AppleTalk Remote Access: Don't Use at 1200 bps

Revised: 2/4/92
Security: Everyone

AppleTalk Remote Access: Don't Use at 1200 bps

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Article Created: 6 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Is it true that Apple doesn't recommend 1200 bps for AppleTalk Remote Access, and won't provide a 1200 bps script for that product?

DISCUSSION -----

Apple doesn't support 1200 bps because the delay is right at the threshold for timing out.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9433

Tech Info Library

AppleShare 3.0: Maximum of 346 Open File Control Blocks

Revised: 5/8/92
Security: Everyone

AppleShare 3.0: Maximum of 346 Open File Control Blocks

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Article Created: 13 December 1991
Article Last Reviewed: 20 April 1992
Article Last Updated: 20 April 1992

TOPIC ----------

AppleShare 2.0.1 limits the maximum number of opened File Control Blocks (FCBs) to 160. This is a problem with some multiuser databases (such as FoxBASE). They open a file for every related database for each user accessing the database from the file server. To allow the maximum number of FCBs, the server had to have a 68O20 or a 68030 processor and have 8MB of RAM.

Does AppleShare 3.0 increase the maximum number of FCBs allowed on the file server? What is the new maximum number of FCBs? Do the same answers apply to File Sharing?

DISCUSSION ----------

AppleShare 3.0's limit is the limit on the number of simultaneous open files under HFS. This is 346 files for both AppleShare and File Sharing.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9435

Tech Info Library

AppleTalk Remote Access: Uses Portions of Comm Toolbox

Revised: 2/4/92
Security: Everyone

AppleTalk Remote Access: Uses Portions of Comm Toolbox

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Article Created: 13 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I understand that AppleTalk Remote Access doesn't use the Comm Toolbox because of speed issues. Is it possible to change AppleTalk Remote so that it recognizes the extra ports Comm Toolbox allows access to? I noticed that in the "Remote Access Setup" CDEV that I can see the extra ports, but can't select them. Could you allow the user to select these serial ports? If not, the extra ports should be hidden.

DISCUSSION -----

AppleTalk Remote Access does use portions of the Comm Toolbox. At least one serial card was tested with AppleTalk Remote Access that allows you to select the serial ports on the card. The card is the QuadraLink from Applied Engineering.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9436

Tech Info Library

PowerBook: Lightning Bolt in Battery Desk Accessory (7/92)

Revised: 5/16/94
Security: Everyone

PowerBook: "Lightning Bolt" in Battery Desk Accessory (7/92)

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Article Created: 12 November 1991
AArticle Reviewed/Updated: 31 July 1992

TOPIC ----------

What's the meaning of the lightning bolt icon on the PowerBook Battery DA?

DISCUSSION ----------

The PowerBook User's Guide states (page 95) that "A lightning bolt icon appears in the Battery desk accessory when the power adapter is plugged in." This is not always true. There are two cases where the lightning bolt icon appears in the Battery DA:

- The lightning bolt should appear in the Battery DA only when the power adapter is plugged in and the computer is in bulk charge. If the power adaptor is inserted, but the computer is in trickle charge, the bolt should NOT show up.

  Bulk charge is when the battery is charged from 0 to 80%, and trickle charge is when the battery is charged from 80 to 100%.

- The other time the lightning bolt will show up is when the power adaptor is plugged into the PowerBook, but not plugged into a wall outlet. The icon will remain present in the Battery DA for up to 2 hours.

An easy way to tell whether or not the power adaptor is actually charging the battery is to look at the Battery DA when the adaptor is plugged into the PowerBook. The battery indicator will drop as many as three positions when the adaptor is first plugged into the PowerBook. If the adaptor is plugged into a wall outlet and charging the battery, the indicator will move back up to the level it was before the adaptor was plugged in within about 15 seconds. If the adaptor isn't plugged into a wall outlet or isn't charging the battery, the indicator won't move back up to the level it was before the adaptor was plugged in.

..TIL09437-PowerBook-Lightning_Bolt_in_Battery_Desk_Accessory_7-92.pdf

Support Information Services

Copyright 1991-92 Apple Computer, Inc.

Tech Info Library Article Number:9437

StyleWriter Driver 7.2.2: Description

Revised: 1/17/92
Security: Everyone

StyleWriter Driver 7.2.2: Description

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Article Created: 13 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Apple StyleWriter driver software, version 7.2.2, as well as the fonts that are included with it.

DISCUSSION ----------

Version 1.2 of the Apple StyleWriter software upgrade includes a new StyleWriter printer driver, version 7.2.2. It is designed to allow printing up to three times faster than the previous version. In addition, Apple will begin shipping seven new TrueType font families (22 individual typefaces) with the StyleWriter. The new software and fonts are fully compatible with System 7.

The StyleWriter can take as little as one third the time to print as previously needed. This speed improvement, plus the additional fonts and the StyleWriter's background printing capability (announced August 1991), provides new convenience for StyleWriter owners.

The new TrueType fonts bring the StyleWriter total to fifteen font families, or 39 individual typefaces, which can be smoothly scaled to any size on the printed page or screen. The fonts are:

- Chicago
- Courier
- Geneva
- Helvetica
- Helvetica Narrow
- ITC Avant Garde
- ITC Bookman
- ITC Zapf Chancery
- ITC Zapf Dingbats

- Monaco
- New Century Schoolbook
- New York
- Palatino
- Symbol
- Times

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Tech Info Library Article Number:9438

Tech Info Library

QuickTime: Hardware Products Will Have QuickTime Component

Revised: 1/22/92
Security: Everyone

QuickTime: Hardware Products Will Have QuickTime Component

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Article Created: 3 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Will hardware vendors provide QuickTime components with their products?

DISCUSSION -----

Many companies with hardware products such as video boards, video laser discs, VCRs, compressor boards, and so on, will provide QuickTime components (drivers meeting QuickTime's API specifications). These components provide QuickTime with the code needed to control the device. To some extent, this is similar to how the AppleTalk Manager needn't "know" how to interact with a specific hardware layer because the Link Access Protocol (LAP), and sometimes AppleTalk Address Resolution Protocol (AARP) layers handle it.

Just as AppleTalk programmers aren't concerned with the details of sending and receiving packets over LocalTalk, Ethernet, Token Ring, and so on, software that supports QuickTime isn't concerned with the details of controlling a Sony EVO 9650 Hi8 Edit VCR, or a Truevision NuVista+ video board. These applications only have to know that they're interacting with devices having certain functional characteristics. Some examples of those characteristics include:

- Playing a video segment, stopping, pausing, putting in fast forward or fast rewind mode, and possessing addressable frames.

- Capturing frames (single or sequence).

- Supporting actions such as fade in, fade out, chroma-keying, and so on.

Although all of this information relates to video and video equipment,

please note that QuickTime isn't limited to video and/or audio applications. Controlled devices could include scientific and manufacturing equipment.

The important thing to remember about QuickTime is that it is a developer-level technology. It provides software developers with a high-level API for dealing with time-dependent data and devices. It also provides a flexible file format for storing time-dependant data.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9442

Tech Info Library

QuickTime: Computer Speed Affects Playback (8/94)

Revised: 8/19/94
Security: Everyone

QuickTime: Computer Speed Affects Playback (8/94)

==========

Article Created: 23 December 1991
Article Reviewed/Updated: 19 August 1994

TOPIC ----------

We've noticed with QuickTime a wide disparity of playback caused by dropping of video frames to remain synchronized with sound when moving from one computer to another. Only when we get to Macintosh IIfx speeds do we seem to maintain frame integrity.

DISCUSSION ----------

The QuickTime engineers deliberately designed QuickTime to do exactly what you describe. Each computer has limitations of how many instructions it can process in a given amount of time. For QuickTime, this imposes certain performance limitations.

When performance needs exceed performance limitations, adjustments must be made to preserve timing and synchronization. When playing a movie with one or more video and audio tracks, QuickTime drops video frames to preserve timing and synchronization. This solution is much less damaging to the presentation than dropping audio segments.

There are several factors that contribute to the performance that you observe when playing QuickTime movies. Some of them are:

- The CPU (68020, 68030, 68040, or PowerPC) and its clock speed

- The number of tracks played at one time

- The precision of the data within each track (examples: bits/pixel, pits/audio sample)

- The background processes that run at playback time (examples: VBL tasks, drivers, file sharing, and so on)

- AppleTalk network traffic. (Each Macintosh partially inspects EVERY packet that comes by to determine whether the packet was addressed to it.)

Article Change History:
19 Aug 1994 - Revised to show that QuickTime requires 68020 computer or better.

Support Information Services

Copyright 1991-94, Apple Computer, Inc.

Tech Info Library Article Number:9443

Tech Info Library

QuickTime: Writing a Compressor/Decompressor

Revised: 1/22/92
Security: Everyone

QuickTime: Writing a Compressor/Decompressor

==========

Article Created: 23 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Does the QuickTime architecture (specifically PICTCompressor) support/import/export TIFF or TARGA images? I need to work with these files in addition to PICT file format, and would like to see the current compression ratios under QuickTime.

Could a TIFF or TARGA Compressor be written using the QuickTime Toolbox, or is it PICT specific?

DISCUSSION -----

One of the benefits of QuickTime is that it was designed to be a very open-ended developer technology. So when you ask if QuickTime is PICT specific, the answer is a strong NO. However, any given compressor/decompressor (CoDec) component will usually be specific to a specific data format such as PICT, TIFF, TARGA, and so on. You could write a TIFF or TARGA CoDec, provided you have the expertise to do so.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9444

Tech Info Library

QuickTime: Application Can Choose Sound Track, or Choose None

Revised: 1/22/92
Security: Everyone

QuickTime: Application Can Choose Sound Track, or Choose None

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Article Created: 23 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Can I turn off the sound as something plays back?

DISCUSSION ----------

Each QuickTime movie file can have any number of tracks within the file. When the file is played, the application software explicitly "tells" QuickTime which tracks to play. For example, you could have a movie file with one video track and one audio track for English narration, one audio track for Spanish, another for German, and so on.

On playback, the application could check to see what language the System is in, and play only the appropriate audio track. The application could also play NO audio tracks if desired. This functionality is an application feature; QuickTime just offers the support for achieving it.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9445

Tech Info Library

Apple Keyboard II: Specifications (Discontinued 6/94)

Revised: 7/5/94
Security: Everyone

Apple Keyboard II: Specifications (Discontinued 6/94)

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Article Created: 13 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article contains technical specifications for the Apple Keyboard II.

DISCUSSION -----

The Apple Keyboard II replaces the existing Apple Keyboard (M0116).

Packing List (M0487LL/A)

Apple Keyboard II
1.0 m (3 ft.) ADB cable
Instruction sheet
Warranty card

System Requirements

Any Apple personal computer with an Apple Desktop Bus (ADB) interface.

Technical Specifications

Total 81 keys, including:

- 18-key numeric pad

- 4 cursor-control keys

Size and Weight

Height: 1.3 inches (32.5 mm)
Width: 16.0 inches (405 mm)

Depth:	5.9 inches (151 mm)
Weight:	2.0 lbs (0.89 kg)

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9446

Tech Info Library

Apple Keyboard II: How It Differs from Previous Apple Keyboard

Revised: 2/4/92
Security: Everyone

Apple Keyboard II: How It Differs from Previous Apple Keyboard

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Article Created: 13 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

The Apple Keyboard II (M0487LL/A) replaces the stand-alone Apple Keyboard (M0116). This article describes the differences between them.

DISCUSSION -----

The Apple Keyboard II, which has been shipping with the Macintosh Classic and Macintosh LC, is fully ANSI and ISO compliant.

New Key Layout

Several keys were relocated. The caps lock and control key exchanged places. The tilde key is now where the escape key was. The vertical line key was moved to a new location above the new return key, and the escape key took the vertical line's old spot. The return key was made smaller, and the space bar was enlarged.

The international ISO version has a new key with ± and § characters and the escape key replaced the right-hand side command key. The space bar was enlarged.

Both keyboard's numeric keypads have the + and - keys reversed. It is the same as the extended keyboard. In addition, this is the same arrangement as a 10-key adding machine.

With the exception of the arrow and escape keys, Apple Keyboard II has a layout which is identical to the comparable parts of the Apple Extended Keyboard II.

Tilt Legs

At the ends on the back, the keyboard has two legs the user can extend to provide a greater tilt.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9447

Tech Info Library

PowerBook: Making Cable Connections While In Sleep Mode (3/95)

Revised: 3/29/95
Security: Everyone

PowerBook: Making Cable Connections While In Sleep Mode (3/95)

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Article Created: 23 December 1991
Article Reviewed/Updated: 29 March 1995

TOPIC ----------

Is it safe to make cable connections, such as ADB, Serial, SCSI, or SCSI Disk Mode, to a PowerBook when it is in Sleep mode?

DISCUSSION ----------

ADB

It is safe to make ADB connections to a PowerBook when in Sleep mode.

Serial

It is safe to make a serial connection to a PowerBook when in Sleep mode though it may require a restart to recognize the device.

SCSI

It is safe to make SCSI connections to a PowerBook when in sleep mode. However, you may need to restart the PowerBook or use a utility such as SCSI Probe to force the PowerBook to recognize the device.

SCSI Disk Mode

If you accidentally connect the SCSI disk adapter to a PowerBook while it's in sleep mode, you'll get a warning dialog box when you wake it.

You must first turn off the PowerBook when connecting the SCSI disk adapter. The SCSI disk mode firmware is only executed from a cold start. NOTE: All PowerBook models support SCSI Disk Mode with the exception of the PowerBook 140, 145, 150, and 170.

If you connect the cable while the system is in sleep mode, there will be

conflicting SCSI IDs on the bus and potential data loss. There are two methods to exit this state:

-You can shut down the system by pressing the reset and interrupt (programmer's) switch

-If there's data in RAM that you need to save, you can disconnect the SCSI disk adapter to resume normal operations (that is, the dialog box will go away).

Note: The PowerBook 100 User's Manual incorrectly advises the user to shut down the system using the Shut Down command from the Special menu. It is not possible to do this since the menu bar is disabled when the warning dialog box is showing.

Article Change History
29 Mar 1995 - Updated to include all cable connections to PowerBook.
18 May 1994 - Clarified PowerBooks which do NOT support SCSI disk mode.
30 Jun 1993 - Updated to include all PowerBook models to date.

Support Information Services

Copyright 1991-95, Apple Computer, Inc.

Tech Info Library Article Number:9449

Tech Info Library

PowerBook 100: Deactivate AppleTalk if Modem Uses Printer Port

Revised: 5/16/94
Security: Everyone

PowerBook 100: Deactivate AppleTalk if Modem Uses Printer Port

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Article Created: 23 December 1991
Article Reviewed/Updated: 3 August 1992

TOPIC ----------

You can use the printer port to connect an external modem. However, remember to deactivate AppleTalk in the Chooser before using the external modem.

DISCUSSION ----------

You may use the PowerBook 100 printer port to connect to a printer or LocalTalk network, and also to add external serial devices such as a modem. However, when disconnecting from a LocalTalk network and connecting a device like an external modem, be sure to deactivate AppleTalk in the Chooser. If you don't, you'll typically get some kind of serial port error message.

Support Information Services

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9450

Tech Info Library

PowerBook 100: RAM Expansion Card Compatibility 8/92

Revised: 5/16/94
Security: Everyone

PowerBook 100: RAM Expansion Card Compatibility 8/92

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Article Created: 23 December 1991
Article Reviewed/Updated: 3 August 1992

TOPIC ----------

What memory cards can I use in the PowerBook 100?

DISCUSSION ----------

You can use Apple PowerBook memory cards (2MB or 4MB cards) in any of the Macintosh PowerBooks.

However, third party cards designed for the Macintosh PowerBook 140 and 170 are not necessarily compatible with the PowerBook 100 because the 68000 has a 16-bit data path, whereas the 68030 can handle 32 bits. The PowerBook 100 requires additional signal lines on the memory card to do addressing correctly. In addition, the physical form factor may not be the same.

Support Information Services

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9451

Tech Info Library

System 7 Tune-Up 1.1.1 Feature Summary (7/93)

Revised: 7/9/93
Security: Everyone

System 7 Tune-Up 1.1.1 Feature Summary (7/93)

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Article Created: 13 January 1992

Article Change History

07/08/93 - REVISED and RETITLED
- Title changed to version 1.1.1 and information from similar articles added to the discussion.

09/24/92 - REVIEWED
- For technical accuracy.

TOPIC

This article describes the changes made to System 7 with Tune-Up.

DISCUSSION

This version of System 7 Tune-Up addresses the problem of disappearing files and folders reported by some users running version 7.0 and 7.0.1. It also includes LaserWriter driver version 7.1.1.

LaserWriter 7.1.1 driver provides the following benefits:

- Support for the Personal LaserWriter NTR
- It fixes the bug that causes a compatibility problem between the current driver (7.1) and the LaserWriter Plus.
- A workaround for a bug in the LaserWriter IIf and IIg ROM that causes PostScript errors (under certain conditions) when printing TrueType.

Improved System Behavior In Low Memory Situations

- Fewer Memory Size Alerts

When you open an application, if the available memory is less than the application prefers, but more than its minimum requirement, the application will use the available memory. Memory size alerts such as "Application prefers 1024K of memory, 900K is available, do you want to open using available memory?" won't appear.

- Closed Applications Quit Automatically When More Memory Is Needed
  Users commonly get into low memory situations by closing a document window without quitting the application, letting the application remain in memory. With the System 7 Tune-Up installed, the Finder offers to quit such applications automatically to make enough memory available when opening another application.

- Automatic Printing Without Quitting The Application
  This helps when you choose "Print…" with background printing on, and there isn't enough memory available to use PrintMonitor. System 7 Tune-Up will print the document immediately, without making you quit the application.

- Reduced System Software Memory Consumption When AppleTalk Is Off
  If you turn off AppleTalk with the Chooser and then restart, AppleTalk networking code won't be loaded into system memory. This frees up 100K to 125K, depending on the Macintosh model. If AppleTalk is turned on again with the Chooser, you must restart to use networking services.

- Reduced System Software Memory Fragmentation
  As you open applications, desk accessories, and control panels, the amount of memory used by system software increases. Problems in the System 7.0 and 7.0.1 Memory and Process managers prevent some of that memory from being released when those programs quit. System 7 Tune-Up fixes those problems, so more memory is released when applications and desk accessories quit.

Performance Enhancements

- Faster LaserWriter Performance When Printing TrueType Fonts
  LaserWriter driver version 7.1 doesn't download software or fonts to the LaserWriter IIf, IIg, IINT, and IINTX if the software or fonts are already in the printer's ROM. This speeds printing of both TrueType and Type 1 fonts. It also doesn't download TrueType software and fonts to the LaserWriter and LaserWriter Plus. Instead, it converts TrueType fonts to Type 1 format and downloads those.

- Faster StyleWriter Performance
  StyleWriter driver version 7.2.2 is nearly twice as fast as version 7.1, because it was rewritten based on the Personal LaserWriter LS driver rather than the ImageWriter driver. Now StyleWriter users need the MS Word TrueType Printer INIT from Microsoft to print Microsoft Word documents correctly on the StyleWriter printer.

- Better Font Memory Management
  TrueType software uses an area of system software memory to store the most recently used font images. System 7.0 and 7.0.1 clears this area

out whenever any new file is opened. TrueType must then refill this memory, slowing performance (especially when printing). With the System 7 Tune-Up, the system clears this memory area only when a new font file is opened, increasing font performance in general and TrueType printing in particular.

- Faster Chooser Performance
  Chooser 7.1 displays device names faster. Keyboard shortcuts in the Chooser also select devices more quickly. Improvements are most noticeable in network zones with many devices.

- Faster Finder Copying Of Large Files
  System 7 Tune-Up improves the performance of Finder "move" and "duplicate" operations by up to 20% on files over 200K.

Bug Fixes

- Reduced Possibility Of Data Corruption With Shared Files
  A problem in System 7.0 and 7.0.1 makes it possible for File Sharing files to become corrupted when two or more users access the file simultaneously. File Sharing Extension 7.0.2 fixes this problem.

- Increased PrintMonitor Reliability
  System 7 Tune-Up makes Print Monitor more reliable and much less prone to crashes.

- Bitmapped Fonts In the System File Marked As Purgeable
  System 7 Tune-Up allows the Font Manager to unload certain fonts in the System 7.0 System File from system software memory when not in use.

- Aliases to the Trash
  System 7 Tune-Up fixes occasional strange behavior of aliases to the Trash.

- SCSI Manager
  With System 7.0 and 7.0.1, using serial communications devices during heavy File Sharing activity can cause the SCSI bus to become confused and seem busy when the bus is free. This causes the computer to hang. System 7 Tune-Up fixes this problem.

- Sleeping Keyboard
  At startup, the System 7 Tune-Up repeatedly resets Apple Desktop Bus keyboards, preventing a problem in which some keyboards occasionally fail to wake up. System 7.0.1 includes this fix as well.

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Tech Info Library Article Number:9452

Tech Info Library

Apple 16-Inch Color Display: Compatibility

Revised: 1/22/92
Security: Everyone

Apple 16-Inch Color Display: Compatibility

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Article Created: 15 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

The Apple 16-inch Color Display works with Quadra 700 and 900 internal video. Other Macintosh II systems require a display card.

DISCUSSION ----------

Quadra Built-in Video

The Quadra 700 and 900 built-in video provides 256 colors in the base configuration, and 16.7 million colors with expanded VRAM.

Display Cards

The Apple 16-inch Color Display works with the Macintosh Display Cards 8•24 and 8•24 GC, version B or later. (If you have one of these cards and it's earlier than version B, you can have the ROMs upgraded.)

The number of colors provided by the Macintosh Display Cards are as follows:

Macintosh Display Card 8•24	256 colors
Macintosh Display Card 8•24 GC	32,000 colors

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9454

Macintosh 16-Inch Color Display: Description (Discontinued)

Revised: 6/20/94
Security: Everyone

Macintosh 16-Inch Color Display: Description (Discontinued)

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Article Created: 15 January 1992
Article Reviewed/Updated: 1 January 1994

TOPIC ----------

This document describes the Macintosh 16-inch Color Display.

DISCUSSION ----------

The Macintosh 16-Inch Color Display delivers a sharply focused picture identical in quality to the Apple 13-inch Color Display.

Feature Set

- 16-inch landscape Trinitron display

- .26mm horizontal stripe pitch

- 832 horizontal pixels by 624 vertical lines (over 500,000 pixels)

- 70% more area than 13-inch displays

- 70 dots per inch

- Horizontal scan rate 50 kHz

- Vertical refresh rate 75 Hz

- Automatic degaussing on startup

- Excellent ergonomic design

- Two ADB ports for keyboard and mouse

- Sound In/Out ports for microphone and headphone (or speaker)

- Anti-glare screen

- Vertically and horizontally pivoting base

- Meets Swedish recommendation for low frequency magnetic and electric field emissions.

Uniform Brightness

Traditional CRT technology has limitations that cause many large-screen color monitors to show uneven brightness across the screen. Variable screen brightness degrades the image quality and causes eye fatigue.

The Apple 16-inch Color Display uses a CRT design that provides uniform brightness across the entire screen. All parts of the screen show the same vivid colors. There is no degradation between the center of the screen and the edges.

Degaussing

The Apple 16-Inch Color Display provides automatic degaussing, on power up, ensuring that you always have the best image possible on your screen. Color display technology uses magnetic fields to guide electron beams inside the CRT to the screen. If a foreign magnetic field comes close to the CRT, it may disturb the internal magnetic field and cause the beams to be slightly misdirected, which distorts the screen image.

The display has circuitry, activated during startup, that compensates for the distortions by adjusting the internal magnetic field to counteract the external magnetic field. If the external magnetic field changes enough during operation to distort the screen image, the image remains distorted until the display's power is turned off and on again.

Adjustable White Point Color Temperature

The white point color temperature is a measure, in degrees Kelvin, of a display's white. Traditional displays use a 9300 degree K white, which has a bluish tint and a high contrast. A 6500 degree K white is similar to page white and is more useful for color matching.

The Apple 16-inch Color Display features an adjustable white point color temperature. You can adjust the white point color temperature by selecting the monitor's control panel and clicking on the option button while holding down the option key. The options dialog offers a choice of gamma tables, and among them are the "Mac Std Gamma" and "Page- White Gamma." The "Mac Std Gamma" is the 9300 degree K option that is the traditional bluish display white. The "Page-White Gamma" is the 6500 degree K white that closely resembles the white of a printed page.

Ergonomics

The Apple 16-inch Color Display has several ergonomic features that provide optimum flexibility for viewing comfort and ease of use.

- High-contrast glass with antiglare, antistatic coating

- The built-in tilt and swivel base makes it easy to change your viewing angle.

- A 75 hertz screen refresh rate eliminates any flickering on your screen.

- The easily accessible ADB and sound I/O ports on the side and front of the base offer flexibility for arranging your system's components.

- Power, brightness, and contrast controls on the front of the monitor make it easy to cycle power and make adjustments.

Article Change History:
7 January 1994 - Revised title and topic to add official product name.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9455

Tech Info Library

Macintosh Communications Toolbox: Software That Uses It (11/94)

Revised: 11/11/94
Security: Everyone

Macintosh Communications Toolbox: Software That Uses It (11/94)

==========

Article Created: 2 January 1991
Article Reviewed/Updated: 11 November 1994

TOPIC ----------

We want an application that uses the Communications Toolbox. We've considered MicroPhone and HyperCard. Do you know if the Macintosh Communications Toolbox works with MPW C? Will it work with any other development environments particularly well?

DISCUSSION ----------

Applications

Many applications that use the Communication Toolbox are available. Terminal emulator programs such as PacerTerm and VersaTerm-Pro use the Communications Toolbox. Software Ventures told us that the current MicroPhone II v3.0 doesn't support the Communications Toolbox. The future release (v4.0) will support the Communications Toolbox Connection Manager.

HyperCard

For HyperCard development, APDA has the HyperCard Macintosh Communications Toolbox Toolkit v1.0b2. This toolkit contains everything you need to access the facilities of the Communications Toolbox from HyperCard. In addition to the external commands (XCMDs) and external functions (XFCNs), the toolkit provides a complete set of documentation, and the full source code for the XCMDs and XFCNs.

NOTE: This product is compatible with HyperCard 2.0, with one known exception. When you open a window, the second window can't open any larger than the first window because of the way both applications allocate memory. This is the only known incompatibility. This is a restricted product. Please call APDA for more information.

MPW

MPW 3.0 and later development platforms support the Macintosh Communications Toolbox. MPW 3.2 supports the Macintosh Communications Toolbox interface files for System 7 and includes the Communications Tools Scripting Interfaces. You can also use third-party platforms that convert MPW interface files and object files.

To locate a vendor's address and phone number, use the vendor's name as a search string in the Tech Info Library.

Article Change History:
11 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:9458

Tech Info Library

KanjiTalk: Printing to StyleWriter

Revised: 9/22/92
Security: Everyone

KanjiTalk: Printing to StyleWriter

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Article Created: 9 January 1992

Article Change History

09/22/92 - UPDATED
- To include information on Kanji TrueType.

TOPIC ----------

Can I print Kanji to a StyleWriter using a Macintosh Classic with 2MB or 4MB RAM, KanjiTalk system software, and a serial connection to a StyleWriter?

Specifically:

1) Can I print Kanji and Roman characters on the StyleWriter?

2) Will the quality be bitmapped (72 dpi) or TrueType (300+ dpi)?

3) Is this possible and/or practical on a 2MB Classic?

DISCUSSION ----------

1) Yes, you can print Kanji and Roman characters on the StyleWriter.

2) Without an outline font technology, such as Kanji TrueType, The output isn't pretty due to bitmap fonts (Adobe's ATM-J can help improve the output). Kanji TrueType, is also available in the U.S. through KanjiTalk authorized dealers.

3) A Macintosh Classic with 2MB RAM is fine for the current release of KanjiTalk, 6.0.7. However, you will need 4MB if you install Kanji TrueType or ATM-J.

For a list of authorized KanjiTalk dealers in the U. S, search the Tech Info Library under "KanjiTalk and dealers", or contact the Apple Dealer Location Operator at 800-538-9696.

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Tech Info Library Article Number:9459

Tech Info Library

Data Access Manager (DAM): How It's Used

Revised: 6/29/92
Security: Everyone

Data Access Manager (DAM): How It's Used

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Article Created: 13 January 1992
Article Last Reviewed: 29 June 1992
Article Last Updated:

TOPIC ----------

I have the following questions about DAM:

1) How does DAM differ from DAL? How is it implemented?

2) Can in-house developers use it?

3) Are there ways of implementing it within HyperCard front ends?

4) I thought that DAM in System 7 applications talked to DAL. Is that correct?

DISCUSSION ----------

1) You'll need to refer to Inside Macintosh, Volume VI, Chapter 8 for detailed information. This subject was covered thoroughly and takes up almost 75 pages, so we won't try to cover it in detail here.

2) Data Access Manager allows your application to communicate with a database or other data source even if you don't generally know about databases or the specific data source your software users communicate with.

   All your application needs is a few high-level Data Access Manager functions and access to a file called a query document. The query document, provided by another application, contains commands and data in the format appropriate for the database or other data source. If your application can create commands for a remote data server, then it can use low-level routines to send these commands and data directly to the data server. An example of a data server is the Data Access Language

Server, which understands the command language called Data Access Language (DAL).

In-house developers can use Data Access Manager for their applications to access data in other applications, or they can write a query document for other applications to use. Again, detailed information and sample code is in Inside Macintosh, Volume VI.

3) Through HyperCard XCMDs and XFCNs, you can create HyperCard front-end applications that communicate to the low-level interface of Data Access Manager.

4) DAM is in System 7, not the applications. Both the high-level and low-level interfaces talk to DAL in a form of a database extension. This is the DAL extension installed with System 7. If you Get Info on it, you'll see it as a "database extension." Of course, DAM can talk to other database extensions. According to Inside Macintosh, the program containing the data need not be a database. With the appropriate database extensions, your application could read data from a spreadsheet, or any other program that stores data.

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Tech Info Library Article Number:9462

Tech Info Library

LaserWriter IIg: PATHWORKS 1.0 Compatibility (7/93)

Revised: 7/21/93
Security: Everyone

LaserWriter IIg: PATHWORKS 1.0 Compatibility (7/93)

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Article Created: 13 January 1992
Article Reviewed/Updated: 21 July 1993

TOPIC ----------

We're evaluating the LaserWriter IIg and comparing it to similar offerings from HP and QMS. We've successfully tested the IIg over LocalTalk and Ethernet, but the IIg fails to work in a particular serial configuration in which the QMS and the HP work fine. We're using PATHWORKS 1.0 with the IIg connected serially to one of DEC's terminal servers.

DISCUSSION ----------

There was a problem when printing to a LaserWriter IIg with PATHWORKS 1.0. DEC has informed us this problem was been fixed with the release of PATHWORKS 1.1, and also that the LaserWriter IIg is supported with release 1.2 as well.

Article Change History:
07/21/93 - To include information on PATHWORKS 1.1 and 1.2.

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Tech Info Library Article Number:9463

Tech Info Library

MacTerminal and Macintosh-to-VAX Connectivity

Revised: 2/3/92
Security: Everyone

MacTerminal and Macintosh-to-VAX Connectivity

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Article Created: 5 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I need to connect approximately 300 Macintosh workstations (on LocalTalk) to a VAX/VMS system using FastPath 5 routers. Only 50 or so simultaneous sessions need be supported. I am looking for software that will allow this to happen.

Currently, all the Macintosh computers have MacTerminal 3.0 and are accessing through a serial connection. I would like to retain the substantial investment we have in MacTerminal.

A product like TSSnet sounds like it will do the job. Are there comparable products that do not include a terminal emulation package (as TSSnet does)?

DISCUSSION ----------

There are many options to connect Macintosh computers on LocalTalk to a VAX. However, since you already own MacTerminal 3.0 and want to retain that investment, this list narrows down a bit. One option is software from Synergy described here:

VersaTermServer is a Macintosh CommToolBox-based application which allows any Macintosh to act as terminal server. It supports 24 output ports, and two different input methods. Inputs can be AppleTalk ADSP Tool over LocalTalk, VersaTerm Telnet Tool over Ethernet, and Apple Modem Tool over serial line. Outputs can be LAT Tool to VAX hosts, Telnet Tool to UNIX hosts, or Modem and Serial Tools. Your Macintosh computers on LocalTalk can use the AppleTalk ADSP Tool to the VersaTermServer, and then LAT from the Server to the VAX. Each supports 24 output ports so you will need two servers running.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:9468

Tech Info Library

DAL for MVS/VTAM: SNA•ps Over Token Ring

Revised: 6/30/92
Security: Everyone

DAL for MVS/VTAM: SNA•ps Over Token Ring

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Article Created: 16 December 1991
Article Last Reviewed: 30 June 1992
Article Last Updated: 30 June 1992

TOPIC ----------

We run SNA•ps over a Token Ring connection to an MVS/VTAM host. We'd like a DAL Server for MVS/VTAM to access through the Token Ring network with LU6.2 protocols (APPC).

Will the Token Ring connection work for DAL access with SNA•ps to an MVS/VTAM environment?

DISCUSSION ----------

DAL engineering lab is using this exact configuration, and it should work. We recommend defining a larger RU size in the Mode Table Entry so you can send a larger block size. You should be using SNA•ps version 1.0.1 or later. See the member README in the DAL.RUN.JCL library on the installation tape for additional information.

Copyright 1991, 1992, Apple Computer, Inc.

Tech Info Library Article Number:9473

Tech Info Library

Direct-To-1: Translation Between All-in-1 and MacWrite

Revised: 2/4/92
Security: Everyone

Direct-To-1: Translation Between All-in-1 and MacWrite

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Article Created: 16 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

We're running a VAX-based server with PCs and terminals, and plan to add Macintosh clients. We communicate worldwide over a VAX network using All-in-1 mail and word processors. We're considering PATHWORKS for Macintosh to turn the VAX into a server for the Macintosh.

One of our major requirements is to download All-in-1 documents to use in a Macintosh word processor such as MacWrite. After some tailoring with MacWrite, we need to load the document back to the VAX as an All-in-1 document.

I understand MacLink Plus/Translators from Dataviz contain a translator called WPS-Plus VMS. Will this translator work between an All-in-1 and MacWrite document?

DISCUSSION ----------

Digital confirmed that WPS-Plus format is different and the translator won't work with All-in-1.

We found the following product information:

Direct-To-1 allows users to send Macintosh files to other All-In-1 users with a Macintosh 512KE or later; Reflection V3.4 or later; Digital VAX All-In-1.

Direct-To-1 is a utility for the Digital VAX that allows Reflection users to send Macintosh files to other All-In-1 users. When used with Walker Richer & Quinn's Reflection 2 for the Macintosh, users can send a variety of file formats over any supported asynchronous or network connection to

a VAX host. Direct-To-1 offers convenience and security features that make All-In-1 a effective communications tool for business users.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9475

Tech Info Library

DAL: No Record Size Limit

Revised: 6/29/92
Security: Everyone

DAL: No Record Size Limit

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Article Created: 19 December 1991
Article Last Reviewed: 29 June 1992
Article Last Updated:

TOPIC ----------

What is the byte limit for the length of a variable-byte-length record in DAL? Where can I get answers to similar questions?

RESPONSE ----------

There is no limit to the size of record support by the DAL server. VARCHAR data types (as with a column of type VARCHAR) can be of any length. However, DAL can't return to the DAL client a VARCHAR larger than 255 characters. Using the @substr function, you can return a very large VARCHAR in several substrings.

This information isn't in the current manuals. For similar questions, refer to the DAL Programmer's Reference, or the DAL Application Developer's Guide.

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Tech Info Library Article Number:9476

Tech Info Library

MacTerminal 3.0: 3278 Terminal Emulation Tool

Revised: 2/4/92
Security: Everyone

MacTerminal 3.0: 3278 Terminal Emulation Tool

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Article Created: 20 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have MacTerminal 3.0, and want to connect, via coax, to a 3174 controller in the building. MacTerminal 2.3 and its built-in 3278 emulation did this easily in the past.

Can I get 3270 terminal and connection tools and, simply by adding them to "vanilla" MacTerminal, get my 3270 access?

DISCUSSION ----------

The only Tool we are aware of is asc3270 from Advanced Software Concepts, which offers 3270 terminal emulation via the CommToolBox. Currently, it only supports telnet connections over TCP/IP using their TCP/IP connection Tool called TCPack.

Since you already have coax to a 3174 controller, SNA•ps is a better solution since it provides better keyboard mapping and terminal emulation. If you insist on using MacTerminal, you will have to wait for the SNA connection Tool from Advanced Software Concepts.

Other 3270 connection solutions are also available in the Technical Info Library. Search using keyword "Macintosh and 3270."

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:9478

Tech Info Library

System 7: Compatibility with Display Card 8•24 GC Software

Revised: 6/18/92
Security: Everyone

System 7: Compatibility with Display Card 8•24 GC Software

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Article Created: 2 January 1992
Article Last Reviewed: 15 June 1992
Article Last Updated:

TOPIC ----------

The Macintosh Display Card 8•24 GC software version 1.0 isn't compatible with System 7.0 or 7.0.1 in the accelerated mode.

DISCUSSION ----------

Version 7.0.1 or higher of the Macintosh Display Card 8•24 GC software is compatible with System software version 7.0 and 7.0.1.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9479

Tech Info Library

Personal LaserWriter: Envelope Cassette Specs Manual Correction

Revised: 1/30/92
Security: Everyone

Personal LaserWriter: Envelope Cassette Specs Manual Correction

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Article Created: 14 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What size envelopes can I use with the Personal LaserWriter Envelope Cassette?

DISCUSSION ----------

You can use envelopes that are within these size ranges:

- Minimum: 3.75x6.45 inches (96x164 mm)
- Maximum: 7.40x10.00 inches (188x255 mm)

Note

Some versions of the Personal LaserWriter LS, SC, and NT Owner's Guides have incorrect Envelope Cassette specifications. The information listed in this article is correct for all versions of the Personal LaserWriter Envelope Cassette.

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Tech Info Library Article Number:9480

Tech Info Library

LaserWriter IIf/IIg: Peripheral Interface Guide Corrections

Revised: 1/30/92
Security: Everyone

LaserWriter IIf/IIg: Peripheral Interface Guide Corrections

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Article Created: 14 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article provides corrections to the October 1991 Peripheral Interface Guide.

DISCUSSION -----

Page 8 of the Peripherals tab shows the settings for Diablo emulation for the Apple LaserWriter IIf and IIg printers. The LaserWriter IIf and IIg printers do not support Diablo emulation.

Incorrect: 25-pin serial, switch 2, 9600 baud serial, Diablo Emulation
  Correct: 25-pin serial, switch 2, 19200 baud, PostScript

Incorrect: 25-pin serial, switch 4, 9600 baud, PostScript
  Correct: 25-pin serial, switch 4, 1200 baud, PostScript

Incorrect: SCSI, switch 0-9, SCSI, Not affected by switch
  Correct: SCSI, switch 0-9, SCSI, For external disk only

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9481

Tech Info Library

LaserWriter IIf & IIg: Configuration and Parameter Info Sheet

Revised: 1/30/92
Security: Everyone

LaserWriter IIf & IIg: Configuration and Parameter Info Sheet

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Article Created: 10 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC -----

When I upgraded the RAM in a LaserWriter IIf from 2MB to 5MB, the LaserWriter Serial Number changed. Why is this?

DISCUSSION -----

The LaserWriter Serial Number on the Printer Configuration and Parameter Information sheet is random, and changes every time a LaserWriter IIf or IIg is turned off and on.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9482

Tech Info Library

LaserWriter IIf: Needs 4MB RAM to Print All Page Sizes

Revised: 2/4/92
Security: Everyone

LaserWriter IIf: Needs 4MB RAM to Print All Page Sizes

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Article Created: 20 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC -----

The manual for the LaserWriter IIf and LaserWriter IIg states that there is a non-printable margin around the page of 5mm. All of the LaserWriter IIf printers I've printed on have an unprintable area of: top=10mm, bottom=10mm, left=10mm, right=6mm.

DISCUSSION -----

The LaserWriter IIf and LaserWriter IIg have a non-printable margin of 5mm around the page. The problem you have is due to a lack of memory in the LaserWriter IIf. The largest page size a 2MB LaserWriter IIf can print is a4small, which is 7.68 by 11 inches. The default page size that is used is lettersmall, which is 7.89 by 10.30 inches. A 2MB LaserWriter IIf can't print a letter size (8.11 by 10.79 inches), or legal size (8.11 by 13.79 inches) page. The only way around this is to upgrade the memory of the LaserWriter IIf to 4MB.

A 4MB LaserWriter IIf can print any of the following page sizes:

legal:	8.11 by 13.79 inches
a4:	7.89 by 11.44 inches
letter:	8.11 by 10.79 inches
a4small:	7.68 by 11 inches
lettersmall:	7.89 by 10.30 inches
b5:	6.72 by 9.81 inches

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Tech Info Library Article Number:9484

Tech Info Library

CloseView: Not Compatible with Some RasterOps Video Cards

Revised: 2/4/92
Security: Everyone

CloseView: Not Compatible with Some RasterOps Video Cards

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Article Created: 9 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

My system locks up as the Closeview INIT is being loaded. CloseView is the only INIT loaded. Virtual memory and 32-bit addressing are off.

Configuration:
- Quadra 900
- RasterOps GSXL ROM Version 1.4
- System 7.0.1
- Closeview

DISCUSSION ----------

RasterOps Tech Support tested CloseView with their cards, and reports the following:

Many RasterOps video cards contain code called Pan and Zoom that provides functionality similar to CloseView. This RasterOps code is incompatible with CloseView.

RasterOps recommends removing CloseView when using their video cards, and using Pan and Zoom, accessible through the Monitor extension under options, instead.

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Tech Info Library Article Number:9485

3M DC2000 Tape Cartridges: Storage and Longevity

Revised: 2/4/92
Security: Everyone

3M DC2000 Tape Cartridges: Storage and Longevity

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Article Created: 4 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What is the storage life of DC2000 tape cartridges? How long we can safely store a cartridge without losing the data?

DISCUSSION ----------

Our answer is from the 3M Recording Products Division Hotline. They don't state the probable maximum life-span of data stored on a DC2000 tape cartridge. They advise that the tape be retensioned every year, and to rewrite the data out onto the tape every 5 years.

Note: To rewrite the data onto a tape cartridge, you'll probably need to restore the data to a hard disk, then back up that hard disk again. All previous mention of how to properly store the tape applies.

Backups

The tape cartridge life-span can be greatly influenced by the environment you store and use it in, as well as whether you back up the tapes by volume or by file.

- Volume
  If you back up tapes by volume, your cartridge may last for a couple thousand backups. This estimate isn't based on any controlled study. It's based on the assumption that during a volume backup, after the initial tensioning of the tape, the drive will generally record information on the tape from the beginning to wherever it stops once it completes transferring all of the information. This is usually in one or two continuous passes. Incidentally, the noise (pitch and volume changes) the drive makes when performing a volume backup isn't from the

drive stopping the tape, rewinding it, then proceeding forward.
The drive generates this noise when it switches tracks.

- File
  Backing up onto the tapes by file is much more stressful on the tape.
  When the files are fragmented on the drive, the drive may have to reverse
  direction of the tape many times to lay the files down sequentially on
  the tape. We are unable to predict the longevity of a tape used for
  file backups. These three factors influence longevity:

  - The great variation in the quantity of files backed up

  - The differences in file size

  - Degree that files are fragmented

  However, prudence should dictate practice when archiving data.

Operating Environment

The operating environment also influences the tape life. Before using the cartridge, allow it to acclimate to your operating environment for eight hours, or for the amount of time it has been exposed to dissimilar conditions -- whichever is less. Recommended operating environment:

Temperature:	41 to 113 degrees F (5 to 45 degrees C)
Relative Humidity	20 to 80% non-condensing
Maximum Wet Bulb Temperature	79 degrees F (26 degrees C)

Store tapes out of the direct sunlight and where they won't be exposed to high temperatures.

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Tech Info Library Article Number:9487

Tech Info Library

SNA•ps 3270: Macintosh Quadra Installation and Compatibility

Revised: 2/4/92
Security: Everyone

SNA•ps 3270: Macintosh Quadra Installation and Compatibility

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Article Created: 5 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I'm unable to get the SNA•ps software to run on a Macintosh Quadra 900. I turned off all the INITs except the SNA INITs and still can't get the program to run without crashing. I have turned 32 mode off/cache off and every combination in between. Is there a known problem? If so, is there a fix in the works?

DISCUSSION -----

SNA•ps 3270 v1.0.1 (the client software) is compatible with the Macintosh Quadra computers. However, you may have done an Easy Install or a Custom Install, and selected SNA•ps CUT and SNA•ps NLCA. In this case, you must remove the extensions, SNA•ps CUT, and SNA•ps NLCA from the Extensions folder. These extensions aren't compatible, and SNA•ps 3270 will hang when you launch it.

The preferred way to install SNA•ps 3270 on a Macintosh Quadra is to do a Custom Install and Choose "SNA•ps 3270 Client, System 7."

The original Macintosh Quadra compatibility booklet distributed with the Macintosh Quadra computers and the compatibility report posted on AppleLink say that both SNA•ps Gateway and SNA•ps 3270, versions 1.0 and later, are compatible with Macintosh Quadra computers. Only SNA•ps 3270 is compatible if you follow the above guidelines.

Note that only a few copies of SNA•ps 3270 version 1.0 were distributed before SNA•ps 3270 was revised to version 1.0.1. There are no functional differences, only a cosmetic one with one dialog.

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..TIL09488-SNA-ps_3270-Macintosh_Quadra_Installation_and_Compatibility_(TA47937).pdf

Tech Info Library Article Number:9488

Tech Info Library

System 7.0.1: Change Overview

Revised: 9/25/92
Security: Everyone

System 7.0.1: Change Overview

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Article Created: 10 December 1991

Article Change History

09/25/92 - REVIEWED
- For technical accuracy.

TOPIC ----------

This article describes the differences between System 7.0 and 7.0.1. They fall under two main headings:

- cdevs/Extensions

- System File

DISCUSSION ----------

CDEVs/Extensions

Memory

RAM Disk Support on Quadra and PowerBook Computers Support for RAM Disk on the Macintosh Portable was moved from the Portable control panel to the Memory control panel. Minor internal changes were made to all of the "panels" inside memory. Specifically, the virtual memory and RAM Cache "panels" were updated to work correctly with the new RAM disk and to work with the existing RAM disk on Macintosh Portable computers. The previous version of the Memory control panel would let users reduce the size of the virtual memory backing store (by reducing virtual memory). This change would take effect before restarting. This was corrected under 7.0.1 to occur at restart.

Portable

The screen brightness and contrast sliders previously found in Portable were removed. The PowerBook family has hardware controls on the front to control contrast and brightness. For the Classic family, Macintosh Portable, and PowerBook 100, a dedicated control panel called "Brightness" provides control of the overall screen brightness. RAM disk controls for the Macintosh Portable previously found in Portable have moved to Memory.

Portable supports internal modems in PowerBook 140 and 170 as well as in the Macintosh Portable.

Brightness

The brightness control panel supports Macintosh Portable, Classic, Classic II, and PowerBook 100 computers. The control panel is a simple slider that controls overall screen brightness.

Network

Minimal Network changes support on-board Sonic Ethernet for the Quadra family.

Battery

Battery was updated to work with the PowerBook family. Battery now provides users with a button to put the computer to sleep immediately.

Caps Lock

The Caps lock indicator panel places a visual indicator of the state of the Caps Lock key on the right end of the menu bar. Available only on PowerBooks.

File Sharing Extension

An internal 4K file sharing buffer was increased to 5K. With the increased performance of the Quadra family's built-in Ethernet, a slightly larger buffer increased the file sharing throughput by 2 times on those computers.

Cache Switch

There's a new control panel for the Quadra computers to disable or enable the 68040 cache. The control panel simply sets a PRAM byte and the System does all the work at the next startup.

A/ROSE and DAL

General 68040 compatibility changes.

HD SC Setup

Minor changes to support new hardware and to change a format-time mode select.

System File

OS

- Keyboard patch wakes up sleeping Putter (Macintosh Classic) keyboards.

- Supports the 53C96 SCSI chip found in the Quadras and PowerBooks 140 and 170. At startup, a linked patch was added to wait for all SCSI drives connected at the previous startup to spin up before continuing the launch. This is for Macintosh Quadras and PowerBooks 140 and 170 only.

- Minor LocalTalk changes for 68040 compatibility.

- Minor changes to Gestalt 'lram', 'ram ', and 'kbd ' selectors for RAM disk/PowerBook keyboard support.

- Updated _hwPriv CPU cache management and dispatch routines.

- Updated keyboard maps for Key Caps (PowerBook keyboard).

- Supports the new Macintosh PowerBook 140/170 power manager.

- Startup code inhibits 68040 cache depending on setting of Cache Switch CDEV.

- Bitmapped system fonts were marked unpurgeable in System 7.0. These are now marked purgeable under 7.0.1.

ToolBox

- SANE (Standard Apple Numerics Environment) performance was improved via backpatching. The new SANE is functional on all computers with a IIci class universal ROM and a Floating Point Unit. It's occasionally noticeable in applications that use SANE on computers with a FPU.

- The Disk Initialization Package now creates an MFS disk when the size of the volume is exactly 800 blocks (400K), instead of doing so on sizes less than or equal to 800 blocks. This is to prevent RAM disks that are smaller than 800 blocks from being formatted as MFS volumes. It is

impossible to create a RAM disk with exactly 800 blocks.

- The Notification Manager has been changed to call IdleUpdate when NMInstall is called (on portables) to wake the system up when a notification is about to be posted.

- Enables powerdown messages on Quadra 900 and RAM disk. The warning code, "has files on it and will be erased if you shut down" was added to the Shutdown Manager. Also, all open video drivers are closed before the power is killed at _Shutdown.

- Support for Quadra and PowerBook sound hardware and internal sound input source selection was added to the Sound Manager.

- The backlight driver was upgraded to work with the PowerBook family.

- SetHandleSize was fixed for all 32-bit memory managers.

General

- Various strings and dialogs, required in the support of the new systems, were added.

- Several minor changes that reduce the overall size of the run time system heap were made to compensate for the memory required by the new CPU support.

- The Installer script file has been substantially revised to address the needs of the new systems.

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Tech Info Library Article Number:9489

Tech Info Library

Macintosh Quadra: How On-board Ethernet Differs from Ethernet NB

Revised: 8/6/92
Security: Everyone

Macintosh Quadra: How On-board Ethernet Differs from Ethernet NB

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Article Created: 19 December 1991
Article Last Reviewed: 5 August 1992
Article Last Updated:

TOPIC ----------

Does the built-in EtherTalk capability on the Quadra systems have the same functionality as the Ethernet NB Card?

DISCUSSION ----------

The Quadra's on-board Ethernet has the same functionality as the Ethernet or EtherTalk NB card. But it's about 15-20% faster because it uses DMA, doesn't rely on NuBus data transfers, and the chip is operating at the faster system bus clock rate.

The Quadra's on-board Ethernet is implemented using the National DP83932 SONIC Ethernet controller chip. This device includes an IEEE 802.3 encoder/decoder (ENDEC), media access control (MAC) unit, separate 32-byte send and receive FIFOs, and DMA controller in one device. SONIC is housed in a 132-pin PQFP package. A small ROM provides the Ethernet global address (which provides a unique 48-bit identity for each Quadra built). The SONIC controller includes DMA capability. It will request the bus and transfer data between its internal registers and main memory.

The Apple AUI (AAUI) connector provides outside connection. The AAUI connector is compatible with any of the FriendlyNet drop boxes that provide transceivers for thick net, thin net, or 10BaseT networks.

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Tech Info Library Article Number:9491

Tech Info Library

MacX: Difficulty Sending Application from HP Server (8/95)

Revised: 8/23/95
Security: Everyone

MacX: Difficulty Sending Application from HP Server (8/95)

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Article Created: 26 November 1991
Article Reviewed/Updated: 23 August 1995

TOPIC ----------

I'm having a problem sending a MacX application to a Macintosh with the new HP 730 (75 Mip server).

Configuration:

- Macintosh IIci
- 8MB memory
- 80MB disk
- Ethernet over twisted pair
- System 7 with MacX 1.1.7
- MacTCP 1.1
- MacTCP Tool 1.1.7

I've tested the above system with a DEC VMS system and it works fine. I can even Telnet into the HP server from the Macintosh. I can send the MacX application to an HP X terminal. But I can't send it to MacX. I've used the standard commands such as "setenv DISPLAY 1.1.1.1:0" and "xterm 1.1.1.1:0" and almost anything else I can think of.

DISCUSSION ----------

After a Macintosh successfully sends to the HP server, try the following command (assuming that X.X.X.X is the Macintosh IP address).

Begin_Table

	root#	/usr/bin/X11/xterm -display X.X.X.X:0.0
or	root#	setenv DISPLAY X.X.X.X:0.0; xterm (root is running csh)
or	root#	env DISPLAY=X.X.X.X:0.0 /usr/bin/X11/xterm (root is running sh)

End_Table

In MacX, try running any of the above commands from the Remote menu. If it works from the HP server to the MacX, but fails from the MacX to the HP server, then you must have a networking permission related problem from MacX to the HP server. We've seen this scenario in a SunOS host which implemented a feature in the "rexecd" code that doesn't allow a host that isn't listed in the /etc/hosts file or YP (now called NIS) name server to execute the "rexecd" command. The solution for it is to add the Macintosh IP address and host name to the Sun's /etc/hosts file or the NIS name server. We suggest that you check this with the HP server to see if it has the same problem.

Article Change History:
23 Aug 1995 - Made correction for technical accuracy.

Support Information Services

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Tech Info Library Article Number:9492

A/UX: Increasing Maximum Open Files per Process

Revised: 9/24/92
Security: Everyone

A/UX: Increasing Maximum Open Files per Process

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Article Created: 2 December 1991

Article Change History

08/31/92 - REVIEWED
o For technical accuracy.

TOPIC ----------

Is there a way to increase the maximum number of files that one A/UX process can open simultaneously?

Normally the maximum is 32 (and this includes stdin, stdout, and stderr). In stdio.h we found the identifier FOPEN_MAX, but modifying this isn't sufficient. We also found the identifiers OPEN_MAX in limits.h and NOFILE in sys/params.h. However, modifying these identifiers to a higher value (for example 40) in our own source doesn't work either.

Is it possible that these values are fixed in certain system libraries or in the object code of the system calls (open, creat)? Is there an easy way to change this, both in A/UX 2.0.1 and 3.0?

DISCUSSION ----------

There is no way to adjust the number of open files available to each process without recompiling the kernel, because it was hard-coded in the kernel. If you try to use "adb" to change this value, other kernel structures will be affected and mixed. You won't be able to recompile the kernel without kernel sources.

The upcoming A/UX 3.0 release increases the maximum number of open files per process to 128. These defined constants, OPEN_MAX (in /usr/include/limits.h) and NOFILE (in /usr/include/sys/param.h), are in A/UX 3.0

..TIL09494-A-UX-Increasing_Maximum_Open_Files_per_Process_(TA47944).pdf

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9494

Tech Info Library

CodexEvents Library: Apple Events For UNIX

Revised: 2/4/92
Security: Everyone

CodexEvents Library: Apple Events For UNIX

==========

Article Created: 2 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC --

On November 18, 1991, Codex Software Development Pty. Ltd. of Melbourne, Australia announced the development of CodexEvents. This is an Apple event style library for providing interapplication communications facilities between Macintosh, UNIX, and Microsoft Windows systems.

DISCUSSION --

Developers can use the CodexEvents library to send messages between independent programs running on different computers. The library is compatible with the Apple events API defined by Apple Computer, Inc. for use with the Apple events messaging protocol. For each Apple event call there is a corresponding CodexEvent call. Thus, it requires very little effort to convert code that uses Apple events to use CodexEvents instead.

"For the first time, we have a truly platform independent messaging protocol which is high level enough to be useful." said J. Matthew Pryor, Director of Software Technology at Codex. "CodexEvents makes writing cross-platform software feasible, by providing a standardized, high level messaging protocol for programmers on Macintosh, UNIX or Windows platforms."

Codex has also developed a background application for the Macintosh which allows a non-Macintosh application to send Apple events to applications running on the Macintosh. This application acts as a protocol converter for incoming CodexEvents, translating them into Apple events which Apple event-aware applications, such as the Macintosh Finder or Microsoft Word, can respond to directly.

CodexEvents is currently available for SunOS, NeXT and Macintosh. The

Macintosh library operates under both System 7.0 and also under System 6.0.5 or later. So developers can use CodexEvents to add interapplication messaging facilities to their non-system 7.0 applications.

CodexEvents currently requires MacTCP to be installed on each Macintosh and TCP/IP protocols to be available on the non-Macintosh computers. CodexEvents is engineered to be network independent however, and versions which use Novell, 3Com and AppleTalk are under development.

Parties interested in licensing CodexEvents should contact Brett Adam of Codex.

Codex Software Development was founded in 1989 with the express purpose of developing cross-platform software technology and innovative software products for the general marketplace.

This information is provided by the product's developer or distributor and constitutes neither an endorsement nor a recommendation by Apple Computer, Inc.. Apple assumes no responsibility with regard to selection, performance or use of this product. All understandings, agreements and warranties, if any, take place directly between the developer and the prospective user.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:9495

Tech Info Library

A/UX: Changing Slice Number with dp (8/94)

Revised: 8/30/94
Security: Everyone

A/UX: Changing Slice Number with dp (8/94)

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Article Created: 18 December 1991
Article Reviewed/Updated: 30 August 1994

TOPIC ----------

I have a problem with my A/UX hard drive (Micronet 400MB with all the database software). The drive was partitioned into 11 partitions, for example:

Swap : slice 1
Ingres : Slice 2
Oracle : Slice 3
Informix : Slice 4

Now I have several different partitions with the same slice number: slice 3. The partitions map seems to be OK (blocks, type of partition, and so on), except the slice number. Do you know if it's possible to change the slice number of a partition by using the dp command, and without losing the information?

DISCUSSION ----------

First, make sure all partitions' physical starting locations don't overlap.

Suppose your Micronet disk drive's SCSI ID is 5, and has two disk partition entries (5 and 6) with the same slice number 3, and you want to change entry 6 with the new slice number 8. Log in as root and do the following:

```
            # dp /dev/rdsk/c5d0s31
    --->Command? p6             <==== Your input # view partition entry 6
    --->Command? c6             <==== Your Input # change partition entry 6
    --->DPME Field? b           <==== Your Input # change BZB
    --->BZB Field? s            <==== Your Input # change slice number
    --->Slice number + 1 [3]: 9 <==== Your Input # assign slice number 8
    Note: [3] indicates the current slice number
    --->BZB Field? q            <==== Your Input # quick BZB mode
```

```
    --->DPME Field? q           <==== Your Input # quick DPME mode
    --->COmmand? w              <==== Your Input # write changes
    --->Command? q              <==== Your Input # quick dp
             #
```

Note that the s slice number (bzb_slice) command in the BZB-field mode isn't documented in either dp(1M) hard copy document or the dp(1M) on-line manual pages.

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

Copyright 1991,1994 Apple Computer, Inc.

Tech Info Library Article Number:9496

Tech Info Library

Macintosh: Files Required to Play Audio CDs (5/95)

Revised: 5/30/95
Security: Everyone

Macintosh: Files Required to Play Audio CDs (5/95)

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Article Created: 17 January 1992
Article Reviewed/Updated: 30 May 1995

TOPIC ----------

Every time I insert an audio CD into the AppleCD attached to my Macintosh computer, a dialog appears asking if I want to initialize the CD. Why?

DISCUSSION ----------

You are missing one or more of the system extensions needed to play audio CDs.

With System 7.1 and later, these files must in the Extensions folder:

Apple CD-ROM
Audio CD Access
Foreign File Access

The AppleCD Audio Player is an application, so it can go anywhere on your hard disk. However, if it is in the Apple Menu Items folder, you can easily access the AppleCD Audio Player from within any application.

If you have an AppleCD 600, you need to use v5.0.4 or later of the Apple CD-ROM extension.

Article Change History:
30 May 1995 - Total rewrite of article.

Support Information Services

Copyright 1991-95, Apple Computer, Inc.

Tech Info Library Article Number:9500

Tech Info Library

System 7.x: Limitations on Use of 400k Disks (8/96)

Revised: 8/27/96
Security: Everyone

System 7.x: Limitations on Use of 400k Disks (8/96)

==========

Article Created: 12 December 1991
Article Reviewed/Updated: 27 August 1996

TOPIC ----------

1) What is meant by MFS disks?

2) What are HFS disks?

3) With the introduction of HFS disks was it still possible to format disks as MFS?

4) How did the introduction of System 7 affect the ability to read and write to MFS disks?

DISCUSSION ----------

1) Question: What is meant by MFS disks?

Answer: The first Macintosh computers used only 400k single-sided disks, formatted as MFS (Macintosh File System) volumes which used a flat file structure, and no subdirectories (folders in Macintosh vocabulary). Although you could create and place documents and folders into folders, they existed only in the Finder's view of the disk.

2) Question: What are HFS disks?

Answer: With the introduction of HFS (hierarchical file system) and 800k, double-sided disks, the concept of subdirectories (folders) came to the Macintosh.

3) Question: With the introduction of HFS disks was it still possible to format disks as MFS?

Answer: Yes. The default format for a single-sided disk was MFS. Although by holding down the Option key when selecting the Erase option you could create a 400k HFS volume. In systems prior to System 7, when viewing the window of a volume in Icon view, an HFS volume would have one black pixel at the far left-hand side of the double horizontal lines that appear below the title bar.

4) Question: How did the introduction of System 7 affect the ability to read and write to MFS disks?

With the introduction of System 7, the ability to read and write files to MFS volumes was retained to maintain compatibility. However, there are some limitations:

* You can still create an MFS volume on a single-sided disk by holding down the Option key (and keeping it held down until the formatting is complete) when selecting Erase Disk under some versions of System 7, including System 7.0x and System 7.1. However, you cannot create an MFS disk under System 7.5.

* With the PC Exchange control panel or ProDOS extension installed, you cannot format disks as single-sided disks. Although you can still write to and read from single-sided disks, both MFS and HFS. So, you must disable this control panel and/or extension if you want to format 400k disks.

* Folders that you see on MFS disks under pre-System 7 systems are no longer visible because the Finder in System 7.x ignores folders created by older versions of the Finder on an MFS disk. A file in such a folder appears in the root level of the disk, but has the same relative position in the window that it has in the MFS folder.

* All the files appear at the root level.

* You cannot rename existing MFS volumes.

* You cannot create new folders on these volumes.

* The Finder does not use or save window position or size information about files located on an MFS disk.

* If you select the single-sided option when formatting a disk, it will be formatted as an MFS volume.

* MFS disks cannot have comments. However, files located within MFS disks can have comments.

* You cannot create an alias for an MFS volume. More generally, Alias Manager functions and the FSMakeFSSpec function do not work if their target is an MFS volume. You can, however, create aliases for files on an MFS volume. Similarly, you can use the new File Manager functions that use FSSpec records on files on an MFS volume.

* You should not call the File Manager function PBGetFCBInfo on MFS volumes.

* The Process Manager's GetProcessInformation function may not return correct results about the location of the application file if the application file resides on an MFS volume.
*If you rename an edition located on an MFS volume, the Edition Manager may not be able to find that edition for any document that publishes to or subscribes to it. Also, if you open an edition in the Finder that is located on an MFS volume and updates the edition, the Finder window closes.

Note: Many of these limitations listed here are documented in Inside Macintosh VI, chapter 25, page 25-9:

Article Change History:
27 Aug 1996 - Updated technical information.
15 Feb 1995 - Reviewed for technical accuracy.
11 Jan 1995 - Noted that System 7.x won't format a 400k disk.

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Tech Info Library Article Number:9502

Tech Info Library

System 7: Opening Documents by Dragging them Over an Application

Revised: 1/21/92
Security: Everyone

System 7: Opening Documents by Dragging them Over an Application

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Article Created: 12 December 1991

Article Change History

08/25/92 - CORRECTED
- To show the correct documentation reference.

TOPIC ----------

What rules does System 7 use to decide whether I can drop a document on an application icon to have the application open it?

The System frequently doesn't highlight the icon I'm trying to drop the document onto. This is a potentially useful feature. I don't think I've ever done it with an alias of an application.

DISCUSSION ----------

The application determines what documents to open when they are dropped on the application icon. There is an FREF resource which now has two main functions for an application:

- Associates the icons defined with file types used by that application.

- Allows you to drag document icons to an application icon to open the documents from that application.

An application should create an FREF resource for the application file itself, and create separate FREF resources for each file type that the application can open. Each FREF resource specifies a file type. The file type can be defined for:

- Files created by that application only

- Files created by other applications that the application supports

- Files of the existing general types, such as TEXT or PICT

When you drag a document icon to an application icon, the Finder checks a list of that application's FREF resources. If the document's file type appears in the FREF resource list, the Finder launches that application with a request to open that document. It's up to the application to open the files according to the needs of the user.

An alias should act the same way as the original it was created from, as the file type will be the same. If you're having problems launching a document alias created by the application you're dragging the alias to, rebuild the Desktop.

There is further information in Chapter 9 (Finder Interface) of Inside Macintosh VI.

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Tech Info Library Article Number:9503

Tech Info Library

PowerBook: Above 10,000 Feet, Keep In Pressurized Cabin (5/96)

Revised: 5/21/96
Security: Everyone

PowerBook: Above 10,000 Feet, Keep In Pressurized Cabin (5/96)

==========

Article Created: 9 January 1991
Article Reviewed/Updated: 20 May 1996

TOPIC ----------

The Getting Started manual for my PowerBook states that the computer should not be operated above 10,000 feet. Does this mean that my PowerBook cannot be used on airplanes that cruise above 10,000 feet?

DISCUSSION ----------

Macintosh PowerBook computers can be used in airplanes, provided the cabin is pressurized under 10,000 feet. Some models can be transported in airplanes with pressurization no higher than 15,000 feet.

Commercial airliners generally maintain cabin pressure to an 8.5 psi differential. As an example:

Cruise Altitude	Cabin Altitude
22000 feet	Sea Level
25000 feet	1420 feet
30000 feet	3640 feet
35000 feet	5600 feet
40000 feet	7290 feet
45000 feet	8670 feet

Only the Concorde cruises above 45,000 feet. That aircraft utilizes a special fuselage design which can sustain much higher differential pressures than 8.5 psi, which allows it to keep the cabin pressure well under 10,000 feet as well.

From this, it is apparent that cabin cruise altitudes will not exceed the 10,000 foot limitations of most PowerBook computers. There are, however, the following points to be made.

So what's the risk?

On PowerBook computers, when altitude limits are exceeded, the principal risks we have observed include general operational problems, hard drive problems, and even the possibility of screen cracking.

Destination higher than 10,000 feet

We are not aware of any airports in the United States with elevations higher than 10,000 feet. Such destinations do exist in other countries. Since the airplane must land, its cabin pressure will eventually be raised to the landing altitude. However, we also discourage the use of the PowerBook at such elevations.

Is the cargo hold pressurized?

The cargo compartment of most commercial airliners is, in fact, part of the airplane's pressure hold, and is pressurized. Check with your specific carrier if in doubt.

Cargo hold risks

The cargo hold brings a combination of other threats. The combination of lowered air pressure during cruise (see above), lowered temperature (the cargo area is typically much cooler than the passenger cabin), and vibration can all combine to create a very hostile environment. In addition, suitcases, which tend to be moist environments, can be cooled such that condensation will appear on solid surfaces. This could further aggravate the situation.

In addition, the risk of damage by rough handling or damage from other suitcases is increased when out of sight of the owner.

Private planes

Most light private planes are not pressurized, but many can climb above 10,000 feet. Even if a light plane has a pressurized cabin, its cargo area may not be. Some light aircraft with high altitude capabilities and unpressurized cabins utilize oxygen systems to keep the occupants shipshape.

Some business jets similarly have unpressurized cargo compartments.

Military aircraft

Military aircraft come in all forms. Fighter cockpits, for example, tend to pressurize to a 5 psi differential, so their cabin altitudes will tend to be much higher than on a passenger jet. Check with the operator to determine what the likely environmental extremes can be.

Are there any other risks?

If the cabin undergoes decompression, the PowerBook could be exposed to extreme environmental factors.

Some all-cargo operators may opt to shut down a portion of their pressurization system, thus increasing fuel efficiency. This would have the effect of raising cabin altitude, possibly to limits which could comprise a threat to a PowerBook.

Some air taxi operators do not use pressurized aircraft, but may normally cruise in the 8 to 9 thousand foot range. In some circumstances, such as weather avoidance, they may climb above 10,000 feet.

So what does Apple recommend?

Apple recommends transporting the PowerBook in the passenger cabin, and not utilizing it above 10,000 feet. Damage caused by hostile operating or storage environments is not covered by the Apple limited warranty.

Users concerned about these issues are encouraged to investigate comprehensive insurance to protect against the financial consequences of inadvertent damage.

Article Change History:
20 May 1996 - Added detailed technical information.

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Tech Info Library Article Number:9504

Tech Info Library

PowerBook: External ADB Devices and Wake Up Function (3/95)

Revised: 3/31/95
Security: Everyone

PowerBook: External ADB Devices and Wake Up Function (3/95)

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Article Created: 9 January 1992
Article Reviewed/Updated: 31 March 1995

TOPIC -----

Can an external ADB device be used to wake up a Macintosh PowerBook computer from the Sleep mode?

DISCUSSION -----

No. ADB devices draw a significant amount of power and would drain the Macintosh PowerBook battery. They are disabled when in sleep mode as a power-saving feature.

Article Change History:
31 Mar 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:9505

Tech Info Library

PowerBook: How To Print From External Modem Port (7/95)

Revised: 7/10/95
Security: Everyone

PowerBook: How To Print From External Modem Port (7/95)

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Article Created: 9 January 1992
Article Reviewed/Updated: 10 July 1995

TOPIC ----------

I have been trying to print directly from my PowerBook 160's modem port to a StyleWriter and an ImageWriter II. Sometimes I get the message that the job is printing, but the job does not print. Other times, I get error messages. I do not have this problem with the printer port.

DISCUSSION ----------

This information only pertains to PowerBooks that have two serial ports rather than a single serial port. PowerBooks that have two serial ports include most of the PowerBook 100 series computers (140, 145, 145b, 170, 160, 165, 165c, 180 and 180c).

For information detailing serial printing from PowerBooks that have a single serial port search for the article titled "PowerBook: Printing to Serial Printer-Single Serial Port."

TO USE THE EXTERNAL MODEM PORT TO PRINT TO A SERIAL PRINTER:
==========

PowerBook With No Internal Modem
==========

• Select the desired printer driver in the Chooser (such as the StyleWriter II) on the left side of the window.

• On the right side of the Chooser window where it says, "Select a port," select the modem port instead of the printer port.

Even though you will have one of the control panels described below in your Control Panels folder you will not see the choices described (internal/external, compatible/normal, use Express Modem/use External Modem) in your control panel because your PowerBook has no internal modem and external modem to choose

between.

PowerBook With Internal Modem
==========

• Change the default setting in the one of the following control panels: Portable, PowerBook, PowerBook Setup, or Express Modem. The specific control panels and settings that need to be changed are listed below under each specific software version.

• Select the desired printer driver in the Chooser (such as the StyleWriter II) on the left side of the window.

• On the right side of the Chooser window where it says, "Select a port," select the modem port instead of the printer port.

System 7.0.1

• Change the default setting in the Portable control panel from Internal Modem to External Modem.

• Use the StyleWriter driver version 7.2.2 to correct a problem with the Portable control panel that occurred when selecting the Internal/External Modem setting.

System 7.1

• Change the default setting in the PowerBook control panel from Internal Modem to External Modem.

System 7.1 w/System Update 3.0, 7.1.1 or 7.5

• Change the default setting in the PowerBook Setup control panel from Compatible to Normal.

• Normal versus Compatible
In the Normal mode, the modem is addressed via the System 7 Communication Toolbox, and the external port is available for usage.

If your communication program is NOT compatible with the Communication Toolbox, set the PowerBook Setup control panel to Compatible. This mode prevents the external serial port from being addressed by other programs, as well as preventing communication with a serial printer.

Express Modem Software v1.5 or Later Installed

• Change the default setting in the Express Modem control panel from Express Modem to External Modem.

Apple Telecom 2.0

In the Express Modem control panel, remove the "x" in the box for the selection "use internal modem instead of external Modem Port".

Article Change History:
10 Jul 1995 - Added Apple Telecom 2.0 information.
21 Apr 1995 - Corrected minor typo in System 7.1 section.
02 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:9506

Tech Info Library

QuickDraw-Based Printers Are Not Compatible With IBM PCs

Revised: 2/4/92
Security: Everyone

QuickDraw-Based Printers Are Not Compatible With IBM PCs

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Article Created: 14 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

How can I connect a Personal LaserWriter LS to an IBM-compatible PC?

DISCUSSION -----

The Personal LaserWriter LS, Personal LaserWriter SC, LaserWriter IISC, and the StyleWriter are not compatible with IBM-compatible computers because they are QuickDraw-based printers.

IBM-to-LaserWriter connectivity requires a PostScript-based printer, like the Personal LaserWriter NT, LaserWriter IINT/IINTX, and LaserWriter IIf/IIg printers.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9507

Tech Info Library

PowerBook Series: Carrying Case Manufacturers 7/92

Revised: 5/16/94
Security: Everyone

PowerBook Series: Carrying Case Manufacturers 7/92

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Article Created: 14 January 1992
Article Reviewed/Updated: 31 July 1992

TOPIC -----

Do you know of any companies that manufacture carrying cases for the Macintosh PowerBook computers?

DISCUSSION -----

Several companies manufacture carrying cases for the Macintosh PowerBook computers. They include ComputerAid Inc., I/O Design, Inc., Isis International, Inc., Kensington Microware, Ltd., Madson Line, Magenta Seven, Inc., and TCC.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9508

Tech Info Library

Macintosh: System 7 and More than 8MB of RAM

Revised: 6/1/92
Security: Everyone

Macintosh: System 7 and More than 8MB of RAM

==========

Article Created: 14 January 1992
Article Last Reviewed: 19 May 1992
Article Last Updated: 19 May 1992

TOPIC ----------

My Macintosh Quadra 700 with 20MB of RAM, has only 7MB available. The system software takes up 13MB of RAM.

DISCUSSION ----------

If you have more than 8MB of RAM installed in a Macintosh, you can access only 8MB of that RAM unless you have 32-bit addressing turned on in System 7 or you're using A/UX. With 32-bit addressing turned on, you can access up to 128MB of physical RAM. under System 7.

To turn 32-bit addressing on, turn 32-Bit Addressing on in the Memory control panel and restart.

If you're running System 7 in 24-bit addressing mode, or any version of system software before 7.0, any RAM beyond 8MB is treated as if it is already being used by the System heap, and is unavailable for your use.

In your case, a Macintosh Quadra 700 has 20MB of RAM, 12MB of which is automatically allocated to the System heap and is unused. If the System is reported as using 13MB, then the System is actually occupying 1MB of the available 8MB of RAM.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9509

Tech Info Library

AppleColor Composite Monitors: Compatible With Both IIGS and IIe

Revised: 5/25/94
Security: Everyone

AppleColor Composite Monitors: Compatible With Both IIGS and IIe

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Article Created: 6 December 1991

TOPIC ----------

There are two AppleColor Composite Monitors shown on the Apple II Products price sheets:

- AppleColor Composite Monitor (IIGS) (part number A2M6020)
- AppleColor Composite Monitor IIe (part number A2M6021)

What are the differences? Are both compatible with both the Apple IIGS and the Apple IIe?

DISCUSSION ----------

Both composite monitors work with either computer. The main difference is in the outside designs to better match the case of the computer with which the particular monitor is associated.

Support Information Services

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9510

Tech Info Library

ImageWriter II: Condensed Print Problem is Driver Related

Revised: 4/13/92
Security: Everyone

ImageWriter II: Condensed Print Problem is Driver Related

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Article Created: 6 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have an ImageWriter II connected to my Macintosh. It's printing condensed mode for no apparent reason.

DISCUSSION ----------

The condensed printing problem is printer driver related. The Macintosh prints everything in graphics when Best or Faster mode is selected. Check the Page Setup in the File menu first. If it still prints in the condensed mode, replace the printer driver.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9511

Tech Info Library

Macintosh: Where To Get Information About Math Coprocessors

Revised: 7/6/92
Security: Everyone

Macintosh: Where To Get Information About Math Coprocessors

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Article Created: 13 December 1991
Article Last Reviewed: 24 June 1992
Article Last Updated:

TOPIC -----

Where can I get information about the math coprocessors used in some Macintosh models?

DISCUSSION -----

This information is in:

- the Apple Numerics manual, available through APDA. It has a chapter on the math coprocessors.

- the math coprocessor manuals published by Motorola.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9513

System 7: Video Memory Allocation

Revised: 4/13/92
Security: Everyone

System 7: Video Memory Allocation

==========

Article Created: 13 December 1991

Article Change History

08/25/92 - REVISED
- To make clear that holding down the option key still has a role in the System 7 Monitors control panel.

TOPIC ----------

I recently upgraded my Macintosh IIci to system software version 7.0. Under version 6.0.X, when I wanted to change the memory allocation for the built-in video, I used this procedure:

1) In the Control Panel, I selected the Monitors cdev.

2) I pressed the Option key and clicked the "Options..." button.

A dialog box appeared, and in the bottom portion of the dialog box, labeled "Memory Allocation For Built-In Video", there were radio buttons for setting how much memory to allocate to video.

Is this still the correct method for System 7?

DISCUSSION ----------

Under system software version 7.0, you no longer need to press the Option key. Just click the "Option..." button in the Monitors control panel to display the dialog box.

If you do hold down the Option key when clicking the "Option..." button in the Monitors control panel, you are presented with an option to "Use Special Gamma" for applications where accurate color representations are

essential, or in situations where two differernt types of monitors are used whose colors must match.

Copyright 1991, 1992, Apple Computer, Inc.

Tech Info Library Article Number:9514

Tech Info Library

Personal LaserWriter LS: Performance Varies with Computer Speed

Revised: 4/13/93
Security: Everyone

Personal LaserWriter LS: Performance Varies with Computer Speed

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Article Created: 13 December 1991

Article Change History

04/13/93 - UPDATED
- To give clearer examples

TOPIC ----------

Printing time is slower when I print from a Macintosh Plus to a Personal LaserWriter LS than it is when I print from a Macintosh Classic II or Macintosh IIci to the same Personal LaserWriter LS.

DISCUSSION ----------

Because the speed of the Macintosh computer's CPU affects the printing time, printing from a Macintosh Plus to the Personal LaserWriter LS is slower than from a higher-speed computer, like the Macintosh Classic II or Macintosh IIci.

The Personal LaserWriter LS has a high-speed RS-422 serial interface, externally clocked at 909KB/sec. At optimum performance, it prints four pages per minute.

Copyright 1991, Apple Computers, Inc.

Tech Info Library Article Number:9515

Tech Info Library

System 7: If Mouse Control Is Lost During Upgrade From System 6

Revised: 4/13/92
Security: Everyone

System 7: If Mouse Control Is Lost During Upgrade From System 6

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Article Created: 13 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I tried to upgrade my Macintosh IIcx to system software version 7.0. During the upgrade, I lost mouse control. I swapped the keyboard and mouse from my Macintosh IIfx, which I successfully upgraded to version 7.0, and tried them with the Macintosh IIcx. I still lost mouse control during the upgrade.

DISCUSSION ----------

You may be experiencing an INIT conflict. First, make a backup copy of your System Folder. Then remove the System Folder from your hard drive and try the installation again.

Also, if you are using any third-party ADB devices, contact the manufacturer and ask if there are any known or reported compatibility problems with their product and version 7.0.

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Tech Info Library Article Number:9516

Macintosh II and IIx: 16MB SIMMS, MODE32, and RAM (9/95)

Revised: 9/15/95
Security: Everyone

Macintosh II and IIx: 16MB SIMMS, MODE32, and RAM (9/95)

==========

Article Created: 9 December 1991
Article Reviewed/Updated: 15 September 1995

TOPIC ----------

According to the "Macintosh Memory Guide" from Connectix, Page 17, second paragraph:

"3) On standard Macintosh II computers Bank A cannot use SIMMs larger than 2MB. 4, 8, and 16MB SIMMs must only be put in Bank B. Also, Bank A must be filled with SIMMs of 2MB or less if Bank B is to be used. Bank A is the set of four sockets to the right as you face the front of the Macintosh. This is a problem unique to the Macintosh II, and is caused by problems in the Macintosh II ROMs which are not overcome by adding MODE32 or MAXIMA. However, you can fix this one problem by installing the FDHD Apple SuperDrive Upgrade kit, which includes a set of Macintosh IIx ROMs. As a result of this limitation, the largest memory configuration on unmodified Macintosh II computers using 1MB and 4MB SIMMs is 20MB: four 1MB SIMMs in Bank A and four 4MB SIMMs in Bank B. When Macintosh IIx ROMs are added the maximum memory the computer will support is 128MB, eight 16MB SIMMs."

Is this information accurate? I was under the impression that the Macintosh II and Macintosh IIx could physically support only 4MB SIMMs.

DISCUSSION ----------

Below is an excerpt from another article describing MODE32. The excerpt describes Macintosh II RAM issues. To see the full article, search under MODE32.

"The Macintosh II and Macintosh IIx require special 4MB SIMMs. Be sure to specify your Macintosh model when ordering these SIMMs and ensure that the vendor is aware of the difference. The Macintosh II requires the Macintosh II FDHD Upgrade to use 4MB SIMMs.

This upgrade has been discontinued.

To take advantage of more than 8MB of physical RAM, the Macintosh II MUST have a PMMU installed, so that MODE32 can expand the system's memory map.

The Macintosh II will not start up if you install 4MB SIMMs in bank A. You'll hear musical chimes at startup, indicating a hardware failure. Install 4MB SIMMs in bank B, and use 256K or 1MB SIMMs in bank A."

If you read the part about the Macintosh II carefully, you will see that it cannot have greater than 1MB SIMMs in Bank A, or you will get musical chimes. Since this happens so early in the boot process, there is nothing that can be done in software to remedy this. This means that a Macintosh II can have a maximum of 68MB of RAM installed (using a PMMU and MODE32). To achieve this amount, you would have 4MB in Bank A, and 64MB in Bank B (using 16MB SIMMs).

A final, but very important issue here concerns the part discussing the special SIMMs required by the Macintosh II and Macintosh IIx. There is nothing to say that vendors will actually make 16MB SIMMs using this configuration.

Article Change History:
15 Sep 1995 - Revised to show discontinued upgrade.
02 Apr 1995 - Updated for clarity.
02 Mar 1994 - Emphasized the need for a PMMU to utilize more memory.

Support Information Services

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Tech Info Library Article Number:9523

Tech Info Library

PowerBook: How to Eliminate Clicking Noise (5/95)

Revised: 5/15/95
Security: Everyone

PowerBook: How to Eliminate Clicking Noise (5/95)

==========

Article Created: 10 January 1992
Article Reviewed/Updated: 15 May 1995

TOPIC ----------

I hear random clicks from my PowerBook 170. Adjusting the volume to zero doesn't eliminate the problem.

DISCUSSION ----------

The click is the power manager shutting down the amplifier to extend battery life. It happens approximately thirty minutes after the last sound is played. It's not a bug, but it can be annoying.

For the PowerBook 100, 140, 145, and 170, you can disable the speaker by inserting a mini plug in the sound out port. When you want sound, unplug it. This way you can eliminate sound and turn on the system in a meeting without disturbing others.

For newer PowerBook computers (the 160 and newer, as well as the Duo series), if you want to shut off sound entirely, set the volume in the Sound control panel to zero and the PowerBook will not make any sound, at startup or any other time.

Article Change History:
15 May 1995 - Updated for clarity.
10 Aug 1993 - Rewrote for new models.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:9524

Tech Info Library

PowerBook: SCSI Termination Differs from Other Macintosh Models

Revised: 5/17/94
Security: Everyone

PowerBook: SCSI Termination Differs from Other Macintosh Models

==========

Article Created: 10 January 1992
Article Reviewed/Updated: 2 July 1993

TOPIC ----------

The Macintosh User's Guide for PowerBooks says that you need two terminators when connecting to one SCSI peripheral.

Is this correct? This is not true for any other Macintosh.

DISCUSSION ----------

The manual is correct. Due to differences in the internal termination scheme, the PowerBooks require two terminators for one to six external SCSI devices. Other Macintosh computers require one terminator for one device, and two terminators for more devices.

Article Change History

07/02/93 -Updated to include all PowerBook models.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9525

Tech Info Library

LaserWriter: PageMaker 4.2 Uses PPD, Not APD Files (8/95)

Revised: 8/22/95
Security: Everyone

LaserWriter: PageMaker 4.2 Uses PPD, Not APD Files (8/95)

==========

Article Created: 13 January 1992
Article Reviewed/Updated: 22 August 1995

TOPIC ----------

There's a problem printing Aldus PageMaker 4.0 documents to a LaserWriter. Any suggestions?

DISCUSSION ----------

To print publications, Aldus PageMaker 4.2 uses PostScript Printer Description files (PPD files) in much the same way as earlier versions of PageMaker used Aldus Printer Description (APD files). PageMaker 4.2 doesn't use APD files. Therefore, when you open a PageMaker 4.0 or 4.0.1 publication in PageMaker 4.2, you must choose Print… to specify a new printer (by selecting a PPD). When you first choose Print… you will receive an error message indicating that PageMaker failed to find a PPD. The message is misleading:

- First, the PPD it refers to corresponds to the APD you last specified in the 4.0 or 4.0.1 publication
  and
- Second, it implies that it searched and didn't find the PPD in the PPDs folder when this is not actually the case.

Simply click Continue, to open the Print dialog box. Choose the PPD you want from the Printer type pop-up menu.

It's a good idea to save the publication after selecting the PPD, otherwise you'll get the message each time you print.

NOTE: When you open a PageMaker 4.2 publication in PageMaker 4.0 or 4.0.1, you must open the Print dialog box and select an APD.

The following is a list of PPD files shipped with PageMaker 4.2 for Apple printers:

Apple LaserWriter IIf v2010.113
Apple LaserWriter IIg v2010.113
Apple LaserWriter v23.0
Apple LaserWriter Plus v38.0
Apple LaserWriter Plus v42.2
Apple LaserWriter IINTX v47.0
Apple LaserWriter IINTX v51.8
Apple LaserWriter IINT v47.0
LaserWriter Personal NT v51.8

The following is a list of PostScript versions from the Tech Info Library article, "Postscript: Versions in LaserWriter ROMs."

Printer	Revision # Displayed on Test Print	ROM Size	PostScript Version
LaserWriter	1.0	256K	23.0
LaserWriter	2.0	512K	38.0
LaserWriter Plus	2.0	512K	38.0
LaserWriter Plus	3.0	512K	47.0
LaserWriter IINT	1.0	1MB	47.0
LaserWriter IINTX	1.0	1MB	47.0
LaserWriter IINTX	3.0	1MB	51.8
Personal LaserWriter NT	1.0	1MB	51.8
LaserWriter IIf	1.0	2MB	2010.113
LaserWriter IIg	1.0	2MB	2010.113
Personal LaserWriter NTR	1.0	2MB	2010.129

The LaserWriter Plus with revision 3.0 ROMs reports back that it has PostScript version 42.2. This is an error in revision 3.0 ROMs. PostScript version 47.0 is the actual version in the revision 3.0 ROMs.

The LaserWriter IIf, LaserWriter IIg, and Personal LaserWriter NTR have PostScript Level 2 in ROM. All other LaserWriter printers have PostScript Level 1 in ROM.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
22 Aug 1995 - Made minor corrections.
11 Nov 1992 - Updated to include current information about PPD files.

Support Information Services

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Tech Info Library Article Number:9526

Tech Info Library

LaserWriter: Apple IIe Card Only Prints 11-inch Page

Revised: 11/4/92
Security: Everyone

LaserWriter: Apple IIe Card Only Prints 11-inch Page

==========

Article Created: 20 December 1991

Article Change History

11/04/92 - REVIEWED
- For technical accuracy.

TOPIC ----------

I have a LaserWriter connected to a Macintosh LC with an Apple IIe Card. The LaserWriter uses the multipurpose tray. I configure the IIe Card software to use the Printer Port (slot 1) to print to the LaserWriter.

When printing a legal-size document in AppleWorks 3.0, I run into printing anomalies. If I specify a 14-inch page in AppleWorks and print the document on an ImageWriter II, the document prints on one page. If I print to the LaserWriter with legal-size paper in the tray, it prints 11 inches only and finishes the document (2 more lines) on the second page. The margin settings are .5-inch left and right, and 0 top and bottom.

DISCUSSION ----------

We've confirmed this anomaly and anticipate it will be corrected in a future release of the software.

At this point we can suggest no workaround.

Copyright 1991, 1992, Apple Computer, Inc.

Tech Info Library Article Number:9529

Tech Info Library

System 7 LaserWriter Driver: How to Shrink PostScript Files

Revised: 7/23/92
Security: Everyone

System 7 LaserWriter Driver: How to Shrink PostScript Files

==========

Article Created: 15 January 1992
Article Last Reviewed: 16 July 1992
Article Last Updated: 16 July 1992

TOPIC ----------

With System 6, I could use Command-K to dump a PostScript image with Laser Prep, or Command-F to dump a PostScript file without Laser Prep.

With System 7, I can't seem to find a way to dump the PostScript file without the Laser Prep. Now an option in the print dialog allows me to select "Postscript File." This provides the same function as Command-K. But is there a way I can exclude Laser Prep as I did with Command-F?

Also, is there any way to make the generated PostScript file any smaller than it is?

DISCUSSION ----------

There is no Apple solution yet for generating PostScript files without headers under System 7. The latest improvement is the version 7.1 LaserWriter driver, which improves printing performance. But we don't have a solution to the problem of extremely large saved files.

The large saved file situation is caused by two major changes from the driver versions prior to 7.0 (excluding 6.1, which is really an old version of 7.0.):

- The addition of TrueType, and

- The need to prevent "laser wars."

TrueType fonts require the TrueType scaler on the destination printer. Because the driver doesn't know anything about the final destination when saving to a file, it saves everything that might be necessary. This can

add several hundred kilobytes to the file's size, and that's with only a couple of fonts. The scaler itself adds well over 100K.

Laser war problems at customer sites with several different driver versions motivated a change in the prep dictionary downloading. Prior to System 7, the first user to print downloaded their version of Laser Prep semi-permanently (outside of the server loop; remaining until a power cycle). Subsequent print jobs from other users would query the LaserWriter and see that the prep information already existed. If the query found an incompatible version, their prep dictionary replaced the existing one. If the existing version was compatible, everything worked fine. The prep dictionary is referenced from the LaserWriter driver's output as a library of procedures. If the referenced routines don't exist the print job will fail.

The System 7 method sends the prep information along with each print job. Since it isn't downloaded semi-permanently, it's always saved with a file because the information is still required. In addition to increasing the file size, this conflicts with non-Apple laser printers (usually connected to workstations or minis) that use substitute prep dictionaries. Since the prep dictionary isn't always present in the LaserWriter, the Command-F option wouldn't work anyway without adding the header code.

A shareware program called Trimmer allows you to select fonts you want excluded from saved files. It also allows the exclusion of the TrueType scaler. Trimmer also provides an option of excluding the Laser Prep header from the PostScript file, simulating the Command-F option from System 6.x. It provides a good way to eliminate unneeded data from saved files. But it's an unsupported non-Apple solution.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9530

Tech Info Library

Ethernet LaserWriters: Change EtherTalk Default Zone (11/94)

Revised: 11/17/94
Security: Everyone

Ethernet LaserWriters: Change EtherTalk Default Zone (11/94)

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Article Created: 3 October 1991
Article Reviewed/Updated: 17 November 1994

TOPIC ----------

Does the utility software that comes with the LaserWriter IIg (which connects directly to Ethernet) allow the user to change the zone that the printer resides in?

Also with the LaserWriter Pro 630, Pro 810, and 16/600 PS is there a utility that can be used to change the zone?

DISCUSSION ----------

There are two utilities that will enable you to change the zones the printers are located in. Use the "Apple Print Utility" for the LaserWriter 16/600 PS, and place the printer's configuration switch in the up position for the zone change to be persistent between restarts. For the LaserWriter IIg, Pro 630 and Pro 810, use "LaserWriter Utility" v7.4.1 or later.

If you don't have LaserWriter Utility v7.4.1 or later, the utility included with the LaserWriter IIg doesn't have an option to select a zone when connected to an EtherTalk network that has more than one zone associated with it. You can change the zone that the LaserWriter IIg appears in with this PostScript code:

```
---Cut Here---
currentfile statusdict begin product (LaserWriter IIg) eq
version (2010.113) eq and end not
{save exch 291 string readstring pop pop restore} if
/ASCIIHexDecode filter /SystemPatch statusdict /emulate get exec
85f6ba98b8147bdb3c41fc154e390200521caba043febd65f48e008d42590001cd0f62e
4c9f2b841c6c1c85660f30002ba262234d72494f203c119951000000376b481858e01bff2
db172cf2ecfe000446e2f3ddca7b1fb2d27814e1c22e000598f64cae7bb9897afb760a5d8
1ac0106>
serverdict begin 0 exitserver
```

```
(%EtherTalk%) <</EtherTalkZone (YourZoneGoesHere)>> setdevparams
---Cut Here---
```

1) Copy all information between the "---Cut Here---" lines.

2) Paste the information into a text document.

3) Change the text "YourZoneGoesHere" in the last line to the new zone name.

4) Save the text document as a file.

5) Download the file with the LaserWriter Utility.

After sending this code, the LaserWriter IIg should appear in the new zone. If the zone name requested isn't valid for the EtherTalk network, the LaserWriter IIg uses "*" as the zone name and appears in the default zone. A valid zone name is a string of up to 32 characters, excluding the ":" and "@" characters.

Notes

For a LaserWriter to be in a particular zone:

1) The LaserWriter must be directly connected to an EtherTalk Phase 2 network via the built-in Ethernet port.

2) The zone in which the LaserWriter is to appear must be in the zone list for the physical cable (network) to which the LaserWriter is attached -- which, in this case, must be Ethernet. This is defined by the router for the physical cable.

Tip for Sending PostScript Code to a LaserWriter

An easy way to send PostScript code to a LaserWriter is to enter it into a TeachText or SimpleText document and download it using the LaserWriter Utility's Download PostScript File option. TeachText or SimpleText is included with Macintosh system software, and the LaserWriter Utility is included with the LaserWriter.

Article Change History:
17 Nov 1994 - Added information on LaserWriter Pro 630, Pro 810, and 16/600 PS.
17 Aug 1992 - Corrected the PostScript Hex Codes.

Support Information Services

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Tech Info Library Article Number:9535

Tech Info Library

AppleTalk: Using Multiple Versions on Same Network

Revised: 2/5/92
Security: Everyone

AppleTalk: Using Multiple Versions on Same Network

==========

Article Created: 9 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

How many versions of AppleTalk can we run on a 20-Macintosh network? We currently have version 56 on most of the computers.

DISCUSSION -----

There should be no incompatibilities between various versions of AppleTalk. It's important to know that AppleTalk phase 2 was introduced with AppleTalk version 53.

AppleTalk version 56 introduced many bug fixes and should be the minimum version in use on any network with highly utilized servers or routers. Most of the bug fixes included in version 56 were related to crashes and other problems with nodes operating in a high stress environment.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9538

Ethernet Transceivers: Require Hub Termination

Revised: 2/9/92
Security: Everyone

Ethernet Transceivers: Require Hub Termination

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Article Created: 13 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

We have problems selecting EtherTalk with the NB card, LC card, or built-in Quadra cards. The usual message is "An error occurred while trying to install the selected AppleTalk connections. The built-in LocalTalk port will be used instead."

We know that we have to plug in the transceiver before starting the Macintosh. Do twisted pair transceivers also require hub termination?

DISCUSSION ----------

The Ethernet NB card driver performs three loopback tests before enabling user services. If any one of these tests fail, the card won't allow you to use the attached network. The initial two tests check the card's internal communications paths. However, the third test performs a loopback test using external parts of the network. If any part of the external network fails to function properly (this includes 10baseT links), the test fails and your port switches to the built-in LocalTalk port.

Concerning 10baseT hub termination, you definitely need to have hub termination before the driver allows you to select user services.

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Tech Info Library Article Number:9539

System 7.0.1: Installing the Ethernet Driver

Revised: 9/25/92
Security: Everyone

System 7.0.1: Installing the Ethernet Driver

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Article Created: 13 January 1992

Article Change History

09/25/92 - REVIEWED
- For technical accuracy.

TOPIC ----------

We've had problems installing system software version 7.0.1 with a NEW Apple Ethernet board installed in the Macintosh. Here's what happens:

1) Upon clicking the installer, we don't get the list of EtherTalk drivers, and we have to choose customize.

2) After completing the installation, the system doesn't work with the new board. We then use the disk that comes with the Ethernet board to install the drivers and A/ROSE.

3) The driver from this disk doesn't work with version 7.0.1, so we must again use the 7.0.1 disk to install the correct Ethernet driver.

Can you suggest a better way to do this?

DISCUSSION ----------

To get the Ethernet NB card installed and working:

1) Install system software version 7.0.1.

Note: You must have the Macintosh connected to a working network before the driver lets the user services become active.

2) Then use the disk that ships with the Ethernet NB card (version 2.5.1)

to install the Ethernet driver.

3) Restart the Macintosh.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9540

Tech Info Library

AppleShare 3.0: Using a Users & Groups File on Multiple Servers

Revised: 2/9/92
Security: Everyone

AppleShare 3.0: Using a Users & Groups File on Multiple Servers

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Article Created: 13 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I'm setting up several AppleShare 3.0 servers, and I'm having problems copying the Users & Groups File. I have an existing AppleShare 3.0 server up and running with over 100 users and groups in the database. This server is a Macintosh SE/30.

I'd like to use the Users & Groups file on a Macintosh IIci from the Macintosh SE/30 server. I can copy the file without problems. When I open up AppleShare Admin, it shows me the first server's name and asks me for the admin key. After I type the correct admin key, I get a list all of the users and groups. If I quit the Admin application and reopen it, I get the message, "The Users and Groups file is damaged."

How can I successfully copy the file?

DISCUSSION -----

Following are the procedures to use the same Users & Groups file for multiple servers:

1) Install and configure an AppleShare 3.0 server with a complete Users & Groups list.

2) Copy the saved Users and Groups file to a spare floppy disk.

3) Open the Preferences folder, located in the System Folder of the next system to have the server software installed. Drag the Users & Groups file to the Trash. Note: It won't let you delete the file from the Trash, but that's OK.

4) Copy the saved Users & Groups file from the floppy disk to the Preferences folder.

5) Insert the AppleShare 3.0 server disk and double click the installer icon to start the installation.

6) After server installation, you must restart the Macintosh.

7) Start the Admin program to automatically read in and use the saved Users & Groups file. In a short time you'll see the complete Users and Groups lists appear, and you can then proceed with any other specific server administration that you need to do.

You can quit the admin program and relaunch it with no problem. Once you're satisfied with the configuration, you can start the server by double clicking on the server application.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9541

Tech Info Library

Macintosh System Software: Correct Responder Versions (3/94)

Revised: 3/31/94
Security: Everyone

Macintosh System Software: Correct Responder Versions (3/94)

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Article Created: 11 November 1991
Article Reviewed/Updated: 31 March 1994

TOPIC ----------

I support 2,500 Macintosh computers, and I'm using Inter•Poll to monitor the various systems. I can only access printer driver information on some of the computers.

It seems that only Responder version 2.0.2 works with system software version 6.0.7, and that only Responder 2.0 works with system software version 7.0.

I'm not sure where the various versions of Responder extensions are coming from on the System 7 computers. The Responder is built into the system, and I followed the same installation on all of the computers.

DISCUSSION ----------

Responder version 1.1.1 doesn't report any information for printer drivers if the 7.0 drivers have been installed on a System 6 Macintosh. Responder versions 2.0.2, 2.0.3, and 2.0.4 are the correct versions to use with this configuration (System 6 using 7.0 drivers), and will report back the correct printer driver information to Inter•Poll.

Before any Macintosh will report the printer driver information, you must first select a printer (driver) from the Chooser. You don't actually have to select a printer, just a printer type (that is, LaserWriter, ImageWriter, and so on), and then restart the Macintosh.

Another anomaly is that the 2.0.1 Responder is built in to System 7 and must be removed before any of the stand-alone versions (2.0.2, 2.0.3, and 2.0.4) will load and function. There's no real reason to remove the built-in Responder; this information is for education and possibly future testing purposes only. None of the current N&C installers will remove the 2.0.1

Responder resource from the System file. You must remove it manually before any of the stand-alone versions of Responder will load on a System 7 computer.

A good indication that the 2.0.1 Responder is installed as well as a stand-alone version is that the Responder icon will be X'ed out when the INITs (extensions) display their icons at startup time. The built-in Responder in System 7 is located in the AINI resource in the System file, resource number is 32000.

Here's a matrix that describes where each version of Responder comes from. This should help sort out why so many different versions are showing up on the BNR Internet and help you to get the correct versions installed on the systems.

Product	Responder Version
6.x	1.1.1 (This includes 6.0.8)
7.0	2.0.1 Built in to the System (Inter•poll reports it as 2.0)
7.0.1	2.0.1 (same notes as 7.0)
7.1	2.0.3 (same notes as 7.0)
Ethernet NB 2.5.1	2.0.2
ARA 1.0	2.0.3
NSI 1.0	2.0.3
NSI 1.1	2.0.3
NSI 1.2	2.0.3
NSI 1.2.1	2.0.3
NSI 1.3	2.0.4
NSI 1.4	2.0.4

Article Change History

31 March 1994 - Reviewed for technical accuracy, updated formatting.
03 February 93 - Revised to update matrix with System 7.1 and NSI information and condense the topic.
21 August 92 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:9542

Inter•Poll: System 7.0.1 and Printer Drivers

Revised: 2/14/92
Security: Everyone

Inter•Poll: System 7.0.1 and Printer Drivers

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Article Created: 20 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC -----

After I installed System 7.0.1 on a networked Macintosh, Inter•Poll 1.0.1 is unable to see or identify the LaserWriter driver on the 7.0.1 system. Is there a workaround for this?

To test:

1) Install 7.0.1 on a Macintosh on the network.
2) Start Inter•Poll on another Macintosh.
3) Choose System Information under the Special menu.
4) Click on the LaserWriter Driver Version radio button.

The 7.0.1 system won't show a LaserWriter Driver installed.

DISCUSSION -----

This isn't a problem. System 7.0.1 reports back the correct printer driver information without any modification or update to any system resources. Please read the information below.

Responder Information

Version 1.1.1 of Responder doesn't report back any information for printer drivers if the 7.0 drivers have been installed on a 6.x system. Responder versions 2.0.2 and 2.0.3 are the correct versions to use and will report back the correct printer driver information to Inter•Poll when installed on a system 6.x Macintosh that is using the 7.0 print drivers. Before any Macintosh will report the printer driver information, you must first select a printer (driver) from the Chooser. (You don't actually have to select a printer just a printer type, such as LaserWriter, ImageWriter, and so on.)

Then restart the Macintosh.

Another anomaly is that the 2.0.1 Responder is built into System 7 and must be removed before any of the stand-alone versions (2.0.2, 2.0.3) will load and function. None of the current N&C installers will remove the 2.0.1 Responder resource from the system. You must remove it manually before any of the stand-alone versions of Responder will load on a System 7 Macintosh. A good indication that the 2.0.1 Responder is installed as well as a stand-alone version is that the responder icon will be X'ed out when the INITs (extensions) are displaying their icons at startup time. The built-in responder in System 7 is located in the AINI resource. The resource number is 32000, size 4104.

Here is a matrix that describes where each version of Responder comes from. This should help to sort out why so many different versions are showing up on the BNR internet and help to get the correct versions installed on the correct systems.

Product	Responder Version
6.x	1.1.1 (This includes 6.0.8)
7.0	2.0.1 Built in to the System (Inter•Poll reports it as 2.0)
7.0.1	2.0.1 (same notes as 7.0)
Ethernet NB 2.5.1	2.0.2
ARAP 1.0	2.0.3

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9543

Tech Info Library

PowerBook Fax/Data Modem: Doesn't Pass Break Signal 8/92

Revised: 5/16/94
Security: Everyone

PowerBook Fax/Data Modem: Doesn't Pass Break Signal 8/92

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Article Created: 10 January 1992
Article Reviewed/Updated: 4 August 1992

TOPIC ----------

If you attempt to send a break signal to a remote host with the Macintosh PowerBook Fax/Data Modem, it won't pass the break signal to the host. Instead, it causes the modem to go back to command state.

How do you pass a break signal to the host without putting the modem into its command state?

DISCUSSION ----------

Unfortunately, any attempt to transmit a break signal with the Macintosh PowerBook Fax/Data Modem always results in the modem going into command state. It won't send the break signal to the host.

Many modems allow you to change break handling so you can determine whether the modem enters command state or simply passes the break signal. The PowerBook Fax/Data Modem doesn't do this.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9544

Tech Info Library

PowerBook: Modem Connections After Using Fax 8/92

Revised: 5/16/94
Security: Everyone

PowerBook: Modem Connections After Using Fax 8/92

==========

Article Created: 10 January 1992
Article Reviewed/Updated: 4 August 1992

TOPIC ----------

After I send a fax with Apple's fax software v1.0.1, I'm unable to connect with on-line services like America Online with White Knight v11.12. In White Knight, I dial the number, the modems handshake, the dialing window clears, then I get a no connection message. Then I have to type a return several times to get any activity. When connecting via an external modem with the same software, I experience no problems.

DISCUSSION ----------

After sending a fax, the PowerBook modem is left with the Connection Mode set to "error control mode" (the modem's factory default, "&Q5"). This instructs the modem to make a connection using V.42/MNP. If the remote modem doesn't offer V.42/MNP, the modem falls back to standard asynchronous mode. During the fallback process, some remote modems, depending on how they're configured, may disconnect.

You can eliminate this problem by setting the PowerBook modem's connection mode to asynchronous mode, with no error correction protocol, via "AT" commands. From White Knight, MacTerminal, or any other terminal emulation program, simply enter AT&Q0 (zero, not the letter "O"), and press return.

From America Online, under the Go To menu, choose Customize Network Setup. In the Modem String field, enter &Q0. America Online will automatically insert the Modem String between the modem attention AT command and the dialing sequence. For example, assume you've configured America Online for tone dialing, you've entered the phone number 555-1212, and you've entered &Q0 as the modem string. The software would use the full dialing sequence AT&Q0DT555-1212.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9545

Tech Info Library

Macintosh Classic II: Specifications (Discontinued)

Revised: 6/19/95
Security: Everyone

Macintosh Classic II: Specifications (Discontinued)

==========

Article Created: 21 October 1991
Article Last Reviewed/Updated: 20 September 1994

TOPIC ----------

This article gives technical specifications for the Macintosh Classic II computer.

DISCUSSION ----------

Microprocessor

- MC68030, 32-bit architecture, 16 MHz clock speed

Memory

- The Classic II 2/40 comes with 2MB of RAM on the logic board and two memory expansion slots for SIMMs (Single In-line Memory Modules).

- The Classic II 4/80 comes with 2MB of RAM on the logic board and two 1MB SIMMs in the expansion slots.

- Expandable to 10MB of RAM by installing SIMMs in the available slots (dealer installation required).

- 512K of ROM

Disk Drives

- Built-in Apple SuperDrive 1.4MB floppy disk drive

- 1/3 height internal 40MB or 80MB Apple SCSI hard disk drive

Video display

- Built-in 9-inch diagonal, high-resolution (512 by 342 pixels) bitmapped

monochrome display

Interfaces

- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices daisy-chained through a low-speed synchronous serial bus

- Two serial (RS-232/RS-422) ports, 230 kilobits per second maximum (up to 0.920 megabits per second if clocked externally)

- SCSI interface, using a 50-pin internal connector and a DB-25 connector for the first external device; all subsequent SCSI-based peripherals use standard SCSI-to-SCSI interface cables.

- 3.5-inch external floppy disk drive (800K or 1.4MB) interface

- Sound port for external audio amplifier or headphones

- Sound-in port for monaural sound input

- Internal connector for optional math coprocessor or ROM expansion

Keyboard

- ADB keyboard with numeric keypad

- Two-level tilt adjustment

Mouse

- Apple Desktop Bus Mouse, mechanical tracking, optical shaft or contact encoding: 90 to 110 pulses per inch (3.51 to 4.29 pulses per mm) of travel

Microphone

- Electret, omnidirectional; output voltage is 4 millivolts, peak to peak, at normal volume.

Sound Generator

- Monophonic 8-bit digital-analog conversion using 11- or 22-kilohertz sample rate, capable of driving stereo headphones or other stereo equipment through the sound jack

Clock/Calendar

- Custom chip with long-life lithium battery

Fan

- 10 cu. ft./min. axial

- Positive pressure cooling

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These features and third-party options provide alternative input and output tools for people with disabilities.

Electrical Requirements

- Line voltage: 120 volts AC, RMS (nominal)

- Frequency: 47 to 63 Hz, single phase

- Power: 100 watts maximum

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 milliamps (a maximum of three devices is recommended)

- Mouse draws 80 milliamps.

- Keyboard draws 25 milliamps.

Size and Weight

- Main unit
  - Height 13.2 inches (33.6 cm)
  - Width 9.7 inches (24.6 cm)
  - Depth 11.2 inches (28.5 cm)
  - Weight 16 to 17.1 lb. (7.3 to 7.8 kg)*

- Mouse
  - Height 1.1 inches (2.8 cm)
  - Width 2.1 inches (5.3 cm)
  - Depth 3.8 inches (28.5 cm)
  - Weight 6 oz. (.17 kg)

- Keyboard
  - Height 1.3 inches (3.3 cm)
  - Width 16.0 inches (40.5 cm)
  - Depth 5.9 inches (15.1 cm)
  - Weight 1.96 lb. (.89 kg)

Operating Environment

- Operating temperature: 50 to 104 degrees F (10 to 40 degrees C)

- Storage temperature: -40 to 116.6 degrees F (-40 to 47 degrees C)

- Relative humidity: 5% to 95% noncondensing

- Maximum altitude: 15,000 ft. (4,722 m)

 * Weight is greater with internal hard disk.

Noise Level

  < 40db measured from the seated operator position.

Support Information Services

Copyright 1991-95, Apple Computer, Inc.

Tech Info Library Article Number:9547

Tech Info Library

PowerBook 170: Specifications (Discontinued)

Revised: 3/22/95
Security: Everyone

PowerBook 170: Specifications (Discontinued)

==========

Article Created: 21 October 1991
Article Reviewed/Updated: 22 March 1995

TOPIC ----------

This article gives technical specifications for the Macintosh PowerBook 170 notebook computer.

DISCUSSION ----------

Microprocessor

- 68030, running at 25 MHz
- 68882 math coprocessor, running at 25 MHz

Memory

- Comes with 4MB pseudostatic RAM, 2MB on the logic board and 2MB on a RAM expansion card that fits into a card slot.

- Expand to 8MB of RAM by replacing the 2MB expansion card with either a 4MB or 6MB RAM expansion card.

Disk Storage

- One built-in 1.4MB drive that uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.

- One internal 40MB hard disk

Display

- 10 inch (254 mm) diagonal

- Backlit active-matrix liquid crystal display

- 640 by 400 pixels

Battery

- NiCad, 2.5 ampere-hours, provides 2 to 3 hours of use before recharging is necessary

- Recharge time: 100% recharged after 5 hours; 80% recharged after 3 hours

Keyboard

- Built-in keyboard with standard Macintosh layout

- Two-level tilt adjustment

Trackball

- dual button trackball, 30 mm diameter

Clock/Calendar

- CMOS custom chip with long-life lithium battery

Interfaces

- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices using a low-speed, synchronous serial bus

- Two RS-422 serial ports for LocalTalk networking, printers, modems, and other devices

- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices

- One sound output port for external audio amplifier

- One sound-in port

Modem

- Internal 2400-baud modem with fax send at 9600 baud; includes fax send software

- Error correction and compression: MNP 4,5 and V.42, V.42bis

Sound Generator

- Apple Sound Chip provides 8-bit sound capable of driving stereo headphones or other stereo equipment through the sound port.

Sound Input

- 8-bit sound, sampled at 11 or 22 kHz

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disability.

ADB Power Requirements

- Maximum current draw for all ADB devices is 50 milliamps (a maximum of three ADB devices is recommended)

Electrical Requirements

- Line voltage: 110 to 220 volts

- Frequency: 50 to 60 Hz

Environmental Requirements

- Operating temperature: 50 to 104 degrees F (10 to 40 degrees C)

- Storage temperature: -40 to +149 degrees F (-40 to +65 degrees C)

- Relative humidity: 20% to 80% noncondensing

- Altitude: Operating: 3048 m (10,000 ft.) maximum
Shipping (non-operating) 0 to 15,000 ft. (0 to 4,722 m)

Size and Weight

- Height: 2.25 inches (5.7 cm)
- Width: 11.25 inches (28.6 cm)
- Depth: 9.3 inches (23.6 cm)
- Weight: 6.8 lb. (3.08 kg)

Noise Level

Noise free except for floppy or hard disk use.

Article Change History:
22 Mar 1995 - Updated altitude information.
27 Aug 1993 - Revised to reflect correct storage temperatures.

Support Information Services

Copyright 1991-95, Apple Computer, Inc.

Tech Info Library Article Number:9549

Tech Info Library

PowerBook: Fax/Data Modems (8/92)

Revised: 5/16/94
Security: Everyone

PowerBook: Fax/Data Modems (8/92)

==========

Article Created: 2 December 1991
Article Reviewed/Updated: 5 August 1992

TOPIC ----------

I read that the Macintosh PowerBook Fax/Data Modem is only a SEND modem. Is it possible that clients can use it as a SEND/RECEIVE (Fax) modem? Can they use some third-party Fax software, such as Abaton, to do a SEND/RECEIVE function?

DISCUSSION ----------

The Macintosh PowerBook Fax/Data Modem is limited to Fax send only. It's a hardware -- not software -- limitation.

There are several third-party modems that support both Fax send and Fax receive. Here are some PowerBook Fax/Data Modem suppliers:

- Global Village Communication, Inc.

- PSI Integration, Inc.

- Lifetime Memory Products, Inc.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Support Information Services

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9553

Tech Info Library

AppleTalk Remote Access: Network Install from Hard Disk

Revised: 1/28/92
Security: Everyone

AppleTalk Remote Access: Network Install from Hard Disk

==========

Article Created: 16 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Can we install AppleTalk Remote Access from a hard disk and/or over the network instead of from the floppy disk? We've tried but have been largely unsuccessful.

DISCUSSION -----

One 1.44MB Disk

Here's how you create a "Net Install" version of AppleTalk Remote Access from one 1.44MB disk:

1) Create a folder called "ATRA Net Install" on your Macintosh hard drive.

2) Insert the AppleTalk Remote Access Installer disk.

3) Drag the floppy disk icon on top of the "ATRA Net Install" folder icon. This will create a folder called "Installer" within the "ATRA Net Install" folder and a copy of the contents of the floppy to the "Installer" folder.

4) Open the "ATRA Net Install" folder.

5) Open the "Installer" folder.

6) Change the name of the application inside from "Installer" to "Install"

7) Drag the files "Install" and "Remote Access Script" out of the "Installer" folder, to the root level of the "ATRA Net Install" folder.

Two 800K Disks

Here's how you create a "Net Install" version of AppleTalk Remote Access from two 800K disks:

1) Create a folder called "ATRA Net Install" on your Macintosh hard drive.

2) Insert the AppleTalk Remote Access Installer Disk 1.

3) Drag the floppy disk icon on top of the "ATRA Net Install" folder icon. This creates a folder called "Installer Disk 1" within the "ATRA Net Install" folder and a copy of the contents of the floppy to the "Installer Disk 1" folder.

4) Insert the AppleTalk Remote Access Installer Disk 2.

5) Drag the floppy disk icon on top of the "ATRA Net Install" folder icon. This creates a folder called "Installer Disk 2" within the "ATRA Net Install" folder and a copy of the contents of the floppy to the "Installer Disk 2" folder.

6) Open the "ATRA Net Install" folder.

7) Open the "Installer Disk 1" folder.

8) Drag the files "Installer" and "Remote Access Script" out of the "Installer Disk 1" folder, to the root level of the "ATRA Net Install" folder.

Copyright 1991, Apple Computers, Inc.

Tech Info Library Article Number:9554

Tech Info Library

AppleTalk Remote Access: Need Phase 2 EtherTalk to Answer Calls

Revised: 1/28/92
Security: Everyone

AppleTalk Remote Access: Need Phase 2 EtherTalk to Answer Calls

==========

Article Created: 18 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC -----

At home, I have a (host) Macintosh IIci with Practical Peripherals 2400 baud modem attached to a LocalTalk network. It's running System 7, with file sharing enabled (one user belonging to one a group called Remote Developers). This user has remote dial-in, connect and link privileges.

At work:, I have a (host) Macintosh with a Practical Peripherals 2400 baud modem (modem port) attached to a Phase I Ethernet network using a Technology Works Ethernet (thin) card. It's running System 7 and has a direct Ethernet connection. This network consists of five Ethernets terminating at a cisco router. A number of KBoxes with LocalTalk networks are attached to some Ethernet segments. This Ethernet routes AppleTalk Phase I, IP and IPX packets. This network contains one AppleShare server, one QuickMail Server, and four Novell NetWare file servers.

When the host computer at home is set up to answer the modem, the computer at work can dial in, log on to file servers, and so on. This works fine with and without the call-back features enabled.

But when I attempt to configure the work computer to answer the modem, an error message says: "Sorry, the network connection you have chosen doesn't support AppleTalk Remote Access."

DISCUSSION -----

Technology Works Ethernet Cards (TechWorks NuBus cards) ship with Apple's EtherTalk software, both AppleTalk Phase 1 and Phase 2.

On a Phase 1 EtherTalk network, AppleTalk Remote Access allows you to place calls, but it WON'T allow you to answer calls.

..TIL09555-AppleTalk_Remote_Access-Need_Phase_2_EtherTalk_to_Answer_Calls_(TA47987).

You need to upgrade to Phase 2 EtherTalk to enable the Answer Calls or server option within AppleTalk Remote Access.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9555

Tech Info Library

Macintosh: Troubleshooting Modem Connect Problems

Revised: 1/28/92
Security: Everyone

Macintosh: Troubleshooting Modem Connect Problems

==========

Article Created: 16 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I installed public domain telecommunications software on my Macintosh to use with my modem. After initiating a connection, the call is answered, but my system locks.

Can you give me some general troubleshooting tips to locate the problem?

DISCUSSION ----------

Here are some general troubleshooting tips:

- Ensure that the baud rate is set correctly.

- Ensure that the bit and parity settings are set correctly.

- Ensure that you're using a clean line.

- Try connecting to other services. Does this problem happen only with one service or with several?

- Try using a commercial telecommunications software package. Do you still have the problem?

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9557

Tech Info Library

PowerBook: How To Tell When Caps Lock Function Is Active (11/96)

Revised: 11/14/96
Security: Everyone

PowerBook: How To Tell When Caps Lock Function Is Active (11/96)

==========

Article Created: 6 December 1991
Article Reviewed/Updated: 13 November 1996

TOPIC ----------

Some of the Macintosh PowerBook series keyboards do not appear to have a Caps Lock function. How can this be?

Is there any visual indication of when the Caps Lock function is active?

What is the Caps Lock extension and do I need it?

DISCUSSION ----------

Macintosh Portable

The original Macintosh Portable has a locking Caps Lock key. It clicks and locks into place in the down position when active like the keyboard used with most desktop computers. The Caps Lock extension does not work on the Macintosh Portable.

Macintosh PowerBook Computers

None of the Macintosh PowerBook computers have a locking Caps Lock key. The Caps lock keys on these computers do not make an audible click when you press the Caps Lock key.

* Some PowerBook models have a green LED (light) on the Caps Lock key. If this LED is illuminated, the Caps Lock function is active.

* Some PowerBook models do not have an LED on the Caps Lock key. On these computers, when the Caps Lock function is active, an "up" arrow is displayed in the upper right corner of the Menu Bar next to the Balloon Help icon. If this arrow does not appear in the Menu Bar, the Caps Lock extension is probably not properly installed in the Extensions folder of the System Folder.

Connectix PowerBook Utilities

If you want another indicator in addition to the light on the Caps Lock key itself, you can get a piece of software called Connectix PowerBook Utilities (CPU) which gives an audible clicking sound from the speaker when the Caps Lock key is pressed (it also provides may other features).

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for any content pertaining to non-Apple products. Please contact the vendor (Connectix) for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
13 Nov 1996 - Updated for clarity.
18 Aug 1995 - Added information about newer PowerBook Caps Lock functions.

Copyright 1991-96, Apple Computer, Inc.

Tech Info Library Article Number:9559

Tech Info Library

PowerBook: Fax Software Sends Faxes in Background (8/92)

Revised: 5/16/94
Security: Everyone

PowerBook: Fax Software Sends Faxes in Background (8/92)

==========

Article Created: 10 December 1991
Article Reviewed/Updated: 5 August 1992

TOPIC ----------

If I use my Macintosh PowerBook with the internal Fax/Data Modem and the software provided, can I send faxes in the background?

DISCUSSION ----------

Yes. After specifying the "Send" information in the FaxSender dialog and clicking "Send", a FaxMonitor takes control and sends the fax in the background.

Support Information Services

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9560

Tech Info Library

Macintosh Quadra: Using Macintosh LC VRAM SIMMs

Revised: 8/6/92
Security: Everyone

Macintosh Quadra: Using Macintosh LC VRAM SIMMs

==========

Article Created: 12 December 1991
Article Last Reviewed: 5 August 1992
Article Last Updated:

TOPIC ----------

Can I use the VRAM (two 128K by 8 chips) from a Macintosh LC in a Macintosh Quadra?

DISCUSSION ----------

Yes, the VRAM from the Macintosh LC can be used in the Macintosh Quadra. Note, though, if you use the 512K VRAM SIMMs from a Macintosh LC, the Macintosh Quadra sees it as only 256K.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9561

Tech Info Library

LaserWriter IIf/IIg: RAM Configurations

Revised: 1/30/92
Security: Everyone

LaserWriter IIf/IIg: RAM Configurations

==========

Article Created: 16 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What are the different RAM configurations for the Apple LaserWriter IIf/IIg?

DISCUSSION ----------

The Apple LaserWriter IIf/IIg can use 256K, 1MB, and 4MB SIMMs.

The configurations are:

RAM	Bank 0	Bank 1
2MB*	Four 256K SIMMs	Four 256K SIMMs
4MB*	Four 1MB SIMMs	None
5MB	Four 1MB SIMMs	Four 256K SIMMs
8MB	Four 1MB SIMMs	Four 1MB SIMMs
16MB	Four 4MB SIMMs	None
17MB	Four 4MB SIMMs	Four 256K SIMMs
20MB	Four 4MB SIMMs	Four 1MB SIMMs
32MB	Four 4MB SIMMs	Four 4MB SIMMs

*These configurations are for the Apple LaserWriter IIf only.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9564

Tech Info Library

LaserWriter: Troubleshooting Print Jobs That Don't Print (4/94)

Revised: 4/12/94
Security: Everyone

LaserWriter: Troubleshooting Print Jobs That Don't Print (4/94)

==========

Article Created: 19 December 1991
Article Reviewed/Updated: 11 April 1994

TOPIC ----------

I am printing from a Macintosh on a network to a LaserWriter with Background Printing turned on. Intermittently, when I send a print job to the printer, it doesn't print. If I reselect the LaserWriter in the Chooser, the job prints.

DISCUSSION ----------

Here are some troubleshooting tips to help you locate the problem:

- Check the network for proper termination.

- Check the equipment and network for frayed or damaged wires and cables.

- If other Macintosh computers on the network are not having these printing problems, move your Macintosh to one of these known-good locations and try printing from there. If you still have the same problem, it's likely to be associated with your Macintosh.

- If other Macintosh computers on the network are having the same problem, try to eliminate the network as the source first. Connect the LaserWriter directly to a Macintosh (other than yours) and try printing from there.

  - If the problem persists, troubleshoot your LaserWriter.

  - If the problem is corrected, troubleshoot your network.

- If you are using a non-LocalTalk LaserWriter, such as the LaserWriter Select 310, make sure AppleTalk is turned off in the chooser. Also make sure that you are using a peripheral-8 cable (M0197LL/B) and not a LocalTalk or PhoneNet connetor.

- When using a serial LaserWriter check the chooser and verify that the proper port is selected.

Article Change History:
11 April 1994 - Added information on using serial LaserWriter printers.

Support Information Services

Copyright 1991-1994, Apple Computer, Inc.

Tech Info Library Article Number:9567

Tech Info Library

ResEdit: Where To Get Current Version

Revised: 2/9/92
Security: Everyone

ResEdit: Where To Get Current Version

==========

Article Created: 19 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Where can I get a current version of ResEdit?

DISCUSSION -----

The current version of ResEdit is available on AppleLink in the Developer Support Folder. Search BB Pathfinder under "ResEdit" for the path.

ResEdit is also available from APDA. For contact information on APDA, search the Tech Info Library under "APDA".

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9568

Tech Info Library

Macintosh IIsi: Troubleshooting NuBus Card Installation Problems

Revised: 7/20/92
Security: Everyone

Macintosh IIsi: Troubleshooting NuBus Card Installation Problems

==========

Article Created: 20 December 1991
Article Last Reviewed: 17 July 1992
Article Last Updated:

TOPIC ----------

I am having a problem installing TokenTalk and EtherTalk NB cards on our Macintosh IIsi computers. We have not been able to get any of the systems up on the network.

DISCUSSION ----------

Without more detailed information about the problems you are experiencing, we can offer only some troubleshooting measures:

- Ensure that the network is properly terminated.

- If you are running System 6.0.7, ensure that the Network Product Installer is used to installed the Network CDEV and TokenTalk/EtherTalk drivers.

- If you have the Macintosh IIsi NuBus Adapter Card installed and the EtherTalk NB Card is properly installed, ensure that the jumper on the EtherTalk NB Card is set for BNC.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9571

Tech Info Library

Macintosh: Troubleshooting Non-Functioning Mouse Control Panel

Revised: 2/9/92
Security: Everyone

Macintosh: Troubleshooting Non-Functioning Mouse Control Panel

==========

Article Created: 20 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a Macintosh Plus running system software version 7.0. I recently upgraded the RAM from 2.5MB to 4MB, and the Mouse control panel stopped functioning -- I no longer can change the tracking speed.

DISCUSSION ----------

Increasing the RAM should not affect system software version 7.0. This problem may be related to a third-party system extension (INIT) conflict.

Try removing all third-party system extensions (INITs), control panels (CDEVs), and DAs from your System Folder for testing purposes. Then reinstall the system software. If the problem is corrected, isolate the conflicting software by reinstalling the system extensions, control panels, and DAs one at a time until the problem reappears. Remember to allow an appropriate testing time between each installation.

If the problem persists, try zapping the PRAM by pressing and holding the Option-Command-P-R keys and restart your Macintosh.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9574

Tech Info Library

ComputerAid, Inc.

Revised: 7/6/93
Security: Everyone

ComputerAid, Inc.

==========

Article Created: 01/14/92
Article Reviewed: 07/06/93
Article Updated: 04/01/92

ComputerAid, Inc.

P.O. Box 5120
Fall River, Ma 02723

800-343-3388

508-674-0860

508-678-5094 Fax

Company Profile:
Accessories, specializing in Macintosh carrying cases, including the PowerBook series, and dust covers.

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Tech Info Library Article Number:9575

Tech Info Library

Video Monitors: Why Some Screens Have Squared Corners

Revised: 2/9/92
Security: Everyone

Video Monitors: Why Some Screens Have Squared Corners

==========

Article Created: 15 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm using a Macintosh SE/30 to which I added an AppleColor High-Resolution RGB Monitor. I noticed something unusual about the monitor's display area: all corners, except the lower left, are rounded. The lower left has a squared (right-angle) corner. Is this a defect?

DISCUSSION ----------

This is not a defect nor is it peculiar to the AppleColor High-Resolution RGB Monitor -- we have seen these squared corners on other Apple and third-party monitors. It's just cosmetic and is more likely to happen when multiple monitors are connected to the computer.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9578

Tech Info Library

Macintosh: Where To Find Cache Switch (9/94)

Revised: 9/19/94
Security: Everyone

Macintosh: Where To Find "Cache Switch" (9/94)

==========

Article Created: 9 December 1991
Article Reviewed/Updated: 19 September 1994

TOPIC ----------

Where can I get a copy of Cache Switch Control Panel for the Macintosh Quadra?

DISCUSSION ----------

The Cache Switch is designed for any of the 68040 computers. This includes certain models of the Macintosh LC, Centris, Quadra, and Performa computers. It is distributed on the Tidbits disk of System 7 and System 7.1. You can also get the Cache Switch on any of the online services that Apple posts software updates on.

The Cache Switch is not installed by the Installer, so you must drag a copy to the System Folder to install it.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History
19 Sep 1994 - Revised location of cache switch
10 Feb 1993 - Revised location of cache switch

Support Information Services

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9579

Tech Info Library

PowerBook 170: How To Switch Processing Speed to 16 MHz 8/92

Revised: 5/16/94
Security: Everyone

PowerBook 170: How To Switch Processing Speed to 16 MHz 8/92

==========

Article Created: 12 December 1991
Article Reviewed/Updated: 3 August 1992

TOPIC ----------

Can you switch the processing speed of the Macintosh PowerBook 170?

DISCUSSION ----------

Yes. The Battery DA has a handle similar to the Alarm Clock DA that activates a power-saving mode dialog box. Select the Power Saver mode, and restart the system to slow down the processor to 16 MHz.

Support Information Services

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9580

Tech Info Library

ADB Mouse: Apple Has No Teflon Pad Replacement Kit

Revised: 2/9/92
Security: Everyone

ADB Mouse: Apple Has No Teflon Pad Replacement Kit

==========

Article Created: 17 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Is there a replacement kit for the teflon pads on the bottom of an ADB mouse?

DISCUSSION -----

As of July 1991, Apple no kit for replacing the teflon pads on the ADB mouse. We are not aware of any third party that offers these items.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9581

Tech Info Library

Extended 80-Column Text Card: Function of Jumper J1 (11/96)

Revised: 11/18/96
Security: Everyone

Extended 80-Column Text Card: Function of Jumper J1 (11/96)

==========

Article Created: 17 December 1991
Article Reviewed/Updated: 14 November 1996

TOPIC ----------

What is the function of jumper J1 on the Apple IIe Extended 80-Column Text Card?

DISCUSSION ----------

Jumper J1 on the Extended 80-Column Text Card enables the use of double high-resolution graphics on the Apple IIe Rev.B main logic board.

Changes to Extended 80-Column Card Instructions
==========

The instruction sheet that comes with the Extended 80-Column card states that a "small plastic jumper" should not be installed on the 80-Column card if the number on the back of any Apple IIe main circuit board ends in an "A".

This is incorrect. The jumper should always be installed on the 80-Column card UNLESS the number on the main circuit board ends in "...0064-A". Other than this instance, every Extended 80-Column Card should have the jumper installed.

Article Change History:
14 Nov 1996 - Reviewed for technical accuracy, revised formatting.

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Tech Info Library Article Number:9582

Tech Info Library

Macintosh: Troubleshooting a Corrupted Desktop File

Revised: 2/9/92
Security: Everyone

Macintosh: Troubleshooting a Corrupted Desktop File

==========

Article Created: 17 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a Macintosh II with a corrupted Desktop file that I cannot rebuild.

DISCUSSION ----------

A damaged directory structure on the hard drive could cause this and other problems.

We suggest that you do a file-by-file backup of the hard drive. Then reinitialize the drive and restore the files.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9583

Tech Info Library

PowerBook: Keyboard and Keypad Sequences 7/92

Revised: 5/16/94
Security: Everyone

PowerBook: Keyboard and Keypad Sequences 7/92

==========

Article Created: 16 January 1992
Article Reviewed/Updated: 31 July 1992

TOPIC ----------

How do I send VT-100 keypad sequences to my mainframe application from the Macintosh PowerBook keyboard?

DISCUSSION ----------

If you are using the VT-102 tool (part of the Communications Toolbox) and MacTerminal 3.0, you can issue the keypad commands from the Keys menu. If you are using a Communications Toolbox-compliant application, you should be able to issue the commands from the menu the application provides for keypads.

If you are not using a Communications Toolbox-compliant application, you may need an application revision that works with the PowerBook. That is, the PowerBook keyboard has a new identifier* inside the Macintosh Operating System, and some applications may not map the mainframe key sequences from the keyboard.

You can use ResEdit to get the ASCII codes for the keypad, but more than likely, you want the key sequences that the mainframe requires. You could then create macros to issue them, or remap them to different keys if the application supports that.

*In particular, the PowerBook keyboards return selector identification codes of:

```
gestaltPwrBkADBKbd        = 12;   {PowerBook Keyboard}
gestaltPwrBkISOKbd        = 13;   {PowerBook Keyboard (ISO)}
```

for the Gestalt "kbd" selector. If your application uses Gestalt to determine the keyboard type, it may not check for this result (since it is new with the PowerBook) and may not do the correct mappings for the mainframe key sequences.

..TIL09587-PowerBook-Keyboard_and_Keypad_Sequences_7-92_(TA48011).pdf

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9587

Tech Info Library

LaserWriter IIf and IIg: Require Black Terminator

Revised: 1/21/92
Security: Everyone

LaserWriter IIf and IIg: Require Black Terminator

==========

Article Created: 7 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Do the Apple LaserWriter IIf and LaserWriter IIg require a black terminator when a hard drive is attached to the SCSI port?

DISCUSSION -----

Yes. The LaserWriter IIf and LaserWriter IIg require the same black terminator that is used with the Macintosh IIfx.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9588

Tech Info Library

LaserWriter IIf and IIg: Black Terminator Part Number (11/94)

Revised: 11/11/94
Security: Everyone

LaserWriter IIf and IIg: Black Terminator Part Number (11/94)

==========

Article Created: 7 January 1992
Article Reviewed/Updated: 11 November 1994

TOPIC ----------

Do the Apple LaserWriter IIf and LaserWriter IIg require a black terminator when a hard drive is attached to the SCSI port?

DISCUSSION ----------

Yes. The LaserWriter IIf and LaserWriter IIg require the same black terminator that is used with the Macintosh IIfx.

The finished goods part number for the Apple Terminator II (Black) is M5871G/A.

Article Change History:
11 Nov 1994 - Reviewed for technical accuracy, added finished goods part number.

Support Information Services

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Tech Info Library Article Number:9589

Tech Info Library

LaserWriter Printers: Where To Find Paper Specifications

Revised: 2/3/92
Security: Everyone

LaserWriter Printers: Where To Find Paper Specifications

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Article Created: 15 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Where can I find information about the recommended paper types for the LaserWriter printers?

DISCUSSION -----

Apple provides general guidelines and specifications for paper used with LaserWriter printers in the LaserWriter User's Guide that accompanies each printer. This information is also available in the Tech Info Library's individual LaserWriter specifications articles. Search the library under "LaserWriter and Specifications".

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9590

Tech Info Library

Apple HDI-30 SCSI Disk Adapter: Cable Pinouts

Revised: 2/9/92
Security: Everyone

Apple HDI-30 SCSI Disk Adapter: Cable Pinouts

==========

Article Created: 19 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What are the pinouts for the Apple HDI-30 SCSI Disk Adapter (M2539LL/A) (service part number 590-0718)?

DISCUSSION ----------

Apple's SCSI cables are built to tight specifications to minimize electrical noise on the SCSI bus. The wires are laid out to provide minimal signal degradation. Poor quality cable construction may lead to intermittent SCSI operation and potential system crashes.

Male HDI-30 connector pin layout
(found on SCSI Disk Adapter Cable M2539LL/A)

```
    30 29 28 27 26 25
    24 23 22 21 20 19
    18 17 16 15 14 13
    12 11 10  9  8  7
     6  5  4  3  2  1
```

BR-50 connector pin layout (found on SCSI Disk Adapter Cable M2539LL/A)

```
25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10  9  8  7  6  5   4   3   2   1

  50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26
```

HDI-30	BR-50	Name	Signal Description
2	26	/DB0	SCSI data bit 0
1,3	19	GND	Ground, Pin 1 enables SCSI disk mode
4	27	/DB1	SCSI data bit 1
5	38	TERMPWR	Termination power (not supplied by PowerBook 100)
6	28	/DB2	SCSI data bit 2
7	29	/DB3	SCSI data bit 3
8	1,4	GND	Ground
9	44	/ACK	SCSI acknowledge
10	5	GND	Ground
11	30	/DB4	SCSI data bit 4
12	2,3,8	GND	Ground
13	11,9,6	GND	Ground
14	31	/DB5	SCSI data bit 5
15	24	GND	Ground
16	32	/DB6	SCSI data bit 6
17	7	GND	Ground
18	33	/DB7	SCSI data bit 7
19	34	/DBP	SCSI data bit parity
20	23,16,20	GND	Ground
21	49	/REQ	SCSI request
22	21,22	GND	Ground
23	43	/BSY	SCSI busy
24	25	GND	Ground
25	41	/ATN	SCSI attention
26	48	/C/D	SCSI control/data
27	45	/RST	SCSI bus reset
28	46	/MSG	SCSI message
29	47	/SEL	SCSI select
30	50	/I/O	SCSI input/output

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9591

Tech Info Library

Batteries: Apple's Lithium Batteries Meet CFR 173.206 (9/95)

Revised: 9/26/95
Security: Everyone

Batteries: Apple's Lithium Batteries Meet CFR 173.206 (9/95)

==========

Article Created: 7 January 1992
Article Reviewed/Updated: 26 September 1995

TOPIC ----------

I need Materials Safety Data Sheets for all lithium batteries used in Apple products. Our shipper is refusing to ship products until we provide this information.

DISCUSSION ----------

The backup batteries used in Apple products contain less than 0.5G of lithium. Therefore, they meet CFR 173.206 (Code of Federal Regulations) requirements and are considered nonrestricted articles in transportation and should not need Materials Safety Data Sheets.

Article Change History:
26 Sep 1995 - Reviewed for Technical accuracy.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:9594

Tech Info Library

LaserWriter IIf/IIg: 20MB RAM Configuration

Revised: 4/13/92
Security: Everyone

LaserWriter IIf/IIg: 20MB RAM Configuration

==========

Article Created: 16 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Does the Apple LaserWriter IIf/IIg support a 20MB RAM configuration?

DISCUSSION -----

Yes. Here is the RAM configuration:

Bank 0	Bank 1
16MB	4MB
(Four 4MB SIMMs)	(Four 1MB SIMMs)

Refer to the Apple LaserWriter IIf/IIg User's Guide for detailed RAM expansion information.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9597

Tech Info Library

ImageWriter LQ: Rev. A & B Owner's Guides Are Identical

Revised: 1/21/92
Security: Everyone

ImageWriter LQ: Rev. A & B Owner's Guides Are Identical

==========

Article Created: 9 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What are the differences between the Rev. A and Rev. B ImageWriter LQ Owner's Manual?

DISCUSSION ----------

There are no differences between these owner's guides. The revision letter indicates where the guide was printed.

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9598

StyleWriter: Troubleshooting Ink Cartridge Problems

Revised: 1/21/92
Security: Everyone

StyleWriter: Troubleshooting Ink Cartridge Problems

==========

Article Created: 9 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

These print quality problems have been reported when replacing the StyleWriter Ink Cartridge:

- No print
- Light print
- White lines
- Smudging

DISCUSSION ----------

If your StyleWriter exhibits any of these symptoms, here are some things to check:

- Ensure that the orange tape and orange cap have been removed from the ink cartridge.

- Ensure that the black rubber boot isn't missing or twisted.

  The rubber boot is located below the home position of the ink cartridge.

- Ensure that you have powered down the StyleWriter using the Power button.

  Powering down the StyleWriter with the Power button caps the ink cartridge. Removing the Power Adapter Cord from the back of the printer will not cap the ink cartridge and may result in poor print quality.

- Ensure that you purge the ink cartridge five times before swapping the cartridge and/or modules.

Apple now recommends purging the ink cartridge five times to relieve any obstructions that may have worked their way into the nozzles during transit.

To perform a manual purge:

1) Turn the StyleWriter off with the Power button. (The printer must be turned off.)

2) Press and hold the Ready button.

3) Press the Power button once and release both buttons at the same time.

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Tech Info Library Article Number:9600

Tech Info Library

Macintosh Quadra 900: Supported Drive Configurations

Revised: 5/21/92
Security: Everyone

Macintosh Quadra 900: Supported Drive Configurations

==========

Article Created: 7 January 1992
Article Last Reviewed: 21 May 1992
Article Last Updated: 21 May 1992

TOPIC -----

What are the supported drive configurations for the Macintosh Quadra 900?

DISCUSSION -----

These are the supported drive configurations for the Macintosh Quadra 900:

- 1 Apple SuperDrive drive and up to 3 half-height SCSI drives

- 1 Apple SuperDrive drive, 1 full-height SCSI drive, and 1
  half-height SCSI drive

The following configurations are supported, but not recommended because the Apple SuperDrive must be removed, which makes system administration and software upgrades difficult:

- 2 removable-media drives and 1 full-height SCSI drive

- 2 removable-media drives and up to 2 half-height SCSI drives

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Tech Info Library Article Number:9601

Tech Info Library

Working Software, Inc.

Revised: 4/4/97
Security: Everyone

Working Software, Inc.

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Article Created: 10 December 1991
Article Reviewed/Updated: 4 April 1997

Working Software, Inc.

PO Box 1844
Santa Cruz, CA 95061-1844

408-423-5696

Fax: 408-423-5699

Company Profile:
Software, specializing in electronic dictionaries and printing utilities.

Copyright 1991-97, Apple Computer, Inc.

Tech Info Library Article Number:9608

Wang and Macintosh: Document Transfer

Revised: 1/21/92
Security: Everyone

Wang and Macintosh: Document Transfer

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Article Created: 16 December 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes different ways to transfer documents between Wang and Macintosh Systems.

DISCUSSION ----------

INTRODUCTION

The Macintosh can be connected to the Wang VS or OIS systems to provide two basic functions: document transfer and translation and terminal emulation.

Document transfer involves the sending of files between the Wang and the Mac. This process also involves translation -- that is, conversion of formatting attributes (like boldfacing, centering, tabs, and underlining) in the Wang documents to their equivalents in the Microsoft Word documents.

As for terminal emulation, the Macintosh can act just like a Wang 2110 VS terminal as long as it is connected to an Enhanced Asynchronous Device Controller (EADC) port on the Wang. This lets the user open a window, on the Macintosh, which is MultiFinder compatible and looks just like a Wang terminal screen. The Wang keyboard is mapped to the Macintosh keyboard, with some Macintosh user interfaces (mouse, pull-down menus, and so on) added for additional ease of use.

The following products provide 2110 terminal emulation: MacLink Plus/Wang VS and VsCom/Macintosh.

Physical Connections

Connections between the Wang system and its dedicated terminals are made

via a Wang proprietary coaxial cable. Although this cable is also usable by IBM-compatible PCs, it remains unusable by Macintosh computers.

To connect a Macintosh to the Wang system, use the RS-232 port on the Macintosh side (which can be connected directly to an RS-232 cable if within 50 feet of the Wang system, or via a modem if farther away).

On the Wang side, a number of ports are available:

- Asynchronous Device Controller (ADC): An 8- or 16- port RS-232 device designed for communication with Wang VS terminals.

- Enhanced Asynchronous Device Controller (EADC): Similar to the ADC, except that it also supports word processing.

- Telecommunications Input/Output Processor (TC-IOP): Provides limited access to Wang software applications, is less sophisticated.

- Multi-Line Telecommunications Controller (MLTC): Similar to the ADC, except that it is used on large Wang VS systems.

- Wang Asynchronous Controller System (WACS): Similar to the EADC, except that it is used on large Wang VS systems.

All these ports support most Wang functions, like communications with the Wang system, file transfer and conversion, and so on, but only the EADC and the WACS support Wang word processing on the Macintosh.

CONNECTIVITY SOFTWARE AVAILABLE

This section describes five transfer products (an asterisk indicates terminal emulation capability):

- MacLink Plus/Wang VS* and MacLink Plus/Wang OIS

- VsCom/Macintosh*

- Converse

- Smart Kid

MacLink Plus/Wang VS

Strengths

- Two-way file transfer and translation between Wang WP and Microsoft Word on the Macintosh

- VS 2110 terminal emulation (supports all Wang characters in the ADC/EADC version)

- Bidirectional copy/paste between Macintosh and Wang

- Multiple document transfer and conversion

- Includes a full set of PC-to-Macintosh translators

- Also includes the Allegro Server/VS FeaturePack, which provides:

  - Security subsystem to prevent unauthorized access to files

  - Document indexing subsystem to enable users to search for files on the basis of author, title, and other fields from the document summary (similar to the Wang summary)

  - Wang Office interface module that provides access to the mail and messaging functions in the Wang OFFICE. Note that it does not provide access to OFFICE's calendar and bulletin board capabilities.

Limitations

MacLink Plus/Wang VS does not support:

- Headers, footers, and footnotes during document conversion

- Background transfer/conversion of files

MacLink Plus/Wang OIS

Strengths

- MacLink Plus/Wang OIS transfers/converts files between Wang OIS and MS-Word on the Macintosh

- It includes a full set of PC-to-Macintosh translators.

Limitations

MacLink Plus/Wang OIS does not support:

- Headers, footers, and footnotes during document conversion

- Direct conversion to/from Wang WP Plus

- Background transfer/conversion of files

For details on MacLink Plus products, contact DataViz, Inc. You can find contact information in the Third Party Company Directory folder in the Tech Info Library.

VsCom/Macintosh

Strengths

- Provides basic document transfer/translation between Wang VS and Microsoft Word on the Macintosh: Supports both WP and WP Plus,

- Direct Wang Office interface: Simple one-step transfer of documents in and out of Wang Office mailboxes

- VS 2110 terminal emulation (supports all Wang characters)

- Bidirectional copy/paste between Macintosh and Wang

- Multiple document transfer and conversion

- Headers and footers supported in document conversion

Limitations

VsCom/Macintosh does not support:

- Background document transfer and conversion

- Footnote conversions

- No TC-IOP port version

For details on VsCom/Macintosh, contact M/H Group. You can find contact information in the Third Party Company Directory folder in the Tech Info Library.

Converse

Strengths

Converse provides simple document conversion and terminal emulation capabilities.

Limitations

Converse does not support:

- Multiple document transfer and conversion capability

- Terminal emulation

- Background transfer and conversion of documents

For details on VsCom/Macintosh, contact MacSoft. You can find contact information in the Third Party Company Directory folder in the Tech Info Library.

Smart Kid

Strengths

- Permits almost 100 percent file conversion including headers, footers, and footnotes.

- Very versatile: Works with a variety of systems and word processing formats.

- Toll-free telephone support.

Limitations

- Requires a Wang operator to send or receive files.

- Does not support background transfer and conversion of documents.

Comments

Smart Kid is a hardware and software product that handles file conversion between Wang VS or Wang OIS and a host of other computer systems, including Macintosh, IBM Displaywriter, Digital VAX, Xerox Memorywriter, and NBI OASys. It is a more expensive option, but, because of its sophisticated file conversion capabilities, it is sometimes chosen by companies that use long, heavily formatted documents.

For details on VsCom/Macintosh, contact MacSoft. You can find contact information in the Third Party Company Directory folder in the Tech Info Library.

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Tech Info Library Article Number:9614

Tech Info Library

System 6.0.x Installation (10/94)

Revised: 6/5/96
Security: Everyone

System 6.0.x Installation (10/94)

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Article Created: 17 January 1993
Article Reviewed/Updated: 17 October 1994

TOPIC ----------

To install System 6, follow these instructions in the order presented. These instructions apply to all versions of System 6 (6.0.1, 6.0.5, 6.0.7, and so on).

DISCUSSION ----------

REQUIRED DISKS

System 6 software comes as a set of 800K (double-density) disks or a set of 1.44MB (high-density) disks:

- The set of four 800K disks includes System Tools, Utilities 1, Utilities 2, and Printing Tools.

- The set of two 1.44MB disks includes System StartUp and System Additions.

The instructions in this document give the name of the 800K disk first, followed by the name of the 1.44MB disk in parentheses.

BACK UP FONTS AND DESK ACCESSORIES

Before you install System 6, back up your fonts and desk accessories. You can back up fonts and desk accessories using the Font/DA Mover. Or you can make a copy of the System file on a floppy disk, and remove the fonts and desk accessories later, using the Font/DA Mover.

PREPARE FOR A CLEAN INSTALLATION
---

1) Start up with the System Tools (or System Startup) disk. To do this, turn on your Macintosh computer. If your Macintosh is already

on, choose Restart from the Special menu.

2) Put the System Tools (or System Startup) disk into the startup floppy drive right after you hear the chime. The floppy disk icon appears in the upper-right corner of the desktop above the hard disk's icon.

   If it doesn't appear there, choose Restart from the Special menu. The disk ejects — push it back into the drive immediately.

3) Double-click your hard-disk icon to open it.

4) Double-click your System Folder to open it.

5) Drag the Finder and System files to the Trash, and choose Empty Trash from the Special menu.

INSTALL SYSTEM 6
---

1) Double-click the System Tools (or System StartUp) disk icon.

2) Double-click the Installer icon (not the Installer script). A welcome message appears.

3) Click the OK button. The Easy Install screen appears.

At this point you have two options:

- Easy Install, which installs the Macintosh system software and printer software recommended for your computer model.

- Customize Install, which lets you override the recommended software and choose exactly what items to install.

Note: You must use the Customize option to install AppleShare workstation software.

Easy Install
---

1) Click the Switch Disk button to select the disk where you want to install System 6.

2) Click the Install button to do the Easy Install.

3) Follow the instructions on the screen. Messages appear to prompt you for the proper disks. When installation finishes, a message appears.

4) Click the Quit button.

5) Choose Restart from the Special menu.

Customize Install

---

1) Click the Customize button. A screen appears.

2) Click the Switch Disk button to select the disk where you want to install System 6.

3) Select the items you want to install from the scrolling window. Hold the Shift key and click to select multiple items. Your selections appear beneath the scrolling window.

4) When you've made your selections, click the Install button.

5) Follow the instructions on the screen. Messages appear, prompting you for the proper disks. When installation finishes, a message appears.

6) Click the Quit button.

Article Change History:
17 Oct 1994 - Reviewed for consistency, changed format, and changed title.
22 Feb 1994 - Reviewed and edited.

Support Information Services

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Tech Info Library Article Number:9627

Tech Info Library

System 6 MultiFinder (10/94)

Revised: 6/5/96
Security: Everyone

System 6 MultiFinder (10/94)

==========

Article Created: 17 January 1992
Article Reviewed/Updated: 17 October 1994

TOPIC ----------

MultiFinder lets you have several programs open simultaneously, making it fast and easy to switch between them. You can print in the background and get the use of your Macintosh computer back faster. And you can allocate memory to programs, so you can get the most out of your available RAM.

With versions of System 6, the Finder is one of these programs. This means you don't have to quit the program you're running to work in the Finder.

DISCUSSION ----------

Setting up MultiFinder

You need at least 2 megabytes (MB) of Random Access Memory (RAM) to take advantage of MultiFinder. To run MultiFinder, the MultiFinder file must be in your System Folder. If not, copy it from your Utilities 1 disk to the System Folder on your hard disk.

You can launch MultiFinder from the Finder in System 6 by opening the System Folder and double-clicking on the MultiFinder icon. To set your system to launch MultiFinder each time you start your Macintosh computer, follow these steps:

1) Choose Set Startup... from the Special menu. A dialog box appears.

2) Click the MultiFinder radio button.

3) Click the OK button.

4) Choose Restart from the Special menu.

How to Tell If MultiFinder Is Running

To find out if you're running MultiFinder, open the Apple menu. If you're in MultiFinder, you'll see About MultiFinder... at the bottom of the menu. You'll also see application names below the desk accessories if they're loaded into memory.

Another way to tell is by looking at the far right of the menu bar. If you're in MultiFinder, you'll see either a small Macintosh icon, or an application icon. In addition, the About the Finder... window changes when you're running MultiFinder. It not only shows memory allocated to the System and Finder, but also to other programs loaded in RAM. You always want to see some white space for applications on this graphic barometer.

Switching Between Applications

MultiFinder lets you switch between applications in several ways:

- Choose the application name from the Apple menu.
- Click the small icon at the far right of the menu bar. Repeated clicking cycles through all the open programs.
- Click the visible portion of another application's window.
- Double-click an application icon, even if it's dimmed.

Memory Allocation

In MultiFinder, each application gets its own portion of memory that belongs solely to that application. Every application comes with a default amount of memory assigned to it, but sometimes you'll get a message that there isn't enough memory to run the program, or that the application has unexpectedly quit. You can fix this by changing the program's memory allocation.

1) Quit the application (no need to do this if the application has already quit).
2) At the desktop, select the application icon.
3) Choose Get Info from the File menu (or press Command-I). The Get Info window appears.
4) Select the Application Memory Size box.
5) Type a new number in the box. Make sure the number you use isn't less than the Suggested Memory Size. It's best to increase the memory size by only 50K to 100K at a time. You can always repeat the procedure if it isn't enough.
6) Close the Get Info window.

You can now launch the application again. The application will get this new memory size until you change it.

Note: When using MultiFinder with System 6, the Finder should get 250K as the minimum size. Use the Memory Allocation procedure to increase the Finder's memory. Restart so the new memory allocation takes effect.

Article Change History:
17 Oct 1994 - Reviewed for uniformity, changed format, and changed title.
24 Feb 1994 - Made text-only version available.

Support Information Services

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Tech Info Library Article Number:9629

Tech Info Library

Desktop Network Troubleshooting (10/94)

Revised: 2/17/97
Security: Everyone

Desktop Network Troubleshooting (10/94)

==========

Article Created: 12 November 1991
Article Reviewed/Updated: 27 October 1994

TOPIC ----------

This quick reference will help you diagnose common connectivity problems in your Local Area Network (LAN). With this information, you can fix the problem yourself, or give support personnel the most helpful information.

The topics include:
- Overview
- LAN defined
- LocalTalk/PhoneNET hardware
- Checking LocalTalk connections
- Checking the Chooser
- LocalTalk hints and help
- EtherTalk hardware
- Checking Ethernet connections
- Checking the Network Control Panel Device (System 6.0.x)
- Checking the Network Control Panel Device (System 7.x)
- EtherTalk hints and help
- Where to get more information

DISCUSSION ----------

LAN Defined

A Local Area Network, or LAN, is made up of computers and shared devices that are physically connected in a limited area. A shared device can be a LaserWriter printer, modem, file server, or print spooler. The two major network types discussed here are LocalTalk/PhoneNET (PhoneNET is a LocalTalk cabling system by Farallon Computing, Inc.) and EtherTalk.

LocalTalk/PhoneNET Hardware

A LocalTalk/PhoneNET network uses the following hardware:

1) Connector module

2) Standard phone cable

3) Terminating resistor

Checking LocalTalk Connections

Follow these steps to check LocalTalk connections:

1) Each Macintosh on the LocalTalk network should have the 8-pin (round) end of the connector module plugged into the Printer port.

2) Each shared device on the LocalTalk network should have the 8-pin (round) end of the connector module plugged into the Network (Ø≠) port.

3) Standard phone cables connect the computers and shared devices in a LocalTalk network. The box end of the connector module has two phone jacks. Either two phone cables, or one phone cable and one terminating resistor, should be attached.

Checking the Chooser

The Chooser can give you valuable information about the network. This section includes a list of questions to help you collect worthwhile information for support personnel. Select Chooser from the Apple menu, and the Chooser window appears. Here are the questions:

1) Is the AppleTalk Active radio button selected?

2) Do you see the AppleShare icon in the (upper-left) box?

3) Do you see any names in the file server (upper-right) box?

4) Do you see the name of the file server or shared disk you want in the file server (upper-right) box?

5) Do you see any zone names in the AppleTalk Zones (lower-left) box?

6) Do you see only a few zone names in the AppleTalk Zones (lower-left) box?

7) Do you see your zone name in the AppleTalk Zones (lower-left) box?

LocalTalk Hints and Help

If you're having problems, try these tips:

- Select Shut Down (not Restart) from the Special menu, wait 30 seconds, and then power on. This simple procedure often fixes the problem.

- Try swapping out the various hardware components (terminating resistor, connector module, and phone cable) one at a time.

WARNING: ALWAYS SHUT DOWN BEFORE MAKING ANY HARDWARE CHANGES.

- Re-install the AppleShare Workstation (System 6.0.x) or File Sharing (System 7.x) software.

Ethernet Hardware

An Ethernet network uses the following hardware:

- Ethernet NB Interface Card -or- built in Ethernet AUI (Attachment Unit Interface) port

- Ethernet (coaxial) cable -or- twisted pair (telephone) cable

- BNC T-connector -or- an Apple Ethernet NB Transceiver, often referred to as a "friendly-net connector". Apple Ethernet NB Transceivers are available in two varieties:

  Apple Ethernet Thin Coax Transceiver (M0329LL/A)
  Apple Ethernet Twisted Pair Transceiver (M0437LL/A)

Checking Ethernet Connections

Make sure the basic Ethernet connections are correct:

1) Does each Macintosh on the EtherTalk network have an EtherTalk Interface Card installed -or- is using the built Ethernet AUI port?

2) Does each Macintosh on the EtherTalk network have the BNC T-connector plugged into the round connector on the installed on the older EtherTalk NB Card -or- a Transceiver plugged into the AUI port on the newer Ethernet NB Card.

3) Check the jumper on the EtherTalk NB Card to ensure that the EtherTalk signals go out the right port (preset for AUI). The jumper area is located near the bottom end of the card near the connectors. There are three pins of which the jumper sets over two. With the EtherTalk NB Card face up, and the connectors to your right, when the jumper is on the left two pins the signal goes out the AUI port, and when the jumper is on the right two pins the signal goes out the BNC port.

   - EtherTalk NB Cards are shipped with the AUI port as the default.
   - The Apple AUI port, which looks similar to a video card port is slightly larger.
   - The BNC port. This is a round port, similar to a cable television cable plug.

4) Do the network LaserWriters and ImageWriter printers still use LocalTalk? (The EtherTalk network is joined to the LocalTalk network to access these printers by using either a bridge, or router.) See

steps 2 and 3 in the "Checking LocalTalk Connections" section.

5) Are coaxial cables connecting the computers and devices in the EtherTalk network? There should be a cable attached to each end of the BNC T-connector -or- the Ethernet Thin Coax Transceiver. If the computer is last on a particular Ethernet segment, the BNC T-connector a cable attached to one end, and a terminator attached to the other end.

6) Is the latest Networking software installed? Update your AppleTalk EtherTalk, or TokenTalk software using the latest version of the Network Software Installer disk.

IMPORTANT: You cannot use the older EtherTalk NB Card in a Macintosh Quadra or later. You MUST use either the on-board AUI port or the newer Ethernet NB Card.

Checking the Network Control Panel Device (System 6.0.x)

If you're running System 6.0.x, follow these steps to check your Control Panel device:

1) From the Apple menu, select Control Panel.

2) Click the Network icon and the Network window appears.

3) Is the EtherTalk icon selected? If not, click the icon name to select it.

4) Close the Control Panel window.

Checking the Network Control Panel Device (System 7.x)

If you're running System 7.x, follow these steps to check your Control Panel device:

1) From the Apple menu, select Control Panel.

2) Double-click the Network icon. The Network window appears.

3) Is the EtherTalk icon selected? If not, click the icon name to select it.

4) Close the Network window.

5) Close the Control Panels window.

EtherTalk Hints and Help

Keep these tips in mind when troubleshooting:

• Select Shut Down (not Restart) from the Special menu, wait 30 seconds, then power on again. This simple procedure often fixes the problem.

• Check that the Ethernet Interface Card is seated properly.

WARNING: ALWAYS SHUT DOWN BEFORE MAKING ANY HARDWARE CHANGES.

• Try swapping out the Ethernet Interface Card.

• Re-install the EtherTalk software from the latest version of the Network Software Installer disk.

Where to Get More Information

• "Apple EtherTalk NB User's Guide" by Apple Computer, Inc. (030-2216-A)

• "Apple LAN Literacy" by Apple Computer, Inc.

• "Apple Network System Overview" by Apple Computer, Inc.

• "Macintosh Networking Reference" (System 7.0) by Apple Computer, Inc. (030-3936-A)

• "Understanding Computer Networks" by Apple Computer, Inc.

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Article Change History:
27 Oct 1994 - Reviewed for consistency and updated format.
21 Dec 1992 - Updated to include new networking software information.

Support Information Services

Copyright 1991-94, Apple Computer, Inc.

Tech Info Library Article Number:9630

Tech Info Library

Quick Reference: Using SmartForm Assistant

Revised: 2/9/92
Security: Everyone

Quick Reference: Using SmartForm Assistant

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Article Created: 15 November 1991
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This quick reference describes how to use Claris' SmartForm Assistant program. Use this application to print professional-looking forms with high-quality graphics and legible, accurate data. SmartForm Assistant forms are organized so you can enter data easily.

A form designer can program SmartForm Assistant forms to calculate automatically, to check the data you enter, and to provide help when you're filling in a form -- things you can't do with paper forms. You can also export the data in your forms to a database or spreadsheet application.

This quick reference is based on SmartForm Assistant 1.1v2, and covers these topics:

- Getting started

- Filling in a form

- Printing a form

- Using support features

- Managing a form set

- Where to find more information

DISCUSSION ----------

Getting Started with SmartForm Assistant 1.1v2

There are four ways to begin filling in a form using SmartForm Assistant:

- Double-click a form.

- Highlight the SmartForm Assistant application icon, pull down the File Menu and select the Open option.

- Double-click the application icon. SmartForm Assistant displays the Open file dialog box. Select the form you want to fill in from this list.

- If you have a set of forms already open, you can pull down the Edit menu and select Add Blank Form to create a blank form. Use this method if you need to fill in multiple copies of the same form in a single session. Also, use this method to create forms requiring unique form numbers.

Note: Throughout this quick reference document, Command-key equivalents are shown in parentheses ( ). You can press these instead of going to menus to select options.

Filling in a Form

Here's how to fill in a form:

1) After you have gotten started with SmartForm Assistant, choose the appropriate form.

2) Once the form set is open, pull down the Edit menu and select Add Blank Form (Command-A). This adds a blank form to your set of forms.

3) Type in the required information. Use the Tab and Shift-Tab (backwards tab) to move from field to field. If you have any difficulties, see the section below, "Using Support Features" for on-line help.

4) When you complete the form, save the information to your hard disk or floppy for archiving purposes. You are ready to print your form(s).

Printing a Form

1) Pull down the File Menu and select Print (Command-P). If a form requires you to print multiple copies, click the "Print with part labels" option in the print dialog box.

2) You can print The Current Form, All Forms, or Visible Forms. Make your selection by using the pop-up menu on the print dialog box. The choice defaults to Print Current Form.

Using Support Features

This section explains two categories of Support Features:

- Intelligent Assistance, which deals with things you need to know immediately.

- General forms Assistance, which contains information needed by more advanced users.

Intelligent Assistance

SmartForm Assistant provides three types of intelligent assistance. These are menu items that help you fill in forms quickly and accurately. These include Format Help, Support window, and Choices window.

- Format Help dialog box. This feature describes the different types of entry formats. SmartForm Assistant provides Format Help on all forms. The form designer must provide Support and Choices, which vary among forms.

  Format Help dialog box. The Format Help dialog box provides a concise explanation of the correct entry formats for each data type. The form designer can define a field as one of ten data types: text, decimal, integer, date, time, name, phone, international phone, logical, or picture. To display the Format Help dialog box, pull down the View menu and select Format Help... (Command-?) after you open a form.

- Support window. This feature describes the type of information to enter. The form designer can also provide custom help messages and custom error messages for each field in a form. These messages apply to the selected field and appear in the Support window. To display the Support window, pull down the Windows menu and select Show Support (Command-H).

- Choices window. This feature lists choices for the selected field. After selecting or tabbing to a field, you can enter data into it by typing, by pasting from the Clipboard, or by selecting an option from the Choices window. As with the Support window's help and error messages, choices are not built into all forms; the form designer must provide them. Some forms, or fields in a form, may not have choices associated with them.

  To display the Choices window, pull down the Windows menu and select Show Choices (Command-Y). You can select items from the Choices window by:

  - Selecting an item in the choice list and then clicking the Select button.

- Double-clicking an item in the choice list.

- Pressing the Command-key equivalent corresponding to the choice you want (Command-key equivalents for the first 10 choices are always Command-1 through Command-9, then Command-0).

General Forms Assistance

Beyond the intelligent assistance provided by Format Help, Support, and Choices, the following features help ease data entry and provide information about the form or its data. These include Name Options..., the Form Info window, the Form Set Info window, and the Auxiliary window.

- The Name Options... dialog box shows prefixes and suffixes (like Mister and Senior) that help SmartForm Assistant interpret acceptable entries in a Name field. It also controls how SmartForm Assistant displays your accepted entry. Some prefixes and suffixes also have abbreviations (Mr. and Sr., for example) and alternate abbreviations (Mr and Sr), which you can view in the Name Options dialog box.

  To display the Name Options dialog box, pull down the View menu and select Name Options... The "Built-in" card displays name options for all forms; the "User-defined" card displays them for a specific form set; the "Library" card displays a list of name options that you define (for example, making Research Engineer, Researcher, or R.E. acceptable).

- The Form Info window displays data about the form with which you're working. The Form Info window displays the Form Name, number, and the creation and last modified dates for the current form. It also includes a field into which you can enter comments about the current form. To display the Form Info window, pull down the Windows menu and select Show Form Info (Command-T).

- The Form Set Info window, displays data about the current form set. The Form Set Info window displays the date the Form Set was created and last modified and information about the Source Form (the form created in SmartForm Designer). It also includes information about the total number of forms in the set, number of visible forms, and number of hidden forms. To display the Form Set Info window, pull down the Windows menu and select Show Form Set Info (Command-M).

- The Auxiliary window is an extra page, consisting of information that will not be printed with the rest of the form. The Auxiliary window contains extra information that SmartForm Assistant does not print. To display the Auxiliary window, pull down the Windows menu and select Show Auxiliary (Command-U).

Managing a Form Set

When you have a number of forms to keep straight -- as with numerous weekly

expense reports in the same file -- you can search through old forms and manage forms more easily with the controls First Form, Next Form, Previous Form, and Last Form. These items are in the View Menu. When you want to view a different form in the set, use these menu items to move through the form set.

Find Forms...

This is used to find a specific form. To find a form, pull down the View Menu and select Find Forms... (Command-F) and a blank form will appear. Determine which field you want to search on and enter the search criteria into that field. To find a form that was created on 7/25/88, you'd enter 7/25/88 as the search criteria in the date field and then click Find in the find dialog box. To find a Facilities Work Request form for reconfiguration of cubicles, you would open the Facilities set of forms, pull down the View menu and select Find Forms..., and enter "reconfigure cubes" in the comments field. The program would find the form in which you entered "reconfigure cubes" in the comments field.

Hide Current Form, Swap Hidden-Visible, or Show All Forms

These menu options are used to manipulate forms in a set after you have searched for a form(s). Suppose you fill in forms for John Doe and Sally Smith. There are 10 forms in the set with John's name, and 5 with Sally's name. Sally has just asked you to print all of her forms. You would pull down the View Menu, select Find Forms..., enter = Smith and click Find on the dialog box. You'd now have 5 forms visible and 10 forms hidden. Now you pull down the File Menu, select print and choose Print Visible Forms from the pop-up menu.

If you wanted to see all of John's forms, you'd pull down the View Menu and select Swap Hidden-Visible (Command-J). John's 10 forms would be visible and Sally's 5 forms would be hidden.

Collect...

The Collect feature lets you take a form that you've already filled out and collect all similar forms to create a form set. For example, if you created 15 Vacation Leave forms, you have 15 different files. If you wanted to examine the one you filled out last week, you'd have to search through your hard drive and open that file. But, using SmartForm Assistant 1.1v2, you open one of those Vacation Leave forms, pull down the File menu and select Collect. Select the folder that has the 15 vacation forms in it and Collect forms into "the current [front-most] set". Watch the dialog box compare each file and collect the ones that match the type of form that is open. This gives you a set of 15 vacation forms.

You can also collect forms by launching SmartForm Assistant, pulling down the File Menu, selecting Collect, choosing the file you want to collect, and clicking Collect forms into "a new set of forms". The application will

search for all the files that match the chosen form type.

Where to Find More Information

About SmartForm Assistant 1.1v2

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9633

Tech Info Library

Kanji: LaserWriter IINTX-J Is Recommended Solution

Revised: 9/23/92
Security: Everyone

Kanji: LaserWriter IINTX-J Is Recommended Solution

==========

Article Created: 17 January 1992

Article Change History

09/22/92 - UPDATED
- To include information on Kanji TrueType and ATM-J fonts.

TOPIC ----------

Is a Japanese version of the LaserWriter IIg available?

DISCUSSION ----------

As of 2/8/92, a Japanese version of the LaserWriter IIg is not available. When Kanji Postscript is required, the LaserWriter IINTX-J is the recommended LaserWriter solution. Kanji TueType and ATM-J fonts are also available and will enable high quality printing to QuickDraw printers.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9634

Tech Info Library

MacX 1.1.7 Font Error

Revised: 2/3/92
Security: Everyone

MacX 1.1.7 Font Error

==========

Article Created: 20 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I've encountered a problem using MacX 1.1.7 and MacTCP 1.1 on a Macintosh IIfx using system software versions 6.0.5 and 7.0. I used it to display the Euclid program (CAD 2D and 3D). After launching the program, I got the message:

"X Toolkit Warning: Cannot convert string "-*-MENU-MEDIUM-R-Normal--*-120-*-*-P-*ISO8859-1" to type FontList, using fixed point."

Do you have any suggestions?

DISCUSSION -----

Here are some possible causes of this problem:

- The proportional font "-*-MENU-MEDIUM...." doesn't exist in the Font Directory file or MacX Fonts folder. Select Fonts from the Edit menu to verify that this font exists.

- The Font Directory file might be out of sync due to improper removal of fonts or font aliases.

We suggest that you reload the MacX fonts from the MacX 1.1.7 distributed disks, (especially the "Font Directory"), and launch MacX again.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9636

Tech Info Library

AppleTalk Remote: Troubleshooting Inability to Reach TCP/IP Host

Revised: 9/28/92
Security: Everyone

AppleTalk Remote: Troubleshooting Inability to Reach TCP/IP Host

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Article Created: 24 December 1991

TOPIC ----------

We're using MacTCP with a Macintosh on Ethernet configured for TCP/IP (as opposed to AppleTalk - encapsulating IP with DDP). This works fine. When using AppleTalk Remote Access however, the Macintosh that is dialing in must use AppleTalk (since the link is AppleTalk only).

When we configured MacTCP on the PowerBook, we chose AppleTalk and the LocalTalk side of a FastPath 4 that was configured to route TCP/IP. This K-box works fine for Macintosh computers on LocalTalk. With AppleTalk Remote Access, however, we can't reach a TCP/IP host. We get a "host not found" message. In addition, when we configured MacTCP on the host Macintosh (sitting on Ethernet) for AppleTalk encapsulation of IP, we couldn't reach the host either.

Since I always used just the TCP/IP configuration of MacTCP before, I'm not sure what is going wrong. Is there something in the K-box we need to change? Something in the MacTCP configuration?

Configuration:
- Macintosh IIci
- MacTCP 1.1
- System 7
- Apple Ethernet (old) card
- Shiva FastPath 4

DISCUSSION ----------

First you should make sure the FastPath is running either K-Star or KIP. If it's using the default ROM code, you won't be able to use it as a DDP/IP gateway.

Next you should verify the configuration:

- Check to see if the DDP/IP gateway was configured at all. You should see a startup message in the log or diagnostics windows that begins with "KSTAR FastPath ..."

- Check that there are IP addresses assigned for either static or dynamic allocation, or both. Verify that the IP address, default router, and subnet mask fields are configured properly.

- Verify that option 7 is turned on; this allows the Fastpath to respond to NBP lookups for "IPGATEWAY" from both the LocalTalk and Ethernet interfaces. We suspect that option 7 may be your culprit. KSTAR 8.1.1 hard wires option 7 on, so you don't have to worry about it if you're using 8.1.1.

You could use Inter•Poll to verify that the FastPath was advertising DDP/IP services. Perform a lookup for all nodes of type "IPADDRESS" Every node assigned a DDP/IP address will respond including the FastPath itself. The router should respond with something like:

Net	Node	Name	Type	Zone
1	220	192.11.0.200	IPADDRESS	LocalTalk

If you then do a lookup for all nodes of type "IPGATEWAY" you should see only the router respond, no end nodes, and hopefully only one router per zone.

Net	Node	Name	Type	Zone
1	220	192.11.0.200	IPGATEWAY	LocalTalk

By default it will only respond to lookups that are directed from the LocalTalk port. If option 7 is enabled, the FastPath will respond to lookups from the Ethernet port, but only if they are directed to the zone for which the LocalTalk port is configured. For example, assume you have a FastPath, with the LocalTalk port configured for zone "LocalTalk," and the Ethernet port configured for zone "EtherTalk." You must select the zone "LocalTalk" when you configure the DDP/IP gateway location in the MacTCP control panel from an Ethernet attached Macintosh, or from a remote LocalTalk attached Macintosh. If you don't select "LocalTalk," the FastPath won't respond to lookups for "IPGATEWAY." The key here is to select the correct zone, the zone configured for LocalTalk interface of the FastPath.

In their documentation, Shiva is a little more restrictive. They specify that the Ethernet port of the FastPath must have the same zone included in its zone list as the zone configured on the LocalTalk interface. They also specify that all nodes managed by a single gateway MUST be in the same zone as the LocalTalk interface for this gateway. The DDP/IP gateway as a whole isn't a documented standard. As long as you use only dynamic assignment, you shouldn't have any problem with the scheme outlined above. With version 8.1.1 of K-STAR, it looks like you should be able to use this type of scheme with static addresses as well. I haven't tested this, but the documentation included with 8.1.1 seems to indicate that they've made some

significant improvements to address assignment.

From the K-STAR 8.1.1 release notes:

Changes made to K-STAR to avoid dynamic IP addresses that are still in use from being given away are:

a. IP in AppleTalk traffic from each Macintosh is used to reset the aging timer.

b. While entries idle (those which have not sent an NBP reply for its IPADDRESS, or any IP traffic) for over 5 minutes will be considered for reuse; the FastPath will send directed IPADDRESS NBP lookups to the Macintosh for 10 minutes after the last response was seen.

c. The FastPath performs a wild card IPADDRESS lookup in the local (LocalTalk) zone every 30 minutes.

d. Previously, the FastPath would hold an IP packet for an address in its client range for up to 30 minutes in the hope that the client would respond to the (initial) NBP ARP. The FastPath no longer holds such packets.

e. Previously, the FastPath stopped keeping track of how old entries were after 30 minutes. Now times are kept up to 2^15 seconds (over 9 hours) to better distinguish between old and very old entries when deciding which entry to reuse.

f. The FastPath will only respond to "NBP PROXY ARPs" (Mac sends an IP ARP request by doing an NBP lookup for type IPDARESS, name xx.xx.xx.xx) if they originate from a Macintosh which is a registered client. This enables two FastPath IPGATEWAYs to coexist in the same zone. Since 2 IPGATEWAYS can coexist, the FastPath now always responds to IPGATEWAY lookups; this is as if option 7 was always enabled.

Finally, take a look at the TCP/IP configuration of the remote Macintosh as well as the Ethernet based Macintosh that also failed. What do they have in the way of configuration data? What zone are they pointed to for the DDP/IP gateway lookup? Are they configured for "Server" node address access? What zone do they reside in? Have you tried static address assignment?

Copyright 1991, Apple Computer, Inc.

Tech Info Library Article Number:9638

Tech Info Library

Personal LaserWriter NT: Minimum Margin Reduces Lines Per Page

Revised: 1/30/92
Security: Everyone

Personal LaserWriter NT: Minimum Margin Reduces Lines Per Page

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Article Created: 21 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a Macintosh LC with 2MB RAM and an HD40 SC running system software version 6.0.8. I have an Apple IIe Card installed and am printing to a Personal LaserWriter NT from AppleWorks and Publish It.

When printing, the print starts an extra half-inch down the page, thereby misaligning subsequent pages -- the last page of one print job I measured had a top margin of 4 inches.

Is there a compatibility problem with the Apple IIe Card and the Personal LaserWriter NT?

DISCUSSION ----------

This indicates that software is not properly configured for the correct number of lines per page. The Personal LaserWriter NT has a minimum margin that reduces the number of available lines per page to 61 from the usual 66 lines for an 8.5x11 page. Configure your software accordingly.

The Apple IIe Card version 2.0 software uses the printer driver in the Macintosh System Folder. Ensure that you have the Courier 10-point font installed.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9639

Tech Info Library

System 7: File Sharing Is Not the Same as AppleShare File Server

Revised: 9/10/92
Security: Everyone

System 7: File Sharing Is Not the Same as AppleShare File Server

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Article Created: 10 January 1992

Article Change History

09/10/92 - REVIEWED
- For technical accuracy.

TOPIC ----------

I have a Macintosh running system software version 7.0 and sharing one folder. No one uses this computer; it acts as a file server only. The folder sharing function works fine with up to 10 users logged on. However, when an eleventh user tries to log on, one of these two messages appears:

- File server will not allow any users to log in. Try again later.
- Too many AppleTalk connections in use. Try again later.

The documentation says that up to 250 users are allowed per System 7 server.

DISCUSSION ----------

Your Macintosh SE/30 is not a dedicated server. It is a system running the system software version 7.0 file sharing option. With that configuration, you are limited to 10 users.

To make the Macintosh SE/30 a dedicated file server, you need to install and run the AppleShare File Server software.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9642

Tech Info Library

Apple File Exchange: Available on System 6.0.X and 7.0 Disks

Revised: 2/9/92
Security: Everyone

Apple File Exchange: Available on System 6.0.X and 7.0 Disks

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Article Created: 17 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Where can I get a copy of Apple File Exchange software to transfer MS-DOS files to my Macintosh SE?

DISCUSSION -----

Apple File Exchange is included on the system software version 6.0.X and 7.0 disks:

System Software Version	Disk
6.0.3 and earlier	Utilities 2
6.0.4 and later	System Additions
7.0	Install 2

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9645

Tech Info Library

Apple IIGS: Apple GS/OS 6.0 Supports the StyleWriter (7/94)

Revised: 7/6/94
Security: Everyone

Apple IIGS: Apple GS/OS 6.0 Supports the StyleWriter (7/94)

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Article Created: 21 January 1992
Article Reviewed/Updated: 6 July 1994

TOPIC ----------

Can I use the StyleWriter with an Apple IIGS?

DISCUSSION ----------

To use Apple GS/OS with the StyleWriter you need GS/OS 6.0, a hard drive and at least 1 megabyte of memory (more is preferred).

Earlier versions of Apple GS/OS do NOT support the StyleWriter.

Known Problem

- AppleWorks GS prints to the StyleWriter printer with GSOS 6.0. At full resolution of 360 dpi, however, full justification will not work and causes problems with spacing between words.

Work Around

- Choose half resolution (180 dpi), then full justification works.

Article Change History:
6 July 1994 - Added known problem.
5 May 93 - Revised to include hard disk and memory information.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9647

I/O Design, Inc.

Revised: 4/4/97
Security: Everyone

I/O Design, Inc.

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Article Created: 01/10/92
Article Reviewed: 07/12/93
Article Updated: 04/04/97

I/O Design, Inc.

P.O. Box 156
916 Springdale Dr.
Exton, PA 19341

800-241-2122

215-524-7277

215-524-7946 Fax

Company Profile:
Accessories, specializing in Macintosh carrying cases.

Article Change History: 07/12/93 Address information corrected

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:9649

Tech Info Library

Isis International, Inc.

Revised: 4/4/97
Security: Everyone

Isis International, Inc.

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Article Created: 01/10/92
Article Reviewed: 07/12/93
Article Updated: 04/04/97

Isis International, Inc.
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726 Front St.
Suite A
Luisville, CO 80027

303-665-1300

Fax: 303-665-1303

Company Profile:
Accessories, specializing in Macintosh, laptop, and notebook carrying cases.

Article Change History: 07/12/93 Address changed, phone number changed

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:9650

Tech Info Library

The Madson Line

Revised: 4/4/97
Security: Everyone

The Madson Line

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Article Created: 10 January 1992
Article Reviewed/Updated: 4 April 1997

The Madson Line

Mailing Address:
P.O. Box 338
Corte Madera, CA 94976

Shipping Address:
405 Tamal Plaza
Corte Madera, CA 94925

415-927-3600

800-851-1551 (outside California)

Fax: 415-927-4661

Company Profile:
Hardware, specializing in accessories for the PowerBook series called the PowerBook collection, including carrying cases, batteries and battery chargers, and security devices.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:9651

Tech Info Library

Magenta Seven, Inc.

Revised: 4/4/97
Security: Everyone

Magenta Seven, Inc.

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Article Created: 01/10/92
Article Reviewed: 07/13/93
Article Updated: 04/04/97

Magenta Seven, Inc.

5109 Holly Ridge Drive
Suite 209
Raleigh, NC 27612

919-787-2787

919-787-1277 Fax

Company Profile:
Accessories, specializing in Macintosh PowerBook acarrying cases.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:9652

Tech Info Library

TCC

Revised: 7/20/93
Security: Everyone

TCC

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Article Created: 10 January 1992
Article Reviewed/Updated: 20 July 1993

TCC

1301 Washington Blvd.
Suite 110
Los Angeles, CA 90066

310-578-9710

800-542-4591

Fax: 310-578-9717

Company Profile:
Accessories, specializing in Macintosh, laptop, and notebook lightweight, aluminum, ZERO Halliburton carrying cases.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:9653

Tech Info Library

Apple Daisy-Wheel Printer: Pinouts for IBM PC, XT, PS/2

Revised: 2/10/92
Security: Everyone

Apple Daisy-Wheel Printer: Pinouts for IBM PC, XT, PS/2

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Article Created: 17 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Can I connect an Apple Daisy-Wheel Printer to an IBM PS/2/30? If yes, what are the cable pinouts?

DISCUSSION -----

Yes, you can connect an Apple Daisy-Wheel Printer to an IBM PS/2/30. You may have a problem with a driver, though. Try setting your applications to print to a Qume-type printer.

Here's the cable pinout information for connecting an Apple Daisy-Wheel Printer to an IBM PC, XT, or PS/2 series:

IBM RS-232 Serial (DB-25 -- Female Connector)	Apple Daisy-Wheel Printer (DB-25 -- Male Connector)
1	1
2	3
3	2
4,5	8
6	20
7	7
8	4,5
20	6
22	N.C.

Reference:

```
RS-232 Signal (DB-25 .. DTE)
 1 - Sig Gnd        - Normally Shield or Chassis Ground
 2 - TXD            - Transmit Data
 3 - RXD            - Receive Data
 4 - RTS            - Request to Send
 5 - CTS            - Clear to Send
 6 - DSR            - Data Set Ready
 7 - GND            - SIGNAL Ground
 8 - DCD            - Data Carrier Detect
20 - DTR            - Data Terminal Ready
22 - RI             - Ring Indicate
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Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9654

Tech Info Library

HyperCard: Which Version for Which System (9/95)

Revised: 9/26/95
Security: Everyone

HyperCard: Which Version for Which System (9/95)

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Article Created: 17 January 1992
Article Reviewed/Updated: 26 September 1995

TOPIC ----------

I need to know what version of HyperCard to use with my version of system software.

DISCUSSION ----------

The following guide can help you find the correct version of HyperCard to use with your version of system software.

Begin_Table

System	HyperCard
5.0	1.2.2
5.1	1.2.2
6.0.2	1.2.2
6.0.3	1.2.2
6.0.4	1.2.2, 1.2.5
6.0.5	1.2.2, 1.2.5, 2.0, 2.0v2, 2.1, 2.2, 2.3
6.0.7	1.2.5, 2.0, 2.0v2, 2.1, 2.2, 2.3
7.0	2.1, 2.2, 2.3
7.0.1	2.1, 2.2, 2.3
7.1	2.1, 2.2, 2.3
7.5	2.1, 2.2, 2.3
7.5.1	2.1, 2.2, 2.3
7.5.2	2.1, 2.2, 2.3

End_Table

Article Change History:
26 Sep 1995 - Reformatted to make more readible on the World Wide Web.
19 Sep 1995 - Added compatability information up to System 7.5.2.

..TIL09655-HyperCard-Which_Version_for_Which_System_9-95_(TA48048).pdf

01 May 1995 - Updated to include HyperCard 2.3 information.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:9655

Tech Info Library

LaserWriter Plus: Uses Canon LBP-8 Engine

Revised: 2/3/92
Security: Everyone

LaserWriter Plus: Uses Canon LBP-8 Engine

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Article Created: 17 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

What engine does the LaserWriter Plus use?

DISCUSSION -----

The LaserWriter Plus uses a Canon LBP-8 Engine.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9658

Tech Info Library

Macintosh LC: Upgraded VRAM Improves Monitor Color Depth

Revised: 7/24/92
Security: Everyone

Macintosh LC: Upgraded VRAM Improves Monitor Color Depth

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Article Created: 20 January 1992
Article Last Reviewed: 24 July 1992
Article Last Updated:

TOPIC -----

Will you explain the advantages of increasing the VRAM on Macintosh LC from 256K to 512K?

DISCUSSION -----

The advantage of increasing the VRAM on the Macintosh LC is an improvement in the color depth.

Here's a chart that shows the improved color depth:

Monitor	With 256K VRAM	With 512K VRAM
Macintosh 12" RGB Display	256 colors/grays	32,768 colors
AppleColor Hi-Res RGB Monitor	16 colors/grays	256 colors/grays
Apple Hi-Res Monochrome Monitor	16 shades of gray	256 shades of gray

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9660

Tech Info Library

Pers LaserWriter LS: Minimal Gain From Memory Upgrade (11/94)

Revised: 11/11/94
Security: Everyone

Pers LaserWriter LS: Minimal Gain From Memory Upgrade (11/94)

==========

Article Created: 20 January 1992
Article Reviewed/Updated: 11 November 1994

TOPIC ----------

I recently had the RAM in my Personal LaserWriter LS upgraded from 512K to 1MB, and I haven't noticed any performance improvement. When I added RAM to my Texas Instruments MicroLaser printer, there was a definite performance improvement.

What does the RAM upgrade do for the Personal LaserWriter LS?

DISCUSSION ----------

Upgrading the Personal LaserWriter LS RAM does not provide a quantum improvement in performance because there is no processing capability on the printer I/O board, this is all handled by the computer to which the printer is connected.

The Personal LaserWriter LS I/O board only unbands the image as it is sent from the computer. Adding more RAM allows the printer to accept slightly larger documents.

A better way to improve Personal LaserWriter LS performance is to add RAM to or increase the performance of the computer to which the printer is connected.

Article Change History:
11 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:9661

Tech Info Library

Pers LaserWriter LS: No Upgrade to Personal LW NT (11/94)

Revised: 11/11/94
Security: Everyone

Pers LaserWriter LS: No Upgrade to Personal LW NT (11/94)

==========

Article Created: 20 January 1992
Article Reviewed/Updated: 11 November 1994

TOPIC ----------

Can I upgrade my Personal LaserWriter LS to a Personal LaserWriter NT by changing a board?

DISCUSSION ----------

No. The Personal LaserWriter LS cannot be upgraded to a Personal LaserWriter NT because of engineering changes in the DC Controller and other circuits as well as FCC regulations.

Article Change History:
11 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:9662

Tech Info Library

MacTCP Developer's Kit: Available from APDA

Revised: 1/30/92
Security: Everyone

MacTCP Developer's Kit: Available from APDA

==========

Article Created: 21 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Is there a developer's kit for using MacTCP via the Macintosh Comm ToolKit?

DISCUSSION -----

APDA, who distributes MacTCP, has a developer's kit. Contact them directly for information on the product.

For APDA contact information, search the Tech Info Library under "APDA".

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9663

Tech Info Library

A/UX 3.0: Memory and Storage Requirements

Revised: 2/10/92
Security: Everyone

A/UX 3.0: Memory and Storage Requirements

==========

Article Created: 3 January 1992
Article Last Reviewed: 3 July 1992
Article Last Updated:

TOPIC ----------

What is the minimum memory requirement to run A/UX 3.0?

DISCUSSION ----------

We recommend 8MB RAM for A/UX 3.0. It requires at least an 80MB hard disk, and 160MB is recommended.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9669

Tech Info Library

A/UX 3.0: Installer Update Feature

Revised: 2/10/92
Security: Everyone

A/UX 3.0: Installer Update Feature

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Article Created: 3 January 1992
Article Last Reviewed: 3 July 1992
Article Last Updated:

TOPIC ----------

This article explains the A/UX 3.0 Installer update feature.

DISCUSSION ----------

With A/UX 3.0, you can do an automatic update of A/UX from version 2.0 or version 2.0.1 if your disk has a minimum of 30MB of free space, and if your partitioning scheme matches that of A/UX 3.0. The free space accommodates the increased size of the A/UX file systems. If your system doesn't meet these two criteria, then we offer two updating utilities. These are similar to the utilities provided with earlier versions of A/UX to find files that need updating and to help you back up those files. Then when you install A/UX 3.0, it repartitions your disk and copies back your system and user files.

The A/UX 3.0 Installer updates existing A/UX 2.0 and 2.0.1 installations to 3.0 in the same manner as the installer used in A/UX 2.0.1. Basically, if the target disk is already set up for A/UX, it skips the disk formatting stage. During the UNIX package installation, outdated 2.x files are REPLACED by their newer 3.0 counterparts. The sizes of these replaced files are used in the free space calculation so that an enormous amount of free space isn't required.

As always, the installer IS NOT a substitute for backing up your disk drive. Make a habit of backing up daily or weekly to ensure the protection of your user files, and any changes you make to the system software.

In addition, A/UX 3.0 continues to support the Autorecovery feature. This feature allows you to recover key system files and get the A/UX computer back into a stable state.

..TIL09670-A-UX_3-0-Installer_Update_Feature_(TA48057).pdf

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9670

Tech Info Library

A/UX 3.0: Spooling to QuickDraw Printers

Revised: 2/10/92
Security: Everyone

A/UX 3.0: Spooling to QuickDraw Printers

==========

Article Created: 6 January 1992
Article Last Reviewed: 3 July 1992
Article Last Updated:

TOPIC -----

I can set A/UX up to spool LPR requests to an AppleTalk-based LaserWriter. Can A/UX 3.0 spool files to Personal LaserWriter LS, ImageWriter, and so on?

DISCUSSION -----

No. You can spool from UNIX to PostScript devices (either serial or AppleTalk) and to ImageWriters, but not other QuickDraw printers such as the Personal LaserWriter LS and StyleWriter.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9671

Tech Info Library

AWS 95 & A/UX : Does Not Work with Apple Remote Access (4/95)

Revised: 4/14/95
Security: Everyone

AWS 95 & A/UX : Does Not Work with Apple Remote Access (4/95)

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Article Created: 6 January 1992
Article Reviewed/Updated: 14 April 1995

TOPIC -----

Will Apple Remote Access (ARA) work with A/UX?

DISCUSSION -----

Both AppleTalk Remote Access 1.0 and Apple Remote Access 2.0 do NOT work with any version of A/UX. This includes the Apple Workgroup Server (AWS) 95 which uses the A/UX operating system.

Article Change History:
14 Apr 1995 - Added the AWS 95.
15 Mar 1994 - Added both versions of ARA.
18 Feb 1993 - Reviewed for technical accuracy.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:9674

Tech Info Library

Macintosh LC: No NTSC Video-Out with Apple IIe Card

Revised: 6/8/92
Security: Everyone

Macintosh LC: No NTSC Video-Out with Apple IIe Card

==========

Article Created: 6 January 1992
Article Last Reviewed: 2 June 1992
Article Last Updated: 2 June 1992

TOPIC ----------

I have a Macintosh LC with an Apple IIe Card. My problem is that the Macintosh LC doesn't have any composite video-out equivalent to the Apple IIGS and Apple IIe systems that I need for projection.

Do you know of any RGB-to-NTSC converters for the Macintosh LC in Apple IIe mode?

DISCUSSION ----------

There is no way to have NTSC-out on a Macintosh LC if an Apple IIe Card is installed. RasterOps, Truevision, or the Computer Video RGB-to-NTSC converters won't work because they require an RGB signal with NTSC timing. The Macintosh LC doesn't have this kind of video port (that is, it doesn't have NTSC sync timing rate built into the board).

Here are two workarounds:

- Use an Apple IIe or Apple IIGS as your NTSC projection system.

- Use an LCD overhead projection panel compatible with the Macintosh LC. Any panel compatible with the 12-inch monochrome or 13-inch RGB monitor will work with the Macintosh LC video port. This solution has the advantage of being a Macintosh environment projection device. We are unaware of any LCD projection panels compatible with the 12-inch RGB monitor.

Another option is using a video card such as the Spectrum/8 LC Card. You have used the slot, but now have a video board that supports not only large screen monitors, but also supports video-out with the addition of the RasterOps video

expander or the Computer Video NTSC encoder. It gives you 256-color graphics for the Macintosh LC. This still doesn't allow for both the Apple IIe card and NTSC video-out.

The Spectrum/8 LC Card supports the following displays:

- SuperMac 19-inch Platinum Display
- 21-inch Platinum Two Page Display
- 16-inch Trinitron Display
- 19-inch Dual-Mode Trinitron Display
- 19-inch SuperMatch Color Display
- 21-inch SuperMatch Two Page Color Display
- Apple 12-inch RGB
- Apple Color 13-inch
- Apple Macintosh Portrait Display
- Apple 21-inch Monochrome
- RasterOps 19-inch
- Radius 19-inch (1152 x 882)

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9675

Tech Info Library

LaserWriter IIf/IIg: Using with Ergofeed Sheet Feeder

Revised: 2/10/92
Security: Everyone

LaserWriter IIf/IIg: Using with Ergofeed Sheet Feeder

==========

Article Created: 21 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Is there a way to configure the RS-232 port on the LaserWriter IIf/IIg so that we have the same functionality as we had with the LaserWriter IINT/IINTX? We're experiencing difficulties with the Ergofeed sheet feeders from BDT Products, Inc. They won't work, even if we put the thumb switch on position 3 (RS-232 not arbitrated for input).

DISCUSSION -----

BDT has a new PROM and driver for their Ergofeed sheet feeders that make them compatible with the LaserWriter IIf and LaserWriter IIg.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:9676

A/UX 3.0: Archive Tape Backup Drives

Revised: 7/13/92
Security: Everyone

A/UX 3.0: Archive Tape Backup Drives

==========

Article Created: 20 January 1992
Article Last Reviewed: 3 July 1992
Article Last Updated:

TOPIC ----------

With A/UX 3.0, is it possible to back up to tapes as large as 250MB?

DISCUSSION ----------

The MaxStream 250Q tape drive from Archive works under A/UX 2.0 and later. It can store up to 250MB of data on a DC6250 cartridge.

A/UX 3.0 Peripheral Compatibility Testing found that the other three Archive drives worked under A/UX 3.0. These three drives are listed here:

- Archive ST2000 (2GB) 4mm DAT

- Archive 150 (150MB) 1/4-inch cartridge drive

- Archive 525 (525MB) 1/4-inch cartridge drive

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9680

Tech Info Library

MacX: Compile Font from BDF File to Make It Usable

Revised: 2/10/92
Security: Everyone

MacX: Compile Font from BDF File to Make It Usable

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Article Created: 23 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

We're using MacX with AIX on an RS6000. Our environment includes NDC X Terminals and PCs running X-Vision from VisionWare. We use WordPerfect on the RS6000.

Some of the fonts are causing problems. In particular, MacX erroneously interprets lines as bogus characters. Here is an example of a font description:

```
bld17.500.snf   -ibm--bold-r-block--23-16-100-100-m-110-ibm-pc850
```

Does Apple have anything that corresponds to these fonts? How do we map in to them?

DISCUSSION ----------

Apparently, the MacX client is requesting a font that doesn't exist in the MacX server.

We suggest the following:

- Use software called "snftobdf" to convert an SNF (Server Natural Format) file into a BDF (Bitmap Distributed Format) file.

- After converting the file to Bitmap Distributed Format, compile it by Font Directory under MacX. It will produce a font in a format the MacX server can use. For more detailed information on how to compile a BDF file within MacX, see page 101 of Apple MacX User's Guide, "Compiling fonts from BDF files."

You must store all available fonts in the MacX Fonts folder, and the MacX Fonts folder must reside either in the System Folder or in the same folder as the MacX application.

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Tech Info Library Article Number:9681

Tech Info Library

MacX 1.1.7: How to Bypass Standard Colormap Initialization

Revised: 2/10/92
Security: Everyone

MacX 1.1.7: How to Bypass Standard Colormap Initialization

==========

Article Created: 28 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

How can I modify the MacX 1.1.7 application with ResEdit to bypass the standard colormap initialization?

DISCUSSION ----------

Follow these steps:

1) Back up the golden master of MacX 1.1.7 before doing the change.

2) Open MacX 1.1.7 golden master with ResEdit and open CODE #4 resource.

3) Change the 0x4E56 at 0x2952 offset to be 0x4E75 (RTS instruction). This removes the standard colormap initialization.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9682

Tech Info Library

MacX: Default Font When Client Software Doesn't Specify

Revised: 2/10/92
Security: Everyone

MacX: Default Font When Client Software Doesn't Specify

==========

Article Created: 28 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What is the default font that MacX uses if the client software doesn't specify a font?

DISCUSSION ----------

If the X client application doesn't specify any font to use, the MacX server looks for the "fixed" font. See page 115 of "Apple MacX User's Guide" for details.

Note that even if the X client doesn't specify the font name on the client's command line, the client can still look for some default places in the client host (like .Xdefaults file in user's home directory and the /usr/lib/X11/app-defaults file) for resources. These files store application and machine-specific resources. The details about how the X resources are referenced can be found in most X11 reference documents, such as the one on page 10 of X(1) manual pages in "X11 Reference for A/UX."

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9683

Tech Info Library

StyleWriter: Use Driver 7.1 with IIe Card Software 2.0 and 2.0.1

Revised: 2/10/92
Security: Everyone

StyleWriter: Use Driver 7.1 with IIe Card Software 2.0 and 2.0.1

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Article Created: 29 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

We installed the new StyleWriter drivers and they work great on the Macintosh. However, we can no longer print from an Apple IIe card. We have a Macintosh LC 4/80 running AppleWorks 3.0 on the IIe card. We had no problems printing until we installed our driver update. The computer seems to communicate with the printer, then the computer locks up, and we have to restart.

DISCUSSION ----------

If the new StyleWriter drivers are version 7.2 or 7.2.2, the recommendation is to use version 7.1 StyleWriter drivers with the Apple IIe Card software version 2.0 and 2.0.1. The 7.2 and 7.2.2 versions of the StyleWriter drivers haven't been tested with the Apple IIe Card software versions 2.0 and 2.0.1.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9685

Tech Info Library

ImageWriter & Excel 3.0: Fix for Problem Printing from Finder

Revised: 2/10/92
Security: Everyone

ImageWriter & Excel 3.0: Fix for Problem Printing from Finder

==========

Article Created: 24 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm having problems printing multiple documents from a Macintosh Classic to an ImageWriter II. I'm using Excel 3.0 . In the Macintosh Reference Guide, on page 123, it tells how to print multiple documents.

After selecting all documents and choosing Print from the File menu, I select the ImageWriter II settings, which are: Faster/ All/ 1 Copy and Automatic. From the Desktop, each document opens, prints, and then closes in the order selected.

After each page, the top margin drops and continues to drop on every page. Also, after the first document prints, a dialog box asks you to insert the next sheet of paper. After clicking OK, the next page prints. The dialog box doesn't come up after every document, and randomly comes up when printing a multiple page document.

I reloaded system software, ImageWriter driver, and Excel 3.0. This doesn't help. I then printed the multiple documents to a LaserWriter II rather than to an ImageWriter II. Each document opened, printed, and closed in the order selected without a problem.

DISCUSSION ----------

We called Microsoft Tech Support and found that the same result is to be expected when printing from the Finder to an ImageWriter (or ImageWriter II) from any Macintosh under System 6 or 7.

The problem has been isolated and fixed in Excel version 3.0a. Registered users can call Microsoft Support for Excel on the Macintosh. Tell them that printing from the Finder to an ImageWriter causes problems, and they

will send the updated software.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:9686

Tech Info Library

LW Driver and System SW: Recommended Combinations (8/96)

Revised: 8/20/96
Security: Everyone

LW Driver and System SW: Recommended Combinations (8/96)

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Article Created: 17 January 1992
Article Reviewed/Updated: 20 August 1996

TOPIC -----

This article discusses system software and LaserWriter driver compatibility.

DISCUSSION -----

On the early Macintosh computers (128K and 512K), Apple Computer recommends using the LaserWriter driver 5.2 with System 3.2 and Finder 5.3. On later Macintosh computers, Apple recommends the combinations of system software and LaserWriter driver indicated in the table with YES. Items marked with an 'X' indicate that the combinations are compatible. However, you should use the recommended combinations.

Begin_Table

		System Software					
LW Driver	Driver Notes	Pre 6.0.7	6.0.7	6.0.8	7.0.x	7.1.x	7.5.x
6.0.2		YES	X	X			
7.1.x			YES	X			
7.2				YES	X	X	X
8.0						X	
8.1.x	1		X	YES	X	X	X

8.2	5				X	X	X
8.3.x	6,7				YES (3)	YES	YES
8.4	6,8				YES (3)	YES	YES
SW ------>							
NOTES ------>			10	2		4	

Notes	Description
1	The LaserWriter 8.1.2 driver was the last version of the LaserWriter 8.x driver tested with any version of System 6.x.
2	System 6.0.8 should use the LaserWriter 7.2 or 8.1.2 driver.
3	System 7.0.x should use the LaserWriter 8.3.4 or LaserWriter 8.4 driver WITHOUT the Desktop Printing extension.
4	Desktop Printing requires System 7.1 or greater.
5	LaserWriter 8.2 requires System 7.0 or greater.
6	LaserWriter 8.3 and greater with Desktop Printing requires System 7.1 or greater.
7	LaserWriter 8.3.4 can be found on Apple SW Updates and resolves the PCI Macintosh printing problem.
8	LaserWriter 8.4 is available on Apple SW Updates. It has many new features. If you have problems using the LaserWriter 8.4 driver, Apple Computer recommends using the LaserWriter 8.3.4 driver.
9	LaserWriter 7.2 seems to work properly on newer version of the Mac OS, such as System 7.5.3. Although Apple has not received reports of incompatibilities, LaserWriter 7.2 was not tested with recent versions of Mac OS.
10	Apple recommends that customers who want to continue using System 6.0.x, upgrade to System 6.0.8.

End_Table

Article Change History:
19 Aug 1996 - Updated with latest software revisions.
13 Apr 1995 - Added System 7.5 and LaserWriter 8.1.1, 8.2, and 8.2.2.
25 Jul 1994 - Corrected article name for system software matrix.

..TIL09687-LW_Driver_and_System_SW-Recommended_Combinations_8-96_(TA48070).pdf

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Tech Info Library Article Number:9687

Tech Info Library

NetWare for Macintosh VAP 1.1: Phase 1/2 Conflict & Workaround

Revised: 2/10/92
Security: Everyone

NetWare for Macintosh VAP 1.1: Phase 1/2 Conflict & Workaround

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Article Created: 23 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I have a 386 server running NetWare 2.15c and NetWare for Macintosh VAP v1.1 on an Ethernet network. The Ethercard in the file server is a Western Digital Star/Ethercard Plus (with AppleTalk) v3.07. There is also a Dayna AppleTalk PC card v1.22 to support a LaserWriter NT for the network. A Macintosh LC connects to the network with an Apple Ethernet card.

I have installed the VAP program three times and still can't get the LaserWriter or the file server to show up in the Macintosh Chooser. I'm running the driver for Phase II on the Macintosh LC.

I know that the Ethernet connection is good, because I also have Insignia Solutions SoftPC Universal v2.5 and SoftNode v1.0 running on the Macintosh LC. I can access the file server and run all the loaded applications (DOS and Netbios).

DISCUSSION -----

You most likely have an AppleTalk Phase 1 versus Phase 2 conflict. The NetWare for Macintosh VAP 1.1 only supports Phase 1. This prevents any Phase 2 client from using the services.

Novell recommended a workaround. Upgrade to NetWare 2.2, and to the Macintosh VAP version 2.2. This will provide the NetWare server with AppleTalk Phase 2, and allow it to publish a LaserWriter printer queue that Macintosh clients can use.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9688

Tech Info Library

MacX: Problem with Ultrix Xlib Library

Revised: 2/10/92
Security: Everyone

MacX: Problem with Ultrix Xlib Library

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Article Created: 24 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a problem using MacX 1.1.7 and Ultrix dxcalendar. The DECwindow client Calendar on Ultrix hangs when using the client EDIT menu. The problem produces the error message:

```
  Xlib:  sequence lost (0x108b9 > 0x8ba) in reply type 0x1c!
```

This problem doesn't occur when using Calendar for the first time. Once I make a calendar entry, I see the problem. It works fine with White Pine's eXodus or with an NCD16 X Terminal.

Configuration:

- Macintosh IIci
- 8MB memory
- 13-inch Apple High Resolution RGB
- Built-in video card
- Ethernet Controller type 3Com Ethernet card, Revision L
- System software version 7.0
- MacX 1.1.7

DISCUSSION ----------

This is a known bug in the Ultrix version of the Xlib library which applications use to get access to the X protocol. It exists in Ultrix 4.0 and 4.1 and possibly later versions as well. This ISN'T a MacX bug; it happens under similar circumstances with Sun and other 68K-based X servers. MacX seems to have the problem more often than other servers due to the built-in conversion of the Clipboard to Macintosh Clipboard; this aggravates the problem.

..TIL09689-MacX-Problem_with_Ultrix_Xlib_Library_(TA48072).pdf

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9689

Tech Info Library

PATHWORKS: Problem Escalation Process

Revised: 6/29/92
Security: Everyone

PATHWORKS: Problem Escalation Process

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Article Created: 24 January 1992
Article Last Reviewed: 29 June 1992
Article Last Updated:

TOPIC ----------

I have a PATHWORKS question about problem escalation and the interface to Apple. Since DEC now owns all the code except DAL and MacX, should we just push all escalations up the "normal" DEC path?

DISCUSSION ----------

PATHWORKS for Macintosh has always been a Digital product. It's sold and supported by Digital. Report all problems with PATHWORKS-related components to Digital support.

- In the U.S., this is Digital Customer Support Center (CSC).

- From other countries, report problems to the local Digital office; they will escalate to Digital in the U.S. if necessary.

Apple Engineering has trained Digital engineering on the transitioned components. The process for escalation hasn't changed. If Digital CSC can't handle a problem, they will escalate it to the PCSG Engineering Maintenance Organization (PCSGEM). Should that component be something Apple developed and maintained, Digital PCSGEM will notify Apple Tech Comm.

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Tech Info Library Article Number:9690

Tech Info Library

Macintosh: DQDB (Distributed Queue Dual Bus) and MANs

Revised: 2/10/92
Security: Everyone

Macintosh: DQDB (Distributed Queue Dual Bus) and MANs

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Article Created: 21 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Is a card available for Macintosh computers to connect to Distributed Queue Dual Bus (DQDB) Metropolitan Area Networks (MANs)?

DISCUSSION ----------

A MAN data transport mechanism is the intended use of a Distributed Queue Dual Bus (DQDB), and DQDB MANs are meant to function as connectionless networks that link multi-megabit LANs together. Because of this, a Macintosh isn't a likely first candidate end-node device for design and manufacture of DQDB interface cards.

It's more likely that DQDB networks will connect to devices such as routers and bridges. Routers and bridges (interconnect devices) will be the first to have DQDB interfaces, and it may be a year or more before those come into real use. There have been some SMDS/DQDB trials, and Bell Atlantic is presently offering SMDS service to a limited area. Wide use of this technology is still several years away.

If you need to put your Macintosh computers on a MAN today, you can use a router to attach to the MAN and then a LAN (of your choice) to attach to the Macintosh end nodes. There may eventually be an SMDS/DQDB interface for the Macintosh when the service becomes a real commercial product.

Here's some background information on DQDB to help understand what it is.

DQDB Background Information

Metropolitan area networks (MANs) could offer answers to the demand for communications with anyone, anywhere, cheaply and reliably. The ideal

answer is a system that can support high speeds and geographical distances of hundreds of kilometers and be available for everyone.

FDDI is a popular backbone technology capable of high-speed communications and allows extended distances between networked sites. Presently FDDI is considered suitable for high-speed workstation networking.

The telephone industry supports a proposed MAN implementation called Queued Packet Synchronous eXchange (QPSX). The IEEE 802.6 committee changed the name to Distributed Queue Dual Bus (DQDB) in order to avoid confusion with an Australian company. MANs have implications that apply to corporate use and to the entertainment industry for advanced video and voice services.

The Distributed Queue Dual Bus (DQDB) standard was adopted as IEEE 802.6 in late 1990. DQDB describes a physical layer and Medium Access Control (MAC) sublayer to support packet and isochronous (time-sensitive) data transport over a metropolitan area. DQDB describes a transport network, not a MAN service.

Bellcore's description of a MAN service is SMDS. As currently specified, SMDS will provide the MAN service using DQDB as the underlying transport network. The first in a series of TAs defining the requirements for SMDS was released in October 1989. These documents include specifications for the user interface, service structures, network components, billing elements, and network management. SMDS TRs started to appear this year, and SMDS demonstrations, trials, industry groups, and related standards have also started to appear. SMDS will be very important in the RBOCs' future deployment plans for MANS, particularly as an initial step to offering Broadband ISDN (B-ISDN) services.

AT&T's competition comes from QPSX Systems of Perth, Australia, which backs Distributed Queue Dual Bus (DQDB). QPSX is a joint venture of Telecom Australia and the University of Western Australia, the developer of DQDB.

Communications industry analysts said there's little difference between AT&T's SMDS and QPSX Systems' DQDB beyond the initials. "SMDS is AT&T's implementation of DQDB," said Stuart Gavurin, a network analyst at Ernst & Young.

In 1987, IEEE decided to use DQDB as the basis for MANs, and a year later QPSX announced an agreement to allow AT&T to manufacture DQDB-compliant products. Shortly after that, however, AT&T decided to pursue its own implementation of MAN.

Gavurin said that the point for potential users to note is SMDS and DQDB adhere to the 802.6 standard and are compatible with each other. Users can buy products based on one implementation and know the products will work with those based on the other implementation.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9692

Tech Info Library

Apple Ethernet NB Card: No Option to Disable Link Beat Signal

Revised: 2/21/92
Security: Everyone

Apple Ethernet NB Card: No Option to Disable Link Beat Signal

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Article Created: 23 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I want to install a new Apple NuBus Card, but I have two types of HP hubs. The newer one supports Link Beat and the old one requires Link Beat to be off.

If a hub requires Link Beat to be off, does the Apple NuBus card or software have a way to turn it off? I've heard of third-party cards that have jumpers on the cards to do this.

DISCUSSION ----------

The new Ethernet NB card doesn't have options to enable or disable the Link Beat signal. Some early twisted pair Ethernet hubs didn't use Link Beat and can't function with transceivers that use it. It's true that some third-party cards have the option to disable this signal. They're trying to be compatible with all hubs (pre- and post-10baseT). Apple designed the cards to be compatible with the true 10baseT specification, which requires Link Beat.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9693

Tech Info Library

AppleTalk and IBM 8209 Bridges Don't Mix

Revised: 2/10/92
Security: Everyone

AppleTalk and IBM 8209 Bridges Don't Mix

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Article Created: 23 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I have a lab with 24 Macintosh LCs and one Macintosh IIci on Ethernet. The file server is attached to an IBM 8209 bridge which is a hardware component that bridges Token Ring networks and Ethernet networks. Some of the Macintosh LC computers randomly won't show the file server in the Chooser, but the Macintosh IIci always shows the file server.

If we restart the IBM 8209 bridge, the Macintosh LCs show the file server again. All the workstations, Macintosh LCs, and Macintosh IIci run system software version 6.0.7. The file server on the other side of the 8209 bridge is a Macintosh IIci running System 7.0 and AppleShare 3.0. We tried System 7.0 on all the computers, and AppleShare 2.0 with system software version 6.0.7 on the server.

DISCUSSION -----

Here is some information that should help you understand why the IBM 8209 bridge and AppleTalk aren't compatible.

IBM 8209 and AppleTalk

Ideally, with the 8209 providing Token Ring to Ethernet bridging services, Macintosh computers on both transports would see the bridged network as a single logical network. Unfortunately, for a number of reasons, this isn't true.

Phase 1 EtherTalk

The first problem stems from the 8209 bridge's generosity in forwarding all datalink (MAC) broadcasts and multicasts. When you run ANY Phase 1

EtherTalk, adding an 8209 bridge into the network automatically generates Phase 1 TokenTalk. This is useless traffic, because the TokenTalk drivers expect Phase 2 protocols. As far as we can tell, it isn't dangerous traffic; it's safely ignored by all nodes. But it does take up bandwidth, and if the Phase 1 Ethernet is large and has many routers, there can be significant broadcast traffic forwarded onto the Token Ring. The answer here is to filter Phase 1 EtherTalk at the 8209 bridge.

Address Bit-Flipping

Token Ring and Ethernet don't agree on the order of bits. So, the 8209 bridge flips the bits of the datalink (MAC) level addresses when it forwards the packets. Normally, this affects only the destination and source addresses in the packet header. However, address resolution protocols such as TCP/IP ARP and AppleTalk's AARP also carry MAC level addresses as a part of the data portion of the packet. The 8209 bridge is specially programmed to look for TCP's ARP, and to go down inside the data, flipping the bits of the embedded MAC address. Later, when a Token Ring host wants to talk with an Ethernet node, it uses the flipped version of the MAC address. When encountered by the 8209 bridge, the address is flipped back and thus delivered correctly.

The 8209 bridge ISN'T specially programmed to assist AARP. Thus, the AARP address is stored in the Token Ring AppleTalk node in its "unflipped" form. Then, should it be used later to address a packet, the 8209 bridge will flip the bits when forwarding back to Ethernet. Now the packet is incorrectly addressed, and can't be delivered.

In short, when using an IBM 8209 to bridge Token Ring and Ethernet, AppleTalk nodes on the ring and Ethernet can't communicate because they can never use AARP correctly.

Configuration Workarounds

Curiously, if the you use Token Ring only as a backbone, and a Macintosh on Ethernet wants to talk to a Macintosh on another Ethernet, with both Ethernets attached by 8209 bridges, this connection WILL work. In fact, as long as you go through an EVEN number of 8209 bridges, connection succeeds. When there's an odd number, connection fails. Note that this makes some extremely bizarre network configurations possible, such as a system of alternating Token Rings and Ethernets connected by 8209 bridges. In this case, all the Ethernets would have AppleTalk connectivity, and all the Token Rings would have AppleTalk connectivity, but the rings and Ethernets would have AppleTalk connectivity between them!

Address Ranges

You may remember that under AppleTalk Phase 2, we use multicast addressing for all protocol "overhead" packets, such as RTMPs, NBPs, and ZIPs. You may also recall that we have a range of 254 addresses used in Ethernet, and 19 different addresses in Token Ring available for multicasts.

Our use of different address ranges, in addition to the bit flipping

described previously, ensures that AppleTalk nodes can't interoperate across an 8209 bridging Ethernet and Token Ring. Just look at the startup process.

A node begins by sending an AARP probe for a protocol address (multicast). The 8209 bridge forwards this AARP message, but because the bits are flipped, a response to the AARP probe gets lost on the return trip. So, the node assumes that its protocol address is unique, and then proceeds to check for a router by multicasting (protocol broadcasting) a ZIP GetNetInfo request. If there is an AppleTalk router present on the cable (whether on Ethernet or Token Ring), it will work. The router hears the request, provides the needed information about the cable, and sends another AARP if necessary.

However, if the router is on the other side of the 8209 bridge, the multicast is forwarded. Even if the bit-flipping wasn't a problem (that is, if IBM were to change the 8209 software to support AARP), you will still NOT MAKE CONNECTION with the router. This is because a TokenTalk router expects multicast addresses in a different range than an EtherTalk node can send, and vice versa. The only answer is to use an AppleTalk router, which manages protocol and zone multicast addresses for each data link appropriately.

In short, AppleTalk and 8209 bridges don't mix. We advise you NOT to use bridging strategies between AppleTalk Token Ring and Ethernet networks.

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Tech Info Library Article Number:9694

Tech Info Library

10BASE-T: Specifications and Configurations

Revised: 2/10/92
Security: Everyone

10BASE-T: Specifications and Configurations

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Article Created: 24 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

We're configuring a large network and getting conflicting specifications regarding 10BASE-T hubs on Ethernet. We want to install the hubs on an existing thin backbone.

As an example, the Asanté hub has thick, thin, and 12 10BASE-T connections. We recommended hanging the hubs off the backbone via the thin connector and use all 12 RJ45s for computers. Asanté says we can't hang more than four or five hubs off a backbone, but Farallon says our configuration will work. Asanté recommends hanging the first hub off the backbone, and then daisy-chaining the rest using one of the RJ45s from each hub. Farallon says this isn't recommended.

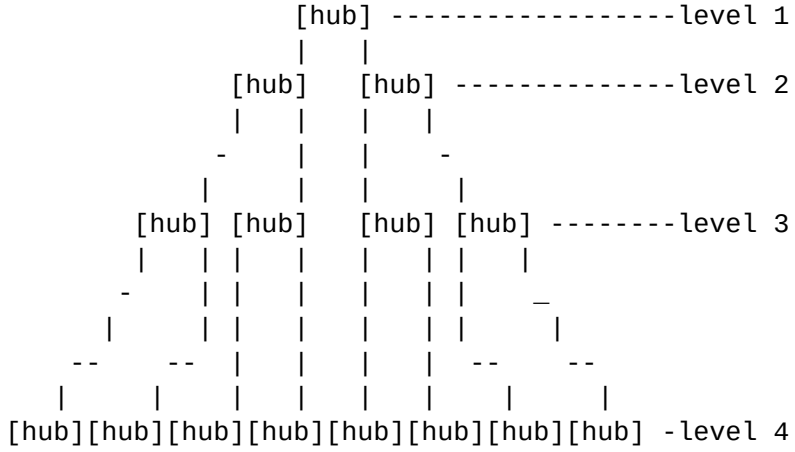
Can you give us some guidance regarding the specifications concerning 10BASE-T in this particular situation? This would help us configure future networks using UTP wiring.

DISCUSSION ----------

IEEE 802.3 Specifications

The IEEE 802.3 10baseT specification states that any two communicating stations can't be separated by more than five segments. This means that you can have up to four repeaters within any given communications path. When a transmission path consists of four repeaters and five segments, up to three of the segments may be coax and the remainder must be link segments. Link segments are defined as repeater-to-repeater links such as FOIL, 10BASE-T, 10BASE-FB, and 10BASE-FL This means each 10baseT port is treated as an inter-repeater link so you can cascade up to five concentrators together before you exceed the 802.3 specification. Some hub

manufacturers (SynOptics) push the limit past the 802.3 specification and allow up to four levels of cascaded hubs. The maximum transmission path between communicating devices is then seven.



Whether the cascaded hub configuration is a better design than the backbone depends on several factors.

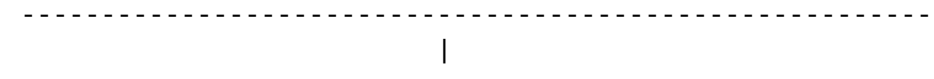
Using an Existing Backbone

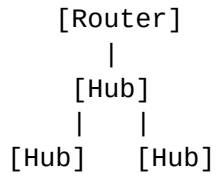
If there is an existing backbone, it might be more cost effective just to use it rather than to run new cable to support the cascaded configuration. The environment itself also plays a key role in network design. A 10BASE-T link supports distances of up to 100 meters (approximately 320 feet); a FOIL link supports distances up to 500 meters (in the maximum five segment network). These are both defined as link segments. Multiple devices can't share link segments in the way a backbone configuration would allow. Again, cost might play a key factor in choosing the right design. Running a shared backbone may be more cost effective, or it may be overkill. This is something that careful analysis of the physical location and intended network use will show.

Cascaded Network

Consider the situation where you would like to isolate the traffic from one hub. If you were to use a cascaded design, it might be more difficult to install a router or a bridge between hubs and still offer the partitioned hub reliable backbone service. The partitioned hub might be subject to additional down time in a cascaded design. If one of the hubs above it were to crash, it wouldn't be able to gain access to the backbone. If it were directly attached, it would always have reliable service no matter what other hub crashed. On the other hand, you might isolate your traffic better by putting a significant amount of your low to medium users on a big cascaded network and isolate them from the backbone with only a single router.

Backbone





The cascaded design may also offer some potential retransmission savings from the standpoint of fewer collisions, thus fewer retransmissions. In the cascaded design, the physical topology limits the number of devices on each hub-to-hub link to two (because they are "link" segments). With only two devices attached to a segment the number of collisions is greatly reduced, since only two devices are contending for the cable at any given time. If you attached each of the hubs to a single backbone, the overall throughput could be reduced (depending on the traffic patterns) because of the extra collisions and hence retransmission of data packets. Of course this will depend on predicted traffic patterns for each of the hubs.

Neither design is right or wrong; it really depends on usage requirements and budget.

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Tech Info Library Article Number:9695

Tech Info Library

Network Monitoring: Tools that Identify Missing Zones

Revised: 2/10/92
Security: Everyone

Network Monitoring: Tools that Identify Missing Zones

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Article Created: 28 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

We use Inter•Poll to get a list of all our AppleTalk zones on the network. We printed a list, generated another list, and we found that two zones were missing. Is there a utility available that will check the network, and give us a complete list, including the zones that are down?

DISCUSSION -----

If you want an automated network monitoring tool that specifically looks for zones that are missing or have been added without authorization, here are two applications that might help you:

- Network Vital Signs, from Dayna Communications

- NetWatchman, from Neon Software

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:9697

Tech Info Library

Macintosh: RPC-Based Tools

Revised: 2/10/92
Security: Everyone

Macintosh: RPC-Based Tools

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Article Created: 28 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

We developed an RPC implementation for OS/2, and would like the same functionality on the Macintosh. Is there an equivalent product for the Macintosh operating system?

DISCUSSION ----------

Netwise offers the only RPC-based tools we're aware of for the Macintosh operating system. Netwise has developed some RPC monitors and end-user applications based on RPC for the PC market, but it offers only a developers' toolkit for the Macintosh.

Also, IPT developed a peer-to-peer (Macintosh to Sun) network communications application that maintains the native user environments on both platforms.

Netwise RPC TOOL

The Netwise RPC TOOL for Macintosh computers on TCP/IP networks provides remote procedure call technology for Apple platforms. The RPC TOOL allows developers to build client/server applications for a wide variety of hardware, operating systems, and network transport environments. RPC TOOL for Macintosh supports Macintosh System 6.0 or later, and Symantec Corporation's C development environment, THINK C, version 4.0.

The Macintosh RPC TOOL allows Macintosh applications to interoperate across a TCP/IP network with applications running on diverse systems, including DEC VAX computers running VMS and ULTRIX, PCs running DOS and OS/2, Sun workstations, Unisys, Hewlett-Packard, and Data General hardware, and many other systems running UNIX variations.

Information Presentation Technologies Sun-Partner

Sun-Partner symmetrically maps network protocols and operating system commands between graphical user interfaces. Sun SPARCstations look like Macintosh computers to Macintosh users, and Macintosh computers look like Sun workstations in the OpenLook or SunView environments. Users can share and exchange data from their own user interfaces. All networked devices are available simultaneously to Sun and Macintosh users.

Sun-Partner supports LocalTalk, EtherTalk Phases 1 and 2, AppleTalk Filing Protocols, and the Apple Data Stream Protocol (ADSP) for Macintosh computers and TCP/IP ARP, RARP, and NFS protocols for Sun SPARCstations.

Each SPARCstation on a SunPartner LAN must have version 4.1 or later of Sun's operating system and an Ethernet-to-LocalTalk connection to run on Ethernet, or an sBus LocalTalk card from IPT to run on LocalTalk. An optional sBus LocalTalk card is available. Without Macintosh System 7.0, each Macintosh on a Sun-Partner network requires IPT's Personal Server Network (PSN) software. A Sun and a Macintosh connection are required for bidirectional networking.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:9698

..TIL09707-A-UX-Glossary_of_Terms_8-94_(TA48082).pdf

Tech Info Library

A/UX: Glossary of Terms (8/94)

Revised: 8/30/94
Security: Everyone

A/UX: Glossary of Terms (8/94)

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Article Created: 14 January 1992
Article Reviewed/Updated: 30 August 1994

TOPIC ----------

This document contains an edited version of the September 1989 A/UX Glossary.

DISCUSSION ----------

/usr/group. An organization of UNIX users.

/usr/tmp. The /usr subdirectory that serves as storage for temporary files that many utilities produce.

AIX. Advanced Interactive Executive; IBM's UNIX operating system.

Archer Group. The former name of UNIX International (AT&T-aligned companies).

autoconfiguration. A/UX capability to automatically configure the smallest possible kernel by checking for installed NuBus cards.

autorecovery. A/UX capability to reinstall critical system files from duplicate copies on disk. in the event of a system corruption. This is unique to Apple.

B-Net. UNISOFT's port of Berkeley Networking Services; BSD software to provide TCP/IP communication.

background processing. The ability to run programs in the background (behind the scenes) while freeing the display screen for other tasks.

Berkeley Networking Services. B-Net; a utility to provide TCP/IP communication.

binary file. Any executable file.

Bourne shell. The command shell that Steven Bourne developed at AT&T.

BSD. Berkeley Software Distribution, the University of California (Berkeley) version of UNIX. The most common versions are 4.2 and 4.3.

C. A high-level language with few hardware dependencies; the UNIX operating system is written in C.

C Shell. The command interpreter developed by U.C. Berkeley programmers

CASE. Computer-aided software engineering.

commands. See Utilities or command name

DECWindows. DEC's proprietary windowing system; the programming interface for DECwindows is incorporated in OSF's standard windowing system. It is based on X Window System from MIT.

directory. A collection of subdirectories and files; a Macintosh folder.

Federal Information Processing. The U.S. federal government's standard for computer purchases; FIPS 151 is based on IEEE's POSIX 1003.1 standard (currently based on Draft 12, Standard (FIPS) of POSIX 1003.1).

FIPS. See Federal Information Processing Standard.

GOSIP. The U.S. federal government's version of the OSI standard.

HFX. Hierarchical File Exchange; a file-translation utility to transport files between A/UX and Macintosh file systems, so users can work in either environment and transfer information

IEEE. See Institute of Electrical and Electronic Engineers

IEEE POSIX 1003. IEEE's standard for development of vendor-independent applications.

Inside Macintosh. A series of Apple documents that define standards for Macintosh application programming.

Institute of Electrical and Electronic Engineers. The organization that (among other things) creates POSIX standards.

kernel. That portion of the operating system that communicates directly with the hardware to allocate software and hardware resources.

korn shell. A revised command interface that contains features of its two predecessors, the Bourne and C shells for AT&T and Berkeley, respectively

man page. A reference manual page, available on-line with most UNIX systems.

MOTIF. OSF's windowing system. A hybrid of Microsoft's Presentation Manager, HP's New Wave, and DECwindows; It is built on the X Window System from MIT.

multitasking. The ability of a CPU to perform multiple tasks simultaneously by rapidly switching among them.

multiuser. The capability that lets more than one user at a time use the computer.

netnews. The global UNIX user bulletin board with over 500 interest groups and over 8000 recipient systems. It also includes an electronic forum for stating opinions, sharing ideas, requesting, receiving, and providing information, and posting public-domain software

Network File System (NFS). The defacto standard from Sun Microsystems for transparent file sharing. This facility enables a user on one vendor's computer to access files on another vendor's computer.

New Wave. The HP windowing system. Portions of New Wave are incorporated in OSF's standard windowing system

NFS. See Network File System

Open Software Foundation (OSF). A standard-development consortium of companies including DEC, Hewlett-Packard (Apollo), and IBM. It grew out of the so-called "Hamilton Group."

OSF1. OSF's UNIX operating system, based on IBM's AIX operating system

operating system. Software that manages a system's resources -- such as CPU, memory, I/O, disk storage, and networks.

OSF. See Open Software Foundation

OSI. A networking standard. OSI is an emerging set of communications protocols (an alternative to TCP/IP) primarily of interest to Europe and the U.S. Federal Government.

pipe. A feature of UNIX command shells that lets tools (known as filters) to be chained together to create new utilities. Piping causes the output of the first command to become the input of the second.

portability. The ability of software to move from one environment with a particular computer and operating system to another environment; transferability from one computer to another. There are two kinds: Source-level portability requires recompilation. Object-level portability requires only moving the file to the new machine.

POSIX. A set of standards formulated by IEEE as guidelines to allow for development of vendor-independent applications. POSIX 1003.1 defines the UNIX-based operating system interface standard.

Presentation Manager. Microsoft's windowing system. Its human interface constructs have been incorporated in OSF's MOTIF standard windowing system.

SASH. Stand Alone Shell of A/UX; A Macintosh application that shuts down the Macintosh OS to start A/UX. It also allows limited access to A/UX files without starting A/UX.

SCCS. See Source Code Control System.

Serial Line/Internet Protocol (SL/IP). A communications protocol that provides features of TCP/IP over slower, longer distance serial lines. Capabilities like NFS and Telnet Virtual Terminal are available over SL/IP.

shell. A specialized UNIX utility that serves as a character oriented, command-line user interface. C, Bourne, and Korn are three shells available with A/UX.

shellscript. A file containing a list of commands to be executed sequentially; a batch file.

Single-tasking. Allowing only one operation at a time. Contrast with multitasking.

single-user. Allowing only one person at a time to use the computer. Contrast with multiuser.

SL/IP. See Serial Line/Internet Protocol

Source Code Control System (SCCS). A utility developed to control versions of software source code, so they can be safely accessed by multiple programmers and writers on a large project.

superuser. System administrator on a UNIX system who has special privileges like changing file permissions, reassigning its ownership, or deleting.

SVID. See System V Interface Definition

SVVS. See System V Verification Suites

System V Interface Definition (SVID). The AT&T standard that defines core elements of the System V operating system. SVID-1 describes AT&T V.2, and SVID-2 describes AT&T V.3.

System V Verification Suites (SVVS). AT&T software that runs on a UNIX system to test whether that system meets the SVID. SVVS 1 and 2 correspond to and test for compliance with SVID 1 and 2 and V.2 and V.3, respectively.

TCP/IP. See Transmission Control Protocol/Internet Protocol.

Transfer Control Protocol/Internet Protocol (TCP/IP). A communications protocol and defacto standard protocol for Ethernet networks used by most UNIX environments. TCP/IP is typically the underlying protocol with NFS, Telnet, and X Window System.

Trusted systems. The U.S. federal government's graded approach to security standards. Also known as "Orange Book." It defines a series of levels of Trust. C1 to A1 where C2 will be the basic requirement for government security in the near future, B1 is a greater level of security and is expected to be the level typically requested for secure government bids.

UI. See UNIX International.

UNIX International (UI). A consortium of companies that follow the AT&T standard for UNIX systems. Originally created to counteract OSF's efforts (previously called Archer group)

usenet. Global Unix mail service sponsored by various universities and large corporations. It tends to be the primary method for UNIX users to share information.

utility. A program that does most operating services, like listing, copying, renaming, and removing files.

uucp. The UNIX to UNIX Copy command is a utility that enables file transfers between UNIX systems and allows automatic transmission of mail messages.

X Window System Consortium. A group originated by MIT that defines X Window System standards for future versions. Apple is a member.

X Window System. A device-independent multitasking environment, originally designed by MIT, for windowing and graphics. It operates across heterogeneous networks.

X/OPEN Standards Committee. A group begun in Europe that sets standards for UNIX and related tools. It focuses primarily on user needs and includes UI and OSF in its membership.

Yellow Pages. A distributed network database service that makes available to workstations copies of files maintained on the server. Usually used in conjunction with NFS. Licensed and developed by Sun Microsystems

Article Change History:
30 Aug 1994 - Reviewed

Support Information Services

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Tech Info Library Article Number:9707

Tech Info Library

MacX 1.1: Using with System 7.0.x (6/94)

Revised: 6/15/94
Security: Everyone

MacX 1.1: Using with System 7.0.x (6/94)

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Article Created: 14 January 1992
Article Reviewed/Updated: 15 June 1994

TOPIC ----------

Can I run MacX 1.1 under the Macintosh System Software 7.0.x?

DISCUSSION ----------

MacX 1.1 is designed for use with Macintosh System software version 6.0.x. You can also use MacX 1.1 with System 7.0.x with limitations, by following the steps in this document. (You do not need to perform these procedures if you want to use MacX 1.1 on System software version 6.0.x.)

IMPORTANT: MacX version 1.1.7 is compatible with System 7.0.x, and MacX version 1.2 is compatible with System 7.1.x. It is recommended to upgrade MacX.

If you're using MacTCP to connect your Macintosh computer to a host computer, you can use MacX 1.1 with System 7.0.x by following several setup procedures. These procedures describe several guidelines that let you use MacTCP version 1.0.2 with System 7.0.x.

Note: If you're using a connection tool other than MacTCP, the instructions in this document don't apply. For more information, contact the vendor of your connection tool.

To use MacX 1.1 with System 7.0.x, install MacX 1.1 and MacTCP 1.0.2 on your computer and then follow the instructions below.

1) Don't use Virtual Memory under System 7.0.x. Open the Memory Control Panel and make sure Virtual Memory is turned off.

2) Connect via Ethernet with MacTCP. For Token Ring access you must use MacTCP 1.1 or later with the MacTCP Token Ring extension.

3) Open the MacTCP control panel to make sure that the Ethernet icon is

present and selected. (You cannot use a DDP/IP gateway via EtherTalk, LocalTalk, or TokenTalk.)

4) Make sure the MacTCP control panel, the AdminTCP control panel, and the Hosts files are in your System Folder and NOT in the Control Panels folder.

   To copy these files to your System Folder, drag the icons for the three files to the open System Folder window. Do not drag the icons to the System Folder icon; the Finder will put them in the wrong place.

5) Restart your Macintosh computer to put these changes into effect.

You are now ready to use MacX 1.1 on your Macintosh computer running System 7.0.x. You may want to store this document in your MacX binder for quick reference.

Note: MacTCP 1.0.2 is not fully compatible with System 7.0.x. Apple Computer, Inc. does not therefore guarantee 100 percent compatibility and functionality.

Article Change History:
15 Jun 1994 - Included the MacTCP Token Ring extension and MacX 1.2.

Support Information Services

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Tech Info Library Article Number:9708

Tech Info Library

MacX 1.1.7: Needed for System 7, Not for A/UX

Revised: 2/10/92
Security: Everyone

MacX 1.1.7: Needed for System 7, Not for A/UX

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Article Created: 14 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I use both System 7 and A/UX. Do I need to update to MacX 1.1.7?

DISCUSSION ----------

If you are running MacX with A/UX, you do not need to upgrade to MacX 1.1.7. MacX has been included in A/UX since version 2.0.1 (March 1991). The next version of A/UX, which will include support for System 7, will incorporate MacX 1.1.7.

MacX 1.1.7 is the latest version of Apple's X Window System display server for the Macintosh operating system. It provides X Window System access and functionality for Macintosh computers in multivendor environments. MacX 1.1.7 provides an integrated computing environment with simultaneous access to Macintosh and X applications and the ability to cut and paste color graphics and text between them.

MacX 1.1.7 provides support for System 7. MacX users can take advantage of System 7 functionality, like Virtual Memory. This new capability expands the computer's memory through software, so that Macintosh users can run more and larger applications. MacX 1.1.7 is required for running MacX with System 7.

In addition, X11 for A/UX, Apple's complete X development environment replaces X Window System for A/UX, which used to incorporate MacX. You can use this product, which includes client applications, libraries, and tools for X Window System development. X11 for A/UX includes the software on both floppy disks and CD-ROM discs.

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..TIL09709-MacX_1-1-7-Needed_for_System_7_Not_for_A-UX_(TA48084).pdf

Tech Info Library Article Number:9709

MacX25 1.0.1: Overview

Revised: 2/10/92
Security: Everyone

MacX25 1.0.1: Overview

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Article Created: 14 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What is the latest version of MacX25, and what are its features?

DISCUSSION ----------

MacX25 version 1.0.1 is updated software for linking Macintosh computers to packet-switched data networks (PSDN) supporting the international OSI and CCITT X.25 recommendation for enterprise-wide communication.

Apple's MacX25 1.0.1 runs on Macintosh computers running System 6 or System 7, supporting any Macintosh as an X.25 client and all Macintosh II computers as servers. System 7 offers a range of services for networking, including file sharing and interapplication communication. To ease your transition to using X.25 in the newer system software environment, MacX25 version 1.0.1 retains the same set-up configuration and does not alter the interface used in MacX25 version 1.0. Access to host computers and end-user services on the PSDN is distributed from a MacX25 server to Macintosh computers over the AppleTalk network system.

For improved communication with European networks, MacPAD (the client side of MacX25) now supports 8-bit characters. Support for 8-bit characters -- in which such symbols as the German umlaut, French cedilla, and Spanish tilde are encoded -- enables businesses on both sides of the Atlantic to transfer data files transparently and to communicate in the appropriate European languages.

The new MacPAD also offers new features for flexibility in communicating across the X.25 network, including the ability to negotiate throughput parameters and the size of packet windows. In addition, because it is implemented as a connection tool for the Communications Toolbox, MacPAD

lets third-party applications, including terminal emulators, connect to host systems over the X.25 networks.

The MacX25 Programming Library, available separately for third-party developers, works in conjunction with the MacX25 server to provide X.25 access to applications. This enables developers to create Macintosh solutions giving users access to PSDNs. The library, which remains unchanged in the new version of MacX25, consists of a toolkit for such routines as initiating and terminating contact with the MacX25 server, establishing and closing down a virtual circuit, and passing data across an established circuit.

For example, an application developed in Italy uses tools in the MacX25 Programming Library to provide Macintosh-to-host access across an X.25 network. List SpA developed a cost-effective interbank trading network for the Italian banking system that enables Macintosh computers in each bank to connect to the system's mainframe over the X.25 network.

Apple's MacX25 conforms to the Open Systems Interconnect (OSI) model and Consultative Committee on International Telephone and Telegraph's (CCITT) X.25 recommendation for communication with packet-switched data networks (PSDN). Because of their cost-effective use of leased lines to transmit information over long distances, X.25 PSDNs offer an increasingly popular means for electronic communication internationally.

MacX25 consists of server and client software. The MacX25 server software lets a Macintosh on an AppleTalk network be set up as a single entry point to the PSDN. Server-based access reduces the cost of global connectivity by maximizing use of expensive resources, like leased lines. MacPAD client software works in conjunction with the server software to provide packet assembler/disassembler connectivity to the PSDN.

MacX25 features a graphics-based administrator's application that facilitates configuration and administration of the server. An address service lets administrators set addressing details on the Macintosh server.

Running the server component of MacX25 1.0.1 under System 7 requires 4MB of RAM; the client side needs 2MB. To run MacX25 1.0.1 server software with System 6.0.7 requires 2MB of RAM; the client side needs 1MB.

MacX25 supports the following standards and recommendations: CCITT X.25 1980 and 1984 versions and Packet Assembler/Disassembler (CCITT X.3, X.28 and X.29).

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Tech Info Library Article Number:9710

Tech Info Library

A/UX: Purpose of X Windows (9/94)

Revised: 9/22/94
Security: Everyone

A/UX: Purpose of X Windows (9/94)

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Article Created: 15 January 1992
Article Reviewed/Updated: 22 September 1994

TOPIC ----------

Who would purchase X window system for A/UX?

DISCUSSION ----------

People who want to run the X11 native environment on a Macintosh or need to develop X Window System applications should use X Window System for A/UX. It includes X11 Release 4 with libraries, toolkits, and clients for development.

If you need access to X Window System applications, you do not need to purchase X Window System for A/UX. A/UX 3.0 includes MacX and the X Window System display server software.

Article Change History:
22 Sep 1994 - Reviewed
15 Jan 1993 - Reviewed.

Support Information Services

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Tech Info Library Article Number:9713

Tech Info Library

A/UX 2.0.1: Compatibility with Macintosh Applications

Revised: 9/11/92
Security: Everyone

A/UX 2.0.1: Compatibility with Macintosh Applications

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Article Created: 15 January 1992
Article Last Reviewed: 31 August 1992
Article Last Updated: 31 August 1992

TOPIC ----------

Which Macintosh applications run on A/UX?

DISCUSSION ----------

With A/UX, users have access to the wide range of Macintosh applications available at local dealers -- the same application binaries that run on the Macintosh OS. There is only one restriction: Applications must follow the "Inside Macintosh" development guidelines for 32-bit cleanliness.

This is also a requirement for applications that run with virtual memory on Macintosh System 7. All key industry software developers are moving in this direction. Many already offer mainstream applications which are 32-bit clean and thus run on A/UX 2.0.1. This group includes Microsoft, Claris, Aldus, and Informix. A complete list of applications is included in the A/UX Third Party List on AppleLink under the A/UX icon.

As a transitional step, A/UX 2.0.1 also includes a 24-bit environment which allows users to run many applications which are not yet 32-bit clean.

All applications that run on A/UX 2.0 also run on A/UX 2.0.1. The applications categories include Macintosh, UNIX, X Window System, Motif (from Integrated Computer Solutions) and MS-DOS applications (using SoftPC from Insignia Solutions).

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Tech Info Library Article Number:9715

Tech Info Library

A/UX: Compatible UNIX Applications (9/94)

Revised: 9/21/94
Security: Everyone

A/UX: Compatible UNIX Applications (9/94)

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Article Created: 15 January 1992
Article Reviewed/Updated: 21 September 1994

TOPIC ----------

Which UNIX applications run on A/UX?

DISCUSSION ----------

The UNIX application community has expressed a lot of interest in porting UNIX and X Window System applications to A/UX and for new development work. A good example is Oracle; they have ported their UNIX database to A/UX and have provided Macintosh tools to access this data easily.

Many UNIX development tools have also been ported to A/UX. Refer to the Redgate Library on AppleLink for a list of compatible third party products. In addition, many of our largest A/UX customers are asking these application developers to support A/UX.

Article Change History:
21 Sep 1994 - Reviewed.
31 Aug 1992 - Reviewed.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:9716

Tech Info Library

AppleTalk Remote Access: AppleEvents Support

Revised: 2/11/92
Security: Everyone

AppleTalk Remote Access: AppleEvents Support

==========

Article Created: 28 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

What AppleEvents does the Remote Access application support? I'm looking for a capability to request a connect and/or disconnect from the AppleTalk Remote Access application via AppleEvents.

DISCUSSION -----

Remote Access supports only the AppleEvents from the required suite:

- Open Application
- Open Document
- Quit Application

It doesn't support Print Document because AppleTalk Remote Access doesn't have a print option.

After installing AppleTalk Remote Access, if you launch Remote Access without configuring Remote Access Setup, a dialog box appears asking if you would like to do so. At that point, AppleTalk Remote Access sends the Finder an "Open" Remote Access Setup AppleEvent.

As an alternative, you may want to use the AppleTalk Remote Access Application Programming Interface (API). It would be possible to have your application access the API directly, or to have your application send an AppleEvent to a program that accesses the API directly.

Details of the API external reference specifications are available from APDA in the AppleTalk Remote Access Developer's Toolkit. Part number R0128LL/A.

..TIL09733-AppleTalk_Remote_Access-AppleEvents_Support_(TA48090).pdf

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9733

Tech Info Library

Macintosh 16 Color Display: Compatibility and Bit Depth Info

Revised: 5/5/92
Security: Everyone

Macintosh 16" Color Display: Compatibility and Bit Depth Info

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Article Created: 27 January 1992
Article Last Reviewed: 5 May 1992
Article Last Updated: 5 May 1992

TOPIC -----

This article provides compatibility and bit depth information for the Macintosh 16" Color Display when used with Macintosh computers and Apple's video cards.

DISCUSSION -----

Model	Card	Bit Depth
Macintosh IIci	On-board Video	Not Compatible
Macintosh IIsi	On-board Video	Not Compatible
Macintosh LC	On-board Video	Not Compatible
Macintosh II Series	Macintosh II Video Card	Not Compatible
Macintosh II Series	Macintosh II Hi-Res Video Card	Not Compatible
Macintosh II Series	Macintosh Display Card 4•8	8-bitΔ
Macintosh II Series	Macintosh Display Card 8•24	8-bitΔ
Macintosh II Series	Macintosh Display Card 8•24 GC	8-bit*
Macintosh II Series	Macintosh Display Card 8•24 GC (Rev B)	8-bit/16-bit

Δ The original Macintosh Display Card 8•24 and Macintosh Display Card 4•8 require a ROM upgrade kit (service part #076-0548). The new ROM (part #341-0868) provides support for the Macintosh 16" Color Display.

** The original Macintosh Display Card 8•24 GC requires a ROM upgrade kit (service part #076-1019). The new ROM (part #341-0266) provides support for the Macintosh 16" Color Display.

Note: All current Finished Goods for the Macintosh Display Card 8•24 and Macintosh Display Card 8•24 GC are shipping with Macintosh 16" Color Display support (new ROMs).

Macintosh Quadra Series

Model	Bit Depth
Macintosh Quadra 700	8-bit/32-bit**
Macintosh Quadra 900	8-bit/32-bit**

** The 32-bit support includes 24-bit support (16.7M colors) as well as an 8-bit alpha channel.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9736

Tech Info Library

Macintosh 21 Color Display: Disabling Automatic Degauss Feature

Revised: 3/10/92
Security: Everyone

Macintosh 21" Color Display: Disabling Automatic Degauss Feature

==========

Article Created: 27 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What is the purpose of the Macintosh 21" Color Display automatic degauss feature, and can it be disabled?

DISCUSSION ----------

All color monitors can lose purity (manifested as faint blotches of color on the display) when the monitor is moved to a different location, turned on its base, or influenced by an external magnetic field. In the past, the only methods for correcting this problem were either to switch off the monitor and then switch it back on, or to enable the degauss switch. When you switch on the monitor, the monitor degauss circuit operates for a fraction of a second to restore screen purity.

The Macintosh 21" Color Display does this automatically. When any of the aforementioned conditions occurs, the monitor emits an audible beep and degausses itself. The entire process takes less than a second. However, some locations where computers are used may be exposed to intermittent external magnetic fields, which can trigger the display's automatic degauss circuit and may be annoying to the user.

This feature can be safely disabled by disconnecting connector X911, mounted on the Position Sensor Board. The Position Sensor Board is located above the CRT neck and just behind the deflection yoke.

Once the connector is disconnected, the only way to degauss the monitor is by pressing the degauss switch at the back of the monitor.

Note

..TIL09737-Macintosh_21_Color_Display-Disabling_Automatic_Degauss_Feature.pdf

Disabling the automatic degauss feature may cause the display to exhibit a tilting or leaning affect. This is because the position sensor is also used to compensate for stray magnetic fields, which may cause raster tilting.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9737

Tech Info Library

Mac Video Cards: Older Versions Compatible With Mac II Series

Revised: 6/22/92
Security: Everyone

Mac Video Cards: Older Versions Compatible With Mac II Series

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Article Created: 27 January 1992
Article Last Reviewed: 15 June 1992
Article Last Updated: 15 June 1992

TOPIC ----------

Are the older versions of the Macintosh video cards compatible with all Macintosh II series computers?

DISCUSSION ----------

Yes. The older 4-bit and 8-bit Macintosh video cards (661-0376 and 661- 0492, respectively) are compatible with all Macintosh II series computers, including the Macintosh IIfx. They're also compatible with the Macintosh Quadra computers.

Here's some additional information that might be useful. The older style video cards do not have sense line capabilities. This means that, when more than one older type video card is installed, the Macintosh will start up to the card nearest the power supply NuBus slot. Or, when older type video cards are used in combination with later version video cards, the Macintosh will always start up to the older version video card, regardless of NuBus slot positioning.

The older style video card takes precedence because of its lack of sense line capability.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9739

Tech Info Library

Service Source CD-ROM: DART 1.4 May Give Erroneous Virus

Revised: 2/11/92
Security: Everyone

Service Source CD-ROM: DART 1.4 May Give Erroneous Virus Warning

==========

Article Created: 28 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

When I try to run DART from my Service Source CD, I get a warning message that the DART program is infected with a virus and I should quit the program as soon as possible and load new software from backups.

Is the Service Source CD infected with a virus?

DISCUSSION ----------

The Service Source CD does not have a virus on it. The DART application on the CD is an older version (1.4). When DART 1.4 is launched on some systems (Macintosh IIfx and Macintosh Quadra series) running system software version 7.0.1, it presents a dialog box stating that there is a virus. This seems to be a problem with DART 1.4.

The latest version of DART (1.5) does not exhibit this problem. The Service Source group is aware of the problem and will be removing the DART application from future releases of the Service Source CD.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9740

Tech Info Library

LaserWriter: Using in a Classified Environment

Revised: 8/26/92
Security: Everyone

LaserWriter: Using in a Classified Environment

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Article Created: 27 January 1992

Article Change History

08/25/92 - REVIEWED
- For technical accuracy.

TOPIC ----------

I use my LaserWriter II in a classified environment. Does the LaserWriter II contain any non-volatile RAM that can be used to store classified information?

DISCUSSION ----------

It would be very difficult to store a user program or data in the LaserWriter printer's EEROM or ZPRAM. The only documented way to write information to non-volatile memory is to use the PostScript operators as defined in the "PostScript Language Reference Manual". There is a way to write directly to non-volatile memory, but Adobe does not make this information available to the public.

Here's a list of LaserWriter printers and the amounts and locations of non-volatile memory:

Printer	Amount & Location of Non-Volatile Memory
LaserWriter	512 bytes of EEROM
LaserWriter Plus	512 bytes of EEROM
LaserWriter IISC	none
LaserWriter IINT	512 bytes of EEROM
LaserWriter IINTX	2048 bytes of ZPRAM

LaserWriter IIf	8192 bytes of EEROM
LaserWriter IIg	8192 bytes of EEROM
Personal LaserWriter LS	none
Personal LaserWriter SC	none
Personal LaserWriter NT	2048 bytes of EEROM

The EEROM and ZPRAM components are soldered into place and cannot be removed easily for servicing. There is no way to erase the non-volatile memory via PostScript.

Most sites operating in a classified environment have a designated security officer who is responsible for ensuring that no equipment with non-volatile RAM or other storage capabilities is released from the classified area. Providing the EEROM and ZPRAM information listed above should be sufficient for the security officer to determine whether the board can be released from a classified environment.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9742

Tech Info Library

No One-Keystroke Way to Change Desktop Color

Revised: 7/24/92
Security: Everyone

No One-Keystroke Way to Change Desktop Color

==========

Article Created: 22 January 1992
Article Last Reviewed: 14 July 1992
Article Last Updated: 14 July 1992

TOPIC ----------

What is the key combination to change the desktop color of my Macintosh?

DISCUSSION ----------

There is no Apple-provided key combination that changes the color of your Macintosh desktop. If you've seen someone change the desktop color this way, it was most likely with a product that was used to automate the process of using a control panel to change the desktop color. Look for third party macro programs like QuicKeys which may be able to accomplish this for you.

For more information, search on "CE Software" and "3rd".

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9744

..TIL09745-Personal_LaserWriter_LS-Use_100_ns_or_Faster_DRAM_8-95_(TA48100).pdf

Personal LaserWriter LS: Use 100 ns or Faster DRAM (8/95)

Revised: 8/22/95
Security: Everyone

Personal LaserWriter LS: Use 100 ns or Faster DRAM (8/95)

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Article Created: 22 January 1992
Article Reviewed/Updated: 22 August 1995

TOPIC ----------

Can I use 60 ns 256K x 4-bit DRAM to upgrade a Personal LaserWriter LS?

DISCUSSION ----------

Yes. The Personal LaserWriter LS specifications state that you can use RAM rated at 100 ns or faster, and 60 ns RAM is faster than 100 ns RAM. Although the RAM is rated faster than 100 ns, it still will be accessed at the 100-ns rate.

Article Change History:
22 Aug 1995 - Corrected type of DRAM used.

Support Information Services

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Tech Info Library Article Number:9745

Tech Info Library

Envisio, Inc. (Aquired by Mirror Technologies, Inc.)

Revised: 4/4/97
Security: Everyone

Envisio, Inc. (Aquired by Mirror Technologies, Inc.)

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Article Created: 01/23/92
Article Reviewed/Updated: 4 April 1997

Envisio, Inc. (Aquired by Mirror Technologies, Inc.)
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305 Second St. NW
St. Paul, MN 55112

612-628-6288

612-633-1083 Fax

Company Profile:
Hardware, specializing in peripherals for the Macintosh PowerBook and Macintosh Portable, i.e. video cards, docking station for PowerBook Duos, and a color active matrix display for PowerBooks.

Article Change History:
05 Jul 1994 - Corrected spelling in title.
08 Jul 1993 - Name Information Added, address and phone number changed.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:9747

Tech Info Library

HDI-30 SCSI System Cable: Connects PowerBook to a SCSI Device

Revised: 5/17/94
Security: Everyone

HDI-30 SCSI System Cable: Connects PowerBook to a SCSI Device

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Article Created: 23 January 1992
Article Reviewed/Updated: 31 July 1992

TOPIC ----------

Is the Apple HDI-30 SCSI Disk Adapter Cable for the Macintosh PowerBook 100 compatible with the Dayna EZ-10BASE T SCSI interface, and can I use this cable to connect the Dayna product to the PowerBook 100?

DISCUSSION ----------

No. The Apple HDI-30 SCSI Disk Adapter Cable cannot be used as you describe. This cable is used to connect a PowerBook 100 to another Macintosh, which enables the PowerBook 100 to be used as an external hard drive on the other Macintosh system.

The Apple HDI-30 SCSI System Cable is used to connect any Macintosh PowerBook to an external SCSI device that conforms to SCSI standards. This cable is 19 inches long and has a standard 50-pin male SCSI connector. We don't have any specific compatibility information about the Dayna product at this time.

Support Information Services

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Tech Info Library Article Number:9748

Tech Info Library

PowerBook: Two Sources for Internal Video Adapter Cards

Revised: 5/17/94
Security: Everyone

PowerBook: Two Sources for Internal Video Adapter Cards

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Article Created: 23 January 1992
Article Reviewed/Updated: 31 July 1992

TOPIC ----------

Do you know of any companies that make internal video adapter cards for the Macintosh PowerBook computers?

DISCUSSION ----------

ComputerCare, Inc. and Envisio, Inc. manufacture internal video adapter cards for the Macintosh PowerBook computers.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9749

Tech Info Library

PowerBook Modem: Some AT Command Usage Differences From Hayes

Revised: 5/17/94
Security: Everyone

PowerBook Modem: Some AT Command Usage Differences From Hayes

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Article Created: 23 January 1992
Article Reviewed/Updated: 31 July 1992

TOPIC ----------

I have noted a problem with the Macintosh PowerBook Fax/Data Modem. It appears to get confused and is unable to take a phone line "Off Hook" when a program tries to place a call. All I hear is a clicking sound.

DISCUSSION ----------

The PowerBook Fax/Data Modem is mostly Hayes compatible; however, there are some differences with AT command usage. One command that was changed is the escape sequence. To take it "Off Hook", use +++AT<cr> without any wait delay. This is documented in the Macintosh PowerBook manual.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9750

LaserWriter IIg: How Printer Handles Three Communication Ports

Revised: 2/14/92
Security: Everyone

LaserWriter IIg: How Printer Handles Three Communication Ports

==========

Article Created: 28 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

How does the Apple LaserWriter IIg handle print jobs among the three communication ports?

DISCUSSION ----------

The LaserWriter IIg has three communication ports that can be active simultaneously. Special arbitration logic controls the activity between the three ports. The port arbitration has nothing to do with the LocalTalk or EtherTalk PAP layer connection arbitration.

Because PostScript can process only one job at a time, only one port can have access to the printer at any given time. The ports are polled in a round-robin fashion until activity is sensed in one of the three ports. Polling is then terminated as a connection is established and execution of a job begins. A connection, in this sense, refers to the dedication of the printer to a communication port while PostScript jobs are received from a host. AppleTalk ports may process multiple jobs during a single connection while the other serial port connections consist of only one job. A non-AppleTalk connection is considered terminated when an EOF (end-of-file indicated end-of-job) character is received.

The port arbitration cycle begins whenever a connection is terminated by a host. The polling order is determined by starting with whichever port has gone unpolled for the longest period of time. The port waiting the next longest is the next to be polled, with the last active port being the last to be polled again. This procedure ensures that one port will not dominate the printer. If a port is opened directly by an active PostScript job, that port is excluded from arbitration until it is again closed. An example of this type of port activity is when a serially connected sheet feeder is

opened by a PostScript job.

All three ports respond to status request, with current printer status, unless they are excluded from the port arbitration cycle due to being opened directly by a PostScript job or just configured inactive. Directly opened ports may either respond with stale status or not respond at all. Ports that are not arbitrated due to configuration may not respond or even appear on the network.

Polling an AppleTalk Port

Printer	AppleTalk Port Driver
inquire->	Any Open Conn on this port since last inquire or last closed connect (which ever occurred last)? YES = True NO = False
If True->	GetNextjob - uses PAP connect arbitration to get oldest of valid OpenConn request for this port.* If no OpenConn is received by 5 second time-out, GetNextJob cancelled and port arbitration cycle resumed. If OpenConn is received in time, connection established and PostScript job is read and executed. At end of job, close connection and resume port arbitration cycle.
If False->	Poll next port

*GetNextJob is active on only one AppleTalk port at a time and never for more than 5 second timeout.

Polling a Serial Port

inquire->	Any characters received on this port since last inquire or last EOF (whichever occurred last?) Yes = True No = False
If True->	Open connection established and PostScript job is read and executed from that port. At end of job, close connection and resume port arbitration cycle.
If False->	poll next port

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Tech Info Library Article Number:9755

Tech Info Library

Macintosh: Correcting ID -127 Internal File System Error

Revised: 2/13/92
Security: Everyone

Macintosh: Correcting ID -127 Internal File System Error

==========

Article Created: 10 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a Macintosh II running system software version 6.0.5 and AppleShare 2.0.1 as a network server.

Using the AppleShare Admin program, I tried to change a group of nested folders from locked to unlocked. When I clicked the Locked box and selected the Change All Enclosed Folders option, I got error ID -127. I don't get this error message if I unlocked the folders individually.

DISCUSSION ----------

Error ID -127 is an internal file system error. You may have a damaged directory tree.

Here are some corrective measures to try:

- Start up the Macintosh from the System Tools Disk and run Disk First Aid to repair any minor damage.

- Rebuild the desktop. To rebuild the desktop, press and hold the Option and Command keys while starting up the Macintosh until you see the message asking whether you want to rebuild the desktop.

- Reinstall the system software and the AppleShare software.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9759

Tech Info Library

LaserWriter IIf and IIg: Controller Board Slot Is for Testing

Revised: 3/4/92
Security: Everyone

LaserWriter IIf and IIg: Controller Board Slot Is for Testing

==========

Article Created: 14 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I noticed that on the LaserWriter IIg controller board there is a socket that looks like the usual processor-direct slot (not the SIMM slots). What is it for?

DISCUSSION ----------

This slot is used by test fixtures at the factory and Level 2 service repair center to test the LaserWriter IIf and IIg logic boards. It is analogous to the edge connector on the Macintosh II logic board.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9761

Tech Info Library

Macintosh: Spacing and Font Substitution

Revised: 7/21/92
Security: Everyone

Macintosh: Spacing and Font Substitution

==========

Article Created: 29 January 1992
Article Last Reviewed: 8 June 1992
Article Last Updated:

TOPIC -----

I'm using system software version 6.0.7 and printing text in Geneva. Instead of getting the bitmapped font, I want to substitute it for Helvetica. I checked the Font Substitution box in Page Setup…, but the printout isn't exactly the same size and spacing as the one printed in Helvetica. Shouldn't it be the same in both Helvetica and Geneva?

DISCUSSION -----

When using font substitution (in this case substituting Helvetica for Geneva), the font used in place of Geneva (Helvetica) will use the Geneva spacing, not the Helvetica spacing. The point size, however, should be the same (that is, Geneva 12 point will substitute Helvetica 12 point). Only the spacing will be different.

Two versions of the same document (one using Geneva on screen and one using Helvetica on screen) would look different when printed, even though you print both documents in the same font (Helvetica).

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9762

OneScanner: Not Recognized at Startup (2/95)

Revised: 2/27/95
Security: Everyone

OneScanner: Not Recognized at Startup (2/95)

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Article Created: 29 January 1992
Article Reviewed/Updated: 27 February 1995

TOPIC ----------

I've had an ongoing problem with a Macintosh Quadra 700 and the Apple OneScanner. The OneScanner worked once, then failed. I checked the Macintosh Quadra for proper drive termination, and reseated/replaced the SCSI cable.

I've used both gray and black terminators on the scanner, no terminators, terminators on both ports, and replaced the scanner cable. The order in which I turn devices on doesn't seem to matter. I can't get any configuration to work consistently. What do you suggest?

DISCUSSION ----------

All Apple OneScanners with ROM version 2.02 could have a SCSI ID recognition problem when connected to any Macintosh Quadra or Power Macintosh computer. The Apple OneScanner is not recognized on the SCSI bus if the OneScanner is powered on before the Macintosh.

There is a workaround to this recognition problem:

Using the OneScanner with a Quadra or Power Macintosh
---

1) Power on the Macintosh, and let it start up to the Finder.

2) Power on the Apple OneScanner.

The OneScanner has, approximately, a 12 to 13 second power-on sequence. This power-on sequence consists of a variety of audible motor calibrations. The sequence is complete when you hear the last sound -- about 12 seconds after switching on the power.

Using the OneScanner With a Quadra Running A/UX
---

1) Power on the Apple OneScanner.

The OneScanner has, approximately, a 12 to 13 second power-on sequence. This power-on sequence consists of a variety of audible motor calibrations. The sequence is complete when you hear the last sound -- about 12 seconds after switching on the power.

2) Power on the Quadra.

3) Start up A/UX, and wait for the Log-in screen. DO NOT log in.

4) Turn off the Apple OneScanner, wait a few seconds, and turn the Apple OneScanner back on.

5) Log in to A/UX.

The Apple OneScanner should be recognized now. If not, try the process again.

Notes

• Use the standard gray terminator with the OneScanner and the Quadra or Power Macintosh.

• Apple has tested these workarounds, and they seem to work in most instances. However, Apple makes no guarantee that these workarounds are successful 100% of the time.

• This Apple OneScanner recognition problem applies only to the Macintosh Quadra and Power Macintosh series. No other Macintosh models are affected.

• The Apple OneScanner ROM version 2.03 corrects the recognition problem, and Apple Service inventory consists of the upgraded boards.

If you are unsure which ROM revision your Apple OneScanner (or any other SCSI device) has, connect the SCSI device to a Macintosh computer and launch a product called SCSI Probe 3.4 or later. SCSI Probe provides the SCSI ID, device type, vendor info, product name, and version information.

• Apple OneScanner owners with Macintosh Quadra computers who want to upgrade to ROM version 2.03, instead of using the workaround, should contact their authorized service providers for a replacement board.

These articles can help you locate software updates mentioned here:

• Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

• Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple

support information, and a subset of the Apple Tech Info Library

Article Change History:
27 Feb 1995 - Slight change to formatting.
26 Sep 1994 - Reviewed article and included information on getting
software online.
18 May 1994 - Included Power Macintosh computers.

Support Information Services

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Tech Info Library Article Number:9763

Tech Info Library

QuickTime: Guidelines for Using Compressors

Revised: 3/4/92
Security: Everyone

QuickTime: Guidelines for Using Compressors

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Article Created: 8 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

We are a little confused about compression alternatives, and uncertain about how we might accelerate compression. When does JPEG make sense?

DISCUSSION -----

Below is a section from the QuickTime Developer's Guide that is included on the QuickTime 1.0 Developer's CD. It gives specific information about each of the compressors that Apple has included in QuickTime, including guidelines on when each should be used.

Photo Compressor

The photo compressor implements the Joint Photographic Experts Group (JPEG) algorithm for image compression. JPEG is an international standard for compressing still images. The version of JPEG supplied with QuickTime complies with the baseline International Standards Organization (ISO) standard bitstream, version 9R9. This algorithm is best suited for use with still images.

The photo compressor performs best on images that vary smoothly or that do not have a large percentage of their areas devoted to edges or other types of sharp detail. This is the case for most natural images. In practice, you will find that compression ratios are highly dependent on source images, but they generally range from 5:1 to 50:1 at 24 bits-per-pixel, with good picture quality resulting from compression ratios between 10:1 and 20:1.

Picture quality is generally very good to exceptional and is often good enough for use in demanding desktop publishing applications. Very high-

resolution images obtained through the use of 24-bit color scanners would best be compressed using the photo compressor.

On a Macintosh IIsi using a compression ratio of 10:1, the photo compressor can compress a 24-bit 640-by-480 pixel image at a normal quality setting in 7.5 seconds. Decompressing the same image takes 7 seconds.

Video Compressor

The video compressor employs an image-compression method developed by Apple. This method was designed to permit very fast decompression times while maintaining reasonably good picture quality. This algorithm's rapid decompression allows applications to display 24-bit images at interactive speeds. This algorithm is best suited for use with sequences of video data.

The video compressor is best suited to digitized video content rather than synthetically generated images. This compressor supports both spatial and temporal compression. If you use only spatial compression, you obtain compression ratios from 5:1 to 8:1 with reasonably good quality at 24-bit pixel depths. If you use both spatial and temporal compression, the compression ratio range extends from between 5:1 to 25:1.

The video compressor can be used for computer animation as well as digitized video, but you obtain higher image quality using the animation compressor. Similarly, the animation compressor can be used for digitized video as well as animation, though you obtain higher compression ratios from the video compressor.

On a Macintosh IIsi using a compression ratio of 6.5:1, the video compressor can compress a 24-bit 640-by-480 pixel image at a normal quality setting in 3.5 seconds. Decompressing the same image takes 1.0 second.

Animation Compressor

The animation compressor employs a compression algorithm developed by Apple. This technique is best suited to animation and computer-generated video content. In addition, the animation compressor can be used to compress sequences of screen images, as might be generated for a training application.

The algorithm employed by the animation compressor is similar to applying the PICT image format to the temporal domain. A PICT image is stored in run-length encoded format and is lossless. The animation compressor also stores images in run-length encoded format. However, the animation compressor can work in either a lossy or lossless mode. The lossless mode maintains picture content precisely, storing an animation as a series of run-length encoded images. The lossy mode loses some quality, but is fast enough for real-time playback.

The animation compressor's performance and achieved compression ratios are highly dependent on the type of images in a scene. The animation compressor is very sensitive to picture changes, and works best on a clean image that has been generated synthetically. Images captured from

videotape generally have considerable visual noise, which can corrupt the inherent similarity of the pixels and make it more difficult for the animation compressor to achieve good compression.

On a Macintosh IIsi using a compression ratio of 1.3:1, the animation compressor can compress a 24-bit 640-by-480 pixel image at a normal quality setting in 2.0 seconds. Decompressing the same image takes 1 second.

Graphics Compressor

The graphics compressor employs a compression algorithm developed by Apple. This compressor is best suited to 8-bit still images and image sequences in applications where compression ratio is more important than decompression speed.

The graphics compressor is a good alternative to the animation compressor whenever performance is less important than compression ratio. In general, the graphics compressor generates a compressed image that is one-half the size of the same image compressed by the animation compressor. However, the graphics compressor can decompress the image at only half the speed of the animation compressor. Therefore, you should consider using the graphics compressor with relatively slow storage devices, such as CD-ROM. In these circumstances, the graphics compressor has sufficient time to decompress the image or image sequence.

On a Macintosh IIsi using a compression ratio of 2.5:1, the graphics compressor can compress a 24-bit 640-by-480 pixel image that has been dithered to 8-bit pixel depth at a normal quality setting in 17.0 seconds. Decompressing the same image takes 1.0 second.

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Tech Info Library Article Number:9766

Tech Info Library

Qume QVT101 Emulation on Macintosh

Revised: 3/4/92
Security: Everyone

Qume QVT101 Emulation on Macintosh

==========

Article Created: 7 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Can the Macintosh emulate a Qume QVT101 terminal (a superset of VT100)?

When I use standard VT100 emulation on the Qume QVT101, I can't do some operations. The Qume QVT101 has some extra features on top of the normal VT100, and applications on the mini want to see the QVT100 and use those additional features.

DISCUSSION -----

We checked with Qume and found that the Qume QVT 101 emulated the Hazeltine 1500, TeleVideo 910 and Lear/Seigler 3A5 terminals. The Qume QVT 101 is an obsolete product.

MacEmulate from Cornerstone Data Systems emulates both the Hazeltine 1500 and the Televideo 910.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder. Or search on "Cornerstone".

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Tech Info Library Article Number:9769

Tech Info Library

DAL 1.3: Recognizing Public Synonyms in Oracle (6/93)

Revised: 6/16/93
Security: Everyone

DAL 1.3: Recognizing Public Synonyms in Oracle (6/93)

==========

Article Created: 13 February 1992

Article Change History

06/11/93 - UPDATED
- DAL 1.3.6 available

TOPIC ----------

I'm having a problem with the DAL Oracle adapter for Oracle version 6.0. Apparently, objects specified through public synonyms aren't recognized. To reproduce the problem, create a table in one account with a public synonym and grant SELECT on the table to the public. Next, log on with a different account and try to access the table using the synonym. This doesn't work. DAL will, however, recognize the table by way of owner.table_name. It appears that the adapter isn't querying the view ALL_SYNONYMS to provide complete access to a user's accessible objects.

This is our configuration:

- DAL version 1.3

- Oracle Adapter 1.3 for Oracle 6.0

DISCUSSION ----------

This problem has been fixed in DAL 1.3.6. Update DAL to the current version.

- If you purchased PATHWORKS from DEC, contact DEC.

- If you have a DAL support contract with the Direct Response Center (DRC) or are under DRC support warranty, contact the DRC.

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Tech Info Library Article Number:9776

Tech Info Library

DEC VT100, 101, and 102 Terminals: Have No Function Keys

Revised: 3/9/92
Security: Everyone

DEC VT100, 101, and 102 Terminals: Have No Function Keys

==========

Article Created: 13 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

We're installing MacTerminal 3.0 on a Macintosh SE/30 with an extended keyboard II to do VT100, 101, or 102 emulation on a SCO Xenix 2.3.4 system. The function keys 1 through 5 don't operate.

DISCUSSION -----

Because you're trying to emulate DEC VT100, VT101, or VT102 terminals, we assume you're using the VT102 Tool rather than VT320.

This isn't a problem with MacTerminal 3.0, or the VT102 Tool. If you look at the real DEC VT100, 101, or 102 terminals, they don't have any Function Keys such as F1 through F20. They only have the PF keys, PF1 through PF4 -- the top four keys on the keypad. The VT102 Tool maps these keys to the Keys menu, or the Macintosh keyboard keypad:

	Key Pad Keys
PF1	Num lock/Clear
PF2	=
PF3	/
PF4	*

So, since the VT102 Tool emulates the VT102 terminal, it doesn't have to provide the function keys F1 through F5, which don't exist on the real terminal.

On the real VT320 keyboard, F1 through F5 are Hold Screen, Print Screen, Set Up, F4, and Break, respectively. The VT320 emulates all except the F4 keys in the VT320 Tool using the File Menu, Settings Menu, Session Menu, or

Option Keys combination.

You will have to reprogram your application to accept other keys, if that's possible. The VT320 Tool will allow mapping of function keys F6 through F20.

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Tech Info Library Article Number:9777

Tech Info Library

Neon Software, Inc.

Revised: 4/4/97
Security: Everyone

Neon Software, Inc.

==========

Article Created: 3 February 1992
Article Reviewed/Updated: 4 April 1997

Neon Software, Inc.

3685 Mount Diablo Blvd.
Suite 203
Lafayette, CA 94549

510-283-9771

510-283-6507 Fax

Internet: neon.sw@applelink.apple.com

Company Profile:
Software, develops and markets intelligent, easy-to-use software tools that improve user proctivity in networked environments. Specifically oriented towards network management tools that run on the Macintosh. LANsurveyor, a network problem solver. NetMinder, a software protocol analysis tool to help solve difficult communications and hardware level problems. TrafficWatch II, monitors and graphs network traffic. RouterCheck, route tracker, route configuration problem solver.

Support Information Services

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Tech Info Library Article Number:9780

Tech Info Library

Netwise, Inc.

Revised: 7/14/93
Security: Everyone

Netwise, Inc.

==========

Article Created: 3 Febuary 1992
Article Reviewed/Updated: 14 July 1993

Netwise, Inc.

2477 55th Street
Boulder, CO 80301

303-442-8280

303-442-3798 Fax

Company Profile:
Specializing in RPC-based tools for the Macintosh operating system, TransAccess performance multi-tier integration and emulation system.

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Tech Info Library Article Number:9781

Tech Info Library

AppleTalk, TCP/IP, and IPX: Simultaneous Routing

Revised: 3/24/92
Security: Everyone

AppleTalk, TCP/IP, and IPX: Simultaneous Routing

==========

Article Created: 6 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Are there any third-party software products that allow simultaneous routing of TCP/IP, IPX, and AppleTalk?

DISCUSSION -----

Novell

There's a Novell router-only product -- basically a Novell 3.11 server without the server capabilities. The product name is Novell Multiprotocol Router 1.0. It supports the routing of IPX, TCP/IP, AppleTalk, and Arcnet.

The NetWare Multi-Protocol Router v1.0 provides customers with a standalone router solution that includes the AppleTalk router. The Multi-Protocol Router provides routing of AppleTalk packets across a Novell network.

IBM

The IBM 6611 Network Processor routes AppleTalk protocol. The IBM 6611 -- which also supports routing for TCP/IP, DECnet, NetBIOS, IPX and XNS networks and SNA data link switching -- enables AppleTalk users to connect to a wide variety of local and remote communications resources located on their network.

AppleTalk

AppleTalk, Apple's local area network protocol suite, is built into every Macintosh computer and networked LaserWriter, and provides users with easy access to network resources. The dynamic nature of AppleTalk allows easy growth, change and automatic reconfiguration of networks. AppleTalk

ensures resources are viewed in a consistent manner, independent of the computing platform on which the resources reside. AppleTalk protocols are broadly licensed and supported by leading equipment manufacturers.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9782

FriendlyNet: Fiber-Optic Transceivers

Revised: 3/26/92
Security: Everyone

FriendlyNet: Fiber-Optic Transceivers

==========

Article Created: 11 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I need to know if anyone manufactures a fiber transceiver for the Macintosh to plug into the Quadra (Friendly Net connector). We're running fiber instead of twisted/thin/thick Ethernet cable. It will be at Ethernet speed, but the cable type is fiber. Do you know of any companies that have such a product?

DISCUSSION -----

There are no FriendlyNet compatible fiber-optic transceivers available at this time. The Ethernet specification (10BASE-F) for data transmission using fiber hasn't yet been approved as a final specification. There are several vendor-specific implementations of fiber-based Ethernet, but most are incompatible with each other and with the proposed 10BASE-F specification. Several vendors have fiber-optic transceivers you can attach to the FriendlyNet thicknet transceiver option.

```
[Mac]-----------------[FTT]-------------------------[FT]------ENET--
AAUI              FriendlyNet                    Std. AUI   Fiber
Cable             Thicknet transceiver           Cable      Transceiver
```

If you have a fiber plant installed with an Ethernet running, you should have access to these types of transceivers from the vendor who originally supplied the fiber network components. Allied Telesis, BlackBox, and Canary all sell fiber transceivers.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

..TIL09783-FriendlyNet-Fiber-Optic_Transceivers_(TA48129).pdf

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9783

Tech Info Library

PowerBook Modem: Workaround for 40-Char Command Buffer Limit

Revised: 5/16/94
Security: Everyone

PowerBook Modem: Workaround for 40-Char Command Buffer Limit

==========

Article Created: 3 February 1992
Article Reviewed/Updated: 5 August 1992

TOPIC ----------

Does the PowerBook modem have a data register of 40 characters? I'm trying to dial a Sprint number, and the modem cuts off characters after 40 digits. I'm using White Knight, and can't send the whole string of characters. Is there a workaround? Is this a limitation of the modem?

DISCUSSION ----------

Yes, there is a 40-character command buffer limit in the PowerBook modem, but there is a workaround.

By using the ; (semicolon) command, you can enter phone numbers (or any command for that matter) longer than 40 characters. You will need to break the phone number up into two separate commands, each less than 40 characters. The semicolon (;) command returns the modem to local command state after dialing. You must put the semicolon (;) at the end of the dialing command.

For example, if you want to dial (408) 555-1212, follow these steps:

1) Enter: ATDT408555;
2) Press RETURN.
3) Wait for OK.
4) Enter: ATDT1212
5) Press RETURN.

Support Information Services

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9785

Tech Info Library

System 7 Finder: Repairing Preferences File that Loses Settings

Revised: 9/11/92
Security: Everyone

System 7 Finder: Repairing Preferences File that Loses Settings

==========

Article Created: 13 February 1992

Article Change History

09/11/92 - REVIEWED
- For technical accuracy.

TOPIC ----------

We have Macintosh computers (PowerBook 170 and IIcx) running System 7. They won't retain default settings, such as changes to Views (like font size) or the Trash warning. After a restart or shut down, the settings return to default. Zapping the PRAM doesn't help.

DISCUSSION ----------

It sounds like you might have a corrupted Finder Preferences file, found by following this path:

System Folder
Preferences
Finder Preferences

Try the following procedure:

- Throw the Finder Preferences file away.

- Restart your computer. (This will automatically create a new Finder Preferences file.)

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9786

Tech Info Library

MacTCP: Syntax of Hosts File (4/96)

Revised: 4/20/96
Security: Everyone

MacTCP: Syntax of Hosts File (4/96)

==========

Article Created: 30 January 1992
Article Reviewed/Updated: 20 April 1996

TOPIC --

I have a question about the Host file for MacTCP used in the remote commands to edit/create in MacX. With the Host... button I can select the connection method and the host. The MacX documentation specifies that the Host List will contain the names in the Hosts file of the System Folder.

How is the Host file created and what is the format? I haven't been able to get any names to appear in this list, so I use the network dot address for testing. I've tried creating a Host file like the /etc/hosts file on A/UX with TeachText (format <dot address> <host name>), but with no success.

DISCUSSION --

NOTE: The syntax for a Hosts file under Open Transport TCP/IP is different. See Technical Information Library article, "Open Transport 1.1/TCP Supports HOSTS File", for Open Transport.

The syntax of the Hosts file used with MacTCP conforms to the master file syntax specified in RFC (Request For Comment) 1035. Here is the syntax:

name type data [;comment]

• name = the name assigned to a host or domain on the internet.

• type = the type is one of the three below:

- "A" for address
- "NS" for Name Server
- "CNAME" for Canonical name

• data = determined by the type specified

• comment = this is optional and begins with a semicolon (;)

The syntax of /etc/hosts file in A/UX is not compatible with the syntax of RFC 1035.

You can use a sample Hosts file which is included in the MacTCP software distribution to edit/add/delete entries and create a new Hosts file for your network.

Here are sample entries in a Hosts file:

```
roland1 A   130.252.11.27     ;     Mike Berg
bruce A     130.252.11.30     ;
windx A     130.252.11.31     ;     Rudy Martin
rizzi A     130.252.11.32     ;     John Rizzi
scoodt A    130.252.11.33     ;     Rudy Martin
renee1 A    130.252.11.34     ;     Renee Gibson
paul A      130.252.11.35     ;
wendy A     130.252.11.36     ;
frank A     130.252.11.37     ;
setlab A    130.252.11.38     ;     Craig Adams
dick A      130.252.11.39     ;     Dick Mahoney
xshare A    130.252.11.40     ;     Rudy Martin
rudy A      130.252.11.41     ;     Rudy Martin
eagle A     130.252.11.42     ;
```

NOTE: You have to restart your computer after making changes to the Hosts file. The file should be named "Hosts" and should be in the system folder, not in any other folder.

For more information on the syntax of MacTCP Hosts file, refer to Appendix A, Name-to-Address Mapping, in the "MacTCP Administrator's Guide."

Article Change History:
20 Apr 1996 - Added Open Transport information.
17 Apr 1995 - Added NOTE section at bottom.
05 Jan 1993 - Reviewed for technical accuracy.

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Tech Info Library Article Number:9788

Tech Info Library

A/UX: TCP/IP Routing Via Ethernet and SL/IP (8/94)

Revised: 8/24/94
Security: Everyone

A/UX: TCP/IP Routing Via Ethernet and SL/IP (8/94)

==========

Article Created: 3 February 1992
Article Reviewed/Updated: 23 August 1994

TOPIC ----------

I know that A/UX supports the routing of TCP/IP protocols and services between two Ethernet networks when the A/UX system is properly configured and has two Ethernet adapters in it.

I also know that A/UX supports SL/IP connections for providing TCP/IP protocols and services over direct or dial-up serial connections.

Can A/UX support TCP/IP routing between two networks, one via an Ethernet connection, and the other via SL/IP?

DISCUSSION ----------

Yes, A/UX supports TCP/IP routing among networks. In A/UX, however, the "ipforwarding" parameter was turned off when it is installed, so that a host can't arbitrarily become a gateway.

You can turn the "ipforwarding" parameter back on by doing the following adb (kernel debugger) command:

```
     # adb -w /unix
 ===> a.out file = /unix (COFF format)
 ===> cannot open core
 ===> ready
      ipforwarding?D
 ===> ipforwarding:   0
      ipforwarding?W 1
 ===> ipforwarding:   0x0      =     0x1
      $w
      $q
 ===> #
```

Then restart A/UX so that the change will take effect. You might also want to make the same change to the /etc/install.d/boot.d/bnet_dr file (adb -w bnet_dr) in case you build a new kernel via newconfig at some later date.

If you would rather not restart, do this:

```
     # adb -w -w /unix /dev/kmem
 ===> a.out file = /unix (COFF format)
 ===> core file = /dev/kmem
 ===> ready
      ipforwarding/W 1
 ===> ipforwarding:   0x0        =    0x1
      $w
      $q
```

This changes the running kernel (/dev/kmem) without affecting what will happen after the next start. You can do both changes in one session. The "-k" flag is recommended when working on standalone programs such as the kernel (that's why it's named "-k").

Article Change History:
23 Aug 1994 - Reviewed and updated.
30 Apr 1992 - REVIEWED for technical accuracy.

Support Information Services

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Tech Info Library Article Number:9789

Tech Info Library

A/UX: When It Builds a New Kernel

Revised: 9/16/92
Security: Everyone

A/UX: When It Builds a New Kernel

==========

Article Created: 4 February 1992

Article Change History

04/30/92 - REVIEWED
- For technical accuracy

TOPIC ----------

Sometimes A/UX automatically builds a new kernel when I change the hardware configuration (different CPU type, more memory, new Ethernet card). Other times it doesn't, and just starts fine on the new configuration.

When and why does A/UX decide to build a new kernel?

DISCUSSION ----------

In general, A/UX rebuilds a new kernel for the following reasons:

- Someone has removed the existing NuBus card (which has driver like ae6 in kernel) such as Ethernet or EtherTalk card, or SuperMac Comm Card, and replaces it into a DIFFERENT slot.

- Someone adds a new NuBus card (with the driver that came with A/UX) onto the system.

- Someone issues a "newconfig" command.

If you move an A/UX drive onto a different CPU and the NuBus card matches the one in A/UX, then A/UX won't rebuild its kernel when it starts. Otherwise, it should rebuild a new kernel to match the existing hardware.

Adding or removing memory doesn't require a new kernel rebuild. A/UX

automatically recognizes its available memory size at startup.

Adding or removing video cards doesn't require a new kernel either since there is no new driver in A/UX to configure.

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Tech Info Library Article Number:9790

..TIL09792-A-UX-Cplusplus_Compiler.pdf

Tech Info Library

A/UX: C++ Compiler

Revised: 9/16/92
Security: Everyone

A/UX: C++ Compiler

==========

Article Created: 5 February 1992

Article Change History

04/30/92 - REVIEWED
- For technical accuracy

TOPIC ----------

Is there a version of C++ for A/UX?

DISCUSSION ----------

The A/UX Developer's Tools Version 1.0, available from APDA, includes a C++ compiler which is based on AT&T technology and enables object-oriented code development. The part number for A/UX Developer's Tools Version 1.0 is B0596LL/A.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9792

Tech Info Library

MacX: Isn't OSF Compliant

Revised: 5/21/92
Security: Everyone

MacX: Isn't OSF Compliant

==========

Article Created: 5 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Is MacX OSF compliant, as opposed to complying, to the International UNIX standards?

A 1989 Tech Info article, "A/UX: X Windows Questions and Answers," states that Integrated Computer Solutions offers an OSF compliant X Window by providing a MOTIF Window Manager. Is this still the case?

DISCUSSION ----------

MacX isn't OSF compliant. It's based on X11 Release 4 Window System Protocols; it has nothing to do with OSF or UNIX International's UNIX standards. OSF (Open Software Foundation) and UNIX International are two major UNIX organizations trying to set their standards for the UNIX industry; they aren't particularly discussing X Windows. The X Consortium is the one that defines and sets all the standards for X Window system. Apple is a member of all three organizations.

MOTIF is an X Window Manager, developed by OSF. (It follows X protocols of course.) The product is sometimes called MOTIF/OSF, since it's an OSF product. ICS (Integrated Computer Solutions) is a company that ported in the MOTIF Window Manager for A/UX.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:9793

Tech Info Library

Alysis Systems' Compatibility INIT: How it Works on the Quadra

Revised: 5/7/92
Security: Everyone

Alysis Systems' Compatibility INIT: How it Works on the Quadra

==========

Article Created: 5 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC --

How does the Alysis Systems Compatibility INIT for the Quadra series work?

DISCUSSION --

Alysis Systems Cache Switch INIT on Quadra

The Alysis Compatibility INIT 2.2 automatically toggles the cache on the Quadra 700 and 900, on-the-fly without having to restart. It also toggles the cache between compatible and non-compatible applications while you are multi-tasking. Unlike earlier versions, version 2.2 will also recognize non-compatible Apple Menu Items (DAs). Users may add names of programs they find to be incompatible with the Quadra or delete them as they become compatible. Businesses and resellers are required to contact Alysis Software for licensing and distribution rights.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Apple's Internal Cache Switch on Quadra

Don't change the caches on or off without restarting a Quadra 700, or you may encounter LocalTalk network problems. When the Quadra 700 starts, the system determines its effective processor speed (this has nothing to do with the 68040's clock speed, and everything to do with the mode of the processor's caches), and sets certain internal timings according to this effective processor speed.

Two of the more important timings are for the floppy disk drive and LocalTalk. Therefore, when the Quadra 700's caches are switched without restarting, the timings set at startup are no longer valid, and the floppy disk drive and LocalTalk won't work (or won't work properly). We monitored a Quadra 700 after switching the caches on the fly. It transmitted an inordinate amount of fragmented packets and never successfully registered itself on the network, or registered and never located network services.

The Quadra 900 features the Peripheral Interface Controllers (PIC chips) of the Macintosh IIfx. These I/O processors seem to work OK after having the caches switched on/off on the fly, but we have a lot more testing to do before we recommend this procedure.

Note the third-party cache switches routinely switch the caches on or off on the fly, whereas the cache switch Apple distributes on the Tidbits disk will only turn on or off the caches immediately if you hold down the option key when changing the cache setting.

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Tech Info Library Article Number:9794

Tech Info Library

MacX: Which Macintosh Models Support It

Revised: 5/7/92
Security: Everyone

MacX: Which Macintosh Models Support It

==========

Article Created: 5 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Does the Quadra 700 support MacX?

DISCUSSION ----------

Yes, Quadra 700 supports MacX. Basically, all Macintosh computers from Macintosh Plus up to the Quadra 900 and PowerBooks with at least 2MB of RAM and with system software version 6.0.5 or later supports MacX.

The Macintosh 512K may run MacX too if you can upgrade the third-party RAM to at least 2MB. For color display, we recommend at least 4MB.

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Tech Info Library Article Number:9795

Tech Info Library

A/UX: Converting from Apple Single to Apple Double Format

Revised: 1/6/93
Security: Everyone

A/UX: Converting from Apple Single to Apple Double Format

==========

Article Created: 6 February 1992

Article Change History

05/07/92 - REVIEWED
- For technical accuracy

01/06/93 - REVISED
- To expand information about the fcnvt utility.

TOPIC ----------

Is there a utility that will convert from Apple Single format to Apple Double format (Resource and Data Fork) and back?

DISCUSSION ----------

A utility program called 'fcnvt' comes with A/UX, and is a hybrid application with A/UX and Macintosh Toolbox calls. Under A/UX the 'fcnvt' utility converts a file in one storage format to a corresponding file in a different storage format.

We suggest you upload files to A/UX and make any conversion there, then download to the Macintosh operating system.

The formats supported are:

AppleDouble
AppleSingle
MacBinary
BinHex
Plain Pair
Plain Triple

A/UX also provides the utility 'setfile' that lets you set a file TYPE and

CREATOR. It also lets you set file attributes (that is, invisible, locked, and so on).

For more information on either of these commands look in the A/UX manual pages or use the A/UX man program.

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Tech Info Library Article Number:9796

Tech Info Library

A/UX: Only One Macintosh Environment Allowed (9/94)

Revised: 9/22/94
Security: Everyone

A/UX: Only One Macintosh Environment Allowed (9/94)

==========

Article Created: 14 February 1992
Article Reviewed/Updated: 22 September 1994

TOPIC ----------

I would like to run two copies of the Finder of A/UX 2.0.1 or 3.0 so that I then can run two copies of AppleShare on a computer. Is it possible to have two Macintosh environments running under A/UX?

DISCUSSION ----------

No, it isn't possible for two Macintosh environments to run simultaneously under A/UX 2.0.1 or A/UX 3.0. Only one Macintosh environment is allowed under A/UX. When the "mac32" or "mac24" process is invoked, it actually starts up the "startmac" or "startmac24" program to create a Macintosh environment. Then the Finder in the System Folder will be executed. This operation is running under Macintosh Toolbox File Manager control; it isn't a re-entrant type of program.

Note that A/UX is capable of supporting Macintosh File Sharing (in A/UX 3.0) and AppleShare CLIENT functionality. The AWS 95 can run AppleShare Pro.

Support Information Services

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Tech Info Library Article Number:9798

Tech Info Library

Macintosh: National Computer Security Center Ratings

Revised: 5/7/92
Security: Everyone

Macintosh: National Computer Security Center Ratings

==========

Article Created: 14 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What is the Macintosh computer's security rating?

DISCUSSION ----------

The NCSC (National Computer Security Center) evaluation criteria define seven levels of trust called Classes. In increasing order of trust, they are: D, C1, C2, B1, B2, B3, and A1.

```
  D       C1       C2      B1      B2     B3      A1
<-------------------------------------------------->
  not                 increasing security         highly
  secure                                          secure
```

D systems aren't trusted. A1 systems are extremely resistant to compromise.

Up to the level of B3, each Class introduces additional features and functions to counter specific threats that weren't countered by lower Classes. For example:

- C2 introduces the "audit" function.
- B1 adds "security labels" to all objects.
- B2 adds a "trusted path."
- B3 adds a "trusted recovery" feature.

Class A1 adds no features or functions over Class B3 system. The software system for a Class A1 system is identical to Class B3 system. However, the Class A1 system is more trusted because it is subjected to extremely rigorous design verification, threat analysis, construction, testing,

inspection, distribution, and operational procedures covering hardware, firmware, and software.

AppleShare meets C1 class because it contains Discretionary Access Control (DAC). You may contact Apple Federal System Groups for more information on the secured Macintosh systems.

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Tech Info Library Article Number:9799

Tech Info Library

Ethernet NB Card: Install EtherTalk 2.5.1 or Later

Revised: 5/7/92
Security: Everyone

Ethernet NB Card: Install EtherTalk 2.5.1 or Later

==========

Article Created: 29 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

We have a Macintosh IIsi with an Ethernet NB card, and we're having problems installing EtherTalk software from the System 7.0.1 disks. When we choose EtherTalk, the software appears to be installed, but it doesn't work.

However, when we first install System 7.0.1, and then install the EtherTalk software from the EtherTalk 2.5.1 disk, everything works correctly.

DISCUSSION ----------

The EtherTalk software that ships with System 7.0 and System 7.0.1 was written prior to the introduction of the Ethernet NB board. In this case, the software was written with System 7.0 and carried forward to System 7.0.1, so it doesn't install an Ethernet driver for the Ethernet NB board. It only installs a driver for the older EtherTalk NB board and the built-in Ethernet on the Macintosh Quadras.

You can find the most current versions of Ethernet software for all of our boards on the NSI 1.1 disk. You can find an image of this disk in the Software Updates folder on AppleLink.

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Tech Info Library Article Number:9801

Tech Info Library

Macintosh Parity-Equipped: Parity Bits Reset Between RAM and VM

Revised: 5/7/92
Security: Everyone

Macintosh Parity-Equipped: Parity Bits Reset Between RAM and VM

==========

Article Created: 30 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Will a parity-equipped Macintosh (with virtual memory enabled), such as the Macintosh IIci, maintain parity when paging information between RAM and virtual memory?

DISCUSSION -----

The question implies a loss of functionality if the parity bits aren't written out to virtual memory. Actually, this isn't the case. Virtual memory has no need to keep track of the RAM parity bits in parity-equipped Macintosh computers.

The reason is that the parity bits are set when you write to RAM. When virtual memory pages information back into RAM, the parity bits are set once again as appropriate. Since the parity bits are for handling data corruption in RAM, once you write to disk, it's up to the disk, its driver, and the file system to ensure data integrity rather than using the same mechanism used in "parity" RAM.

Also, when virtual memory reads the information in RAM, it doesn't have access to the parity bits. It reads a byte; it gets that byte's value.

Finally, imagine the excess overhead associated with moving around and storing that additional information. If you had 16MB set for virtual memory, you would need an extra 2MB of disk space just to handle the parity bits.

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Tech Info Library Article Number:9802

Tech Info Library

System Errors 7.0.1: Negative Codes (-8000 to -32640)

Revised: 9/25/92
Security: Everyone

System Errors 7.0.1: Negative Codes (-8000 to -32640)

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Article Created: 31 January 1992

Article Change History

09/25/92 - REVIEWED
- For technical accuracy.

TOPIC ----------

The following list provides an explanation of system errors -8000 to -32640 as it relates to system software version 7.0.1.

Here's an explanation of two symbols used in the lists:

[Items listed in brackets are old result code meanings]

???? This information wasn't available.

DISCUSSION ----------

LaserWriter Driver Errors

-8132	????	Manual Feed time out
-8133	????	General PostScript Error
-8150	????	No LaserWriter chosen
-8151	????	Version mismatch between LaserPrep dictionaries
-8150	????	No LaserPrep dictionary installed
-8160	????	Zoom scale factor out of range

PictInfo Errors

-11000	pictInfoVersionErr	Version number not zero
-11001	pictInfoIDErr	Invalid PictInfo ID
-11002	pictInfoVerbErr	Invalid verb combination specified
-11003	cantLoadPickMethodErr	Custom pick method not in resource chain
-11004	colorsRequestedErr	Number out of range or greater than passed

```
                              to NewPictInfo
-11005 pictureDataErr         Invalid picture data

Power Manager Errors
-13000 pmBusyErr      Power Manager IC stuck busy
-13001 pmReplyTOErr   Timed out waiting to begin reply handshake
-13002 pmSendStartErr Power Manager IC did not start handshake
-13003 pmSendEndErr   During send, Power Manager did not finish handshake
-13004 pmRecvStartErr During receive, Power Manager did not start handshake
-13005 pmRecvEndErr   During receive, Power Manager did not finish handshake

Mac TCP Errors
-23000 ipBadLapErr            Bad network configuration
-23001 ipBadCnfgErr           Bad IP configuration error
-23002 ipNoCnfgErr            Missing IP or LAP configuration error
-23003 ipLoadErr              Error in MacTCP load
-23004 ipBadAddr              Error in getting address
-23005 connectionClosing      Connection in closing
-23006 invalidLength
-23007 connectionExists       Request conflicts with existing connection
-23008 connectionDoesntExist Connection does not exist
-23009 insufficientResources Insufficient resources to perform request
-23010 invalidStreamPtr
-23011 streamAlreadyOpen
-23012 connectionTerminated
-23013 invalidBufPtr
-23014 invalidRDS
-23014 invalidWDS
-23015 openFailed
-23016 commandTimeout
-23017 duplicateSocket
-23030 ipOpenProtErr          Can't open new protocol, table full
-23031 ipCloseProtErr         Can't find protocol to close
-23032 ipDontFragErr          Packet too large to send w/o fragmenting
-23033 ipDestDeadErr          Destination not responding
-23034 ipBadWDSErr            Error in WDS format
-23035 icmpEchoTimeoutErr     ICMP echo timed-out
-23036 ipNoFragMemErr         No memory to send fragmented pkt
-23037 ipRouteErr             Can't route packet off-net
-23041 nameSyntaxErr
-23042 cacheFault
-23043 noResultProc
-23044 noNameServer
-23045 authNameErr
-23046 noAnsErr
-23047 dnrErr
-23048 outOfMemory

Primary or Secondary Init Code Errors
-32768 svTempDisable  Temporarily disable card but run primary init
-32640 svDisabled     Reserve -32640 to -32768 for Apple temp
                      disables
```

..TIL09803-System_Errors_7-0-1-Negative_Codes_-8000_to_-32640.pdf

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Tech Info Library Article Number:9803

Tech Info Library

TITLE

Mac OS System Error Codes: -299 to -5553

Article ID: 9804
Created: 2/25/92
Modified: 1/12/00

TOPIC

The following list provides an explanation of system errors -299 to -5553.

DISCUSSION

Note: Items listed in [brackets] are old result code meanings.
Note: ???? This information wasn't available.

Notification Manager Error

-299	nmTypErr	Invalid qTypeÐmust be ORD(nmType)

Start Manager Errors

-290	smSDMInitErr	SDM could not be initialized.
-291	smSRTInitErr	Slot Resource Table could not be initialized.
-292	smPRAMInitErr	Slot Resource Table could not be initialized.
-293	smPriInitErr	Cards could not be initialized.
-300	smEmptySlot	No card in slot
-301	smCRCFail	CRC check failed for declaration data
-302	smFormatErr	FHeader Format is not Apple's
-303	smRevisionErr	Wrong revison level
-304	smNoDir	Directory offset is Nil
-305	smLWTstBad	Long Word test field <> $5A932BC7.
-306	smNosInfoArray	No sInfoArray. Memory Mgr error.
-307	smResrvErr	Fatal reserved error. Reserved field <> 0.
-308	smUnExBusErr	Unexpected Bus Error
-309	smBLFieldBad	ByteLanes field was bad.
-310	smFHBlockRdErr	Error occured during _sGetFHeader.
-311	smFHBlkDispErr	Error occured during _sDisposePtr (Dispose of FHeader block).
-312	smDisposePErr	_DisposePointer error
-313	smNoBoardsRsrc	No Board sResource.
-314	smGetPRErr	Error occured during _sGetPRAMRec (See SIMStatus).
-315	smNoBoardId	No Board Id.
-316	smIntStatVErr	The InitStatusV field was negative after primary or secondary init.
-317	smIntTblVErr	An error occured while trying to initialize the Slot Resource Table.
-318	smNoJmpTbl	SDM jump table could not be created.
-319	smBadBoardId	BoardId was wrong, re-init the PRAM record.
-320	smBusErrTO	BusError time out.
-330	smBadRefId	Reference Id not found in list
-331	smBadsList	Bad sResource [sList] structure: Id1<Id2<Id3 ╔ format is not followed.
-332	smReservedErr	Reserved field not zero
-333	smCodeRevErr	Code revision is wrong
-334	smCPUErr	Code revision is wrong
-335	smsPointerNil	LPointer is nil {From sOffsetData. If this error occurs, check sInfo rec for more information.}
-336	smNilsBlockErr	Nil sBlock error {Don't allocate and try to use a nil sBlock}
-337	smSlotOOBErr	Slot out of bounds error
-338	smSelOOBErr	Selector out of bounds error; function not implemented
-339	smNewPErr	_NewPtr error
-340	smBlkMoveErr	_BlockMove error
-341	smCkStatusErr	Status of slot = fail.
-342	smGetDrvrNamErr	Error occured during _sGetDrvrName.

-343 smDisDrvrNamErr Error occured during _sDisDrvrName.
-344 smNoMoresRsrcs No more sResources *OR*
-344 smNoMoresResources Specified sResource data structure not found
-345 smsGetDrvrErr Error occurred during _sGetDriver.
-346 smBadsPtrErr Bad pointer was passed to sCaldSPointer function
-347 smByteLanesErr ByteLanes field in card's format block was determined to be zero
-348 smOffsetErr Offset was too big (temporary, should be fixed)
-349 smNoGoodOpens No opens were successfull in the loop.
-350 smSRTOvrFlErr SRT over flow.
-351 smRecNotFnd Record not found in the SRT.

Device Manager Slot Support Errors
-360 slotNumErr invalid slot # error
-400 gcrOnMFMErr gcr format on high density media error

Edition Manager Errors
-450 editionMgrInitErr Manager not initialized or could not load package
-451 badSectionErr Not a valid section type
-452 notRegisteredSectionErr Not registered
-454 badSubPartErr Bad edition container spec or invalid edition container
-460 multiplePublisherWrn Already is a publisher
-461 containerNotFoundWrn Alias was not resolved
-463 notThePublisherWrn Not the publisher

SCSI Manager Errors
-470 scsiBadPBErr invalid field(s) in the parameter block
-471 scsiOverrunErr attempted to transfer too many bytes
-472 scsiTransferErr write flag conflicts with data transfer phase
-473 scsiBusTOErr bus error during transfer
-474 scsiSelectTOErr scsiSelTO exceeded (selection failed)
-475 scsiTimeOutErr scsiReqTO exceeded
-476 scsiBusResetErr the bus was reset, so your request was aborted
-477 scsiBadStatus non-zero (not "Good") status returned
-478 scsiNoStatusErr device did not go through a status phase
-479 scsiLinkFailErr linked command never executed
-489 scsiUnimpVctErr unimplemented routine was called

SysErrs used instead of inline $A9FF & $ABFF
-490 userBreak user debugger break
-491 strUserBreak user debugger break - display string on stack
-492 exUserBreak user debugger break - execute commands on stack

QuickDraw Error
-500 rgnTooBigErr Bitmap would convert into a region greater than 64 KB

Text Edit Error
-501 teScrapSizeErr scrap item too big for text edit record

O/S Error
-502 hwParamrErr bad selector for _HWPriv

Processes Errors
-600 procNotFound No eligible process with specified process serial number
-601 memFragErr Not enough room to launch application w ith special requirements
-602 appModeErr Memory mode is 32-bit, but application is not 32-bit clean
-603 protocolErr app made module calls in improper order
-604 hardwareConfigErr hardware configuration not correct for call
-605 appMemFullErr Partition size specified in 'SIZE' resource is not big enough for launch
-606 appIsDaemon Application is background-only
-607 bufferIsSmall Buffer is too small
-608 noOutstandingHLE No outstanding high-level event
-609 connectionInvalid Connection is invalid
-610 noUserInteractionAllowed Attempted PostHighLevelEvent from background and no session yet established

Memory Dispatch Errors
-620 notEnoughMemoryErr Insufficient physical memory
-621 notHeldErr Specified range of memory is not held
-622 cannotMakeContiguousErr Cannot make specified range contiguous
-623 notLockedErr Specified range of memory is not locked
-624 interruptsMaskedErr Called with interrupts masked
-625 cannotDeferErr Unable to defer additional user functions

DatabaseAccess (Pack 13) Errors

-800	rcDBNull	The data item was NULL
-801	rcDBValue	Data available or successfully retrieved
-802	rcDBError	Error executing function
-803	rcDBBadType	Next data item not of requested data type
-804	rcDBBreak	Function timed out
-805	rcDBExec	Query currently executing
-806	reDBBadSessID	Session ID is invalid
-807	rcDBBadSessNum	Invalid session number
-808	rcDBBadDDEV	Couldn't find the specified database extension, or error occurred in opening database extension
-809	rcDBAsyncNotSupp	The database extension does not support asynchronous calls
-810	rcDBBadAsyncPB	Invalid parameter block specified
-811	rcDBNoHandler	There is no handler for this data type installed for the current application
-812	rcDBWrongVersion	Wrong version number
-813	rcDBPackNotInited	The InitDBPack function has not yet been called

Help Manager Errors

-850	hmHelpDisabled	Help balloons are not enabled
-851	hmResNotFound	????
-852	hmMemFullErr	????
-853	hmBalloonAborted	Because of constant cursor movement, the help balloon wasn't displayed
-854	hmSameAsLastBalloon	Menu and item are same as previous menu and item
-855	hmHelpManagerNotInited	Help menu not set up
-856	hmBadSelector	????
-857	hmSkippedBalloon	No ballon content to fill in
-858	hmWrongVersion	Wrong version of Help Manager resource
-859	hmUnknownHelpType	Help message record contained a bad type
-860	hmCouldNotLoadPackage	????
-861	hmOperationUnsupported	Bad method parameter
-862	hmNoBalloonUp	No balloon showing
-863	hmCloseViewActive	User using CloseView won't let you remove balloon

AppleTalk Ð PPC Toolbox Errors

-900	notInitErr	PPC Toolbox has not been initialized yet
-902	nameTypeErr	Invalid or inappropriate locationKindSelector in location name
-903	noPortErr	Invalid port name; Unable to open port or bad port reference number
-904	noGlobalsErr	System unable to allocate memory, critical error
-905	localOnlyErr	Network activity is currently disabled
-906	destPortErr	Port does not exist at destination
-907	sessTableErr	PPC Toolbox is unable to create a session
-908	noSessionErr	Invalid session reference number
-909	badReqErr	Bad parameter or invalid state for this operation
-910	portNameExistsErr	Another port is already open with this name
-911	noUserNameErr	User name unknown on destination machine
-912	userRejectErr	Destination rejected the session request
-915	noResponseErr	Unable to contact application
-916	portClosedErr	The port was closed
-917	sessClosedErr	The session has closed
-919	badPortNameErr	PPC port record is invalid
-922	noDefaultUserErr	User has not specified owner name in Sharing Setup control panel
-923	notLoggedInErr	Default user reference number does not yet exist
-924	noUserRefErr	Unable to create a new user reference number
-925	networkErr	An error has occurred in the network
-926	noInformErr	PPCStart failed because target application did not have an inform pending
-927	authFailErr	User's password is wrong
-928	noUserRecErr	Invalid user reference number
-930	badServiceMethodErr	Service method is other than ppcServiceRealTime
-931	badLocNameErr	Location name is invalid
-932	guestNotAllowedErr	Destination port requires authentication

AppleTalk - NBP Errors

-1024	nbpBuffOvr	Buffer overflow in LookupName
-1025	nbpNoConfirm	Name not confirmed on ConfirmName
-1026	nbpConfDiff	Name confirmed at different socket
-1027	nbpDuplicate	Duplicate name exists already
-1028	nbpNotFound	Name not found on remove
-1029	nbpNISErr	Error trying to open the NIS

ASP Errors (XPP driver)

-1066	aspBadVersNum	Server cannot support this ASP version
-1067	aspBufTooSmall	Buffer too small

-1068 aspNoMoreSess No more sessions on server
-1069 aspNoServers No servers at that address
-1070 aspParamErr Parameter error
-1071 aspServerBusy Server cannot open another session
-1072 aspSessClosed Session closed
-1073 aspSizeErr Command block too big
-1074 aspTooMany Too many clients (server error)
-1075 aspNoAck No ack on attention request (server err)

AppleTalk - ATP Errors

-1096 reqFailed Request to contact router failed: retry count exceeded
-1097 tooManyReqs Too many concurrent requests
-1098 tooManySkts Too many concurrent responding-sockets
-1099 badATPSkt Bad ATP-responding socket
-1100 badBuffNum Bad response buffer number specififed
-1101 noRelErr No release received
-1102 cbNotFound Control Block not found; no pending asynchronous calls
-1103 noSendResp AddResponse issued without SendResponse
-1104 noDataArea No data area for request to MPP
-1105 reqAborted ERdCancel function called for this ERead [SendRequest aborted by RelTCB]

Data Stream Protocol - DSP driver Errors

-1273 errOpenDenied Open request denied by recipient
-1274 errDSPQueueSize Send or receive queue is too small
-1275 errFwdReset Read terminated by forward reset
-1276 errAttention Attention message too long
-1277 errOpening Attempt to open connection failed
-1278 errState Bad connection state for this operation
-1279 errAborted Request aborted by dspRemove or dspClose function
-1280 errRefNum Bad connection reference number

HFS Errors

-1300 fidNotFound File ID not found [No file thread exists]
-1301 fidExists File id already exists
-1302 notAFileErr Specified file is a directory
-1303 diffVolErr Files on different volumes
-1304 catChangedErr Catalog has changed and CatPosition may be invalid
-1305 desktopDamagedErr The desktop database has become corrupted Ð the Finder will fix this, but if your application is not running with the Finder, use DTReset or DTDelete

AppleEvent Errors

-1700 errAECoercionFail Data could not be coerced to the requested descriptor type
-1701 errAEDescNotFound Descriptor record was not found
-1702 errAECorruptData Data in an Apple event could not be read
-1703 errAEWrongDataType Wrong descriptor type
-1704 errAENotAEDesc Not a valid descriptor record
-1705 errAEBadListItem Operation involving a list item failed
-1706 errAENewerVersion Need a newer version of the Apple Event Manager
-1707 errAENotAppleEvent Event is not an Apple event
-1708 errAEEventNotHandled Event wasn't handled by an Apple event handler
-1709 errAEReplyNotValid AEResetTimer was passed an invalid reply
-1710 errAEUnknownSendMode Invalid sending mode was passed
-1711 errAEWaitCanceled User canceled out of wait loop for reply or reciept
-1712 errAETimeout Apple event timed out
-1713 errAENoUserInteraction No user interaction allowed
-1714 errAENotASpecialFunction Wrong keyword for a special function
-1715 errAEParamMissed Handler did not get all required paramters
-1716 errAEUnknownAddressType Unknown Apple event address type
-1717 errAEHandlerNotFound No handler found for an Apple event or a coersion
-1718 errAEReplyNotArrived Reply has not yet arrived
-1719 errAEIllegalIndex Not a valid list index

AppleTalk - ATP Errors

-3101 buf2SmallErr Packet too large for buffer; partial data returned
-3102 noMPPErr No MPP error
-3103 ckSumErr Check sum error
-3104 extractErr Extraction error
-3105 readQErr Read queue error
-3106 atpLenErr ATP length error
-3107 atpBadRsp ATP bad response error
-3108 recNotFnd Record not found
-3109 sktClosedErr Socket closed error

Print Manager w/LaserWriter

```
-4096 ???             No free Connect Control Blocks available
-4097 ???             Bad connection reference number
-4098 ???             Request already active
-4099 ???             Write request too big
-4100 ???             Connection just closed
-4101 ???             Printer not found, or closed
```

File Manager Extensions Errors

```
-5000 accessDenied    Incorrect access for this file/folder
-5006 DenyConflict    Permission/Deny mode conflicts with the current
                    mode in which this fork is already open
-5015 NoMoreLocks     Byte range locking failure from Server
-5020 RangeNotLocked  Attempt to unlock an already unlocked range
-5021 RangeOverlap    Attempt to lock some of an already locked range
```

AFP Errors (XPP driver)

```
-5000 afpAccessDenied        AFP Access denied
-5001 afpAuthContinue        AFP Authorization continue
-5002 afpBadUAM              AFP Bad UAM
-5003 afpBadVersNum          AFP Bad version number
-5004 afpBitmapErr           AFP Bit map error
-5005 afpCantMove            AFP Can't move error
-5006 afpDenyConflict        AFP Deny conflict
-5007 afpDirNotEmpty         AFP Dir not empty
-5008 afpDiskFull            AFP Disk full
-5009 afpEofError            AFP End-of-File error
-5010 afpFileBusy            AFP File busy
-5011 afpFlatVo              AFP Flat volume
-5012 afpItemNotFound        AFP Information not found
-5013 afpLockErr             AFP Lock error
-5014 afpMiscErr             AFP Misc error
-5015 afpNoMoreLocks         AFP No more locks
-5016 afpNoServer            AFP No server
-5017 afpObjectExists        AFP Object already exists
-5018 afpObjectNotFound      AFP Object not found
-5019 afpParmErr             AFP Parm error
-5020 afpRangeNotLocked      AFP Range not locked
-5021 afpRangeOverlap        AFP Range overlap
-5022 afpSessClosed          AFP Session closed
-5023 afpUserNotAuth         AFP User not authorized
-5024 afpCallNotSupported    AFP Call not supported
-5025 afpObjectTypeErr       AFP Object type error
-5026 afpTooManyFilesOpen    AFP Too many files open
-5027 afpServerGoingDown     AFP Server going down
-5028 afpCantRename          AFP Can't rename
-5029 afpDirNotFound         AFP Directory not found
-5030 afpIconTypeError       Size of new icon and one it replaces don't match
-5031 afpVolLocked           Volume is Read-Only
-5032 afpObjectLocked        The specified command could not be completed because the object is
                           locked.
-5033 afpContainsSharedErr   The specified share point contains a share point.
-5034 afpIDNotFound          The specified ID could not be found.
-5035 afpIDExists            The specified ID already exists.
-5036 afpDiffVolErr          Equivalent to the Mac OS error code.
-5037 afpCatalogChanged      The catalog has changed and CatPosition may be invalid. No matches
                           were returned.
-5038 afpSameObjectErr       EEquivalent to the Mac OS error code.
-5039 afpBadIDErr            The specified ID is invalid.
-5040 afpPwdSameErr          The new password is the same as the old password.
-5041 afpPwdTooShortErr      The specified password is too short.
-5042 afpPwdExpiredErr       The password has expired.
-5043 afpInsideSharedErr     The specified directory is inside a share point.
-5044 afpInsideTrashErr      The specified directory is in the Trash.
-5045 afpPwdNeedsChangeErr   The password needs to be changed the first time the user logs on.
-5046 afpPwdPolicyErr        The specified password violates a UAM's policy.
-5047 afpAlreadyLoggedOn     The specified user is already logged on.
```

SysEnvirons Errors

```
-5500 envNotPresent   SysEnvirons trap not present--returned by glue.
-5501 envBadVers      Version non-positive
-5502 envVersTooBig   Version bigger than call can handle
```

Gestalt Errors

```
-5550 gestaltUnknownErr       Could not obtain the response
-5551 gestaltUndefSelectorErr Undefined selector
-5552 gestaltDupSelectorErr   Selector already exists
-5553 gestaltLocationErr      Function not in system heap
```

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Category: General OS
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Tech Info Library

System Errors 7.0.1: Negative Codes (-299 to -5553) (11/95)

Revised: 4/21/97
Security: Everyone

System Errors 7.0.1: Negative Codes (-299 to -5553) (11/95)

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Article Created: 31 January 1992
Article Reviewed/Updated: 29 November 1995

TOPIC ----------

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Here's an explanation of two symbols used in the lists:

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-309	smBLFieldBad	ByteLanes field was bad.
-310	smFHBlockRdErr	Error occured during _sGetFHeader.
-311	smFHBlkDispErr	Error occured during _sDisposePtr (Dispose of FHeader block).

```
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                      or secondary init.
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-331  smBadsList      Bad sResource [sList] structure:
                      Id1<Id2<Id3 …  format is not followed.
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-333  smCodeRevErr    Code revision is wrong
-334  smCPUErr        Code revision is wrong
-335  smsPointerNil   LPointer is nil {From sOffsetData. If this error
                      occurs, check sInfo rec for more information.}
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                      nil sBlock}
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-452  notRegisteredSectionErr  Not registered
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-461  containerNotFoundWrn     Alias was not resolved
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```

```
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-474  scsiSelectTOErr scsiSelTO exceeded (selection failed)
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-502  hwParamrErr     bad selector for _HWPriv

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-600  procNotFound      No eligible process with specified process
                        serial number
-601  memFragErr        Not enough room to launch application
                        w ith special requirements
-602  appModeErr        Memory mode is 32-bit, but application is
                        not 32-bit clean
-603  protocolErr       app made module calls in improper order
-604  hardwareConfigErr hardware configuration not correct for call
-605  appMemFullErr     Partition size specified in 'SIZE' resource is
                        not big enough for launch
-606  appIsDaemon       Application is background-only
-607  bufferIsSmall     Buffer is too small
-608  noOutstandingHLE  No outstanding high-level event
-609  connectionInvalid           Connection is invalid
-610  noUserInteractionAllowed    Attempted PostHighLevelEvent from
                          background and no session yet established


Memory Dispatch Errors
-620  notEnoughMemoryErr      Insufficient physical memory
-621  notHeldErr              Specified range of memory is not held
-622  cannotMakeContiguousErr Cannot make specified range contiguous
-623  notLockedErr            Specified range of memory is not locked
-624  interruptsMaskedErr     Called with interrupts masked
```

```
-625  cannotDeferErr          Unable to defer additional user functions

DatabaseAccess (Pack 13) Errors
-800  rcDBNull          The data item was NULL
-801  rcDBValue         Data available or successfully retrieved
-802  rcDBError         Error executing function
-803  rcDBBadType       Next data item not of requested data type
-804  rcDBBreak         Function timed out
-805  rcDBExec          Query currently executing
-806  reDBBadSessID     Session ID is invalid
-807  rcDBBadSessNum    Invalid session number
-808  rcDBBadDDEV       Couldn't find the specified database extension,
                        or error occurred in opening database extension
-809  rcDBAsyncNotSupp  The database extension does not support
                        asynchronous calls
-810  rcDBBadAsyncPB    Invalid parameter block specified
-811  rcDBNoHandler     There is no handler for this data type
                        installed for the current application
-812  rcDBWrongVersion  Wrong version number
-813  rcDBPackNotInited The InitDBPack function has not yet been called

Help Manager Errors
-850  hmHelpDisabled         Help balloons are not enabled
-851  hmResNotFound          ????
-852  hmMemFullErr           ????
-853  hmBalloonAborted       Because of constant cursor movement,
                            the help balloon wasn't displayed
-854  hmSameAsLastBalloon    Menu and item are same as previous menu and item
-855  hmHelpManagerNotInited Help menu not set up
-856  hmBadSelector          ????
-857  hmSkippedBalloon       No ballon content to fill in
-858  hmWrongVersion         Wrong version of Help Manager resource
-859  hmUnknownHelpType      Help message record contained a bad type
-860  hmCouldNotLoadPackage  ????
-861  hmOperationUnsupported Bad method parameter
-862  hmNoBalloonUp          No balloon showing
-863  hmCloseViewActive  User using CloseView won't let you remove balloon

AppleTalk — PPC Toolbox Errors
-900  notInitErr       PPC Toolbox has not been initialized yet
-902  nameTypeErr      Invalid or inappropriate locationKindSelector
                      in location name
-903  noPortErr        Invalid port name; Unable to open port or bad
                      port reference number
-904  noGlobalsErr     System unable to allocate memory, critical error
-905  localOnlyErr     Network activity is currently disabled
-906  destPortErr      Port does not exist at destination
-907  sessTableErr     PPC Toolbox is unable to create a session
-908  noSessionErr     Invalid session reference number
-909  badReqErr        Bad parameter or invalid state for this operation
-910  portNameExistsErr  Another port is already open with this name
-911  noUserNameErr    User name unknown on destination machine
-912  userRejectErr    Destination rejected the session request
```

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-915  noResponseErr    Unable to contact application
-916  portClosedErr    The port was closed
-917  sessClosedErr    The session has closed
-919  badPortNameErr   PPC port record is invalid
-922  noDefaultUserErr User has not specified owner name in Sharing Setup
                       control panel
-923  notLoggedInErr   Default user reference number does not yet exist
-924  noUserRefErr     Unable to create a new user reference number
-925  networkErr       An error has occurred in the network
-926  noInformErr      PPCStart failed because target application did not
                       have an inform pending
-927  authFailErr      User's password is wrong
-928  noUserRecErr         Invalid user reference number
-930  badServiceMethodErr  Service method is other than
                          ppcServiceRealTime
-931  badLocNameErr        Location name is invalid
-932  guestNotAllowedErr   Destination port requires authentication

AppleTalk - NBP Errors
-1024 nbpBuffOvr      Buffer overflow in LookupName
-1025 nbpNoConfirm    Name not confirmed on ConfirmName
-1026 nbpConfDiff     Name confirmed at different socket
-1027 nbpDuplicate    Duplicate name exists already
-1028 nbpNotFound     Name not found on remove
-1029 nbpNISErr       Error trying to open the NIS

ASP Errors (XPP driver)
-1066 aspBadVersNum   Server cannot support this ASP version
-1067 aspBufTooSmall  Buffer too small
-1068 aspNoMoreSess   No more sessions on server
-1069 aspNoServers    No servers at that address
-1070 aspParamErr     Parameter error
-1071 aspServerBusy   Server cannot open another session
-1072 aspSessClosed   Session closed
-1073 aspSizeErr      Command block too big
-1074 aspTooMany      Too many clients (server error)
-1075 aspNoAck        No ack on attention request (server err)

AppleTalk -  ATP Errors
-1096 reqFailed  Request to contact router failed: retry count exceeded
-1097 tooManyReqs     Too many concurrent requests
-1098 tooManySkts     Too many concurrent responding-sockets
-1099 badATPSkt       Bad ATP-responding socket
-1100 badBuffNum      Bad response buffer number specififed
-1101 noRelErr        No release received
-1102 cbNotFound      Control Block not found; no pending
                      asynchronous calls
-1103 noSendResp      AddResponse issued without SendResponse
-1104 noDataArea      No data area for request to MPP
-1105 reqAborted      ERdCancel function called for this ERead
                      [SendRequest aborted by RelTCB]
Data Stream Protocol - DSP driver Errors
-1273 errOpenDenied   Open request denied by recipient
```

```
-1274 errDSPQueueSize Send or receive queue is too small
-1275 errFwdReset     Read terminated by forward reset
-1276 errAttention    Attention message too long
-1277 errOpening      Attempt to open connection failed
-1278 errState        Bad connection state for this operation
-1279 errAborted      Request aborted by dspRemove or dspClose function
-1280 errRefNum       Bad connection reference number

HFS Errors
-1300 fidNotFound     File ID not found [No file thread exists]
-1301 fidExists       File id already exists
-1302 notAFileErr     Specified file is a directory
-1303 diffVolErr      Files on different volumes
-1304 catChangedErr   Catalog has changed and CatPosition may be invalid
-1305 desktopDamagedErr  The desktop database has become corrupted —
                      the Finder will fix this, but if your application is
                      not running with the Finder, use DTReset or DTDelete

AppleEvent Errors
-1700  errAECoercionFail     Data could not be coerced to the
                             requested descriptor type
-1701  errAEDescNotFound     Descriptor record was not found
-1702  errAECorruptData      Data in an Apple event could not be read
-1703  errAEWrongDataType    Wrong descriptor type
-1704  errAENotAEDesc        Not a valid descriptor record
-1705  errAEBadListItem      Operation involving a list item failed
-1706  errAENewerVersion     Need a newer version of the Apple Event Manager
-1707  errAENotAppleEvent    Event is not an Apple event
-1708  errAEEventNotHandled  Event wasn't handled by an Apple event handler
-1709  errAEReplyNotValid    AEResetTimer was passed an invalid reply
-1710  errAEUnknownSendMode  Invalid sending mode was passed
-1711  errAEWaitCanceled     User canceled out of wait loop for reply
                             or reciept
-1712  errAETimeout          Apple event timed out
-1713  errAENoUserInteraction    No user interaction allowed
-1714  errAENotASpecialFunction  Wrong keyword for a special function
-1715  errAEParamMissed      Handler did not get all required paramters
-1716  errAEUnknownAddressType   Unknown Apple event address type
-1717  errAEHandlerNotFound  No handler found for an Apple event
                             or a coersion
-1718  errAEReplyNotArrived  Reply has not yet arrived
-1719  errAEIllegalIndex     Not a valid list index


AppleTalk -  ATP Errors
-3101 buf2SmallErr    Packet too large for buffer; partial data returned
-3102 noMPPErr        No MPP error
-3103 ckSumErr        Check sum error
-3104 extractErr      Extraction error
-3105 readQErr        Read queue error
-3106 atpLenErr       ATP length error
-3107 atpBadRsp       ATP bad response error
-3108 recNotFnd       Record not found
```

```
-3109 sktClosedErr    Socket closed error

Print Manager w/LaserWriter
-4096 ???             No free Connect Control Blocks available
-4097 ???             Bad connection reference number
-4098 ???             Request already active
-4099 ???             Write request too big
-4100 ???             Connection just closed
-4101 ???             Printer not found, or closed

File Manager Extensions Errors
-5000 accessDenied    Incorrect access for this file/folder
-5006 DenyConflict    Permission/Deny mode conflicts with the current
                      mode in which this fork is already open
-5015 NoMoreLocks     Byte range locking failure from Server
-5020 RangeNotLocked  Attempt to unlock an already unlocked range
-5021 RangeOverlap    Attempt to lock some of an already locked range

AFP Errors (XPP driver)
-5000 afpAccessDenied     AFP Access denied
-5001 afpAuthContinue     AFP Authorization continue
-5002 afpBadUAM           AFP Bad UAM
-5003 afpBadVersNum       AFP Bad version number
-5004 afpBitmapErr        AFP Bit map error
-5005 afpCantMove         AFP Can't move error
-5006 afpDenyConflict     AFP Deny conflict
-5007 afpDirNotEmpty      AFP Dir not empty
-5008 afpDiskFull         AFP Disk full
-5009 afpEofError         AFP End-of-File error
-5010 afpFileBusy         AFP File busy
-5011 afpFlatVo           AFP Flat volume
-5012 afpItemNotFound     AFP Information not found
-5013 afpLockErr          AFP Lock error
-5014 afpMiscErr          AFP Misc error
-5015 afpNoMoreLocks      AFP No more locks
-5016 afpNoServer         AFP No server
-5017 afpObjectExists     AFP Object already exists
-5018 afpObjectNotFound   AFP Object not found
-5019 afpParmErr          AFP Parm error
-5020 afpRangeNotLocked   AFP Range not locked
-5021 afpRangeOverlap     AFP Range overlap
-5022 afpSessClosed       AFP Session closed
-5023 afpUserNotAuth      AFP User not authorized
-5024 afpCallNotSupported AFP Call not supported
-5025 afpObjectTypeErr    AFP Object type error
-5026 afpTooManyFilesOpen AFP Too many files open
-5027 afpServerGoingDown  AFP Server going down
-5028 afpCantRename       AFP Can't rename
-5029 afpDirNotFound      AFP Directory not found
-5030 afpIconTypeError    Size of new icon and one it replaces don’t match
-5031 afpVolLocked        Volume is Read-Only
-5032 afpObjectLocked     Object is M/R/D/W inhibited
```

SysEnvirons Errors

-5500 envNotPresent	SysEnvirons trap not present - returned by glue.
-5501 envBadVers	Version non-positive
-5502 envVersTooBig	Version bigger than call can handle

Gestalt Errors

-5550 gestaltUnknownErr	Could not obtain the response
-5551 gestaltUndefSelectorErr	Undefined selector
-5552 gestaltDupSelectorErr	Selector already exists
-5553 gestaltLocationErr	Function not in system heap

Article Change History:
29 Nov 1995 - Corrected minor typo.
07 Dec 1994 - Corrected spelling.
25 Sep 1992 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:9804

TITLE

Mac OS System Error Codes: 0 to -261

Article ID: 9805
Created: 2/25/92
Modified: 5/19/99

TOPIC

The following list provides an explanation of system errors 0 to -261.

DISCUSSION

Note: Items listed in [brackets] are old result code meanings.
Note: ???? This information wasn't available.

General System Errors (VBL Mgr, Queue, Etc.)

0	noErr	0 for success *OR*
0	smNotTruncated	No truncation necessary
-1	qErr	queue element not found during deletion *OR*
-1	smTruncErr	Truncation indicator alone is wider than the specified width
-2	vTypErr	invalid queue element
-3	corErr	core routine number out of range
-4	unimpErr	unimplemented core routine
-5	SlpTypeErr	invalid queue element
-8	seNoDB	no debugger installed to handle debugger command

Color Manager Errors

-9	iTabPurgErr	from Color2Index/ITabMatch
-10	noColMatch	from Color2Index/ITabMatch
-11	qAllocErr	from MakeITable
-12	tblAllocErr	from MakeITable
-13	overRun	from MakeITable
-14	noRoomErr	from MakeITable
-15	seOutOfRange	from SetEntry
-16	seProtErr	from SetEntry
-17	i2CRangeErr	from SetEntry
-18	gdBadDev	from SetEntry
-19	reRangeErr	from SetEntry
-20	seInvRequest	from SetEntry
-21	seNoMemErr	from SetEntry

I/O System Errors

-17	controlErr	Driver can't respond to Control call
-18	statusErr	Driver can't respond to Status call
-19	readErr	Driver can't respond to Read call
-20	writErr	Driver can't respond to Write call
-21	badUnitErr	Driver ref num doesn't match unit table
-22	unitEmptyErr	Driver ref num specifies NIL handle in unit table
-23	openErr	Requested read/write permission doesn't match driver's open permission, or Attempt to open RAM serial Driver failed
-24	closErr	Close failed; Permission to close .MPP driver was denied
-25	dRemovErr	tried to remove an open driver
-26	dInstErr	DrvrInstall couldn't find driver in resources
-27	abortErr	IO call aborted by KillIO; Publisher has written a new edition *OR*
-27	iIOAbortErr	IO abort error (Printing Manager)
-28	notOpenErr	Couldn't rd/wr/ctl/sts cause driver not opened
-29	unitTblFullErr	Unit table has no more entries
-30	dceExtErr	dce extension error

File System Errors

-33	dirFulErr	Directory full
-34	dskFulErr	Disk full
-35	nsvErr	No such volume; volume not found
-36	ioErr	I/O error (bummers)
-37	bdNamErr	Bad file name; there may be no bad names in the final system!
-38	fnOpnErr	File not open
-39	eofErr	End of file; no additional data in the format
-40	posErr	Tried to position to before start of file (r/w)
-41	mFulErr	Memory full (open) or file won't fit (load)
-42	tmfoErr	too many files open
-43	fnfErr	File not found; Folder not found; Edition container not found; Target not found
-44	wPrErr	Diskette is write protected; Volume is locked through hardware
-45	fLckdErr	File is locked
-45	fLckedErr	Publisher writing to an edition
-46	vLckdErr	Volume is locked through software
-47	fBsyErr	File is busy (delete); Section doing I/O
-48	dupFNErr	Duplicate filename (rename); File found instead of folder
-49	opWrErr	File already open with with write permission
-50	paramErr	Error in user parameter list
-51	rfNumErr	Reference number invalid
-52	gfpErr	Get file position error
-53	volOffLinErr	Volume is off line
-54	permErr	Software lock on file; Not a subscriber [permissions error on file open]
-55	volOnLinErr	drive volume already on-line at MountVol
-56	nsDrvErr	no such drive (tried to mount a bad drive num)
-57	noMacDskErr	not a mac diskette (sig bytes are wrong)
-58	extFSErr	External file system - file system identifier is nonzero
-59	fsRnErr	file system internal error: during rename the old entry was deleted but could not be restored
-60	badMDBErr	bad master directory block
-61	wrPermErr	Write permissions error; Not a publisher

Font Manager Errors

-64	fontDecError	error during font declaration
-65	fontNotDeclared	font not declared
-66	fontSubErr	font substitution occured

Disk, Serial Ports, Clock Specific Errors

-64	lastDskErr	
-64	noDriveErr	drive not installed
-65	offLinErr	r/w requested for an off-line drive
-66	noNybErr	couldn't find 5 nybbles in 200 tries
-67	noAdrMkErr	couldn't find valid addr mark
-68	dataVerErr	read verify compare failed
-69	badCksmErr	addr mark checksum didn't check
-70	badBtSlpErr	bad addr mark bit slip nibbles
-71	noDtaMkErr	couldn't find a data mark header
-72	badDCksum	bad data mark checksum
-73	badDBtSlp	bad data mark bit slip nibbles
-74	wrUnderrun	write underrun occurred
-75	cantStepErr	step handshake failed
-76	tk0BadErr	track 0 detect doesn't change
-77	initIWMErr	unable to initialize IWM
-78	twoSideErr	tried to read 2nd side on a 1-sided drive
-79	spdAdjErr	unable to correctly adjust disk speed
-80	seekErr	track number wrong on address mark
-81	sectNFErr	sector number never found on a track
-82	fmt1Err	can't find sector 0 after track format
-83	fmt2Err	can't get enough sync
-84	verErr	track failed to verify
-84	firstDskErr	
-85	clkRdErr	unable to read same clock value twice
-86	clkWrErr	time written did not verify
-87	prWrErr	parameter ram written didn't read-verify
-88	prInitErr	InitUtil found the parameter ram uninitialized
-89	rcvrErr	SCC receiver error (framing, parity, OR)
-90	breakRecd	Break received (SCC)

AppleTalk Errors

-91	ddpSktErr	Error opening socket *OR*
-91	eMultiErr	Invalid address or table is full
-92	ddpLenErr	Data length too big *OR*
-92	eLenErr	Packet too large or first entry of the write-data structure did not contain the full 14-byte header
-93	noBridgeErr	No router available [for non-local send]

-94	lapProtErr	error in attaching/detaching protocol *OR*
-94	LAPProtErr	Protocol handler is already attached, node's protocol table is full, protocol not attached, or protocol handler pointer was not 0
-95	excessCollsns	Hardware error [excessive collisions on write]
-97	portInUse	driver Open error code (port is in use)
-98	portNotCf	driver Open error code (parameter RAM not configured for this connection)
-99	memROZErr	hard error in ROZ
-99	memROZError	hard error in ROZ
-99	memROZWarn	soft error in ROZ

Scrap Manager Errors

-100	noScrapErr	No scrap exists error
-102	noTypeErr	Format not available [no object of that type in scrap]

Storage Allocator Errors

-108	memFullErr	Ran out of memory [not enough room in heap zone]
-109	nilHandleErr	GetHandleSize fails on baseText or substitutionText; NIL master pointer [handle was NIL in HandleZone or other]
-110	memAdrErr	Address was odd, or out of range
-111	memWZErr	Attempted to operate on a free block; GetHandleSize fails on baseText or substitutionText [WhichZone failed (applied to free block)]
-112	memPurErr	Trying to purge a locked or non-purgeable block
-113	memAZErr	Address in zone check failed
-114	memPCErr	Pointer Check failed
-115	memBCErr	Block Check failed
-116	memSCErr	Size Check failed
-117	memLockedErr	Trying to move a locked block (MoveHHi)

HFS Errors

-120	dirNFErr	Directory not found
-121	tmwdoErr	No free WDCB available
-122	badMovErr	Move into offspring error
-123	wrgVolTypErr	Not an HFS volume [wrong volume type error or (obsolete) operation not supported for MFS]
-124	volGoneErr	Server volume has been disconnected.
-125	updPixMemErr	Insufficient memory to update a pixmap
-127	fsDSIntErr	Internal file system error

Menu Manager Errors

-126	dsMBarNFnd	System error code for MBDF not found
-127	dsHMenuFindErr	Could not find HMenu's parent in MenuKey
-128	userCanceledErr	User canceled an operation

HFS FileID Errors

-130	fidNotFound	no file thread exists
-131	fidNotAFile	directory specified
-132	fidExists	file id already exists

Color Quickdraw & Color Manager Errors

-147	regionTooBigError	Region too big or complex
-148	pixMapTooBigErr	Pixel map record is deeper than 1 bit per pixel [passed pixelmap is too large]
-149	notEnoughStack	Not enough stack space for the necessary buffers *OR*
-149	mfStackErr	Insufficient stack
-150	cMatchErr	Color2Index failed to find an index
-151	cTempMemErr	Failed to allocate memory for temporary structures
-152	cNoMemErr	Failed to allocate memory for structure
-153	cRangeErr	Range error on colorTable request
-154	cProtectErr	ColorTable entry protection violation
-155	cDevErr	Invalid type of graphics device
-156	cResErr	Invalid resolution for MakeITable
-157	cDepthErr	Invalid pixel depth
-158	cParmErr	Invalid parameter

Resource Manager Errors (other than I/O)

-185	badExtResource	Extended resource has a bad format.
-186	CantDecompress	Resource bent ("the bends") can't decompress a compressed resource
-188	resourceInMemory	Resource already in memory
-189	writingPastEnd	Writing past end of file
-190	inputOutOfBounds	Offset or count out of bounds
-192	resNotFound	Resource not found
-193	resFNotFound	Resource file not found
-194	addResFailed	AddResource failed
-195	addRefFailed	AddReference failed

-196	rmvResFailed	RmveResource failed
-197	rmvRefFailed	RmveReference failed
-198	resAttrErr	Attribute inconsistent with operation
-199	mapReadErr	Map inconsistent with operation

Sound Manager Errors

-200	noHardware	Required sound hardware not available [no hardware support for the specified synthesizer]
-201	notEnoughHardware	Insufficient hardware available [no more channels for the specified synthesizer]
-203	queueFull	No room in the queue
-204	resProblem	Problem loading the resource
-205	badChannel	Channel is corrupt or unusable [invalid channel queue length]
-206	badFormat	Resource is corrupt or unusable [handle to 'snd ' resource was invalid]
-207	notEnoughBufferSpace	Insufficient memory available
-208	badFileFormat	File is corrupt or unusable, or not AIFF or AIFF-C
-209	channel	Channel is busy
-210	buffersTooSmall	Buffer is too small
-211	channelNotBusy	Channel not currently used
-212	noMoreRealTime	Not enough CPU time available
-213	badParam	A parameter is incorrect
-220	siNoSoundInHardware	No sound input hardware available
-221	siBadSoundInDevice	Invalid sound input device
-222	siNoBufferSpecified	No buffer specified
-223	siInvalidCompression	Invalid compression type
-224	siHardDiskTooSlow	Hard drive too slow to record
-225	siInvalidSampleRate	Invalid sample rate
-226	siInvalidSampleSize	Invalid sample size
-227	siDeviceBusyErr	Sound input device is busy
-228	siBadDeviceName	Invalid device name
-229	siBadRefNum	Invalid reference number
-230	siInputDeviceErr	Input device hardware failure
-231	siUnknownInfoType	Unknown type of information
-232	siUnknownQuality	Unknown quality

MIDI Manager Errors

-250	midiNoClientErr	no client with that ID found
-251	midiNoPortErr	no port with that ID found
-252	midiTooManyPortsErr	too many ports already installed in the system
-253	midiTooManyConsErr	too many connections made
-254	midiVConnectErr	pending virtual connection created
-255	midiVConnectMade	pending virtual connection resolved
-256	midiVConnectRmvd	pending virtual connection removed
-257	midiNoConErr	no connection exists between specified ports
-258	midiWriteErr	couldn't write to all connected ports
-259	midiNameLenErr	name supplied is longer than 31 characters
-260	midiDupIDErr	duplicate client ID
-261	midiInvalidCmdErr	command not supported for port type

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

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Document Information
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Category: General OS
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Tech Info Library

System Errors 7.0.1: Negative Codes (0 to -261)

Revised: 9/25/92
Security: Everyone

System Errors 7.0.1: Negative Codes (0 to -261)

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Article Created: 31 January 1992

Article Change History

09/25/92 - REVIEWED
- For technical accuracy.

TOPIC ----------

The following list provides an explanation of system errors 0 to -261 as it relates to system software version 7.0.1.

Here's an explanation of two symbols used in the lists:

[Items listed in brackets are old result code meanings]

???? This information wasn't available.

DISCUSSION ----------

General System Errors (VBL Mgr, Queue, Etc.)

0	noErr	0 for success *OR*
0	smNotTruncated	No truncation necessary
-1	qErr	queue element not found during deletion *OR*
-1	smTruncErr	Truncation indicator alone is wider than the specified width
-2	vTypErr	invalid queue element
-3	corErr	core routine number out of range
-4	unimpErr	unimplemented core routine
-5	SlpTypeErr	invalid queue element
-8	seNoDB	no debugger installed to handle debugger command

Color Manager Errors

-9	iTabPurgErr	from Color2Index/ITabMatch

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-10   noColMatch       from Color2Index/ITabMatch
-11   qAllocErr        from MakeITable
-12   tblAllocErr      from MakeITable
-13   overRun          from MakeITable
-14   noRoomErr        from MakeITable
-15   seOutOfRange     from SetEntry
-16   seProtErr        from SetEntry
-17   i2CRangeErr      from SetEntry
-18   gdBadDev         from SetEntry
-19   reRangeErr       from SetEntry
-20   seInvRequest     from SetEntry
-21   seNoMemErr       from SetEntry

I/O System Errors
-17   controlErr       Driver can't respond to Control call
-18   statusErr        Driver can't respond to Status call
-19   readErr          Driver can't respond to Read call
-20   writErr          Driver can't respond to Write call
-21   badUnitErr       Driver ref num doesn't match unit table
-22   unitEmptyErr     Driver ref num specifies NIL handle in unit table
-23   openErr          Requested read/write permission doesn't match
                       driver's open permission, or
                       Attempt to open RAM serial Driver failed
-24   closErr          Close failed; Permission to close .MPP driver
                       was denied
-25   dRemovErr        tried to remove an open driver
-26   dInstErr         DrvrInstall couldn't find driver in resources
-27   abortErr         IO call aborted by KillIO; Publisher has written
                       a new edition *OR*
-27   iIOAbortErr      IO abort error (Printing Manager)
-28   notOpenErr       Couldn't rd/wr/ctl/sts cause driver not opened
-29   unitTblFullErr   Unit table has no more entries
-30   dceExtErr        dce extension error

File System Errors
-33   dirFulErr        Directory full
-34   dskFulErr        Disk full
-35   nsvErr           No such volume; volume not found
-36   ioErr            I/O error (bummers)
-37   bdNamErr         Bad file name; there may be no bad names
                       in the final system!
-38   fnOpnErr         File not open
-39   eofErr           End of file; no additional data in the format
-40   posErr           Tried to position to before start of file (r/w)
-41   mFulErr          Memory full (open) or file won't fit (load)
-42   tmfoErr          too many files open
-43   fnfErr           File not found; Folder not found;
                       Edition container not found; Target not found
-44   wPrErr           Diskette is write protected; Volume is locked
                       through hardware
-45   fLckdErr         File is locked
-45   fLckedErr        Publisher writing to an edition
-46   vLckdErr         Volume is locked through software
```

-47	fBsyErr	File is busy (delete); Section doing I/O
-48	dupFNErr	Duplicate filename (rename); File found instead of folder
-49	opWrErr	File already open with with write permission
-50	paramErr	Error in user parameter list
-51	rfNumErr	Reference number invalid
-52	gfpErr	Get file position error
-53	volOffLinErr	Volume is off line
-54	permErr	Software lock on file; Not a subscriber [permissions error on file open]
-55	volOnLinErr	drive volume already on-line at MountVol
-56	nsDrvErr	no such drive (tried to mount a bad drive num)
-57	noMacDskErr	not a mac diskette (sig bytes are wrong)
-58	extFSErr	External file system — file system identifier is nonzero
-59	fsRnErr	file system internal error: during rename the old entry was deleted but could not be restored…
-60	badMDBErr	bad master directory block
-61	wrPermErr	Write permissions error; Not a publisher

Font Manager Errors

-64	fontDecError	error during font declaration
-65	fontNotDeclared	font not declared
-66	fontSubErr	font substitution occured

Disk, Serial Ports, Clock Specific Errors

-64	lastDskErr	
-64	noDriveErr	drive not installed
-65	offLinErr	r/w requested for an off-line drive
-66	noNybErr	couldn't find 5 nybbles in 200 tries
-67	noAdrMkErr	couldn't find valid addr mark
-68	dataVerErr	read verify compare failed
-69	badCksmErr	addr mark checksum didn't check
-70	badBtSlpErr	bad addr mark bit slip nibbles
-71	noDtaMkErr	couldn't find a data mark header
-72	badDCksum	bad data mark checksum
-73	badDBtSlp	bad data mark bit slip nibbles
-74	wrUnderrun	write underrun occurred
-75	cantStepErr	step handshake failed
-76	tk0BadErr	track 0 detect doesn't change
-77	initIWMErr	unable to initialize IWM
-78	twoSideErr	tried to read 2nd side on a 1-sided drive
-79	spdAdjErr	unable to correctly adjust disk speed
-80	seekErr	track number wrong on address mark
-81	sectNFErr	sector number never found on a track
-82	fmt1Err	can't find sector 0 after track format
-83	fmt2Err	can't get enough sync
-84	verErr	track failed to verify
-84	firstDskErr	
-85	clkRdErr	unable to read same clock value twice
-86	clkWrErr	time written did not verify
-87	prWrErr	parameter ram written didn't read-verify
-88	prInitErr	InitUtil found the parameter ram uninitialized

-89	rcvrErr	SCC receiver error (framing, parity, OR)
-90	breakRecd	Break received (SCC)

AppleTalk Errors

-91	ddpSktErr	Error opening socket *OR*
-91	eMultiErr	Invalid address or table is full
-92	ddpLenErr	Data length too big *OR*
-92	eLenErr	Packet too large or first entry of the write-data structure did not contain the full 14-byte header
-93	noBridgeErr	No router available [for non-local send]
-94	lapProtErr	error in attaching/detaching protocol *OR*
-94	LAPProtErr	Protocol handler is already attached, node's protocol table is full, protocol not attached, or protocol handler pointer was not 0
-95	excessCollsns	Hardware error [excessive collisions on write]
-97	portInUse	driver Open error code (port is in use)
-98	portNotCf	driver Open error code (parameter RAM not configured for this connection)
-99	memROZErr	hard error in ROZ
-99	memROZError	hard error in ROZ
-99	memROZWarn	soft error in ROZ

Scrap Manager Errors

-100	noScrapErr	No scrap exists error
-102	noTypeErr	Format not available [no object of that type in scrap]

Storage Allocator Errors

-108	memFullErr	Ran out of memory [not enough room in heap zone]
-109	nilHandleErr	GetHandleSize fails on baseText or substitutionText; NIL master pointer [handle was NIL in HandleZone or other]
-110	memAdrErr	Address was odd, or out of range
-111	memWZErr	Attempted to operate on a free block; GetHandleSize fails on baseText or substitutionText [WhichZone failed (applied to free block)]
-112	memPurErr	Trying to purge a locked or non-purgeable block
-113	memAZErr	Address in zone check failed
-114	memPCErr	Pointer Check failed
-115	memBCErr	Block Check failed
-116	memSCErr	Size Check failed
-117	memLockedErr	Trying to move a locked block (MoveHHi)

HFS Errors

-120	dirNFErr	Directory not found
-121	tmwdoErr	No free WDCB available
-122	badMovErr	Move into offspring error
-123	wrgVolTypErr	Not an HFS volume [wrong volume type error or (obsolete) operation not supported for MFS]
-124	volGoneErr	Server volume has been disconnected.
-125	updPixMemErr	Insufficient memory to update a pixmap
-127	fsDSIntErr	Internal file system error

```
Menu Manager Errors
-126  dsMBarNFnd      System error code for MBDF not found
-127  dsHMenuFindErr  Could not find HMenu's parent in MenuKey
-128  userCanceledErr User canceled an operation

HFS FileID Errors
-130  fidNotFound     no file thread exists
-131  fidNotAFile     directory specified
-132  fidExists       file id already exists

Color Quickdraw & Color Manager Errors
-147  regionTooBigError  Region too big or complex
-148  pixMapTooBigErr    Pixel map record is deeper than 1 bit per pixel
                         [passed pixelmap is too large]
-149  notEnoughStack  Not enough stack space for the necessary buffers *OR*
-149  mfStackErr      Insufficient stack
-150  cMatchErr       Color2Index failed to find an index
-151  cTempMemErr     Failed to allocate memory for temporary structures
-152  cNoMemErr       Failed to allocate memory for structure
-153  cRangeErr       Range error on colorTable request
-154  cProtectErr     ColorTable entry protection violation
-155  cDevErr         Invalid type of graphics device
-156  cResErr         Invalid resolution for MakeITable
-157  cDepthErr       Invalid pixel depth
-158  cParmErr        Invalid parameter

Resource Manager Errors (other than I/O)
-185  badExtResource   Extended resource has a bad format.
-186  CantDecompress   Resource bent ("the bends")
                       can't decompress a compressed resource
-188  resourceInMemory Resource already in memory
-189  writingPastEnd   Writing past end of file
-190  inputOutOfBounds Offset or count out of bounds

-192  resNotFound      Resource not found
-193  resFNotFound     Resource file not found
-194  addResFailed     AddResource failed
-195  addRefFailed     AddReference failed
-196  rmvResFailed     RmveResource failed
-197  rmvRefFailed     RmveReference failed
-198  resAttrErr       Attribute inconsistent with operation
-199  mapReadErr       Map inconsistent with operation

Sound Manager Errors
-200  noHardware        Required sound hardware not available
                       [no hardware support for the specified synthesizer]
-201  notEnoughHardware Insufficient hardware available
                       [no more channels for the specified synthesizer]
-203  queueFull         No room in the queue
-204  resProblem        Problem loading the resource
-205  badChannel        Channel is corrupt or unusable
                       [invalid channel queue length]
-206  badFormat         Resource is corrupt or unusable
```

```
                        [handle to 'snd ' resource was invalid]
-207  notEnoughBufferSpace  Insufficient memory available
-208  badFileFormat     File is corrupt or unusable, or not AIFF or AIFF-C
-209  channel           Channel is busy
-210  buffersTooSmall   Buffer is too small
-211  channelNotBusy    Channel not currently used
-212  noMoreRealTime    Not enough CPU time available
-213  badParam          A parameter is incorrect
-220  siNoSoundInHardware   No sound input hardware available
-221  siBadSoundInDevice    Invalid sound input device
-222  siNoBufferSpecified   No buffer specified
-223  siInvalidCompression  Invalid compression type
-224  siHardDiskTooSlow     Hard drive too slow to record
-225  siInvalidSampleRate   Invalid sample rate
-226  siInvalidSampleSize   Invalid sample size
-227  siDeviceBusyErr       Sound input device is busy
-228  siBadDeviceName       Invalid device name
-229  siBadRefNum           Invalid reference number
-230  siInputDeviceErr      Input device hardware failure
-231  siUnknownInfoType     Unknown type of information
-232  siUnknownQuality      Unknown quality

MIDI Manager Errors
-250  midiNoClientErr     no client with that ID found
-251  midiNoPortErr       no port with that ID found
-252  midiTooManyPortsErr too many ports already installed in the system
-253  midiTooManyConsErr  too many connections made
-254  midiVConnectErr     pending virtual connection created
-255  midiVConnectMade    pending virtual connection resolved
-256  midiVConnectRmvd    pending virtual connection removed
-257  midiNoConErr        no connection exists between specified ports
-258  midiWriteErr        couldn't write to all connected ports
-259  midiNameLenErr      name supplied is longer than 31 characters
-260  midiDupIDErr        duplicate client ID
-261  midiInvalidCmdErr   command not supported for port type
```

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Tech Info Library Article Number:9805

Tech Info Library

TITLE

Mac OS System Error Codes: 1 to 32767

Article ID: 9806
Created: 2/25/92
Modified: 5/19/99

TOPIC

These lists of system error codes and their meanings are maintained with MPW SysErr.a, and in Inside Macintosh Volume VI (c) Addison-Wesley 1991.

DISCUSSION

Note: Items listed in [brackets] are old result code meanings.

DS Error Table

1	dsBusError	bus error
2	dsAddressErr	address error
3	dsIllInstErr	illegal instruction error
4	dsZeroDivErr	zero divide error
5	dsChkErr	check trap error
6	dsOvflowErr	overflow trap error
7	dsPrivErr	privilege violation error
8	dsTraceErr	trace mode error
9	dsLineAErr	line 1010 trap error
10	dsLineFErr	line 1111 trap error
11	dsMiscErr	miscellaneous hardware exception error
12	dsCoreErr	unimplemented core routine error
13	dsIrqErr	uninstalled interrupt error
14	dsIOCoreErr	IO Core Error
15	dsLoadErr	Segment Loader Error
16	dsFPErr	Floating point error
17	dsNoPackErr	package 0 not present [List Manager]
18	dsNoPk1	package 1 not present [Reserved by Apple]
19	dsNoPk2	package 2 not present [Disk Initialization]
20	dsNoPk3	package 3 not present [Standard File]
21	dsNoPk4	package 4 not present [Floating-Point Arithmetic]
22	dsNoPk5	package 5 not present [Transcendental Functions]
23	dsNoPk6	package 6 not present [International Utilities]
24	dsNoPk7	package 7 not present [Binary/Decimal Conversion]
25	dsMemFullErr	out of memory!
26	dsBadLaunch	can't launch file
27	dsFSErr	file system map has been trashed
28	dsStknHeap	stack has moved into application heap
30	dsReinsert	request user to reinsert off-line volume
31	dsNotThe1	not the disk I wanted (obsolete)
33	negZcbFreeErr	ZcbFree has gone negative
40	dsGreeting	welcome to Macintosh greeting
41	dsFinderErr	can't load the Finder error
42	shutDownAlert	handled like a shutdown error (obsolete)
43	dsSystemFileErr	can't find System file to open (obsolete)
51	dsBadSlotInt	unserviceable slot interrupt
81	dsBadSANEopcode	bad opcode given to SANE Pack4
84	menuPrgErr	happens when a menu is purged
85	dsMBarNFnd	SysErr -- cannot find MBDF
86	dsHMenuFindErr	SysErr -- recursively defined HMenus
87	dsWDEFnFnd	Could not load WDEF
88	dsCDEFnFnd	Could not load CDEF
89	dsMDEFnFnd	Could not load MDEF
98	dsNoPatch	Can't patch for particular Model Mac
99	dsBadPatch	Can't load patch resource
101	dsParityErr	memory parity error
102	dsOldSystem	System is too old for this ROM
103	ds32BitMode	booting in 32-bit on a 24-bit sys

```
20000 dsShutDownOrRestart   user choice between ShutDown and Restart
20001 dsSwitchOffOrRestart  user choice between switching off and Restart
20002 dsForcedQuit    allow the user to ExitToShell, return if Cancel
32767 dsSysErr        general system error (catch-all used in DSAT)
```

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

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Document Information
Product Area: Mac OS System Software
Category: General OS
Sub Category: General Topics

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Tech Info Library

System Errors 7.0.1: Positive Codes (1 to 32767)

Revised: 9/25/92
Security: Everyone

System Errors 7.0.1: Positive Codes (1 to 32767)

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Article Created: 31 January 1992

Article Change History

09/25/92 - REVIEWED
- For technical accuracy.

TOPIC ----------

These lists of system error codes and their meanings are maintained with MPW SysErr.a, and in Inside Macintosh Volume VI (c) Addison-Wesley 1991. The last change was for system software version 7.0.1, on Thursday, June 20, 1991.

Here's an explanation of two symbols used in the lists:

[Items listed in brackets are old result code meanings]

???? This information wasn't available.

DISCUSSION ----------

DS Error Table

1	dsBusError	bus error
2	dsAddressErr	address error
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4	dsZeroDivErr	zero divide error
5	dsChkErr	check trap error
6	dsOvflowErr	overflow trap error
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8	dsTraceErr	trace mode error
9	dsLineAErr	line 1010 trap error
10	dsLineFErr	line 1111 trap error
11	dsMiscErr	miscellaneous hardware exception error

12	dsCoreErr	unimplemented core routine error
13	dsIrqErr	uninstalled interrupt error
14	dsIOCoreErr	IO Core Error
15	dsLoadErr	Segment Loader Error
16	dsFPErr	Floating point error
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23	dsNoPk6	package 6 not present [International Utilities]
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20000	dsShutDownOrRestart	user choice between ShutDown and Restart
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20002	dsForcedQuit	allow the user to ExitToShell, return if Cancel
32767	dsSysErr	general system error (catch-all used in DSAT)

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Tech Info Library Article Number:9806

Tech Info Library

TITLE

Mac OS System Error Codes: Uncommon Codes

Article ID: 9808
Created: 2/25/92
Modified: 5/20/99

TOPIC

The following list provides an explanation of uncommon system errors. These lists are maintained with SysErr.a and in the Inside Macintosh programmer's documentation.

DISCUSSION

Note: Items listed in [brackets] are old result code meanings.
Note: ???? This information wasn't available.

```
Internal File System Errors
1     chNoBuf         no free cache buffers (all in use)
2     chInUse         requested block in use
3     chnotfound      requested block not found
4     chNotInUse      block being released was not in use
16    fxRangeErr      file position beyond mapped range
17    fxOvFlErr     extents file overflow
32    btnotfound    record not found
33    btexists      record already exists
34    btnospace     no available space
35    btnoFit       record doesn't fit in node
36    btbadNode     bad node detected
37    btbadHdr      bad BTree header record detected
48    cmnotfound    CNode not found
49    cmexists      CNode already exists
50    cmnotempty    directory CNode not empty (valence = 0)
51    cmRootCN      invalid reference to root CNode
52    cmbadnews     detected bad catalog structure
53    cmFThdDirErr thread belongs to a directory not a file
54    cmFThdGone    file thread doesn't exist
64    dsBadRotate   bad BTree rotate

Slot Declaration ROM Manager Errors
1     siInitSDTblErr  slot int dispatch table could not be initialized.
2     siInitVBLQsErr  VBLqueues for all slots could not be initialized.
3     siInitSPTblErr  slot priority table could not be initialized.
10    sdmJTInitErr    SDM Jump Table could not be initialized.
11    sdmInitErr      SDM could not be initialized.
12    sdmSRTInitErr   Slot Resource Table could not be initialized.
13    sdmPRAMInitErr  Slot PRAM could not be initialized.
14    sdmPriInitErr   Cards could not be initialized.

HD20 Driver Errors
16    wrtHsLw         HSHK low before starting
17    wrtHSLwTO       Time out waiting for HSHK to go low
19    wrtHSHighTO     Time out waiting for HSHK to go high
32    rdHsHi          HSHK high before starting
33    rdSyncTO        Time out waiting for sync ($AA) bye
34    rdGroupTO       Time out waiting for group
36    rdHoffSyncTO    Time out waiting for sync after holdoff
37    rdHsHiTO        Time out waiting for HSHK high
38    rdChksumErr     Checksum error on response packet
48    invalidResp     First byte in response packet was wrong
49    sqncNumErr      Sequence number in response packet was wrong
50    dNumberErr      Drive number in response packet was wrong
64    noResp          No response packet ever received

SCSI Manager Errors
```

```
2     scCommErr       Communications error (operations timeout)
3     scArbNBErr      Arbitration failed during SCSIGet - Bus busy
4     scBadparmsErr   Bad parameter or TIB opcode
5     scPhaseErr      SCSI bus not in correct phase for operation
6     scCompareErr    SCSI Manager busy with another operation when
                      SCSIGet was called
7     scMgrBusyErr    SCSI Manager busy with another operation when
                      SCSIGet was called
8     scSequenceErr   Attempted operation is out of sequence - e.g.,
                      calling SCSISelect before doing SCSIGet
9     scBusTOErr      Bus timeout before data ready on SCSIRBlind and
                      SCSIWBlind
10    scComplPhaseErr SCSIComplete failed - bus not in Status phase


Serial Driver Error Masks
1     swOverrunErr    Serial Driver overrun error
16    parityErr       Serial parity error
32    hwOverrunErr    Serial hardware overrun
64    framingErr      Serial framing error

Miscellaneous Result Code
1     evtNotEnb       Event not enabled at PostEvent

CDev Errors
0     cdevMemErr      Memory shortfall; alert user please
1     cdevResErr      Couldn't get a needed resource; alert
3     cdevUnset       cdevValue is initialized to this
-1    cdevGenErr      General error; gray cdev w/o alert

Script Manager Errors
0     smNotTruncated  No truncation was necessary
1     smTruncated     Truncation performed
-1    smTruncErr      General error

Communications Toolbox Errors
0     ctbuNoErr        ????
-1    ctbuGenericError ????

Communications Resource Manager Errors
0     crmNoErr        ????
-1    crmGenericError ????

Connection Manager Errors
0     cmNoErr            ????
1     cmRejected         ????
2     cmFailed           ????
3     cmTimeOut          ????
4     cmNotOpen          ????
5     cmNotClosed        ????
6     cmNoRequestPending ????
7     cmNotSupported     ????
8     cmNoTools          ????
9     cmUserCancel       ????
11    cmUnknownError     ????
-1    cmGenericError     ????

File Transfer Manager Errors
0     ftNoErr           ????
1     ftRejected        ????
2     ftFailed          ????
3     ftTimeOut         ????
4     ftTooManyRetry    ????
5     ftNotEnoughDSpace ????
6     ftRemoteCancel    ????
7     ftWrongFormat     ????
8     ftNoTools         ????
9     ftUserCancel      ????
10    ftNotSupported    ????
11    ftUnknownError    ????
-1    ftGenericError    ????

Midi Manager MIDIPacket Errors
1     midiOverflowErr ????
2     midiSCCErr      ????
3     midiPacketErr   ????
255   midiMaxErr      all command words less than this are errors

Terminal Manager Errors
0     tmNoErr           ????
1     tmNotSent         ????
```

```
2     tmEnvironsChanged ????
7     tmNotSupported    ????
8     tmNoTools         ????
11    tmUnknownError    ????
-1    tmGenericError    ????

AppleTalk Errors
-1    overrunErr      ???? (returned by ReadPacket & ReadRest routines)
-2    crcErr          ????
-3    underrunErr     ????
-4    lengthErr       ????

System Errors to put up msg dialogs
-10   dsMacsBugInstalled       say "MacsBug Installed"
-11   dsDisassemblerInstalled  say "Disassembler Installed"
-12   dsHD20Installed          say "HD20 Startup"
```

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

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Document Information
Product Area: Mac OS System Software
Category: General OS
Sub Category: General Topics

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Tech Info Library

System Errors 7.0.1: Uncommon Codes

Revised: 9/25/92
Security: Everyone

System Errors 7.0.1: Uncommon Codes

==========

Article Created: 31 January 1992

Article Change History

09/25/92 - REVIEWED
- For technical accuracy.

TOPIC ----------

These lists are maintained with MPW SysErr.a and in Inside Macintosh Volume VI (c) Addison-Wesley 1991. The last change was for system software version 7.0.1, on Thursday, June 20, 1991.

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32	rdHsHi	HSHK high before starting
33	rdSyncTO	Time out waiting for sync ($AA) bye
34	rdGroupTO	Time out waiting for group
36	rdHoffSyncTO	Time out waiting for sync after holdoff
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4	scBadparmsErr	Bad parameter or TIB opcode
5	scPhaseErr	SCSI bus not in correct phase for operation
6	scCompareErr	SCSI Manager busy with another operation when SCSIGet was called
7	scMgrBusyErr	SCSI Manager busy with another operation when SCSIGet was called
8	scSequenceErr	Attempted operation is out of sequence – e.g., calling SCSISelect before doing SCSIGet
9	scBusTOErr	Bus timeout before data ready on SCSIRBlind and SCSIWBlind
10	scComplPhaseErr	SCSIComplete failed – bus not in Status phase

Serial Driver Error Masks

1	swOverrunErr	Serial Driver overrun error
16	parityErr	Serial parity error

```
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0     ctbuNoErr        ????
-1    ctbuGenericError ????

Communications Resource Manager Errors
0     crmNoErr        ????
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Connection Manager Errors
0     cmNoErr            ????
1     cmRejected         ????
2     cmFailed           ????
3     cmTimeOut          ????
4     cmNotOpen          ????
5     cmNotClosed        ????
6     cmNoRequestPending ????
7     cmNotSupported     ????
8     cmNoTools          ????
9     cmUserCancel       ????
11    cmUnknownError     ????
-1    cmGenericError     ????

File Transfer Manager Errors
0     ftNoErr           ????
1     ftRejected        ????
2     ftFailed          ????
3     ftTimeOut         ????
4     ftTooManyRetry    ????
5     ftNotEnoughDSpace ????
6     ftRemoteCancel    ????
7     ftWrongFormat     ????
8     ftNoTools         ????
9     ftUserCancel      ????
10    ftNotSupported    ????
11    ftUnknownError    ????
-1    ftGenericError    ????
```

```
Midi Manager MIDIPacket Errors
1     midiOverflowErr ????
2     midiSCCErr      ????
3     midiPacketErr   ????
255   midiMaxErr      all command words less than this are errors

Terminal Manager Errors
0     tmNoErr           ????
1     tmNotSent         ????
2     tmEnvironsChanged ????
7     tmNotSupported    ????
8     tmNoTools         ????
11    tmUnknownError    ????
-1    tmGenericError    ????

AppleTalk Errors
-1    overrunErr      ???? (returned by ReadPacket & ReadRest routines)
-2    crcErr          ????
-3    underrunErr     ????
-4    lengthErr       ????

System Errors to put up msg dialogs
-10   dsMacsBugInstalled       say "MacsBug Installed"
-11   dsDisassemblerInstalled  say "Disassembler Installed"
-12   dsHD20Installed          say "HD20 Startup"
```

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Tech Info Library Article Number:9808

Tech Info Library

A/UX 3.0: Support for QuickTime

Revised: 5/7/92
Security: Everyone

A/UX 3.0: Support for QuickTime

==========

Article Created: 8 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Does A/UX 3.0 support QuickTime?

DISCUSSION -----

Yes, A/UX 3.0 supports QuickTime. A/UX 3.0 fully integrates QuickTime into the Macintosh environment running under UNIX. This is one of the first UNIX-based systems that integrates dynamic data such as sound, video, and animation into documents.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9809

Tech Info Library

QuickTime: Creating and Distributing Movies

Revised: 3/19/92
Security: Everyone

QuickTime: Creating and Distributing Movies

==========

Article Created: 8 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

How do I create and distribute QuickTime movies?

DISCUSSION ----------

You can create QuickTime animation movies by saving your animation as a QuickTime Movie from a wide variety of upgraded QuickTime-savvy applications. A utility in the QuickTime Starter Kit will also let you convert appropriate Macintosh and DOS file formats to QuickTime movies. Utilities in the Movie Exchange Toolkit will also let you convert content on other platforms to QuickTime movies.

If you want to create a video QuickTime movie, the easiest way is by using one of the new QuickTime digitizer cards, such as VideoSpigot from SuperMac. For higher-quality capture, there are several tools in the QuickTime Developer's Kit, that allow for controlled capture from laserdiscs and professional video equipment.

A QuickTime movie is just a regular Macintosh file -- you can distribute it as you would any ordinary Macintosh file. But because QuickTime movies are typically large, you'll usually use storage media such as CD-ROM, removable mass storage, or networks. You can also record your presentations, including QuickTime movies, to videotape using any number of third-party RGB-to-NTSC/PAL hardware solutions.

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Tech Info Library Article Number:9810

QuickTime: System Requirements and Installation 2/93

Revised: 2/3/93
Security: Everyone

QuickTime: System Requirements and Installation 2/93

==========

Article Created: 8 February 1992

Article Change History

06/29/92 - REVIEWED
- For technical accuracy.

12/22/92 - REVISED
- To add more detail about 32-bit QuickDraw and using it on different system configurations.

02/03/93 - REVISED
- To add note about QuickTime Starter Kit installation.

TOPIC ---

What are the system requirements for QuickTime, and what else do I need to do before installing it? Will it work with a SCSI-based graphics adapter?

DISCUSSION ---

QuickTime requires a Macintosh computer with a 68020 or later microprocessor, with system software version 6.0.7 or later. Apple recommends at least 4MB of memory when using QuickTime with System 7. QuickTime relies on the capabilities of 32-bit QuickDraw, which only runs on 68020 or later Macintosh computers.

With System 6.0.7, the 32-Bit QuickDraw file is located on the Printing Tools disk in the Apple Color folder and isn't automatically installed. You must install it manually. With System 7 and later versions, 32-bit QuickDraw is built into the system software, and a separate file for 32-bit QuickDraw is no longer required.

If you want to use QuickTime on an older Macintosh, you might be able to upgrade the unit or use a third-party board to bring it up to a 68020 CPU or higher. QuickTime will then work with System 7 installed, or with the

32-bit QuickDraw file installed in system 6.0.5 or 6.0.7.

In regards to QuickDraw working on a SCSI-based graphic adapter, we don't have any testing information on its functionality with such a device. We have heard reports of these devices being significantly slower in the screen drawing process. Based on this information, we would expect QuickTime to have a very poor performance when compared to operation with direct video through a video board or built-in video.

To install, simply drag the QuickTime extension to your System Folder and restart. Please note that the Installer for QuickTime Starter Kit 1.0 will replace QuickTime version 1.5 with 1.0. Just reinstall the QuickTime 1.5 extension.

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Tech Info Library Article Number:9812

Tech Info Library

QuickTime: Movie Exchange Toolkit

Revised: 9/16/92
Security: Everyone

QuickTime: Movie Exchange Toolkit

==========

Article Created: 8 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC --

What is the QuickTime Movie Exchange Toolkit?

DISCUSSION --

This toolkit consists of utilities, sample code, and documentation to allow developers to incorporate the QuickTime Movie file format into their non-Macintosh applications. The utilities support popular models of computers running MS-DOS, Windows, Cray, Silicon Graphics, Sun, DEC, and IBM computers.

For example, a user creating an animation in MS-DOS will have the option of converting that animation to a QuickTime movie. The animation can then be shared with Macintosh users over a network or via floppy disk, but only played back on a Macintosh.

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Tech Info Library Article Number:9813

Tech Info Library

QuickTime: Video Window Size

Revised: 5/7/92
Security: Everyone

QuickTime: Video Window Size

==========

Article Created: 8 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Why is the video window so small?

DISCUSSION -----

There is no limit in QuickTime to the size or frame rate you can have for a movie -- the only limitation is hardware. On existing Macintosh computers, and using Apple's Video Compressor, you can run 160 x 120 pixel movies at an average of 15 frames per second. The new Macintosh Display Card 8•24 GC can provide larger video windows by decompressing the video from its AMD2900 RISC processor.

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Tech Info Library Article Number:9814

Tech Info Library

Apple 16-Inch Color Display: 8•24, 8•24 GC, and Quadra Support

Revised: 5/7/92
Security: Everyone

Apple 16-Inch Color Display: 8•24, 8•24 GC, and Quadra Support

==========

Article Created: 8 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What are the bit depths with the Apple 16-Inch Color Display and the Macintosh Display Cards 8•24 and 8•24 GC?

What support do the Quadra 700 and 900 give the Apple 16-Inch Color Display with their various VRAM configurations?

DISCUSSION ----------

The Macintosh Display Cards 8•24, 8•24 GC, Quadra 700, and Quadra 900 offer the following support for the Apple 16-Inch Color Display:

8•24 (rev B) - 1, 2, 4, and 8 bits/pixel (up to 256 colors)

8•24 GC (rev B) - 1, 2, 4, 8, and 16 bits/pixel (up to 32,768 colors)

Quadra 700 - .5MB VRAM: 1, 2, 4, and 8 bits/pixel (up to 256 colors)
1MB VRAM: 1, 2, 4, and 8 bits/pixel (up to 256 colors)
2MB VRAM: 1, 2, 4, 8 and 24 bits/pixel (up to 16.7 colors)

Quadra 900 - 1MB VRAM: 1, 2, 4, and 8 bits/pixel (up to 256 colors)
2MB VRAM: 1, 2, 4, 8 and 24 bits/pixel (up to 16.7 colors)

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Tech Info Library Article Number:9815

AppleTalk Remote Access: Manual Dialing (1/96)

Revised: 1/29/96
Security: Everyone

AppleTalk Remote Access: Manual Dialing (1/96)

==========

Article Created: 6 February 1992
Article Reviewed/Updated: 29 January 1996

TOPIC ----------

I have a question about using a PowerBook 170 to communicate with a remote computer long distance. If I use a special discount phone service and have to talk to an operator to get access to the this line, when would I connect with the remote modem with Remote Access? Or can I even communicate using a phone service like this?

DISCUSSION ----------

Yes, it's possible to dial manually and still connect using AppleTalk Remote Access 1.0. The "Apple Modem 2400 with X1" Remote Access Script allows this. You can download this script from Apple's ARA Server at 512-908-8118 (connect as a Guest). Also, Apple Remote Access 2.0, the version with Dial Assist, has the ability to manually dial through the Setup Menu in the Apple Remote Access program. Upgrading to ARA 2.0 is probably easier than trying to modify the CCL script for your modem.

Background Information

The PowerBook Modem normally waits to detect a dial tone before dialing. When dialing manually it's necessary to disable this feature so the modem will attempt to "dial without a number" and connect immediately.

The only change to the original Apple Modem 2400 script was the addition of "X1" within the dial command:

```
!
! The modem is ready so enable answering, or originate a call
!
! To accommodate manual dialing,
! added X1 command to disable
! "wait for dial tone". - PDF 2/5/92
```

```
  !
  @LABEL 8
  pause 5
  ifANSWER 30
  note "Dialing ^1" 3
  write "ATX1DT^1\13"
```

To use the new script, follow these steps:

Step 1

Put the script in the Extensions folder.

Step 2

Open the Remote Access Control Panel and select "Apple Modem 2400 with X1."

Step 3

Open Remote Access and enter a single space in the Phone field. (If you leave the Phone field blank, a dialog box indicates "The connection attempt has failed. You have not specified a phone number in the connection document." Entering a space gets around it.)

Step 4

Enter Name and Password as necessary.

Step 5

Place the call manually (or through your operator).

Step 6

The moment you hear the remote phone number ring, click "Connect" in the Remote Access window. (It takes about 5 seconds for the script to execute from the time you click "Connect" and when the modem goes off hook and actually tries to connect.)

Step 7

The moment you see the "Communicating at xxxx bps" message in the Remote Access Status window, hang up.

Article Change History:
29 Jan 1996 - Updated information on ARA 2.0 and update format.
15 Sep 1994 - Removed binary file. Updated to include ARA 2.0 info.
02 Feb 1993 - Updated.

Support Information Services

Copyright 1992-96, Apple Computer, Inc.

Tech Info Library Article Number:9819

Tech Info Library

Environment Settings for MacX to OpenLook

Revised: 10/14/92
Security: Everyone

Environment Settings for MacX to OpenLook

==========

Article Created: 5 March 1992

TOPIC ----------

What are the environment settings for connecting to a Sun OpenLook platform when using MacX?

DISCUSSION ----------

1) setenv OPENWINHOME /usr/openwin
setenv LD_LIBRARY_PATH /usr/openwin/lib

2) Add the next line to your path string:

$OPENWINHOME /bin: $OPENWINHOME /bin/Xview: $OPENWINHOME /demo

3) Command to start OpenLook Window Manager (don’t start “openwin”):

setenv DISPLAY “®display”; /(root directory)/****/olwm

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9822

Tech Info Library

LaserWriter IIf/IIg: TrueType Font, 2nd Document Won't Print

Revised: 10/14/92
Security: Everyone

LaserWriter IIf/IIg: TrueType Font, 2nd Document Won't Print

==========

Article Created: 30 January 1992

Article Change History

10/15/92 - UPDATED
- New driver with fix available.

TOPIC ----------

When I print the same document twice in a row to either the Apple LaserWriter IIf or IIg, using TrueType fonts, the second document doesn't print.

DISCUSSION ----------

This problem has been fixed, update to the most current version of the driver.

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Tech Info Library Article Number:9823

Tech Info Library

LaserWriter II Series: Possible Causes of Card Stock Jams

Revised: 5/7/92
Security: Everyone

LaserWriter II Series: Possible Causes of Card Stock Jams

==========

Article Created: 3 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

A customer reported that he uses his LaserWriter IINTX to print employee records onto card stock. After printing about 350 cards, the printer jams.

Are there any recommended guidelines for printing on card stock? Are there any adjustments that I can make to the printer to correct the problem?

DISCUSSION ----------

You can use up to 36-pound card stock via manual feed in the LaserWriter II series printers. However, higher weight stock has a higher content of cotton rag or other dust-producing material. This may be causing paper dust to build up on the paper pickup roller and/or separation pad, which may be causing the jam conditions.

Try cleaning the paper pickup roller with a printer platen cleaner. DO NOT use alcohol. Alcohol removes an oil compound in the rubber, causing it to shrink and damage the roller.

Note that the roller and separation pad are subject to wear. Ensure that these parts are in good working condition.

Search on LaserWriter II and specifications for more information on recommended printing material.

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Tech Info Library Article Number:9825

Tech Info Library

Macintosh: Troubleshooting Bus Error Messages

Revised: 5/7/92
Security: Everyone

Macintosh: Troubleshooting Bus Error Messages

==========

Article Created: 3 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a Macintosh IIsi running system software version 6.0.7 and Quark 3.0. I'm getting bus error messages when I open the Chooser to select a different printer.

DISCUSSION ----------

We've had other problem reports like this and found that most were caused by the WDEF virus or a corrupt System.

To eliminate the WDEF virus as the cause, follow the instructions in the Tech Info Library article titled "WDEF" Virus: Information.

If the problem persists:

1) Remove all items from the System Folder that you want to save, like third-party INITs, CDEVs, and DAs.

2) Trash the System Folder.

3) Reinstall the system software from locked, known-good disks.

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Tech Info Library Article Number:9826

Tech Info Library

LaserWriter IIf/IIg/Pro: Switching PostScript to HP Emul (9/94)

Revised: 6/5/96
Security: Everyone

LaserWriter IIf/IIg/Pro: Switching PostScript to HP Emul (9/94)

==========

Article Created: 21 February 1992
Article Reviewed/Updated: 28 September 1994

TOPIC ----------

How do I set a LaserWriter IIf, IIg, or LaserWriter Pro for LaserJet emulation, and return it to standard Apple PostScript mode?

I'm using my printer on an IBM network and need to send the commands via text file.

DISCUSSION ----------

Switching to HP Emulation for the Current Job

Below is PostScript code that will switch the LaserWriter IIf, IIg, and LaserWriter Pro PostScript interpreter into HP LaserJet IIP emulation mode for the duration of the current job. It requires first configuring the port to be used for PostScript "Binary" mode (versus Normal), or a rangecheck error will be generated.

```
currentfile /LaserJetIIP statusdict /emulate get exec
```

The code must precede each job that will use HP LaserJet IIP emulation, and only works on the LaserWriter IIf, IIg, and LaserWriter Pro printers. The emulate operator is currently specific to these printers. The emulator will exit, returning to PostScript, if either of the following conditions occur:

- The current job ends.
  This is defined as when the printer receives a control-D or when the emulator's 30-second wait timeout expires. Note that this 30-second timer can't be changed, and overrides the normal WaitTimeout value while the emulator is in control.

- The printer receives the ASCII sequence ESC-DEL-Zero (Decimal ASCII 27, 127, 48).

This causes the emulator to exit to PostScript, where more printing can occur before the end of job. However, when the emulator exits, it ejects the current page. This prevents any mixing of PostScript and HP LaserJet data on a single page.

Permanently Switching to HP Emulation

A communications port can also be configured for HP LaserJet IIP emulation so that the setting persists across jobs and power cycles. This is just as if the setting were made from the LaserWriter Utility's Configure Communication feature, and requires that the push-wheel mode switch be in one of positions 6 through 9.

To configure the serial port, download this PostScript code to your LaserWriter:

```
(%Serial_NV4%)
<< /Protocol /Binary
   /Interpreter /LaserJetIIP
>> setdevparams
```

The first line tells the setdevparams operator which parameter set is to be changed. Possible values here are:

```
(%Serial_NV%)  for push-wheel position 6
(%Serial_NV2%) for 7
(%Serial_NV3%) for 8
(%Serial_NV4%) for 9
```

If the mini-DIN 8 port is being used, substitute "SerialB" into the string for all instances of "Serial."

Note: If you remove the "_NV" portion from "(%Serial_NV4%)", such as (%Serial4%), the settings will not persist and the printer will return to PostScript mode under the conditions mentioned above.

To configure the parallel port, download this PostScript code to your LaserWriter:

```
%%Begin (%Parallel_NV3%)    %Modifies the 3rd changeable pos.(setting 8)
<< /Enabled true            %Mark a dictionary on the stack with key/value
   /HasNames false          %pairs for the various settings.
   /Protocol /Raw
   /Interpreter /LaserJetIIP
   /On true >> setdevparams %Create the dictionary and execute setdevparams
                            %(which uses it to modify the parameter set.)
%%End
```

The first line tells the setdevparams operator which parameter set is to be changed. Possible values here are:

```
       (%Parallel_NV%)  corresponds to 6
       (%Parallel_NV2%) "         " to 7
       (%Parallel_NV3%) "         " to 8
       (%Parallel_NV4%) "         " to 9
```

Note: If you remove the "_NV" portion from "(%Parallel_NV3%)", such as (%Parallel3%), the settings will not persist and the printer will return to PostScript mode under the conditions mentioned above.

Switching Back to PostScript

Switching a communications port back to PostScript mode requires sending the following variation of the above code to a port that is still configured for PostScript:

```
  (%Use the same parameter set here as used in the previous code%)
  << /Protocol /Binary
     /Interpreter /PostScript
  >> setdevparams
```

If all available ports have been configured for HP LaserJet IIP emulation, returning to PostScript will require changing the push-wheel switch to one of positions 0 through 5.

Article Change History

28 Sep 1994 - Revised formatting, reviewed for technical accuracy.
12 Apr 1993 - Updated to include information about the LaserWriter Pro.

Support Information Services

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Tech Info Library Article Number:9827

Tech Info Library

LaserWriter IIf & IIg: EPROM Wear

Revised: 5/7/92
Security: Everyone

LaserWriter IIf & IIg: EPROM Wear

==========

Article Created: 21 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Are there any concerns about writing to an EPROM in the LaserWriter IIf and IIg? (With the LaserWriter NT or NTX, there's a limit to the number of changes before it becomes worn out.)

DISCUSSION -----

Unlike the LaserWriter IINTX, which uses battery backed nonvolatile RAM to store settings, the LaserWriter IIf and IIg use a device much like that in the LaserWriter IINT. But where the IINT is limited to approximately 10,000 writes, the newer device allows approximately 50,000. The LaserWriter IINTX has no such limit, but the battery within the memory device will eventually fail -- resulting in the same symptoms.

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Tech Info Library Article Number:9828

Tech Info Library

PostScript Level 2: Doesn't Check for Device-Specific Operators

Revised: 5/7/92
Security: Everyone

PostScript Level 2: Doesn't Check for Device-Specific Operators

==========

Article Created: 27 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I upgraded from a LaserWriter IINTX to a LaserWriter IIg, to print jobs made by Sun workstations. Files that printed on the LaserWriter IINTX now fail to print on the LaserWriter IIg. The problem file generates a calendar for 1992. Examining a log shows that the "load" command isn't finding a key entry and causes the error. This is somewhere in the following PostScript extract:

```
"/a4 [ [300 72 div 0 0 -300 72 div -72 3436 ] 292 3365
 {statusdict /jobstate (printing) put 0 setblink
 margins exch 142 add exch 256 add 8 div round cvi frametoroket
 statusdict /jobstate (busy) put 1 setblink} /framedevice load
 60 45 {dup mul exch dup mul add 1.0 exch sub} /setscreen load
 {} /settransfer load /initgraphics load /erasepage load ] cvx
 statusdict begin bind end readonly def"
```

Is the software that creates the Postscript doing "unapproved" things to the statusdict dictionary? Or are the problems due to a change from Level 1 to Level 2 Postscript in the LaserWriter IIf and IIg?

DISCUSSION -----

After a quick look at the CAL code, we noticed at least a couple of device-specific operators.

The first, framedevice, is the one causing the failure on your LaserWriter IIg. The framedevice operator no longer exists in PostScript Level 2 implementations. It wasn't included in a number of Level 1 implementations either. Nearly every mention of the operator in Adobe documentation warns about its use, all pointing out that the code should definitely understand

the environment it's used on. It's interesting that an application is generating code that uses it without first verifying its existence on the printer.

The second problem operator is setblink. It actually occurs first in the code, but is in a deferred procedure and therefore doesn't get a chance to cause problems because it's never executed. (More on this later.) It's also device-specific to some printers that allow program control over the user indicator panel.

Finally, both of the problem operators are in a definition of the a4 paper size. This is the same segment you included in your question. What's almost humorous is that nothing in the rest of the code refers to this definition. It isn't used. (That's why the setblink operator never has a chance to fail.) Commenting out the a4 definition doesn't affect the program's operation or output. Also, a4 is already defined in many PostScript implementations. It certainly doesn't need to be redefined for the LaserWriter IIg. If the Sun generated this by a "prep" file, you should be able to comment it out to prevent causing further problems with other files.

In any case, the program that generated the PostScript should have first checked for the existence of these operators. The problem is showing up because of changes from PostScript Level 1 to Level 2, but the real culprit is the PostScript code itself. It fails to test adequately the environment it's running in.

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Tech Info Library Article Number:9829

Tech Info Library

MacTerminal: Macintosh-to-UNIX File Transfer

Revised: 9/16/92
Security: Everyone

MacTerminal: Macintosh-to-UNIX File Transfer

==========

Article Created: 18 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

We have a Motorola 147 microcomputer system running UNIX 568, release 5, version 6. We would like to use some Macintosh Plus or SE computers as terminals and need to know if there is something that will work with MacTerminal or some other emulator to allow file transfers between the computers.

DISCUSSION -----

See if your UNIX host has one of the standard file transfer protocols such as Xmodem, Kermit, or FTP. Most UNIX systems have support for file transfer using these protocols. MacTerminal 3.0 comes with an XMODEM Tool for file transfer. Other terminal emulators such as PacerTerm or VersaTerm-Pro provide other file transfer Tools such as PacerFT, and VersaTerm FTP Tool.

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Tech Info Library Article Number:9832

Tech Info Library

DAL: For VM/CMS, DOS, Windows, and NetWare SQL

Revised: 9/2/92
Security: Everyone

DAL: For VM/CMS, DOS, Windows, and NetWare SQL

==========

Article Created: 19 February 1992

Article Change History

06/18/92 - REVIEWED
- For technical accuracy

TOPIC ----------

I have some questions about DAL:

1) Is it possible to buy DAL Server for VM/CMS directly from Apple, instead of Computer Associates?

2) Is DAL available for DOS? For Windows?

3) Is DAL for NetWare shipping?

DISCUSSION ----------

1) Yes, customers can buy DAL products directly from Apple buy sending an order to APDA.

2) Blyth software has shipped DAL for DOS and DAL for Windows since November 1991.

3) Novell is shipping DAL for Netware SQL.

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Tech Info Library Article Number:9833

DAL: How to Access Database on Remote VAX

Revised: 9/2/92
Security: Everyone

DAL: How to Access Database on Remote VAX

==========

Article Created: 21 February 1992

Article Change History

05/08/92 - REVIEWED
- For technical accuracy

TOPIC ----------

We have some VAX systems running VAX/VMS. What logical names are required for DAL on one VAX to access an ORACLE RDBMS on the other VAX? We were able to run SQLPlus, but we've customized it so the access required a few logical names.

DISCUSSION ----------

If the VAX systems are part of a VAXcluster, you must connect to a node that is running the DAL Server and AppleTalk for VMS. If the DAL Server and AppleTalk for VMS has been licensed for each node on the VAXcluster, then you may access a shared database via DAL from any node running the DAL Server and AppleTalk for VMS.

If the VAX systems aren't part of a VAXcluster, you still can access the remote database, if the database is set up for remote access. ORACLE, Ingres, and Sybase all have mechanisms to support remote database access.

For example, if you have the DAL Server and AppleTalk for VMS installed on VAX A and the ORACLE database installed on VAX B, you can allow users on VAX A to access the database on VAX B in this way:

1) Select either the Async Driver, the DECnet Driver, or the TCP Driver for SQL*Net during ORACLE installation.

2) Create a database link for each database. This database link contains

enough information to uniquely identify a path to the remote database. It normally contains the following information:

- Network protocol
- Nodename
- Dbname
- Username/password
- Protocol options

If the users on VAX A can access the database on VAX B, then the DAL Server has access, too. The database application handles the Async, DECnet or, TCP/IP communications between VAX A and VAX B, not DAL.

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Tech Info Library Article Number:9835

Tech Info Library

DAL: Protocols for NetWare SQL, Btrieve Hooks

Revised: 9/2/92
Security: Everyone

DAL: Protocols for NetWare SQL, Btrieve Hooks

==========

Article Created: 25 February 1992

Article Change History

05/08/92 - REVIEWED
- For technical accuracy

TOPIC ----------

What protocols support DAL for NetWare SQL? What pieces of NetWare, if any, must be co-resident? Are there hooks into Btrieve?

DISCUSSION ----------

The DAL Server NLM (NetWare loadable module) supports AppleTalk via ADSP. You can connect the Macintosh to any segment of the network (LocalTalk, Ethernet, Token Ring, and Arcnet). DAL for NetWare SQL uses hosts.cl1 or DAL Preferences file with the familiar syntax:

```
ServerName:atalk:ServerName.AppleTalkZone
```

Files required for the NetWare File Server side:

- NetWare v3.11 or later
- Mac.NAM v3.4
- BTRIEVE.NLM v6.0 or later
- NWSQL.NLM v3.0 or later
- APPLETLK.NLM v3.01
- TLI.NLM v3.11
- DALSVR.NLM v1.0

NetWare SQL uses NetWare Btrieve as its record manager. Consequently, front-end DAL applications running on the Macintosh can share files created and maintained by the thousands of Btrieve applications already on the

market.

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Tech Info Library Article Number:9836

Tech Info Library

DAL: Blyth DAL/DOS Client Software

Revised: 6/24/92
Security: Everyone

DAL: Blyth DAL/DOS Client Software

==========

Article Created: 25 February 1992
Article Last Reviewed: 18 June 1992
Article Last Updated: 18 June 1992

TOPIC ----------

What protocols are supported in the DAL/DOS client software from Blyth?

DISCUSSION ----------

Blyth Software's DAL for DOS and DAL for Windows support asynchronous connections to VAX and UNIX systems, Irma, and AttachMate EXTRA HLLAPI for 3270 connection to mainframes.

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Tech Info Library Article Number:9837

Tech Info Library

PowerBook: Don't Make Direct Calls to Serial Chip 2/92

Revised: 5/16/94
Security: Everyone

PowerBook: Don't Make Direct Calls to Serial Chip 2/92

==========

Article Created: 17 February 1992

TOPIC -----

We're using a PowerBook 170 with software we developed. This software accesses a serial device attached to the external serial port.

When we use the same software under System 7.0.1 on a Macintosh IIci, it works fine. When we attempt to use it on a PowerBook 170, the program bombs out and the serial ports lock up. The internal modem on the PowerBook 170 doesn't appear to be interfering. All settings seem correct.

What could be the source of this problem? Were there any changes to the serial port on the PowerBook 170 that might require some sort of special serial switch?

DISCUSSION -----

It sounds like the application is making serial communication calls directly to the PowerBook 170's serial chip. An application should use normal communications calls to talk to the serial driver; it should never attempt to get direct access to the SCC hardware.

The serial chip is turned off when not in use (in order to conserve power). If your application makes normal serial communications calls, the serial driver knows how to turn the serial chip back on. However, an application that attempts to go directly to the serial chip will wind up talking to the chip when it's turned off, resulting in a loss of communication.

Support Information Services

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Tech Info Library Article Number:9839

PowerBook Fax/Data Modem: How Escape Sequence Differs from Hayes

Revised: 5/16/94
Security: Everyone

PowerBook Fax/Data Modem: How Escape Sequence Differs from Hayes

==========

Article Created: 18 February 1992

TOPIC ----------

I'm reluctant to believe that the PowerBook internal modem is fully compatible with Hayes' patented guard time escape sequence. Is this a serious issue?

DISCUSSION ----------

The issue relates to the different ways the escape sequence is implemented by Hayes and Apple. The primary difference is that Hayes implements a guard time and Apple doesn't. And no, it isn't a serious issue.

Background

You can use an escape sequence when the modem is on-line and you need to enter commands to the modem, but you don't want to disconnect from a call. The escape sequence ensures that you won't lose the modem connection or data while the modem is off line in the command state. Because of the escape sequence, modems can provide reliable transmission of data, distinguishing the predetermined escape sequence characters from the random occurrence of like characters in user data.

Hayes' Implementation

To enter the escape sequence, follow these steps:

1) Pause 1 second (Hayes calls this the guard time) or longer.

2) Enter +++ (3 plus characters), and pause 1 second or longer.

3) The "OK" from the modem acknowledges that it has escaped from the on-line data state, and you may begin entering AT commands.

When you're ready to resume your call to a remote system, enter ATO, and press RETURN. This is the command to return on-line.

Apple's Implementation

There are two ways to enter into the command state while on line:

- Send a BREAK to the modem (refer to the ATYn command on page 100 of the Macintosh PowerBook Fax/Data Modem User's Guide for more details), and it will immediately drop into command state, or

- Enter the appropriate escape sequence.

The following strings are recognized as valid escape sequences:

```
+++ATxxx....xxx<CR>
+++<CR>ATxxx....xxx<CR>
```

<CR> is RETURN.
xxx....xxx is a character string consisting of 0 to 13 ASCII characters.

After the escape command is recognized and executed, the modem sends an OK result code.

NOTE: This escape sequence is only based on character recognition, regardless of any guard time before, during, or after the DTE sends the string to the modem. This command isn't recognized in command mode.

Support Information Services

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9840

Tech Info Library

System 7: Modifying the Keyboard Layout Switching Command

Revised: 1/23/95
Security: Everyone

System 7: Modifying the Keyboard Layout Switching Command

==========

Article Created: 21 February 1992
Article Reviewed/Updated: 23 January 1995

TOPIC ----------

Background

Under System 7.x, I can switch keyboard layouts by pressing the Command, Option, and Space Bar keys. This feature is probably not well known in the U.S., where normally only one keyboard layout is installed. However, in most European countries you may have at least two keyboard layouts installed.

In Norway we have three: two different Norwegian (only one key is different) and the U.S. keyboard layout. The ability to change keyboard layouts in environments with employees from different countries is appreciated. And with the Keyboard menu (between the Help menu and the Application menu) enabled with a little help from ResEdit, it's very easy to find the keyboard layout in use.

Problem

Many heavy users in the graphics business have upgraded to System 7.x, or bought Macintosh Quadra systems. The keyboard layout switch shortcut causes problems in some common graphics applications such as Adobe PhotoShop, Adobe Illustrator, and Quark XPress.

Adobe PhotoShop and Adobe Illustrator use the Command, Option, and Space Bar sequence to zoom the picture in, while Quark XPress uses this sequence to get a special space character called em-space (used a lot among professional typographers).

We've found a workaround with PhotoShop and Illustrator. If we press the space key before the Command and Option keys, the keyboard layout won't change. The Quark XPress problem is more difficult, since the Command, Option, and Space Bar sequence displays a special character, rather than executing a command.

Do you have any solutions for this?

DISCUSSION ----------

NOTE: System 7.5 comes pre-installed with many keyboard layouts. Also, if a System 7.5 Easy Install is performed, all the European keyboard layouts are installed as a default. The user can limit the keyboard layout installation to only the U.S. keyboard layout if a Custom Install is performed. For more information about workarounds and alternatives to using ResEdit see the following article:
"System 7.5: Command-Option-Spacebar Application Conflict (10/94)"

WARNING: The following instructions refer to using ResEdit to alter your system software. Apple Computer, Inc., is not liable for any damage done to your software through the use of ResEdit to alter the software. The User Assistance Center phone representatives (at 800-SOS-APPL) do not provide technical support for ResEdit. It is supported by APDA. For contact information on APDA, search the Tech Info Library under "APDA".

The entries in the 'KSWP' system resource (ID = 0) control the switching of the keyboard layouts. Actually, the entries in the 'KSWP' resource control more than that. Inside Macintosh Volume VI fully documents this resource on pages 14-43 to 14-44, and pages 14-98 to 14-99.

The standard U.S. 'KSWP' resource looks like this:

```
FFFF 3101 FFFC 3109
FFFE 4601 0000 4201
0000 0000
```

Each long word entry controls a separate function. The first two bytes (integer) form the verb that the KeyScript procedure will act upon. The third byte is the virtual key code for the key that you must press, and the fourth byte is the modifier state that must exist when you press the key.

Table 14-3 on page 14-44 of Inside Macintosh Volume VI outlines the verbs for the KeyScript procedure.

You can find most of the virtual key codes on pages 191 and 192 of Inside Macintosh Volume V, or by using ResEdit on the 'KCHR' resource in the System file.

Note on modifier state: Option key down is equal to 8; Shift key down is equal to 2; and Command key down is equal to 1. If you press multiple modifier keys at the same time, their values are added together for the modifier state entry.

The second entry in the standard U.S. 'KSWP' resource (FFFC 3109) is the one that causes the problems you describe. The first two bytes, $FFFC or -4, form the verb "smKeyNextKybd" which means "Switch to next keyboard in active script." The third byte, $31, is the virtual key code for space. The fourth byte is Command key down (1) plus the Option key down (8) which equals $09.

There are three ways to solve the problem. The first method is rather limiting and not very flexible. The second is the most straightforward, and probably the best. The third is the most flexible, but the most complicated from a user's point of view.

- Delete the entry that causes the problem.
 The 'KSWP' resource would then look like this:

```
FFFF 3101 FFFE 4601
0000 4201 0000 0000
```

- Change the virtual key code to something other than $31.
  Changing it to $4C would allow the Command-Option-Enter key sequence to switch keyboard layouts. The 'KSWP' resource would look like this:

```
FFFF 3101 FFFC 4C09
FFFE 4601 0000 4201
0000 0000
```

- Add two new entries to the 'KSWP' resource.
  One would disable switching from the current keyboard (verb "smKeyDisableKybdSwitch") and the other would enable keyboard switching (verb "smKeyEnableKybds"). Command, Option, and Enter disable switching, and Command, Option, and Return enable switching. The 'KSWP' resource would look like this:

```
FFFF 3101 FFFC 3109
FFFE 4601 0000 4201
FFF4 4C09 FFF9 2409
0000 0000
```

Note: The four bytes of zeroes at the end of the resource are filler and must be present.

Article Change History:
23 Jan 1995 - Added warning about ResEdit not being supported by UAC and info about default keyboard layouts in System 7.5.
18 Dec 1992 - Corrected formatting of 'KSWP' resource.
18 Nov 1992 - Reviewed for technical accuracy

Support Information Services

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Tech Info Library Article Number:9844

LaserWriter IIg: Link Signals on 10Base-T

Revised: 5/21/92
Security: Everyone

LaserWriter IIg: Link Signals on 10Base-T

==========

Article Created: 27 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm testing a LaserWriter IIg on a Banyan network. I'm using a twisted pair transceiver. In my network environment and a variety of vendor equipment, I can't have equipment sending out any "Link signals" between networking components. It appears the transceiver is emitting some sort of link signal. Is there any way I can turn off this signal?

DISCUSSION ----------

There isn't an option to turn off the "link beat" signal on the Apple Ethernet NB cards or the LaserWriter IIg when using the 10Base-T transceivers. The "link beat" signal is part of the 10Base-T standard. The cards are designed for use on 10Base-T compliant networks only, and no provisions have been made to accommodate any non-standard Ethernet configuration.

One possible solution, Asante's 10T MAU (medium access unit), allows any computer with a thick Ethernet port to connect to a 10BaseT twisted-pair network. The device, which resembles an external modem, contains two ports:

- A 15-pin AUI port for a thick coaxial connection, and

- An eight-pin RJ-45 port for connection to twisted-pair cable.

The 10T MAU unit also provides four LED status displays and two switches that enable or disable the link integrity and SQE signals. The device is compatible with any thick-cable Ethernet card. You could use this device in addition to an Apple Ethernet NB card with the thicknet transceiver option.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:9845

Tech Info Library

Macintosh Quadra: No Way to Disable DRAM Tests

Revised: 5/8/92
Security: Everyone

Macintosh Quadra: No Way to Disable DRAM Tests

==========

Article Created: 27 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Is there a way to reduce the time it takes for a Quadra with a large amount of RAM to perform its RAM tests on startup? A Quadra 900 with 128MB of RAM takes 86 seconds to access the hard drive; a Quadra 700 with 68MB of RAM takes about half the time.

Is there a key combination we can use on startup to bypass the RAM tests?

DISCUSSION -----

You can't defeat the startup RAM test without installing new ROMs having a different startup sequence.

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Tech Info Library Article Number:9848

Tech Info Library

A/UX: Can Mount and Use AppleShare Volumes (9/94)

Revised: 9/19/94
Security: Everyone

A/UX: Can Mount and Use AppleShare Volumes (9/94)

==========

Article Created: 14 February 1992
Article Reviewed/Updated: 19 September 1994

TOPIC ----------

Can I mount AppleShare volumes under A/UX? Can I then manipulate files? If so, how does A/UX handle filenames with blanks in them?

DISCUSSION ----------

Yes, A/UX mounts any AppleShare volume in the AppleTalk network on your desktop. A/UX 3.0 can also do Macintosh File Sharing as in Macintosh System 7.0. It can export any volume from your A/UX computer to be shared in the AppleTalk network. (Note that AppleShare SERVER functionality isn't supported under A/UX.)

The A/UX File Manager handles all files, including A/UX file systems (BSD and System V file systems) and Macintosh HFS (Hierarchical File System) without any problem. This, of course, includes handling file format conversion and copy between different file systems, file permission, and filenames with blanks. As a matter of fact, UNIX is capable of creating filenames with blanks, for example:

```
% touch "This Is Mine"
```

Support Information Services

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Tech Info Library Article Number:9850

Tech Info Library

A/UX: Remove Temp Files On Unsuccessful adduser Command (8/94)

Revised: 8/22/94
Security: Everyone

A/UX: Remove Temp Files On Unsuccessful adduser Command (8/94)

==========

Article Created: 25 February 1992
Article Reviewed/Updated: 22 August 1994

TOPIC ----------

I've just set up a server with A/UX. Everything works until I add a new user with the adduser command. I get the reply, "File busy, try again later."

Now I can't change passwd for anyone. I can login and logout as root, edit the /etc/passwd, and modify it with vi, but not with vipw. I can't change my own passwd as root with passwd command. I've even replaced /etc/passwd by /etc/opasswd, and still nothing has changed. I've also restarted the computer twice. I've changed all the privileges, and even changed the file by a user other than root.

I'm NOT running yellow pages (NIS), just networking with NFS, telnet, and so on.

DISCUSSION ----------

You probably had an UNSUCCESSFUL attempt using the adduser command. The "vipw" may have incorrectly set the user password. In turn, it created two locked file called "ptmp" (password temp file), and "gtmp" (group temp file) in the /etc directory.

Removing the /etc/ptmp and /etc/gtmp locked files should take care of your problem.

Article Change History:
22 Aug 1994 - Added the reference to gtmp file.

Support Information Services

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Tech Info Library Article Number:9851

Tech Info Library

A/UX: HoneyDanBer (BNU 1) UUCP (9/94)

Revised: 9/14/94
Security: Everyone

A/UX: HoneyDanBer (BNU 1) UUCP (9/94)

==========

Article Created: 25 February 1992
Article Reviewed/Updated: 13 September 1994

TOPIC ----------

I'd like to have this information on UUCP under A/UX 3.0:

- What are the main differences between BNU UUCP and A/UX 2.0 UUCP?

- What is f-protocol in BNU UUCP?

DISCUSSION ----------

Basically, the HoneyDanBer UUCP is a well-known UUCP implementation in the UNIX community. Its overall performance with A/UX 3.0 is better than the one we used in A/UX 2.0.1 and before. These are the differences:

- It supports TCP as well as serial links.

- The file structure of the UUCP system files under /usr/lib/uucp directory are organized differently (new files and new formats).

- It adds more parameters and features for better control on dialers and login checking sequence.

- Almost all the files (for example, Devices, Sysfiles, Systems, and so on) in the /usr/lib/uucp directory have new formats.

- The new A/UX Network System Administration document for A/UX 3.0 describes more details.

The original HoneyDanBer UUCP didn't include the f-protocol. Because of requests for the f-protocol, A/UX 3.0 adds it in the HoneyDanBer UUCP.

The f-protocol is a UUCP protocol used to communicate over X.25 networks. The PAD dialer is a "real" dialer used to set up connections to remove X.25

destinations using MICOM or Motorola PADS, and will probably work on most other PADS.

Article Change History:
13 Sep 1994 - Reviewed.

Support Information Services

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Tech Info Library Article Number:9852

Tech Info Library

MacX: Iconified Windows Can't Be Animated

Revised: 5/8/92
Security: Everyone

MacX: Iconified Windows Can't Be Animated

==========

Article Created: 25 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

We're trying to provide a mail program that, when iconified, will change icons to show incoming mail and/or incoming files. But when we iconify windows in MacX, the iconified window can no longer update the icon to show changes in window status.

DISCUSSION -----

The built-in MacX Window Manager doesn't support the window animation after the window has been iconified. In other words, all iconified icons become inactive until de-iconified.

However, other window managers, such as "twm," support this feature even if the client has been iconified. The icon still does animation as it is in the regular window. For example, the "kalaid" client under "twm" demonstrates this capability.

We suggest that you run the client under your favorite window manager.

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Tech Info Library Article Number:9853

Tech Info Library

System 7: Lost Get Info Comments

Revised: 12/16/92
Security: Everyone

System 7: Lost "Get Info" Comments

==========

Article Created: 18 February 1992

Article Change History

12/16/92 - UPDATED
- To report System 7.1 has the same problem.

TOPIC ----------

When I insert a floppy disk and choose Get Info, I can type comments. When I eject and reinsert the floppy disk, the comments are gone. I can also reproduce this by leaving the floppy disk inserted, using NoFinder to kill the Finder, and then relaunching the Finder. This is true for System 7.0 and 7.0.1 (both with and without Tune Up).

DISCUSSION ----------

This problem with SuperDrive (FDHD) disks has been reported to Engineering and to the System 7 team. We don't have a workaround yet but can duplicate it with System 7.0, 7.01 and 7.1.

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Tech Info Library Article Number:9855

Tech Info Library

System 7: Does Not Support Non-SCSI Hard Drives (5/96)

Revised: 6/4/96
Security: Everyone

System 7: Does Not Support Non-SCSI Hard Drives (5/96)

==========

Article Created: 19 February 1992
Article Reviewed/Updated: 27 May 1996

TOPIC ----------

I am using an old HD20 (pre-SCSI disk from a Macintosh 512K) with a Macintosh Classic running System 7. The disk gets corrupted. Is it impossible to use HD20 with System 7?

DISCUSSION ----------

System 7 requires a SCSI hard drive. The Non-SCSI HD20 is therefore not supported by System 7.

(We have seen cases where the HD20s did work with System 7. However, HD20s were never tested with System 7. We have found that sometimes they work fine, and sometimes they don't work at all.)

It is not possible to run Apple HD SC Setup on the HD20s. Therefore, you cannot update the driver. This will absolutely not allow virtual memory or file sharing to work on these drives.

Article Change History:
27 May 1996 - Corrected minor typographical error.

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Tech Info Library Article Number:9856

Tech Info Library

PowerBook: Using External Device to Discharge NiCad Battery 2/92

Revised: 5/16/94
Security: Everyone

PowerBook: Using External Device to Discharge NiCad Battery 2/92

==========

Article Created: 19 February 1992

TOPIC ----------

When using an external discharge device to discharge the NiCad battery in a PowerBook, is there any adverse effect on the hardware or internal lithium battery?

DISCUSSION ----------

There should be no problems using an external discharge device to discharge and then recharge a the NiCad battery in a PowerBook 140, 145, 160, 170, or 180.

This should NOT be done, however, with a PowerBook 100 or PowerBook Duo, which do not have a NiCad battery.

Article Change History

11/2/92 - Updated for new models.

Support Information Services

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Tech Info Library Article Number:9857

Tech Info Library

Macintosh Display Cards 8•24 & 8•24 GC: Rev A/B Differences

Revised: 6/2/92
Security: Everyone

Macintosh Display Cards 8•24 & 8•24 GC: Rev A/B Differences

==========

Article Created: 18 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Why doesn't the ROM upgrade to the Macintosh Display Card 8•24 GC Rev A allow 16-bit color on the Macintosh 16-inch Color Monitor? What is the difference between an upgraded Rev A card and the Rev B card?

Also, why doesn't the Macintosh Display Card 8•24 support 16-bit color on the Macintosh 16-inch Color Monitor?

DISCUSSION -----

Although the ROM upgrade for the Rev A 8•24 GC card allows this card to work with the Macintosh 16-inch Color Monitor, the ROM version isn't the only difference between the Rev A and Rev B 8•24 GC cards. The Rev B card includes a new CLUT/DAC chip that supports a 16-bit color lookup table that is necessary for 16-bit color support. Because this chip isn't available on the Rev A card, this card won't support 16-bit color.

Similarly, since the 8•24 card doesn't have a CLUT chip that supports 16-bit color, this card won't provide 16-bit color support. However, just like the 8•24 GC, you will need to upgrade the ROMs on older versions of this card if you wish to use a Macintosh 16-inch Color Monitor.

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Tech Info Library Article Number:9858

Tech Info Library

Macintosh 16, 21 Color Displays: Chromaticity Values (2/92)

Revised: 5/25/94
Security: Everyone

Macintosh 16", 21" Color Displays: Chromaticity Values (2/92)

==========

Article Created: 21 February 1992

TOPIC ----------

I'm trying to set up Macintosh 16-inch and 21-inch Color Displays with Adobe PhotoShop. I need to get the Phosphor Color settings in order to calibrate the monitors. Adobe said that these must be obtained by the maker of the monitor. What are the chromaticity values?

DISCUSSION ----------

Here are the chromaticity values for the two displays.

Macintosh 16-inch Color Display

	X	Y
RED:	.625 ± .020	.340 ± .020
GREEN:	.280 ± .020	.595 ± .020
BLUE:	.155 ± .015	.070 ± .020

The CIE coordinates for white are:

X=.283 ± .020
Y=.298 ± .020

Macintosh 21-inch Color Display

	X	Y
RED:	.635 ± .020	.333 ± .020
GREEN:	.280 ± .020	.595 ± .020
BLUE:	.152 ± .020	.063 ± .020

The CIE coordinates for white are:

X=.281 ± .020
Y=.311 ± .020

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9859

Tech Info Library

Sys 7: AppleShare 3.0 Print Server Print File Limits (6/95)

Revised: 6/27/95
Security: Everyone

Sys 7: AppleShare 3.0 Print Server Print File Limits (6/95)

==========

Article Created: 30 January 1992
Article Reviewed/Updated: 27 June 1995

TOPIC ----------

Can the AppleShare 3.0 Print Server handle very large (for example, 60MB) print files?

DISCUSSION ----------

Theoretically, there are no limits on how large a print file can be -- you are limited only by the available disk space on the server. However, if a client Macintosh has background printing turned on, PrintMonitor may not be able to handle such large files. If that should happen, the workaround is to spool the document to the server with background printing turned off.

Article Change History:
27 Jun 1995 - Change title for clarity.
31 Jan 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:9860

Tech Info Library

System 7: MacroMaker Is Not Supported

Revised: 9/2/92
Security: Everyone

System 7: MacroMaker Is Not Supported

==========

Article Created: 11 February 1992

Article Change History

09/02/92 - REVIEWED
- For technical accuracy.

TOPIC ----------

In the compatibility listing I have for system software version 7.0, it says that MacroMaker is "unnecessary". This seems to indicate that System 7 somehow does macros, but I can't find anything on this in the manuals.

DISCUSSION ----------

"Unnecessary" was a poor word choice. It should have stated that MacroMaker was "not compatible". MacroMaker is not supported in version 7.0, and there are no plans to revise it for version 7.0 compatibility.

There are several third-party macro products that are compatible with version 7.0, including QuicKeys 2 by CE Software.

For more information, search on CE Software.

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Tech Info Library Article Number:9863

Tech Info Library

Macintosh: Using System 7 on HD and Earlier Version on Floppy

Revised: 2/12/93
Security: Everyone

Macintosh: Using System 7 on HD and Earlier Version on Floppy

==========

Article Created: 11 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I upgraded my Macintosh hard drive to system software version 7.0, but I have some programs that are not version 7.0 compatible that I'd still like to use. Can I start up my Macintosh from a floppy startup disk that is running system software earlier than version 7.0 and use those programs?

DISCUSSION ----------

Yes. You can start up from a system software version 6.0.X startup floppy disk, provided that the Macintosh doesn't require version 7.0.1 or later to run. The Macintosh Classic II, Macintosh PowerBook series, and Macintosh Quadra series do not support system software version 6.0.X.

Note

Version 6.0.X does not recognize the version 7.0 desktop file. When you first start up from the version 6.0.X floppy disk, a dialog will appear reporting that the version 7.0 hard drive is damaged and asking if you want to repair it. (Your hard drive is not damaged.) Click the "OK" button, to create the version 6.0.X desktop file.

The next time you start up from the version 7.0 hard drive, the system software will update the version 7.0 desktop file for any changes that were made during the version 6.0.X operation.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9864

PowerBook: Battery Recharger Properties 2/92

Revised: 5/16/94
Security: Everyone

PowerBook: Battery Recharger Properties 2/92

==========

Article Created: 12 February 1992

TOPIC ----------

Can you give me some information about the Macintosh PowerBook battery rechargers?

DISCUSSION ----------

The PowerBook battery recharger does not provide just a bulk charge to the NiCad batteries. The sophisticated power circuitry within the recharger assists in preventing NiCad battery "memory" problems by monitoring the battery levels and adjusting the charge appropriately.

Support Information Services

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9865

Tech Info Library

PowerBook Batteries: Long-Term and Short-Term Storage 2/92

Revised: 5/16/94
Security: Everyone

PowerBook Batteries: Long-Term and Short-Term Storage 2/92

==========

Article Created: 12 February 1992

TOPIC ----------

Can you give me a brief summary of the recommended long-term and short-term storage requirements?

DISCUSSION ----------

The Macintosh PowerBook batteries need to cycled through a charge/discharge process on a regular basis, which is why there is a warning to the users not to exceed long-term (6-month) storage.

These rules apply:

Short-Term Storage (1 week or less)

The Macintosh PowerBook can be stored with the battery (fully charged) in the unit without the power adapter plugged in.

Short-Term Storage (1 to 2 weeks)

The Macintosh PowerBook can be stored with the power adapter plugged in. After this period, a charge/discharge cycle should be performed. In other words, use the computer until the battery is drained and then recharge it fully.

Long-Term Storage (up to 6 months)

The Macintosh PowerBook battery should be fully charged, and
- The PowerBook 140/170 must be in a shutdown state.
- The PowerBook 100 must be disconnected.

For more detailed information, see the section on battery storage in the owner's manual.

Support Information Services

..TIL09866-PowerBook_Batteries-Long-Term_and_Short-Term_Storage_2-92.pdf

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Tech Info Library Article Number:9866

Tech Info Library

LaserWriter IINT Manual Feed: Why Paper-Out Light Stays Lit

Revised: 5/8/92
Security: Everyone

LaserWriter IINT Manual Feed: Why Paper-Out Light Stays Lit

==========

Article Created: 13 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

When I print from the manual-feed tray on my LaserWriter IINT, the paper-out status light stays lit. I can still print from the tray without any problem, but the only way I can clear the status light is to open and shut the printer cover.

DISCUSSION ----------

There is a bug in the LaserWriter IINT ROM that causes this. If you have a piece of paper in the manual-feed tray when you issue a manual-feed print job, the status light stays on after the print cycle. The workaround is to send the manual-feed print job, then wait until the status light is blinking before you insert the piece of paper.

There is no other workaround for this problem, and none is planned because it is a cosmetic problem and does not affect the actual operation of the printer.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9867

Tech Info Library

PowerBook: Using AppleTalk Remote Access with Internal Modem

Revised: 5/16/94
Security: Everyone

PowerBook: Using AppleTalk Remote Access with Internal Modem

==========

Article Created: 13 February 1992

TOPIC ----------

How do I configure AppleTalk Remote Access to use my Macintosh PowerBook 170 internal modem? There is no option in the AppleTalk Remote Access Setup to choose the internal modem.

DISCUSSION ----------

You need to configure both the AppleTalk Remote Access Setup and the Macintosh PowerBook Portable control panel to use the internal modem.

1) In the AppleTalk Remote Access Setup, select the Modem port.

2) From the Apple menu, choose Control Panels and select the Portable control panel.

3) In the Portable control panel, you have the option to set the serial port for either the external or internal modem. Set the port for the internal modem (note that this will disable the external serial modem port).

Support Information Services

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Tech Info Library Article Number:9868

Tech Info Library

PowerBook: To Send Fax, Hard Drive Must Be Up to Speed 1/96

Revised: 1/4/96
Security: Everyone

PowerBook: To Send Fax, Hard Drive Must Be Up to Speed 1/96

==========

Article Created: 13 February 1992
Article Reviewed/Updated: 4 January 1996

TOPIC ----------

I am having intermittent problems staying connected to Fax machines from my Macintosh PowerBook 170 Fax/Data Modem. I have checked my configurations; I am sending to a known-compatible Fax machine; and I am using a clean phone line.

DISCUSSION ----------

If the PowerBook hard drive has been spun down, and you try sending a Fax before the hard drive is fully spun up, the PowerBook it will be able to make the connection. However, while the hard drive is in the process of spinning up, the Fax/Data modem in unable to send any data even though it is connected. This will cause the receiving Fax machine to detect this call as a "No Carrier" and it will disconnect.

A workaround you can try is to configure the Portable (or PowerBook) control panel so that the hard drive will not spin down. To do this:

Step 1

Choose Control Panels from the Apple menu.

Step 2

Select the Portable (or PowerBook) control panel.

Step 3

Hold the Option key while you click the minutes option, and set it so that the hard drive will not go into the sleep state.

Note

If you are running your PowerBook computer from the battery, doing this will reduce the operational time of the battery because the hard drive will not go spin down, therefore it will always be drawing power. If you are running from the battery, we suggest that you reset the Portable control panel minutes option for the hard drive to spin down after you send the Fax.

Article Change History:
06 Jan 1996 - Reworded for clarity.

Support Information Services

Copyright 1992-96, Apple Computer, Inc.

Tech Info Library Article Number:9869

Tech Info Library

System 6: Memory Errors Under MultiFinder 2/93

Revised: 2/2/93
Security: Everyone

System 6: Memory Errors Under MultiFinder 2/93

==========

Article Created: 14 February 1992

Article Change History

02/02/93 - REVISED
• To indicate that this is valid for System 6 only.

TOPIC ----------

I am often asked by Macintosh users running MultiFinder what causes these types of error messages:

- Application has unexpectedly quit (2)
- Not enough Finder memory ...

DISCUSSION ----------

In most cases, these error messages appear when there isn't enough memory allocated to the Finder when running under MultiFinder.

When you are running in Finder only, the Macintosh allocates all available memory to the Finder until an application is run. When you are running under MultiFinder, the Finder is treated as an application and is given a set amount of memory to work with.

To determine if your problem is insufficient memory allocated to the Finder when you are running under MultiFinder, restart your Macintosh in Finder only mode. Then try the same function that resulted in the error message. If you don't get the error message, you need to increase the memory allocated to the Finder when you are running in MultiFinder.

How To Increase Finder Memory Allocation
---
1) Start up your Macintosh in Finder only mode.

2) Open the System Folder of the startup disk, and click the Finder file.

3) From the File menu, choose Get Info (or simply press Command-I on the keyboard).

4) In the Get Info window, increase the amount of memory shown in the Application Memory Size box. Note that any additional memory that is allocated to the Finder will not be available to applications. A good starting point is to increase the memory allocation by 100K.

Copyright 1992, 1993, Apple Computer, Inc.

Tech Info Library Article Number:9871

Tech Info Library

Farallon StarController: Specifies One Node per Port

Revised: 5/18/92
Security: Everyone

Farallon StarController: Specifies One Node per Port

==========

Article Created: 17 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I have a Farallon PhoneNET StarController and a Farallon punch-down block. Can I punch down four nodes per channel on the punch-down block; that is, can I daisy-chain at the block instead of at the Macintosh end?

DISCUSSION -----

The Farallon StarController specifies one node per port. Exceeding this limit may cause network traffic and/or termination problems.

We suggest that you contact Farallon Technical Support for further information.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9875

Macintosh Portable: Can Be Used Without Internal Hard Drive

Revised: 5/18/92
Security: Everyone

Macintosh Portable: Can Be Used Without Internal Hard Drive

==========

Article Created: 20 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a Macintosh Portable that I use with an external hard drive. Will the Macintosh Portable operate properly if I disconnect the internal hard drive?

DISCUSSION ----------

The Macintosh Portable operates properly without an internal hard drive. The Macintosh Portable does not provide termination power; therefore, an internal hard drive is not required.

The modification you're suggesting is often used in secure environments to ensure that storage media are not transported to unsecured areas.

Note

Because the Macintosh Portable is sensitive to ESD damage, this or any other modification must be done by an authorized Service Provider.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9876

Tech Info Library

StyleWriter: Apple vs. Third-Party Ink Cartridge (1/95)

Revised: 1/3/95
Security: Everyone

StyleWriter: Apple vs. Third-Party Ink Cartridge (1/95)

==========

Article Created: 21 February 1992
Article Reviewed/Updated: 3 January 1995

TOPIC ----------

I have been using standard Canon ink cartridges with my StyleWriter printer. An Apple technician told me that using non-Apple StyleWriter Ink Cartridges voids Apple's warranty on the StyleWriter.

Is this true?

DISCUSSION ----------

Apple StyleWriter Ink Cartridges (M8041G/B) are made by Canon for Apple and meet Apple's rigid specifications.

Physical damage to the printer caused by the use of a third-party printhead cartridge or ink refill kits that DO NOT meet Apple’s rigid standards WILL void the warranty.

Although not supported by Apple, the use of Canon, third-party cartridges, or ink refill kits that meet the rigid specifications WILL NOT void the Apple warranty. For best print quality, Apple recommends using the Apple StyleWriter Ink Cartridges for the orignal StyleWriter and StyleWriter II.

Article Change History:
3 Jan 1995 - Replaced discussion with new discussion.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:9877

Tech Info Library

Sonnet Technologies, Inc.

Revised: 4/4/97
Security: Everyone

Sonnet Technologies, Inc.

==========

Article Created: 2 March 1992
Article Reviewed/Updated: 4 April 1997

Sonnet Technologies, Inc.

18004 Sky Park Circle
Suite 260
Irvine, CA 92714-6428

714-261-2800

Fax: 714-261-2461

Company Profile: Hardware, specializing in math coprocessor cards for the Macintosh Classic II and Macintosh LC, a dual slot adapter for the Macintosh LC, and PostScript font cartridges for PostScript printers.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:9878

Tech Info Library

Macintosh LC with Apple IIe Card: Copying ProDOS Disks and Files

Revised: 5/18/92
Security: Everyone

Macintosh LC with Apple IIe Card: Copying ProDOS Disks and Files

==========

Article Created: 5 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a Macintosh LC with an Apple IIe Card installed and an Apple 5.25 Drive connected to the card.

1) Can I disk copy a 5.25-inch disk to a 3.5-inch disk in the Macintosh LC SuperDrive?

2) How do I make a disk copy of a 5.25-inch disk?

DISCUSSION ----------

1) No, you can't do a disk copy because you can't copy from one size disk to another size disk. You need to copy individual files from the 5.25-inch disk to the 3.5-inch disk. The ProDOS utilities can be used to do this.

   Another problem is that some disks may be in the older DOS 3.3 format, which is not supported on the higher-density disks. Though ProDOS will read DOS 3.3 disks, and you can copy DOS 3.3 files to ProDOS, some programs will not run because of operating system differences.

2) To copy standard a 5.25-inch disk with the Apple IIe Card and one Apple 5.25 Drive, use the ProDOS utilities, which provide a copy function. You need to specify the same device for both the original and duplicate. The software prompts you when you need to insert and remove disks. Note that some disks cannot be copied because they are protected.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9879

Tech Info Library

PowerBook: International Keyboards 2/92

Revised: 5/16/94
Security: Everyone

PowerBook: International Keyboards 2/92

==========

Article Created: 17 February 1992

TOPIC ----------

What international keyboards are available for the Macintosh PowerBook series? I am particularly interested in a Swedish keyboard for one of my international customers.

DISCUSSION ----------

In the United States, the only keyboard available for purchase through service is the U.S. version. All other keyboards listed are on a like-by- like exchange basis only.

Keyboards available for exchange on the Macintosh PowerBook 100 are Canadian, Spanish, and Japanese. Keyboards available for exchange on the Macintosh PowerBook 140/170 are British, French Canadian, German, Spanish, French, Japanese, Swedish, and Italian.

Customers who want to obtain a keyboard for a specific language need to contact a reseller or distributor in that particular country to order the part.

Support Information Services

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9881

Tech Info Library

Macintosh Portable:Upgrade to Backlit Doesn't Require RAM Change

Revised: 6/24/92
Security: Everyone

Macintosh Portable:Upgrade to Backlit Doesn't Require RAM Change

==========

Article Created: 18 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I would like to upgrade my original Macintosh Portable to the Backlit Macintosh Portable. I heard that these two computers use different types of RAM.

If I upgrade to the Backlit Macintosh Portable, will I also have to change the RAM?

DISCUSSION ----------

The Macintosh Portable uses Static RAM, and the Backlit Macintosh Portable uses Pseudo-Static RAM. RAM is not interchangeable between the two models.

However, since the upgrade to the Backlit Macintosh Portable requires a modification only to the main logic board, a change in RAM is unnecessary.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9884

Tech Info Library

ADB Devices: Can Be Used with both Macintosh and Apple IIGS

Revised: 6/2/92
Security: Everyone

ADB Devices: Can Be Used with both Macintosh and Apple IIGS

==========

Article Created: 5 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Can I use a Macintosh ADB keyboard with the Apple IIGS?

DISCUSSION ----------

ADB devices that follow ADB standards, like the mouse and keyboards, can be used with the Apple IIGS and all Macintosh models that use the ADB standards.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9885

Tech Info Library

Macintosh LC w/Apple IIe Card: SCSI Ethernet Box & AppleTalk

Revised: 6/2/92
Security: Everyone

Macintosh LC w/Apple IIe Card: SCSI Ethernet Box & AppleTalk

==========

Article Created: 3 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a Macintosh LC with the Apple IIe Card connected to Ethernet via a SCSI Ethernet box. Can I use ProDOS software to access AppleTalk services?

DISCUSSION ----------

Our driver is designed to use the Apple Ethernet LC Card and not to look for the Ethernet connection from the SCSI port. If the vendor of the SCSI Ethernet box included a driver for the Apple IIe Card side, that setup should work.

We suggest that you contact the vendor of the SCSI Ethernet box for confirmation.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9886

Tech Info Library

Macintosh: Difference Between PMMU and FPU (2/95)

Revised: 2/14/95
Security: Everyone

Macintosh: Difference Between PMMU and FPU (2/95)

==========

Article Created: 3 February 1992
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

How does the PMMU (Paged Memory Management Unit) differ from the FPU and how can I tell if my computer has one?

DISCUSSION ----------

The PMMU and math coprocessor (also known as FPU) perform very different functions. The PMMU handles memory management, while the math coprocessor handles arithmetic functions handed off to it from the microprocessor.

To tell if your computer has a PMMU installed, you must run a diagnostic utility which has this capability. Apple Personal Diagnostics, MacEnvy or other similar utility can inform you if your computer has a PMMU installed.

Article Change History:
14 Feb 1995 - Noted how to determine if a PMMU is installed.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:9888

Tech Info Library

Macintosh: If TrueType INIT Is Scrambled at Startup

Revised: 8/2/93
Security: Everyone

Macintosh: If TrueType INIT Is Scrambled at Startup

==========

Article Created: 17 February 1992
Article Reviewed/Updated: 30 September 1992

TOPIC ----------

I have a Macintosh LC, running system software version 6.0.7, and a StyleWriter printer. At startup, the TrueType INIT is scrambled.

I trashed the System Folder, reinstalled the version 6.0.7 system software, and removed all other INITs. I also ran Disinfectant 2.4 and rebuilt the desktop, but I am still having the problem.

DISCUSSION ----------

Since we haven't had other reports of this problem, we suspect that your version of TrueType is corrupted. Try installing TrueType from another known-good disk.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9890

Tech Info Library

Macintosh 512K: Upgrade to Macintosh 512Ke Was a ROM Swap

Revised: 6/2/92
Security: Everyone

Macintosh 512K: Upgrade to Macintosh 512Ke Was a ROM Swap

==========

Article Created: 18 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Are there any differences between an Apple-sold Macintosh 512Ke and Macintosh 512K upgraded to a Macintosh 512Ke?

DISCUSSION ----------

There should be no differences between the two, whether the Macintosh 512Ke came from Apple in that configuration or if it was done as an upgrade. The Apple upgrade was a ROM swap from 64K ROMs to 128K ROMs from the Macintosh Plus, and the most significant change was support for the Apple 800K floppy drive.

The only possible difference is that the upgrade didn't include the 800K floppy drive, although this is unlikely because that was the main reason for the upgrade. Every Macintosh 512Ke shipped from Apple had an 800K floppy drive installed.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9891

Tech Info Library

System 7: Error -199 Is Map Inconsistent with Operation

Revised: 6/2/92
Security: Everyone

System 7: Error -199 Is "Map Inconsistent with Operation"

==========

Article Created: 18 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I'm running system software version 7.0 on my Macintosh, and I got the message Error -199 message. What does it mean?

DISCUSSION -----

Error -199 is a "Map Inconsistent with Operation" error. The most common cause of this error is corruption within the System file.

Our recommendation is to trash the System file and rerun the Installer to install a clean System file.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9892

System 7: Has Bad-Sector-Checking Mechanism for Floppy Disks

Revised: 6/2/92
Security: Everyone

System 7: Has Bad-Sector-Checking Mechanism for Floppy Disks

==========

Article Created: 18 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

System software version 7.0 seems to have a floppy disk formatting feature that I haven't seen before.

If I format a new disk -- or reformat a previously used disk -- with the "Erase Disk" option and the formatting is successful, there is a "Verifying Format" function before "Creating Directory" appears. The boot blocks and data space are filled with the pattern F6F6.

If the formatting fails part way through the process, and I try to format again and it's successful, there is a "Re-verifying Format" function and the pattern is PKKT.

I also noticed on some floppy disks, which I've reformatted several times with the "Erase Disk" option, that the amount of disk space available decreases, even though there are no files on the disk except the Desktop file. I checked and there was a problem with some of the sectors. These bad sectors showed zeros, while the rest of the disk had the PKKT pattern.

DISCUSSION ----------

There is a bad-sector-checking mechanism for floppy disks in version 7.0, and it is that mechanism that is using up the disk space.

The "Re-verifying Format" message indicates that there was a problem during the first format attempt (a media failure was found on the floppy disk). Most floppy disks don't exhibit this behavior. Any that show the "Re-verifying Format" message multiple times would be suspect. You would most likely find more and more problem sectors with the zero pattern as the system tries to keep the floppy disk usable.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9894

Tech Info Library

Chooser: Disappearing Printer May Be Termination Problem

Revised: 6/2/92
Security: Everyone

Chooser: Disappearing Printer May Be Termination Problem

==========

Article Created: 18 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

What causes printer names to appear and disappear in the Chooser?

DISCUSSION -----

Printer names appearing and disappearing in the Chooser is indicative of a termination problem.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9895

Tech Info Library

AppleTalk Phase 2: EtherTalk Driver on Network Product Installer

Revised: 6/2/92
Security: Everyone

AppleTalk Phase 2: EtherTalk Driver on Network Product Installer

==========

Article Created: 4 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

What EtherTalk driver is recommended for a Macintosh IIci running system software version 6.0.7 on an AppleTalk Phase 2 network?

DISCUSSION -----

The latest version of the EtherTalk driver is 2.0.1, which is the version needed for an AppleTalk Phase 2 network. This driver is available on the Network Product Installer disk that comes with the version 6.0.7 system software disks.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9897

Tech Info Library

LaserWriter IISC: Is a SCSI Device and Cannot Be Networked

Revised: 6/2/92
Security: Everyone

LaserWriter IISC: Is a SCSI Device and Cannot Be Networked

==========

Article Created: 5 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a LaserWriter IISC that I'd like to connect to a small AppleTalk network. What do I need to do?

DISCUSSION ----------

The LaserWriter IISC is a SCSI device and cannot be used as a network printer.

Apple offers upgrades for the LaserWriter IISC to the LaserWriter IIf or IIg, which have AppleTalk capabilities built in.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9899

Tech Info Library

3.5 160MB HDA: Designed for Specific Computers, Not LaserWriter

Revised: 5/29/92
Security: Everyone

3.5" 160MB HDA: Designed for Specific Computers, Not LaserWriter

==========

Article Created: 29 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm trying to use an Apple 3.5-inch, 160MB HDA from a Macintosh Quadra 900 in an Apple external case with my LaserWriter IINTX.

The drive works fine when connected to a Macintosh system, but it isn't recognized by the LaserWriter IINTX. I can successfully use another drive with the same cables and terminator with the LaserWriter IINTX.

I am using LaserWriter Utility 7.0 to access the printer.

DISCUSSION ----------

All drives manufactured by Apple must conform to certain specifications, which the 3.5-inch, 160MB drive does. However, the 3.5-inch, 160MB drive was designed and tested to work ONLY in these Macintosh models:

- Macintosh Quadra 700
- Macintosh Quadra 900
- Macintosh IIfx
- Macintosh IIci

Many times Apple Engineering, Service, and Marketing decide to ship products in certain configurations based on availability, pricing, and technical specifications (such as Term Power, Power Draw, and so on). Keeping this in mind, it is important to use and/or order the correct part for the corresponding Macintosh system. Apple drives are not to be used in systems other than those for which they were originally intended.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9900

Tech Info Library

System 7: Use CMS SCSI Utility INIT 7.0.2e or Later

Revised: 6/2/92
Security: Everyone

System 7: Use CMS SCSI Utility INIT 7.0.2e or Later

==========

Article Created: 31 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a Macintosh PowerBook 140 with an internal hard drive running system software version 7.0.1. I am trying to connect a Syquest SCSI removable drive running CMS SCSI Utility 5.6, but the Syquest drive will not start up.

I had the same problem with the Syquest drive when I tried to connect it to a Macintosh PowerBook 170; however, the Syquest drive works fine with my Macintosh II and Macintosh IIfx.

DISCUSSION ----------

CMS Enhancements has a new CMS SCSI Utility INIT (7.0.2e) to use in conjunction with the CMS SCSI Utility software, which allows a removable SCSI drive to run on a version 7.0.1 system. Since the Macintosh PowerBook series require version 7.0.1, I assume that the Macintosh II and IIfx configurations worked because they have system software versions earlier than 7.0.1 installed.

Note that CMS Enhancements has released a new version (7.0.2) of the CMS SCSI Utility software. However, it is not mandatory that you upgrade to this version because the new CMS SCSI Utility INIT 7.0.2e is backward compatible with other versions of the utility software.

On AppleLink, you can find contact information on a company mentioned in this article by clicking the "Library Index" button in the lower-center of the Tech Info Library search window, then opening the "Third Party Company Directory" folder.

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Tech Info Library Article Number:9902

Tech Info Library

Tulin Hermit Crab Drive: Compatibility w/ Macintosh LC, Classic

Revised: 2/3/93
Security: Everyone

Tulin Hermit Crab Drive: Compatibility w/ Macintosh LC, Classic

==========

Article Created: 14 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a Tulin Corporation Hermit Crab external hard drive that uses power from the external floppy port of the Macintosh. I can use the drive with a Macintosh Plus, but it won't work with a Macintosh Classic.

Is there a known compatibility problem with this hard drive and the Macintosh Classic?

DISCUSSION ----------

Tulin Corporation is aware of a problem. Apparently, when the older version of the Hermit Crab drive is connected to a Macintosh Classic or a Macintosh LC, it does not spin up properly. Tulin indicated that the problem is related to the amount of power the drive draws from the Macintosh (12 watts).

Tulin does have a version of the Hermit Crab drive that works with the Macintosh Classic and Macintosh LC. Contact them directly for more details.

On AppleLink, you can find contact information on a company mentioned in this article by clicking the "Library Index" button in the lower-center of the Tech Info Library search window, then opening the "Third Party Company Directory" folder.

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Tech Info Library Article Number:9904

Tech Info Library

Macintosh 21 Color Display: Pinouts

Revised: 3/11/93
Security: Everyone

Macintosh 21" Color Display: Pinouts

==========

Article Created: 6 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Here are the pinouts for the Macintosh 21-inch Color Display.

DISCUSSION -----

Pin	Function
A1	Blue Video
A2	Green Video
A3	Red Video
1	Horiz. sync return
2	Vert. sync return
3	Sense #3
4	Sense ground
5	Csync
6	Horiz. sync
7	Vert sync
8	Sense #2
9	Sense #1
10	Csync return
Shell	Shell ground

For the 21-inch color sense line configuration, sense lines 1, 2, and 3 (pins 3, 8, and 9) must all be tied to sense ground (pin 4).

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Tech Info Library Article Number:9908

Tech Info Library

Apple Color Monitors: Phosphor CIE Coordinates (5/96)

Revised: 5/23/96
Security: Everyone

Apple Color Monitors: Phosphor CIE Coordinates (5/96)

==========

Article Created: 3 March 1992
Article Reviewed/Updated: 23 May 1996

TOPIC ----------

This article lists the phosphor CIE coordinates for Apple color monitors. These CIE Coordinates apply only to high-resolution color monitors.

DISCUSSION ----------

IMPORTANT: These coordinates should accurately represent these displays, however Apple Computer does not guarantee that your monitor will match these values exactly. Apple Computer also reserves the right to change these values at any time without notice.

Macintosh 21-Inch Color Display
==========

Phosphor CIE Coordinates:

RED	x = 0.635	y = 0.333
GREEN	x = 0.280	y = 0.595
BLUE	x = 0.152	y = 0.063

Apple Multiple Scan 15 Display
==========

Phosphor CIE Coordinates:

RED	x = 0.610	y = 0.342
GREEN	x = 0.298	y = 0.588
BLUE	x = 0.151	y = 0.064

Apple Multiple Scan 20 Display
==========

Phosphor CIE Coordinates:

RED x = 0.625 y = 0.340
GREEN x = 0.280 y = 0.595
BLUE x = 0.155 y = 0.070

AppleVision 1710 and 1710AV Display
==========

Phosphor CIE Coordinates:

RED x = 0.625 y = 0.340
GREEN x = 0.280 y = 0.595
BLUE x = 0.155 y = 0.070

Apple Multiple Scan 17 Display
==========

Phosphor CIE Coordinates:

RED x = 0.635 y = 0.332
GREEN x = 0.283 y = 0.606
BLUE x = 0.153 y = 0.0621

Macintosh 16-Inch Color Display
==========

Phosphor CIE Coordinates:

RED x = 0.625 y = 0.340
GREEN x = 0.280 y = 0.595
BLUE x = 0.155 y = 0.070

AppleColor High-Resolution RGB Monitor
==========

Phosphor CIE Coordinates:

RED x = 0.625 y = 0.340
GREEN x = 0.280 y = 0.595
BLUE x = 0.155 y = 0.070

Article Change History:
23 May 1996 - Added AppleVision 1710 and 1710AV displays.
16 May 1995 - Reclassified.
11 Oct 1994 - Added Multiple Scan 15 display

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..TIL09911-Apple_Color_Monitors-Phosphor_CIE_Coordinates_5-96.pdf

Tech Info Library Article Number:9911

Tech Info Library

Material Safety Data Sheets: General Information (10/94)

Revised: 10/10/94
Security: Everyone

Material Safety Data Sheets: General Information (10/94)

==========

Article Created: 13 February 1992
Article Reviewed/Updated: 10 October 1994

TOPIC ----------

This article provides general information about, and a discussion of, Material Safety Data Sheets -- commonly known as MSDSs.

DISCUSSION ----------

A Material Safety Data Sheet is an occupational safety and health document. State and federal law requires the manufacturer, importer, and distributor of any chemical substance used in a workplace to provide Material Safety Data Sheets along with the first shipment of that substance. The law also requires employers that use chemical substances to keep the MSDS on file and train employees in their use. An MSDS contains physical, chemical, and health- and safety-related information about the chemical substance.

The law does not require MSDSs for everything used in a workplace setting. For example, you will not find MSDSs for your pencils or pencil sharpeners. The law exempts any "article" that does not release hazardous substances under conditions of normal use from the MSDS requirements. The ONLY Apple product we have ever found that required an MSDS is a machine oil we provide to our service providers for servicing our vintage Daisywheel printer.

Despite this legal exemption, some companies routinely demand MSDSs for everything they buy. In some companies, provision of MSDSs is a standard purchasing contract term. To satisfy this demand, some of our vendors (but not all) routinely prepare MSDSs for whatever they make and are available for the asking.

AAC Fulfillment has MSDSs available on some products like PowerBook batteries and LaserWriter toner cartridges and printer ribbons. Contact the Apple Assistance Center for information on availability of a particular MSDS.

Article Change History:
10 Oct 1994 - Minor clarification of wording.
28 Jul 1994 - Updated information, included where to get MSDS.
10 Mar 1994 - Revised formatting, updated information on availability of MSDS.

Support Information Services

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Tech Info Library Article Number:9912

Tech Info Library

Display Card 8•24 & 8•24 GC: Identifying Rev & Upgrade ROM 1/96

Revised: 1/31/96
Security: Everyone

Display Card 8•24 & 8•24 GC: Identifying Rev & Upgrade ROM 1/96

==========

Article Created: 29 January 1992
Article Reviewed/Updated: 31 January 1996

TOPIC ----------

How can I tell whether a Macintosh Display Card 8•24 or Macintosh Display Card 8•24 GC is Rev A or Rev B?

DISCUSSION ----------

Begin_Table

Macintosh Display Card	REV	Card Service P/N	P/N on ROM
Display Card 8•24	A	661-0608	
Display Card 8•24	B	661-0678	341-0868
Display Card 8•24 GC	A	661-0606	
Display Card 8•24 GC	B	661-1642	341-0266

Upgrading Rev A to Rev B ROMs
==========

Macintosh Display Card	Upgrade P/N
Display Card 8•24	076-0548
Display Card 8•24GC	076-1019

End_Table

The Rev B ROMs provides Page-White correction for the Macintosh 21-in. Color Display and Macintosh 16-in. Color Display support.

Article Change History:
31 Jan 1996 - Rewrote discussion in table format.

..TIL09913-Display_Card_8-24_and_8-24_GC-Identifying_Rev_and_Upgrade_ROM_1-96.pdf

Support Information Services

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Tech Info Library Article Number:9913

Tech Info Library

LaserWriter: Printing Bold Characters from VAX

Revised: 9/30/92
Security: Everyone

LaserWriter: Printing Bold Characters from VAX

==========

Article Created: 4 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I'm using a Quadra and Microphone II (version 4) to dial into All-in-One on a VAX. It works great, my screens look good, I can use PF keys, and so on. However, when I print to the LaserWriter IINT, anything that was bold prints out on 2 lines. I assume that it is doublestriking the line to get the bold effect, not realizing it's a LaserWriter image-based printer. The LaserWriter is connected to the Quadra.

Do you know of any drivers that would let the printer know what it's doing? Do you think Microphone would? Could I use the PATHWORKS printer drivers without installing PATHWORKS?

DISCUSSION -----

Your problem is caused by the VAX sending the LaserWriter control characters that are understood only by DEC laser printers or third-party printers with DEC emulation. On a DEC LN03, for example, in order to bold a string, you have to enclose the string with 2 control characters, one at each end. You also have to do this twice, for the top half and the bottom half of the string. When not interpreted, this prints out as two lines, sometimes with extra characters at the beginning or at the end of the string.

PATHWORKS uses a print symbiont called VAXshare symbiont to convert VMS text into PostScript data before sending it to the LaserWriters. Another symbiont, called the PostScript printer symbiont, transfers data to a Digital PostScript printer.

You'll need to send VMS text to the VMS queue system, and need a similar "symbiont" to do the translation to PostScript. Unfortunately, no vendor

is selling just the VAX queue symbiont alone. They all come as part of the package. You might want to contact Pacer and Alisa to see if they sell the VAX print service separately.

MicroPhone won't solve this problem for you. And you can't use PATHWORKS' VAXshare print service without purchasing PATHWORKS for Digital.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:9917

Tech Info Library

Personal LaserWriter: No Refurbishment Kit

Revised: 9/30/92
Security: Everyone

Personal LaserWriter: No Refurbishment Kit

==========

Article Created: 29 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Why doesn't Apple offer a refurbishment kit for the Personal LaserWriter printers?

DISCUSSION -----

The Personal LaserWriter engine life is rated at a minimum of 150,000 pages. The pick-up roller and separation pad each have a minimum rated life of 50,000 pages. However, since most users use the cassette tray, these parts will most likely last well beyond their 50,000-page rating. Also, the fuser assembly, laser scanner assembly, and other moving parts are expected to last the life of the engine. Therefore, there is no need for a refurbishment kit.

The LaserWriter and LaserWriter II engines have engine-life ratings that exceed the working life of several of their major modules (such as the fuser, cassette pick-up assembly, and transfer guide assembly). Therefore, refurbishment programs were created to ensure that proper maintenance is performed at the proper intervals.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9919

Tech Info Library

LaserWriter IIf and IIg: Function of Jumper J11

Revised: 9/30/92
Security: Everyone

LaserWriter IIf and IIg: Function of Jumper J11

==========

Article Created: 11 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

On the Apple LaserWriter IIf and IIg I/O controller board, near the ROM chips, is a set of jumper pins labeled J11. What is their function?

DISCUSSION -----

The jumper pins labeled J11 are at board position L7. The jumper pins allow the use of 8-megabit ROM chips, providing a total of 4MB of ROM space.

The jumper is factory set at the 2MB setting to allow the use of four 4-megabit ROMs, providing a total of 2MB of ROM space. There are no existing Apple or third-party upgrades that use the 4MB setting.

All Apple LaserWriter IIf and IIg printers should be set at the 2MB setting.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9921

Tech Info Library

StyleWriter Sheetfeeder: Paper Pickup Ratcheting Noise Is Normal

Revised: 9/30/92
Security: Everyone

StyleWriter Sheetfeeder: Paper Pickup Ratcheting Noise Is Normal

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Article Created: 11 February 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

My StyleWriter sheetfeeder makes a ratcheting noise during the paper pickup process. Is this noise normal?

DISCUSSION ----------

The StyleWriter printer sheetfeeder does make a racheting noise during the paper pickup process. This noise is normal and is no cause for concern.

The sheetfeeder mechanism is powered by a single drive gear, which mates to the StyleWriter printer. The sheetfeeder contains no sensors or other feedback devices for the StyleWriter to gather paper status information. The paper pickup sequence consists of a carefully orchestrated set of forward and reverse paper-feed motor movements. These movements allow the paper pickup rollers to pick up a single sheet of paper and return to their home position. The ratcheting sound is created by an integral one-way clutch mechanism inside the sheetfeeder.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9922

Tech Info Library

ImageWriter LQ:Testing Sheetfeeder/Tractor-Feed Paper-Out Sensor

Revised: 5/24/93
Security: Everyone

ImageWriter LQ:Testing Sheetfeeder/Tractor-Feed Paper-Out Sensor

==========

Article Created: 20 February 1992

TOPIC ----------

The ImageWriter LQ has two paper-out sensors; however, the Technical Procedures Manual has information for testing only the least-used bottom-feed sensor.

How can I test the other paper-out sensor used for the sheetfeeder and tractor-feed paper?

DISCUSSION ----------

To test the paper-out sensor used for everything except bottom-feed paper, follow these steps:

1) Using standard procedures, remove the printer top cover.

2) Power on the printer without any paper inserted.

3) Configure a multimeter to measure between 0-5 volts DC.

4) Locate connector C9 on the logic board.

5) Connect the GND lead to pin 5 and the positive lead to pin 3. Without any paper inserted in the printer, the measured voltage should be approximately 4-5 volts.

6) Insert a piece of paper in the printer and monitor the multimeter. As paper is inserted, the voltage should drop from 4-5 volts to almost zero volts. Repeat this process several times to ensure proper operation of the sensor.

   If this change does not occur, the paper-out sensor is probably defective and should be replaced.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9924

Tech Info Library

PowerBook Fax Sender: Configure Receiving Fax to Print Header

Revised: 5/16/94
Security: Everyone

PowerBook Fax Sender: Configure Receiving Fax to Print Header

==========

Article Created: 28 February 1992

TOPIC ----------

The Fax/Data Modem for the PowerBooks doesn't allow the receive modem to date stamp the top of the page as other fax machines do when they send faxes. After testing it here I've come to the conclusion that this has to be something in the software and not the fax itself that is dropping this date stamp from the top of the page.

DISCUSSION ----------

Depending upon how a fax machine is configured:

- It can generate a header, which may include the date and time as a part of the fax image it sends, or

- Automatically print a header on the fax image it receives.

The PowerBook Fax Sender software doesn't include a header in the fax it generates. It does however send its Station ID. It's the responsibility of the receiving fax machine to shape and include it in the fax image it prints. The receiving fax machine needs to be configured to do this.

So, if you have your fax machine configured to generate headers on sent faxes but not on received ones, this would explain why you aren't seeing headers printed on faxes received from PowerBooks.

Support Information Services

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9925

Tech Info Library

AppleColor High-Res RGB Monitor: Voltage Range Label Error

Revised: 9/3/93
Security: Everyone

AppleColor High-Res RGB Monitor: Voltage Range Label Error

==========

Article Created: 28 February 1992
Article Last Reviewed/Updated: 2 September 1993

TOPIC ----------

Later model 13-inch AppleColor High-Res RGB Monitors no longer designate on the back panel that they are compatible with voltages from 100 to 240. They show only 110-120 volts. Have there been any engineering changes to this monitor?

If the monitor is being driven from the power output on the back of a Macintosh, will the correct voltage be delivered to the monitor even when the Macintosh is plugged into a European power source?

DISCUSSION ----------

The current specification sheet states that the AppleColor Hi-Res RGB Monitor (model number M1297) supports a voltage range from 85 to 270 VAC, and a power frequency range of 47 to 63 Hz.

There were some internal design changes in the revision B monitor, but the voltage and frequency range remained the same. Most of the changes were made to meet the Swedish guidelines for ELF emissions.

The back panel identification was an oversight when the labels were printed, and the voltage range information was left off the label. Our engineers are aware of the problem and this should be rectified in future shipments of the monitor.

In regard to the power out of the back of a Macintosh II, the power supply switches the power from the wall to the output plug. No voltage processing takes place. Any device that has the power plugged into the back of a Macintosh must meet the power requirements of that country.

Article Change History
2 September 1993 - Updated to reflect that these monitors are no longer in

production

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Tech Info Library Article Number:9926

A/UX: Remote Dump to Magnetic Tape Drive

Revised: 6/2/92
Security: Everyone

A/UX: Remote Dump to Magnetic Tape Drive

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Article Created: 3 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm trying to do a remote dump (rdump) from a Macintosh IIfx on an Ethernet network to a 1/4-inch cassette tape drive on a Concurrent computer on the same network. The device file for the tape drive is /dev/rctp. The address on the network and in the /etc/NETHOSTS is mdsaero. I think everything is set up properly now since the dump process begins. The following is the command I issued:

```
macunix.root 1 # rdump 0usf 28800 mdsaero:/dev/rctp /dev/dsk/c5d0s3
  DUMP: Date of this level 0 dump: Mon Feb 24 15:33:14 1992
  DUMP: Date of last level 0 dump: the epoch
  DUMP: Dumping /dev/rdsk/c5d0s3 (/users) to /dev/rctp on host mdsaero
  DUMP: mapping (Pass I) [regular files]
  DUMP: mapping (Pass II) [directories]
  DUMP: estimated 201945 blocks on 0.41 tape(s).
  DUMP: Protocol to remote tape server botched (code /etc/rmt: Command not
found.
?).
rdump: Lost connection to remote host.
  DUMP: Bad return code from dump: 1
macunix.root 2 #
```

Note: slice 3 is a 400MB (approximately) partition and the tape cassette is a 525MB tape. The procedure also won't work with a 120MB tape.

DISCUSSION ----------

According to the above error message, "... remote tape server botched (code /etc/rmt: Command not found," the problem is apparently on the remote host.

The /etc/rmt can't be found in the mdsaero host. The /etc/rmt is a remote magtape protocol program used by the remote dump (rdump) and remote restore (rrestore) programs in manipulating a magnetic tape drive through an IPC (Inter Process Communication) connection. The /etc/rmt is normally started up with an rexec() and rcmd() call.

Check the mdsaero host to see if it supports the remote procedure call for a remote magnetic tape drive. A/UX and most BSD UNIX systems support this facility.

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Tech Info Library Article Number:9927

Tech Info Library

MacX: snftobdf Utility Converts SNF Fonts to BDF (9/94)

Revised: 9/16/94
Security: Everyone

MacX: snftobdf Utility Converts SNF Fonts to BDF (9/94)

==========

Article Created: 4 March 1992
Article Reviewed/Updated: 15 September 1994

TOPIC ----------

On the Tech Info Library, an article mentions a public domain software utility called 'snftobdf' converter for X-Window fonts. Is this a UNIX- based product that compiles on the X client or at the MacX end?

We need to send Adobe, BDF, and SNF fonts to MacX from a Motorola X-Window/Motif client that's running Word Perfect and FrameMaker for UNIX.

DISCUSSION ----------

Yes, the "snftobdf" is a public software utility for converting SNF (Server Normal Format) fonts into the BDF (Bitmap Distribution Format) fonts. It's UNIX-based, and runs at the X client end. Basically, you may convert SNF fonts on a UNIX-based X11 client host, and transfer them to a Macintosh OS computer. Then under MacX, you can use the Font Director facility to compile the BDF fonts into the X fonts that the MacX server can use.

For more detailed information on how to compile BDF files within MacX, see page 101 of Apple MacX User's Guide, "Compiling fonts from BDF files."

You can find a copy of snftobdf on AppleLink.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
15 Sep 1994 - Removed binary file.

Support Information Services

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Tech Info Library Article Number:9928

Tech Info Library

DOS PC-to-LaserWriter IIf,IIg: Troubleshootg Print Problem(3/94)

Revised: 3/10/94
Security: Everyone

DOS PC-to-LaserWriter IIf,IIg: Troubleshootg Print Problem(3/94)

==========

Article Created: 9 March 1992
Article Reviewed/Updated: 10 March 1994

TOPIC ----------

We have a Macintosh LC and an AST Premium II (386-PC compatible) connected to an Apple LaserWriter IIf. We have no problem printing from the Macintosh to the LaserWriter, but we can't print from the AST to the LaserWriter.

We added these mode statements to the autoexec.bat:

```
mode com1:9600,n,8,1
mode lpt1:=com1:
```

which redirects the print command to com1.

When we tried to print screen, nothing happened. When we tested with CheckIt (PC diagnostics), we got a print error.

We tried to print from WordPerfect 5.1 using HP emulation, and it won't print. We set the printer select switch to 1 and ran the self-test, which showed RS-232C, 9600, Raw Input. We had a cable made to the specifications in the Tech Info Library article titled "LaserWriter IINT to IBM PC: Pinouts for DB-25 Connection. We tried it both with HW handshaking (DTR) and SW handshaking (XON/XOFF) -- WordPerfect 5.1 has a setup for XON/XOFF, and we set it to on.

Can you help us troubleshoot the problem?

DISCUSSION ----------

Are you sending PostScript or HP emulation? For both the Macintosh and the PC to be connected at the same time, both have to send PostScript to the printer. The printer cannot switch between HP emulation and PostScript on the fly.

This configuration requires the printer select switch to be set to either 0 or 5.

Here's a test you can run to determine if this is a hardware or software problem:

1) Turn off the printer and set the select switch to 1 (HP LaserJet Emulation).

2) Ensure that you are using a Null Modem Cable.

3) Issue the appropriate Mode Commands:

   Mode Com1: 96,8,1,n,p

   Mode LPT1: = Com1:

4) Issue a CTRL-P. This redirects the screen output to the list device.

5) Perform a few DIR commands. You should see the light on the LaserWriter blink.

6) Issue a CTRL-L. This sends a form feed to the printer and ejects the page.

7) Issue a CTRL-P. This redirects the output back to the screen.

If the keyboard hangs or the light doesn't blink during this procedure, you have a hardware problem. The likely causes are the cable, the serial port on the IBM, or the logic board on the printer.

If you get output, the problem is most likely in software. Check the configurations of the applications you are using on the PC side.

Note that this only tests the hardware configuration. You should set the printer back to PostScript, so that the Macintosh can print to it.

Article Change History:
10 March 1994 - Added keyword and reformatted article.

Support Information Services

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Tech Info Library Article Number:9930

Tech Info Library

RAM: Faster-than-Required SIMMs Don't Improve Performance

Revised: 6/2/92
Security: Everyone

RAM: Faster-than-Required SIMMs Don't Improve Performance

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Article Created: 11 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Will performance on my Macintosh Quadra 700 increase if I use SIMMs rated at 60 ns instead of the recommended 80 ns?

DISCUSSION ----------

Performance will not increase if you install SIMMs rated at 60 ns in a Macintosh Quadra because the SIMMs still will be accessed at the 80-ns rate.

A problem with incorrect SIMM speeds is encountered when the SIMMs are too slow for the system in which they are installed. For example, if you put 120-ns SIMMs in a system that requires 80-ns SIMMs, the CPU accesses the 120-ns SIMMs at the faster 80-ns rate. This causes those slower SIMMs to overheat, produce random errors, and eventually fail completely.

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Tech Info Library Article Number:9931

Tech Info Library

Personal LaserWriter NTR: Specs (Discontinued 9/93)

Revised: 9/13/93
Security: Everyone

Personal LaserWriter NTR: Specs (Discontinued 9/93)

==========

Article Created: 23 March 1992
Article Reviewed/Updated: 10 September 1993

TOPIC ----------

This article gives technical specifications for the Personal LaserWriter NTR.

DISCUSSION ----------

Marking Engine

- Canon LBP-LX laser-xerographic

Controller

- AMD29005 16 MHz CPU

Memory

- 3MB ROM
- 3MB RAM (standard 72-pin, 80ns SIMMs, CAS before RAS), upgradable to 4 MB

Throughput

- 4 pages per minute

Page Description Language

- Adobe PostScript Level 2

Emulation

- HP PCL 4 (emulates HP LaserJet IIP)

Print Resolution

- 300 dots per inch

Interfaces

- RS-422/423 8-pin circular mini DIN
- RS-232C 25-pin 'D' shell connector
- Centronics 36-pin (parallel)

Recommended Duty Cycle

- Minimum 150,000 pages, with no monthly page limit (equivalent to 200 pages/day, 5 days/week for 5+ years).

Paper Feed

- Manual or automatic with the multipurpose tray (70 sheets or 7 envelopes).
- Optional 250-sheet automatic feed paper cassette

Print Materials

- Media
  Apple recommends 20-lb (75g/m2) photocopy or typewriter bond in normal mode. You can use 16-lb (60g/m2) to 28-lb (105g/m2) paper. Accepts medium weight photocopier transparencies. Envelopes can be fed through the multi-purpose tray or from the optional envelope cassette.
- Sizes
  - Paper: U.S. letter, U.S. legal, A4, B5 cassettes - each cassette holds 250 sheets of 20 (75g/m2) lb paper.
  - Envelopes: Envelope cassette holds 15 envelopes. Use envelopes between the following sizes:
    - minimum 3.8 x 7.25 inch (96 x 184 mm)
    - maximum 7.4 x 10 inch (188 x 255 mm)
- Printable Surface
  - Maximum printable line: 8.1 inches (205.9 mm)
  - Minimum top and bottom margins: .235 inches (6.0 mm)
  - Minimum left and right margins: .197 inch (5.0 mm)
  - The actual printable area may vary depending on the application and the amount of RAM installed.

Size and Weight

- Height: 9.8 inches (24.8 cm)
- Width: 15 inches (38 cm)
- Depth (with optional letter-size cassette): 18.3 inches (46.4 cm)
- Weight: 29.5 lb. (13.35 kg)

Operating Environment

- Temperature: 50 degrees to 90 degrees F (10 degrees to 32.5 degrees C)
- Humidity: 20% to 80%

Power Requirements

- U.S./Japan: 90 to 110 volts AC, 48-52Hz, 58-62 Hz
- Europe/Australia: 220 to 240 volts AC, 48-52 Hertz

Power Consumption

- Operating
  - 600 watts maximum at 115 volts
  - 550 watts maximum at 220 volts

Article Change History

09/10/93 - UPDATED
• Discontinued on 9/7/93
09/14/92 - REVIEWED
• For technical accuracy.
09/14/92 - UPDATED
• Memory upgrade section to show it's expandable to 4 MB.

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Tech Info Library Article Number:9933

Tech Info Library

Personal LaserWriter NTR: Description (Discontinued) (10/94)

Revised: 10/3/94
Security: Everyone

Personal LaserWriter NTR: Description (Discontinued) (10/94)

==========

Article Created: 23 March 1992
Article Reviewed/Updated: 3 October 1994

TOPIC ----------

This article describes the Personal LaserWriter NTR.

DISCUSSION ----------

The Personal LaserWriter NTR combines a high-speed RISC processor and multi-platform ease of use. It delivers 3 to 5 times the performance of the Personal LaserWriter NT.

You can upgrade the Personal LaserWriter SC and NT to the NTR with a controller board upgrade.

Features

- The Personal LaserWriter NTR uses the 4 ppm (pages per minute) Canon P-110 engine common to all of Apple's Personal LaserWriter product line.

- It uses the standard Personal LaserWriter toner cartridge (part # M0089LL/A). This toner cartridge has an expected life of about 3500 pages of normal coverage.

- 70-sheet paper tray, second 250-sheet tray optional
  It uses the following standard LaserWriter II paper cassette options when equipped with the optional 250-sheet cassette base (part# M8028G/A):

  - Letter cassette (part # M0091LL/A)
  - Legal cassette (part # M0302LL/A)
  - Envelope cassette (part # M0094LL/A)

- RISC Processor (AMD 29005)

- Parallel, LocalTalk and serial interfaces

This is the first Apple LaserWriter to feature a Centronics parallel port for easy connectivity to DOS/Windows PCs.

- All ports active
  The printer arbitrates connections between its three communications ports, allowing each to be physically connected to different sources concurrently.

- 39 font faces
  Adobe Type 1 fonts in ROM, and their TrueType equivalents available on floppy disk.

- PostScript Level 2
  Enhanced PostScript offers improved performance thanks to data compression and more extensive use of data caching.

- TrueType and Type 1 support (in ROM)
  The TrueType Scaler is in ROM for optimum TrueType font performance.

- HP IIP (PCL 4+) emulation

- 3MB RAM standard, expandable to 4MB
  The NTR ships with 3MB of DRAM, sufficient for the great majority of printing applications. You can upgrade to 4MB by replacing the removable 1MB SIMM with a 2MB SIMM. (Personal LaserWriter NTR supports industry-standard 80ns or faster, 72-pin 2 MB SIMMs, CAS before RAS.)

Benefits

- Quick first page output

- True multi-platform compatibility: Macintosh, DOS/Windows, and OS/2

- Enhanced ease of use in multi-platform, especially Macintosh and PC, environments. All interfaces are simultaneously active. No more changing dip switches or thumbwheel settings.

- Enhanced font selection

- Paper handling capabilities expand with user's needs. With second tray installed, convenient access to different types of paper such as letterhead and bond.

- Latest version of PostScript, providing enhanced performance and functionality

- Ensures compatibility and maximum quality with user's fonts.

- Compatibility with non-PostScript applications

- Sufficient RAM for processing complex pages (includes legal size printing); expandable for faster printing with more fonts.

Article Change History:
03 Oct 1994 - Corrected part number on paper tray.
15 Sep 1992 - Included more specifics on the type of memory upgrade.

Support Information Services

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Tech Info Library Article Number:9934

Personal LaserWriter NTR: Communication Arbitration

Revised: 3/19/92
Security: Everyone

Personal LaserWriter NTR: Communication Arbitration

==========

Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

The Personal LaserWriter NTR has three communication ports that can be active simultaneously. Special arbitration logic controls the activity among the three ports.

DISCUSSION ----------

Because PostScript processes one job at a time, only one port can have access to the printer at any given time. Arbitration logic polls the ports in a round-robin fashion until it senses activity in one of the three ports. It terminates polling at connection and the beginning of job execution. A connection, in this sense, refers to the dedication of the printer to a communication port while receiving PostScript jobs from a host. AppleTalk ports may process multiple jobs during a single connection while the other serial port connections have only one job. Receiving an EOF (end-of-file indicated end-of-job) character terminates a non-AppleTalk connection.

The port arbitration cycle begins whenever a host terminates a connection. It determines polling order by always polling the port that has gone unpolled for the longest time. This procedure ensures that one port won't dominate the printer. If an active PostScript job opens a port directly, that port is excluded from arbitration until the job closes it again. A PostScript job opening a serially connected sheet feeder is an example of this type of port activity.

All three ports respond to status request, with current printer status, unless excluded from the port arbitration cycle as previously explained, or just configured inactive. Directly opened ports may either respond with stale status or not respond at all. Ports not arbitrated due to

configuration may not respond or even appear on the network.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9936

Tech Info Library

Personal LaserWriter NTR: Utility Software 7.2

Revised: 3/19/92
Security: Everyone

Personal LaserWriter NTR: Utility Software 7.2

==========

Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Utility software, version 7.2, used with the Personal LaserWriter NTR.

DISCUSSION ----------

The LaserWriter Utility software provided with the Personal LaserWriter NTR is a slightly revised version of the utility that shipped with the LaserWriter IIf and IIg. The updated version includes some bug fixes and some minor changes to handle port configuration. These are the supported functions:

- Disable Start
  You can disable/enable the printing of the page Start Page when you turn the printer on.

- Configuration
  You can set the parameters for user-defined switch settings (emulation, baud rate, data length, hand shaking, port, and cut sheet feeder).

- Naming
  You can change the printer's name.

- Download Fonts
  You can download PostScript and TrueType fonts to DRAM.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9938

Tech Info Library

Macintosh LC II: Connecting a VGA Monitor

Revised: 3/19/92
Security: Everyone

Macintosh LC II: Connecting a VGA Monitor

==========

Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What are the pinouts for connecting a VGA monitor to the Macintosh LC II computer?

DISCUSSION ----------

To recognize a VGA monitor, you must wire pins 10 and 7 together. Since Macintosh LC II always grounds ID bit 2, this wire will cause ID3 to be grounded and will make the VGA ID appear.

Macintosh LC DB-15		VGA Connector
2	Red Video	1
1	Red Ground	6
9	Blue Video	3
13	Blue Ground	8
5	Green Video	2
6	Green Ground	7
15	Hsync	13
12	Vsync	14
14	Sync Ground	10
10		
7	Connect 7 and 10 so the sense pin ID will equal VGA	

A few issues to keep in mind:

- VGA monitors may vary, depending on the vendor. Check with the vendor about Macintosh LC II compatibility before buying.

- Vendors have different image quality specifications. There may be significant differences between Apple monitors and VGA monitors. Do a side-by-side comparison of a VGA monitor with an Apple monitor before buying.

- When a VGA monitor is connected as described in the pinout above, the resolution is 640 x 480. The bit-depth supported depends on the amount of VRAM installed. For example, if a 256K VRAM SIMM is installed, 4-bit color (16 colors) is supported. If the 512K VRAM SIMM is installed, 8-bit (256 colors) is supported.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9939

Tech Info Library

Macintosh LC II: RAM Configuration and 10 MB Limit (7/96)

Revised: 7/2/96
Security: Everyone

Macintosh LC II: RAM Configuration and 10 MB Limit (7/96)

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Article Created: 23 March 1992
Article Reviewed/Updated: 2 July 1996

TOPIC ----------

Is there a technical reason for the 10 MB limit on RAM for the Macintosh LC II and Performa 400, 405, and 430 computers?

DISCUSSION ----------

The Macintosh LC II and Performa 400, 405, and 430 computers have 4 MB of DRAM soldered onto the logic board. In addition, there are two 30-pin SIMM slots that accept 1, 2, and 4 MB SIMMs, which results in 4, 6, 8, and 10 MB configurations. SIMMs should be fast-paged mode, 100 nanoseconds (ns) RAM access time, or faster.

Although you would physically have 12 MB of DRAM installed in the computer if you populated each SIMM slot with 4 MB SIMMs, the total amount of addressable RAM is limited to 10 MB. As a result, when you populate your board with two 4 MB SIMMs, the lower 2 MB of DRAM on the logic board cannot be accessed.

This 10 MB addressable RAM limit on these computers is because the hardware only uses 24 address lines to select addresses, regardless whether it is in 24- or 32-bit mode. This means the hardware can access only $xx00 0000 - $xxFF FFFF, or 16 MB of address space. The hardware ignores the upper 8 bits of the address.

A distinction must be made between what the hardware looks at and what the software looks at. In 32-bit mode the software looks at all 32 bits of the address, but when the software tries to read a value from the memory location $40A0 0000, for example, the hardware, ignoring the upper 8 bits of this address, reads a value from $00A0 0000 instead.

In addition, since the ROM is mapped by the hardware to $00A0 0000 in both 24- and 32-bit modes and RAM needs to be contiguous, the largest contiguous amount of memory is from 0 -$9F FFFF, which is 10MB.

Article Change History:
02 Jul 1996 - Changed wording.
07 Jul 1992 - Added Performa.

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Tech Info Library Article Number:9941

Tech Info Library

AppleCD 150: Description (Discontinued 1/94)

Revised: 1/6/94
Security: Everyone

AppleCD 150: Description (Discontinued 1/94)

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the AppleCD 150 drive.

DISCUSSION ----------

AppleCD 150 is a cost-reduced revision of the existing AppleCD SC Plus drive. It uses a different enclosure instead of the traditional Apple plastic box. By making this change, we provide the same functionality and performance as the existing product, but at a much lower price.

Features

- 150KB per second
- Supports Macintosh HFS, ISO 9660/High Sierra file formats
- 380 ms average access time
- 64K cache memory
- Front-loading caddy door
- Automatic lens cleaning mechanism
- QuickTime ready
- SCSI interface

Benefits

- Fast data transfer
- Access to large number of titles
- Quick access to information
- Improved reliability
- Improved dust protection
- Can access video data
- Easy Macintosh connection, plug and play

..TIL09942-AppleCD_150-Description_Discontinued_1-94.pdf

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Tech Info Library Article Number:9942

Tech Info Library

Macintosh LC II: Software Compatibility

Revised: 3/19/92
Security: Everyone

Macintosh LC II: Software Compatibility

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Are there any software compatibility problems with the Macintosh LC II?

DISCUSSION -----

Software compatibility test results show no new software compatibility problems.

Some cards need latest drivers:

- The LC Ethernet card requires a ROM revision (Service upgrade).

- The Apple IIe card requires 2.1 driver (on networks, and so on).

An expansion card compatibility list ships in the Macintosh LC II box. This list indicates the versions required to run properly on the Macintosh LC II. Since we found no new software compatibility problems, no software compatibility list will be included.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9943

Tech Info Library

Macintosh LC II: LC Ethernet Card Requires New Driver

Revised: 3/19/92
Security: Everyone

Macintosh LC II: LC Ethernet Card Requires New Driver

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I heard that the Macintosh LC Ethernet card works in the Macintosh LC II, but requires a driver upgrade.

DISCUSSION -----

For use in the Macintosh LC II, the Ethernet card requires a ROM upgrade that contains a new driver.

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Tech Info Library Article Number:9944

Tech Info Library

Macintosh LC II: Doesn't Support 65.5K Colors

Revised: 4/14/92
Security: Everyone

Macintosh LC II: Doesn't Support 65.5K Colors

==========

Article Created: 23 March 1992
Article Last Reviewed: 13 April 1992
Article Last Updated: 13 April 1992

TOPIC ----------

Why doesn't the Macintosh LC II support 2^16 (= 65.5K, or 65,536) colors?

DISCUSSION ----------

All video timing modes use a 256 x 24 Color Look-Up Table (CLUT). Monochrome mode also uses the CLUT, driving the R, G, and B with the same signal. When you select the thousands of colors mode in the monitor CDEV, you are selecting 16 bit/pixel format. The 16 bit/pixel assigns the uppermost bit to an Alpha Channel and 5 bits each for Red, Green, and Blue.

Selecting thousands mode divides the 256 x 24 CLUT into three 32 x 8 tables, allowing display of 32 levels of each color from a selection of 256. The 555 data is applied to each of these tables, resulting in 888 output values. The CLUT is used so that gamma correction can be applied, even in the direct color mode. Therefore, you will get 2^16-1 = 32^3 = 32.7K color selections from a palette of 2^24 = 16.7 million color choices.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:9945

Tech Info Library

Macintosh LC II: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Macintosh LC II: Description (Discontinued)

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Macintosh LC II computer.

DISCUSSION ----------

The Macintosh LC II has a 68030 processor running at 16MHz, providing up to 10% faster performance than the Macintosh LC.

The ROM (Read-Only Memory) contains operating system routines, Toolbox routines, and system traps. The memory mapping scheme allocates 2MB of address space for ROM. The Macintosh LC II configuration consists of four 128K x 8 ROMs using 512K of the allocated address space. The Macintosh LC II ROM is an LC ROM (based on IIci ROM) upgraded to take advantage of the 68030.

Features

- Virtual Memory support
- 16-bit data path
- 32-bit clean ROM (512K)
- No Apple Floating Point Unit (FPU). Third-party solutions available.
- One 1.4MB FDHD SuperDrive
- hard drive options: none, 40MB, or 80MB
- LC Processor Direct Slot (PDS). Works with Apple IIe, LC Ethernet, and third-party LC cards.
- Built-in video RAM
  - 256K VRAM SIMM option
    - 16 grays on Macintosh 12-inch Monochrome or VGA
    - 256 colors on Macintosh 12-inch RGB Display
    - 16 colors on 13-inch AppleColor High-Resolution RGB Monitor or VGA

  - 512K VRAM SIMM option
    - 256 grays on Macintosh 12-inch Monochrome or VGA
    - 32,000 colors on Macintosh 12-inch RGB Display
    - 256 colors on 13-inch AppleColor High-Resolution RGB Monitor or VGA
- 4MB RAM soldered on logic board
- 2 SIMM RAM expansion slots (expansion to 6, 8, or 10MB)
- Ports (ADB, Printer, Modem, Video, SCSI, Mono sound out, Sound In)
- Built-in sound
  - Monaural 8-bit A/D converter with 22 kHz sampling rates
  - Electret microphone
- Macintosh LC to Macintosh LC II Upgrade Kit

System Software

Macintosh LC II systems with no hard drive are shipped with System 6.0.8.

Macintosh LC II systems with hard drives ship with System 7.0.1 and the System 7 Tune-Up extensions.

Worldwide Configurations

- USA
  - 4MB RAM, floppy drive only, 256K VRAM (M1720LL/A) - education only
  - 4MB RAM, 40MB hard drive, 256K VRAM (M1701LL/A)
  - 4MB RAM, 80MB hard drive, 512K VRAM (M1707LL/A)

- Europe and Pacific
  - 4MB RAM, 40MB hard drive, 512K VRAM, with or without keyboard
  - 4MB RAM, 80MB hard drive, 512K VRAM, with or without keyboard

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Tech Info Library Article Number:9946

Macintosh LC II: Specifications (Discontinued 3/93)

Revised: 9/27/93
Security: Everyone

Macintosh LC II: Specifications (Discontinued 3/93)

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Article Created: 23 March 1992

TOPIC --------------------

This article gives technical specifications for the Macintosh LC II computer.

DISCUSSION --------------------

Processor

- MC68030, 32-bit architecture, 15.6672 megahertz (MHz) clock frequency (includes built-in memory management unit).

Memory

- 4MB RAM, expandable to 10MB
- 512K of read-only memory (ROM)
- 256 bytes of parameter memory (PRAM)

Video RAM

- 256K video RAM (VRAM), upgradable to 512K
- With 256K video RAM, these video modes are supported:
  - 512 x 384 pixels with 1, 2, 4, and 8 bits per pixel
  - 640 x 480 pixels with 1, 2, and 4 bits per pixel
- With 512K video RAM, these video modes are supported:
  - 512 x 384 pixels with 1, 2, 4, 8, and 16 bits per pixel
  - 640 x 480 pixels with 1, 2, 4, and 8 bits per pixel

Disk Drives

- Built-in Apple SuperDrive 1.4MB high-density floppy disk drive
- Internal SCSI hard disk drive (several capacities available; optional if you're upgrading)
- Optional external SCSI hard disk drives (several capacities available)

Sound Generator

Custom sound chip, including mono sampling generator capable of driving stereo miniature phone jack headphones, or stereo equipment by sending the same output into each channel.

Power Input

- Line voltage: 100-240 volts AC, RMS automatically configured
- Frequency: 50-60 Hz ±3 Hz single phase
- Power: 50 watts maximum, not including monitor power

Clock/Calendar

CMOS custom chip with long-life lithium battery

Interfaces

- One Apple Desktop Bus port supports a keyboard, mouse, and other devices daisy-chained through a low-speed, synchronous serial bus (maximum of three chained devices)
- Two serial (RS-232/RS-422) ports, 230.4 kilobits per second maximum (up to 0.920 megabits per second if clocked externally)
- SCSI interface
- Video port supports RGB and monochrome monitors of various sizes and resolutions
- Internal expansion slot for processor-direct expansion card
- Sound output port capable of delivering monophonic sound to both channels of a stereo device
- Sound input port for monaural sound input

Monitors

- Supports the following monitors:
  - Macintosh 12-inch RGB Display
  - Macintosh 12-inch Monochrome Display
  - AppleColor High-Resolution RGB Monitor

Keyboards

Supports all Apple Desktop Bus (ADB) keyboards

Mouse

ADB mouse: either mechanical tracking, optical shaft, or contact encoding

Apple Desktop Bus Power Requirements

- Maximum power draw for all ADB devices: milliamperes (mA)
- Mouse draws 80 mA
- Keyboard draws 25-80 mA (varies with the keyboard model used)

Note: Up to three ADB devices can be daisy-chained to the ADB port.

RAM Configurations

RAM in the Macintosh LC II is provided both on the logic board and in packages called Single In-line Memory Modules, or SIMMs. The SIMMs contain dynamic RAM chips on a single circuit board, with electrical "finger" contacts along one edge that plug into the SIMM sockets on the computer's logic board.

Macintosh LC II can work with any of several RAM configurations, depending on the density of the RAM chips that are mounted on the SIMMs. The Macintosh LC II can use only 1, 2, or 4MB RAM SIMMs. Don't purchase 256K SIMMs for use with the Macintosh LC II. Possible RAM configurations include 4, 6, 8, and 10MB.

Important: Macintosh LC II SIMMs should be fast-paged mode 100 nanoseconds (ns) RAM access time or faster. The slower 120 ns and 150 ns SIMMs available for some other models of Macintosh computers DO NOT work in the Macintosh LC II.

Microphone/Sound

The microphone is an electret type, omnidirectional microphone that is powered by the computer. Microphone output voltage is 4 millivolts (mV) peak-to-peak at normal speaking volume.

Note: You can also use adapters to input sound from audio equipment with line level outputs, but the line level signals must be attenuated before reaching the computer's sound input port. An attenuation of 500:1 is recommended when inputting line level signals. Appropriate attenuation cables and adapters are available from electronics stores.

Size and Weight

- Main Unit
  Weight: 8.8 lb. (4.0 kg)
  Height: 3.0 inches (77 mm)
  Width: 12.2 inches (310 mm)
  Depth: 15.0 inches (382 mm)
- Mouse
  Weight: 6 oz. (0.17 kg)
  Height: 1.1 inches (27.9 mm)
  Width: 2.1 inches (53.3 mm)
  Depth: 3.8 inches (96.5 mm)
- Keyboard
  Weight: 2 lb. (1 kg)
  Height: 1.8 inches (44 mm)
  Width: 16.5 inches (418 mm)
  Depth: 5.6 inches (142 mm)

Environment

- Operating temperature
  10 degrees C to 40 degrees C (50 degrees F to 104 degrees F)
- Storage temperature
  –40 degrees C to 47 degrees C (–40 degrees F to 116.6 degrees F)
- Relative humidity
  0% to 80% (noncondensing)

Altitude
  0 to 3048 m (0 to 10,000 ft.)

E

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Tech Info Library Article Number:9947

Tech Info Library

Macintosh LC II: Logic Board Upgrade

Revised: 8/1/94
Security: Everyone

Macintosh LC II: Logic Board Upgrade

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Article Created: 23 March 1992
Article Reviewed/Updated: 29 July 1994

TOPIC ----------

Can a Macintosh LC be upgraded to a Macintosh LC II?

DISCUSSION ----------

Yes, the Macintosh LC II logic board upgrade kit (M1710SC/A) includes 2 MB DRAM, System software 7.0.1, documentation (but not HyperCard), and a new plastic top cover.

Article Change History:
29 Jul 1994 - Correct service part number for logic board upgrade kit.

Support Information Services

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Tech Info Library Article Number:9948

Tech Info Library

Macintosh LC II: Video (7/93)

Revised: 7/12/93
Security: Everyone

Macintosh LC II: Video (7/93)

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Article Created: 23 March 1992

Article Change History

07/12/93 - REVISED
- To include Performa

TOPIC ----------

This article describes the video capabilities and expansions available for the Macintosh LC II, and Performa 400, 405 and 430.

DISCUSSION ----------

Macintosh LC II comes with either a 256K or 512K VRAM SIMM. The VRAM is installed in a 32-pin SIMM slot. There are three possible SIMMs you can use:

- NO VRAM (a SIMM containing two transparent latches)
  - monochrome on Macintosh 12-inch Monochrome Display
  - monochrome on 13-inch AppleColor High-Resolution RGB Monitor
  - monochrome on VGA
- 256K VRAM SIMM option (Performa 405)
  - 16 grays on Macintosh 12-inch Monochrome or VGA
  - 256 colors on Macintosh 12-inch RGB Display
  - 16 colors on 13-inch AppleColor High-Resolution RGB Monitor or VGA
- 512K VRAM SIMM option (Performa 400 and 430)
  - 256 greys on Macintosh 12-inch Monochrome or VGA
  - 32,000 colors on Macintosh 12-inch RGB Display
  - 256 colors on 13-inch AppleColor High-Resolution RGB Monitor or VGA

Timing Modes

The Macintosh LC II supports the following four video timing modes:

Resolution	Supported	Vertical	Horizontal	Bandwidth
512 x 384	Macintosh 12-inch RGB	60.15	24.48	15.67
640 x 480	Macintosh 12-inch Monochrome AppleColor 13-inch	66.62	34.98	31.33
540 x 384	Macintosh 12-inch RGB Macintosh 12-inch Monochrome AppleColor 13-inch	60.15	24.48	17.23
VGA		59.94	31.47	25.18

All video timing modes use a 256 x 24 Color Look-Up Table (CLUT). Monochrome mode also uses the CLUT, driving the R, G, and B with the same signal. When you select "thousands of colors" in the Monitors control panel, you're selecting 16 bit/pixel format. The 16 bit/pixel assigns the uppermost bit to an Alpha Channel and 5 bits each for Red, Green, and Blue. Selecting thousands mode divides the 256 x 24 CLUT into three 32 x 5 tables. Therefore, you get 2^15 = 32^3 = 32.7K color selections.

Monitor Video Connectors

Macintosh LC II uses a DB-15 female connector to connect to the video monitor. Here's the pin-out:

Pin	Signal	Description
1	RED.GND	Red Video Ground
2	RED.VID	Red Video
3	CSYNC~	Composite Sync.
4	MON.ID1	Monitor ID, Bit 1
5	GRN.VID	Green Video
6	GRN.GND	Green Video Ground
7	MON.ID2	Monitor ID, Bit 2
8	nc	(No Connection)
9	BLU.VID	Blue Video
10	MON.ID3	Monitor ID, Bit 3
11	CSYNC.GND	CSYNC Ground
12	VSYNC~	Vertical Sync.
13	BLU.GND	Blue Ground
14	HSYNC.GND	HSYNC Ground
15	HSYNC~	Horizontal Sync.
Shell	S.GND	Chassis Ground

Three of the 15 pins (pin 10, 7, and 4) are used to send a signal to identify the monitor type. Once identified, Macintosh LC II synchronizes the correct video timing.

The monitor IDs are:

Connector pins	10,7,4
Monitor ID bits	321
Macintosh 12-inch Monochrome	110
Macintosh 12-inch RGB Display	010
Apple IIe mode	010
AppleColor 13-inch RGB	110
VGA	011
No Monitor	111

When no monitor (111) is attached, 512 x 384 video timing is selected. Macintosh LC II performs a special function of always returning a 1 to the Monitor Parameters Register when reading Monitor ID bit 2. By performing this special function, various monitors can select the correct video timing schemes. The VGA monitor (011) has the same monitor ID as the two-page monochrome. Neither the Two-Page nor the Portrait monitor can be attached to Macintosh LC II.

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Tech Info Library Article Number:9949

Tech Info Library

Macintosh LC II: Virtual Memory

Revised: 3/19/92
Security: Everyone

Macintosh LC II: Virtual Memory

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

The Macintosh LC II supports a demand paged virtual memory environment -- a distinct advantage over its predecessor, the Macintosh LC. The 68030 microprocessor comes equipped with the MC68851 PMMU (page memory management unit).

DISCUSSION -----

Addressing Scheme

The Macintosh LC II can generate either 24-bit or 32-bit virtual addresses.

The 24-bit mode allows a total of 11MB virtual memory. In 24-bit mode the total addressing space is 16MB. In this address space, 2MB is reserved for ROM, 1MB for I/O, 1MB for video, and 1MB is just reserved for a total of 5MB used in this 16MB space. The PDS slot also takes up 1MB. So when a card isn't installed, virtual memory can use this space. With a PDS card present, 10MB of virtual memory is available.

In 32-bit mode, because the ROM is 32-bit clean (that is, the ROM code has the ability to use the full 32 bits of address space), the total addressing space is 232, or 4 gigabytes. Of this 4 gigabytes, 3 gigabytes is used for ROM, I/O, slot space, and expansion, leaving a maximum of 1 gigabyte for virtual memory.

Virtual Memory

With the Macintosh LC II, limited RAM expandability and the cost of RAM SIMMs makes virtual memory an attractive option. Virtual addressing allows the Macintosh LC II to address data on a disk drive as if it were in main

memory. That means that you can launch more applications and data on the Macintosh LC II than the amount of installed RAM can contain.

The 68030 and its PMMU provide the hardware support for virtual memory. PMMU performs memory paging, a technique where a needed page of memory is transferred (swapped) into main memory from the disk. In addition, the PMMU swaps out of main memory, a page that isn't currently needed. The PMMU keeps track of 64 pages in memory.

With 32-bit addressing on and enough space available to allocate on hard disk, you can create a very large virtual memory address space. However, it's best for performance reasons to limit the size of your virtual memory to twice the size of installed RAM. By limiting the size of your virtual memory, you'll help eliminate excessive paging activity known as thrashing.

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Tech Info Library Article Number:9950

Tech Info Library

Macintosh LC II: Not Capable of Running A/UX

Revised: 3/19/92
Security: Everyone

Macintosh LC II: Not Capable of Running A/UX

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Can the Macintosh LC II run A/UX 3.0?

DISCUSSION ----------

No, the Macintosh LC II cannot run A/UX, which puts heavier demands on hardware resources than the Macintosh operating system does.

The Macintosh LC II is not a suitable A/UX platform for the following reasons:

- The Macintosh LC II lacks an FPU.

- It has limited RAM expansion and internal hard disk space.

- It has a 16-bit data path.

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Tech Info Library Article Number:9951

Macintosh LC II: How It Differs from Macintosh LC

Revised: 7/24/92
Security: Everyone

Macintosh LC II: How It Differs from Macintosh LC

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Article Created: 23 March 1992
Article Last Reviewed: 23 July 1992
Article Last Updated:

TOPIC -----

This article lists the ways the Macintosh LC II differs from the Macintosh LC.

DISCUSSION -----

- Processor: 68030 (instead of 68020)
- 4MB RAM minimum soldered onto the logic board.
- No second floppy-disk drive
- Improved VGA support (multisync).
- ASIC changes
  - 030 support (related to data cache use)
  - 4MB RAM on board support
  - ROM space reduced to 2MB (from 4MB); allows 2MB for cards
  - LOR (low-res special effect/pixel doubler)
- Removed speaker/fan plastic assembly.
- Removed second floppy connector.
- Reduced voltage sensitivity for VGA conformance.

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Tech Info Library Article Number:9953

Tech Info Library

Macintosh LC II: No NTSC Video Out

Revised: 3/19/92
Security: Everyone

Macintosh LC II: No NTSC Video Out

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Why doesn't the Macintosh LC II have NTSC video out?

DISCUSSION -----

NTSC video, unlike standard composite, is based on half-lines, not full lines of video. Standard Macintosh video starts at the top LEFT of the screen. The Macintosh then increments down the screen one line at a time, ending the scan at the bottom right. The NTSC scan starts at the top and MIDDLE of the screen, counts down every other line, and then ends only halfway across the screen on the bottom, again in the MIDDLE of the screen.

Now, the problem is that the current Macintosh LC and LC II video architecture is based on routines with the basic unit as one full line across. In order to do NTSC, the Macintosh LC II video architecture would have to understand half-lines.

The Macintosh Display Card 4•8 and 8•24 use a completely programmable timing logic, which can do NTSC timing quite easily. However, to implement this logic on the Macintosh LC II logic board would require 3 to 5 thousand more gates on video ASIC, which are just not available in the current package. Additional video circuitry would be required.

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Tech Info Library Article Number:9954

Tech Info Library

Macintosh LC II: No Support for 16 or 21 Monitors (2/93)

Revised: 3/9/93
Security: Everyone

Macintosh LC II: No Support for 16" or 21" Monitors (2/93)

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Article Created: 23 March 1992

Article Change History

02/26/93 - UPDATED
- To include information on products that provide larger monitor support.

TOPIC ----------

Can the Macintosh LC II support the Apple Macintosh Portrait Display, Macintosh 16" Color Display, Apple 21-inch Two-Page Monochrome Monitor, or the Macintosh 21" Color Display?

DISCUSSION ----------

The Apple Macintosh Portrait Display, Macintosh 16" Color Display, Apple 21-inch Two-Page Monochrome Monitor, and the Macintosh 21" Color Display are not directly supported on the Macintosh LC II.

Like the Macintosh LC, Macintosh LC II supports four different resolutions:
- 512 x 384
- 640 x 480
- 560 x 384 (Apple II resolution)
- VGA

The Apple Macintosh Portrait Display resolution is 870 x 640.
The Macintosh 16" Color Display resolution is 832 x 624.
The resolution on the 21-inch displays is 1152 x 870.

The Macintosh LC II on-board video is the same as the LC. The Macintosh LC II supports 256 colors on the 12-inch, and 16 colors on the 13-inch monitor.

There are third-party products that can provide the Macintosh LC and LC II with the capability of driving the larger monitors. Two such companies are Lapis and Aura Systems. You can find more information on these companies by searching on their names in the Technical Information Library and in the Redgate Products Library.

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Tech Info Library Article Number:9955

Tech Info Library

Macintosh LC II: Why No Two-Floppy Configuration

Revised: 3/19/92
Security: Everyone

Macintosh LC II: Why No Two-Floppy Configuration

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Why is a two floppy drive configuration not offered on Macintosh LC II?

DISCUSSION -----

The second floppy drive was removed to save cost and space on the logic board. In addition, the two-floppy configuration is an undesirable System 7 platform.

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Tech Info Library Article Number:9956

Tech Info Library

Macintosh LC II: RAM Expansion (7/93)

Revised: 7/12/93
Security: Everyone

Macintosh LC II: RAM Expansion (7/93)

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Article Created: 23 March 1992

Article Change History

07/12/93 - REVISED
- To include Performa

TOPIC ----------

When 4MB RAM resides on the logic board, how do I populate the two SIMM slots to get 10MB in the Macintosh LC II or Performa 400, 405, and 430?

DISCUSSION ----------

In the case of 4MB soldered on the printed circuit board (PCB), you need an 8MB RAM expansion kit to get 10MB. This configuration has 12MB of RAM present in the system. However, the Memory Map reserves only the first 10MB of address space for RAM. Therefore, the lower 2MB on the PCB can't be accessed when a 4MB base system is fully expanded. Even though, 32-bit addressing allows up to 1GB address space for RAM, there are only 24 address lines. Hence Macintosh LC II can see only 10MB of physical RAM.

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Tech Info Library Article Number:9957

Sparrow Corp.

Revised: 7/19/93
Security: Everyone

Sparrow Corp.

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Article Created: 26 February 1992
Article Reviewed/Updated: 19 July 1993

Sparrow Corp.

P.O. Box 6102
Mississippi State, MS 39762

601-324-0982

Fax: 601-324-3231

Company Profile:
Hardware and software, distributes interface cards for the Macintosh II line to VME or CAMAC.

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Tech Info Library Article Number:9958

Tech Info Library

230MB 3.5-inch SCSI Hard Disk Drive: Description

Revised: 3/26/92
Security: Everyone

230MB 3.5-inch SCSI Hard Disk Drive: Description

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article describes the Apple 230MB 3.5-inch SCSI hard disk drive.

DISCUSSION -----

This hard disk drive is intended for use in Apple's high-performance computer systems, and has features that benefit these particular products because of their exceptional speed and performance.

This drive operates from +12V and +5V supplies, but MAY REQUIRE POWER SAVING MODES. Side holes machined within the hard disk assembly chassis are for mounting the drive. The SCSI interface provides hardware-detectable SCSI ID.

The drive firmware contains on-board start-up diagnostic routines as well as automatic error correction during normal operation. Servo position control "locked" to the data track of interest provides on-track error performance. When turned on, the drive releases the actuator arm assembly from its locked position (landing zone) only if the read/write heads are in a stable flying condition. This feature ensures no direct physical contact between the heads and the data area on the disk surfaces. If power suddenly shuts off, the actuator arm automatically retracts to the landing zone before the heads make contact with the disk surfaces, and remains locked in place until power returns.

E

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Tech Info Library Article Number:9959

Ofoto for Windows: Description

Revised: 3/26/92
Security: Everyone

Ofoto for Windows: Description

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the differences between Ofoto for Windows -- the software that accompanies Apple OneScanner for Windows -- and Ofoto for Macintosh. It also outlines the product's file formats and system requirements.

DISCUSSION ----------

Differences Between Ofoto for Windows and Ofoto for Macintosh
---
Ofoto for Windows, like Ofoto for Macintosh, was developed by Light Source Inc. It is nearly identical to Ofoto for Macintosh 1.1, except that it does not support QuickTime compression, and can run without a scanner present.

These are the other differences:

- The eraser, pencil, and lasso tools have been removed.

- Revert and Scan Orientation have been removed.

- The Windows MDI (Multi-Document Interface) metaphor is used. There is a title bar over the menu bar for the application, with any number of images open within the application.

- A single-line window at the bottom of the application describes menu commands that are being selected with the mouse.

- The Tool bar is a separate floating window not attached to the image windows.

- You can tell if an image is dirty (needs to be saved) if the upper-left and lower-right corners "bubble" out.

- Operations that use the Option key and mouse on the Macintosh use the Shift key under Windows. Two examples: using Shift with the mouse to crop an image, and using Shift with the mouse to zoom out.

- When Ofoto is run without a scanner, the functions that pertain to scanning are grayed out.

- Printer Setup takes the place of the Macintosh version's Page Setup.

- When you save a file in Ofoto, an auxiliary data file with an extension of the form OF? is also written to disk. This file is useful only if you intend to the read the image back into Ofoto. (On the Macintosh, this information is part of the resource fork, which doesn't exist in the DOS file system.)

  The "?" in the extension "OF?" can be any of these:
  - M (Microsoft Paint)
  - B (Windows Bitmap)
  - P (PC Paintbrush)
  - I (GEM Image)
  - T (TIFF)
  - E (Encapsulated Postscript)

File Formats

Ofoto for Windows reads the following file formats:

- TIFF
- EPS
- PC Paintbrush (PCX)
- GEM Image (IMG)
- Windows Bitmap (BMP)
- Microsoft Paint

System Requirements

Ofoto for Windows requires:

- Microsoft Windows 3.0 (standard or enhanced mode only, real mode not supported)

- MS-DOS 3.3 or greater (5.0 recommended)

- VGA 640 x 480 resolution, 12MHz 286 or faster (386 or 486 preferred)

- 4MB RAM

- Hard disk with at least 10MB available

- Microsoft mouse or compatible

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Tech Info Library Article Number:9961

Tech Info Library

OneScanner for Windows: Using Its SCSI Card with Other Devices

Revised: 3/26/92
Security: Everyone

OneScanner for Windows: Using Its SCSI Card with Other Devices

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

The SCSI card bundled with Apple OneScanner for Windows can be used with other SCSI devices, such as a hard drive. Note: Apple does not support other SCSI configurations, cards, or devices.

To use the card with a SCSI device other than OneScanner, you need the driver software that is available from Adaptec, the card's manufacturer.

DISCUSSION ----------

Using the SCSI card for other devices can be tricky. Sometimes SCSI IDs must be set with a jumper on the card and the software must be reconfigured to use another address for the card.

Similarly, the scanner will theoretically operate with other SCSI cards or some built-in SCSI implementations, but different drivers will be required -- and Apple will not support other SCSI cards. (Note that this rules out all Microchannel-equipped IBM PS/2s as supported configurations.)

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Tech Info Library Article Number:9962

Tech Info Library

OneScanner for Windows: Description

Revised: 3/26/92
Security: Everyone

OneScanner for Windows: Description

==========

Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Apple OneScanner for Windows, an 8-bit gray-scale scanner for the Microsoft Windows market.

DISCUSSION ----------

OneScanner for Windows is identical to OneScanner for Macintosh, except for the bundled accessory kit. The accessory kit includes:
- a SCSI card for AT or EISA bus PC compatibles
- a SCSI Peripheral cable and terminator.
- Ofoto for Windows scanning software and manuals

Ofoto for Windows is designed to resemble the Macintosh version as much as possible, including one-button autoscan and adaptive calibration. Ofoto for Windows is described in a separate article.

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Tech Info Library Article Number:9963

OneScanner for Windows: Hardware Compatibility

Revised: 3/26/92
Security: Everyone

OneScanner for Windows: Hardware Compatibility

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Apple OneScanner for Windows has been confirmed compatible with many IBM PC models and with PC-compatible systems from other manufacturers.

DISCUSSION ----------

Compatible

It would be impossible to test OneScanner for Windows with every brand of Windows-compatible hardware. It should work on most of them. These are the ones we've tested to date:

- ALR PowerFlex 386sx
- ALR486
- AST 486
- Compaq 386/33
- Compaq 486 EISA
- Dell System 325
- Gateway 386/25
- HP Vectra 386/25c
- IBM PS/2 Model 40
- NEC PowerMate 386/25s

Not Compatible

OneScanner for Windows is incompatible with the built-in SCSI implementation found on the IBM PS/2 model 95.

OneScanner for Windows is incompatible with all current Northgate PCs.

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..TIL09964-OneScanner_for_Windows-Hardware_Compatibility_(TA48281).pdf

Tech Info Library Article Number:9964

Tech Info Library

OneScanner for Windows: Performance Tip

Revised: 5/23/96
Security: Everyone

OneScanner for Windows: Performance Tip

==========

Article Created: 23 March 1992
Article Reviewed/Updated: 23 May 1996

TOPIC ----------

Apple Support has found that some modifications to the default CONFIG.SYS file can significantly improve the performance of OneScanner for Windows on some machines.

DISCUSSION ----------

The default settings for FILES and BUFFERS are too low for optimum performance with Ofoto.

Here is a sample file:

```
FILES=40
BUFFERS=30
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\SETVER.EXE
rem DEVICE=C:\DOS\EMM386.EXE 6496
DEVICE=C:\DOS\SMARTDRV.SYS 4096 1024
DOS=HIGH

DEVICE=C:\OFOTO\ASPI2DOS.SYS /Z /U-
```

Article Change History:
23 May 1996 - Reviewed for technical accuracy.

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Tech Info Library Article Number:9965

Apple IIGS: System 6.0 Software and HyperCard IIGS 1.1

Revised: 6/5/92
Security: Everyone

Apple IIGS: System 6.0 Software and HyperCard IIGS 1.1

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Article Created: 27 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes Apple IIGS System 6.0 software and an upgraded version of HyperCard IIGS.

DISCUSSION ----------

Apple IIGS System 6 software offers an enhanced user interface, greater speed and performance, and data exchange capabilities not available on previous Apple IIGS operating systems. HyperCard IIGS version 1.1 has been upgraded to include a Media Control stack for operating CD ROMs and videodisc players, and new HyperTalk scripting capabilities. As with original HyperCard IIGS, version 1.1 is also in color.

Apple IIGS System 6 provides similar ease-of-use and functionality now available with the System 7 Finder for the Macintosh.

Features and Benefits of Apple IIGS System 6

- Three New File System Translators
  These provide easy access to Macintosh disks, Pascal disks, and Apple II DOS 3.3 disks

- Control Panel and Desk Accessory Enhancements
  You can open control panels directly from the desktop. The software incorporates Find File and Calculator desk accessories.

- Finder Help
  You can access Finder Help through pop-up menus and keep it on screen while stepping through procedures.

- Enhanced Window Handling and Window Appearance
  It's easier to move between and manage multiple windows on a single screen.

- Two New Applications: Teach and Archiver
  Teach is a desktop text processor that enables you to jot down notes, read disk files, and create formatted or unformatted text documents. Teach also provides file import capability from ASCII, AppleWorks version 3.0, AppleWorks GS, MacWrite version 5.0 formats, and AppleWriter. Archiver offers flexible hard disk backup functions to save and restore either individual files or entire volumes.

- Media Control Toolset
  This is a new tool/driver/control panel/desk accessory combination that allows you to integrate, configure, and manage highly sophisticated multimedia effects. Use it in conjunction with HyperCard IIGS version 1.1 to optimize the toolset's performance.

- The Universal Access Suite
  This suite (also available on Macintosh System 7 software) opens the Apple IIGS to disabled users via Video Keyboard, Easy Access, and Closeview programs.

- As with the System 5 series, Apple IIGS System 6 users can network their Apple IIGS computers with each other and with Apple IIe, Macintosh, and MS-DOS computers. However, System 6 improves networking functionality via EasyMount, a new feature that allows users to mount a network server with a simple double-click command.

- Apple IIGS System 6 replaces Apple IIGS System 5.0.4 for the stand-alone Apple IIGS, providing a consistent graphical interface and high performance for both the individual and networked user.

Speed and Feature Enhancements for HyperCard IIGS 1.1

- Media Control Stack
  This allows control of external media devices such as laserdisc players and CD-ROM drives from within the stack. A common interface to two external devices provides control, using standard buttons or floating control panels for "Play," "Fast Fwd," and so on.

- Tune Builder Stack
  This allows you to create short original tunes by simply clicking the mouse on the stack's music staff. You can play notes in variable time, and with the voices of a large collection of instruments. You can use these tunes as enhancements to other original stacks by cutting and pasting.

- Features from Macintosh HyperCard Versions 2.0 and 2.1
  - HyperTalk extensions
  - X Windows

- The Apple IIGS SuperDrive Controller Card

Available for the enhanced Apple IIe and Apple IIGS, this allows users to use Apple's SuperDrive, which permits the use of 1.4MB floppy disks. The SuperDrive card also operates all other Apple II 3.5 disk drives.

System Requirements

- Apple IIGS personal computer with at least 1MB of RAM, ROM version 01 or 03 and one 3.5-inch disk drive, although configurations of 2MB of RAM and a hard drive is recommended for optimal performance.

- Networked systems require Apple IIGS computers with at least 768K RAM, ROM version 01 or 03, and appropriate LocalTalk cables.

- HyperCard IIGS version 1.1 requires an Apple IIGS personal computer with 1.5MB RAM, one 800K disk drive and hard disk or connection to a networked environment, and system software 5.0.3 or subsequent version.

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Tech Info Library Article Number:9966

Tech Info Library

LaserWriter Printers: Memory Configurations (6/96)

Revised: 6/28/96
Security: Everyone

LaserWriter Printers: Memory Configurations (6/96)

==========

Article Created: 20 March 1992
Article Changed/Revised: 28 June 1996

TOPIC -----

Here is a chart that shows memory configurations and SIMM speeds for Apple LaserWriter printers.

DISCUSSION -----

Apple LaserWriter Printers: RAM Configurations

Begin_Table

Printer	RAM Soldered on Board (MB)	Number of SIMM Slots	Possible SIMM Sizes	Physical RAM Configs (MB)	Speed
LW	1.5	0	N/A	1.5*	N/A
LW Plus	1.5	0	N/A	1.5*	N/A
LW IISC%	0	4	256K	1	120 ns
LW IINT%	2	0	N/A	2*	N/A
LW IINTX%	0	12	256K,1MB	2,3,4,5,8, 9,12	120 ns
LW IIf	0	8	256K, 1MB, 4MB	2,4,5,8,16, 17,20,32	80 ns
LW IIg	0	8	256K, 1MB, 4MB	5,8,16,17, 20,32	80 ns
LW Pro 600 and 630	0	2	4MB, 8MB, 16MB	8,16,20,32	80 ns

LW Pro 810	8	3	4MB, 8MB	8,12,16,20, 24,28,32	N/A
LW Select 300	0.5	1	1MB, 4MB	0.5,1.5,4.5	80 ns
LW Select 310	1.5	1	1MB, 4MB	1.5,2.5,5.5	100 ns
LW Select 360	3	1	4MB, 16MB	7,16	80 ns
PLW SC	0	4	256K	1	120 ns
PLW LS	0	4	256K	0.5,1	100 ns
PLW NT	0	2	1MB, 4MB	2,8	120 ns
PLW NTR	2	1	1MB, 2MB	3,4	80 ns
PLW 300	0.5	0	N/A	0.5	N/A
LW 16/600 PS	0	2	4MB, 8MB, 16MB	8,12,16,24, 32	80 ns
Color LW 12/600 PS	8	2	1MB, 4MB, 16MB	12,13,16,24, 25,28,40	60 ns
LW 12/640 PS	0	2	4 MB,8 MB 16 MB,32 MB	4,8,12,16,20 24,32,36,40 48,64	70 ns

End_Table

NOTES:

Unless otherwise noted, Apple LaserWriters use 30-pin, 80 ns memory SIMMs.

* These LaserWriter printers have the RAM soldered on the board. There are no RAM upgrades available.

% These LaserWriter printers can be upgraded to a LaserWriter IIf or IIg. Contact your local authorized Apple dealer for upgrade information.

The LaserWriter IINTX uses 64-pin, 120 ns (or faster) memory SIMMs.

The LaserWriter Pro 600 and 630 use 72-pin, 80ns (or faster) memory SIMMs. If you use a double-sided SIMM, you can only fill one SIMM slot since a double-sided SIMM electronically occupies both SIMM slots.

The LaserWriter Pro 810 uses special non-standard 4MB and 8MB memory modules.

The LaserWriter Select 310 uses 72-pin, 100 ns (or faster) memory SIMMs.

The LaserWriter Select 360 can be upgraded with a 72-pin, 80 ns 16MB (4 Mbit by

32 bit) SIMM with 2K Row refresh (11 bit by 11 bit).

The LaserWriter Select 360 may be upgraded to 16 MB total by removing the 4 MB SIMM and replacing it with a 16 MB SIMM. The remaining 3 MB of memory is disabled by the controller whenever a 16 MB SIMM is installed.

The Personal LaserWriter SC can be upgraded to a Personal LaserWriter NT. Contact your local authorized Apple dealer for upgrade information.

The Personal LaserWriter NT printer's two SIMM slots are treated as one bank; therefore, you cannot combine 1MB and 4MB SIMMs to get a 5MB configuration.

The Personal LaserWriter NTR uses 72-pin, CAS before RAS, 80 ns (or faster) memory SIMMs.

The LaserWriter 16/600 PS uses 72-pin SIMMs.16 MB SIMMs with a 4K Row (10 bit x 12 bit) refresh configuration are not compatible with the LaserWriter 16/600 PS. Memory configurations of 16+0=16MB and 16+4=20MB are not supported by the LaserWriter 16/600 PS printer.

The Color LaserWriter 12/600 PS uses 72-pin SIMMs. You can mix SIMMs of different capacities in the two SIMM slots. When installing memory simms of different sizes, the larger density SIMM can be installed into either memory slot. There should be no difference in installing larger density SIMMs in J10 or J11.

It is important to remember, however, that you must use single-sided memory SIMMs when upgrading the printer’s memory, if you intend to fill both memory slots. Double-sided SIMMs are recognized as two individual memory banks and could, therefore, cause problems when the printer attempts to address the memory SIMM in the other slot.

For the LaserWriter 12/640 PS printer, the SIMMs must have a 2 KB row (11 bit x 11 bit) refresh configuration. 16 MB SIMMs with a 4 KB row (10 bit X 12 bit) refresh configuration are not compatible with the printer.

Article Change History
28 Jun 1996 - Added additional note about the LW 360 and info for 12/640.
07 Mar 1996 - Updated Color LaserWriter 12/600 PS note.
15 Sep 1995 - Added Color LaserWriter 12/600 PS.

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Tech Info Library Article Number:9968

Tech Info Library

Ofoto 1.1: Apple OneScanner Software Upgrade Description

Revised: 6/5/92
Security: Everyone

Ofoto 1.1: Apple OneScanner Software Upgrade Description

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Article Created: 10 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Ofoto 1.1 software.

DISCUSSION ----------

The new software for the Apple OneScanner includes Ofoto 1.1 and a revised instruction manual. Ofoto 1.1 incorporates support for QuickTime image compression abilities. This allows you to compress and decompress still image files and save them as much smaller files. The QuickTime system software extension is included with the new software. Other enhancements include the addition of an "autosharpen" command, a simplified calibration process, and improved access to the "image-type" control.

Support for QuickTime compression/decompression abilities significantly reduces the file sizes of scanned images as much as 10 times. QuickTime provides various compression choices, including the Joint Picture Expert Group (JPEG) industry standard method of image compression. QuickTime also makes the opening and decompression of compressed files saved in the standard PICT format automatic to all Macintosh applications. The other enhancements refine the user interface of the scanning software and improve the quality of scanned images.

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Tech Info Library Article Number:9969

Tech Info Library

Personal LaserWriter LS: Software Upgrade

Revised: 12/15/92
Security: Everyone

Personal LaserWriter LS: Software Upgrade

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Article Created: 10 March 1992

TOPIC ----------

This article describes a software upgrade for the Personal LaserWriter LS.

DISCUSSION ----------

The software upgrade for the Personal LaserWriter LS includes seven new font families and improved installation software. The new fonts are: ITC Avant Garde, ITC Bookman, New Century Schoolbook, Helvetica Narrow, Palatino, ITC Zapf Chancery, and ITC Zapf Dingbats. The new font set is fully compatible with System 7, and with virtually all software applications.

Apple has also improved the installation of fonts, driver, and printer software with a new installer. This new installer enables users to install or remove fonts, and add new printer software by clicking a button.

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Tech Info Library Article Number:9970

Tech Info Library

MacTCP 1.1: Communicating with SGI Indigo UNIX Computer

Revised: 6/5/92
Security: Everyone

MacTCP 1.1: Communicating with SGI Indigo UNIX Computer

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm having problems communicating with an SGI Indigo UNIX computer using a Macintosh with MacTCP 1.1

Here's the scenario:

I'm connected to an Ethernet network with two Indigo boxes. We've isolated this segment; only our three computers are on it.

- Indigo #1 - 192.100.2.2
- Indigo #2 - 192.100.2.4
- Mac IIfx - 192.100.2.43 (MacTCP, version 1.1)

The Indigos "ping" each other successfully.

I boot a computer with system 7.0.1, but I don't respond to an Indigo's attempt to "ping" me.

I use Etherpeek on the same Macintosh IIfx, and I see their "ping" request packets on the network (even the one addressed to me). Etherpeek gets information, and confirms that I have configured the proper MacTCP address.

I open MacTCP SPY, and I suddenly begin to respond to the "pings." I can then use VersaTerm Pro with the Telnet Comm Tool drivers to log on to the Indigo with no problems. By the way, I continue to respond to the "ping," even when I close MacTCP SPY.

Rebooting with System 6.0.7 on the hard drive, I still don't respond to a "ping," even when I use MacTCP SPY to "kick start."

In short, I need to enable the 6.0.7 Macintosh IIfx to communicate, preferably without a MacTCP Spy "kick start." If the solution is to upgrade to System 7, then I need to have this same capability on this platform as well.

DISCUSSION ----------

The actions you describe are exactly the way MacTCP was designed to operate. The driver isn't loaded until the first TCP/IP application is launched. This is true for both 6.0.7 and 7.0, or we should say MacTCP 1.0 and 1.1.

You shouldn't have to kick-start MacTCP unless you want it to respond to ICMP messages before you run a MacTCP application. If this is the functionality you desire, just set MacTCP Spy as a startup application. This will work under both System 6.x and System 7.x.

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Tech Info Library Article Number:9974

Tech Info Library

AppleTalk: DDP Encapsulated in IP (IP Tunneling) (3/95)

Revised: 3/22/95
Security: Everyone

AppleTalk: DDP Encapsulated in IP (IP Tunneling) (3/95)

==========

Article Created: 23 March 1992
Article Reviewed/Updated: 22 March 1995

TOPIC -----

Is there any way to encapsulate an AppleTalk packet (DDP) into an IP packet to send over an IP protocol only network? If this is possible, I expect I will need something at the other end (gateway) to strip the AppleTalk packet from the IP.

DISCUSSION -----

What you describe is known as IP tunneling, where a gateway/router connected to both an AppleTalk network and an IP network wraps a DDP packet inside a UDP packet. It then transmits that packet across the IP network to another gateway/router that is capable of de-encapsulating the packet.

The IP Extension to the Apple Internet Rounter (AIR) does just that. When talking to another AIR running the IP Extension, you can tunnel AppleTalk through an IP network, including the Internet.

Article Change History:
22 Mar 1995 - Updated with AIR 3.0 information; reformatted.

Support Information Services

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Tech Info Library Article Number:9975

Tech Info Library

AMP Thinnet and FriendlyNet

Revised: 6/5/92
Security: Everyone

AMP Thinnet and FriendlyNet

==========

Article Created: 25 March 1992
Article Last Reviewed: 18 June 1992
Article Last Updated:

TOPIC -----

I have AMP's Thinnet tap system for Thinwire Ethernet. AMP uses a special vampire-style plug in the wall and a cable running to the user's workstation that plugs into the coax port on the interface card.

We had a problem with FriendlyNet. Since we have two ends, we either get too many terminations on the network (two existing plus one automatic from the transceiver), or reflections (if we open one end up by using a barrel connector). Neither case led to a healthy network.

DISCUSSION -----

You need to use a 222814-1 Test Cable Assembly. This device provides two coax cables that plug into either side of the FriendlyNet transceiver. AMP is 802.3 compliant (the run from the faceplate to the user contains both "ends" of the network).

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9976

AppleTalk Phase 2: OUI in Ethernet to FDDI Bridges

Revised: 6/5/92
Security: Everyone

AppleTalk Phase 2: OUI in Ethernet to FDDI Bridges

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Article Created: 25 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I have a question about the bridging problem with AppleTalk Phase 2 and FDDI. I found some information that says the IEEE 802.1 committee is currently formalizing the use of OUI in Ethernet to FDDI bridges that will define what to do if a bridge encounters SNAP headers with OUI=0. What is the status of this?

DISCUSSION -----

The IEEE 802.1 committee has adopted the proposal which we, in conjunction with DEC, brought before them to resolve the conflict in using OUI 0. The 802.1 committee has moved the 802.1h specification to the "recommended practice" status which is just short of being a fully adopted and ratified standard.

The 802.1h specification defines how an Ethernet to FDDI translational bridge should operate in the presence of packets that use OUI 0. This is basically a simple filter mechanism which is implemented in the bridge that checks the packets OUI:

- If it's 0, it then checks to see if the packet type is AppleTalk.

- If it's an AppleTalk packet, then it doesn't do any translation.

The key here is to make sure that any potential FDDI bridge vendors have implemented the 802.1h specification.

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Tech Info Library Article Number:9977

Tech Info Library

FriendlyNet 10Base-T: Won't Switch Among IEEE 802.3 Draft Modes

Revised: 6/5/92
Security: Everyone

FriendlyNet 10Base-T: Won't Switch Among IEEE 802.3 Draft Modes

==========

Article Created: 25 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I want to connect a Macintosh Quadra 700 to an existing Novell-based EtherNet with 10Base-T. I can't get contact, and I think it's because the existing network is based on IEEE 802.3 draft 5, while Apple's implementation most likely is draft 10. Other cards/transceivers have the ability to switch between the two modes. What does Apple do to connect to a network based on draft 5?

DISCUSSION ----------

There was a significant amount of work done and products sold before the standard was finalized. Many of the hubs produced before the standard was finalized don't support the Link Integrity function, a test signal used to verify the connection between the transceiver and the hub.

Unfortunately, we don't have any way to disable Link Integrity for our FriendlyNet 10Base-T transceiver, nor do any of the third-party FriendlyNet compatible transceivers support the disabling of this signal. The only solution for this type of environment is to purchase a third-party 10Base-T Ethernet card that supports disabling the Link Integrity function.

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Tech Info Library Article Number:9978

AAUI: Pinout Equivalents to AUI

Revised: 6/5/92
Security: Everyone

AAUI: Pinout Equivalents to AUI

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Article Created: 31 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC --

What are the pinout equivalents of the AAUI (Apple Attachment Unit Interface) to the standard AUI (Attachment Unit Interface)?

What pin connections are needed for a cable to connect an Apple AAUI to DB15 connector (vampire clip) coming off of a thicknet cable?

What is the maximum length for this cable?

DISCUSSION --

Here are the pinouts for the AUI interface per 802.3 and the matching AAUI pin number:

1 - Shield (Control In shield)
    Not mandatory and not implemented on AAUI

2 - Collision Presence (+) (Control In circuit A)
    AAUI pin 5

3 - Transmit (+) (Data Out circuit A)
    AAUI pin 9

4 - Reserved (Data In shield)
    AAUI Shell

5 - Receive (+) (Data In circuit A)
    AAUI pin 2

6 - Power Return (Voltage Common)

```
        AAUI pin 4

    7 - Reserved (Control Out circuit A)
        Not mandatory and not implemented on AAUI

    8 - Reserved (Control Out shield)
        AAUI Shell

    9 - Collision Presence (-) (Control In circuit B)
        AAUI pin 6

   10 - Transmit (-) (Data Out circuit B)
        AAUI pin 10

   11 - Reserved (Data Out shield)
        AAUI Shell

   12 - Receive (-) (Data In circuit B)
        AAUI pin 3

   13 - Power (Voltage Plus)
        AAUI pin 1

   14 - Reserved (Voltage shield)
        AAUI Shell

   15 - Reserved (Control Out circuit B)
        Not mandatory and not implemented on AAUI
```

You can use the same specifications as apply to the AUI cable to compute the maximum length of the AAUI cable when used to interface to a 10BASE-5 network. Hence the AAUI cable could be up to 50 meters long. When attaching to other 802.3 compliant networks, the length of the AAUI cable has different characteristics. When used to attach to a 10BASE-2 network the AAUI cable length should be limited to 1.33 meters.

The biggest problem you're going to face in putting this type of cable together is that all Macintosh computers don't have +12 volts available to drive the AUI transceiver. The transceiver needs an external power supply.

10BASE-2 AAUI Notes

FriendlyNet can support a maximum of 40 nodes per network segment. This is more than the maximum of 30 nodes described in the 10BASE2 specification. This is achieved through use of more stringent design specifications for both the MAU and the Apple Coaxial cables, and by using a fixed, short cable connecting host to drop box. (This doesn't preclude the use of standard RG-58 C/U cables, but reduces the recommended node count to 30.)

General AAUI Interface Notes

Except for the pins that supply power, each AAUI signal has the same description, function, and electrical requirements as the AUI signal of the

same name. This is detailed in IEEE Standard 802.3-1988 CSMA/CD, paragraph 7.6.3, P. 105.

To allow connection of Apple AAUI-equipped hosts to standard 802.3 MAUs, possibly accessing different media, an AAUI to AUI converter shall be provided. Because all Apple equipment isn't capable of supplying the +12 VDC @ 500 mA necessary to power a standard AUI as specified in the IEEE 802.3 standard, the converter requires external power.

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Tech Info Library Article Number:9980

Tech Info Library

A/UX 3.0: Requires MultiFinder to Run Macintosh Applications

Revised: 6/5/92
Security: Everyone

A/UX 3.0: Requires MultiFinder to Run Macintosh Applications

==========

Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Is it possible (and supported) to run individual Macintosh Toolbox off-the-shelf applications under A/UX 3.0 WITHOUT launching 7.0 MultiFinder? In other words, will A/UX 3.0 support A/UX 1.1 functionality, allowing me to launch individual applications from the command line, and return to the command line after I quit each application?

DISCUSSION -----

A/UX 3.0 doesn't allow Macintosh applications to run without MultiFinder. System 7 relies on the existence of MultiFinder.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9981

Tech Info Library

A/UX 3.0: Booting to a Known Good Kernel

Revised: 6/5/92
Security: Everyone

A/UX 3.0: Booting to a Known Good Kernel

==========

Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Using A/UX 3.0, when I run newconfig or autoconfig, the kernel becomes unusable, and I have to reinstall. On other UNIX platforms, it's relatively painless to boot to a known good kernel, and then reconfigure the kernel. Is this possible on the Macintosh?

DISCUSSION -----

The 3.0 newconfig is essentially the same as 2.0. The way to boot to a known good kernel is to "launch /newunix" from A/UX Startup. Then try /etc/newconfig.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9982

Tech Info Library

A/UX 3.0: Mac Apps Don't Need Recompile; A/UX Hybrids Do (9/94)

Revised: 9/22/94
Security: Everyone

A/UX 3.0: Mac Apps Don't Need Recompile; A/UX Hybrids Do (9/94)

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Article Created: 23 March 1992
Article Reviewed/Updated: 22 September 1994

TOPIC ----------

Has anything changed between A/UX 2.0.1 and A/UX 3.0 that would require users or developers to recompile their UNIX applications to get them to run?

DISCUSSION ----------

You don't need to recompile Macintosh applications.

You do need to recompile A/UX Hybrids.

Straight UNIX applications SHOULDN'T need recompiling if they're using shared libraries. The only changes to the kernel are for NFS.

Article Change History:
22 Sep 1994 - Reviewed.

Support Information Services

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Tech Info Library Article Number:9983

Tech Info Library

A/UX 3.0 and System 7 Tune-Up (9/94)

Revised: 9/15/94
Security: Everyone

A/UX 3.0 and System 7 Tune-Up (9/94)

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Article Created: 23 March 1992
Article Reviewed/Updated: 14 September 1994

TOPIC ----------

Will the System 7 Tune-up work under A/UX 3.0?

DISCUSSION ----------

System 7 Tune-up 1.0 is pre-installed on A/UX 3.0, but the files are modified from the Macintosh operating system versions. Tune-up 1.1.1 should not be installed because it is not needed. Don't replace A/UX System 7 Tune-up items with the Macintosh OS versions. However, you may install the new LaserWriter driver, if desired.

Article Change History:
14 Sep 1994 - Added information about Tune-up 1.1.1.

Support Information Services

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Tech Info Library Article Number:9984

..TIL09985-A-UX_3-0-ISO_9660_CDs_(TA48299).pdf

Tech Info Library

A/UX 3.0: ISO 9660 CDs

Revised: 6/5/92
Security: Everyone

A/UX 3.0: ISO 9660 CDs

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Article Created: 30 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Will ISO 9660 CDs with UNIX file systems operate under A/UX 3.0?

DISCUSSION -----

ISO 9660 CDs aren't directly accessible through the UNIX file system under A/UX 3.0. They're mountable through the Finder as under the Macintosh OS, but they aren't accessible from the UNIX command line.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9985

Tech Info Library

PowerBook Fax Sender 1.1.2 or Later: Fixes Page Length (7/93)

Revised: 5/16/94
Security: Everyone

PowerBook Fax Sender 1.1.2 or Later: Fixes Page Length (7/93)

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Article Created: 24 March 1992
Article Reviewed/Updated: 15 July 1993

TOPIC ----------

When I send a fax from my PowerBook, the pages print out at the receiving fax machine with an extra 1/2 inch of white space at the top and bottom. The pages tear off in a non-standard size.

DISCUSSION ----------

The problem you refer to is a known problem with early Fax Sender versions. Apple recommends that you upgrade to Fax Sender 1.1.2 or later to correct the problem. Fax Sender 1.1.2 is installed from the Express Modem 1.0.4 disk and is backward compatible with the PowerBook Fax/Data Modem.

Article Change History:
07/15/93 - Retitled and Updated with Fax Sender upgrade information.

Support Information Services

Copyright 1992, 1993, Apple Computer, Inc.

Tech Info Library Article Number:9988

Tech Info Library

PowerBook: Fax Monitor Status Prevents Sleep (11/94)

Revised: 11/11/94
Security: Everyone

PowerBook: Fax Monitor Status Prevents Sleep (11/94)

==========

Article Created: 27 March 1992
Article Reviewed/Updated: 11 November 1994

TOPIC ----------

I've noticed that when Fax Monitor Status is the foreground application, the PowerBook won't go to sleep, even if the status is idle.

DISCUSSION ----------

This has been corrected so that the PowerBook will enter sleep mode if the Fax Monitor status is Idle. If, however, it is waiting for a call, the PowerBook will not go into sleep mode.

Article Change History:
11 Nov 1994 - Updated solution.
15 Jul 1993 - Updated with engineering status and workaround information.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:9989

Tech Info Library

DAL 1.3.5: AsyncCTB (X.25) Only for VAX or A/UX DAL Servers

Revised: 9/9/92
Security: Everyone

DAL 1.3.5: AsyncCTB (X.25) Only for VAX or A/UX DAL Servers

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Article Created: 30 March 1992

Article Change History

06/18/92 - REVIEWED
- For technical accuracy

TOPIC ----------

A DAL 1.3.5 document indicated that X.25 support is available for DAL to VTAM and TSO servers. Is this true?

DISCUSSION ----------

The AsyncCTB (X.25) network adapter will only go to VAX or A/UX DAL servers.

The only "async-type" input that IBM mainframe servers accept is dial-in to a Protocol Converter that supports VT100 terminal-type access.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:9990

..TIL09995-EveryWare_Development_Corporation_2-95.pdf

Tech Info Library

EveryWare Development Corporation (2/95)

Revised: 4/4/97
Security: Everyone

EveryWare Development Corporation (2/95)

==========

Article Created: 23 March 1992
Article Reviewed/Updated: 4 April 1997

EveryWare Development Corporation

7145 West Credit Ave. Bld #1
Mississauga, ON.
CANADA, L5N 6J7

Phone: (905) 819-1172
Fax: (905) 819-1172

InterNet: support@everyware.com

Company Profile:
Specializing in the Butler™ (a relational database) and Enterprise products.

Support Information Services

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Tech Info Library Article Number:9995

Tech Info Library

LaserWriter IIf/IIg: Add RAM to Correct Margin Problems (2/95)

Revised: 2/6/95
Security: Everyone

LaserWriter IIf/IIg: Add RAM to Correct Margin Problems (2/95)

==========

Article Created: 26 March 1992
Article Reviewed/Updated: 06 February 1995

TOPIC ----------

I have margin problems when printing to the LaserWriter IIf and IIg.

DISCUSSION ----------

The LaserWriter IIf now ships with 4MB and the LaserWriter IIg ships with 8MB of DRAM. These configurations will improve the margin problems and some memory management problems.

If your printer has similar problems, the memory can be upgraded to these levels to resolve the problem. See your authorized Apple service provider for the upgrade.

Article Change History:
06 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:10002

Tech Info Library

Personal LaserWriter NTR: No Automatic Emulation Switching

Revised: 6/5/92
Security: Everyone

Personal LaserWriter NTR: No Automatic Emulation Switching

==========

Article Created: 30 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Does the Personal LaserWriter NTR have automatic emulation switching?

DISCUSSION ----------

The Personal LaserWriter NTR does not have automatic emulation switching.

Some people might confuse the port arbitration function with emulation switching. Personal LaserWriter NTR, like the LaserWriter IIf and LaserWriter IIg, can accept jobs from all three ports at the same time, and process each job in turn. It can't sense a specific job's data stream, and switch from PostScript to Hewlett Packard PLC 4 emulation, or from HP PLC 4 to PostScript. To move from PostScript to HP PLC 4 emulation on a specific port, you must download a PostScript program or change the printer's switch setting (you can also use the utility).

You can connect to a Personal LaserWriter NTR to configure one port for PostScript and another for HP PLC 4. That means the printer, via automatic port arbitration, alternately processes PLC and PostScript jobs, though not through one individual port.

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Tech Info Library Article Number:10003

PostScript Level 2: Change in PostScript Version and Pagetype

Revised: 6/5/92
Security: Everyone

PostScript Level 2: Change in PostScript Version and Pagetype

==========

Article Created: 9 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

When we access the value of the variable "version" from the printer we get a value of "2010.113" as the current version number. This variable has previously given us values of "38.0" and "47.0" on LaserWriter II and LaserWriter Plus models. Is the version really 2010.113, or is there something different that has altered the name or location of this information?

When accessing the PostScript variable "pagetype" we previously got values of "0" returned, but with the LaserWriter IIg we get an "undefined" variable. Are there many other variables that have changed, specific to the Apple version of PostScript?

DISCUSSION ----------

Yes, the version of PostScript used in the LaserWriter IIf and IIg is 2010.113. This is Adobe's current numbering convention, and will continue for new PostScript Level 2 implementations. We've seen a number of programs that assume the returned value won't exceed 4 characters. While the new version numbers can cause a problem here, the real culprit is the programmer who made an assumption about the size of data returned. The value returned by version has never been documented to return a specific length of data.

The pagetype operator is no longer defined in PostScript Level 2. It was a statusdict operator in many, but not all, Level 1 implementations, and as such wasn't guaranteed to exist on different printers. Actually, this was true of any statusdict entry.

Level 2 uses a more comprehensive method for defining information about the output device, and PageSize is included as one of its parameters. The operator you'll need information on is setpagedevice, which is described fully in the PostScript Language Reference Manual, 2nd Edition. Note that the various setpagedevice parameters may be different on different printers, so a program should check for the existence of specific entries before attempting to use them. Once your code confirms it's running on a Level 2 implementation, it can obtain a list of the individual parameters for that specific printer:

```
currentpagedevice { pop == } forall flush
```

This will return the list over the communication channel. If you wish to query the current setting of a specific parameter, use code with this syntax:

```
currentpagedevice /PageSize get == flush
```

Setting PageSize, an array of two numbers, requires the setpagedevice operator to modify the parameter dictionary. The syntax can look like:

```
<< /PageSize [ 612 792 ] >> setpagedevice
```

Also, six operators are available to set up the most common page sizes. These operators are letter, lettersmall, legal, a4, a4small and b5. Their dimensions are listed on the configuration page printed by the LaserWriter Utility.

There are many other changes from PostScript Level 1 to Level 2. We strongly recommend the PostScript Language Reference Manual, 2nd Edition, by Adobe Systems and published by Addison Wesley.

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Tech Info Library Article Number:10005

Tech Info Library

LaserWriter IIf and IIg: SCSI Speed

Revised: 6/5/92
Security: Everyone

LaserWriter IIf and IIg: SCSI Speed

==========

Article Created: 10 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

What is the speed of the LaserWriter IIg SCSI interface?

DISCUSSION -----

The SCSI interface of the LaserWriter IIf and LaserWriter IIg is capable of SCSI transfer rates of up to 3MB per second. The actual SCSI transfer rate depends on such factors as the hard disk attached and the operation being performed.

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Tech Info Library Article Number:10006

Tech Info Library

LaserWriter IIf and IIg: Frequencies and Screen Angles

Revised: 6/11/92
Security: Everyone

LaserWriter IIf and IIg: Frequencies and Screen Angles

==========

Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What is the line screen number (lines per inch) for the LaserWriter IIf and LaserWriter IIg? It was 53 on an LaserWriter IINTX.

DISCUSSION ----------

With PhotoGrade off, the LaserWriter IIf and LaserWriter IIg are just like the LaserWriter IINTX:

- Frequency: 53 lpi
- Screen Angle: 45 degrees

With PhotoGrade on, there are five settings available via the LaserWriter Utility. Here are the numbers:

Far right:	Frequency: 150 lpi;	Screen Angle: 0 degrees
Middle right:	Frequency: 106 lpi;	Screen Angle: 45 degrees
Center:	Frequency: 83 lpi;	Screen Angle: 56 degrees
Middle left:	Frequency: 75 lpi;	Screen Angle: 0 degrees
Far Left:	Frequency: 53 lpi;	Screen Angle: 45 degrees

Note: The "Middle right" setting is the default PhotoGrade setting.

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Tech Info Library Article Number:10007

Tech Info Library

LaserWriter IIf, IIg: Arbitrate Print Jobs Rather Than Buffering

Revised: 6/11/92
Security: Everyone

LaserWriter IIf, IIg: Arbitrate Print Jobs Rather Than Buffering

==========

Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Do the LaserWriter IIf and LaserWriter IIg buffer jobs waiting for the next ports as part of the "all ports active" feature?

DISCUSSION -----

No. Each job is arbitrated and takes over the printer while it's printing. Jobs on other ports have to wait for the jobs ahead to finish.

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Tech Info Library Article Number:10008

Tech Info Library

LaserWriter IIf and IIg: LW Utility Downloads Up to 316 Fonts

Revised: 6/11/92
Security: Everyone

LaserWriter IIf and IIg: LW Utility Downloads Up to 316 Fonts

==========

Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What is the maximum number of fonts that the LaserWriter Utility can download at one time?

DISCUSSION ----------

Our testing indicates that the LaserWriter Utility that comes with the LaserWriter IIf and LaserWriter IIg can download a maximum of 316 fonts at one time.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10009

Tech Info Library

LaserWriter IIf and IIg: Adding RAM to Improve Performance

Revised: 6/11/92
Security: Everyone

LaserWriter IIf and IIg: Adding RAM to Improve Performance

==========

Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

For high-end printing, we needed 12MB on a LaserWriter IINTX. What's the equivalent RAM needed on the LaserWriter IIf or IIg to get the same performance as a 12MB LaserWriter IINTX?

DISCUSSION ----------

We haven't done any testing to compare the LaserWriter IIf or LaserWriter IIg to the LaserWriter IINTX in this way. We suggest trying the stock LaserWriter IIg with the same documents and adding memory as necessary. Adding more memory will help performance. The maximum RAM that the LaserWriter IIf and LaserWriter IIg can have is 32MB.

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Tech Info Library Article Number:10010

Tech Info Library

LaserWriter IIf and IIg: Toner Cartridges

Revised: 4/20/93
Security: Everyone

LaserWriter IIf and IIg: Toner Cartridges

==========

Article Created: 23 March 1992

Article Change History

04/16/93 - CORRECTED
- To discuss refilled, rather than remanufactured toner cartridges

TOPIC ----------

The new toner cartridges have the same part number as the old ones. Is there any way to distinguish the new ones from the old ones?

DISCUSSION ----------

No. Apple started shipping the new toner cartridges about two months before the introduction of the LaserWriter IIf and LaserWriter IIg. There should be very few of the old cartridges in use now.

Note: Apple doesn't recommend the use of refilled toner cartridges with the LaserWriter IIf and LaserWriter IIg. This is especially true when using PhotoGrade.

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Tech Info Library Article Number:10011

Tech Info Library

LaserWriter IIf and IIg: Printing Font Sample with Many Fonts

Revised: 6/11/92
Security: Everyone

LaserWriter IIf and IIg: Printing Font Sample with Many Fonts

==========

Article Created: 27 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a LaserWriter IIg with a 40MB hard drive attached.

I've reformatted the hard drive several times and downloaded fonts with the LaserWriter Utility (as shipped with the LaserWriter IIg). When I try to print a Font Sample, the LaserWriter processes it for a while and then comes back with an error "Unable to Print Because of A PostScript Error."

I've tried it several times with different Fonts and found that when there are more than 40 or so fonts it will get the error, but when there are 30 fonts or less, it will print.

DISCUSSION ----------

This is a known limitation of the code that prints the font samples. Printing a font sample of many different fonts can exceed the memory of a LaserWriter (depending on the amount of memory installed). The code could work around this by breaking the samples across pages as memory grew short, but it doesn't.

Below is PostScript code that prints a sample of all available fonts, one per page. (This can take a long time with many fonts.) It was written by a Sun Microsystems employee, but can be freely distributed. We've inserted some code to prevent page clipping on a LaserWriter IIg.

Copy the text between the "cut" lines and paste it into a blank text document. Once saved, you can download it to a LaserWriter with the LaserWriter Utility included with the LaserWriter IIf and IIg.

---- cut here ----

```
%!PS-Adobe-1.0
%%DocumentFonts: (atend)
%%Title: FontBook
%%Creator: Keith Vincent, SSE, Sun Microsystems
%%CreationDate: Mar 18, 1988
%%Pages: (atend)
%%EndComments

/currentpagedevice where      %D.W. 3/92 - Disable PhotoGrade
{ pop currentpagedevice /PreRenderingEnhance known
  { << /PreRenderingEnhance false >> setpagedevice } if
} if %currentpagedevice

/inch { 72 mul } def
/cvis { 1 string dup 0 4 -1 roll put } def

/DrawBoundMarks {      % width x y => - (draw the character bounding marks)
 gsave
  0 setlinewidth
  moveto
  0 1 16 div inch neg rmoveto
  0 7 16 div inch rlineto
  1 16 div inch neg 6 16 div inch neg rmoveto
  2 16 div inch add 0 rlineto               % this is where width gets used
  1 16 div inch neg 1 16 div inch neg rmoveto
  0 7 16 div inch rlineto stroke
 grestore
} def

/LabelChar {                % num wid x y => - (print the character label)
 gsave
  /Times-Roman findfont 6 scalefont setfont                  % num wid x y
  moveto                                                     % num wid
  1 64 div inch neg 5 32 div inch neg rmoveto                 % num wid
  exch                                                       % wid num
  16 (   ) cvrs show                                         % wid
  ( ) show                                                   % wid
  1000 mul { cvi } stopped { pop -1 } if 1000 div (      ) cvs show  % -
 grestore
} def

/LabelName {                  % str x y => -    (print the character name)
 gsave
  moveto
  1 64 div inch neg 7 32 div inch neg rmoveto
  /Times-Roman findfont 6 scalefont setfont
  show
 grestore
} def

/LowAscii
<20212223242526272829 2A2B2C2D2E2F303132333435363738393A3B3C3D3E3F4041424344
45464748494A4B4C4D4E4F505152535455565758595A5B5C5D5E5F606162636465666768696
```

```
A6B6C6D6E6F707172737475767778797A7B7C7D7E7F> def
/HiAscii
<A0A1A2A3A4A5A6A7A8A9AAABACADAEAFB0B1B2B3B4B5B6B7B8B9BABBBCBDBEBFC0C1C2C3C4
C5C6C7C8C9CACBCCCDCECFD0D1D2D3D4D5D6D7D8D9DADBDCDDDEDFE0E1E2E3E4E5E6E7E8E9E
AEBECEDEEEFF0F1F2F3F4F5F6F7F8F9FAFBFCFDFEFF> def
%%EndProlog
%%Page: 1

/str 250 string def
/buf 256 string def

FontDirectory {
 dup type /integertype eq { pop pop }
 {
  pop
  0 1 255 { buf exch 0 put } for
  /GivenFont exch def
  GivenFont findfont 24 scalefont setfont
  currentfont /FontName get cvx buf cvs
  gsave
   /Times-Roman findfont 24 scalefont setfont
   1 inch 10.5 inch moveto
   buf show
   ( \(24 point\)) show
  grestore

  32 16 127 {
   /yval exch def
   /y 9.5 inch 11 16 div yval 16 div 2 sub mul inch sub def
   0 1 15 {
    /xval exch def
    /num yval xval add def
    /x xval .5 mul inch 7 16 div inch add def
    /width num cvis stringwidth pop def
    /name { currentfont /Encoding get } stopped
     { pop pop /.notdef }
     { { num get } stopped
      { /.notdef }
      if
     }
    ifelse def
    width x y DrawBoundMarks
    num width 24 div 0.0005 add x y LabelChar
    name (                    ) cvs x y LabelName
    x y moveto num cvis show
   } for
  } for
  160 16 255 {
   /yval exch def
   /y 10 inch 11 16 div yval 16 div 2 sub mul inch sub def
   0 1 15 {
    /xval exch def
    /num yval xval add def
```

```
      /x xval .5 mul inch 7 16 div inch add def
      /width num cvis stringwidth pop def
      /name { currentfont /Encoding get } stopped
       { pop pop /.notdef }
       { { num get } stopped
        { /.notdef }
        if
       }
      ifelse def
      width x y DrawBoundMarks
      num width 24 div 0.0005 add x y LabelChar
      name (                    ) cvs x y LabelName
      x y moveto num cvis show
     } for
    } for

    GivenFont findfont 10 scalefont setfont
    7 16 div inch 5.5 inch moveto LowAscii show

    7 16 div inch .5 inch moveto HiAscii show
    showpage
    clear
   } ifelse
  } forall
  %%Trailer
  %%DocumentFonts:
  %%Pages:
  ---- cut here ----

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  Tech Info Library Article Number:10013
```

Tech Info Library

A/UX: Hiding CommandShell

Revised: 6/11/92
Security: Everyone

A/UX: Hiding CommandShell

==========

Article Created: 9 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

We need to transparently prevent the CommandShell from launching when certain users (anyone except root) log in to the system.

To do this, we tried setting CommandShell privilege to "700" with the chmod command, so only root has execute privileges. This seems to work fine for logging in, but when logging out, a white screen displays a text message that says the mac32 process is unable to execute CommandShell, and press the return key to exit to the login prompt.

We need to find a cleaner way to do this. Is the mac32 binary actually looking to close CommandShell, or is there some buried configuration shell script or file that we can alter to make this operation smoother for our future non-technical A/UX users?

DISCUSSION ----------

The screen became white when the user logged out because the "screenrestore" wasn't executed in the "/mac/bin/mac32" script file, due to the missing logfiles that the CommandShell program should have created.

Changing the "CommandShell" privilege to "700" isn't a good idea. Here's a better way:

1) Login as the "root" superuser.

2) Make a copy of /mac/bin/mac32 a temporary file, for example:

```
cp /mac/bin/mac32 /tmp/.mac32
```

3) Edit the /tmp/.mac32 file, then comment or remove the line that executes the CommandShell. The line should look like this or be removed from the .mac32 file:

```
# /mac/bin/CommandShell -u > $CSLOGFILE 2>&1 &
```

4) Change the permission of the /tmp/.mac32 file into read-execute only:

```
chmod 500 /tmp/.mac32
```

5) Copy /tmp/.mac32 onto the home directory of the user who doesn't want to execute CommandShell. For example, jim:

```
cp /tmp/.mac32 /users/jim
chown jim /users/jim/.mac32
chmod 500 /users/jim/.mac32
```

The .mac32 file in the user's home directory can override the global /mac/bin/mac32 shell script.

Note that if you remove the .mac32 from the user's home directory, the global /mac/bin/mac32 script executes.

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Tech Info Library Article Number:10014

Tech Info Library

MacX: Can Run Under Macintosh Operating System

Revised: 6/11/92
Security: Everyone

MacX: Can Run Under Macintosh Operating System

==========

Article Created: 9 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Can I run MacX without running A/UX?

DISCUSSION -----

Yes, you can run MacX under Macintosh OS. Basically all Macintosh computers from the Macintosh Plus up to the Quadra 900, and PowerBooks with at least 2MB of RAM and with system software version 6.0.5 or later, support MacX. For color display, at least 4MB is recommended. The Macintosh 512K may run MacX too if you can upgrade with third-party RAM to at least 2MB.

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Tech Info Library Article Number:10015

Tech Info Library

MacX and Apple X Window System

Revised: 6/11/92
Security: Everyone

MacX and Apple X Window System

==========

Article Created: 9 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

What is the difference between MacX and Mac X window? Are they the same product?

DISCUSSION -----

MacX is an X Window System display server, developed by Apple for the Macintosh family of computers. The current version of MacX 1.1.7 is X11R4 based.

We assume you're referring to Apple X Window System products that include MacX display server for Macintosh OS and A/UX, and X11 for A/UX (implementations of X Window System, Version 11, Release 4). The X Window System, nicknamed X, was designed by a team of researchers from industry and from the Massachusetts Institute of Technology (MIT).

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Tech Info Library Article Number:10016

Tech Info Library

MacX: Via ARA and DDP-IP Gateway

Revised: 6/11/92
Security: Everyone

MacX: Via ARA and DDP-IP Gateway

==========

Article Created: 24 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I am attempting to create a dial-in X window session using ARA (AppleTalk Remote Access), MacX 1.1.7, Mac TCP 1.1, and a FastPath 4 with K-Star 9.1. The solution works over LocalTalk. But when I disconnect from the network, dial up the ARA server, and attempt to execute an X command, I get a "Could not open display" error in MacX.

The session log either gives me a "Could not open display" error, or acts as if the X session is open, even though I get no window on the display server screen. MacX makes the connection to the X client, and the FastPath properly assigns a TCP/IP address to the server (from the range I set up in K-STAR). I simply get no screen display on the server. Knowing that X is shipping screen bitmaps across the link, I'm assuming that ARA is the problem.

Are there any documented incompatibilities between MacX and ARA?

DISCUSSION -----

We set up a similar configuration to run MacX via ARA and a KIP fastpath gateway. We encountered no problem starting an X client from MacX remote command and/or from a remote X host (an A/UX with X11R4 clients, for example).

If you've configured and set up this kind of environment correctly, we suggest doing the following, after ARA is connected and before doing MacX:

1) Make sure you choose ARA from the Network control panel and reboot the system.

2) Make sure you choose the right zone (on which your Fastpath resides) from the MacTCP control panel.

3) In the MacTCP control panel, make sure the netmask is the same as the one the Fastpath server uses. Basically, verify all information in the MacTCP control panel.

4) Use the "MacTCP Spy" program, a MacTCP utility to show the current status of MacTCP on the Macintosh. The IP, Subnet Mask, and Gateway addresses will be shown if it talks to the Fastpath gateway.

5) From the remote X client host (most are UNIX boxes), try to "ping" (doing the ICMP request), to see if it can reach your Macintosh. If this doesn't work, it's most likely the netmask, or broadcast address, or routing table problem.

6) Now try MacX.

7) Make sure the -display option on the MacX remote command line matches the one in the "Display" pop-up menu (0-3).

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Tech Info Library Article Number:10017

Tech Info Library

MacX: Client Crash Due to Default Color Map

Revised: 6/11/92
Security: Everyone

MacX: Client Crash Due to Default Color Map

==========

Article Created: 31 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm using MacX and the Khoros image manipulation package from the University of New Mexico. Using the Khoros editimage program, the client windows appear on the screen just fine, but when I attempt to open an image, the client crashes with the following message:

```
X Error of failed request:  BadValue (integer parameter out of range for operation)
Major opcode of failed request:  89 (X_StoreColors)
Value in failed request:  0x100
Serial number of failed request:  3859
Current serial number in output stream:  3861
Major X error encountered for display '128.36.2.15:0.2'! Unable to recover.

[1]    Exit 1               editimage
```

AND the MacX application crashes with either a bus error, a bad F-trap error, or an ID 12 error.

This behavior is 100% repeatable with those images that cause it. However, certain images will display reliably, with a 0% chance of causing the crash. The program seems to fail when the image contains more than about 200 different colors. (All the images are 8 bits deep, but some have smaller palettes, not using all 256 values.)

The Khoros putimage program, which is simpler (it only displays the image without allowing any manipulation), can reliably display all the images on the Macintosh screen . The editimage program has no problem displaying images on the Sun screen.

I'm using various Macintosh II-class computers (IIci, IIfx), which are all connected to LocalTalk. I'm running MacX 1.0.1, MacTCP 1.1, MacTCP Tool 1.0 and System 6.0.5. I tried the same thing on a Quadra 900 running System 7.0.1, MacX 1.1.7, MacTCP 1.1 and the MacTCP Tool 1.1 and experienced exactly the same behavior. So I don't believe a software upgrade will solve his problem. I make IP connections through a FastPath, and the host is a Sun Sparcstation 1.

DISCUSSION ----------

The problem described probably involves the MacX loading the "standard color maps" by default, since many X client applications use the STANDARD or default X color map. MacX uses the standard Macintosh system palette as the DEFAULT color map (it should). This allocates/locks about 128 colors, and leaves about 130 color map cells free for clients to write in that map. Therefore, if the application tries to allocate more than 130 colors in that color table, it fails. In other words, you CAN'T allocate more than 130 colors in the DEFAULT color map; you have to create a NEW color map and install your colors into it.

Applications that use the standard or default color map will cause this situation. Recently, MacX provided a patch for applications that don't create their own color maps and need a full 256 colors to work properly. The patch (using ResEdit) bypasses the standard color map initialization when MacX launches. Here are the patch instructions:

1) Back up golden master of MacX 1.1.7.
2) Open MacX 1.1.7 with ResEdit.
3) Double-click on the CODE resource icon.
4) Select ID #4.
5) At the offset 0x2952:
   - Change the 0x4E56 to 0x4E75,
   - Save the change and exit ResEdit.

This removes the standard color map initialization.

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Tech Info Library Article Number:10019

Tech Info Library

Audio Interchange File Format: Sound Files To Windows (7/94)

Revised: 7/13/94
Security: Everyone

Audio Interchange File Format: Sound Files To Windows (7/94)

==========

Article Created: 27 March 1992
Article Reviewed/Updated: 12 July 1994

TOPIC ----------

I'm looking for information on the Audio Interchange File Format (AIFF). Is it a standard on Macintosh? Is it supported under Windows? How can I move sound files to DOS/Windows?

DISCUSSION ----------

The AIFF sound files are the standard file format defined by Apple and several third-party developers for sampled (digitized) sound.

However, Windows support is a different issue. Windows uses its own file format for digitized sound. A simple AFE transfer won't provide a usable sound file in the Windows/MS-DOS environment. If Windows did support the AIFF file format, then an AFE transfer would be appropriate.

The AIFF sound file has header information which can be followed by a variety of "chunks." One of these chunks represents a linear sampling of audio waveforms stored as bytes. A general overview of AIFF files is in Chapter 22, The Sound Manager, of Inside Macintosh VI. A more complete description of the AIFF file format is available from APDA.

Nothing in the Windows/MS-DOS world can directly understand the header information. Therefore, you need to do a file conversion. The only utility commercially available that we know of (as of July, 1994) is "SoundEdit 16" from MacroMedia. SoundEdit 16 can read Macintosh formatted (AIFF) files and then create Windows Wave files as output. To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
12 Jul 1994 - Added the MacroMedia utility SoundEdit 16

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10020

Tech Info Library

System 7: User Limits for Publish and Subscribe

Revised: 4/6/92
Security: Everyone

System 7: User Limits for Publish and Subscribe

==========

Article Created: 27 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What's the maximum number of users when sharing files under Publish and Subscribe?

DISCUSSION ----------

There's a theoretical limit to the number of subscribers to a file. If you were to reach this limit, you would far exceed the capability of whatever server you're connecting to. The theoretical limit is based upon a counter the Edition Manager uses to keep track of the number of subscribers to an edition file.

Each subscriber's computer opens the file. So if that computer has reached its limit on the number of files it can have open, you won't be able to subscribe to an additional file until you close a file. On the server front, the edition file is only opened once. So the number of subscribers won't affect the number of files that the server can have open.

Real world environments are far lower than that limit. For example, the maximum number of users who can log on to an AppleShare 3.0 server is 120, if you've configured your server for this number.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10021

Tech Info Library

PowerBook: How To Disable Sleep Mode When Using AC Adapter 3/92

Revised: 5/16/94
Security: Everyone

PowerBook: How To Disable Sleep Mode When Using AC Adapter 3/92

==========

Article Created: 17 March 1992

TOPIC ----------

When I'm using the AC adapter to power my Macintosh PowerBook, can I disable the Sleep mode for the hard drive?

DISCUSSION ----------

Yes. Here's how:

1) Choose Control Panels from the Apple menu.

2) Open the Portable control panel.

3) Click the checkbox for "Stay Awake when plugged in."

Support Information Services

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10022

Tech Info Library

PowerBook: Hard Drive Contains Head-Parking Safety Feature 8/92

Revised: 5/16/94
Security: Everyone

PowerBook: Hard Drive Contains Head-Parking Safety Feature 8/92

==========

Article Created: 18 March 1992
Article Reviewed/Updated: 19 August 1992

TOPIC ----------

Please explain the head-parking feature of the Macintosh PowerBook hard drive.

DISCUSSION ----------

The 2.5-inch hard drives used in the PowerBook computers contain a landing zone with an actuator latch feature. The actuator arm is released from its locked position only if the read/write heads have achieved a stable flying condition. This feature ensures that there is no direct physical contact between the heads and the data area on the disk surfaces. If, for any reason, power is suddenly removed from the drive, the actuator arm automatically retracts to the landing zone before the heads have made contact with the disk surfaces and locks in place until power is restored.

Note

Although the hard drives have this head-parking safety feature, Apple states that the PowerBook should be shut down before transporting. For further information, search on "PowerBook and transporting".

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10023

Tech Info Library

PowerBook Computers: Tips for Transporting (4/95)

Revised: 4/3/95
Security: Everyone

PowerBook Computers: Tips for Transporting (4/95)

==========

Article Created: 18 March 1992
Article Reviewed/Updated: 03 April 1995

TOPIC ----------

I've heard that I shouldn't move my Macintosh PowerBook when it's in the Sleep mode because the heads are not properly parked. Does this mean that I need to shut down my PowerBook before I move it?

DISCUSSION ----------

Although the 2.5-inch hard drives used in the Macintosh PowerBook contain a landing zone with an actuator latch feature, Apple's official position is that a PowerBook should be shut down before being transported.

In general, it's okay to transport PowerBook computers while they are asleep, and here's why (note that this same information applies to essentially all modern hard disks).

• The hard disk is the primary component that's vulnerable to damage when transporting a PowerBook The main concern is vibration (jarring, jiggling, knocking, dropping).

• When the PowerBook hard disk is not spinning, it is locked and is as safe to move as it's ever going to be. In this respect sleep and shutdown modes are identical.

• The only thing to be very careful of when moving a PowerBook (or any other hard disk) is that it not be jarred while the hard disk is spinning up or spinning down. During this period the hard disk is much more vulnerable to damage from vibration.

• After the hard disk is fully up to speed, it is still susceptible to shock or vibration damage.

• When moving a sleeping PowerBook (or a PowerBook 100 even when shut down,

unless you've flipped off the indented battery disconnect switch), there is a slight danger of accidentally hitting a key that would wake up the PowerBook and also power-up the hard disk. Make sure that your PowerBook is solidly closed so it can't accidentally start up.

• If you are running totally off a RAM disk and your system is asleep, wake-up would not spin up the hard disk anyway. So, transporting a sleeping PowerBook that is running totally off a RAM disk is relatively safe.

• Using a PowerBook in a moving vehicle is a risk that the Apple PowerBook manual neglected to mention. Due to the nature of use while travelling, the repeated spin ups and downs of the drive can put it at more risk than in desktop operation. Additional caution should be exercised when using the PowerBook while moving.

Unfortunately, you can't guard against all events. It should really take a determined knock at just the right time to do real damage. If you are reasonably careful (and keep in mind when the PowerBook is most vulnerable), you should be able to travel with your PowerBook (asleep or not) just fine.

Running a PowerBook entirely from a RAM disk is much safer in this case.

For more information on the actuator latch feature, use "PowerBook and Head-Parking" as a search string.

Article Change History
---
03 Apr 1995 - Noted that drive can be damaged when spinning also.
06 Feb 1995 - Reviewed for technical accuracy.
11 Dec 1992 - Added info that it's okay to move a sleeping PowerBook.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10024

Tech Info Library

AppleTalk Remote Access: AppleTalk Must Be Active (6/93)

Revised: 6/4/93
Security: Everyone

AppleTalk Remote Access: AppleTalk Must Be Active (6/93)

==========

Article Created: 18 March 1992

Article Change History

06/07/93 - Added information about Always AppleTalk.

TOPIC ----------

I installed AppleTalk Remote Access on my Macintosh PowerBook 170 and my Macintosh IIci (both are running System 7). When I try to go into Remote Access Setup, I get a message saying that AppleTalk Remote Access wasn't installed or that the extensions were turned off at startup.

I tried re-installing AppleTalk Remote Access from known-good disks on both systems, and I still get the same message.

DISCUSSION ----------

This message appears when AppleTalk is not active.

To make AppleTalk active:

1) From the Apple menu, select Chooser.

2) In the Chooser window, click the AppleTalk Active button.

3) Restart your Macintosh.

You should now have access to AppleTalk Remote Access.

You can also use the Always AppleTalk software which is part of the PowerBook File Assistant collection of software. This allows a System 7.1 user to switch between AppleTalk being active and in active without restarting the computer.

..TIL10025-AppleTalk_Remote_Access-AppleTalk_Must_Be_Active_6-93.pdf

Copyright 1992, 1993, Apple Computer, Inc.

Tech Info Library Article Number:10025

Tech Info Library

StyleWriter: Ink Cartridge Shelf Life

Revised: 6/11/92
Security: Everyone

StyleWriter: Ink Cartridge Shelf Life

==========

Article Created: 24 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What is the shelf life of a StyleWriter Ink Cartridge?

DISCUSSION ----------

The shelf life of a packaged StyleWriter Ink Cartridge is 18 months. However, if the package has been opened, the StyleWriter Ink Cartridge lasts for approximately 6 months.

Note

This 6-month estimate is applicable only if the StyleWriter Ink Cartridge is installed in the printer. Canon, the cartridge vendor, recommends that you don't unpackage the cartridge until you are ready to install it in the StyleWriter and, therefore, doesn't not provide shelf-life information for cartridges that are unpackaged but not installed in the printer.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10028

Tech Info Library

AppleShare 3.0: Capturing Third-Party Printers

Revised: 4/7/92
Security: Everyone

AppleShare 3.0: Capturing Third-Party Printers

==========

Article Created: 24 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Can I capture a Hewlett-Packard IIIsi printer using AppleShare Print Server 3.0? It looks like it should work as long as I have the right printer driver installed on the server.

DISCUSSION -----

We're not aware of any problems capturing third-party printers with AppleShare 3.0. The process should be the same as capturing an Apple LaserWriter.

For information on capturing printers, refer to the AppleShare Server 3.0 Administrator's Guide.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10029

Tech Info Library

AppleShare 3.0: Splitting File and Printing Services

Revised: 4/7/92
Security: Everyone

AppleShare 3.0: Splitting File and Printing Services

==========

Article Created: 31 March 1992
Article Last Reviewed: 6 April 1992
Article Last Updated: 6 April 1992

TOPIC ----------

I am about to install AppleShare 3.0 on a new network consisting of four Macintosh Quadra systems. I understand that I can have both file and printing services on one server. However, can these two functions be split and placed on two separate systems, and would there be any performance improvement if I did this?

As my network grows and I add more nodes, possibly up to 10, will a Macintosh Quadra server with both services handle these functions as well as a setup with the file server on a Macintosh Quadra and the print server on another Macintosh?

DISCUSSION ----------

The AppleShare 3.0 File Server and Print Server are separate applications and can be used independently.

Splitting these two functions may improve processing time; however, in your proposed environment of 10 nodes, the gain would be minimal.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10032

Tech Info Library

StyleWriter: Manual-Feed Printing

Revised: 4/7/92
Security: Everyone

StyleWriter: Manual-Feed Printing

==========

Article Created: 26 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm having a problem printing manual-feed jobs on my StyleWriter printer, even though I'm using the standard manual-feed process:

1) Choose Print from the File menu.

2) Select the manual-feed option.

3) Click the "Print" button.

4) Wait for the dialog box saying to "Insert next sheet of paper."

When I insert the paper, I get an error, and the job doesn't print.

DISCUSSION ----------

When using the manual-feed option with the StyleWriter, you need to deselect the printer before you insert the paper and then reselect it to print.

Follow these steps for printing manual-feed jobs on the StyleWriter:

1) Choose Print from the File menu.

2) Select the manual-feed option.

3) Click the "Print" button.

4) Wait for the dialog box saying to "Insert next sheet of paper."

5) Press the StyleWriter "Select" button to deselect the printer.

6) Insert the sheet (or envelope). The StyleWriter advances the paper about 1/2 inch.

7) Press the StyleWriter "Select" button again to reselect the printer.

8) Click "OK" in the dialog box to start the print job.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10033

Tech Info Library

AppleTalk: Filtering AppleTalk Traffic From Remote Links

Revised: 4/7/92
Security: Everyone

AppleTalk: Filtering AppleTalk Traffic From Remote Links

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Article Created: 31 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article explains how to identify and filter AppleTalk packets from remote links.

DISCUSSION -----

Many organizations, particularly those whose data processing centers are run on DEC VAX computers, use Ethernet as their primary data communications link. When these organizations need to connect remote sites to their networks, it is quite common to extend a local Ethernet to the remote site using a transparent learning bridge and a leased digital telecommunications line, such as a 56K bps or a T1 line.

If AppleTalk nodes are connected anywhere on this extended Ethernet, any broadcast traffic they generate is forwarded across the remote link and may cause unwanted traffic on this line. And, if AppleTalk routers are present on both sides of the link, they exchange routing tables. As long as no configuration conflicts are present, they reliably route AppleTalk traffic between the two sites, which can be useful if you want to interconnect distant AppleTalk networks. However, if are not prepared to administer an AppleTalk WAN, or you don't want to have the two sites connected, this situation can cause problems.

For these reasons, you may want to filter AppleTalk traffic from the remote link, either to save transmission bandwidth on the link and/or to separate two AppleTalk networks that should not be connected. This is usually done by configuring the bridges to discard AppleTalk packets rather than forwarding them.

Here's how to do filter AppleTalk packets for both AppleTalk Phase 1 and

Phase 2 networks:

To filter AppleTalk traffic from a remote link, the bridges on both ends need to be set up to filter two kinds of packets. It is important that both ends of the link are set up for filtering, since most remote bridges filter only outgoing traffic. If AppleTalk traffic is passing in one direction and not in the other, there will be problems with routers on the end that receives the other's traffic.

Filtering AppleTalk Phase 1 is fairly straightforward. Since AppleTalk Phase 1 uses standard Ethernet headers, you can set the bridge to filter based on Ethernet protocol type (a 2-byte field in the packet that begins at byte 13). The two types to filter are $80F3 (for AARP) and $809B (for all other AppleTalk). Most bridges have a specific protocol filtering capability, so you simply need to specify which packet types to pass and which to discard, and the bridge does the rest.

Because AppleTalk Phase 2 does not use the old-style Ethernet header, you can't filter AppleTalk Phase 2 based on Ethernet protocol type. AppleTalk Phase 2 uses IEEE 802.2 and SNAP (Sub-Network Access Protocol) to provide interoperability with Token Ring networks because Token Ring uses 802.2 as its only means of specifying which protocol is in use. The 802.2 header begins at byte 15 of the Ethernet frame, and for AppleTalk, it looks like this:

```
                |       |
    Byte 15:    |  $AA  | \
                |  $AA  |  |- 802.2 header (3 bytes)
                |  $03  | /
                |  $08  | \
                |  $00  |  \
                |  $07  |   |- SNAP Protocol Discriminator (5 bytes)
                |  $80  |  /
                |  $9B  | /
                |       |
```

Thus, the bridge must be set to discard all packets that have this 8-byte pattern beginning at byte 15. This is usually accomplished as a different filtering function, by specifying the pattern to match and where to look for it. The bridge does not care what the data mean: if it finds the specified pattern at the right place, it discards the packet.

AARP (AppleTalk Address Resolution Protocol), which has a different protocol discriminator from other AppleTalk traffic, must also be filtered. The pattern to filter for AARP looks like this:

```
                |       |
    Byte 15:    |  $AA  | \
                |  $AA  |  |- 802.2 header (3 bytes)
                |  $03  | /
                |  $00  | \
                |  $00  |  \
                |  $00  |   |- SNAP Protocol Discriminator (5 bytes)
```

```
                  |  $80  |  /
                  |  $F3  | /
                  |       |
```

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10034

Tech Info Library

Macintosh Quadra 900: Not Designed To Be Operated on Its Side

Revised: 4/7/92
Security: Everyone

Macintosh Quadra 900: Not Designed To Be Operated on Its Side

==========

Article Created: 31 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Can I operate the Macintosh Quadra 900 on its side and put a Macintosh 16" Color Display on top of it?

DISCUSSION ----------

The Macintosh Quadra 900 is a tower design and is not intended to be operated on its side. Also, the case is not structurally designed to have weight placed on the panels. This may cause the case to crack.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10036

Tech Info Library

AppleTalk Remote Access: Chooser and Get Zone List

Revised: 4/13/92
Security: Everyone

AppleTalk Remote Access: Chooser and Get Zone List

==========

Article Created: 2 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I have a question about AppleTalk Remote Access and Zone List Time-Out Values. When requesting the Get Zone List in the Chooser, I get the message, "Chooser: Zone List Time-Out Values." How do we get around this problem with our own AppleTalk Remote software?

DISCUSSION -----

The mechanism used in AppleTalk Remote Access (ARA) is actually quite simple. This is the way the Chooser works for remote ARA stations:

1) The remote ARA Macintosh logs in to the server.

2) The remote ARA-connected Macintosh receives the current zone list. The remote Macintosh then caches that list, and services all requests from that cached list. The GetZoneList call is patched on the remote station, and instead of requesting data from a remote router, it comes from our cache.

The only problem with this scheme is that the users are presented with a static view of the network, or at least the zones on the network. If a new zone appears, or if an existing zone disappears they won't see those changes reflected in their Chooser until they log-off and then back in.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10043

Tech Info Library

Macintosh Chooser: GetZoneList Command Times Out

Revised: 4/13/92
Security: Everyone

Macintosh Chooser: GetZoneList Command Times Out

==========

Article Created: 2 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

We have a problem with the Chooser command GetZoneList timing out when dialing in to a WAN over 2400 baud modems. We want this command to allow enough time to find all of the zones.

Our network has 56 zones. Users dial in from all types of Macintosh and Outbound computers, and from all over the country. They dial in to Shiva devices including Telebridges, NetModems, and NetSerials. Most (90%) connections are at 2400 baud. (We chose not to use AppleTalk Remote Access, since it requires a dedicated Macintosh and System 7.) After establishing a connection, we open the Chooser and get one of two results:

- No zones appear (the GetZoneList times out before returning ANY packets), or
- 38 to 40 zones appear (the GetZoneList times out after the first packet).

AppleTalk Remote Access software traps the GetZoneList and freezes the zones. How can we make it work with our network?

DISCUSSION -----

The Chooser isn't well-suited to all WAN topologies. But it's actually tuned and works well for local area network environments and high bandwidth WAN links.

The Chooser isn't broken. The Shiva dial-in products push the current Chooser past its intended use, without offering an alternative. To fix this, Shiva could:

- Implement a Shiva-specific Chooser for use with their dial-in AppleTalk

products, or

- Patch the GetZoneList call in the remote Macintosh computers to function more like AppleTalk Remote Access.

AppleTalk Remote Access is a good example of how to develop a remote AppleTalk product within the present GetZoneList parameters.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10044

Tech Info Library

AppleTalk and TCP/IP Half-Router

Revised: 4/13/92
Security: Everyone

AppleTalk and TCP/IP Half-Router

==========

Article Created: 3 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I'm in search of AppleTalk and TCP/IP half-routers for use with synchronous or asynchronous modems and 10BaseT or ThinNet. Many of the solutions I've come up with (IBM, Netware, Proteon) are PC-based. I'd like either a stand-alone or Macintosh solution. Each router would need only two ports: a sync/async port, and an Ethernet port. The maximum speed needed for the sync/async port would be 19.2 kbps.

DISCUSSION -----

Unfortunately, there are no low-end AppleTalk and TCP/IP routers which support serial-based connections. The only two routers that even come close to filling the requirements are the SyncRouter by Engage Communications, and the CommTalk by APT. Neither of these supports native TCP/IP routing. The only solution to the low-end multi-protocol router is the cisco IGS.

The SyncRouter supports speeds up to 500KB on its serial interface and provides a single LocalTalk port for connection to the local network.

Engage also has a new Ethernet based router that supports T1 speeds and allows up to four serial connections.

The CommTalk router is available in several configurations, both as a local and remote router. It's configurable for up to six local network attachments, either Ethernet or LocalTalk, and one high-speed serial port for wide-area communications. The CommTalk supports speeds up to 1.544MB (T1) on the high-speed serial port.

On AppleLink, you can find contact information for the various vendors by

clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:10045

Tech Info Library

AUI Adapter: Requires Its Own Power Supply

Revised: 4/13/92
Security: Everyone

AUI Adapter: Requires Its Own Power Supply

==========

Article Created: 3 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Why does the Apple Ethernet AUI Adapter require a power supply of its own?

DISCUSSION ----------

The FriendlyNet AUI adaptor needs a power supply because all Macintosh models can't provide the +12VDC needed to meet the 802.3 specification.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10046

Tech Info Library

LAN Cabling: Segment Size and Distance Between Devices

Revised: 4/13/92
Security: Everyone

LAN Cabling: Segment Size and Distance Between Devices

==========

Article Created: 3 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm confused by figure 16 on page 20 in the "Local Area Network Cabling Guide." What's the difference between "minimum distance between devices" and "maximum segment length"? What does "segment" mean in this context?

DISCUSSION ----------

The minimum distance between devices specifies the minimum distance between adjacent nodes on a wire. Maximum segment length specifies the maximum length of the wire. A segment is a single network entity or wire without repeaters used to extend the over-all length of the network. You can use repeaters to extend the network to its maximum length specified by the "Maximum network length" information given in Figure 16.

Maximum Segment Size:

```
  185 meters                 185 meters
[------------]--[repeater]--[------------]
   Segment A                  Segment B
```

Minimum Distance Between Devices:

```
   |.5 meters|
[-------------------------------------------------]
   |         |
  [Mac]    [Mac]
```

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Tech Info Library Article Number:10047

Tech Info Library

PowerBook Fax Modem: After Wrong Number, Fax Must Be Resent

Revised: 5/16/94
Security: Everyone

PowerBook Fax Modem: After Wrong Number, Fax Must Be Resent 4/92

==========

Article Created: 3 April 1992

TOPIC ----------

Configuration:

- Apple PowerBook Fax/Modem Software
- PowerBook 100, 4MB RAM
- System 7.0.1

If something goes wrong with the fax (for example, creating a recipient entry with the wrong phone number so the fax can't get through), I can't hang on to the imaged document and try again. I have to reimage the document.

DISCUSSION ----------

If you fax a document with the wrong phone number you'll need to enter the correct phone number and fax the document again. There's no workaround.

Support Information Services

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10050

Tech Info Library

PowerBook Fax Modem: Improving Speed 4/92

Revised: 5/16/94
Security: Everyone

PowerBook Fax Modem: Improving Speed 4/92

==========

Article Created: 3 April 1992

TOPIC ----------

Configuration:

- Apple PowerBook Fax/Modem Software
- PowerBook 100, 4MB RAM
- System 7.0.1

The software is slow to image a page and get it ready to fax. It can take up to 2.5 minutes to image a single page. It appears to me that this may have something to do with the presence of ATM in my system, but I haven't really pinned it down exactly.

However, a PSI PowerModem (or, rather, the software that accompanies it), on the identical PowerBook 100 configuration (hardware and software), gets the same page ready to transmit in about 15 seconds, a tenfold speed improvement.

Even though it works in the background, there are times when I want the fax sent right away. I've had to wait five minutes to send a short fax.

DISCUSSION ----------

To help speed things up, change the Fax Page Setup Image Quality from "Fine" to "Standard."

Support Information Services

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10051

Tech Info Library

LaserWriter IIf/IIg: Formatting Third-Party Hard Drives

Revised: 4/13/92
Security: Everyone

LaserWriter IIf/IIg: Formatting Third-Party Hard Drives

==========

Article Created: 8 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

We recently upgraded our LaserWriter IINTX to a LaserWriter IIg. We had a Microtech Europa 40MB drive connected to the LaserWriter IINTX, which we want to continue using with this LaserWriter.

As the manual stated, we removed the drive's internal termination and are using the black terminator. We can see the drive with the LaserWriter Utility program, but after starting the initialization process, the utility reports that the initialization failed.

Is there a compatibility problem with the Microtech Europa drive and the LaserWriter IIg?

DISCUSSION ----------

Compatibility problems have been reported with some third-party hard drives. Apple's engineers have checked into the problem and found that most can be resolved by formatting the hard drive with a different utility.

Here are some alternatives you can try:

- Since the LaserWriter IIg uses an HFS format, try formatting the hard drive on the Macintosh and moving the hard drive to the LaserWriter IIg.

- Try formatting the hard drive with a third-party utility like LaCie's SilverLining.

- Contact the hard drive vendor to learn if there are known compatibility problems with the printer, and if there are any fixes.

..TIL10052-LaserWriter_IIf-IIg-Formatting_Third-Party_Hard_Drives.pdf

See the Tech Info Library article titled "LaserWriter IINTX/IIf/IIg: Third-Party Hard Drive Compatibility" for additional information.

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Tech Info Library Article Number:10052

Tech Info Library

Macintosh Display Card 8•24 GC: Upgrade

Revised: 4/13/92
Security: Everyone

Macintosh Display Card 8•24 GC: Upgrade

==========

Article Created: 11 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

The Macintosh Display Card 8•24 GC has been upgraded to include a number of new features and improvements in both hardware (a new ROM and CLUT) and software.

DISCUSSION ----------

The 8•24 GC Rev B hardware features include timing and color support (32,000 colors) for the 16-inch display. The software makes the GC card fully System 7 compatible, and provides gamma selection for the 16-inch and 21-inch color displays.

No new hardware is required to use the QuickTime extension.

Owners of the 8•24 GC Rev A card will need to have their card upgraded to the new ROM (timing support) in order to use the Macintosh 16-inch Color Display. There is no upgrade path for the CLUT (Color Look Up Table). The Rev B ROM is ONLY needed for the 16-inch display.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10053

Tech Info Library

Allied Telesis, Inc.

Revised: 7/22/93
Security: Everyone

Allied Telesis, Inc.

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Article Created: 6 April 1992
Article Reviewed/Updated: 22 July 1993

Allied Telesis, Inc.
---

575 East Middlefield Road
Mountain View, CA 94043

415-964-2771

415-964-0944 Fax

Company Profile:
Hardware, specializing in fiber transceivers, local area network products, land products

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10054

Tech Info Library

Alysis Software Corporation

Revised: 7/22/93
Security: Everyone

Alysis Software Corporation

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Article Created: 6 April 1992
Article Reviewed/Updated: 22 July 1993

Alysis Software Corporation
---

231 31st Ave.
San Francisco, CA 94122

800-8-ALYSIS (825-9747)

415-566-2263

415-566-9692 Fax

Company Profile:
Software, specializing in the Compatibility system extension (INIT) for the Macintosh Quadra and file compression software

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10055

Tech Info Library

Canary Communications, Inc.

Revised: 7/7/93
Security: Everyone

Canary Communications, Inc.

==========

Article Created: 04/06/92
Article Reviewed: 07/07/93
Article Updated: 12/02/92

Canary Communications, Inc.

1851 Zanker Road
San Jose, CA 95112

408-453-9201

408-453-0940 Fax

Company Profile:
Hardware, manufacturer of LAN equipment, specializing in connectivity level products, i.e. transceivers, repeaters, multi-port hubs, mulit-media repeaters, managed hubs, over-thick, thin 10-Base T and 10-Base FL

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10056

Tech Info Library

Cornerstone Data Systems

Revised: 7/7/93
Security: Everyone

Cornerstone Data Systems

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Article Created: 04/06/92
Article Reviewed: 07/07/93
Article Updated: 12/02/92

Cornerstone Data Systems

P.O. Box 6260
Anaheim, CA 92816

714-772-5527

714-772-2838 Fax

Company Profile:
Specializing in terminal emulation software for the Macintosh for WISE Televideo, Hazeltime, Adds-Viewpoint, and Data-General terminal types.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10057

Tech Info Library

Open Software Foundation

Revised: 7/14/93
Security: Everyone

Open Software Foundation

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Article Created: 9 April 1992
Article Reviewed/Updated: 14 July 1993

Open Software Foundation
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11 Cambridge Center
Cambridge, MA 02142

617-621-8700

Fax: 617-621-0631

Company Profile:
Organization that sets standards for the UNIX industry.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10059

Tech Info Library

UNIX International

Revised: 7/20/93
Security: Everyone

UNIX International

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Article Created: 9 April 1992
Article Reviewed/Updated: 20 July 1993

UNIX International
---

20 Waterview Blvd.
Parsippany, NJ 07054

800-848-6495

Fax: 201-263-8401

Company Profile:
Organization that sets standards for the UNIX operating system.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10060

Tech Info Library

After Hours Software

Revised: 4/4/97
Security: Everyone

After Hours Software

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Article Created: 04/02/92
Article Reviewed: 07/02/93
Article Updated: 04/04/97

After Hours Software

5990 Sepulveda Blvd.
Suite 240
Van Nuys, CA 91411

818-780-2220

818-780-2666 Fax

Company Profile:
Software, specializing in contact management software for the complete line of Macintosh computers, including the PowerBook series.

Article Change History: 07/02/93 Address information added

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10061

Tech Info Library

Attain Corporation

Revised: 4/4/97
Security: Everyone

Attain Corporation

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Article Created: 2 April 1992
Article Reviewed/Updated: 4 April 1997

Attain Corporation
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50 Grove Street
Somerville, MA 02144

617-776-1110

(Tech. Support and Customer Service)
617-776-2711

617-776-1626 Fax

Company Profile:
Software, specializing in personal productivity software for the complete line of Macintosh computers, including the PowerBook series, i.e. IN CONTROL, a to-do list manager.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10063

Tech Info Library

Bananafish Software, Inc.

Revised: 4/4/97
Security: Everyone

Bananafish Software, Inc.

==========

Article Created: 2 April 1992

Bananafish Software, Inc.
---
730 Central Avenue
San Francisco, CA 94117

415-929-8135

415-929-8146 Fax

Company Profile:
Software, specializing in information management software for the complete line of Macintosh computers, including the PowerBook series.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10064

Tech Info Library

Endpoint! Marketing Information Systems

Revised: 4/4/97
Security: Everyone

Endpoint! Marketing Information Systems

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Article Created: 04/02/92
Article Reviewed: 07/08/93
Article Updated: 04/04/97

Endpoint! Marketing Information Systems

1230 Oakmead Parkway
Suite 210
Sunnyvale, CA 94086

800-488-5322

408-737-3831

408-738-5979 Fax

Company Profile:
Software, specializing in sales automation software for the complete line of Macintosh computers, including the PowerBook series.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10065

Tech Info Library

Inline Design, Inc.

Revised: 4/4/97
Security: Everyone

Inline Design, Inc.

==========

Article Created: 2 April 1992
Article Reviewed/Updated: 4 April 1997

Inline Design

Inline Design
308 Main Street
Lakeville, CT 06039

800-453-7671

203-435-4995

203-435-1091 Fax

Company Profile:
Software, specializing in entertainment and educational software and utilities for Macintosh computers, including the PowerBook series.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10066

Tech Info Library

Liberty Systems, Inc.

Revised: 4/4/97
Security: Everyone

Liberty Systems, Inc.

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Article Created: 04/02/92
Article Reviewed: 07/12/93
Article Updated: 04/04/97

Liberty Systems, Inc.
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160 Saratoga Avenue
Suite 38
Santa Clara, CA 95051

408-983-1127

408-243-2885 Fax

Company Profile:
Hardware, specializing in a complete line of portable mass-storage products (hard drives, tape drives, removable cartridge drives, and optical drives) for Macintosh computers, including battery-powered drives for the PowerBook series.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10067

Tech Info Library

Lotus Development Corporation

Revised: 3/3/94
Security: Everyone

Lotus Development Corporation

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Article Created: 2 April 1992
Article Reviewed/Updated: 3 March 1994

Lotus Development Corporation
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55 Cambridge Parkway
Cambridge, MA 02142

800-343-5414 (Customer Service)

800-223-1662 (Technical Support)

617-577-8500

800-693-3899 (Customer Service and Sales) Fax

617-693-0967 (Fax)

Company Profile:
Software, specializing in spreadsheet and other application software for Macintosh computers, including the PowerBook series and IBM PCs.

Lotus North Office
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400 Riverpark Dr.
North Reading, MA 01864

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10068

Tech Info Library

Pastel Development Corporation

Revised: 4/4/97
Security: Everyone

Pastel Development Corporation

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Article Created: 2 April 1992
Article Reviewed/Updated: 4 April 1997

Pastel Development Corporation
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113 Spring Street
5th Floor
New York, NY 10012

212-941-7500 (Sales, Technical Support)

212-431-3079 Fax

Company Profile:
Software, specializing in personal information management software for Macintosh computers, including the PowerBook series.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10070

Tech Info Library

TeamBuilding Technologies

Revised: 4/4/97
Security: Everyone

TeamBuilding Technologies

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Article Created: 2 April 1992
Article Reviewed/Updated: 4 April 1997

TeamBuilding Technologies
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836 Bloomfield Avenue
Montreal, Quebec, H2V 3S6
CANADA

514-278-3010

Fax: 514-278-2874

Company Profile:
Software, specializing in time management software for Macintosh computers, including the PowerBook series.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10071

Tech Info Library

Three-Sixty Pacific, Inc.

Revised: 4/4/97
Security: Everyone

Three-Sixty Pacific, Inc.

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Article Created: 2 April 1992
Article Reviewed/Updated: 4 April 1997

Three-Sixty Pacific, Inc.

2105 S. Bascom Avenue
Suite 380
Campbell, CA 95008

408-879-9144
409-776-2187 (Technical Support)

Fax: 408-879-9739

Company Profile:
Software, specializing in entertainment software for Macintosh computers, including the PowerBook series.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10072

Tech Info Library

WordPerfect Corporation

Revised: 1/30/95
Security: Everyone

WordPerfect Corporation

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Article Created: 2 April 1992
Article Reviewed/Updated: 24 March 1994

WordPerfect Corporation

1555 N. Technology Way
Orem, UT 84057

801-225-5000

800-451-5151

Fax: 801-222-5077

Company Profile:
Software, specializing in time management and word processing software for Macintosh computers, including the PowerBook series.

NOTE: On 21 March 1994, WordPerfect and Novell announced the intention to merge in the near future.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10073

Tech Info Library

PowerBook: Information on Hardware, Software, and Accessories

Revised: 5/16/94
Security: Everyone

PowerBook: Information on Hardware, Software, and Accessories

==========

Article Created: 7 April 1992

TOPIC -----

Where on AppleLink can I find information about hardware and software solutions for the Macintosh PowerBook series?

DISCUSSION -----

Apple publishes the "PowerBook Solutions Guide" and makes it available to the public on AppleLink. Use BB Pathfinder in the AppleLink Information folder to scan AppleLink bulletin boards for the location. Search on "PowerBook".

For other PowerBook hardware and software solutions, search on "PowerBook" in the Tech Info Library and Redgate Macintosh Registry.

Support Information Services

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10074

Tech Info Library

MacWrite II: Using on a Macintosh With More Than 16MB RAM

Revised: 4/13/92
Security: Everyone

MacWrite II: Using on a Macintosh With More Than 16MB RAM

==========

Article Created: 9 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Whenever I try to run the MacWrite 1.1.v2 spell checker on my Macintosh Quadra (with 20MB RAM and 32-bit addressing on), my system locks up.

DISCUSSION ----------

Claris Technical Support reports that this problem happens with all versions of MacWrite II on Macintosh systems with more than 16MB RAM. The workaround is to reduce the amount of available RAM -- to 16MB or less -- before you run MacWrite II.

Here are two alternatives to try:

1) Increase the system heap to 4MB or larger, so that you have 16MB or less of memory available. You can do this by increasing the RAM cache to 4MB or more.

2) Load other application programs into memory to reduce the available RAM to 16MB or less before running MacWrite II.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10076

Tech Info Library

Apple IIe Startup Disk 2.0 for Apple IIe Card

Revised: 4/14/92
Security: Everyone

Apple IIe Startup Disk 2.0 for Apple IIe Card

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Article Created: 13 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What is version 2.0 of the Apple IIe startup disk for?

DISCUSSION ----------

Apple IIe Startup Disk 2.0 (part number M1222LL/A) is for the Apple IIe card for the Macintosh LC. It is currently available for ordering. This updated software provides additional support for hard drive partitioning and printing to the Personal LaserWriter LS and StyleWriter.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10079

Tech Info Library

Macintosh: Hard Drives Can Cause Screen Fluctuations (2/95)

Revised: 2/6/95
Security: Everyone

Macintosh: Hard Drives Can Cause Screen Fluctuations (2/95)

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Article Created: 13 January 1992
Article Reviewed/Updated: 06 February 1995

TOPIC ----------

My Macintosh has minor screen-width fluctuations when the hard drive is accessed.

DISCUSSION ----------

Minor screen fluctuations can be caused by the magnetic field fluctuations of Macintosh hard drives. This is most pronounced in compact Macintosh computers such as the Macintosh SE or Macintosh Classic.

In some cases, reducing the brightness of the screen can modulate the fluctuations. Replacement of the hard drive is a possible solution though not guaranteed to resolve the issue.

Article Change History:
06 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10081

Tech Info Library

Pascal: Converting PC Code to the Macintosh

Revised: 6/25/92
Security: Everyone

Pascal: Converting PC Code to the Macintosh

==========

Article Created: 13 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Can MPW Object Pascal or Symantec's Think Pascal read or import the source code from Turbo Pascal?

DISCUSSION -----

MPW Pascal and Think Pascal can't directly convert MS-DOS Turbo Pascal programs and run them without modification. Here's how:

1. Convert the MS-DOS based Turbo Pascal programs into text files (if they're not text files already) and copy them to your Macintosh.

2. Use MPW Pascal or Think Pascal (doesn't matter which) to recompile the programs.

You'll need to make a lot of additional changes to get the program running on the Macintosh. The actual complexity depends on how much non-standard Pascal calls are used and how many of those calls are not available on the Macintosh side.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10083

Tech Info Library

Apple Monitors: ELF Emissions Not Affected by Refresh Rate

Revised: 4/14/92
Security: Everyone

Apple Monitors: ELF Emissions Not Affected by Refresh Rate

==========

Article Created: 13 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Is there a correlation between a monitor's DPI resolution and ELF emissions?

DISCUSSION ----------

The refresh rate (the number of times a video image is refreshed on the screen) determines the frequency at which ELF is emitted, but the refresh rate does not increase the amplitude or levels of ELF emitted from the monitor. Crisp color graphics require a wider video bandwidth than text-based systems, so there is the possibility of increased VLF and high frequency emissions, but the ELF spectrum remains unchanged.

Apple's products are constantly tested and compared against existing and proposed international standards. We continuously follow scientific developments in the field of computer health and safety. Members of Apple's Environmental Health and Safety group as well as representatives within Product Development, Product Marketing, and Engineering Services keep track of new findings.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10084

Tech Info Library

Ethernet Cards: GOSIP Compliance

Revised: 4/14/92
Security: Everyone

Ethernet Cards: GOSIP Compliance

==========

Article Created: 13 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Do Apple Ethernet cards conform to the GOSIP (US Government Open Systems Interconnection Profile) standard developed by the Government before the Open System Standard was announced.

DISCUSSION -----

According to the GOSIP standard (FIPS PUB 146), GOSIP does not mandate any specific physical interface standard for the Physical Layer. As far as the Link Layer is concerned, Apple Ethernet cards should conform to GOSIP, since GOSIP requires that the data link layer protocols be selected by the Acquisition Authority, including from the High Level Data Link Control (HDLC), Link Access Procedure B (LAP B), in conjunction with X.25 [NBS 1,3; ISO 26], and ISO 8802/2 in conjunction with ISO 8802/3, ISO 8802/4, or ISO 8802/5 [NBS 1; ISO 28-31].

There are many requirements in GOSIP regarding the upper layer, which software is not all available for the Macintosh platform. For example, the Application Layer covers Association Control Service Elements (ACSE) which support all applications, File Transfer, Access, and Management Protocol (FTAM), and Message Handling System.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10085

Apple IIGS: RAM's Effect on Reconnecting to Server After Crash

Revised: 4/14/92
Security: Everyone

Apple IIGS: RAM's Effect on Reconnecting to Server After Crash

==========

Article Created: 13 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I have a 1MB and a 1.25MB Apple IIGS computer on an AppleShare network. When these computers crash with an application open, the 1MB and 1.25MB models behave differently:

- The 1.25MB Apple IIGS always reboots correctly from the server.

- The 1MB Apple IIGS has to be turned off completely for 30 seconds to a minute before it can re-connect to the server. Trying to re-connect before waiting causes the 1MB Apple IIGS to hang on the "Welcome to the IIGS" greeting.

I've placed a 256K Memory Expansion Card in a different 1MB Apple IIGS with no problem rebooting. Also, when shutting down the AppleShare server, the notification of loss of server services is shown on the 1MB Apple IIGS as if it has a good connection to the server.

DISCUSSION -----

We assume you are talking about 1MB on the Apple IIGS' logic board rather than 256K on a 1MB Apple IIGS expansion board.

The newer 1MB logic board of the newer Apple IIGS does indeed use less power than the previous 256K logic board. It is not necessarily the RAM chips that stay powered, but the several CMOS chips and capacitors on the logic that retain the voltages. There is no solution for your problem other than to fully expand the memory with a RAM card to create more of a power drain -- or, as you have discovered, leave your 1MB computers off for the 30 seconds after you have a crash.

..TIL10086-Apple_IIGS-RAMs_Effect_on_Reconnecting_to_Server_After_Crash.pdf

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10086

Tech Info Library

PhotoGrade: DOS Use Not Supported

Revised: 4/14/92
Security: Everyone

PhotoGrade: DOS Use Not Supported

==========

Article Created: 13 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Can DOS users use PhotoGrade?

DISCUSSION -----

Because PhotoGrade requires Color and Grayscale in its Print dialog, printing isn't currently supported for PC users.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10089

Tech Info Library

Macintosh Classic II: Math Co-Processor Card Availability

Revised: 4/14/92
Security: Everyone

Macintosh Classic II: Math Co-Processor Card Availability

==========

Article Created: 13 January 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Can I put a math co-processor in a Macintosh Classic II?

DISCUSSION ----------

Though Apple has no plans to produce such a card such, the Macintosh Classic II has a processor-direct slot (PDS) for which third-parties could produce a math co-processor card.

Check periodically the Redgate library on AppleLink for a current product list of available cards.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10090

Tech Info Library

PowerBook: Battery Recharger Doesn't Include an AC Adapter 1/92

Revised: 5/16/94
Security: Everyone

PowerBook: Battery Recharger Doesn't Include an AC Adapter 1/92

==========

Article Created: 13 January 1992

TOPIC ----------

Does the PowerBook battery recharger come with an AC power adapter? I assume it does, but the price list shows the power adapter as a separate line item.

DISCUSSION ----------

The PowerBook battery recharger doesn't come with a power adapter. It uses the AC adapter that comes with the PowerBook.

Support Information Services

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10091

Tech Info Library

PowerBook SCSI Disk Mode: SCSI Cable Not Included (6/93)

Revised: 2/6/95
Security: Everyone

PowerBook SCSI Disk Mode: SCSI Cable Not Included (6/93)

==========

Article Created: 13 January 1992

TOPIC ----------

Is the SCSI cable adapter included with the purchase of PowerBook models which support SCSI Disk Mode?

DISCUSSION ----------

The SCSI Disk Mode cable doesn't come included with PowerBooks. You must purchase it separately.

Article Change History

06/30/93 -Revised for all PowerBooks to date.

Support Information Services

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10092

Tech Info Library

Personal LaserWriter NT: How to Order Face Up Cover Sensor

Revised: 9/3/92
Security: Everyone

Personal LaserWriter NT: How to Order Face Up Cover Sensor

==========

Article Created: 13 January 1992

Article Change History

9/3/92 - CORRECTED
- To correctly call the product "Personal LaserWriter NT"

TOPIC ----------

I need to order a Face Up Cover Sensor for the Personal LaserWriter NT.
All I can find is a part called Face Up Cover Assembly (part number 949-0276).
Are these the same parts?

DISCUSSION ----------

Order the Multipurpose Cable Assembly (part number 890-8605). The sensor
is included in that assembly.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10094

Tech Info Library

LaserWriter: How To Fix Incorrect Margin Settings (8/95)

Revised: 8/17/95
Security: Everyone

LaserWriter: How To Fix Incorrect Margin Settings (8/95)

==========

Article Created: 15 April 1992
Article Reviewed/Updated: 15 August 1995

TOPIC ----------

A customer reported that images printed from his LaserWriter IIf are not centered on the page. A test page that was generated when he turned on his LaserWriter was shifted to the right approximately 3/16 inch.

I tested our LaserWriter IIg, and we're getting the same results as the customer.

DISCUSSION ----------

Caution:
========
If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

This is a common problem with LaserWriter printers when they are assembled from their engine and controller components, and it has been reported with recent shipments of LaserWriter IIf/IIg printers. The margins may be out of adjustment and may need calibration. You can do this using the PostScript setmargins operator. Here's the syntax:

```
  <yoffset>  <xoffset>  setmargins
```

Positive integers increase the top and left margins; negative numbers decrease them. Each unit is a single device pixel (1/300 inch), or roughly 1/4 point. Changes are seen only in increments of 16 on the original LaserWriter engine used with the LaserWriter and LaserWriter Plus.

The setmargins operator is in statusdict, and must be executed outside the server loop so its changes will persist across power cycles. The following PostScript code can be used as a sample -- it shifts the image up and to the

left 16 and 24 pixels, respectively. It first exits the server loop and, therefore, modifies the parameters in EEPROM (Electrically Erasable Programmable Read-Only Memory) or ZPRAM (Zero Power RAM).

```
serverdict begin 0 exitserver
statusdict begin
-16 -24 setmargins
```

Care should be taken with the LaserWriter, LaserWriter Plus, LaserWriter IINT, and LaserWriter IIf/IIg because their controllers store parameters in a memory device with limited writes. Though these printers can handle at least 10,000 writes (the LaserWriter IIf/IIg over 50,000), automating the process in a batch file or PostScript program can quickly shorten the life. They still will work after this occurs, but they will use default settings and any new settings will need to be downloaded after each power cycle.

By altering the margin values, you should be able to properly center the LaserWriter page image. Note that the setmargins operator has no effect on total image size; it just alters its position on the page.

The following PostScript code prints a page showing the current margin settings. You may want to print this page before you modify the original settings, though they are likely to be set to zero (for both x and y) as shipped from the factory.

Begin_Table

```
/str 32 string def     %Define a 32 character string for later use.
/Times-Roman findfont  %Lookup font in fontdict and push it on stack
15 scalefont setfont   %Push size, scale, and make it the current font.
72 700 moveto          %One inch over, and 700 72nds up.
statusdict begin       %We'll be using two operators from statusdict.
(Margins for )         %Push the leading text on the stack.
show                   %Show the topmost string from the stack at 72 700.
str                    %Push an empty string of 32 length on stack.
printername            %Puts the LaserWriter name in the string.
show                   %Show it.
72 680 moveto          %Move back to 1 inch left, and down 20 points.
margins                %Push top and left margins onto stack.
(  Xoffset set to: )   %Push leading string onto stack.
show                   %Show it.
str                    %Push an empty string.
cvs show               %Convert left margin into the string and show it.
72 660 moveto          %Do the same thing again for the top margin.
(  Yoffset set to: )
show str cvs show
clippath stroke        %Draw a frame around the page border
showpage               %spit out the page.
```

End_Table

To download these programs, copy or type them into a text document using your favorite editor (the comments following the % characters aren't necessary).

TeachText or any editor that can save as text works fine. Then use the LaserWriter Utility, version 7.0 or later, or a similar utility to download the PostScript file to your LaserWriter.

Article Change History:
15 Aug 1995 - Made formatting changes and included PostScript disclaimer.

Support Information Services

Copyright 1992-95 Apple Computer, Inc.

Tech Info Library Article Number:10095

Tech Info Library

LaserWriter Driver 7.1.1 and Clone PostScript Interpreter Probs

Revised: 4/20/92
Security: Everyone

LaserWriter Driver 7.1.1 and Clone PostScript Interpreter Probs

==========

Article Created: 16 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Does LaserWriter driver 7.1.1 fix the compatibility problems with some clone PostScript interpreters and LaserWriter driver 7.1?

DISCUSSION ----------

No. This new driver does not address the compatibility problems between LaserWriter driver 7.1 and some third-party printers because this is not a 7.1 driver problem. This is an issue with the clone PostScript interpreters (PhoenixPage and TrueImage) these printers use, and which deviate from the Adobe standard interpreter.

Apple is working with the companies that sell these interpreters to provide a fix. Until a fix is available, Apple recommends that you continue using LaserWriter driver 7.0.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10096

Tech Info Library

ImageWriter II: Troubleshooting Poor Print Quality

Revised: 4/20/92
Security: Everyone

ImageWriter II: Troubleshooting Poor Print Quality

==========

Article Created: 15 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have an ImageWriter II in for repair. When the customer prints in Faster or Best mode, about once every four pages the characters in a line of print either look squashed together or there's a fine white line running horizontally through the center of them.

DISCUSSION ----------

Here are some things you can try:

1) For the best print quality, place the stack of paper behind the printer. The paper should have a clear, unobstructed entry and exit path.

2) Ensure that the power cord and printer cable are not obstructing the paper path.

3) Ensure that the manual paper sensor isn't exerting too much pressure on the paper.

4) Ensure that the paper guide isn't exerting too much pressure on the paper.

5) Ensure that the tractor assembly is working properly and that the paper isn't slipping.

6) Ensure that the print-head gap is correct (see "Shims" in Section 5, Additional Procedures, in the Technical Procedures).

7) Ensure that the paper bail isn't exerting too much pressure on the paper.

8) Set a top and bottom margin of 1 inch (the areas where the squashed line or misregistration problems will be most apparent).

9) Try using 20-pound paper.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10097

Tech Info Library

Apple IIc: How to Determine If It Needs ROM Upgrade for UniDisk

Revised: 7/1/92
Security: Everyone

Apple IIc: How to Determine If It Needs ROM Upgrade for UniDisk

==========

Article Created: 14 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have an Apple IIc, and I want to purchase a UniDisk 3.5 to use with it. My dealer said that some of the earlier Apple IIc computers need a ROM upgrade to support the UniDisk 3.5.

How can I determine if my Apple IIc needs the upgrade without bringing it to the dealer?

DISCUSSION ----------

Check your Apple IIc serial number. The Apple IIc systems that require the ROM upgrade for UniDisk 3.5 support are those with serial numbers lower than F6051GFA2S4000.

Another way to determine if your Apple IIc needs the ROM upgrade is to go into BASIC and type "PR#7" and press Return. If the Apple IIc responds with "AppleTalk Offline", you have the new ROM. If it tries to start up an external drive or returns "Check Disk Drive", you have the old ROM.

Your Apple service provider will perform the ROM upgrade free of charge.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10098

Tech Info Library

StyleWriter Ink Cartridge: Weight Information

Revised: 4/20/92
Security: Everyone

StyleWriter Ink Cartridge: Weight Information

==========

Article Created: 15 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

How much does a StyleWriter Ink Cartridge weigh when it's full and when it's empty?

DISCUSSION -----

A new cartridge with ink and housing weighs approximately 2.2 ounces. An empty cartridge weighs approximately 1.1 ounces. These weights are approximate: because actual cartridge weight may vary slightly, and some residual ink remains in an "empty" cartridge.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10101

Tech Info Library

TokenTalk 2.4 Drivers: Problem with 4MB Cards

Revised: 4/20/92
Security: Everyone

TokenTalk 2.4 Drivers: Problem with 4MB Cards

==========

Article Created: 9 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

We're showing more reliable speeds and connections on LocalTalk than on Token Ring. When we access the Chooser under LocalTalk, all zones show up and all devices respond immediately. After switching to TokenTalk, the zones don't show up right away, and the devices are slow in responding when the zones and devices appear. Devices also disappear at times. None of these problems occur while under Avatars, Lanway 4/16 TokenTalk card, or LocalTalk. These are all running on the same 4MB ring.

DISCUSSION -----

It sounds like you've upgraded to TokenTalk 2.4 (NSI 1.2). We're experiencing problems with the TokenTalk 2.4 drivers with the 4MB cards. The 4/16MB cards seem to function fine in an environment with well-behaving Novell server/routers.

A bug in the Novell 3.11 server prevents communicating with them unless you install a special NLM on the server. Search for the article titled, "Apple Internet Router: ATTOKLLC.NLM in Source Routing Token Ring" for installation instructions.

To fix the problems:

1) Everyone revert to TokenTalk 2.2 using the Ethernet NB 2.5.1 Installer or System 7.0.x.

2) Locate all of the Novell servers and make sure they have the correct NLM installed.

Copyright 1992 Apple Computer, Inc.

..TIL10110-TokenTalk_2-4_Drivers-Problem_with_4MB_Cards.pdf

Tech Info Library Article Number:10110

Tech Info Library

Laserdiscs: Controlling them from Macintosh (12/95)

Revised: 12/22/95
Security: Everyone

Laserdiscs: Controlling them from Macintosh (12/95)

==========

Article Created: 27 March 1992
Article Reviewed/Updated: 22 December 1995

TOPIC ----------

Which Pioneer laserdisc players can I can use with the Pioneer Movie Maker program to make a controlled QuickTime movie?

I read in the QuickTime documentation on Making QuickTime Movies, that it only needs a serial-port controllable laserdisc player. A device called The Box (from Voyager) allows the Macintosh to control consumer laserdisc players using the Macintosh computer's serial box. I was wondering if this would work.

DISCUSSION ----------

A Macintosh can control a laserdisc player, and have the video output captured and converted to a QuickTime movie. The application you use needs to have a device driver for the laserdisc player you're using.

Pioneer Movie Maker

This is a controlled capture system developed by Apple Computer for the QuickTime developer CD-ROM. It's a tool for content and application developers -- not for end-users. It requires a Pioneer model 4200 or 8000 laserdisc player.

- The 8000 works with CAV discs or CLV discs that have extended time codes on them.

- The 4200 works only with CAV discs. Plug the laserdisc player into the modem port and set it to 4800 baud.

The Box

You need this only if your laserdisc player has no serial port. It

connects to the Macintosh and uses the remote control capability of the laserdisc player. Contact The Voyager Company for compatibility information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
22 Dec 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:10111

Tech Info Library

AppleCD 150: Supports Foreign File Access (Discontinued 1/94)

Revised: 1/6/94
Security: Everyone

AppleCD 150: Supports Foreign File Access (Discontinued 1/94)

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Article Created: 9 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Does the AppleCD 150 support Foreign File Access?

DISCUSSION ----------

Yes.

The AppleCD 150 has the same internal mechanism as the AppleCD SC Plus.

CDs using ISO 9660 and High Sierra formats provide faster file location than those implementing HFS. Foreign File Access handles the conversion of File Manager calls to ISO 9660 and High Sierra discs.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10113

Tech Info Library

Team Advanced Systems Associates (formerly Advanced Sys. Assoc.)

Revised: 7/27/93
Security: Everyone

Team Advanced Systems Associates (formerly Advanced Sys. Assoc.)

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Article Created: 9 April 1992
Article Reviewed/Updated: 27 July 1993

Team Advanced Systems Associates

10835 Corte Playa Majorca
San Diego, CA 92124

619-279-2316

619-292-1377 Fax

Company Profile:
Specializing in an FDDI (Fiber Distributed Data Interface) NuBus adapter, high performance computaion accelerators, networking cards

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10114

Tech Info Library

Seaquest Software

Revised: 7/20/93
Security: Everyone

Seaquest Software

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Article Created: 9 April 1992
Article Reviewed/Updated: 20 July 1993

Seaquest Software

4200 NW Columbia Ave.
Portland, OR 97229-2952

503-531-0252

Fax: 503-629-8442

Company Profile:
Specializing in a Kermit SQ, X/Y and Z Modem SQ Communications ToolBox (CTB) tool and a CTB-based communications application called Message Mover®.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10115

Tech Info Library

LaserWriter IIf/g: RAM and Legal Size Pages

Revised: 4/20/92
Security: Everyone

LaserWriter IIf/g: RAM and Legal Size Pages

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Article Created: 23 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What happens if I print a legal size page on a LaserWriter IIf with 2MB RAM? Is it cropped, or do I get an error message?

Why can't a 2MB LaserWriter IIf print a legal size page when the LaserWriter IINT can?

DISCUSSION ----------

In this situation, the LaserWriter IIf generates no error message and clips the document to lettersmall (7.89 x 10.30 inches) dimensions.

The LaserWriter IIf and LaserWriter IIg use PostScript level 2. PostScript level 2 requires more memory than PostScript Level 1. A LaserWriter IIf needs 3MB of RAM to have the same page size capabilities as the LaserWriter IINT.

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Tech Info Library Article Number:10116

Tech Info Library

AFP Volume: File Limits (9/95)

Revised: 9/8/95
Security: Everyone

AFP Volume: File Limits (9/95)

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Article Created: 9 April 1992
Article Reviewed/Updated: 8 September 1995

TOPIC ----------

Is there a practical limit to the number of files and folders on an AFP volume? I am interested in having some AFP server (such as a UNIX computer) with many gigabytes of storage, but would like all of the files to appear to users as a single file system. Would AFP limit how deep or wide the catalog tree could be in this type of situation?

DISCUSSION ----------

The AppleTalk Filing Protocol (AFP) has the following limitations:

Maximum Volume Size:	4 gigabytes
Maximum File Size:	2 gigabytes
Maximum Number of Files and Folders:	65,536

There are no limits to how deep or wide a catalog tree can be as long as there are no more than 65,536 files and folders (sub-directories).

IMPORTANT: For users running the Mac OS older than version 7.5 and using a Macintosh as an AFP client, the maximum volume size must not exceed 2 Gigabytes (the maximum volume size supported by the Mac OS older than 7.5). For System Software 7.5.1 users, the maximum volume size has been increased to 4 gigabytes. Software 7.5.2 users can address volumes up to 2 terabytes but there is no supported AppleShare solution to serve volumes of that size.

NOTE: Under AppleShare client software older than version 3.5, the maximum volume size the AppleShare client software will support is a few hundred thousand bytes less than 2 gigabytes (2,147,483,648 bytes). Apparently there was a small bug in the AppleShare client software that caused it to have problems when accessing volumes that are 2GB in size. This problem was fixed with the release of Macintosh System Software 7.5 which includes AppleShare client software version 3.5.

Something else to consider, it typically is not very efficient to use multi-gigabyte storage devices without using partitions to cut down on the size of the volumes in use.

Article Change History:
08 Sep 1995 - Updated to include information for System 7.5.x.
24 May 1995 - Updated to include informaiton for System 7.5.
20 Aug 1992 - Updated for revised information for AppleShare numbers.

Support Information Services

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Tech Info Library Article Number:10117

Tech Info Library

AIR: ATTOKLLC.NLM in Source Routing Token Ring (8/95)

Revised: 8/22/95
Security: Everyone

AIR: ATTOKLLC.NLM in Source Routing Token Ring (8/95)

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Article Created: 9 April 1992
Article Reviewed/Updated: 22 August 1995

TOPIC -----

I'd like some information on the Novell NLM called ATTOKLLC.NLM. It's needed in Source Routing Token Ring installations that also have Apple Internet Routers (AIR). How do I get the NLM? How is it installed?

DISCUSSION -----

Novell Technical Support sent this information about the ATTOKLLC.NLM that should be loaded whenever the server is on a Token Ring network with Source Routing and an Apple Internet Router. You should get the ATTOKLLC.NLM from Novell.

Here are the installation instructions included with the NetWare for Macintosh 3.01 READ.ME file:

ISSUE: When the AppleTalk router in APPLETLK.NLM is on a multi-ring Token Ring network on which Apple Internet Routers and IBM Source Routing Token Ring Bridges are present, the router requires that a special NLM, provided with this package, be run to communicate with Apple Internet Routers.

CAUSE: The Apple Internet Router sends an 802.2 Test/Poll packet to a node when it needs to discover the Token Ring route (across bridges) to that node. It waits to receive an 802.2 Test/Final (reply) packet, which contains the Token Ring route information, before sending AppleTalk packets to the node. APPLETLK.NLM does not reply with a 802.2 Test/Final packet.

SOLUTION: If you are running NetWare for Macintosh v3.12 on a NetWare v3.12 server and you need Token Ring support, you do not use the file ATTOKLLC.NLM described in the NetWare for Macintosh Installation and Maintenance guide. Instead, you must install and load the file LLC8022.NLM. When you consult the manual, read all references to ATTOKLLC.NLM as LLC8022.NLM.

If you are running the 200-user version of NetWare for Macintosh v3.12 on a NetWare v3.11 server, you must still copy and load the file ATTOKLLC.NLM as described in the NetWare for Macintosh Installation and Maintenance guide.

Install ATTOKLLC.NLM, which listens for and responds to these Test/Poll packets. This NLM is not installed automatically during the NetWare for Macintosh v3.01 installation. To install this NLM, you must manually copy ATTOKLLC.NLM from the NW-MAC diskette to the SYS:SYSTEM directory of the server(s) on which the NetWare for Macintosh v3.0 or v3.01 software is installed. You should then load ATTOKLLC.NLM and bind it to the Token Ring board that handles the "TOKEN-RING" frame type, as described below.

After installing ATTOKLLC.NLM, follow these steps:

1) Load the frame type "TOKEN-RING" for the Token Ring LAN driver being used for AppleTalk. (This is the default frame type used when the board is loaded, but it is not the frame type used by APPLETLK. If you are running IPX and APPLETLK over the same Token Ring, this frame type is already loaded.)

2) Load the Token Ring Source Routing NLM "ROUTE.NLM" for the Token Ring board with the "TOKEN-RING" frame type. Note that this is not the same logical board to which APPLETLK is bound. Note also that you must perform this step even if you are running IPX on this Token Ring board.

3) Load ATTOKLLC.NLM. There are no options for this NLM.

4) Bind ATTOKLLC to the Token Ring board handling TOKEN-RING frames. Note that this is not the same logical board to which APPLETLK is bound.

For example, if you have already configured AppleTalk on Token Ring as follows:

```
load token int=2 port=320 frame=token-ring_snap name=tsnap
load route board=1
bind appletlk to tsnap net=10-10 zone={"Paris"}
```

The following lines demonstrate the four steps described above:

```
#Step 1.   load token int=2 port=320 frame=token-ring name=tring
#Step 2.   load route board=2
#Step 3.   load attokllc
#Step 4.   bind attokllc to tring
```

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Article Change History:
22 Aug 1995 - Updated information on installing ATTOKLLC.NLM.

Support Information Services

..TIL10118-AIR-ATTOKLLC-NLM_in_Source_Routing_Token_Ring_8-95.pdf

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Tech Info Library Article Number:10118

Tech Info Library

Personal LaserWriter NTR: Sharing Options

Revised: 4/20/92
Security: Everyone

Personal LaserWriter NTR: Sharing Options

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Article Created: 9 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I understand that I can network the Personal LaserWriter NTR with Macintosh computers, and connect to a PC Windows environment through the parallel port as a one-to-one printer. But can I share the Personal LaserWriter NTR within the MS-DOS PC environment? Does it have to operate within the Windows environment? Will it work in a Novell PC network?

DISCUSSION ----------

The Personal LaserWriter NTR has three different ports available for connection with computers. Of these, you can only use the mini-8 connector to share it with multiple computers. You must configure it for AppleTalk communication.

The DB-25 and parallel ports accept input from standard computer interfaces, but these have no standards for a bus or network configuration. Printer sharing boxes do exist, and will likely work with the NTR, but we haven't tested any of these. The only other way you can share the DB-25 and parallel ports is by connecting the NTR to a spooler that accepts jobs from networked computers. Novell NetWare has such a spooler.

Note: Because you can independently configure all three ports, you can always share the Personal LaserWriter NTR with at least three different computers, without using AppleTalk. You can set the mini-8 and DB-25 ports to serial, and the parallel port always accepts parallel input. With the mini-8 port configured for AppleTalk, the NTR can support an AppleTalk network of computers in addition to a serial and a parallel connection.

Using the mini-8 connector in LocalTalk mode allows any AppleTalk node to

print, whether Macintosh, MS-DOS, or otherwise. The only requirement is that the client support AppleTalk PAP (Printer Access Protocol) printing. A product that provides this capability for MS-DOS is PhoneNET Talk, by Farallon Computing, Inc. Windows isn't at all necessary for this to work, but Windows applications tend to be more PostScript aware since PostScript drivers are included with Windows. This makes those applications more likely to support the full capabilities of the NTR.

Configuring the NTR for a Novell installation varies, depending on the NetWare server. However, it will be very much the same as configuring other LaserWriter models for this task. The connection could be through any of its ports, and it can then accept input from Macintosh or PC computers that have access to the NetWare server.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:10119

Tech Info Library

A/UX 3.0: Compatibility with Other Software (10/94)

Revised: 10/3/94
Security: Everyone

A/UX 3.0: Compatibility with Other Software (10/94)

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Article Created: 6 April 1992
Article Reviewed/Updated: 3 October 1994

TOPIC ----------

I need to know what kind of compatibility to expect for A/UX 3.0 with the following software:

- Databases: Oracle, Informix, Sybase, Ingres (Which versions?)
- Motif from ICS (Does the version for A/UX 2.0.1 work under 3.0?)
- DAL (which version and which databases?)
- SoftPC

DISCUSSION ----------

Oracle

The current version of Oracle for A/UX is version 6.0.

Informix

According to Informix, the Informix 4.0 DBMS products for A/UX that include the tools, Informix-SQL and Informix-4GL, and the engines Informix-Online and Informix-SE, are the current released products.

Sybase

According to Sybase, four SQL tool sets currently support A/UX. These are:

- APT (Application Productivity Tools) Workbench, version 4.0.2
- Open Client C (DB Library), version 4.0.2
- Data Workbench, version 4.1
- Report Execution, version 4.1

Contact Sybase for more information.

The Ask Group, Inc./Ingres Products (formerly Ingres)

According to Ask/Ingres Sales, the Ingres for A/UX 2.0 stopped shipping September '91. We don't know why.

Motif

Motif from ICS for A/UX works on both A/UX 2.0.1 and 3.0.

DAL

The DAL server for A/UX, version 1.3 is the current released version that supports Informix 4.0 and 2.1, and Oracle DBMS.

SoftPC and Compilers

According to tests, SoftPC by Insignia was found to be compatible but may have cosmetic bugs.

To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
03 Oct 1994 - Updated article with information contained in attached file, and removed attached file.
23 Jul 1993 - Company title updated from Ask/Ingres to The Ask Group, Inc./ Ingres Products
02 Feb 1993 - Updated, to explain how to locate the binary attachment if you are not using the online version of AppleLink.

Support Information Services

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Tech Info Library Article Number:10121

Tech Info Library

MacTCP 1.1: Server Addressing and Routing Information Field

Revised: 7/17/92
Security: Everyone

MacTCP 1.1: "Server" Addressing and "Routing Information" Field

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Article Created: 13 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I have a question about "Server" style addressing under MacTCP 1.1, and the "Routing Information" field. I'm using a Gatorbox CS Rack, and all of the DDP/IP functions seem to be working fine. I'm a little confused though, about what seems to be a new feature.

Using Server mode addressing, and selecting the LocalTalk icon in MacTCP, and the correct zone to find the IPGateway (LocalTalk side of Gatorbox), I restart my system. It obtains an address fine, and displays it in the MacTCP address field (which seems to be a very nice new feature).

I'm confused about the address of the DDP/IP gateway (Gatorbox) now appearing in the "Routing Information" field. I've believed for several years now that this field had nothing to do with the DDP/IP Gateway. This was an address of a true TCP/IP router that would forward IP traffic to IP networks beyond the local one. I also understood this function required it, when not using RIP for local TCP/IP routing.

Why is this address displayed? I know that with Server-based addressing, the DDP/IP gateway is the device that needs to be used for truly setting the default route information. Does this "Routing Information" field have two purposes now, depending on which address method I'm using?

DISCUSSION -----

You're correct about MacTCP 1.1 now displaying new information when using a DDP/IP gateway (server mode addressing). MacTCP 1.1 now displays the IP address of the DDP/IP gateway in the default gateway field of the MacTCP control panel device. MacTCP 1.1 also displays the IP address received from the DDP/IP gateway in the IP address field of the MacTCP control panel

device. This new behavior in no way affects the way you configure or use MacTCP in a DDP/IP gateway environment. The additional information now presented is useful as a feedback mechanism, and nothing more.

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Tech Info Library Article Number:10122

Tech Info Library

LaserWriter: Token Ring and NetPort or SprintTALK/25T (7/93)

Revised: 7/27/93
Security: Everyone

LaserWriter: Token Ring and NetPort or SprintTALK/25T (7/93)

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Article Created: 20 April 1992
Article Reviewed/Updated: 23 July 1993

TOPIC ----------

I'm exploring the possibility of using an Intel NetPort to connect LaserWriters to Token Ring via the serial port (or parallel port on the NTR).

What products are available to connect LaserWriters to Token Ring?

DISCUSSION ----------

There are no products available to connect a LaserWriter directly to a Token Ring network. One solution available is Digital Products' SprintTALK/25T, or to locate the printer behind a Token Ring-to-LocalTalk or Token Ring-to-Ethernet router.

The NetPort won't work unless you only want to print to the printer from Novell servers. You may be able to configure a Novell server that has the AppleTalk NLM installed to print to a printer attached to the NetPort. In that case, it would be easier and more direct to just attach the printer to the Novell server. If you have Novell servers installed, you may want to explore this further.

SprintTALK/25

SprintTALK/25 lets you directly connect Macintosh computers and LocalTalk compatible printers to an Ethernet or Token Ring network. While other Ethernet print servers limit you on the number of printers you can connect, SprintTALK/25E provides support for up to eight printers. SprintTALK/25T provides the industry's only fast, easy, and inexpensive conversion of TokenTalk to LocalTalk.

You may locate the AppleTalk devices anywhere that's convenient, because SprintTALK/25 is also a single zone router, Macintoshes and other LocalTalk

devices can also be connected and accessed. Any Macintosh on the network can see and print to any connected printer via the standard Macintosh "Chooser" window, users don't have to operate network software or change queues.

NetPort Description

NetPort is a print server for NetWare 2.x and 3.x token ring networks running at either 4 or 16 Mbits/sec. You can connect to two printers anywhere on the network without shutting down the file server. NetPort is completely transparent to users and takes up no workstation or file server memory. The server is fully self-contained, including microprocessor, memory, NIC, and one serial and one parallel port. Print server software in the NetPort eliminates the need for a NetWare VAP or NLM. The unit's flash memory allows configuration updates via software, rather than replacing ROM chips. The NetPort is also available for thin coaxial, thick coaxial, and twisted-pair Ethernet versions. Contact Intel Corp. Personal Computer Enhancement Division for more information.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

Article Change History:
23 July 1993 - Company title updated from Intel Corp., Personal Computer Enhancement Operation to Intel Corp., Personal Computer Enhancement Division.

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Tech Info Library Article Number:10123

Tech Info Library

VT100 Emulation, 56KB Line, and Internetworking

Revised: 7/17/92
Security: Everyone

VT100 Emulation, 56KB Line, and Internetworking

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Article Created: 20 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I want to tie a Macintosh network (for example, AppleShare or Ethernet) into a 56KB line for the purpose of VT100 emulation for two purposes:

- An electronic time card system running on a 3090 with a TCP/IP front end.

- A UNIX-based E-mail system running on several types (Sperry 5080, Sperry 5095, Gould 9000, and Pyramids).

The standard PC setup includes using VT100 emulation through remote bridges (using Xyplex devices).

I have no idea how to set VT100 up as a gateway. And, would I need to set up a separate gateway for the time card system, or could the two be combined?

DISCUSSION ----------

The choice of an application for the Macintosh is easy. Choose any MacTCP-based application that supports VT100 emulation (almost all of them do). You might consider the Intercon or Wollongong commercial products, or the widely-used NCSA public domain package. You might also consider a CommToolBox-based application. You could use any CommToolBox-based communications program (such as MacTerminal 3.0, VersaTerm Pro, and so on), and a telnet tool available from a variety of sources (like the VersaTerm product that ships with a telnet tool, InterCon, and so on).

Connecting the two networks together is also a simple task. You need to choose a router product that supports both Ethernet and high-speed serial links. The router will need to support IP routing at the minimum, and

depending on the other requirements, might also need to support other protocols as well.

You need to know how many users will be connected, and what their usage patterns will be before choosing specific products. Topology is also a major consideration:

- What, if any, other routers are installed on the network?
- Are you routing AppleTalk?
- Do you have more than one Ethernet network?
- Are there any users connected on LocalTalk?

There are a number of technological alternatives for internetworking to choose from. Network managers should base their decisions on levels and quality of service, in addition to price. Factors to consider in the selection include:

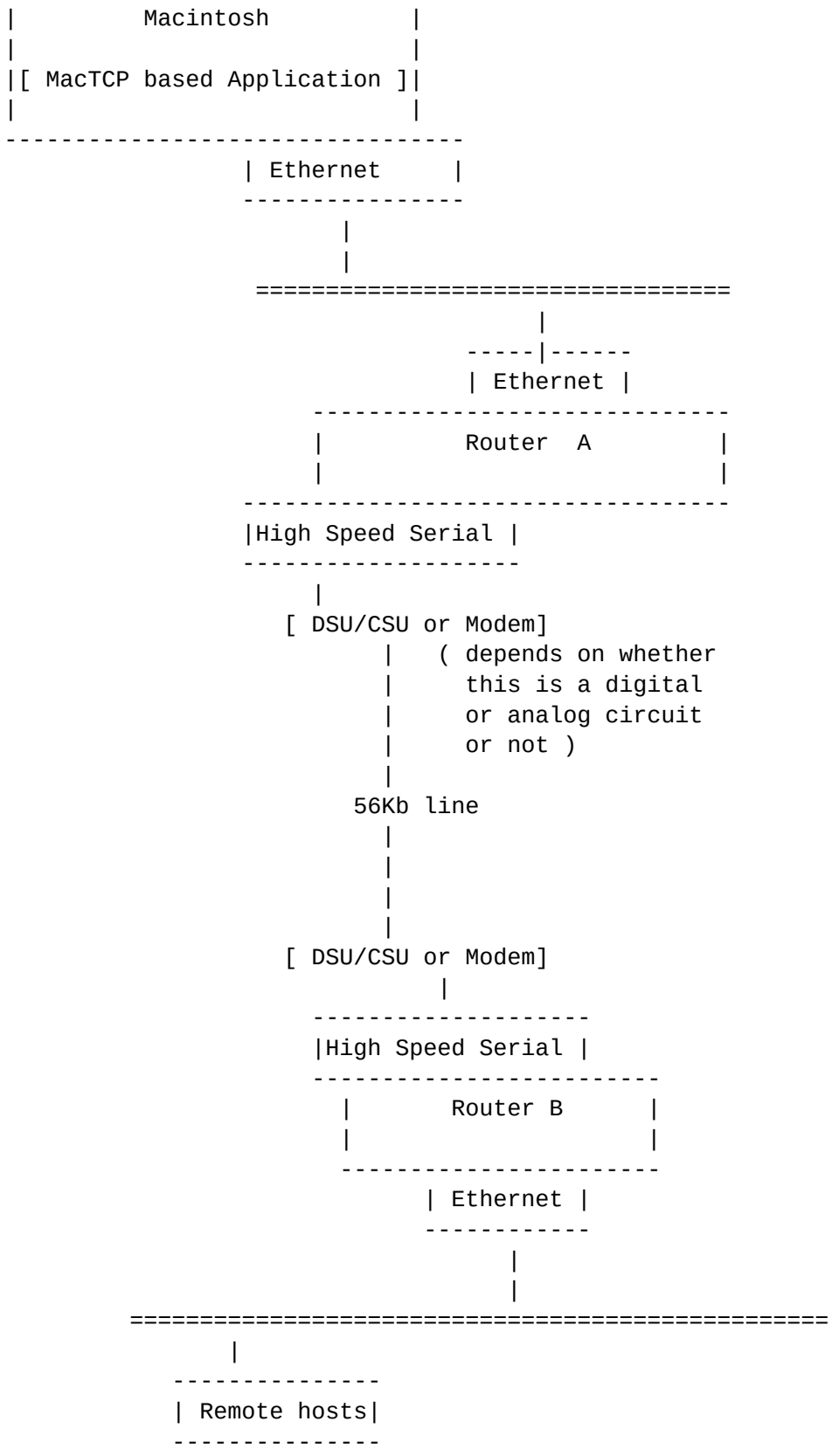
- User need for almost real-time service between linked networks
- What protocols provide the required services
- Matching the hardware to the applications used on the networks, and compatibility of the hardware with the network protocols
- Operating system and physical layer
- Security
- Technology-specific issues
- Whether users require near real-time access across network boundaries (Will slower packet-switching services suffice?)

The choice will largely depend on the expected traffic through the router and existing topology considerations. There are several high-end routers for heavy usage environments, and there are a few low-end routers capable of supporting high-speed serial links. Cisco is the industry leader, and is the router we use internally at Apple. Cisco offers a full range of products. This article includes a brief description of products from Cisco as well as other vendors.

If the environment calls for the use of a DDP/IP router, the CommTalk by APT would be an excellent choice. The router doesn't support native TCP/IP routing, although it does provide a DDP/IP gateway which all AppleTalk connected Macintosh computers can use for IP services. The DDP/IP gateway provides a mechanism for MacTCP-based applications to encapsulate IP packets in AppleTalk DDP packets. This allows an existing Macintosh network with AppleTalk-only routers to communicate with computers using the IP protocol anywhere on the connected IP network.

The CommTalk router is available in several configurations, both as a local and remote router. It's configurable for up to 6 local network attachments, either Ethernet or LocalTalk, and 1 high-speed serial port for wide area communications. The CommTalk supports speeds up to 1.544MB (T1) on the high-speed serial port.

So what we have now is this:



Note: Router A and router B must speak a compatible protocol over the high-speed serial connection.

Product Information

- cisco Systems AGS+
  AGS + is a TCP/IP, DECnet, Apple, and IPX router for Ethernet, Token Ring, and FDDI. For WAN connections, it supports RS-232, V.35, RS-422, frame relay, SMDS, X.25, and T-1. The router can simultaneously bridge. This 32-port router can forward 20,000 pps. It uses the RIP, OSPF, IS-IS, BGP, FGP, IGRP, or RTMP routing protocols.

- cisco Systems CGS
  CGS is a TCP/IP, DECnet, Apple, and IPX router for Ethernet, Token Ring, and FDDI. For WAN connections, it supports RS-232, V.35, RS-422, frame relay, T-1, satellite, microwave, X.25, RS-449, X.2 1, and SMDS. It can simultaneously bridge. This four-port router can forward 20,000 pps. It uses the RIP, OSPF, IS-IS, EGP, GRP, IGRP, or RTMP routing protocols.

- cisco Systems IGS
  IGS is a TCP/IP, DECnet, Apple, and IPX router for Ethernet. For WAN connections, it supports RS-232, V.35, RS-422, frame relay, T-1, satellite, microwave, X.21, RS-449, and SMDS. The router can simultaneously bridge. It can forward 6,000 pps. It uses the RIP, IS-IS, IGRP, BGP, or EGP routing protocols.

- cisco Systems MGS
  MGS is a TCP/IP, DECnet, Apple, and IPX router for Ethernet, Token Ring, and FDDI. For WAN connections, it supports RS-232, V.35, RS-422, frame relay, T-1, satellite, microwave, X.25, X.21, RS-449, and SMDS. The router can simultaneously bridge. This 11-port router can forward 20,000 pps. It uses the RIP, OSPF, IS-IS, IGRP, EGP, BGP, or RTMP routing protocols.

- Hewlett-Packard HP, HP ER
  The HP (HP 27270A) and HP ER (HP 27285A) are TCP/IP, DECnet, Apple, IPX, X.25, and XNS routers that support RS-232, V.35, RS-422, T-1, and X.21 WAN connections. They use RIP. The HP router runs on Ethernet and Token Ring networks, while the HP ER runs on Ethernet. Both can simultaneously bridge. A two- to 16-port router can forward 8,500 pps, and the HP ER, a four-port router, can forward 9,000 pps.

- Network Systems 6000 Series
  The 6000 Series RISC includes TCP/IP, DECnet, Apple, IPX, XNS, and OSI bridge/routers for Ethernet, Token Ring, and FDDI. For WAN connections, they support RS-232, V.35, frame relay, T-1, T-3, SMDS, satellite, and microwave. Each router can forward 15,000 pps for Ethernet and 50,000 pps for FDDI. The routers use the RIP, OSPF, or IS-IS protocols.

- Newbridge Networks
  8100 MULTIPROTOCOL The 8100 Multiprotocol is a TCP/IP, DECnet, Apple, IPX and XNS router for Ethernet, Token Ring, and FDDI networks that supports RS-232, V.35, RS-422, frame relay, T-1, and X.25 WAN connections. It can simultaneously bridge. This router can forward 14,800 pps. It uses RIP.

- Proteon CNX 500
  The CNX 500 is a TCP/IP, DECnet, Apple, IPX, XNS, Domain, and OSI bridge/router for Ethernet, Token Ring, and FDDI. For WAN connections, it supports RS-232, X.35, RS-422, T-1, PPP, and X.25. It can simultaneously bridge. This six-port router can forward 25,000 pps. The CNX 500 uses RIP or OSPF.

- Proteon P4100
  The p4100 is a TCP/IP, DECnet, Apple, IPX, XNS, Domain, and OSI bridge/router for Ethernet and Token Ring. For WAN connections, it supports RS-232, V.35, RS-422, T-1, X.25, PDN, and DDN. The router can simultaneously bridge. This four-port router can forward 3,000 to 4,000 pps. It uses RIP or OSPF.

- Proteon P4200
  The p4200 is a TCP/IP, DECnet, Apple, IPX, XNS, Domain, and OSI router for Ethernet, Token Ring, and FDDI. For WAN connections, it supports RS-232, V.35, RS-422, T-1, and SMDS. This nine-slot router, with up to 14 connections, can forward 4,000 to 6,000 pps. It uses RIP or OSPF.

- RAD Network Devices Open Gate
  Open Gate is a TCP/IP, DECnet, Apple, and IPX router for Ethernet, Token Ring, and FDDI. For WAN connections, it supports V.35, RS-422, frame relay, T-1, satellite, and microwave. The router can simultaneously bridge. This two- to 24-port router can forward 150,000 pps. It uses RIP or OSPF.

- Chipcom Online Module
  The Online router module is a TCP/IP, DECnet, Apple, and IPX router for Ethernet. For WAN connections, it supports RS-232, V.35, RS-422, frame relay, T-1, satellite, and microwave. The router can simultaneously bridge. This two-port router can forward 6,000 pps. It uses the RIP, IGRP, BGP, RTMP, ZIP, or EGP routing protocols.

- Timeplex Time/LAN 100
  Time/LAN 100 is a TCP/IP, DECnet, Apple, IPX, XNS, X.25, and DDN bridge/router for Ethernet, Token Ring, and FDDI. For WAN connections, it supports RS-232, V.35, RS-422, T-1, PPP, G.703, satellite, and microwave. It can simultaneously bridge. This 12-port router can forward 14,000 pps. It uses RIP or OSPE.

- Wellfleet Concentrator, Feeder, Link Nodes
  The Concentrator, Feeder, and Link Nodes are TCP/IP, DECnet, AppleTalk, IPX, XNS, and X.25 routers. The Concentrator and Link nodes run on Ethernet, Token Ring, and FDDI. The Feeder Node operates on Ethernet and Token Ring. They can simultaneously bridge, use RIP or OSPF, and can forward 14,5000 pps. For WAN connections, they support RS232, V.35, RS-422, X.25, SDLC, HDLC, T-1, E-1, fractional T-1, satellite, microwave, frame relay, and SMDS.

- Telebit Netblazer
  The NetBlazer TCP/IP router for Ethernet networks supports RS-232, V.35,

and RS-422 WAN connections. It uses RIP. The entry-level model has three ports.

MacTCP-Based VT100 Compatible Applications

- InterCon Systems Corp.
  TCP/Connect-II

- VersaTerm-PRO
  NCSA maintains a professional-looking TELNET package for the PC and the Macintosh which supports remote login, multiple VT102 emulation, Tek 4014 emulation, subnetting, and dynamic IP address assignment via RARP.

  Features included in NCSA Telnet:
  (* means new in version >= 2.2)

  - DARPA standard telnet
  - Built-in standard FTP server for file transfer
  - VT102 emulation in multiple, simultaneous sessions
  - Full subnetting support
  - Tektronix 4014 graphics emulation
  - Scrollback for each session
  - Domain name lookup with default domain suffix
  - *RARP for dynamic IP address assignment
  - Full color support (PC and *Macintosh II)
  - *Font and size support (Macintosh)
  - *MacBinary FTP transfer (Macintosh)
  - *New Ethernet board support (PC, PS/2)

  How to obtain a copy:

  1) From a friend
     The documentation, program and source code are now in the public domain. Copy, modify, distribute.

  2) Anonymous FTP from ftp.ncsa.uiuc.edu (128.174.20.50)
     You may want to ftp the README file(s) to determine which files to transfer to your home computer.

     For the PC version, you have your choice of tar files which contain the documentation, the programs, and supporting files. For each tar file, there is also a compressed tar file with the same contents. After the files are extracted from the tar file, some transfer method (for example, kermit, NCSA Telnet) should be used to download the files to the PC. The documentation is available in line printer format, and Macintosh Microsoft Word format. Remember to download .EXE files in binary mode.

     The Macintosh version consists of several files encoded with Stuff-It. The BinHex (.HQX) version is a duplicate copy for those who need a non-binary distribution. Download the selections you need with a binary transfer method (kermit, NCSA Telnet), and extract the individual files. The documentation is in Microsoft Word 3.X format.

3) Diskette or Tape
   On-disk copies and printed manuals are available for a small fee which covers materials, handling, and postage. The anonymous FTP tape covers the contents of all disks. Orders can only be accepted if accompanied by a check in U.S. dollars made out to the University of Illinois. You can get an order form by contacting NCSA Telnet Orders.

CommToolBox-Based MacTCP Tools

These are current products available that provide telnet access for programs that use the Communication ToolBox:

- TCPack
  Supports telnet and ftp protocols.

- InterCon's Telnet Driver/Tool
  Telnet support only.

- VersaTerm-Pro
  Ships with a telnet tool

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:10124

Tech Info Library

PowerBook Fax/Data Modem: Disabling MNP Connections (7/94)

Revised: 7/21/94
Security: Everyone

PowerBook Fax/Data Modem: Disabling MNP Connections (7/94)

==========

Article Created: 23 April 1992
Article Reviewed/Updated: 21 July 1994

TOPIC ----------

Which AT command switches MNP 5 on and off in the PowerBook Fax/Data Modem?

DISCUSSION ----------

There are several ways to disable MNP connections: Through '&Q', '%C' commands and through S register settings:

From the Macintosh PowerBook Fax/Data Modem User's Guide, page 102

&Qn Connection Mode, where if n equals (default is 5):

0	Sets asynchronous mode with no error correction protocol.
1-4	Returns ERROR.
5	Error control mode. Instructs the modem to make a connection using the V.42/MNP. If remote modem does not offer V.42/MNP, the modem falls back to standard Asynchronous mode.

From the Macintosh PowerBook Fax/Data Modem Developer's Guide, page 55

%Cn MNP 5 enable - Enables and disables MNP class 5 data compression during Reliable Mode connections. For use with MNP class 5, \L0 is mandatory, \J0 is recommended.

%C0	Disables data compression. AT%C0 sets S46 to 136.
%C1	Enables data compression (default). AT%C1 sets s46 to 138.

From the Macintosh PowerBook Fax/Data Modem Developer's Guide, page 56

• \Jn BPS adjusts to DTE speed - After connecting, when in Direct Mode, the PowerBook and the Fax/Data Modem always adjust their data rate to the one used on the communication channel (between the Fax/Data Modem and the

remote modem).

When one of the three MNP modes is set, the PowerBook normally keeps the same data rate as used in the Command State and the modem, with the help of flow control, adjusts its speed and buffers data between the communication channel and the PowerBook. This can be modified with the \J command, which can disable that buffering possibility within an MNP mode.

\J0 The modem adjusts its speed to the PowerBook; buffering is enabled (default).
\J1 The modem and the PowerBook must adjust the speed to that of the communication channel without buffering, as in Direct Mode.

• \L Service type - This command controls the MNP service type setting.

\L0 Stream (default).
\L1 Block; returns ERROR.

From the Macintosh PowerBook Fax/Data Modem Developer's Guide, page 75

• S46: Error protocol selection V.42 and V.42bis (default is 138)

0 Either LAP-M (V.42) or LAP-B (MNP).
1 LAP-B only.
2 LAP-M with adaptive data compression or LAP-B with adaptive compression.
3 LAP-B with adaptive data compression.
136 LAP-M (V.42) only.
138 LAP-M with adaptive compression (V.42bis).

All other codes return ERROR.

• S48: Feature negotiation action V.42 and V.42bis (default is 7)

0 Negotiation disabled in V.42 or V.42 bis modes only depending on S46.
7 Negotiation enabled. Start with V.42 or V.42bis and fall back to MNP if required.
128 Negotiation disabled. Force to MNP mode only.

All other codes return ERROR.

Article Change History:
21 Jul 1994 - Changed access privileges to everyone.

Support Information Services

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Tech Info Library Article Number:10125

Tech Info Library

PowerBook: NEC CDR-35 CD-ROM Player Compatibility (2/95)

Revised: 2/7/95
Security: Everyone

PowerBook: NEC CDR-35 CD-ROM Player Compatibility (2/95)

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Article Created: 15 April 1992
Article Reviewed/Updated: 07 February 1995

TOPIC ----------

I can't make an NEC CDR-35 CD Player work with a PowerBook, although it works fine with a Macintosh LC.

DISCUSSION ----------

Neither NEC nor Apple has tested the CDR-35 with any PowerBook computer. NEC recommends the CDR-36 or later for use with the PowerBook family.

NEC Technical Support has had reports that when the Apple SCSI cable and the NEC CD-ROM drivers version 2.21 are used, the CDR-35 did work with a PowerBook. It seemed that the NEC SCSI cable didn't work. Because Apple and NEC haven't tested the CDR-35 and PowerBook computers, this isn't a supported solution.

Article Change History:
07 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10128

Tech Info Library

AppleCD Family and Kodak Photo CD (8/93)

Revised: 8/3/93
Security: Everyone

AppleCD Family and Kodak Photo CD (8/93)

==========

Article Created: 15 April 1992
Article Reviewed/Updated: 3 August 1993

TOPIC ----------

There are two levels of support available for Kodak's Photo CDs. The first and most basic level is the ability to read the Photo CD itself. The second level is the ability to deal with more than just the initial session of a multisession CD. The AppleCD 300 and 300i are the first CD-ROM players from Apple to support multisession Photo CD.

DISCUSSION ----------

MODE 1 and 2

To achieve the first level, Kodak's Photo CD requires a CD-ROM drive that provides Mode 2/Form 1 services.

CD-ROM Mode 1 is the standard ability to read CD-ROMs. A CD-ROM drive must support this mode to be considered a CD-ROM drive.

CD-ROM Mode 2 allows for additional capabilities. In relation to Photo CDs, the CD-XA Form 1 is the most important element. Mode 2/Form 1 allows the Photo CD to be recognized and read.

Additional software is required to understand what is being read. Kodak's developer's toolkit helps third-party developers to add the ability to read in the Photo CD's images. QuickTime 1.5 and later allows you to use Photo CD images on the Macintosh. This allows any Macintosh with the proper software installed, and with a Mode 2/Form 1 CD-ROM drive attached, to read Photo CDs.

Multisession

To provide the multisession support, the first level must be in place and then the CD-ROM drive needs to understand to look past the "lead-out" area of the first session to find the second session's "lead-in" area.

The Photo CD concept allows the customer to send the CD back to a Kodak photofinisher to add additional images to the CD. Each time images are added to the CD, the process is called a session. Since images can be added at different times, the CD is known as multisession.

The different sessions of the multisession CD-ROM consist of a lead-in area, data, and a lead-out area. Thus a multisession CD would have repeating sequences of lead-in areas, followed by data, followed by lead-out areas. For example:

```
lead-in area
data for session 1
lead-out area

lead-in area
data for session 2
lead-out area

and so on
```

For a CD-ROM drive to read past the initial session, the drive must understand how to deal with multiple lead-in and lead-out areas. Normally, a CD-ROM will have only one lead-in/lead-out combination. This is because, traditionally, most CD-ROMs can be written to only once. Thus, most CD-ROM drives are designed to recognize one set of lead- in/lead-out areas. Once a lead-out area is located, most of the older CD-ROM drives will consider that lead-out area the end of the CD-ROM.

With newer technology available, the ability to write additional information resulted in the use of the multisession procedure (that is, the Kodak Photo CD). This procedure means that a CD-ROM drive must understand how to look past the lead-out area to see if another lead-in area exists.

The AppleCD SC (Apple's original CD-ROM drive) doesn't support the Mode 2/Form 1 format; however, if using 4.01 or higher of the CD driver, it can read any Kodak Photo CD (single session only).

The AppleCD SC Plus (Apple's second version of the CD-ROM drive) does support the Mode 2/Form 1 format; however, it doesn't support multisession. Therefore, the AppleCD SC Plus can read the Kodak Photo CD, but can only read the first session. The AppleCD SC Plus won't read additional sessions.

Like the AppleCD SC Plus, the AppleCD 150 Drive (Apple's third version of the CD-ROM drive) does support the Mode 2/Form 1 format; however, it doesn't support multisession. Similarly, the AppleCD 150 Drive can read the Kodak Photo CD, but can only read the first session. The AppleCD 150 Drive won't read additional sessions.

The AppleCD 300 and AppleCD 300i (the internal model) do support multisession Photo CDs.

..TIL10129-AppleCD_Family_and_Kodak_Photo_CD_8-93.pdf

Article Change History:
30 October 1992 - Corrected to explain that the AppleCD SC drive (original CD-ROM drive) does support a Kodak Photo CD with certain restrictions.
3 August 1993 - QuickTime 1.5 or later reads Photo CD images.

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Tech Info Library Article Number:10129

Tech Info Library

GS/OS 6.0 and HyperCard GS: Memory Requirements

Revised: 7/17/92
Security: Everyone

GS/OS 6.0 and HyperCard GS: Memory Requirements

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Article Created: 20 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

If I have ROM 01 IIGS, how much memory do I need to use a GS/OS application if I boot from my file server (no floppy used)?

I need to know how much memory it takes to run an Apple IIGS under GS/OS 6.0 with the following parameters:

- Full OS and a hard drive
- Boot GS/OS only, but run ProDOS applications
- Boot GS/OS and run a GS/OS application (not HyperCard)
- Boot diskette containing Local Network Startup and everything else from the server

Under 5.0.4, most things worked in 1 or 1.25MB, but I'm confused about the requirements for 6.0.

DISCUSSION ----------

The minimum configurations for GS/OS 6 are the same as for 5.0.4, although increasing RAM to 2MB will provide better performance. We don't have configuration information for the specific cases you mentioned. However, published information about GS/OS 6.0 system requirements provides the following information:

> System Requirements
>
> Standalone Apple IIGS System 6 software requires an Apple IIGS personal computer with at least 1MB of RAM, ROM version 01 or 03 and one 3.5-inch disk drive, although configurations of 2MB of RAM and a hard drive is recommended for optimal performance. Networked systems require Apple IIGS computers with at least 768K RAM, ROM version 01

or 03 and appropriate LocalTalk cables.

Exact memory requirement definition is rather dynamic because (like the Macintosh OS) you can add a variety of extensions. This makes the size of the GS/OS System file grow and shrink.

Use the "About the Finder…" menu item under the GS/OS 6 Apple Menu to find memory usage information. The About… box contains information about total memory, available memory, Finder memory usage, System, Desk Accessories and Setup files.

For example, using the "Easy Update" button in the GS/OS Installer to create a startup disk provided the following memory usage (via the About… box) in a 1MB RAM (no memory expansion card) ROM 03 Apple IIGS:

```
Total Memory     : 1152K
Available Memory :  480K
Finder           :  299K
System           :  295K
Desk Accessories :   13K
Setup Files      :   62K
```

The same startup disk on a ROM 01 IIGS with a 1MB RAM expansion card showed the following usage:

```
Total Memory     : 1280K
Available Memory :  549K
Finder           :  299K
System           :  359K
Desk Accessories :   13K
Setup Files      :   57K
```

Customize the installation to allow a larger Available Memory area and reduce the System area. The "Easy Update" installs drivers that you may not use, such as AppleDisk5.25, SCSI.Manager, SCSIHD.Driver. Not installing these would provide an additional 37K of Available Memory. You can add another 23K to Available Memory by removing all the installed CDEVs; the ROM-based Desk Accessories can handle the functions of the Easy Update CDEVs.

HyperCard GS requires 1.5MB of RAM to run on the Apple IIGS.

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Tech Info Library Article Number:10130

Tech Info Library

Macintosh LC II and IIsi: Comparing Performance

Revised: 6/21/93
Security: Everyone

Macintosh LC II and IIsi: Comparing Performance

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Article Created: 20 April 1992

Article Change History

06/21/93 - REVISED
- No longer includes specs on all Macintosh models. Refer to article titled "Macintosh Family: MIPS Ratings" for that information.

TOPIC ----------

I'm planning a lab for word processing as well as for desktop publishing tasks. I'm considering the Macintosh LC II or the Macintosh IIsi. What differences in performance can I expect between the two computers, since both have the 68030 processor? The performance issue is most important in the case of handling complex graphics. What would the addition of the optional math coprocessor mean to the performance of each computer?

DISCUSSION ----------

Following is the text of the AppleLink Tech Info Library article "MIPs Can be Misleading." Please remember that we don't quote MIPs values without strenuous disclaimers about their applicability in the Macintosh world.

Information pertinent to your decision is this:

Macintosh LC II	3.9	MIPs	**
Macintosh IIsi	5.0	MIPs	** ***

* NOTE: The majority of our systems operate with a variable number of wait states. See the Tech Info article on Wait States and Macintosh.

** NOTE: This figure has been adjusted to reflect the improved efficiency of the 68020 and 68030.

*** NOTE: This figure does not reflect performance degradation due to the use of internal video, or increases provided by an optional cache card.

Using these values, the Macintosh IIsi is over 25% faster than the Macintosh LC II. While we don't have specific benchmarks of performance in desktop publishing applications, it's safe to say that the speed difference would be significant.

Measuring MIPS is, at best, an inaccurate art. All the reference manuals we consulted stated that a MIPS rating can be misleading. MIPS (Million Instructions Per Second) is a measurement of CPU (Central Processing Unit) speed.

From Motorola's 68020/68030 Performance Report:

> "Benchmarking microprocessors is much like water-witching. Everyone wants to use the results but are skeptical of the 900-methods. From the user's point of view, the best benchmark to use in making a decision on a given microprocessor is to run the code which will be run in the final application. This, however, is usually difficult at best, and expensive and time consuming at least. Since running the actual code is usually not feasible, most users and all microprocessor manufacturers turn to either synthetic benchmarks - ones that simulate real-world conditions - or small standard benchmark programs which are designed to indicate real-world performance. Not everyone can agree on what simulates real conditions; thus, there are numerous benchmark programs available, each written to test some aspect of performance that the writer is interested in testing."

Another issue that causes MIPS ratings to be suspect is the fact that not all instructions take the same amount of time. A single instruction can take from 2 to over 200 machine cycles. The MC68020, for example, runs at a sustained rate of 2 to 3 MIPS, with occasional bursts of 8 MIPS.

Several other factors may enter into the process of obtaining the MIPS rating:

- Instruction in cache and cache enabled
- Instruction data size
- Addressing mode used -- extension words and indirect
- Memory port size
- Memory speed -- variable wait states
- Operand misalignment
- Prefetch sequence -- even or odd, word alignment of op word
- Instruction overlap

If a program is written to test the MIPS, other issues surface:

- Which instruction is used? The best instruction to make the MIPS rating look good would be the fastest executing instruction in the CPU set.

- What is the best program structure to use? Two choices, a loop or a straight line. A straight line program will take more space but is, by

far, the fastest. The straight line program executes only the fast instructions without executing any looping instructions.

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Tech Info Library Article Number:10131

Tech Info Library

StyleWriter: Why It Goes Off-line During Manual-Feed Printing

Revised: 7/17/92
Security: Everyone

StyleWriter: Why It Goes Off-line During Manual-Feed Printing

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Article Created: 21 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This question is about manual-feed printing from the StyleWriter. The printer goes into an off-line state when the user selects OK after the "Please insert a piece of paper" dialog. Then the Macintosh displays the message, "The printer is not responding."

Why does this happen?

DISCUSSION ----------

The printer goes off-line to accommodate those users feeding paper from the front of the printer. The StyleWriter doesn't have a paper sensor for the front-feed slot, so the printer takes itself off-line to allow the user to press the form feed button. The printer then pulls the paper into the paper path.

Since the printer can't tell if the user is feeding from the front or the rear, it takes itself off-line in all cases.

See the StyleWriter Owner's Guide for more explicit instruction on manual-feed printing.

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Tech Info Library Article Number:10132

LaserWriter IINT: Switch Changes Disrupt Network

Revised: 7/17/92
Security: Everyone

LaserWriter IINT: Switch Changes Disrupt Network

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Article Created: 20 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

When I set the DIP switch to RS-232 modeA on a LaserWriter IINT connected to a LocalTalk network, it hangs the network. No users can see servers or printers in the Chooser.

Once I set the DIP switch back to LocalTalk mode, the network carries on fine. Why is this happening?

DISCUSSION ----------

This is normal behavior, documented in the LaserWriter IINT and NTX Owner's Guide, Appendix C. When you use the DIP switches to configure the port settings, it affects both the DB-25 and mini-8 ports. When you change the switches to RS-232 mode, both ports will use this new setting. Since the RS-232 specification requires idle transmit signals to be held more negative than minus three volts, the LaserWriter will do this for both ports. If the mini-8 port is connected to an AppleTalk network when you do this, the LaserWriter will inject at least -3 volts onto one of the network signal pairs. This is very disruptive, and causes the symptoms you describe.

The LaserWriter IINTX (with version 3.0 ROM) allows software-switching between ports, and the complete disabling of one or the other port. This would allow you to leave both ports connected when changing from AppleTalk to RS-232. You can find the required steps documented in a separate article titled, "LaserWriter IINTX: How To Switch Modes Using Software" parts 1 and 2. Search for "LaserWriter IINTX and setsccbatch" in the Tech Info Library. The LaserWriter IINT doesn't have this same capability.

The LaserWriter IIf and IIg allow simultaneous connections to their

different ports, and you can configure each independent of the others. They will also automatically arbitrate between jobs arriving from the different ports. If this is an urgent matter, you may wish to consider upgrading.

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Tech Info Library Article Number:10133

Tech Info Library

A/UX 3.0: Can't Use with AppleShare 3.0

Revised: 7/17/92
Security: Everyone

A/UX 3.0: Can't Use with AppleShare 3.0

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Article Created: 11 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Can I use A/UX 3.0 as an AppleShare file server using AppleShare 3.0?

DISCUSSION -----

No. You can't use AppleShare 3.0 on a system running A/UX 3.0. AppleShare 3.0 requires the Macintosh OS.

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Tech Info Library Article Number:10139

Tech Info Library

System 7: Create Network Aliases from Remote Macintosh

Revised: 9/15/92
Security: Everyone

System 7: Create Network Aliases from Remote Macintosh

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Article Created: 11 March 1992

Article Change History

09/15/92 - CORRECTED
- To show what really happens when making an alias locally; also used information from another article.

TOPIC ----------

If I follow the procedure below, I would expect to be prompted with a log-on sequence for my Macintosh, wherever it is on the network:

1) Create an alias for a Macintosh with a hard disk named the default "Macintosh HD".
2) Copy the alias to a floppy.
3) Insert the floppy into another Macintosh with a hard disk having the same name ("Macintosh HD") as the first hard disk.
4) Double-click on the alias.

But instead this procedure opens the current hard disk.

DISCUSSION ----------

If you wish to make an alias of a file or volume that will work over a network, you must mount the desired target volume from a remote Macintosh, and then make the alias of the file or volume from the remote Macintosh. That alias can then be passed to any Macintosh on the network to access the desired file or volume. If you make the alias on the local Macintosh, it will only be a reference to a local file or volume.

For instance, if you make an alias for "Macintosh HD" from your local volume, then the alias will only contain the name "Macintosh HD". If that

alias is taken to another system with a hard disk named "Macintosh HD" then the alias will simply open that local volume.

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Tech Info Library Article Number:10140

Tech Info Library

Security Zone: Must Have 16-Character Password

Revised: 7/17/92
Security: Everyone

Security Zone: Must Have 16-Character Password

==========

Article Created: 12 March 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I installed the Security Zone zone name on a spare port of one of our MaxWay 500s, and it shows up in the Chooser.

Unfortunately, it doesn't seem to have any effect. When I click on "Answer calls" in the Remote Access Setup CDEV, it doesn't ask for password -- even if I click on "entire network."

DISCUSSION ----------

The problem probably stems from the following:

When you run the Security Zone stack, it displays the name you should give to the Security Zone. Unless the name is printed, the stack only displays 15 characters of the 16-character password. You probably have a 15-character password. Therefore, the AppleTalk Remote Access program isn't treating it as a true Security Zone. Try re-entering the zone name with the full name from the stack.

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Tech Info Library Article Number:10141

Tech Info Library

LaserWriter IIf & IIg: Adobe Changed How Helvetica Fonts Print

Revised: 7/17/92
Security: Everyone

LaserWriter IIf & IIg: Adobe Changed How Helvetica Fonts Print

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Article Created: 30 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

We recently purchased some LaserWriter IIf and IIg printers. We also have several LaserWriter IINTX printers. Our designers have reported that the type style of documents printed with the Helvetica font to a LaserWriter IIf or IIg are different from those printed to a LaserWriter IINTX. The difference is most noticeable with characters like "g" and "o" -- one printer prints circular characters, and the other prints oval characters.

We examined the fonts in both printers with several utilities and can't find any differences. We aren't using any TrueType fonts, and we turned off both FinePrint and PhotoGrade, but the results are still the same.

DISCUSSION -----

There are slight differences in the way Helvetica fonts are printed on the LaserWriter IIf and IIg when compared to other LaserWriter printers, like the LaserWriter IINTX. Adobe changed the way Helvetica PostScript fonts print. The LaserWriter IINTX has version 001.002 of the Helvetica PostScript font, while the LaserWriter IIf and IIg have version 001.006S.

Adobe controls these PostScript font changes. They make these changes to bring their fonts more in line with the actual fonts they license from various font foundries. In the future, more and more PostScript printers will have this version of the Helvetica font. Apple is neither responsible for nor has any control over this.

Here are two things you can try:

1) Download the Helvetica font (version 001.006) from the Adobe Type Library CD to a LaserWriter IINTX. Then compare the printouts with those from the LaserWriter IIf or IIg.

2) Contact Adobe and find out if version 001.002 of the Helvetica font is still available. Download this older version to the LaserWriter IIf or IIg and compare the printouts to the LaserWriter IINTX printouts.

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Tech Info Library Article Number:10144

Tech Info Library

A/UX 3.0 and Earlier: Supported Third-Party Serial NB Cards

Revised: 7/17/92
Security: Everyone

A/UX 3.0 and Earlier: Supported Third-Party Serial NB Cards

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Article Created: 30 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I would like to use a Macintosh Quadra 900 running A/UX as a multi-user UNIX system and connect 14 serial terminals to it.

I was told that I could use an Apple Serial NB Card to support four terminals. I plan to use four Apple Serial NB Cards in the Macintosh Quadra to support these 14 serial terminals.

Will this work?

DISCUSSION ----------

A/UX 3.0 and earlier does not support the Apple Serial NB Card because there is no driver available for A/UX. The driver for the Macintosh OS is not compatible with A/UX.

A/UX does support two internal serial ports (printer and modem ports). If you want additional serial ports on A/UX, there are several third-party NuBus cards available:

- CommCard by Taniwha Systems Design
- DigiChannel Nu/Xi by DigiBoard
- Hurdler Serial Boards by Creative Solutions

For more information on the cards, contact these companies directly.

On AppleLink, you can find contact information on a company mentioned in this article by clicking the "Library Index" button in the lower-center of the Tech Info Library search window, then opening the "Third Party Company Directory" folder.

..TIL10145-A-UX_3-0_and_Earlier-Supported_Third-Party_Serial_NB_Cards.pdf

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Tech Info Library Article Number:10145

Tech Info Library

Apple Scanner: Ofoto Upgrade for 32-Bit Addressing (12/93)

Revised: 12/23/93
Security: Everyone

Apple Scanner: Ofoto Upgrade for 32-Bit Addressing (12/93)

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Article Created: 30 April 1992
Article Change History: 23 December 1993

TOPIC ----------

I have the original Apple Scanner, and I'm using the latest version of AppleScan, which I downloaded from AppleLink. This software doesn't seem to support 32-bit addressing. How can I use the Apple Scanner and 32-bit addressing under System 7?

DISCUSSION ----------

The older versions of the Apple Scanner software do not support 32-bit addressing. To use your Apple Scanner and 32-bit addressing under System 7, you need to purchase Ofoto from LightSource, Inc., which is the software we include with our newer Apple OneScanners. This is especially important if you have a Centris 660AV, Quadra 660AV and Quadra 840AV, all which run only in 32-bit addressing mode.

Ofoto is not available as a separate product from Apple. However, there are two Ofoto upgrade kits available from LightSource: one version works only with the Apple Scanner, and the other version works with all scanners.

For more details, search on "Lightsource."

Article Change History:
23 December 1993 - Added info on AV Series.
25 August 1992 - Updated to give company information.

Support Information Services

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Tech Info Library Article Number:10146

Tech Info Library

PowerBook AC Adapter, Battery Charger: Electrical Specifications

Revised: 5/17/94
Security: Everyone

PowerBook AC Adapter, Battery Charger: Electrical Specifications

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Article Created: 30 April 1992

TOPIC ----------

What are the electrical specifications for the Macintosh PowerBook AC Adapter (for the 100, 140, 145 and 170 line) and the Battery Recharger?

DISCUSSION ----------

The Macintosh PowerBook AC Adapter specifications are:

Input Voltage: 80 to 270 VAC (120/240 V Nominal)
Frequency: 48 to 62 Hz (50/60 Hz Nominal)
Output Voltage: 7.5 to 7.9 VDC (load-dependent)
Output Current: 0.005 to 2.0 A max.
Weight: 11 ounces
Dimensions: 2.44" wide x 1.88" high x 3.88" long

Because the Macintosh PowerBook Battery Recharger relies on the AC Power Adapter, the same voltages apply for the recharger.

Article Change History

12/1/92 - Updated to include weight and dimensions.

Support Information Services

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Tech Info Library Article Number:10147

Tech Info Library

Apple Equipment: See User Guides for Care and Cleaning Info

Revised: 7/17/92
Security: Everyone

Apple Equipment: See User Guides for Care and Cleaning Info

==========

Article Created: 21 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Does Apple have any recommended cleaning procedures for its equipment?

DISCUSSION ----------

The user guide or owner manual, shipped with each product, contains basic care and cleaning instructions for the user. You can find the specific page numbers for this information in the index under "care" and/or "cleaning".

Some cleaning procedures must be performed by authorized service providers. If you cannot find cleaning instructions for your particular needs in the manual, contact your authorized Apple dealer or service provider.

There is a separate Tech Info Library article on cleaning Apple floppy-disk drives, in which Apple recommends using 3M cleaning kits.

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Tech Info Library Article Number:10148

Tech Info Library

LaserWriter IIf, IIg, and NTR: Windows 3.0 Problem & Fix

Revised: 7/17/92
Security: Everyone

LaserWriter IIf, IIg, and NTR: Windows 3.0 Problem & Fix

==========

Article Created: 21 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have a Macintosh IIsi, running system software version 7.0 (without the 7.1.1 tune-up), and a 486 DOS computer, running Windows 3.0, connected to my LaserWriter IIf. I'm using the LaserWriter driver that comes with Windows.

Apple's data sheets for the LaserWriter IIf, IIg, and NTR printers state that these printers are designed so you can simultaneously connect multiple kinds of networks and computers without having to manually reconfigure the printer to receive data through a particular port.

However, when I try to print from the Macintosh, which is connected to the LaserWriter IIf LocalTalk port, after I've printed from the Windows machine, PrintMonitor shows that the LaserWriter is "processing the job from Windows", even though the job has finished printing. The only way I can print a Macintosh job after printing from the Windows machine is to physically disconnect the cable from the Windows machine to the LaserWriter. Then PrintMonitor shows that the Windows job has finished, and the Macintosh job will print.

Is this a known compatibility problem, and is there a fix?

DISCUSSION ----------

There is a compatibility problem between Windows 3.0 and the LaserWriter IIf, IIg, and NTR. You need to upgrade to Windows 3.1, which lets you choose some "advanced options" for PostScript printers.

To fix the problem, in the "advanced options" dialog box, check the "Clear Memory Per Page" option. For details, see page 84, item #8, of the

"Getting Started with Microsoft Windows" manual.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10149

Tech Info Library

System 7 Tune-Up 1.1.1: Availability, Installation (9/93)

Revised: 9/23/93
Security: Everyone

System 7 Tune-Up 1.1.1: Availability, Installation (9/93)

==========

Article Created: 24 April 1992
Article Reviewed/Updated: 23 September 1993

TOPIC ----------

What version of System 7 Tune-Up should I use, and how should I install it?

DISCUSSION ----------

What Version To Use

Use version 1.1.1 of System 7 Tune-Up. System 7 Tune-Up 1.1 was released and then recalled because it caused unpredictable system behavior in low-memory situations.

When To Install System 7 Tune-Up

If you use System 7.0 or System 7.0.1, Apple recommends installing System 7 Tune-Up 1.1.1. System 7.1 incorporates the functionality of System 7 Tune-Up 1.1.1, so there is no need to install it.

Availability

System 7 Tune-Up 1.1.1 is posted on AppleLink; follow this path:

Software Sampler
  Apple SW Updates
    Macintosh
      System Software
        System 7 Tune-Up 1.1.1

Installation Notes

Apple recommends installing System 7 Tune-Up 1.1.1 on all Macintosh systems running system software version 7.0 or 7.0.1. The components of System 7 Tune-Up 1.1.1 were rolled into system 7.1. Therefore, it isn't necessary to

install the Tune-Up into any release of system software after that version.

If you upgrade a Macintosh with System 7 Tune-Up installed to System 7.1, the Installer will disable the Tune-Up software, but won't remove it. To save disk space, delete the Tune-Up file from your Extensions folder in the System Folder.

Before installing System 7 Tune-Up 1.1.1 on your Macintosh, read the entire ReadMe file on the Tune-Up disk or the System 7 Tune-Up Version 1.1.1 Installation Instructions included in the Tune-Up 1.1.1 package.

To insure proper software installation, Apple always recommends installing system, printer, or network software, including System 7 Tune-Up 1.1.1, via the Installer. There are only a few unusual circumstances when you wouldn't use the Installer.

Be sure to install the System 7 Tune-Up software last. System 7 Tune-Up was released AFTER AppleTalk Remote Access, and it contains newer System 7 resources (System 7 tuner, LaserWriter, StyleWriter 7.2.2, File Sharing Extension 7.2, Chooser 7.1, and various system software patches). If you don't install System 7 Tune-Up last, AppleTalk Remote Access will install older versions of some of these resources. Shared computers may not appear in the Chooser.

During System 7 Tune-Up installation, AppleTalk is set to "Inactive" in the Chooser. You need to set AppleTalk to "Active" in the Chooser, and restart your Macintosh. Then you'll be able to open the Network control panel, and avoid the message that "AppleTalk Remote Access has not been properly installed" when you try to use it.

The first time you start your computer with Extensions on WITH Tune Up 1.1.1 installed, the System 7 Tuner installs an INIT resource into the System file. You can only see this INIT resource with a tool like ResEdit. After that first install, you can boot with Extensions off and you are still protected from the disappearing folder problem. The INIT loads from the System file regardless of whether Extensions are on, BUT the System 7 Tuner MUST be in the Extensions folder. If you throw away your system and reinstall, you will be unprotected until you start up with Extensions on WITH Tune Up 1.1.1 installed.

System 7 Tune-Up 1.1.1 installs these files:

- System 7 Tuner 1.1 extension (new for version 1.1.1)
- LaserWriter 7.1.1 driver (new for version 1.1)
- StyleWriter 7.2.2 driver (no change)
- Chooser 7.1 (no change)

Article Change History:
23 September 1993 - Revised: added information on when to install System 7 Tune-Up.
8 July 1993 - Revised: consolidated information from other articles.
8 February 1993 - Reviewed for technical accuracy.

..TIL10150-System_7_Tune-Up_1-1-1-Availability_Installation_9-93_(TA27936).pdf

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Tech Info Library Article Number:10150

Tech Info Library

System 7.x.x: AppleTalk and ADSP Versions (10/95)

Revised: 10/17/95
Security: Everyone

System 7.x.x: AppleTalk and ADSP Versions (10/95)

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Article Created: 27 April 1992
Article Reviewed/Updated: 17 October 1995

TOPIC ----------

What versions of AppleTalk and ADSP are included with System 7 and later versions of System software? Are there any newer versions available? If so, what benefits do they provide?

DISCUSSION ----------

AppleTalk version 56 (part of System 7), the ADSP stack is integrated with the rest of the AppleTalk stack.

The AppleTalk versions for System software 7.x.x are as follows:

- System 7 and System 7.0.1 come with AppleTalk v56. System 7 Tune-Up 1.1.1 does not change the version of AppleTalk installed.
- System 7.1 comes with AppleTalk v57.0.4.
- Both System 7 Pro and System 7.1.2 come with AppleTalk version 58.1.1.
- System 7.5 comes with AppleTalk version 58.1.3

The latest version of AppleTalk is v58.1.6 and is available on the PowerBook 190 and 5300 series computers. The latest Network Software Installer (NSI) is 1.5.1 which installs AppleTalk v58.1.5. AppleTalk v58.1.5 should be used except for the PowerBook 190 and 5300 series, or PCI-based Power Macintosh computers (7200, 7500, 8500, 9500) which requires Open Transport. (Search on Network Software Installer for specific content information.)

Below is a history of AppleTalk and ADSP version since System 7.0.

AppleTalk v57.0.1 and ADSP v57.0.1 changes

- Added support for multiple DDP addresses on a single computer.
- Some code was changed to be MC68040 friendly for the new Macintosh Quadra systems.

- Minor modifications to retry timer handling were made in both NBP and ATP. This should reduce traffic due to retransmissions on slower network links (2400 to 19.2KB serial lines).
- The Network Control Panel no longer allows you to select LocalTalk if the printer port is already open by another application.
- Reliability and performance of LocalTalk on Macintosh Plus systems has been improved.

AppleTalk v57.0.3 and ADSP v57.0.3 changes

- Improved support for MC68040-based computers.
- Support for the Macintosh PowerBook power-down modes.
- Smaller RAM footprint in the system heap.
- Performance improvements to the AppleTalk Transaction Protocol (ATP) to reduce network traffic when used with links such as AppleTalk Remote Access using 9600-bps modem.
- AppleTalk Data Stream Protocol (ADSP) and AppleTalk Session Protocol (ASP) now support AppleTalk Remote Access. Sessions with computers on the remote end of a phone connection will be torn down when the phone connection is broken.
- A bug was fixed in ATP which could cause an AppleShare client or file server to "hang" if any data wasn't received in the first attempt.

AppleTalk v57.0.4 and ADSP v57.0.4 changes

- A fix for a bug in ATP that could cause incoming GetRequest packets with a checksum to be dropped. This affects machines running fileshare if the client is sending packets with DDP checksums.
- A fix for ADSP so that an openRetries count of 255 actually means "infinite retries", as specified in the documentation, rather than 255.
- Improved performance under VM (virtual memory)
- Improved File share and AppleShare performance over LocalTalk.

AppleTalk v58 and ADSP v58 changes

- Adds support (instrumentation) for SNMP. Also includes continuing support for Apple's Router.

AppleTalk version 58.1.1 (NSI 1.4.1-no change to ADSP)

- A problem that existed with the LocalTalk SNMP byte counting code that would cause an occasional bus error was fixed. It was wrongly assumed that was ALWAYS a WDS pointer and that address was used to calculate the byte counts.
- Check for Slotless networking devices when coming out of sleep for the PowerBook Duos.
- Lap Manager only intercepts packets for SAP 0xAA or 0x00. An attempt will be made to deliver any packet for a destination SAP that is not 0xAA or 0x00 to the SAP listener. If no SAP listener is found, then the packet will be ignored. A check in LLCAttach was added for duplicate SAP or SNAP addresses. If so, then an error is returned.

AppleTalk version 58.1.4 changes

- The LAP Manager was fixed to avoid sending corrupted TEST and XID response packets in certain heavy traffic situations.

AppleTalk version 58.1.5 changes

- An address-mapping problem that could cause slowdowns in EtherTalk or TokenTalk networks was fixed.
- The LAP Manager was fixed to avoid sending corrupted TEST and XID response packets in certain heavy traffic situations.
- A bug that passed a corrupted length indication to multi-node clients was fixed.
- A VM problem that could cause hangs was fixed (this could also have occurred when Ram Doubler was active).
- A LocalTalk problem on Power Macintosh computers was fixed that prevented LaserWriter Bridge from working properly.
- An additional LocalTalk problem on Power Macintosh computers was fixed that caused slow performance when both LocalTalk and GeoPort were in use.

AppleTalk version 58.1.6 changes

- Included support for built-in infrared technology (IRTalk) found on the PowerBook 190 and 5300 series computers.

Article Change History:
17 Oct 1995 - Added AppleTalk 58.1.5 and 58.1.6 revisions.
13 Jan 1995 - Updated to show version of AppleTalk in System 7.5.
28 Mar 1994 - Added information on NSI 1.4.3 and new AppleTalk version.

Support Information Services

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Tech Info Library Article Number:10151

Tech Info Library

LaserWriter and HP Emulation: Switching Character Pitch

Revised: 7/20/92
Security: Everyone

LaserWriter and HP Emulation: Switching Character Pitch

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Article Created: 27 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I'm using a Personal LaserWriter NT, in RS-232 mode, set to HP Emulation. It won't toggle into 12cpi using PCL escape sequences.

Sending codes from a BASIC program:

```
   CHR$ 27,38,107,50,83      for 16cpi
   CHR$ 27,38,107,48,83      for 10cpi
   CHR$ 27,38,107,52,83      for 12cpi and this one does not work.
```

All other settings work, but 12cpi can't be set. The command is just ignored.

DISCUSSION -----

Hewlett Packard has provided more than one set of codes to switch character pitch in their different levels of PCL. The emulator used in our LaserWriter models was originally designed by Adobe as a LaserJet+ emulator. As such, it doesn't support some more recent command additions. Specifically, the sequences ESC&k0S and ESC&k2S are interpreted as requesting standard and compressed font pitch, respectively. Values other than 0 or 2 are ignored. This is why you saw that the value of 4 produced no change in output.

However, other code sequences do exist to switch character pitch. The sequence ESC(snH does this for the primary font, where n is the desired number of characters per inch. Note that a real LaserJet will pick a built-in font that is as close as possible to the requested size, but may very well not have the right one available. The emulator uses PostScript to obtain its different character sizes, and is therefore able to provide

precisely scaled characters at any size.

Examples:

```
ESC(s10H    sets 10 characters per inch.
ESC(s12H    sets 12 characters per inch.
ESC(s16.6H  sets 16.6 characters per inch.
ESC(s2.2H   sets 2.2 characters per inch.*
ESC(s24H    sets 24 characters per inch.*
```

*On a real LaserJet+, these would produce output far from that requested since the font in that pitch wouldn't exist unless downloaded.

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Tech Info Library Article Number:10152

Tech Info Library

DAL for MVS/VTAM Server: Tuning Hints and Tips

Revised: 6/18/92
Security: Everyone

DAL for MVS/VTAM Server: Tuning Hints and Tips

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Article Created: 27 April 1992
Article Last Reviewed: 18 June 1992
Article Last Updated: 18 June 1992

TOPIC ----------

I need information on tuning the VTAM connection to improve the performance of the DAL VTAM server.

DISCUSSION ----------

The following is the file containing tuning hints and tips for the VTAM server. You can find it on the DAL for MVS/VTAM Server distribution tape in the DAL.RUN.JCL file as the member, TUNING. An additional member, README, can also be of assistance. It is also recommended that all the tracing and log files be removed from the execution JCL.

DAL MVS/VTAM SERVER TUNING HINTS AND TIPS.

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THE FOLLOWING INFORMATION CAN BE USED TO HELP YOU OBTAIN THE BEST RESULTS FOR THE DAL MVS/VTAM SERVER, VERSION 1.3.5.

* CALCULATING STORAGE REQUIREMENTS (REGION SIZE)

THE DAL MVS/VTAM SERVER REQUIRES 808K OF STORAGE WITH NO SESSIONS CONNECTED. EACH CONCURRENT SESSION REQUIRES A MINIMUM OF 260K. TO CALCULATE THE REGION SIZE TO SUPPORT THE DESIRED NUMBER OF CONCURRENT SESSIONS FOR YOUR ENVIRONMENT, USE THE ABOVE FIGURES AND ADD TEN PERCENT FOR OVERHEAD. EXAMPLE: TEN CONCURRENT SESSIONS WILL REQUIRE A REGION SIZE (REGION= ON JOB STEP) OF 3749K. SEE BELOW ON THE MAXIMUM NUMBER OF

SESSIONS CONNECTED TO A SINGLE SERVER.

* 31-BIT ADDRESSING AND MAXIMUM NUMBER OF SESSIONS

THE DAL MVS/VTAM SERVER DOES NOT CURRENTLY SUPPORT 31-BIT ADDRESSING. THIS MEANS THAT THE SERVER CANNOT OPERATE IN A REGION SIZE LARGER THAN 16M (I.E., "ABOVE THE LINE"). THEREFORE, USING THE STORAGE ESTIMATION PROCEDURE GIVEN ABOVE, THE MAXIMUM NUMBER OF SESSIONS SIMULTANEOUSLY CONNECTED TO THE SERVER IN A 16M REGION IS 52; FOR A 9M REGION THE NUMBER OF SESSIONS WOULD BE 28.

* MULTIPLE DAL MVS/VTAM SERVERS ON THE SAME CPU

MORE THAN ONE MVS/VTAM SERVER CAN BE RUN AT THE SAME TIME ON A SINGLE CPU (GIVEN THE LIMITS OF YOUR ENVIRONMENT). USING MORE THAN ONE SERVER WILL ALLOW FOR GREATER THAN 63 CONCURRENT SESSIONS. IF MULTIPLE SERVERS ARE USED, THE CLIENT SCRIPTS (HOSTS.CL1 PRIOR TO SYSTEM 7.0 AND DAL PREFERENCES UNDER SYSTEM 7.0) MUST REFERENCE THE APPROPRIATE APPLID(S). TO ACCOMPLISH THIS, EACH SERVER MUST HAVE A UNIQUE VTAM APPLID ASSIGNED TO IT. YOU WILL NOT NEED TO PERFORM A COMPLETE INSTALLATION FOR EACH APPLID (AND ITS ASSOCIATED SERVER) AS THE LOADLIB, AUTOEXEC, AND ENVIRONMENT FILES MAY BE SHARED BETWEEN MULTIPLE SERVERS. REFER TO THE "DATA ACCESS LANGUAGE FOR MVS/VTAM INSTALLATION AND OPERATION GUIDE", AS WELL AS TO THE APPROPRIATE IBM PUBLICATIONS, FOR MORE INFORMATION ON VTAM APPLIDS AND SERVER FILES. REFER TO THE "DATA ACCESS LANGUAGE FOR THE MACINTOSH INSTALLATION AND USER'S GUIDE" FOR MORE INFORMATION ON THE HOSTS.CL1 (DAL PREFERENCES) FILE.

* SECURITY

THE DAL MVS/VTAM SERVER MUST BE AN AUTHORIZED TASK ON THE HOST SYSTEM IN ORDER TO IMPLEMENT SECURITY (PASSWORD) VERIFICATION. AUTHORIZATION PROCEDURES ARE EXPLAINED IN THE "DATA ACCESS LANGUAGE FOR MVS/VTAM INSTALLATION AND OPERATION GUIDE" AS WELL AS THE APPROPRIATE IBM PUBLICATIONS. USE OF THIRD-PARTY PROGRAMS TO BYPASS THE NORMAL AUTHORIZATION PROCEDURE (I.E., REFERENCE TO THE LOAD MODULE IN A SYS1.PARMLIB MEMBER) IS NOT SUPPORTED BY APPLE, AND RESULTS MAY BE UNPREDICTABLE.

* USE OF DB2 THREADS

THE DAL MVS/VTAM SERVER REUSES THE AVAILABLE THREADS WITHIN THE HOST DB2 SUBSYSTEM. EACH CONCURRENT SESSION REQUIRES ONE THREAD, WHICH IS RELEASED UPON COMPLETION OF THE DATABASE TRANSACTION (E.G., SELECT, COMMIT). THE NUMBER OF AVAILABLE DB2 THREADS IS SPECIFIED DURING INSTALLATION OF THE DB2 SUBSYSTEM. REFER TO THE APPROPRIATE IBM PUBLICATIONS FOR MORE INFORMATION.

E
TCM/DAL for MVS/VTAM Server-Tuning Hints and Tips 04/27/92

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Tech Info Library Article Number:10153

Tech Info Library

AppleCD 150: Specifications (Discontinued 1/94)

Revised: 1/6/94
Security: Everyone

AppleCD 150: Specifications (Discontinued 1/94)

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Article Created: 29 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC --------------------

This article gives the technical specifications for the AppleCD 150 drive.

DISCUSSION --------------------

Playback Medium
- 12-cm optical disc installed in a CD caddy (any CD-ROM or audio compact disc is compatible)

Capacity
- Mode 1: 656MB
- Mode 2: 748MB
- Recording surfaces: 1
- Data/block (available to user)
  Mode 1: 2,048 bytes
  Mode 2: 2,336 bytes
- Blocks per disc: more than 270,000

Audio Playback
- Playing time: more than 1 hour
- Frequency response: 20 to 20,000 hertz

Characteristics
- Average access time: 380 milliseconds
- Full stroke access time: 650 milliseconds (typical)
- Data streaming rate
  Mode 1: 150KB/second
  Mode 2: 171KB/second
- Block rate: 75 blocks/second
- SCSI bus transfer burst rate: 1.5MB/second
- Rotational speed: 230 to 530 rpm

Interfaces
- Two SCSI 50-pin connectors for connection to the Macintosh and other SCSI devices
- One headphone jack
- Two RCA audio output jacks for external amplifier or amplified speakers

Electrical Requirements
- Power requirements: 100 to 240 volts AC, 50 to 60 hertz
- Power consumption: 0.25 amps (drive on)

Operating Environment
- Temperature: 41 to 104 degrees F (5 to 40 degrees C)
- Relative humidity: 10% to 90% noncondensing

Non-operating Environment
- Storage temperature: -22 to 122 degrees F (130 to 55 degrees C)
- Transportation temperature: -22 to 131 degrees F (130 to 55 C)
- Relative humidity: 5% to 95% noncondensing

System Requirements
- A Macintosh Plus or later model Macintosh
- Macintosh system software 6.0.5 or later

Size and Weight
- Height: 1.95 inches (4.9 cm)
- Width: 7 inches (17.75 cm)
- Depth: 12.9 inches (32.5 cm)
- Weight: 6.5 lb. (2.9 kg)

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Tech Info Library Article Number:10154

Tech Info Library

Quadra 900 & 950: Unplug Before Installing NuBus Card (11/94)

Revised: 11/11/94
Security: Everyone

Quadra 900 & 950: Unplug Before Installing NuBus Card (11/94)

==========

Article Created: 23 April 1992
Article Reviewed/Updated: 11 November 1994

TOPIC ----------

Why must I unplug the Macintosh Quadra 900 before installing a NuBus card?

DISCUSSION ----------

The Macintosh Quadra 900/950 power supply provides a +5-volt trickle voltage to one pin on the NuBus slot when the computer is connected to AC. One reason for this is to allow remote startup.

If the computer is not unplugged during the installation procedure, the power supply, the logic board, and/or the NuBus card may be damaged.

Consult your Macintosh Quadra 900 or Macintosh Quadra 950 Owner's Manual for the proper expansion card installation procedure.

Note: This caution does not apply to the Macintosh Quadra 700.

Article Change History
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11 Nov 1994 - Reviewed for technical accuracy.
20 Jan 1993 - Revised to include Macintosh Quadra 950 in this category.

Support Information Services

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Tech Info Library Article Number:10156

Tech Info Library

Macintosh Quadra 900 & 950: Unplug Before Installing NuBus Card

Revised: 1/20/93
Security: Everyone

Macintosh Quadra 900 & 950: Unplug Before Installing NuBus Card

==========

Article Created: 23 April 1992

Article Change History

01/20/93 - REVISED
- To include Macintosh Quadra 950 in this category.

TOPIC ----------

Why must I unplug the Macintosh Quadra 900 before installing a NuBus card?

DISCUSSION ----------

The Macintosh Quadra 900/950 power supply provides a +5-volt trickle voltage to one pin on the NuBus when the computer is plugged into the AC adapter. One reason for this is to allow remote startup.If the computer is not unplugged during the installation procedure, the power supply, the logic board, and/or the NuBus card may be damaged.

Consult your Macintosh Quadra 900 or Macintosh Quadra 950 Owner's Manual for the proper expansion card installation procedure.

Note

This caution does not apply to the Macintosh Quadra 700.

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Tech Info Library Article Number:10157

Tech Info Library

AppleColor RGB Monitor (IIGS): Not Compatible with Mac Systems

Revised: 6/8/92
Security: Everyone

AppleColor RGB Monitor (IIGS): Not Compatible with Mac Systems

==========

Article Created: 29 April 1992
Article Last Reviewed: 3 June 1992
Article Last Updated:

TOPIC ----------

Can I use my AppleColor RGB Monitor (for the Apple IIGS) with a Macintosh?

DISCUSSION ----------

No. The AppleColor RGB Monitor (IIGS) is not compatible with Macintosh computers.

The vertical and horizontal sync rates supported on Macintosh video cards and by the built-in video provided with certain models, like the Macintosh LC/LC II and Macintosh IIsi, are not compatible with those of the AppleColor RGB Monitor (IIGS).

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Tech Info Library Article Number:10159

Tech Info Library

PowerBook: Rechargeable Battery Safety Notice 7/92

Revised: 5/16/94
Security: Everyone

PowerBook: Rechargeable Battery Safety Notice 7/92

==========

Article Created: 30 April 1992
Article Reviewed/Updated: 31 July 1992

TOPIC ----------

This article addresses a safety concern about the Macintosh PowerBook Rechargeable Battery.

DISCUSSION ----------

Because of the high-energy capacity of the Macintosh PowerBook Rechargeable Battery pack, accidental shorting of the brass contacts at the corner of the battery pack can quickly generate enough power to cause burns or start a fire.

When the battery pack isn't either in the computer or in the recharger, the pack should be kept in an insulating carrying case.

If your battery pack didn't come with an insulating carrying case, call 800-377-4127 or visit your Apple dealer to obtain a free carrying case (part number 076-0590).

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10160

Tech Info Library

ImageWriter II: Command for Disabling Perforation Skip

Revised: 7/20/92
Security: Everyone

ImageWriter II: Command for Disabling Perforation Skip

==========

Article Created: 29 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Is this the ImageWriter II command code to DISABLE perforation skip?

ESC D CTRL @ CTRL D or $27 68 00 04

(as shown on page 144 of the ImageWriter II Technical Reference Manual)?

DISCUSSION ----------

The string of "ESC D CTRL @ CTRL D" is indeed the correct command string to disable the perforation skip.

This command works only if the perforation skip was enabled via software. In other words, you must set the ImageWriter II DIP switches so that perforation skip is disabled. If you enable the perforation skip with the string "ESC Z CTRL @ CTRL D" you can disable it with the string "ESC D CTRL @ CTRL D".

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Tech Info Library Article Number:10161

Tech Info Library

HyperCard 2.1: Some Menu Items Can't Be Disabled (& Workaround)

Revised: 7/20/92
Security: Everyone

HyperCard 2.1: Some Menu Items Can't Be Disabled (& Workaround)

==========

Article Created: 1 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Some HyperCard 2.1 menu items can't be disabled. For example, the command

```
disable menuItem "New Card" of menu "Edit"
```

doesn't function. This is also true of "Delete Card" and "Cut Card"
An obvious workaround is to DELETE the item instead.

DISCUSSION ----------

Claris is aware of the limitation; it is intentional.

There are more elegant workarounds than deleting the menuItem.
The best is to rename the item in question, and then disable it. See the
HyperTalk code below:

```
on openBackground -- or in some other handler
  put "Can't Delete Card" into menuItem "Delete Card" of menu "Edit"
  disable menuItem "Can't Delete Card" of menu "Edit"
end openBackGround
```

This is probably the best way to deal with the issue because it tells the
user specifically that the option isn't available. Otherwise, the user may
wonder if something is wrong with the menu.

You could also add a handler for doMenu...

```
on doMenu which
  if which = "Delete Card"
  then
```

```
        beep -- or put up a dialog informing user
      else
        pass doMenu
      end if
   end doMenu
```

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Tech Info Library Article Number:10162

Tech Info Library

MacApp 3.0: Last Release That Supports Pascal

Revised: 7/20/92
Security: Everyone

MacApp 3.0: Last Release That Supports Pascal

==========

Article Created: 30 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Does MacApp version 3.0 support Pascal?

DISCUSSION -----

MacApp 3.0 supports Object Pascal. However, this is the last release of MacApp that will work with Pascal because of a new Linker being implemented. A new Object Pascal compiler would need to be developed in order to be compatible, and there are no plans to develop such a compiler. Thus, it is strongly recommended that developers convert their code to C++ in order to continue using MacApp.

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Tech Info Library Article Number:10163

Tech Info Library

DAL: Problem with Async Login Sequence

Revised: 7/20/92
Security: Everyone

DAL: Problem with Async Login Sequence

==========

Article Created: 29 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm currently working with an account to design a DAL Prefs file that will allow them to dial and log into one VAX and then use the VMS "SET HOST" command to connect to a second VAX (which is the DAL server).

I have been told that this can't work. I had it working once, but was not able to duplicate. This is the script:

```
rem:: This is a custom VMS async login sequence for remote attachment via
decnet

BPACM1:async:com1:9600:Noparity:8databits:2stopbits:Boxonxoff:128:Nomodem
BPACM1:login:2tries:lo:6000:600:\r\^y\w2:\r:\w2\r\r\MODIFY ?\sC
CIMTS\r\w2\MASSWORD\sPASS\r\w2\MPLETE\r\r\r\r\w2\Msername>\u\r\w2\Mocal>\sC
BPACM2\r\w2\Msername\u\r\P\Massword\p\r\w2\M$\sSET HOST
BPACM1\r\Msername\u\r\P\Massword\p\r\M$

rem:: NEW SCRIPT SET TO PROVIDE SET HOST FACILITY.


EVERYTHING works up to the end of the script;


<15:13:43>
    Last interactive login on Monday, 27-APR-1992 15:11
<15:13:44>
Processing System Login on BPACM1
<15:13:45> Z[c[0c
<15:13:46>
%SET-W-NOTSET, error modifying RTA1:
```

```
<15:13:47>
-SET-I-UNKTERM, unknown terminal type
<15:13:48> Z[c[0c
<15:13:49>
%SET-W-NOTSET, error modifying RTA1:
<15:13:50>
-SET-I-UNKTERM, unknown terminal type
<15:13:52> Z[c[0c
<15:14:03>
%SET-W-NOTSET, error modifying RTA1:
<15:14:04>
-SET-I-UNKTERM, unknown terminal type
<15:14:06>
HEMEL READY    ---------------------------- END OF VAX LOGIN
<15:14:07>

<15:14:07> $
<15:14:07> Cuslogin done (0)
<15:14:07>  dalsvr pktasync
<15:14:08>
SYNC
<15:14:35>
1: Connection to host 'BPACM1' failed.
<15:14:36> 1: Error #-10628 (0) async (DAL Preferences)
<15:14:36> 1: Message: .
<15:14:36> 1: Disconnected.


at 15:14:08;
```

What does the SYNC mean? Is this a DAL command failing to execute? I have had it work once and was able to access an Ingres DB.

DISCUSSION ----------

A DAL asynchronous login will run through all the set up for the user account when used as a terminal. This includes commands like "SET TERMINAL/INQUIRE" that DAL doesn't like.

The error "%SET-W-NOTSET, error modifying RTA1:" you received is from trying to do a SET TERMINAL on the remote terminal RTA1, which you normally get when logging in over terminal servers or SET HOST.

You should check both your SYLOGIN.COM and LOGIN.COM and bypass any setting for interactive terminal sessions. A typical DCL command to do this is:

```
$ IF F$MODE() .NES. "INTERACTIVE" THEN GOTO ENDINTER

.....Put all interactive terminal settings here

$ ENDINTER:
```

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..TIL10164-DAL-Problem_with_Async_Login_Sequence.pdf

Tech Info Library Article Number:10164

Tech Info Library

MacTerminal: Using VT Tools in 8-bit Environment

Revised: 7/20/92
Security: Everyone

MacTerminal: Using VT Tools in 8-bit Environment

==========

Article Created: 1 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

We want to receive characters from the full 8-bit Macintosh character set on MacTerminal. The files are text files, and come from a non-Macintosh computer.

We can transfer the file to the host with no problems. But downloading the same file strips off the 8th bit! We've tried various tools, VT102, and VT320. We don't want to use a standard file transfer like XMODEM, as that isn't too stable on this system.

DISCUSSION ----------

The VT102 Tool doesn't support 8-bit character sets because it emulates the DEC VT102 terminal that doesn't.

The VT320 Tool does support 8-bit character sets in an 8-bit environment with 8-bit control characters. To set this mode, select the "Terminal..." menu item under the Settings menu. Select VT300 (8-bit) from the Terminal Mode pop-up menu.

Also, make sure that the terminal port on the host is set for 8-bit support. In the VAX/VMS environment, for example, use the following DCL command to force the host to pass all data, including tabs, carriage returns, line feeds, and control characters, as binary data.

```
$ SET TERMINAL/PASTHRU portno:
```

where portno is the terminal port number such as TXA1:

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10165

Tech Info Library

A/UX: Mounting DOS CD-ROMs

Revised: 7/20/92
Security: Everyone

A/UX: Mounting DOS CD-ROMs

==========

Article Created: 30 April 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What issues are involved with accessing DOS CDs from SoftPC or Orange Micro boards, running under A/UX 3.0? I noticed that putting the CD extensions in the A/UX Macintosh System Folder disabled A/UX. But without them, I can only mount Apple CDs.

DISCUSSION ----------

A/UX can mount ISO 9660 and High Sierra CD-ROMs in the Finder as Macintosh volumes. Then you can use SoftPC's E: drive to mount the CD under DOS. This may or may not solve your problem, depending on the software you're using to access the information on the CD. This is because DOS will see the CD as if it were just another hard drive.

To mount foreign CD-ROMs under A/UX, you must have the "Foreign File Access" extension in the active System Folder or Extensions folder, along with the appropriate FFA documents: ISO 9660 and High Sierra in the ROOT LEVEL of the System Folder (NOT in the Extensions Folder). But DON'T use the "Apple CD-ROM" extension under A/UX.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10166

Tech Info Library

Apple IIc: Description (Discontinued)

Revised: 7/11/94
Security: Everyone

Apple IIc: Description (Discontinued)

==========

Article Created: 1 May 1992

TOPIC ----------

This article describes the Apple IIc computer (now discontinued).

DISCUSSION ----------

The Apple IIc is a compact personal computer about the same size as a loose-leaf notebook, small enough to fit in a briefcase, and light enough to carry with you. It has 128K of RAM, a built-in disk drive, and a full-size keyboard. It runs thousands of programs from the Apple II software library.

Features

- 128K RAM and 16K ROM
- Enhanced version of the processor used in the Apple IIe
- Built-in 5.25-inch disk drive
- Full-size keyboard that produces the entire ASCII character set in both 80-column and 40-column formats.
- Three separate color graphic modes
- Built-in speaker with volume control and a headphone jack
- Two built-in serial ports for adding a modem and printer, as well as built-in connectors for attaching a mouse, joystick, hand controllers, second disk drive, and television display
- External (floor-mounted or table-mounted) power unit
- Built-in Applesoft BASIC programming language

Support Information Services

Copyright 1992-1994 Apple Computer, Inc.

Tech Info Library Article Number:10168

Tech Info Library

APT Communications, Inc. (formerly DBT)

Revised: 7/7/93
Security: Everyone

APT Communications, Inc. (formerly DBT)

==========

Article Created: 05/04/92
Article Reviewed: 07/07/93
Article Updated: 07/07/93

APT Communications, Inc.

9607 Dr. Perry Rd.
Ijamsville, MD 21754

301-831-1182

301-874-5255 Fax

Company Profile:
Specializing in the CommTalk router for Ethernet, LocalTalk, or
Wide Area Networks (WANs), Apple remote access dial server

Article Change History: 07/07/93 Name Changed, New Product Information Added

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10169

Tech Info Library

Intel Corp., Personal Computer Enhancement Division

Revised: 7/12/93
Security: Everyone

Intel Corp., Personal Computer Enhancement Division

==========

Article Created: 05/04/92
Article Reviewed: 07/12/93
Article Updated:

Intel Corp., Personal Computer Enhancement Division

C03-7
5200 N.E. Elam Young Parkway
Hillsboro, OR 97124

503-681-8080

503-629-7227 Fax

Company Profile:
Specializing in the NetPort print server for NetWare token ring networks.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10170

Tech Info Library

StyleWriter: Use ClarisWorks 1.0v3 or Later

Revised: 7/20/92
Security: Everyone

StyleWriter: Use ClarisWorks 1.0v3 or Later

==========

Article Created: 6 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I'm using ClarisWorks 1.0v2 on a Macintosh SE/30 running system software version 6.0.7. When I print to my StyleWriter, the first line of each paragraph (beginning with the second paragraph) is slightly indented. These indents vary from paragraph to paragraph.

When I print the same documents to a LaserWriter printer, the printouts are aligned properly.

DISCUSSION -----

This is a known problem with ClarisWorks versions 1.0 and 1.0v2 when printing to a StyleWriter. Claris recently released version 1.0v3, which corrects the problem.

Contact Claris Customer Relations for a copy of the upgrade.

On AppleLink, you can find contact information on Claris Corporation by clicking the "Library Index" button in the lower-center of the Tech Info Library search window, then opening the "Third Party Company Directory" folder.

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Tech Info Library Article Number:10171

Tech Info Library

Macintosh II Family: How the ADB Keyboard Power-On Switch Works

Revised: 6/5/92
Security: Everyone

Macintosh II Family: How the ADB Keyboard Power-On Switch Works

==========

Article Created: 7 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Can you explain how the power-on switch on the ADB keyboard works for the Macintosh II family of computers?

DISCUSSION -----

The power-on switch on these Macintosh computers does not simply connect and disconnect AC power to/from the power supply. Instead, these computers have a power-control circuit that turns on the power supply in response to a signal from the ADB keyboard.

When you press the power-on switch on the ADB keyboard, a capacitor discharges, generating a signal to the power supply that causes the power supply to turn itself on and begin functioning normally within 1.5 to 2.0 seconds. The capacitor is kept charged by two 3-volt lithium batteries.

In the Macintosh IIcx and Macintosh IIci, the capacitor is kept charged by a trickle current from the power supply. If the capacitor in a Macintosh IIcx or Macintosh IIci is completely discharged, it takes approximately 5 seconds to charge, once AC power is applied to the power supply.

Assuming that a Macintosh IIcx or Macintosh IIci is unplugged for an extended period, the system would required approximately 5 seconds from the time it is plugged in before the power-control circuit could turn on the power supply, and another 1.5 to 2.0 seconds for the system to come on once the power-on switch is pressed.

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Tech Info Library Article Number:10177

Tech Info Library

System 7: How to Find Amount of Memory an Application is Using

Revised: 7/20/92
Security: Everyone

System 7: How to Find Amount of Memory an Application is Using

==========

Article Created: 7 May 1992

Article Change History

08/21/92 - REVIEWED
- For technical accuracy.

TOPIC ----------

How can I tell exactly how much memory an application is using?

DISCUSSION ----------

To find out exactly how much memory an application is using:

1) Turn on Balloon Help. (Choose "Show Balloons" from the "?" menu.)

2) If the application you want to check isn't open, launch it.

3) In the Finder, choose "About This Macintosh" from the Apple menu.

4) Point at the appropriate thermometer for the application you are checking.

   The balloon shows both the amount of memory being used by the application and the amount of memory allocated to the application.

This article was adapted from information appearing in "Apple edition", March 1992, Volume D8:2, "Hot tips" column.

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Tech Info Library Article Number:10179

Tech Info Library

System 7: Using Apple Menu for Quick Access to Programs & Files

Revised: 7/20/92
Security: Everyone

System 7: Using Apple Menu for Quick Access to Programs & Files

==========

Article Created: 7 May 1992

Article Change History

08/21/92 - UPDATED
- With alias information.

TOPIC ----------

I'm looking for a quick way to access some applications and files that I use frequently.

DISCUSSION ----------

For quick access to files that you use frequently, including programs, folders, documents, and so on, put them in the Apple Menu Items folder in your System Folder. Then you'll be able to choose them from the Apple menu. If you want the applications or documents to continue being available in their previous folders, just place an alias of the application or file in the Apple Menu Items folder.

Because items in the Apple menu are sorted alphabetically, you can group items in the Apple menu by adding a unique character, such as space or "√" or "Δ" or "•", to the beginning of filenames.

This article was created from information appearing in "Apple edition", January 1992, Volume D8:1, "Hot tips" column.

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Tech Info Library Article Number:10180

Tech Info Library

SCSI Device Tips

Revised: 7/20/92
Security: Everyone

SCSI Device Tips

==========

Article Created: 7 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article provides some general tips for using SCSI devices.

DISCUSSION -----

- Disconnect, from your computer, any SCSI devices you don't want to start.

- Turn on ALL SCSI devices connected to your Macintosh -- even those you're not using -- to avoid problems.

- Turn on SCSI devices before you start up your Macintosh.

- Do not turn off SCSI devices until after you've shut down your Macintosh.

- Ensure that the SCSI chain is properly terminated. A terminator is required on the last available port in a SCSI chain (provided the device is not internally terminated).

- Ensure that each SCSI device in the chain has a different ID number. There are eight SCSI ID numbers available.

  - ID number 0 is assigned to the Macintosh internal hard drive.
  - ID number 7 is assigned to the Macintosh.
  - ID numbers 1-5 are available for the other SCSI devices in the chain.

This article was created from information appearing in "Apple edition", January 1992, Volume D8:1, "Hot tips" column.

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Tech Info Library Article Number:10181

Tech Info Library

System 7.x: Desktop File Rebuilding and Icon Recovery (8/95)

Revised: 9/30/96
Security: Everyone

System 7.x: Desktop File Rebuilding and Icon Recovery (8/95)

==========

Article Created: 7 May 1992
Article Reviewed/Updated: 18 August 1995

TOPIC ----------

This article describes the desktop file, when and how to rebuild it (such as when your icons change to "generic" document or application icons), why the desktop file sometimes will not rebuild, and what to do in this case.

DISCUSSION ----------

What is the Desktop File?

The Desktop file is an invisible file found in the main level of your hard drive. It is the file that keeps track of all the documents and applications that are on your drive.

The file name is desktop for versions of System 6 and earlier. System 7.0 and later versions use the invisible files named Desktop DB and Desktop DF.

When to Rebuild the Desktop File

Occasionally your Desktop file may become too large or may be damaged.

NOTE: It is generally a good idea to rebuild your Desktop file once a month or so.

Symptoms of a Damaged Desktop File

One symptom of a damaged Desktop file is icons on your desktop appear as "generic" rather than "custom" icons. Rebuilding the Desktop file may eliminate the problem.

The Desktop file manages all icons on a particular hard drive or floppy disk. When you insert a new or customized icon, the Desktop file may not load it or may load a previous version of the icon. To have the special icon appear on the desktop, the Desktop file must be rebuilt to update the Desktop file and register the icon.

Icons change to generic document (blank page with a corner turned down) or application (diamond with a hand) icons for several reasons, including the following:

• Utilities such as compression or security software can alter icons.

• Custom icons become damaged or deleted.

• The Desktop file has been damaged.

• Applications that create files may not assign icons to the files.

• An application that created a file and assigned an icon may no longer be available.

• A file may have lost the bit that indicates a custom icon (this is known as the bundle bit).

Symptoms of a Large Desktop File

If the Desktop file becomes too large, the computer may have difficulty reading it efficiently and speedily. This can cause the Finder to access files more slowly. Rebuilding the Desktop file can clean up old information and speed up Finder access.

You can also make a file-by-file backup of the drive, re-initialize the drive, and then restore the files. This re-groups all the files, unfragments them, and increases the efficiency of the drive.

How to Rebuild the Desktop File

Rebuilding the Desktop relinks documents to their correct applications and rewrites the Desktop file itself.

Before rebuilding the Desktop, be sure that you have some room available on the hard disk. The Desktop rebuilding process requires hard disk space, and does not successfully complete without it. A good guideline is to always have 5% of the hard drive or other volume available as free space.

This procedure only works when the Finder is loaded. Applications like At Ease don't load the Finder, so you must turn them off prior to rebuilding.

NOTE:
Rebuilding the Desktop file erases any comments you may have typed in the Get Info windows of files on your disk.

System 6 through System 7.1.2

You can rebuild the Desktop manually by holding down the Option and Command (Apple) keys while the system is starting up. When you see the message "Are you sure you want to rebuild the desktop file on the disk "your disk"? Comments in info windows will be lost", click okay.

System 7.5 and later

Step 1

Before you rebuild your desktop, use the Extensions Manager to save a record of the extensions that are currently turned on.
• Open the Extensions Manager control panel.
• Click on the Sets pop-up menu, and choose Save Set.
• When the Save Set dialog box opens, type a name for your currently selected extensions (for example, 'My Extensions'). When you close the dialog box, the name of your set is added to the Sets pop-up menu.

Step 2

Turn off all extensions - Click on the Sets pop-up menu again and choose All Off.

Step 3

Turn on Macintosh Easy Open - Find it in the list of control panels, click it to put a checkmark beside it.

Step 4

Restart your computer while holding down the Command and Option keys.

Step 5

When you see the dialog that says "Are you sure you want to rebuild the desktop file on the disk "your disk"? Comments in info windows will be lost," release the keys and click OK.

Step 6

When the desktop is rebuilt, click on the Apple menu and choose Control Panels.

Step 7

Open the Extensions Manager control panel.

Step 8

Turn your extensions back on - Click on the Sets pop-up menu and choose the name you gave your set of extensions in step 1 (for example, 'My Extensions').

Step 9

Restart your computer to activate the extensions.

Why the Desktop File Sometimes Will Not Rebuild

There are several reasons why you may have difficulty rebuilding the Desktop file.

A Conflicting INIT or System Extension

An INIT or system extension can interfere with rebuilding the Desktop file. To resolve the problem you can try the following:

For versions of System 6, remove all non-Apple extensions from the System Folder. Then rebuild the desktop file by holding down the Option and Command keys while starting the computer.

For System 7 through 7.1.2, rebuild the desktop with extensions off following these steps:

Step 1

Hold the Shift key down while starting up the computer.

Step 2

As soon as you see "Welcome to Macintosh Extensions Off", release the Shift key and hold down the Command and Option keys.

Step 3

Continue pressing the Command and Option keys until the dialog asks you if you are sure you want to rebuild the Desktop file.

Step 4

Let go of the keys and click on the OK button.

For System 7.5 and later use the procedure in the previous section which utilizes the extensions manager.

If you have used compression or security utilities, and the preceding solutions do not work, contact the vendors for a solution.

Not Enough Memory to Rebuild

Changing the size of the Finder's partition should not be necessary under System 7, as was sometimes necessary under System 6. The only way to change the size of the Finder's partition under System 7 is either by using ResEdit or by booting under System 6.0.x, and changing the partition there.

The Finder needs to do a little different work under System 7.0 than it did under System 6.0.x. The system is using the Desktop Database, rather than the Resource Manager, which relieves that bottleneck in the system. The Finder can get some additional memory from other places, like the System Heap, if necessary.

There really is no reason that you should need to alter the partition size of the Finder under System 7.

Increasing the Finder's partition sets aside more memory for the Finder and increases the size of your System Heap. In doing this, you set aside the memory for the System Heap but decrease the amount of memory for applications.

If you want to try changing the partition by booting under System 6.0.x, here are the instructions. (Doing this requires you to boot up the Macintosh from a System 6.0.x diskette, and most Macintosh computers introduced after the release of System 7 (including Quadra and PowerBook computers) are not able to use this option.)

Here are the steps for Macintosh computers that can start up under System 6.0.x:

Step 1

Restart your Macintosh from a startup floppy disk that has System 6, like the 800K Disk Tools disk from the Personal Upgrade Kit (not the high-density Disk Tools disk, which contains System 7).

Step 2

Locate and click the Finder file in your System Folder on your Macintosh hard drive (not the Finder on the floppy).

Step 3

Choose Get Info from the File menu and increase the amount of memory allocated to the Finder in the Current size box.

Step 4

Close the Get Info window.

Step 5

Restart your Macintosh (from the hard drive) under System 7 once again.

What to Do If Rebuilding the Desktop Does Not Restore Your Icons
==========

If rebuilding the does not restore your icons, run Disk First Aid to see if there is a problem you can fix. If you have specific files (other than custom icons) that became generic icons, there are these possibilities:

• You may not have the applications that originally created them.

• These files may have lost their bundle bit. MacTools as well as other disk utilities can correct lost bundle bits. Disk First Aid does not detect or repair lost bundle bits.

• The application that created them may simply not assign an icon to them; check with the application's vendor.

• You may be using custom icons, which the Desktop file cannot rebuild. See the article titled "System 7.x: Creating and Using Custom Icon Folders".

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
18 Aug 1995 - Added System 7.5 rebuild information.
09 Feb 1995 - Added keyword; merged multiple articles.
30 Nov 1994 - Article Reviewed and updated.

Support Information Services

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Tech Info Library Article Number:10182

Tech Info Library

StyleWriter: Doesn't Support Custom Page Size

Revised: 7/21/92
Security: Everyone

StyleWriter: Doesn't Support Custom Page Size

==========

Article Created: 7 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

We get an error when printing with the new version of the StyleWriter driver. We're trying to print on a piece of paper that is 8.5 inches wide and 5.5 inches high. In the page setup dialog we have the orientation set to landscape. We have our margins at 1 inch top and bottom, .5 inch left and 9.5 inches right. When we print from Microsoft Word 5.0, we get an error message that says "The paper is shorter than the size selected in Page Setup. Please add the correct paper, click OK to reprint the page and continue the print job, or Cancel to terminate printing."

With version 1.1 of the StyleWriter driver, we didn't get this message. When we upgraded the drive to 7.2, we started getting this message. Tech Support couldn't reproduce the problem and suggested trying version 7.2.2 of the driver. We get the same results with version 7.2.2. We tried three different StyleWriters on both a Macintosh SE with system 6.0.7 and on a Macintosh Quadra 900 with system 7.0.1.

The Finder has the same problem, but we can't set margins in the Finder. We have the same problem using Excel 3.0, Word 5.0 and 4.0, Freehand 3.1, and PageMaker 4.2 using the Apple driver. We didn't try the Aldus driver because we didn't have a StyleWriter PPD. We get the same results printing in the background and printing straight.

DISCUSSION -----

Appendix B of the StyleWriter Owner's Manual states that the StyleWriter only supports US Letter, US Legal, A4, and #10 envelopes. It doesn't support custom paper sizes.

We contacted the engineer who wrote the StyleWriter Driver. The code has

always been in place to watch for the end of the page, and return an error if end-of-paper occurs before the printer expects it. You were lucky to get functionality using half-size paper.

The obvious workaround is to print twice to a standard-size paper and then cut it in half. Other options would be developing the documents in an application such as PageMaker (or equivalent) that allows you to rotate text objects 180 degrees, printing entirely in one pass of the paper. You would still have to cut the page in half.

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Tech Info Library Article Number:10184

Tech Info Library

Macintosh Quadra 700 Upgrade: Serial Number

Revised: 7/21/92
Security: Everyone

Macintosh Quadra 700 Upgrade: Serial Number

==========

Article Created: 8 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

When I upgrade a Macintosh IIcx or Macintosh IIci to a Macintosh Quadra 700, do I get a new serial number? It isn't possible to remove the old serial number tag from the Macintosh IIcx or Macintosh IIci.

DISCUSSION -----

The Macintosh Quadra 700 Logic Board Upgrade (M5950LL/A) doesn't come with, nor does it require a new serial number. You continue to use the serial number from the upgraded Macintosh IIcx or Macintosh IIci. If you want the serial number on the new case, you can etch it on.

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Tech Info Library Article Number:10186

Tech Info Library

Microsoft Mail: Integrating with VMS Mail Systems

Revised: 7/21/92
Security: Everyone

Microsoft Mail: Integrating with VMS Mail Systems

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Article Created: 7 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

From my Macintosh in Singapore, I want to connect to a VAX system in Europe. I'd like to use the X.25 network system (Telepac). My only application sends and receives electronic mail.

Is there an MS-mail to VMSmail gateway system available? I know that there is an All-in-1 emulation product for the Macintosh to VAX, but I don't have an All-in-1 on my VAX system, only standard VMSmail.

I want to keep cost low and would only want to send and receive mails, not log on to the VAX and create mails across the X.25 line.

DISCUSSION ----------

We found two products, both from Alisa Systems. You can search for them -- and other third-party products -- in the RedGate Macintosh Registry on AppleLink, under Third Parties.

AlisaMail

VAX-based electronic mail system
Macintosh Plus or larger.

AlisaMail is a VAX-based electronic store-and-forward message switch that integrates Macintosh and VAX mail systems. It's an expanding series of mail servers and an SQL-based engine, called the Information Switch, that when used together provides transparent message exchange between users of Microsoft Mail, VMSmail, All-In-1, X.400 and more. AlisaMail consists of a VAX-based server for Microsoft Mail (100 percent Microsoft Mail compatible), a VMSmail server and the Information Switch. Servers for

Automatic Document Conversion and for Digital's Message Router will be available. The Information Switch provides message and directory services for the AlisaMail servers and comprehensive administration facilities, including accounting and reporting for tracking delivery delays and message traffic loads and other similar functions. Available with 10-user license or unlimited user license.

MailMate

Macintosh to VAX mail bridge
Macintosh Plus or larger.

The MailMate family of products provide gateways to DECnet mail users for existing Macintosh-based electronic mail packages. Currently, MailMate gateways are available for CE Software's QuickMail and Microsoft Corp.'s Microsoft Mail. The MailMate gateways provide two-way exchange of text messages with Digital Equipment Corp.'s DECnet mail (also known as VMSmail), making mail exchange possible between QuickMail or Microsoft Mail and Digital's All-In-1 system, IBM PROFS, X.400 and other services supported by MailBus, when used in conjunction with Digital's Message Router/MailBus services and the MRGATE gateway. MailMate products support use of automatic address prefix and suffix for groups of users, restricting access to gateway services, logging of all gateway activity for the mail manager, use of pre-defined forms and templates for users and one-off addressing. MailMate licenses are available for one to 10 users, one to 30 users, one to 100 users and unlimited users. MailMate uses Alisa's DECnet package for the Macintosh, making the Macintosh a true DECnet node capable of receiving and sending DECnet mail. DECnet access may be via Ethernet, LocalTalk (and the Kinetics FastPath IV) or asynchronous (DDCMP) connection.

Apple Computer, Inc. is not responsible for the contents of this article.

Redgate Communications, Inc. is not responsible for the accuracy of product listings and descriptions.

Redgate Macintosh Registry
23-Jan-92

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:10188

Tech Info Library

Apple IIe: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Apple IIe: Description (Discontinued)

==========

Article Created: 8 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Apple IIe computer.

DISCUSSION ----------

The Apple IIe personal computer comes with platinum finish to match existing platinum Apple II peripherals.

Features

- A built-in numeric keypad

- 128K of random access memory and 16K of read-only memory, including Applesoft BASIC

- A 65C02 microprocessor

- Multipurpose memory-expansion and video slot and seven additional I/O expansion slots

- Typewriter-style keyboard, with 128 ASCII codes

- Special-purpose keys, including two programmable keys

- High-fidelity speaker

- Multipurpose hand control inputs and outputs, and cassette input and output.

The Extended 80-Column Text Card is installed in the Apple IIe's aux/video

slot.

Order Number	
Apple IIe 128K	A2S2128

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Tech Info Library Article Number:10191

Tech Info Library

Apple IIGS: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Apple IIGS: Description (Discontinued)

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Article Created: 8 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Apple IIGS computer.

DISCUSSION ----------

The Apple IIGS personal computer is the most powerful member of the Apple II family.

Features

- 256K of built-in RAM and 256K of additional RAM via the Apple IIGS Memory Expansion Card, which is included. The RAM is expandable to 8MB.

- A 16-bit 65C816 processor lets the Apple IIGS run more sophisticated applications, including those with Macintosh-style interface, as well as most existing Apple IIe and IIc software. With a clock speed of 2.8 instead of 1 megahertz, these programs will run up to 2.8 times faster on the IIGS.

- 128K of ROM memory expandable via the memory expansion slot up to one megabyte.

- Control Panel, which enables users to set screen colors and speaker volume.

- Detachable keyboard with 14-key numeric pad. It contains two Apple Desktop Bus ports on opposite ends; one is for connecting the keyboard to the computer, and the second is for the mouse or other ADB-compatible input devices.

- Eight international character sets can be displayed.

- Two built-in serial ports allow for easy connection of AppleTalk, a modem, printer, or other serial devices.

- Seven general purpose expansion slots are available for peripherals, in addition to a dedicated RAM/ROM slot.

- Up to 15 separate audio voices can be generated simultaneously for music, speech, and sound effects.

- Analog RGB port allows for quick connection to the AppleColor RGB Monitor; no adaptors or additional interface are required.

Benefits

- Compatibility with most Apple peripherals.

- The eight expansion slots give the Apple IIGS a virtually unlimited growth path. One slot is dedicated to RAM/ROM cards, while the other seven are general-purpose peripheral-interface slots.

- The disk-drive port lets users take advantage of the 800K Apple 3.5 Drive and 143K 5.25 Drive. They can be used individually, in any combination, or with UniDisk 3.5 drives. Up to four drives can be daisy-chained from the drive port. With the addition of the Apple II SCSI Card and cable, the Apple IIGS can work with the 20MB Apple Hard Disk 20SC.

- With the AppleColor RGB Monitor, the Apple IIGS produces crisp 80-column color text; a palette of 4096 colors, with as many as 256 on screen at once, is available.

- The Apple Desktop Bus (ADB) standard allows for easy connection of multiple input devices such as a graphics table and mouse. Users can connect another ADB peripheral to the keyboard, then daisy-chain more accessories from it. Up to sixteen devices can be connected at one time.

- Access to the AppleTalk Personal Network is possible, without an interface card, via the Apple IIGS's built-in serial ports.

- New applications that use windows, pull-down menus, and other Macintosh features can be used.

- A choice of QWERTY (Sholes), Dvorak, and international keyboard layouts.

Order Number

A0012LL/A

Copyright 1992-1994 Apple Computer, Inc.

Tech Info Library Article Number:10192

Tech Info Library

Macintosh Classic: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Macintosh Classic: Description (Discontinued)

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Article Created: 8 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Macintosh Classic computer.

DISCUSSION ----------

The Apple Macintosh Classic personal computer performs up to 25% faster than the Macintosh Plus, and comes standard with the Apple SuperDrive. The SuperDrive is a 3.5-inch disk drive that can read from and write to Macintosh disks as well as MS-DOS, OS/2, and ProDOS disks. AppleTalk networking and sound output capabilities are built-in. A SCSI port allows connection of up to seven peripheral products. An internal hard disk drive is optional.

Features

- 68000 microprocessor, running at 7.8336 megahertz

- Apple SuperDrive (1.4-megabyte floppy disk drive)

- Six built-in ports: One SCSI port, one Apple Desktop Bus (ADB) port, one external 3.5-inch disk interface, two serial ports, and one sound port

- Optional 40MB internal hard disk drive

- 1 or 2MB of RAM, expandable to 4MB

- 512K of ROM, including HFS (Hierarchical File System), drivers for Macintosh hard disks, ADB, SCSI, and an AppleTalk network, Macintosh Toolbox, and QuickDraw

- Macintosh user interface, including mouse, icons, windows, and pull-down menus

- MultiFinder operating system

- Software Compatibility

Benefits

- Offers up to 25 percent faster performance and system responsiveness than the Macintosh Plus system.

- SuperDrive allows convenient transfer of data files between Macintosh, OS/2, MS-DOS, and Apple II systems, and provides almost twice the storage capacity of 800K disk drives.

- It's easy to expand your system with additional peripheral devices.

- Accommodates a second 800K or 1.4MB external 3.5-inch disk drive.

- Provides access to LocalTalk cable-based networks, which allow you to connect Macintosh Classic systems to other computers and to LaserWriter printers through the AppleTalk network system.

- Supplies high-quality, four-voice digital sound that is compatible with all applications that use Macintosh sound.

- Handles a broad range of computing needs by providing ample storage capacity for files and applications.

- Provides a simple growth path as you need additional memory.

- Lets you work with large amounts of data, such as large spreadsheets, scanned images, and sound files.

- Supports Macintosh System 7.

- Hierarchical File System organizes document storage and allows easy access to files.

- SCSI interface supports high-performance peripherals.

- QuickDraw provides a consistent graphics interface for applications, making applications intuitive and easy to learn, and reducing training and support costs.

- Lets you easily cut and paste parts of documents from one application to another.

- Allows background tasks to be run while you interact with applications in the foreground.

- Lets you run virtually all Macintosh software.

Order Numbers

Macintosh Classic 1MB	M0421LL/A
Macintosh Classic 4MB Hard Disk 40	M1560LL/B

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Tech Info Library Article Number:10193

Tech Info Library

PowerBook HDI-20 External 1.4MB Drive: Specifications (3/94)

Revised: 3/5/94
Security: Everyone

PowerBook HDI-20 External 1.4MB Drive: Specifications (3/94)

==========

Article Created: 8 May 1992
Article Reviewed/Updated: 4 March 1994

TOPIC ----------

This article gives technical specifications for the PowerBook HDI-20 External 1.4MB drive.

DISCUSSION ----------

Recording Media
- Disk diameter: 3.5 inches (9.0 cm)
- Recording surfaces: 2
- Tracks per inch: 135 (5.31 tracks per millimeter)

Capacity
- Formatted data capacity: 1.4MB (MFM), 800K (GCR), 720K (MFM)
- Unformatted data capacity: 1MB or 2MB

Drive Characteristics
- Seek time (track to track): 3 milliseconds
- Settle time: 18 milliseconds
- Drive startup time: 800 milliseconds maximum

Interfaces
- Connects directly to the Macintosh PowerBook 100 or the PowerBook Duo (needs PowerBook Duo Floppy Adapter) via the HDI-20 floppy disk drive port.

Environmental Requirements
- Operating temperature: 50 F to 122 F (10 C to 50 C)
- Storage temperature: -40 F to 140 F (-40 C to 60 C) noncondensing
- Relative humidity: 5% to 90% (with a maximum wet bulb temperature of 82 degrees F or 29 degrees C)

Weight
- 1 pound, 6 ounces

Dimensions
- 7 inches long x 4.5 inches wide x 1 inch high

Article Change History
4 March 1994 - Updated to reflect actual weight of drive.
2 December 1992 - Updated to add weight and dimension information, and to include support for the PowerBook Duo.

Support Information Services

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Tech Info Library Article Number:10194

Tech Info Library

Macintosh IIsi: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Macintosh IIsi: Description (Discontinued)

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Article Created: 8 May 1992

Article Change History

02/03/93 - REVIEWED
- For technical accuracy.

TOPIC ----------

This article describes the Macintosh IIsi computer.

DISCUSSION ----------

The Macintosh IIsi is equipped with a 20-megahertz 68030 microprocessor that runs Macintosh applications up to five times faster than the Macintosh Classic. The Macintosh IIsi supports A/UX.

The Macintosh IIsi comes with built-in support for four Apple monitors as well as third-party monitors. A video expansion card can be added if you need to use any other Apple or third-party monitors.

An internal expansion slot for either a NuBus card or an 030 Direct Slot card allows you to add one of the expansion cards that are available for communications, video, or coprocessing. An optional floating-point math coprocessor can be added to speed mathematical calculations. Eight external ports allow you to connect peripheral equipment.

Sound input is available with the Macintosh IIsi. The unit comes with a microphone and phono jack adapter, which let you input your voice into documents, presentations, and even electronic mail messages.

The Macintosh IIsi will run applications supported by System software version 7.0.

Features

- 68030 microprocessor, running at 20 megahertz; built-in Memory Management Unit (MMU)

- Optional 68882 floating-point math coprocessor, running at 20 megahertz

- Multiple monitor options including:
  - Built-in video support for four Apple monitors:
    - Macintosh 12-inch RGB Display
    - AppleColor High-Resolution RGB Monitor
    - Macintosh 12-inch Monochrome Display
    - Apple Macintosh Portrait Display

  - Support for other Apple or third-party monitors that require a video expansion card

- One internal expansion slot for either a NuBus card or an 030 Direct Slot card

- Sound input

- Apple SuperDrive (1.4MB floppy disk drive)

- 40- or 80MB internal hard disk drive

- Eight Built-in Ports
  one SCSI port, one Apple Desktop Bus (ADB) port, external disk drive port, two serial ports, one sound-in port, one sound-out port, one video port

- 1MB of on-board RAM, expandable to 17MB

- 512K of ROM, including support for: 32-bit addressing, Hierarchical File System, 32-Bit QuickDraw, sound input

- Choice of keyboards (sold separately): Apple Keyboard, Apple Extended Keyboard

- Macintosh user interface, including mouse, icons, windows, and pull-down menus

- Software compatibility

Benefits

- Runs applications up to five times faster than the Macintosh Classic.

- Supports A/UX, Apple's implementation of the AT&T operating system.

- Supports virtual memory.

- Provides fast processing of mathematical calculations.

- Eliminates the need for a separate video card or special driver software.

- Lets you work with up to 256 colors or shades of gray simultaneously on the Macintosh 12-inch RGB Display and the AppleColor High-Resolution RGB Monitor, up to 256 shades of gray with the Macintosh 12-inch Monochrome Display, and up to 16 shades of gray with the Apple Macintosh Portrait Display.

- Lets you work with the monitor that best suits your needs -- including monitors that produce photographic-quality color.

- Lets you incorporate new capabilities or increase system performance by adding an expansion card for communications, graphics, emulation.

- Lets you add one of the NuBus cards that are available for all other Macintosh II systems.

- Lets you add one of the 030 Direct Slot cards that are available for the Macintosh SE/30 personal computer.

- Allows convenient transfer of data files between Macintosh, OS/2, MS-DOS, and Apple II systems.

- Provides almost twice the storage capacity of 800K disk drives.

- Provides ample storage capacity for files and applications.

- Supports up to seven peripherals such as CD-ROM drives, scanners, and printers.

- Supports either an external 800K or 1.4MB Apple SuperDrive floppy disk drive.

- Provides access to LocalTalk cable-based networks, which allow you to connect Macintosh IIsi systems to other computers and to LaserWriter printers through the AppleTalk network system.

- Supports sound input via microphone or phono jack adapter.

- Supplies four-voice digital sound output that is compatible with all applications that use Macintosh sound.

- Provides connection to all monitors supported by the Macintosh IIsi computer's built-in monitor support.

- Lets you work with large amounts of data, such as large spreadsheets, scanned images, and sound files.

- Enables future 32-bit versions of the Macintosh Operating System to address up to 4 gigabytes of memory.

- Enables color systems to display up to 16 million colors simultaneously.

- Apple Keyboard includes a numeric keypad and cursor keys.

- Apple Extended Keyboard also includes 15 function keys, letting you work effectively with alternate operating systems, terminal-emulation programs, and other data communications applications.

- Makes most applications intuitive and easy to learn.

- Reduces training and support costs.

- Provides a consistent user interface across applications.

- Allows multiple applications to be opened concurrently.

- Lets you easily cut and paste parts of documents from one application to another.

- Allows background tasks to be run while you interact with applications in the foreground.

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Tech Info Library Article Number:10195

Tech Info Library

Macintosh LC: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Macintosh LC: Description (Discontinued)

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Article Created: 8 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Macintosh LC computer.

DISCUSSION ----------

The Apple Macintosh LC personal computer is, at its introduction, the lowest-cost color-capable Macintosh. The 16-megahertz 68020 microprocessor increases system responsiveness more than 100 percent over the Macintosh SE and Classic.

Built-in support for three Apple monitors eliminates the need to add a separate video card. The three monitors that may be used with the Macintosh LC are the Macintosh 12-inch RGB Display, the Macintosh 12-inch Monochrome Display, and the AppleColor High-Resolution RGB Monitor. You can use 256 colors on the Macintosh 12-inch RGB Display, 16 shades of gray on the Macintosh 12-inch Monochrome Display, and 16 colors on the AppleColor High-Resolution RGB Monitor. The optional Macintosh LC 512K VRAM (video random- access memory) SIMM (Single In-line Memory Module) allows the generation of more colors or shades of gray on all three monitors.

The Macintosh LC has been designed so you can add sounds to documents created with the computer.

The system comes standard with the 1.4MB Apple SuperDrive disk drive. This allows read/write operations to 3.5-inch disks initialized for the Macintosh as well as MS-DOS, OS/2, and ProDOS. A 40MB internal hard disk is also included.

There are seven built-in ports to connect the Macintosh LC with peripheral

equipment. Built-in networking is also included. A processor-direct slot allow you to add a high-performance expansion card for additional graphics and communications.

The available Apple IIe Card is allows the Macintosh LC to run all applications developed for Apple IIe systems. The Macintosh LC supports System software 7.0.

Features

- 68020 microprocessor, running at 16 megahertz

- Built-in Video Support for Three Apple Monitors
  Macintosh 12-inch RGB Display, Macintosh 12-inch Monochrome Display, and AppleColor High-Resolution RGB Monitor

- Optional Macintosh LC 512K VRAM SIMM

- Sound input

- Apple SuperDrive (1.4MB floppy disk drive)

- Apple IIe Card

- 020 Direct Slot

- Seven Built-in Ports
  one SCSI port, one Apple Desktop Bus (ADB) port, two serial ports, one sound-in port, one sound-out port, and one video output port

- 40MB internal hard disk drive

- 2MB on-board RAM, expandable to 10MB

- Macintosh user interface, including mouse, icons, windows, and pull-down menus

- Software compatibility

Benefits

- More than 100 percent faster performance and system responsiveness than Macintosh SE and Macintosh Classic systems

- Choice of Apple displays, both color and monochrome

- 256 colors available simultaneously on the Macintosh 12-inch RGB Display, up to 16 shades of gray on the Macintosh 12-inch Monochrome Display, and up to 16 colors on the AppleColor High-Resolution RGB Monitor

- Allows display change without adding video card

- Color depth can be increased to 256 colors or shades of gray on the AppleColor High-Resolution RGB Monitor and Macintosh 12-inch Monochrome Display.

- 32,000 colors on the Macintosh 12-inch RGB Display

- Allows you to add voice comments to voice-capable word processing, spreadsheet, and other documents; send spoken electronic mail messages; add voice excerpts to presentations; and create spoken password protection for sensitive files.

- Allows convenient transfer of data files between Macintosh, OS/2, MS-DOS, and Apple II Systems.

- Twice the storage capacity of 800K disk drives

- Allows you to run all applications that have been developed for Apple IIe computers. Preserves your investment in Apple IIe software.

- High-performance expansion card for communication, emulation, and graphics.

- Supports up to seven popular peripherals such as CD-ROM drives, scanners, and printers.

- Easy external access to optional expansion cards

- Access to LocalTalk cable-based networks; connection to other computers and to LaserWriter printers through the AppleTalk network system

- Sound input via microphone or phono jack adapter

- High-quality sound output that is compatible with all applications that use Macintosh sound.

- Connection to external video display devices

- Simple growth path as you need additional memory.

- Lets you work with large amounts of data, such as spreadsheets, scanned images, and sound files.

- Makes most applications intuitive and easy to learn.

- Reduces training and support costs.

- Provides a consistent user interface across applications.

- Allows multiple applications to be opened concurrently.

- Lets you easily cut and paste parts of documents from one application to another.

- Allows background tasks to be run while you interact with applications in the foreground.

- Runs all Macintosh software.

Order Numbers

Macintosh LC 4MB Hard Disk 40	M1218LL/A
Macintosh LC 4MB Hard Disk 80, 512K VRAM (no keyboard)	M1201LL/B

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Tech Info Library Article Number:10196

Tech Info Library

Macintosh II: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Macintosh II: Description (Discontinued)

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Article Created: 8 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Macintosh II computer.

DISCUSSION ----------

As a member of the Apple Macintosh family of computers, the Macintosh II runs the same software and has the same icon/mouse interface as previous versions of the Apple Macintosh.

The Macintosh II uses a Motorola 16 MHz 68020 microprocessor, which has a 32-bit data bus. These factors have the potential to speed up Macintosh Plus software (which runs on an 8 MHz 68000) by a factor of 4. Other properties of the 68020 add to that speed advantage, and with the standard 68881 floating-point coprocessor, certain Macintosh software may run as much as 200 times faster on the Macintosh II than on a Macintosh Plus.

ROM in the Macintosh II has been completely rewritten, and includes Color QuickDraw, which supports the definition of over 16 million colors. With the Macintosh II Video Card and its Expansion Kit the Macintosh II can display 256 colors (or shades of gray) on the screen at once. Since the Macintosh II has flexible video options, you may choose a video device that best suits your needs.

Six NuBus slots provide a flexible means of expanding the architecture. NuBus, Texas Instruments' synchronous bus definition, allows any device to become master of the system. Therefore, 80286 cards, EtherNet cards, and other intelligent interfaces may, at times, gain control of the CPU. With this architecture, the Macintosh II may conceivably run MS-DOS software, act as a smart terminal, or drive a variety of output devices.

The Macintosh II supports 4-voice hardware sound. The firmware now contains synthesizers for MIDI, note, wave table, and sampled sound production; and it supports the addition of other sound hardware through the NuBus slots or through the external sound jack.

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Tech Info Library Article Number:10197

Tech Info Library

Macintosh Plus: Description (Discontinued)

Revised: 10/7/93
Security: Everyone

Macintosh Plus: Description (Discontinued)

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Article Created: 8 May 1992
Article Reviewed/Updated: 27 July 1992

TOPIC ----------

This article describes the Macintosh Plus computer and the improvements over the original Macintosh 128K and 512K computers. It also describes the Macintosh Plus Upgrade Kits for those computers.

DISCUSSION ----------

FEATURES

- One Full Megabyte of Memory
  With one full megabyte of RAM available (expandable to four megabytes), the Macintosh Plus can accommodate memory-intensive application programs. Large models, documents, and databases are easily handled.

- 800K of Storage Capacity
  The 800K drive stores more system programs and applications on a dual-sided 3.5 disk and still leaves space for data files. The 800K drive operates at twice the speed of the 400K drive.

- A High Speed Peripheral Port
  Equipped with a Small Computer Systems Interface (SCSI) port, the Macintosh Plus transfers data up to six times faster through the SCSI port than through the disk drive port. Up to seven peripherals can be daisy chained to the Macintosh Plus at one time.

- Enhanced ROMs
  A new 128K ROM has been added to the Macintosh Plus. It offers a Hierarchical File System which allows the Macintosh Plus to operate faster and function more efficiently, improving overall system performance. It provides the user with a more efficient way to store and retrieve documents.

- Cursor Keys and a Numeric Keypad

The Macintosh Plus features a keyboard with cursor keys and a numeric keypad designed to accelerate data entry.

Connecting the Macintosh Plus to Apple peripherals and third party peripherals requires certain cables.

To ensure that users get the best performance from their Macintosh Plus, they must install the Macintosh Plus system software on all their application disks. A program called the "Installer" on the Macintosh Plus System Tools disk makes installation quick and easy. This diskette is bundled with every Macintosh Plus and Macintosh Plus Disk Drive Kit. Additional information about the Installer is included in the Macintosh Plus Owner's Guide, as well as the 800K External Disk Drive Manual.

Upgrade Kits

Three Macintosh Plus Upgrade Kits enable customers to upgrade from a Macintosh 128K or a 512K to a Macintosh Plus.

The kits are:

- The Macintosh Plus Disk Drive Kit
  This kit includes an 800K Disk Drive, 128K ROM, and Macintosh Plus Systems Tools Disk to update existing applications to work on the Macintosh Plus. This kit exchanges the ROM chip and disk drive in the Macintosh 128K or 512K for the new 800K Disk Drive and 128K ROM.

- The Macintosh Plus Logic Board Kit
  This kit includes the Macintosh Plus logic board with 1MB of RAM and new rear housing to accommodate the external SCSI port, and a Macintosh Plus Owner's Guide and information sheet. Also included is a Macintosh Plus Peripheral Adapter which allows connection to Macintosh peripherals such as ImageWriter and popular third-party peripherals. A Macintosh Plus Disk Drive is required in order to install the Macintosh Plus Logic Board Kit.

- The Macintosh Plus Keyboard Kit
  This kit includes a keyboard with standard alpha layout, cursor keys, and a numeric keypad for easy data entry. It requires no dealer installation.

NOTE

The Macintosh Plus Upgrade Kits are no longer in production. Please check with your authorized Apple dealer for availability.

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Tech Info Library Article Number:10198

Tech Info Library

Macintosh Portable: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Macintosh Portable: Description (Discontinued)

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Article Created: 8 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Macintosh Portable computer.

DISCUSSION ----------

The Macintosh Portable provides complete Macintosh functionality in a portable design. Everything -- CPU, screen, keyboard, trackball, battery, and disk storage -- is integrated into a single, easy-to-carry package.

Active Matrix Display

The Macintosh Portable has a high-contrast Active Matrix Liquid Crystal Display (AMLCD) with a fast response rate; it displays the full width of a page, and makes the screen easy to see in almost any lighting condition, from almost any angle.

Expansion Slots

The Macintosh Portable's four internal expansion connectors allow you to customize it for your specific needs:

- Internal Modem Slot
  This allows installation of the Macintosh Portable Data Modem 2400, an internal asynchronous modem that can exchange information with any other standard data modem at 300, 1200, and 2400 bits per second. The modem was specifically designed for the Macintosh Portable to minimize power usage and thus extend the battery life. It will even wake up the Macintosh Portable when it receives an incoming phone call.

- Processor Direct Expansion Slot

You can install additional third-party RAM, up to the system's full capacity of 9MB, or various third-party communications cards supporting protocols such as Ethernet.

- ROM Slot
  This allows easy upgrading of system ROM, or the addition of third-party ROM enhancements.

- RAM Slot
  You can upgrade internal memory to 4MB.

Full Power

Most battery-powered computers run for only two to three hours before needing to be recharged; the Macintosh Portable provides from 6 to 12 hours of operation, depending on system configuration and usage. To conserve power and extend battery life, the Portable includes a special microprocessor that manages power use and posts warnings when the battery is getting low. A Battery desk accessory monitors power levels and displays a meter to show how much power remains.

Features

- All-in-One Design
  Built-in CPU, display, trackball, disk drive, and standard Macintosh keyboard. Easy to pack, carry, set up, and use almost anywhere, anytime.

- 68000 CMOS Processor Operating at 16 MHz
  CMOS (Complimentary Metal Oxide Silicon) microprocessors require very little power, helping to extend battery life. The 16MHz clock speed of the 68000 runs at twice the speed of the Macintosh SE, providing rapid processing for spreadsheets, databases, and other applications.

- Power Management Microprocessor
  This chip conserves power by monitoring system components and putting them into a standby "rest" or "sleep" mode when not in use, while retaining memory contents.

- Replaceable Lead Acid Battery
  The lead acid battery allows the computer to monitor voltage levels and provide information on remaining power. It also lets you recharge at any time without requiring a deep discharge cycle, and can be easily replaced if necessary.

- Apple 1.4MB SuperDrive
  The high-density floppy disk drive lets you work in multivendor environments where access to data from other computers is important. SuperDrive allows you to format, read, and write to Apple 400K, 800K and 1.4MB floppy disks, as well as ProDOS, MS-DOS, and OS/2 720K and 1.44MB floppy disks.

- Interchangeable Low-Power Keyboard, Trackball

The trackball can be replaced with an optional numeric keypad for number-intensive applications, and either device can be mounted on either side of the keyboard for right- or left-handed use.

- Power Adapter for 85 to 270 Volts AC, 48 to 62 Hz
  The adapter makes the Portable easy to use in almost any country, without transformers (requires only a simple plug adapter).

- Optional 40MB Internal Hard Disk
  The low power hard disk's 28 millisecond access time provides fast and easy access to files and applications. The 40MB hard disk configuration of the Macintosh Portable (M5351) comes from the factory with System 6.0.4 and HyperCard 1.2.3 installed.

- Eight Built-In Ports
  External disk drive, SCSI, Apple Desktop Bus, printer, modem, audio, power adapter, and video ports. The ports provide easy access to all standard Macintosh peripherals. With the addition of an optional Video Adapter (available later in 1989), the Portable can also drive external monitors and projection systems, allowing presentations to large audiences.

- Apple Stereo Sound Chip
  Enables the portable to provide high-quality stereo sound, and to be compatible with all applications using Macintosh sound.

- High Quality Foam-Lined Carrying Case
  This case (included with the Portable) provides easy portability, as well as internal pockets for items such as power adapter, numeric keypad, extra battery, disks, and papers.

System Software

The Macintosh Portable requires System Software version 6.0.4 and HyperCard version 1.2.5.

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Tech Info Library Article Number:10199

Tech Info Library

Macintosh SE: Description (Discontinued)

Revised: 5/18/94
Security: Everyone

Macintosh SE: Description (Discontinued)

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Article Created: 8 May 1992
Article Reviewed/Updated: 18 May 1994

TOPIC ----------

This article describes the Macintosh SE computer which was discontinued by Apple in October 1990.

DISCUSSION ----------

The Macintosh SE adds expansion and flexibility to the power of the Macintosh Plus.

Processing speed is improved 15 to 20 percent over previous models, allowing faster recalculations of spreadsheets and faster document processing. SCSI performance is up to two times faster than on the Macintosh Plus.

The Macintosh SE comes standard with either two 800K internal drives, or one 800K internal drive and one internal 20MB SCSI hard disk.

The Macintosh SE incorporates the features of the Macintosh Plus including:

- The same compact design
- A 68000 microprocessor
- One megabyte of memory (expandable to four megabytes)
- A connection for SCSI peripherals
- The Macintosh SE-Bus Expansion Slot allows for the addition of a variety of cards:
  - Accelerator cards
  - External monitor adapters
  - Coprocessor cards
  - Networking and communication cards
  - A 5.25-inch MS-DOS disk drive controller card
- Seven built-in ports, including:
  - One SCSI port
  - One drive port

  - Two RS422 serial ports
  - One sound port
  - Two Apple Desktop Bus (ADB) ports
- One megabyte of RAM, expandable up to four megabytes.
- 256K ROM, which includes support for:
  - Internal and external SCSI connectors
  - Internal drives
  - One expansion slot
  - Apple Hard Disk 20SC
  - The Hierarchical File System
  - QuickDraw
  - AppleTalk
  - The Apple Desktop Bus

A keyboard isn't included with either configuration of the Macintosh SE. However, two keyboards -- the Apple Keyboard and Apple Extended Keyboard -- are available.

Article Change History:
18 May 1994 - Revised article to reflect discontinued product.

Support Information Services

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Tech Info Library Article Number:10200

Tech Info Library

Macintosh Quadra: Selecting NTSC Convolution

Revised: 7/21/92
Security: Everyone

Macintosh Quadra: Selecting NTSC Convolution

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Article Created: 7 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm doing video out on the Macintosh Quadra 700 using a RasterOps Video Expander. I've installed a VRAM upgrade (two SIMMs) bringing the total VRAM to 1MB.

According to Apple documentation, this VRAM configuration should support convolution. RasterOps indicates that it does, and that you should be able to choose convolution from the Monitors control panel. Nowhere do the words "Convolution" or "Interlaced" appear in the main Monitors control panel window or the Options… dialog.

I see "flicker" on the NTSC monitor, when there should be none.

DISCUSSION ----------

The Quadra Built-in Video Options… dialog of the Monitors control panel is not offering the four "Select monitor type:" options that it should:

- 512 x 384 NTSC
- 640 x 480 NTSC
- 512 x 384 NTSC Convolved
- 640 x 384 NTSC Convolved

This indicates that the built-in video doesn't understand that the NTSC mode is being requested. The configuration of the sense pin connections indicates the request for this mode.

For the built-in video to understand a request for NTSC mode, "sense0" (pin 4) and "sense1" (pin 7) need to be grounded to pin 11, the composite and vertical sync ground.

```
  4      MON.ID1  (sense0) --|
  7      MON.ID2  (sense1) --|
  11     C&VSYNC.GND --------|
```

With these pins grounded, all of the tests we did put the Quadras into the NTSC mode, defaulting to "512 x 384 Convolved." However, by opening the Options… dialog in the Monitors control panel, we could select any of the other three monitor types.

After changing the monitor type, you need to restart the Quadra for the change to take effect.

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Tech Info Library Article Number:10201

Tech Info Library

Macintosh System Software: Disk Images On CD-ROM

Revised: 7/21/92
Security: Everyone

Macintosh System Software: Disk Images On CD-ROM

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Article Created: 11 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Where can I get disk images of Macintosh system software?

DISCUSSION -----

The Macintosh Information Source CD and the Technical Information Source CD contain disk images of all Macintosh operating system versions that were available up to the production day of the CD.

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Tech Info Library Article Number:10202

Tech Info Library

Macintosh Quadra 950: CD and Sound

Revised: 5/15/92
Security: Everyone

Macintosh Quadra 950: CD and Sound

==========

Article Created: 18 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

One of the internal storage devices in the Macintosh Quadra 950 computer can be a CD-ROM drive, installed at the front for media access.

DISCUSSION ----------

The CD-ROM drive connects to the internal SCSI bus, and an additional cable takes the audio signals from the CD-ROM to the main circuit board. Therefore audio CDs can be heard through the system speaker. When speakers are connected to the external sound-out on the computer, CD, system beep, and other system sounds will be heard through the speakers as well. This integration of the audio signals into the computer provides three functions that are important for multimedia applications:

- Ability to play audio from the CD-ROM through the internal sound system

- Ability to mix audio from the CD-ROM with computer-generated sound

- Ability to perform digital recording of audio from the CD-ROM

Volume control for an internal AppleCD SC Plus is done through software. The CD Remote DA detects that the CD-ROM drive is internal, and provides volume control. On external drives, the software control isn't visible, and the hardware control is used.

As in the Quadra 900, the AppleCD SC Plus won't be sold as an optional configuration, but the logic still exists, and will work in the Quadra 950.

Note: The existing sound input is 8-bit linear PCM with analog limiting to enhance the power of the signal being digitized. The sample rate may be

set for 22 kHz or 11 kHz. Therefore the results won't be significantly better than a low-cost cassette recorder without noise reduction. This level of performance is adequate for voice annotation, but won't produce the best results with music.

To compensate for some of the shortcomings of the sound input system, the gains for the line input and internal CD input are somewhat higher than normal. This may cause overdrive distortion on loud material, but will boost the signal to mask a lot of digitizing noise on soft material. The user can turn down the input to the digitizer, either by backing off the volume slider on the internal CD control panel or by reducing the volume of the signal driven to the line input jacks. The main point is, some experimentation may be required for best results.

The internal CD drive stereo analog outputs are developed from a source sampled at the CD 44 kHz sample rate. The sound input system samples at 22 kHz or 11 kHz. The sound input system filters the CD signal (and line OR microphone, for that matter) to prevent bothersome aliasing. Therefore, most of the high-end sound is lost. For 22 kHz sampling, the sound is filtered at around 8 kHz, and at 11 kHz the sound is filtered at around 4 kHz. The former may be thought of as "AM radio" quality, the latter as "telephone" quality.

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Tech Info Library Article Number:10205

Tech Info Library

Macintosh Quadra 950: Internal Mass-Storage Devices

Revised: 5/15/92
Security: Everyone

Macintosh Quadra 950: Internal Mass-Storage Devices

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Article Created: 18 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the internal mass-storage options in the Macintosh Quadra 950.

DISCUSSION ----------

The floor-standing case provides flexibility for internal mass-storage devices. There are four half-high mounting locations. Two of the four are in the front of the case, accessible for removable media. Any of the four locations can accommodate either a 3.5-inch or a 5.25-inch hard disk drive. The 1.44MB SuperDrive disk drive doesn't take up one SCSI slot, therefore there are four additional SCSI connections possible.

A hard disk drive for the Quadra 950 computer can be a 3.5-inch or 5.25-inch half-height device or a 5.25-inch full-height device. The Quadra 950 comes with either a 230MB or 400MB hard drive. Third party full-height drives are available with even higher capacities. Third parties will have to ship their internal devices with a carrier. Users must keep track of the SCSI IDs of their internal devices, use Get Info on each drive to check the IDs, or use a public domain package such as SCSI Probe to make sure there is no conflict on the SCSI bus. A note on this has been added to the User's Guide.

The upper-front location will always be filled with a 1.44MB SuperDrive. The lower front location can accommodate a backup device, either tape or magneto-optical, or a non-removable SCSI device. One of the internal storage devices in the Quadra 950 computer can be a CD-ROM drive, installed at the front for media access.

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..TIL10206-Macintosh_Quadra_950-Internal_Mass-Storage_Devices.pdf

Tech Info Library Article Number:10206

Tech Info Library

Quadra 900, 950, AWS 95, WS 9150: Security Keyswitch (2/95)

Revised: 2/22/95
Security: Everyone

Quadra 900, 950, AWS 95, WS 9150: Security Keyswitch (2/95)

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Article Created: 18 May 1992
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

The Quadra 900, 950, Workgroup Server 95, and Workgroup Server 9150 come with a security keyswitch that allows owners to limit access to the computer.

DISCUSSION ----------

The keyswitch has three positions: OFF, ON, and SECURE. The key can be removed while the switch is in any of the three positions. The operation of the keyswitch is designed to provide a first level of security for users who wish to use it, without being inconvenient for those who don't.

Keyswitch OFF Position

When the keyswitch is in the OFF position, the computer can't be turned on. Moving the keyswitch from either the ON or SECURE position to the OFF position turns the computer off.

CAUTION: Turning the keyswitch to OFF when the computer is running turns the power off immediately -- the system software doesn't have a chance to close files. If the computer is turned off by turning the keyswitch to OFF, data can be lost.

Keyswitch ON Position

When the keyswitch is in the ON position, the user controls the power the same way as on any other computer in the Macintosh II, Quadra, and Power Macintosh family. The computer can be turned on from the keyboard and turned off with the Shut Down menu item.

Keyswitch SECURE Position

When the keyswitch is in the SECURE position, the ADB devices and floppy disk

are disabled. For example, the keyboard does not generate characters, or the mouse moves but no menus can be pulled down. Also when power is applied to the computer while the keyswitch is in the SECURE position, the computer automatically starts up. The SECURE position is intended for situations involving remote access, or in which the computer is a network server. In the SECURE position, the computer will automatically power on if power is disrupted (that is, if the cable is removed, or power goes out).

Lost Keys

Naturally, the best thing to do is to make several copies of the key immediately and place them in a secure location. Most key shops have blanks for the type of key used in the 900/950/AWS95/WS9150.

But if the key is already lost, a customer can take the machine to a locksmith shop and have them create a new key to unlock the system. If this option is not viable, a customer can order an entire replacement lock assembly from any Apple service provider. The part number is 705-0175.

For security reasons Apple will not replace individual keys.

If the key is missing out of the box of a new Macintosh, customers should contact the Apple Customer Assistance Center (800-776-2333). A replacement lock assembly will be sent to the customer's authorized Apple service provider, who can install it.

Article Change History:
22 Feb 1995 - Added clarification on key in secure position.
10 Oct 1994 - Clarified Discussion and part number for key.
29 Mar 1993 - Revised to add references to all Quadra 9x0 series computers.

Support Information Services

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Tech Info Library Article Number:10207

Tech Info Library

Macintosh Quadra 950: Power Supply

Revised: 5/15/92
Security: Everyone

Macintosh Quadra 950: Power Supply

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Article Created: 18 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article describes the Macintosh Quadra 950 power supply.

DISCUSSION -----

The power supply on the Macintosh Quadra 950 is a 300 watt power supply, and adapts automatically to the AC voltage that is applied. The localization package for the computer includes the appropriate power cord for the destination country.

The power supply includes a 120 mm (4.72-inch) fan that provides quiet cooling for the entire system. The power supply also includes a switched convenience receptacle to provide power for the monitor.

Power Supply Ratings

Load	+5V	+5V TRKL	+12V	–12V	Total Power
Minimum	5 A	1 mA	150 mA	50 mA	27.5 W
Maximum	33 A	125 mA	10 A	1 A	303.25 W
Peak	33 A	125 mA	20 A*	1 A	424 W*

*For a period of 12 seconds maximum

The table shows the minimum, maximum, and peak ratings for the power supply. The output labeled +5V TRKL is a trickle supply that is available whenever the computer is plugged in. That output provides power for the parameter RAM and the power-on logic, along with standby power for the NuBus cards. The +12V output is designed with a peak capacity high enough to meet the combined current demands made by all the peripheral devices

turning on at the same time.

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Tech Info Library Article Number:10208

Tech Info Library

Macintosh Quadra 950: Description

Revised: 5/15/92
Security: Everyone

Macintosh Quadra 950: Description

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Article Created: 18 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Macintosh Quadra 950.

DISCUSSION ----------

The Macintosh Quadra 950, which replaces the Quadra 900, features 33 MHz, improved video, and improved I/O. An upgrade will be offered for existing Quadra 900 owners.

The key features of The Quadra 950 are:

- Motorola 68040, 33 MHz
- 8MB to 64MB DRAM using 4MB SIMMs
- Supports 24 bpp up to a 16-inch monitor, 16 bpp on all displays (New CLUT/DAC)
- Improved I/O with a clock frequency of 25 MHz (Quadra 900 is 16 MHz)
- Up to four internal SCSI devices
- Five NuBus slots with support for higher-powered cards
- Floor-standing design
- System Software 7.0.1 and Tune-Up disk (no changes in system software)
- System configurations of 230MB and 400MB available at introduction (no 160MB configuration)

Form Factor

The Macintosh Quadra 950 computer has the same form factor as the Quadra 900, and support up to four internal SCSI devices.

The Macintosh Quadra 950 can have:

- four half-height SCSI drives
  or
- two full-height SCSI drives
  or
- one full-height and two half-height SCSI drives
  or
- two removable media SCSI devices in front (floppy counts as one), and a combination of SCSI devices behind

Termination must be removed from drives whenever installed internally on the Quadra 950.

Motorola MC68040 Microprocessor

Central to the Quadra 950 is a new processor chip from Motorola, the 68040 (040) running at 33 MHz. The 040 running at 25 MHz and the 040 running at 33 MHz are functionally equivalent, and therefore should pose no compatibility issues with the Quadra 950. The hardware changes shouldn't affect application compatibility.

The 68040 is mounted to the logic board with a socket, and a heat sink is clipped onto the socket rather than glued to the 040. This allows easier servicing if required. It's important to close the case when the Quadra 950 is running to assure proper cooling of the 040.

IOPs

Improved I/O features also contribute to the higher performance of the Quadra 950 computer. Like the Macintosh IIfx, the Quadra 950 has intelligent I/O processors (IOPs) on the ports for the floppy disk, ADB, and serial I/O. These ASICs, which feature a built-in microprocessor, DMA controller, timer, and external Static RAM (SRAM) are used to off-load floppy disk, ADB, modem, and printer port interrupts. These are the same IOPs found in the Macintosh Quadra 900.

Configurations and What's in the Box

At introduction, there are three Macintosh Quadra 950 configurations:
- Floppy only
- 8/230MB
- 8/400MB

Each unit includes a power cord, keyboard cable, mouse, microphone, and System 7 Tune-Up disk.

The documentation includes:
- Getting Started with your Macintosh Quadra 950
- Macintosh User's Guide
- compatibility list

The VRAM kit is different from the kit sold initially for the Quadra 700/900. A new kit with faster (80ns) VRAM will replace the 100ns kits sold today.

Upgrades

An Upgrade for Quadra 900 customers to the Quadra 950 is available. The upgrade kit consists of the logic board only.

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Tech Info Library Article Number:10210

Tech Info Library

Macintosh Quadra 950: Video Support

Revised: 8/24/92
Security: Everyone

Macintosh Quadra 950: Video Support

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Article Created: 18 May 1992

Aricle Change History

8/24/92 - CORRECTED
• To give proper bit depth on all Apple displays
- RETITLED
• To make the contents of the article more clear

TOPIC ---

This article describes the Macintosh Quadra 950 video support, including a definition of convolution. Here is what the Quadra 950 gets with Apple monitors:

DISCUSSION ---

Quadra 950	12 Mono	12 RGB	13 RGB	16 RGB	15 Port	21 Mono	21 RGB
1 meg VRAM	8	24	16	16	8	8	8
2 megs VRAM	8	24	24	24	8	8	16

The VRAM slots on the Quadra 950 are located under the power supply, and are therefore difficult to access. It comes standard with 1 MB of VRAM. All four slots must be populated with 256K SIMMs when upgrading the Quadra 950 from 1MB VRAM to 2MB.

Because the Quadra 950 uses 80ns VRAM SIMMs, the frame buffer controller (DAFB) could be reprogrammed to remove one or more wait states from the VRAM access time, thus increasing the video speed 20%. Due to the increased speed of the processor, the total video speed improvement should reach 30%. The Quadra 950 comes standard with 1MB VRAM, which can be

expanded to 2MB using 80ns 256K VRAM.

The built-in frame buffer also supports several non-Apple monitors (VGA and Super VGA-800 x 600) and broadcast standards such as NTSC and PAL for interlaced displays. Convolution is included as an option for NTSC and PAL to reduce the flicker when using interlaced monitors. When connecting to an NTSC or PAL device, the ID pins on the cable indicate whether convolution is turned on. A special video adapter box is needed in order to connect the Quadra 950 to a television. Third parties such as Truevision, RasterOps, and Computer Friends provide the conversion of the RGB signal to a composite signal for NTSC and PAL. Because the video chip on the main logic board provides NTSC and PAL timing, the solution for a television display is significantly lower in cost than on other computers. In 24-bit mode, convolution isn't an option, but it is in black and white mode.

To locate a vendor's addreess and phone numbers, use the vendor name as a search string.

Definition of Convolution

The Macintosh Display Card 8•24, introduced in 1990, addressed the problem of screen flicker by implementing a new way of pixel averaging called Convolution. Convolution runs every pixel through a formula that averages the pixel with its individual neighboring pixels above and below, and its part of the function of the CLUT/DAC chip on Display Card 8•24.

Convolution causes a blurring effect between scan lines so that a horizontal line includes at least a portion of the scan lines above and below its own scan line. A portion of the horizontal line remains visible during display of both the odd and even fields, so flicker is avoided. The convolution formula follows a 1:2:1 ratio, where the current pixel value is given twice the weight of its neighbors above and below.

Convolution is automatically turned on where appropriate. If the on-board video on the Quadra 950 is driving an interlace display in 24-bit mode, convolution is disabled. If the card is driving an interlace display in 8-bit mode, or a lesser pixel depth, convolution is enabled.

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Tech Info Library Article Number:10211

Tech Info Library

Macintosh Quadra 950: SCSI Support (1/97)

Revised: 1/15/97
Security: Everyone

Macintosh Quadra 950: SCSI Support (1/97)

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Article Created: 18 May 1992
Article Reviewed/Updated: 15 January 1997

TOPIC ----------

This article describes SCSI support in the Macintosh Quadra 950.

DISCUSSION ----------

As in the Macintosh Quadra 900, the SCSI bus in the Macintosh Quadra 950 is divided into internal and external buses, each controlled by its own identical IC -- an NCR 53C96 device. Therefore, the internal and external SCSI buses are logically connected through software, but are electrically separate. The goal of this design was to develop a combination of controller, cabling, and termination for the internal SCSI devices which permits data transfer rates approaching the NCR 53C96 controller limit of 6MB/s. The cabling and termination of the internal SCSI bus are optimized so that the 53C96 that controls the internal bus can support data transfers at a faster rate: up to 5MB/s with existing faster third-party hard drives. The improved SCSI performance will result in increased system responsiveness when accessing large amounts of data on a fast hard drive.

The internal SCSI channel also supports an active termination which improves SCSI bus signal quality and reliability through improved transmission line and terminator design. This means that only one terminator is needed at the end of the external SCSI chain. The external channel's termination also offers a more uniform impedance and cleaner termination scheme. However, because external cabling and termination are less predictable, performance on the external bus could be lower than the internal. Electrically isolating the two channels ensures that changes in external cabling and termination don't impact the performance of the internal devices.

Even though the internal and external SCSI chains are physically different, they are still logically the same, and can therefore, like all Macintosh systems, accommodate up to seven SCSI devices. You must make sure that every device has a different SCSI ID number, regardless of which SCSI chain the device is connected

to. You cannot use SCSI ID 7, and SCSI ID 0 is usually reserved for the internal hard disk. The added value of the Macintosh Quadra 950 dual-controller design is that the internal hard drive(s) performance won't be affected by problematic devices (like a scanner) attached to the external SCSI connector. Improvements in signal quality on the SCSI bus results in higher SCSI reliability.

Article Change History:
15 Jan 1997 - Added information about SCSI ID numbers.

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Tech Info Library Article Number:10212

Macintosh Quadra 950: Integrated Circuits (6/94)

Revised: 7/1/94
Security: Everyone

Macintosh Quadra 950: Integrated Circuits (6/94)

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Article Created: 18 May 1992
Article Reviewed/Updated: 30 June 1994

TOPIC

The circuitry of the Macintosh Quadra 950 computer has many new features along with older features it shares with the Macintosh IIci and IIfx computers. Certain components appeared for the first time in the Macintosh Quadra 900, and are therefore present in the Quadra 950 as well:

- The MC68040 microprocessor
- Several new custom ICs
- The built-in video hardware
- The 68040 PDS slot.

This section describes the circuit design of the Macintosh Quadra 950.

DISCUSSION

There are three buses in the Quadra 950 computer:

- System bus
- I/O bus
- NuBus

The system bus connects directly to the pins of the MC68040 microprocessor and runs at the processor's clock rate of 33 MHz. The system bus is a high performance bus, with the capability to read burst-read and burst-write. Five controller ICs are connected to the system bus:

- Orwell, the custom memory controller
- YANCC, the NuBus controller
- DAFB, the frame-buffer controller
- The two 53C94 SCSI controllers

The I/O bus in the Quadra 950 computer is similar to the I/O bus in the Macintosh IIfx computer. The I/O bus in the Quadra 950 computer runs at a clock rate of 25 MHz. The controller ICs that are connected to the I/O bus include new custom ICs along with ICs originally designed for the Macintosh IIfx, such as the IOPs.

The NuBus runs at a clock rate of 10 MHz and includes several features of NuBus '90, including a clock signal at 20 MHz between cards, which is twice the normal rate. This clock rate doesn't apply from card to CPU.

Integrated Circuits (ICs)

The Quadra 950 incorporates all of the same ICs that the Quadra 900 did, many Apple custom ICs, and some new ASICs.

The Apple custom ICs that the Quadra 950 computer shares with earlier Macintosh models include:

- AC/DC: a custom Color Look-Up Table and Digital-to-Analog Converter (CLUT/DAC) IC developed by Apple and used in the Macintosh Display Cards 4•8, 8•24, and 8•24 GC, but improved in the Quadra 950.
- DFAC (Digitally Filtered Audio Chip): the sound input and filter IC first used in the Macintosh LC
- IOP: the I/O processors first used in the Macintosh IIfx
- SWIM: the IC that supports the SuperDrive disk drive

The Apple custom ICs that are newly designed for the Quadra 950 computer are:

- BATMAN: a custom IC (replaces the Apple Sound Chip) that acts as a sound amplifier
- SPORTY: a custom IC that provides sound output functions
- CABOOSE: a custom processor that manages system power, the real-time clock, and parameter RAM
- DAFB (Direct Attach Frame Buffer): an IC that connects directly to the system bus and controls the video RAM or frame buffer
- ORWELL: a custom IC that connects to the system bus and controls burst-mode data transfers to the main RAM
- JDB (Junction Data Bus): one of two ICs making up the I/O Adapter, connecting the data signals from the system bus and the I/O bus
- RELAYER: one of two ICs making up the I/O Adapter, controlling the bus buffers and proving bus arbitration logic
- YANCC (Yet Another NuBus Controller Chip): a custom IC that controls the NuBus interface

Third-party ICs include:

- SCSI interface ICs: two NCR 53C96
- Sonic: the DP83932 Ethernet controller IC made by National Semiconductor
- Two VIAs similar to those in earlier members of the Macintosh II family

I/O bus adapter ICs: JDB and Relayer

The I/O bus attaches local I/O devices to the system bus in a way that is flexible and highly compatible with previous Macintosh systems, and is fully buffered from the system bus to reduce capacitive loading. By putting Relayer and JDB between the system bus and I/O bus, none of the 040 signals go directly to the I/O chips, thus reducing the loading on the 040 bus signals, and increasing speed and reliability. The I/O bus hardware protocols are a subset of the 68030 bus protocols.

The two-chip set consisting of the Relayer and JDB provide a transparent connection between the system bus and the I/O bus. The I/O bus enables the Quadra 950 computer to use the same I/O device controllers used in the Macintosh IIfx. The I/O bus clock runs at 24.28 MHz and is completely asynchronous to the system bus clock.

This two-chip setup allows any system bus master such as the 040, a NuBus master card, or a master device on the PDS to request bus access and transfer data to slaves located on the I/O bus. It also allows I/O bus masters like SONIC to access main memory which is located on the system bus. This improves the overall speed of the system by isolating the faster bus (system bus) from the slower bus (I/O bus).

The I/O bus adapter is made up of two ICs: JDB and Relayer. Two ICs are used because of the high pin count required.

The functions of the Relayer IC include:

- Generating chip select and DSACK signals for devices on the I/O bus
- Converting timing signals between the system bus and the I/O bus
- Arbitrating between the system bus and the I/O bus
- Acting as watchdog for bus activity and time out
- Controlling the address-bus transceiver ICs
- Generating the clock signal for the VIA ICs

The functions of the JDB IC include:

- Controlling the data path (dynamic bus sizing and data byte lane routing)
- Synchronizing and distributing the reset signals

The ICs making up the I/O bus adapter contain no programmable registers and don't require support from the system software.

Memory Controller IC: Orwell

The Orwell IC connects to the system bus and provides control and timing signals for RAM and ROM. The Orwell IC supports all types of MC68040 memory access, including burst modes. Orwell allows all memory to be marked cache-able, which means cache-inhibit isn't asserted.

When the computer is reset, the Orwell IC maps ROM addresses into memory beginning at address $0000 0000 and disables the system RAM. As soon as the ROM code addresses the normal ROM space ($4000 0000), the Orwell IC automatically remaps the ROM to its normal addresses and restores RAM addressing starting at $0000 0000. The microprocessor always starts upon

reset at address 0. At that time there is nothing in RAM (which resides at address 0 after reset). Therefore, ROM code needs to be accessed, and since its normal addressing starts at $4000 0000, it's remapped down so the processor has some code to fetch upon reset. This is the same process in every Macintosh II.

RAM Control

The Orwell IC controls four banks of dynamic RAM. Each bank accepts standard 80ns SIMMs containing 1MB, 4MB, and perhaps 16MB (256K and 2MB aren't supported), giving total memory sizes from 8MB to 16MB for each bank (256MB if 16MB SIMMs work). Therefore, the Quadra 950 could have a total of 64MB when using the SIMMs currently available. 16MB SIMMs haven't been thoroughly tested on the Quadra 950, and therefore can't be listed as a possible configuration. The Quadra 950 can also use 60ns SIMMs, but Orwell is programmed for 80ns DRAM, so a 60ns SIMM wouldn't improve the speed. If one slot in a given bank is filled, then all slots in the bank must be populated.

Note: When large amounts of DRAM are installed, the memory check upon startup is lengthy and can cause users to think that the computer isn't functioning. There is no software indication that the computer is running memory checks.

The Orwell IC contains registers that the system software uses to set the starting address of each bank of memory. At startup, the system software determines the sizes of the banks and assigns the bank starting addresses so that the banks occupy contiguous memory spaces, unlike that of the Macintosh IIci and IIsi, which have split memory maps.

ROM

The ROM in the Quadra 950 is soldered directly to the main logic board, and consists of two 4MBit ROMs at 150ns (each ROM is a 256K x 16 device)=1MB ROM. As with all instructions, ROM can be cached in the 040. The memory controller, Orwell, supports burst access to the ROM via the 68040 fake burst mechanism. This means that Orwell asserts Transfer Burst Inhibit (TBI) with TA for accesses to ROM, which can't be "bursted." This allows the 040 to try a burst, and then notice that it must do the accesses in four individual long words.

SCSI Controller ICs

In the Quadra 950, the SCSI bus is divided into internal and external buses, each controlled by its own NCR 53C96 device. The internal and external SCSI buses are logically connected, but electrically separate. The external bus is electrically isolated from the internal bus so that changes in external cabling and termination have no effect on the performance of the internal SCSI devices.

The cabling and termination of the internal SCSI bus are optimized so that the 53C96 that controls the internal bus can support data transfers at a faster rate -- up to 5MB/s (the maximum the chip can transfer is 6MB/sec).

Earlier Macintosh computers were capable of a 3MB/s transfer rate.

NuBus Controller IC: YANCC

In the Quadra 950 computer, the interface between the system bus and the NuBus comprises three chips: the YANCC IC and two 16-bit transceiver ICs that are the same as the ones in the Macintosh IIci.

The YANCC IC maps certain system bus cycles to NuBus cycles and certain NuBus cycles to system bus cycles. The features of the YANCC IC include:

- Support for all types of single data transfers in either direction
- A buffer, one long word deep, for appended writes from the MC68040 to the NuBus
- Support for block move transfers between NuBus masters and main memory
- Support for pseudo-block transfers between the MC68040 and NuBus slaves
- Support for some new functions defined in the NuBus '90 specification

Unlike the NuBus controllers in previous Macintosh computers, the YANCC IC generates an interrupt when there is an error involving the write buffer. Software controls this interrupt by means of a control and status register in the YANCC.

Video Frame-Buffer Controller IC: DAFB

The built-in video hardware in the Quadra 950 computer provides high-performance graphics on all current Macintosh monitors. The video hardware is built around a video frame buffer controlled by the DAFB IC.

The video frame buffer comprises four banks of video RAM (VRAM); two of which are soldered onto the logic board. This minimum configuration (1MB soldered on) supports 16 bits per pixel on all Apple monitors up to 16 inch, and 8 bits per pixel on all Apple monitors. The basic VRAM configuration supports 24 bits per pixel on the 12-inch RGB monitor. The standard 1MB VRAM also supports NTSC and PAL monitors, using Apple convolution as well as VGA monitors. By installing VRAM SIMMs into the other two banks (four 256K VRAM SIMMs), the user can expand the frame buffer to support 24 bits per pixel for the 13-inch and 16-inch monitors.

Because the frame buffer in the Quadra 950 computer is connected directly to the system bus, which is now even faster than the Quadra 900, it speeds up all applications, even those that don't use QuickDraw. Given the faster clock speed, and the removal of wait states in the VRAM timing, the Quadra 950 frame buffer can perform graphic operations, such as scrolling, up to 50% faster than the Quadra 900 frame buffer.

The control registers in the DAFB IC and the frame-buffer VRAM are mapped into the memory locations that were assigned to NuBus slot $9 in earlier models.

Sound ICs: DFAC, Batman, and Sporty

The Quadra 950 computer uses a new sound system. Its features are similar

to the features of the sound interface in the Macintosh LC and the IIsi. The features of the Quadra 950 sound interface include:

- ASC compatibility
- Ability to play 8-bit sound files
- 8-bit sound input
- Lower noise and distortion analog circuitry

Four Apple custom ICs provide the sound interface:

- DFAC: provides sound input and an anti-aliasing filter
- Batman: an updated version of the Apple Sound Chip
- Sporty: a custom IC that replaces the two Sony sound ICs
- External digital-to-analog converter (DAC)

The Digitally Filtered Audio Chip (DFAC) is an Apple custom IC that is also used in the Macintosh LC. The DFAC IC includes the anti-aliasing filter and analog-to-digital converter (ADC) for sound input. It also contains a digital filter for conditioning output data before it is sent to the DAC. The DFAC serializes the sound input information and sends it to Batman, where it is put into a FIFO, which software can read.

The Batman sound chip provides ASC compatibility and includes several important new features such as support for sound input, support for an external D/A converter, and large FIFOs which buffer playback and sound input samples. Batman doesn't support the wave table function which was available in the original ASC (this feature was not widely used and should only cause very limited compatibility problems). The Batman transfer acknowledge is generated by Relayer.

For sound output, an external DAC provides higher-quality sound than that generated by the PWM system used in earlier Macintosh models. The Sporty custom IC replaces the two Sony ICs used in earlier models and provides better sound quality (that is, less noise and distortion). Like the Sony ICs it replaces, the Sporty IC also contains digital attenuators. A separate amplifier with power output of 2 watts drives the larger speaker used in the Quadra 950 computer.

Article Change History
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30 Jun 1994 - Revised formatting.
09 Dec 1992 - Corrected to remove statement saying you cannot mix RAM speeds in different banks.

Support Information Services

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Tech Info Library Article Number:10213

Tech Info Library

Macintosh Quadra 950: Connectors

Revised: 5/15/92
Security: Everyone

Macintosh Quadra 950: Connectors

==========

Article Created: 18 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article discusses the Macintosh Quadra 950's:
- microphone and Mic In connectors
- audio Line In connectors
- sound out connector and speaker
- Ethernet connector

DISCUSSION -----

Microphone and Mic In Connector

The Macintosh Quadra 950 computer includes a microphone, and a Mic In connector in the back. The microphone is similar to the one provided with the Macintosh IIsi and LC, but it has a longer cable to allow it to reach the floor-standing case.

Audio Line In Connectors

The audio Line In connectors are standard phono connectors intended for users who wish to use the computer to sample line-level devices such as home stereo systems. The signals from the Line In connectors are internally mixed to a single (monophonic) audio signal; that signal is combined with the input from the Mic In connector and then sent to the sound input circuit.

Note: Even though there are two Line-In connectors, the stereo channels are mixed into a single monophonic signal; therefore stereo information is lost. For the user's convenience, the computer has two connectors so that an external mixer isn't needed when connecting the computer to the most common type of consumer audio equipment.

Sound Out Connector and Speaker

The Sound Out connector on the Quadra 950 computer is similar to the one on the Macintosh II and has the same electrical characteristics. The audio amplifier for the internal speaker is more powerful than those on other Macintosh, models so that it can drive the speaker at higher sound levels (approximately 2 watts per channel compared to .25 watts per channel on the Macintosh II). The higher levels are required because the computer is normally on the floor and thus farther from the user.

Ethernet Connector

The Ethernet implementation on the Quadra 950 is the same as on The Quadra 900. Ethernet is implemented using the National SONIC Ethernet controller chip. This device includes an IEEE 802.3 encoder/decoder (ENDEC), media access control (MAC) unit, separate 32-byte send and receive FIFOs, and DMA controller in one device. SONIC is housed in a 132-pin PQFP package. The Ethernet global address (which provides a unique 48-bit identity for each CPU built) is provided by a small ROM.

The SONIC controller includes DMA capability. It will request the bus and transfer data between its internal registers and main memory.

The Ethernet connector on the Quadra 950 computer is the Apple AUI (AAUI) connector, which accepts any FriendlyNet adapter. There is a different FriendlyNet adapter for each of the different kinds of Ethernet standard cable:

- The AUI (thick) cable

- CheaperNet (thin) cable

- 10BASE-T (twisted pair) cable

The speed of the I/O bus has been improved to 25 MHz over the 16 MHz of the Quadra 900. This speed increase can improve Ethernet throughput by 20%.

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Tech Info Library Article Number:10214

Tech Info Library

Macintosh Quadra 950: Expansion Slots

Revised: 5/15/92
Security: Everyone

Macintosh Quadra 950: Expansion Slots

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Article Created: 18 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

The Macintosh Quadra 950 computer has five NuBus slots and one PDS (processor-direct slot) line with NuBus slot $E and uses the same opening in the back. The use of a PDS card precludes the use of a NuBus card in slot $E.

DISCUSSION ----------

NuBus slots

NuBus in the Quadra 950 provides all the benefits found in the Quadra 900:

- Provides higher power

- Accommodates oversized NuBus cards

- Supports some of the NuBus '90 features

Higher Power

The power supply in the Quadra 950 computer is designed to provide additional current on the +5V outputs for the NuBus slots, compared with the current specified in "Designing Cards and Drivers for the Macintosh Family," second edition. The Quadra 950 has enough power to support a total of two 25-watt cards and three 15-watt cards.

Oversized NuBus Cards

Each NuBus slot can accommodate either a standard NuBus card or an oversized card. The oversized card is the same length as a standard NuBus

card, but it is 2 inches taller. Each NuBus slot in the Quadra 950 computer includes a card guide; to install an oversized card, the user removes the card guide.

NuBus '90 Features

NuBus '90 is the 1990 proposal for revision of the IEEE standard for the NuBus (IEEE STD R1196-R-1990). Apple has a representative on the panel designing the new standards, and has had since its inception. The specifications for NuBus '90 are incomplete and still under development, but Apple has implemented the portion of the specifications that are completed. Apple will be updating the implementation as the specifications expand and stabilize. The NuBus slots in the Quadra 950 computer provide the following new features described in that proposal:

- Low current at +5 V is available on the new STDBYPWR pin when main power is off and the AC cord is plugged in.

- New signals /TM2, /CLK2X, and /CLK2XEN support block transfers at double the standard rate (20 MHz). The Quadra 950 computer allows double-rate block transfers between NuBus cards, but doesn't support double-rate transfers to or from the main memory (this remains at 10 MHz).

- NuBus '90 defines new signals SB0 and SB1 for a serial bus on the formerly reserved pins A2 and C2. The serial-bus signals are bused and terminated, but the main circuit board doesn't drive them.

- NuBus '90 defines new signals /CM0, /CM1, /CM2, and /CBUSY to support a cache coherency protocol. Pins on the NuBus connector are assigned to those signals, but the Quadra 950 system doesn't support them.

Processor-Direct Slot

For maximum performance, the processor-direct slot (PDS) is connected directly to the MC68040 microprocessor by way of the system bus. Possible applications for a PDS expansion card include cache memory, a video frame buffer, a DMA-based I/O controller, expansion memory, or even an additional MC68040 microprocessor. When a PDS card is installed, slot $E is unavailable for a NuBus card.

A PDS card can have memory locations in the upper part of the RAM memory space or in the space assigned to NuBus slot $E. If the card uses slot $E addresses, it must decode all addresses in both the slot space and the super slot space, responding to any access to an unused location with a TEA on the processor bus to indicate an illegal address.

A typical PDS card maps into the NuBus space and works with the system software's Slot Manager. Such a card must contain a NuBus declaration ROM and must notify the NuBus controller that it is using the NuBus space by asserting (pulling low) the signal /PDS.SLOT.E.EN on the PDS connector.

WARNING: A PDS expansion card for the Quadra 950 computer must be designed to work with the MC68040 microprocessor; PDS cards designed for computers

that use the MC68020 or the MC68030 won't work in the Quadra 950 computer.

A PDS card for the Quadra 950 computer has the same dimensions as a NuBus card and can include a back-panel connector. When the PDS card is installed, it occupies NuBus slot $E, reducing the number of available NuBus slots from five to four. Any PDS card designed to operate in the Quadra 950 must be capable of meeting the 33 MHz timing specification for the Motorola 68040. This requires shorter output delay times than the 25 MHz timing. Otherwise, PDS connector pinouts, size and placement are identical among the Macintosh Quadra 900, 700, and 950.

IMPORTANT: The signals on the PDS connector are connected directly to the MC68040 with no buffers. Therefore the address, data, and clock lines on a PDS card must present capacitive loads of not more than 40 pF. The control lines must present capacitive loads of not more than 20 pF.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10215

Tech Info Library

Macintosh Quadra 950: Specifications

Revised: 5/15/92
Security: Everyone

Macintosh Quadra 950: Specifications

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Article Created: 18 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article gives the technical specifications for the Macintosh Quadra 950 computer.

DISCUSSION -----

Microprocessor

- Motorola 68040, 32-bit architecture, 33 MHz clock speed

- Integral Paged Memory Management Unit (PMMU), Floating Point Unit (FPU), and 8-kilobyte cache architecture

I/O Speed

- 25 MHz

Memory

- Comes with 8MB of RAM standard and eight memory expansion slots for 80ns SIMMs (Single In-line Memory Modules).

- Expandable to 64MB of RAM by installing 4MB SIMMs in all 16 slots.

Disk Drives

- Built-in Apple SuperDrive 1.4MB floppy disk drive

- 230MB or 400MB internal Apple SCSI hard disk drive (optional)

- Support for four internal SCSI devices, such as a CD-ROM or DAT drive, or SCSI hard disk drive (several capacities available)

Video Display

- Up to 16 bpp video support for most Apple monitors standard (15-inch portrait and 21-inch landscape require 2MB VRAM)

- Supports all Apple monochrome and color monitors, including:
  - Macintosh 12-inch RGB Display
  - Macintosh 12-inch Monochrome Display
  - AppleColor High-Resolution RGB Monitor
  - Macintosh Portrait Display
  - Macintosh Two-Page Monochrome Monitor
  - Macintosh 21-inch Color Display

- Supports some other non-Apple monitors, including VGA, NTSC, and PAL.

- 24 bpp video support on 12-inch (1MB VRAM), 13-inch, NTSC, PAL, 16-inch with 2MB VRAM.

Video RAM

- 1MB, upgradable to 2MB for display of more colors or shades of gray

Interfaces

- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices daisy-chained through a synchronous serial bus

- Two serial (RS-232/RS-422) ports, 230.4 kilobits per second maximum (up to 0.920 megabits per second if clocked externally)

- SCSI bus interface

- Video port to support RGB and monochrome monitors of various sizes and resolutions

- Five internal NuBus expansion slots

- One 68040 PDS (processor-direct slot) provides access to the CPU for highest possible performance.

- Stereo sound output port capable of delivering sound to both channels of a stereo device

- Sound input port for monaural sound input

- Two audio line input ports (stereo input is mixed to a monophonic signal)

- AUI-15 Ethernet connector

Keyboard

- Supports all ADB (Apple Desktop Bus) keyboards.

Mouse

- Apple Desktop Bus Mouse; mechanical tracking, optical shaft, or contact encoding

Sound Generator

- Custom sound chip drives stereo miniature phone jack headphones or stereo equipment.

Clock/Calendar

- Custom chip with long-life lithium battery

Microphone

- Electret, omnidirectional; output voltage is 4 millivolts, peak-to-peak, at normal volume.

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These built-in features and third-party options provide alternative input and output tools for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 volts AC, RMS automatically configured

- Frequency: 59 to 60 Hz, single phase

- Power: 303 watts maximum, not including monitor power

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 milliamps (a maximum of three ADB devices is recommended)

- Mouse draws 80 milliamps.

- Keyboard draws 25 to 80 milliamps, depending on the keyboard model used.

Operating Environment

- Operating temperature: 50 F to 104 F (10 C to 40 C)

- Storage temperature: -40 F to 116.6 F (-40 C to 47 C)

- Relative humidity: 20% to 80% noncondensing

- Maximum altitude: 10,000 ft. (3,048m)

Size and Weight

- Main unit
  - Height 18.6 inches (47.3 cm)
  - Width 8.9 inches (22.4 cm)
  - Depth 20.6 inches (52.3 cm)
  - Weight 36 lb. 12 oz. (16.7 kg)*

- Mouse
  - Height 1.1 inches (2.8 cm)
  - Width 2.1 inches (5.3 cm)
  - Depth 3.8 inches (9.7 cm)
  - Weight 6 oz. (.17 kg)

 * Weight is greater with an internal hard disk.

Noise Level

  < 40 db (floor standing position) measured from the seated operator position.

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Tech Info Library Article Number:10216

..TIL10217-Network_Systems_Corp-.pdf

Tech Info Library

Network Systems Corp.

Revised: 7/14/93
Security: Everyone

Network Systems Corp.

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Article Created: 11 May 1992
Article Reviewed/Updated: 14 July 1993

Network Systems Corp.

7600 Boone Ave. N.
Minneapolis, MN 55428

612-424-4888

612-424-2853 Fax

Company Profile:
Hardware and software, specializing in integrating local area networks (LANs).

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10217

Tech Info Library

RAD Network Devices, Inc.

Revised: 7/16/93
Security: Everyone

RAD Network Devices, Inc.

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Article Created: 11 May 1992
Article Reviewed/Updated: 3 December 1992

RAD Network Devices, Inc.

7711 Center Ave.
Suite 270
Huntington Beach, CA 92647-3076

714-891-1446

714-891-1764 Fax

Company Profile:
Hardware and software, specializing in the integration of local area networks (LANs).

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10219

Tech Info Library

Software Publishers Association

Revised: 7/20/93
Security: Everyone

Software Publishers Association

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Article Created: 11 May 1992
Article Reviewed/Updated: 20 July 1993

Software Publishers Association

1730 M Street N.W.
Suite 700
Washington, DC 20036-4510

202-452-1600

Fax: 202-223-8756

Company Profile:
Publisher of the SPA self-audit kit.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10220

Tech Info Library

Ascom Timeplex (formerly Timeplex, Inc.)

Revised: 7/20/93
Security: Everyone

Ascom Timeplex (formerly Timeplex, Inc.)

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Article Created: 11 May 1992
Article Reviewed/Updated: 20 July 1993

Ascom Timeplex, Inc.
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400 Chestnut Ridge Road
Woodcliff Lake, NJ 07675

201-391-1111

201-573-6470 Fax

Company Profile:
Formerly Timeplex, Inc., datacomm, specializing in switching equipment, i.e. multiplexers, and modems.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10221

Tech Info Library

AppleTalk Remote Access: V.42bis Data Compression

Revised: 5/21/92
Security: Everyone

AppleTalk Remote Access: V.42bis Data Compression

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Article Created: 18 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I heard that using AppleTalk Remote Access uses software to turn off the V.42 compression built into some modems. Do you know if this is the case? If it is, is there some way to prevent it?

DISCUSSION -----

Here are a few terms clarified for this discussion:

MNP Level 4 = Error Correction
MNP Level 5 = Data Compression (2:1)

v.42 = Error Correction
v.42bis = Data Compression (4:1)

v.32 = 9600 baud
v.32bis = 14.4K baud

AppleTalk Remote Access (ARA) provides MNP Level 4 error correction and v.42bis data compression in software. There's no way to disable these features in ARA. ARA doesn't do MNP Level 5 data compression nor v.42 error correction.

The main reason ARA does MNP Level 4 error correction and v.42bis data compression in software and inside the Macintosh is for reliability. The Macintosh serial connection isn't nearly as reliable at 57.6K baud as it is at 9600 or 19.2K baud. If ARA were to use the v.42bis ability of a 9600 baud modem, the connection between the Macintosh and the modem would have to be 57.6K baud for maximum performance. By doing the compression and decompression in the Macintosh via software, the connection between the

Macintosh and the modem need only be at 9600 baud for v.32 modems. For v.32bis modems (14,400 baud) the connection should be 19.2K baud.

ARA also uses a proprietary technique called "Smart Buffering" that is only possible if the error correction and data compression are done in software. Due to the more reliable serial connection and the "Smart Buffering," ARA provides superior performance using software-based error correction and data compression.

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Tech Info Library Article Number:10224

Tech Info Library

Macintosh LC and LC II: Expansion Card Differences

Revised: 7/21/92
Security: Everyone

Macintosh LC and LC II: Expansion Card Differences

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Article Created: 18 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

We purchased a large number of Macintosh LC II computers and Avatar Ethernet cards. The cards aren't working. According to Avatar, they tested the card, along with their coax and Token Ring cards on a prototype Macintosh LC II, and they worked fine. The coax and Token Ring cards are working in the production LC II, but the Ethernet card seems to have a problem.

When the card is in the Macintosh LC II, it hangs when the computer restarts. When we remove the card and restart the computer, AppleTalk is off. We then replace the card, and the computer starts, but if we turn AppleTalk on and restart, it hangs again. We get a message to restart the computer to toggle AppleTalk on and off.

DISCUSSION ----------

There are some basic differences between the Macintosh LC and the Macintosh LC II that developers of expansion cards need to consider. These differences are documented in the Macintosh LC II developer notes.

These are the two primary differences:

- The 68030 generates a bus error when addressing a non-existent memory, and the 68020 does nothing to detect these errors.

- The NuBus FC3 function code signal is always driven high on the Macintosh LC II. This determines whether 24- or 32-bit addressing is used.

These differences could be enough to cause some cards/drivers to have problems in the Macintosh LC II. We provided this information to our

developers and encouraged them to offer software patches/ROM upgrades for any affected cards.

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Tech Info Library Article Number:10227

Tech Info Library

Macintosh Quadra: Internal CD-ROM Players

Revised: 7/21/92
Security: Everyone

Macintosh Quadra: Internal CD-ROM Players

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Article Created: 18 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What internal CD-ROM players are available for the internal bay of a Macintosh Quadra 900 or 950?

DISCUSSION ----------

There are a number of third-party options, including MicroNet Technology, Peripheral Land, Inc., and MicroTech. You can obtain these CD-ROMs from computer retailers, or directly from the manufacturers.

Apple CD-ROM players fit, but we don't (nor does anyone else to our knowledge) provide the mounting hardware or audio and power cables.

On AppleLink, you can find contact information for the various vendors by clicking the Library Index button to view the folder structure in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:10229

Tech Info Library

Macintosh Quadra 950: Color Addition Extension (10/94)

Revised: 10/3/94
Security: Everyone

Macintosh Quadra 950: Color Addition Extension (10/94)

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Article Created: 18 May 1992
Article Reviewed/Updated: 3 October 1994

TOPIC ----------

When a color monitor is connected to the on-board video circuitry of some early Macintosh Quadra 950 systems, AND the Monitors control panel is set to millions of colors, certain color manipulation commands may not work in some graphics application programs. The problem isn't destructive. The system won't crash, and data won't be corrupted.

To correct the problem, upgrade to system software version 7.1 or later. Or install the system extension called 950 Color Addition, as described below.

DISCUSSION ----------

What Is the 950 Color Addition Extension?
---
950 Color Addition is a system software extension that fixes a minor problem on Macintosh Quadra 950 computers. This extension has no function on other Macintosh models.

Where Do I Get It?

These articles can help you locate the software update mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

How To Install It
---
1) Insert the "Macintosh Quadra Extra" floppy disk in the floppy disk

drive.

2) Drag the 950 Color Addition icon into the System Folder on your startup disk.

3) When a message asks you if you want the 950 Color Addition to be stored in the Extensions folder, click OK.

   Note: If the 950 Color Addition is already installed in your Extensions folder, you don't need to reinstall it. When you are asked whether you want to replace the 950 Color Addition, click Cancel.

4) Restart your Macintosh Quadra 950.

If you Reinstall System Software

If you later reinstall system software, you will need to repeat the above procedure.

Article Change History:
03 Oct 1994 - Removed file from article and added new "Where Do I Get It?" information.
19 Jan 1993 - Updated with System Software version 7.1 information.

Support Information Services

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Tech Info Library Article Number:10232

Tech Info Library

Apple Internal 230MB Hard Drive: Specifications

Revised: 7/21/92
Security: Everyone

Apple Internal 230MB Hard Drive: Specifications

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Article Created: 18 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article provides the technical specifications for the 230MB internal hard disk drive.

DISCUSSION -----

Capacity

Formatted capacity: 232MB
Formatted sector size: 512 bytes
Sectors per track: 44 to 87
Total data tracks/surface: 1,930
Total data sectors (blocks): 471,140

Performance

Track to track: 4 milliseconds, including settling
Average access time: 16 milliseconds, including settling
Full stroke: 28 milliseconds, including settling
Average latency: 7 milliseconds
SCSI Data Burst Rate: ≥ 5.0 megabytes/second (CPU/bus dependent)
Time to ready from power on: <20 seconds
Time to stop from power down: <20 seconds

Environmental

Exceeds all Macintosh system environmental specifications: operating and non-operating temperature, humidity, altitude, vibration, and shock.

Size and Weight

Dimensions: 150 x 102 x 25.4 millimeters (1/3 height, 3.5-inch form factor)
Weight: 0.85 kilograms (30 ounces) not including mounting carrier

Miscellaneous

Encoding Method: 1,7 RLL (Run-Length Limited)
Servo mechanism: optical encoder servo
Actuator type: balanced rotary voice coil
Landing zone: dedicated (not on data)
Head park and lock: the actuator automatically parks and locks in the
landing zone at power down.
Mounting: any mounting orientation is supported.

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Tech Info Library Article Number:10234

Tech Info Library

PowerBook: Using HyperCard To Dial Voicemail and Play Messages

Revised: 5/16/94
Security: Everyone

PowerBook: Using HyperCard To Dial Voicemail and Play Messages

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Article Created: 17 June 1992
Article Reviewed/Updated: 13 July 1992

TOPIC ----------

I'm trying to use HyperCard to dial my Macintosh PowerBook modem to call my voicemail, so I can listen to my messages through the speaker.

I can use the dial command in HyperCard to dial the modem, but when I try to enter my extension and password, the modem resets.

I can also use the serial XCMDs, send the ADT command, get a constant dial tone, and then use the dial command to send the number, but this doesn't work either.

DISCUSSION ----------

You need to modify your dial command and write button scripts to send the appropriate serial commands to the modem.

1) Issue the command ATM1 to tell the speaker to remain on.

2) Time the necessary pauses for the voicemail system when it asks you to select/press buttons for options, and so on.

   Each comma you insert into the dial string adds 1 second to the dial time. For example:

   ATDT 9,,555-1212;

   dials 9, waits 2 seconds for the phone system (usually for PBX) to respond, and then continues to dial the number.

3) Add a semicolon to the dial string (as shown in the example above). When the semicolon is reached, the modem drops back into command state -- instead of trying to make a connection.

If your string is longer than 40 characters, you must use multiple dial strings since the PowerBook Fax/Data Modem has a 40-character limit. You can enter multiple dial commands by issuing a semicolon, which puts the modem back into the command state. Then type the ATDT XXXXXXXXX; for additional tones you need to send.

4) Issue an ATH0 when you want to hang up the modem.

Support Information Services

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Tech Info Library Article Number:10237

Tech Info Library

System 7.0.1: False Disk Unreadable Message w/Removable Media

Revised: 1/15/93
Security: Everyone

System 7.0.1: False "Disk Unreadable" Message w/Removable Media

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Article Created: 19 May 1992

Article Change History

01/12/93 - CORRECTED
- To show the correct version of system software

TOPIC ----------

Occasionally, my Macintosh Quadra gives me the error message, "This disk is unreadable, do you want to initialize?" -- with "Eject or Initialize" as my options. This happens only when I have a CD-ROM or other removable media (such as a cartridge drive) connected.

DISCUSSION ----------

This is caused by a harmless SCSI Manager bug that is fixed in System Software version 7.1. This seems to happen randomly with Quadras and System 7.01 when you have a CD-ROM or other removable-media devices connected.

When you get this error message, click the Eject button. If you click the Initialize button, you'll get this message, "Initialization failed! This disk is write-protected!" with an "OK" button.

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Tech Info Library Article Number:10241

Tech Info Library

AppleShare Print Server: Hiding the Chooser's Non-Spool Listing

Revised: 7/16/92
Security: Everyone

AppleShare Print Server: Hiding the Chooser's Non-Spool Listing

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Article Created: 19 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I leave AppleShare Print Server (version 2.0 or 3.0) running 24 hours a day and have a LaserWriter captured -- bypass disabled, so that users see the Print Server entry in the Chooser, but not the print-direct entry.

At night, I turn off the LaserWriter. In the morning, when I turn on the LaserWriter, both the LaserWriter and the spooler version of the LaserWriter appear in the Chooser. Should this happen?

DISCUSSION -----

This a known problem, and there are two ways to correct it:

- Release the printer and recapture it.

- Send a print job to the LaserWriter through the spooler.

Printing directly to the LaserWriter does not remove the direct Chooser listing.

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Tech Info Library Article Number:10242

Tech Info Library

Networks: How to Have a Server Control Time Stamps

Revised: 7/16/92
Security: Everyone

Networks: How to Have a Server Control Time Stamps

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Article Created: 19 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

How is the "Last Modified" column for servers affected when users have different times set on their Macintosh computers -- for example, when some users reset their clocks for daylight savings time and some don't?

DISCUSSION -----

The time stamp shown in the Last Modified column for servers changes from machine to machine, depending on USER'S clock setting. To see this, mount any server and note the time stamp of a file. Dismount the server, and change your clock by 1 hour. Now re-mount the server, and the time stamps have all changed by 1 hour.

This is a known problem that can affect applications that depend on time stamps; however, there are utilities available that synchronize all Macintosh computers with the server's clock.

One free utility for this is Macintosh Timelord/Tardis 1.3. Timelord (Chooser Extension) lets a networked Macintosh act as timeserver to other Macintosh computers connected to it. Tardis (Control Panel) is the client.

Macintosh Timelord/Tardis is available through ftp on the Internet and from user groups.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10243

Tech Info Library

Macintosh Quadra 900 Tech Procedures: Pixel Depth Correction

Revised: 7/14/92
Security: Everyone

Macintosh Quadra 900 Tech Procedures: Pixel Depth Correction

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Article Created: 14 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Currently we have two sources of information on pixel depth for the Macintosh Quadras:

- Technical Procedures for the Quadra 900, p. 5.4 (Additional Procedures)

- A Tech Info Library article titled "Macintosh Quadra: Pixel Depth for Various VRAM Configurations"

There is a discrepancy between them when comparing "PAL with convolution." Technical Procedures says "millions" of levels, while the Tech Info Library article says 256 levels.

DISCUSSION -----

The Quadra 900 Technical Procedures are incorrect, and will be corrected in a future version.

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Tech Info Library Article Number:10250

Tech Info Library

A/UX 3.0: scn_open request for write Error & Wrkaround (6/96)

Revised: 6/28/96
Security: Everyone

A/UX 3.0: "scn_open request for write" Error & Wrkaround (6/96)

==========

Article Created: 13 May 1992
Article Reviewed/Updated: 28 June 1996

TOPIC ----------

I recently attempted to launch A/UX 3.0, the boot process halted with the screen displaying, in the upper left hand corner, scn_open : request for write. What happened? How I can get A/UX to launch properly?

DISCUSSION ----------

We searched for the "scn_open : request for write" error message, and this bug was reported in an A/UX bug report. Here is the description of this bug and workaround:

After running newconfig/autoconfig and moving the root disk to another machine, the error message "scn_open: write failed" may occur, and the toolbox will not startup.

The problem is that if "launch" detects that autoconfig needs to run, it will boot /newunix instead of /unix. /newunix's major device numbers in this case no longer match the major device numbers of the root file system. This causes the toolbox "startmac -o minimal..." to bail as the major number for the uinter driver doesn't match the entry position in the device switch table. Instead, it now matches the scanners entry point, and scn_open() is being called instead of ui_open()!

The correct solution is to hard-code the major device numbers within the master.d files, but as this solution is not viable at this time, a quicker hack is to have "launch" from Startup set the verbose flag "-v" when it detects that it must do an autoconfig. This is very simple, and will fix most cases. There may be cases where other devices have "moved" with respect to /unix vs. /newunix, which may be catastrophic, but not sure at this point.

Other scenario has also been found to produce the same problem, like Ctrl C out

of newconfig debugger after asking for IP address information. The workaround to this is to run "launch" from A/UX Startup with the verbose "-v" flag.

Article Change History:
28 Jun 1996 - Corrected wording in article.

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Tech Info Library Article Number:10251

Tech Info Library

Ofoto: Saving Images as MacPaint Files

Revised: 7/14/92
Security: Everyone

Ofoto: Saving Images as MacPaint Files

==========

Article Created: 12 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm using the Apple OneScanner and Ofoto 1.0 with system software version 6.0.7 or 6.0.8, and I'm attempting to save a file as a MacPaint file.

The manual said to scan at 72 dpi in black and white, which I did. When I tried to "Save As…" a MacPaint file format, the option was grayed out. Is there a way to use the MacPaint option?

DISCUSSION ----------

In versions 1.0, 1.0.1, and 1.1 of Ofoto (in other words, all versions to date), you must use one of the following settings in the Scan Controls windoid to have the MacPaint option available in the "Save As…" dialog:

Calibration: Screen Blk & Wht
Image Type: Line Art (Autodetect unchecked)
Auto radio button selected

- or -

Calibration: Screen Blk & Wht
Image Type: Photo (Autodetect unchecked)
Auto radio button selected

- or -

Calibration: Screen Blk & Wht
Image Type: Autodetect checked
Auto radio button selected

The choice of Manual or Auto radio buttons is an important one. None of the Manual settings provide the MacPaint option in the "Save As…" dialog.

The first setting above allows you to scan a color or gray-scale image as a high contrast black and white line art image without any dithering. The saved MacPaint file will also be a black and white line art image without dithering.

The second setting allows you to scan a color or gray-scale image as a gray-scale image. The saved MacPaint file will be a dithered black and white image.

The third setting produces one of two results, based on the type of original artwork scanned:

- A black and white line art image results if the original is line art. The MacPaint file will be line art.

- A gray scale image will be created if the original is a color/gray scale image. The MacPaint file will be a dithered black and white image.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10252

ImageWriter LQ: Using with Apple IIe Card

Revised: 7/14/92
Security: Everyone

ImageWriter LQ: Using with Apple IIe Card

==========

Article Created: 14 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm trying to use the ImageWriter LQ with my Macintosh LC with the Apple IIe Card installed. When I print from Macintosh software, everything works fine. When I try to print from Apple IIe software, it looks like printing is going to start, but the printer never responds and the program never returns from trying to print.

DISCUSSION ----------

The ImageWriter LQ defaults to a baud rate of 19,200. The Macintosh defaults to 19,200. However, the Printer Card device in the Option Panel defaults to 9600. This is what causes the print job to fail.

To get the Apple IIe Card out of the attempt to print to the ImageWriter LQ, power off the ImageWriter LQ. This will cause most applications to abort the attempt to print, and return to normal operation, thus retaining any unsaved work.

There are two workarounds:

- If you AREN'T using the ImageWriter LQ from the Macintosh, set the DIP switches on the LQ to 9600. This is SW2-1 closed and SW2-2 closed. It's the opposite of the default (both switches open), and allows use of the Printer Card device in the IIe Card Option Panel.

- If you're using the ImageWriter LQ from both the Macintosh and the IIe Card, then you need to make changes in the IIe Card Option Panel.

  1) Go to the Slots device, and move the Printer Card icon from slot 1 to the Spare Cards area.

2) Select the appropriate Serial Card icon (modem port or printer port), and place it in slot 1.

3) Select the appropriate Serial Card icon (printer port or modem port) from the scrolling device list.

4) In the Serial Card's settings make sure the following are set:

Device Connected:

- Other Device (Use Settings Below)

Port Characteristics:

Baud Rate:	19200	Auto Line Feed:	Off
Data Format:	8 Data/1 Stop	Interrupts:	Off
Parity:	None	Serial Card Mode:	Printer
Line Length:	80 Characters	Handshaking:	XON/XOFF

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10253

Tech Info Library

Macintosh Quadras: Using AppleTalk Phase 1

Revised: 7/14/92
Security: Everyone

Macintosh Quadras: Using AppleTalk Phase 1

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Article Created: 12 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I'm connecting Macintosh Quadra systems using the internal Ethernet card and the AppleTalk Phase 1 driver on an AppleTalk Phase 1 internetwork. I want to stay with AppleTalk Phase 1. Why must Macintosh Quadra systems use AppleTalk Phase 2 only?

DISCUSSION -----

It's possible to attach a Macintosh Quadra, using its built-in Ethernet port, to an AppleTalk Phase 1 EtherTalk network using the EtherTalk 1.2 adev. However, this configuration isn't supported because it wasn't tested. In fact, using a NuBus Ethernet card like the Apple Ethernet NB Card or EtherTalk NB Card (Rev. M or later) isn't supported, but appears to work as well. Again, this configuration wasn't tested and isn't supported.

The bottom line here is that everything will most likely work properly. However, if it doesn't, our advice will be to upgrade to AppleTalk Phase 2 EtherTalk.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10254

Tech Info Library

PATHWORKS: Printing 8-bit Characters on LaserWriters

Revised: 7/14/92
Security: Everyone

PATHWORKS: Printing 8-bit Characters on LaserWriters

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Article Created: 13 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Using Digital PATHWORKS and a LaserWriter Plus, the Palatino font option characters don't come out right. For example, a "bullet" comes out as a "%" sign.

DISCUSSION ----------

Digital told us that this is a known problem, and you need to set the printer to 8-bit mode. Here are two PostScript files to do this. Print the following two files in the PATHWORKS directory:

msa$root:[msa.msap$utility] to your printer to set the printer to 8-bit mode:

msap$set_params.ps
msap$show_params.ps

The second file prints a confirmation sheet on the printer.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10257

Tech Info Library

Macintosh Quadra: NSI 1.2 Resolves LocalTalk Conflict (1/95)

Revised: 1/31/95
Security: Everyone

Macintosh Quadra: NSI 1.2 Resolves LocalTalk Conflict (1/95)

==========

Article Created: 27 May 1992
Article Reviewed/Updated: 31 January 1995

TOPIC ----------

Did AppleTalk 57 shorten the data packet, thus correcting some problems between the Macintosh Quadra and Farallon's Star Controller?

DISCUSSION ----------

General Information

Some customers have experienced problems when using Macintosh Quadra computers on LocalTalk networks, including the inability to access LocalTalk services, and poor LocalTalk network performance. These problems are caused by the Quadra transmitting a number of abort bits (used to demarcate the end of a frame) outside the recommended range. The workaround is to update your LocalTalk resources with the NSI (Network Software Installer) 1.2 or later.

Those encountering the problem might report that:

- LaserWriters or servers disappear from the Chooser.

- Documents print fine once, then subsequent print commands yield PostScript errors or "printer not found" messages.

- Network performs slowly (for example, slow printing and file transfer, and device times out).

The problem most often occurs on a Quadra 700, since a Quadra 900 or 950 is out of compliance only when the PICs are turned off. Turning the PICs off is possible with the Serial Switch, which isn't commonly available or used.

Note that some third parties previously advised all Quadra owners encountering this problem to update to AppleTalk v57.0.1, which helped in many cases, but doesn't resolve this problem entirely. Therefore, customers encountering this

problem should use the NSI 1.2 or later.

Abort Bit Problem Only with LocalTalk

AppleTalk v56 is located in the Quadra's ROMs. The NSI 1.2 or later patches out AppleTalk in ROM and also installs two updated 'ltlk' resources.

Note that Apple never shipped AppleTalk v57. Before releasing AppleTalk v57, we found a bug in ADSP at the last minute, fixed that problem, then changed the name of the code to AppleTalk v57.0.1.

This abort bit problem, if it occurs, will only occur with LocalTalk. That is, if the Quadra is connected directly to a LocalTalk network, particularly one having third-party repeater-type devices, then it may have problems. If the Quadra is using the on-board Ethernet, it won't have this problem, even if its packets are routed to devices using LocalTalk connected elsewhere on the network.

These articles can help you locate the NSI software mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
31 Jan 1995 - Removed references to AppleLink and added online services.
15 Sep 1992 - Revised to include path for the NSI disk on AppleLink.

Support Information Services

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Tech Info Library Article Number:10263

Tech Info Library

Macintosh 12-Inch Monochrome Display: Description (Discontinued)

Revised: 6/7/94
Security: Everyone

Macintosh 12-Inch Monochrome Display: Description (Discontinued)

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Article Created: 26 May 1992

TOPIC ----------

This article describes the Macintosh 12-inch Monochrome Display.

DISCUSSION ----------

The Macintosh 12-Inch Monochrome Display is the lowest-cost high-resolution display for modular Macintosh computers. The combination of "page-white" phosphor screen and dark glass provides high brightness and sharp contrast. It displays up to 256 levels of gray simultaneously, depending on the Macintosh computer or video card.

Features

- 12-inch monochrome CRT
- 640 horizontal pixels by 480 vertical lines at 76 dots per inch (dpi)
- 67-hertz screen refresh rate
- "Page-white" phosphor screen and dark glass
- Antiglare screen
- Brightness and contrast controls

Benefits

- Sharp display of text and graphics on a full-size screen
- Superior resolution and focus for displaying small type and fine graphic details
- Full-width display (including margins) and more than half the height of a letter-size page
- Maintains close size integrity between the screen and printed documents.
- Reduces eyestrain by eliminating flicker.
- Improves brightness and contrast.
- Minimizes reflected glare.
- Lets you work comfortably in bright rooms.
- Lets you adjust the display to suit your preferences and environment.

If you're using a Macintosh IIsi, Macintosh IIci, or modular Macintosh personal computer equipped with an appropriate video card, you can display up to 256 shades of gray simultaneously. If you're using a Macintosh LC, you can display 16 shades of gray.

To use the Macintosh 12-inch Monochrome Display, you'll need the following:

- A Macintosh personal computer with a built-in video port or an appropriate video card, such as the Macintosh Display Card 4•8, the Macintosh Display Card 8•24, or the Macintosh Display Card 8•24 GC.
- A video cable, which is supplied with the display.

Order Number

- Macintosh 12-inch Monochrome Display
  M0298LL/A

Copyright 1992-1994, Apple Computer, Inc.

Tech Info Library Article Number:10264

Tech Info Library

Apple Two-Page Monochrome Monitor: Description (Discontinued)

Revised: 6/20/94
Security: Everyone

Apple Two-Page Monochrome Monitor: Description (Discontinued)

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Article Created: 26 May 1992

TOPIC ----------

This article describes the Apple Two-Page Monochrome Monitor.

DISCUSSION ----------

The Apple Two-Page Monochrome Monitor (M0402) is a high-quality, high-resolution, 21-inch monitor that can display two pages of text and graphics plus the Macintosh menus and scroll bars. This monitor is suited for page layout, desktop publishing, engineering and scientific applications, and higher education applications, especially for users of the A/UX operating system.

Features

- Active display area measures 15 inches horizontal by 11.3 inches vertical
- 1,152 by 870 pixel resolution at 77 dots per inch
- 75Hz refresh rate
- Flat antiglare screen

To enhance gray scaling, the Macintosh II Video Card Expansion Kit (M0213) is available as an option.

Order Number

- Apple 2-Page Monochrome Monitor
  M0402

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10265

Tech Info Library

Apple Token Ring 4/16 NB Card: Description (3/94)

Revised: 3/18/94
Security: Everyone

Apple Token Ring 4/16 NB Card: Description (3/94)

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Article Created: 26 May 1992
Article Reviewed/Updated: 18 March 1994

TOPIC ----------

This article describes the Apple Token Ring 4/16 NB Card.

DISCUSSION ----------

The Apple Token Ring 4/16 NB Card is a 9-inch bus master network interface card. It allows Macintosh computers with NuBus expansion slots to connect to Token Ring networks that operate at either 4 or 16 megabits per second (Mbps). The card is based on the Macintosh Coprocessor Platform, and includes its own Motorola 68000 microprocessor, 512K of RAM, and A/ROSE, a real-time, multitasking operating system that runs on the card. The card operates independently of the main Macintosh processor, executing multiple networking protocols or network application programs concurrently. This maximizes both system and network performance.

The Token Ring 4/16 NB Card uses the IBM Token Ring chip set, ensuring compatibility and interoperability with all IBM Token Ring networks that operate at 4 or 16 Mbps. The card also supports a variety of software environments, including AppleTalk, 3270, and APPC. This flexibility provides users connected to Token Ring networks with access to both local area network (LAN) and mainframe-based services.

NOTE: The Apple Token Ring 4/16 NB Card is a 9-inch NuBus card and will not fit into Macintosh computers which take only 7-inch NuBus cards. These computers are: Centris and Quadra 610, 660AV, and Power Macintosh 6100/60.

Features

- Connection to IEEE 802.5 and 802.2 industry-standard Token Ring networks
- Software-switchable 4 and 16 Mbps speeds
- IBM Token Ring chip set; DB-9 connector formatting to IBM-type cabling
- Includes TokenTalk software

- Password-protected speed selection, timer settings, and locally administered address
- Multiprocessor, bus master architecture
- Motorola 68000 microprocessor
- 512K RAM, expandable to 2.5MB RAM
- Apple Real-time Multitasking Operating System Environment (A/ROSE)

Order Numbers

- Apple Token Ring 4/16 NB Card
  M0415LL/A
- Macintosh Coprocessor Platform Memory Expansion Kit
  M0145LL/A

Article Change History:
18 Mar 1994 - Updated to indicate that card is a 9-inch NuBus card.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10266

Tech Info Library

Apple Token Ring 4/16 NB Card: Specifications (4/94)

Revised: 4/11/94
Security: Everyone

Apple Token Ring 4/16 NB Card: Specifications (4/94)

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Article Created: 26 May 1992
Article Reviewed/Updated: 10 April 1994

TOPIC ----------

This article gives technical specifications for the Apple Token Ring 4/16 NB Card.

DISCUSSION ----------

Hardware

- Chip set: IBM Token Ring
- Connector: DB-9 connector for attaching to IBM Type 1 cabling. External adapters for Type 3 cabling are available from other vendors
- Processor: Motorola 68000 running at 10 Mhz
- Bus interface: 9-inch NuBus bus master
- Memory: 512K RAM, expandable to 2.5MB
- Power requirements: 1.5 amps at 5 volts
- Certification: FCC Class A; VDE
- Expansion memory: When increasing memory on the card, the following specifications must be met:
  - Type: Dynamic RAM
  - Size: 256K x 4 (for expanding to 1MB) or 1MB x 4 (for expanding to 2.5MB)
  - Configuration: 4 bits wide
  - Package: ZIP
  - Speed: 120 ns or faster

To expand the Token Ring 4/16 NB Card memory to 1MB, order the Macintosh Coprocessor Platform Memory Expansion Kit.

To expand the Token Ring 4/16 NB Card memory to 2.5MB, contact:

- Andrew Corporation in Austin, TX. Telephone number is 512-314-3000

Software

- Application interface: AppleTalk, Apple 3270 API, APPC verb interface
- LLC implementation: Type 1 and Type 2
- Routing: Supports IBM source routing

Software-Configurable Card Settings

- Transmission speed: 4 or 16 megabits per second
- Token Ring address: burned-in or locally administered address
- Timers: Response (T1), Acknowledge (T2), and Inactivity (Ti)
- Card settings can be password-protected

Token Ring Cabling Specifications

- Shielded twisted-pair (IBM Type 1 cabling)
  - Maximum distance from multistation access unit (MAU) to device (lobe length) = 300 meters
  - Maximum distance between two MAUs (trunk length) = 200 meters
  - Maximum devices per ring = 260
- Unshielded twisted-pair (IBM Type 3 cabling)
  - Maximum distance from MAU to device (lobe length) = 100 meters
  - Maximum distance between two MAUs (trunk length) = 120 meters
  - Maximum devices per ring = 72

For further information on third party products, please use the vendor name as a search string.

Article Change History:
10 April 194 - Updated information on where to get Memory upgrades.
18 Mar 1994 - Updated information to include this is a 9-inch Nubus card.
23 Sep 1992 - Updated by adding another third-party source of RAM SIMMs to upgrade the card.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10267

Apple 3.5 Drive: Description

Revised: 6/8/92
Security: Everyone

Apple 3.5 Drive: Description

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Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Apple 3.5 Drive.

DISCUSSION ----------

The Apple 3.5 Drive adds 800K of data storage to the Apple IIGS, Macintosh 512K, Macintosh 512K Enhanced, Macintosh Plus, and Macintosh SE personal computers. The Apple 3.5 Drive uses 3.5-inch, 800K, double-sided disks.

Features

- Over 5 times the storage capacity of 5.25-inch drives.
- Daisy-chaining capability (for Apple IIGS only). An additional port on the back of the unit allows you to connect another Apple 3.5 Drive or Apple 5.25 Drive directly. Up to three extra drives can be daisy-chained for a total of 3.2MB of external storage. (3.5 drives must come first in the chain.)
- In-use light that indicates when the drive is running.
- Direct connection to the Apple IIGS without an interface card.
- Platinum finish that matches the Apple IIGS, Macintosh Plus and Macintosh SE.

Benefits

- Multiple programs and increased data can be stored on a single disk; disk swapping is reduced.
- All ProDOS- or Pascal-based Apple II software can be run on 3.5-inch media.
- Users can load programs and retrieve data faster.
- For the Apple IIGS only, the Apple 3.5 Drive provides flexibility by

allowing connection of up to three extra drives (3.5-inch or 5.25-inch) to the first drive; users can mix a 3.5-inch and 5.25-inch drive in the same system. (3.5 drives must come first in the chain.)

Order Number

• Apple 3.5 Drive A9M0106

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Tech Info Library Article Number:10268

Tech Info Library

Apple Keyboard II: Description (Discontinued 6/94)

Revised: 7/5/94
Security: Everyone

Apple Keyboard II: Description (Discontinued 6/94)

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Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article describes the Apple Keyboard II.

DISCUSSION -----

Key Layout

Key location on the Apple Keyboard II differs from the earlier Apple Keyboard:
- The caps lock and control key exchanged places.
- The tilde key is where the escape key was.
- The vertical line key was moved to a new location above the new return key.
- The escape key took the vertical line's old spot.
- The return key was made smaller.
- The space bar was enlarged.

The international ISO version has a new key with ± and § characters and the escape key replaced the right-hand side command key.

Both keyboards' numeric keypads have the + and - keys reversed. It is the same as the extended keyboard. In addition, this is the same arrangement as a 10-key adding machine.

With the exception of the arrow and escape keys, Apple Keyboard II has a layout which is identical to the comparable parts of the Apple Extended Keyboard II.

Tilt Legs

At the ends on the back, the keyboard has two legs the user can extend to provide a greater tilt.

Compliance

The Apple Keyboard II is fully ANSI and ISO compliant.

Order Number

- Apple Keyboard II
  M0487LL/A

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10270

Tech Info Library

AppleColor Composite Monitor IIe: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

AppleColor Composite Monitor IIe: Description (Discontinued)

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Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the AppleColor Composite Monitor IIe.

DISCUSSION ----------

The AppleColor Composite Monitor IIe allows users to add color capabilities to their Apple IIe systems.

Features

- Displays high-resolution color graphics, 80-column text in monochrome, or color graphics with text in a 40-column format.

- Can work with composite (NTSC) video output instead of RGB output, so users simply plug the monitor into the video jack of their Apple IIe, Apple II Plus, Apple II, or Apple IIc computer. No need for special cards or adaptors.

- The 13-inch screen provides a large display area for easy viewing.

The monitor provides higher resolution than standard video or television screens. It provides a cost-effective solution for users who require color display and 80-column text, and is compatible with all Apple software.

Order Number

- AppleColor Composite Monitor IIe
  A2M6021

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..TIL10271-AppleColor_Composite_Monitor_IIe-Description_Discontinued.pdf

Tech Info Library Article Number:10271

Tech Info Library

Apple Ethernet LC Card: Description (Discontinued)

Revised: 6/7/94
Security: Everyone

Apple Ethernet LC Card: Description (Discontinued)

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Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Apple Ethernet LC Card.

DISCUSSION ----------

The Apple Ethernet LC Card is a network interface card for the Macintosh LC personal computer.

The Apple Ethernet LC Card and the Apple Ethernet Thin Coax Transceiver provide a high-performance (10 megabits per second) network option that is easier to install and configure than traditional Ethernet systems.

The Ethernet LC Card, Apple Ethernet Thin Coax Transceiver, and 2-meter thin coaxial cable (included with the Transceiver) are all you need to connect Macintosh LC computers together on an Ethernet network. The Ethernet Thin Coax Transceiver is self-terminating.

Apple Ethernet media adapters are available to integrate the Ethernet LC Card into twisted-pair and thick coaxial cable Ethernet environments.

Features

- Apple Ethernet Cable System compatibility
- Includes EtherTalk software
- Compliance with IEEE 802.3 standards

Benefits

- Provides plug-and-play networking for the Macintosh LC computer. Allows the Macintosh LC computer to connect to any Ethernet cabling environment.

- Provides AppleTalk network system users with a higher-performance connection to network services.
- Allows Macintosh LC computers to connect to industry-standard Ethernet networks and interoperate in multivendor Ethernet environments.

Order Numbers

- Apple Ethernet LC Card
  M0443LL/A
- Apple Ethernet Thin Coax Transceiver
  M0329LL/A
  - Apple Ethernet Self-Terminating Cable -- 5 Meter M0833LL/A
  - Apple Ethernet Self-Terminating Cable -- 13-Meter Plenum M0436LL/A
- Apple Ethernet Twisted-Pair Transceiver
  M0437LL/A
- Apple Ethernet AUI Adapter
  M0432LL/A

Support Information Services

Copyright 1992-1994, Apple Computer, Inc.

Tech Info Library Article Number:10272

Tech Info Library

Apple Ethernet LC Card: Specifications

Revised: 6/26/92
Security: Everyone

Apple Ethernet LC Card: Specifications

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Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article gives technical specifications for the Apple Ethernet LC Card.

DISCUSSION -----

The Apple Ethernet LC Card provides physical and link level access to data communications networks meeting IEEE 802.3 and 802.2 Logical Link Control (LLC) type 1 standards.

Connector

• Apple Ethernet

Transmit/Receive Data Rate

• 10-megabits-per-second maximum data rate

Power Dissipation
• < 4 watts

Environmental Requirements

• Operating temperature
  50 to 104 degrees F (10 to 40 C)

• Humidity
  20% to 95% noncondensing at a temperature range of 25 to 40 degrees C

Ethernet Controller

- National Semiconductor DP83932 (SONIC)

System Requirements

- Macintosh LC
  In addition to the Apple Ethernet LC Card and accompanying software, the following are required to connect a Macintosh LC personal computer to an Ethernet network:
  - The Macintosh Operating System.
  - If you're using AppleTalk network services, the network must use AppleTalk Phase 2 protocols.
  - An Apple Ethernet Cable System external transceiver or AUI adapter.

- Apple Ethernet Thin Coax Transceiver
  The Apple Ethernet Thin Coax Transceiver provides plug-and-play networking in a high-performance Ethernet environment. The Ethernet LC Card, the Apple Ethernet Thin Coax Transceiver, and the 2-meter segment of thin coaxial cable included with the Transceiver are all you need to connect a Macintosh LC computer to an Ethernet network. You need no terminators or other Ethernet hardware.

  The Apple Ethernet Self-Terminating Cable -- 5 Meter and Apple Ethernet Self-Terminating Cable -- 13-Meter Plenum, or other RG 58 A/U thin coaxial cable, can be used to connect devices that are more than 2 meters apart.

- Apple Ethernet Twisted-Pair Transceiver The Apple Ethernet Twisted-Pair Transceiver is used to connect the Ethernet LC Card to an Ethernet network using unshielded twisted-pair cable.

  To use Ethernet with unshielded twisted-pair media, you need an IEEE 802.3 10BASE-T-compatible hub, sold separately from third-party vendors.

- Apple Ethernet AUI Adapter
  The Apple Ethernet AUI Adapter provides the Ethernet LC Card with a standard IEEE 802.3 Attachment Unit Interface (AUI). The AUI can be used to connect the Ethernet LC Card to an external transceiver.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10273

Tech Info Library

Apple Ethernet NB Card: Description (Discontinued)

Revised: 6/7/94
Security: Everyone

Apple Ethernet NB Card: Description (Discontinued)

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Article Created: 26 May 1992

TOPIC ----------

This article describes the Apple Ethernet NB Card.

DISCUSSION ----------

The Apple Ethernet NB Card is a bus master network interface card that provides connectivity to IEEE 802.3 Ethernet networks for the Macintosh II family of personal computers.

The Ethernet NB Card has its own 68000 microprocessor, memory, and real-time multitasking operating system. Operating independently of the main Macintosh processor, the card supports the concurrent execution of multiple networking protocols while maximizing both system and network performance.

The Ethernet NB Card includes an Apple Ethernet port. With the addition of the appropriate Apple Ethernet Cable System media adapter, which plugs into the port, Ethernet NB Card users can connect to any standard Ethernet cabling environment:

- Thin coax
- Thick coax
- Unshielded twisted-pair

Because all Apple Ethernet Cable System components are IEEE 802.3 compliant, they can interoperate in multivendor environments.

This easy-to-install card lets you use a variety of networking protocols with a Macintosh computer, including AppleTalk, TCP/IP, and DECnet.

Features

- Compliance with IEEE 802.3 standards
- Apple Ethernet Cable System compatibility
- Includes EtherTalk software
- A/UX local area networking support

Benefits

- Allows the Macintosh II family of computers to connect to industry-standard Ethernet networks and interoperate in multivendor Ethernet environments.
- Can be used in any standard Ethernet cable environment with the appropriate Apple Ethernet media adapter.
- Provides AppleTalk network system users with transparent access to network services.
- When used with the A/UX operating system from Apple, provides a complete solution for connecting to local area network environments based on the UNIX operating system, including TCP/IP and the Network File System (NFS).
- Handles all communications processing for the Macintosh II family of computers. Allows concurrent execution of multiple networking protocols. Optimizes system and network performance.

Order Numbers

- Apple Ethernet NB Card
  M0417LL/A
- Apple Ethernet AUI Adapter
  M0432LL/A
- Apple Ethernet Thin Coax Transceiver
  M0329LL/A
  - Apple Ethernet Self-Terminating Cable -- 5 Meter M0833LL/A
  - Apple Ethernet Self-Terminating Cable -- 13-Meter Plenum M0436LL/A
- Apple Ethernet Twisted-Pair Transceiver
  M0437LL/A

Copyright 1992-1994, Apple Computer, Inc.

Tech Info Library Article Number:10274

Tech Info Library

ImageWriter II: Description

Revised: 6/28/94
Security: Everyone

ImageWriter II: Description

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Article Created: 26 May 1992

TOPIC ----------

This article describes the ImageWriter II printer.

DISCUSSION ----------

The ImageWriter II printer is an entry-level, dot-matrix printer. It offers fast drafts, sharp graphics, near-letter-quality output, easy paper handling, and color printing.

Features

- Three printing speeds
  - Fast draft
  - Mid-speed correspondence mode
  - Near-letter-quality mode
- Color printing in six colors with one change of ribbon
- Printing on cut-sheet or continuous paper, including labels
- Push-button paper loading for single sheets

The ImageWriter II can be expanded by these options:

- Sheet feeder option
- 32K Memory option increases buffer space so that you can use Apple IIe, IIc, or IIGS computer while the ImageWriter II prints
- LocalTalk option allows sharing the printer on any AppleTalk network.

The mini circular-8 connector and cable, available as a separate item, connects the ImageWriter II to Apple CPUs. The Apple II, II Plus, and IIe require a Super Serial Card to connect with an ImageWriter II.
The ImageWriter II color printing feature requires an ImageWriter II Color Ribbon and color-compatible software.

Order Number

..TIL10275-ImageWriter_II-Description.pdf

ImageWriter II Printer C0090LL/A

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10275

Tech Info Library

LaserWriter IINT: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

LaserWriter IINT: Description (Discontinued)

==========

Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the LaserWriter IINT.

DISCUSSION ----------

The LaserWriter IINT is Apple's mainstream network laser printer, ideal for producing sophisticated text and graphics. The LaserWriter IINT features a 68000 microprocessor, providing fast 300 dpi output. It also offers 2MB of RAM and 1MB of ROM, allowing you to store a wide variety of fonts. Eleven font families (35 typefaces) are included with the LaserWriter IINT.

The LaserWriter IINT features built-in support for the AppleTalk Personal Network, allowing up to 31 users to share the printer. The LaserWriter IINT works with any software that outputs PostScript-compatible files, offering unlimited flexibility in creating and manipulating text and graphics.

An RS-232 port provides easy connection to MS-DOS computers. The LaserWriter IINT supports the Diablo 630 Emulation Mode. MS-DOS users can access the printer by purchasing an AppleTalk PC Card or the appropriate RS-232 cable.

The LaserWriter IINT is compatible with Macintosh Plus, Macintosh SE, Macintosh II, and Apple IIGS, as well as the Apple LaserShare Print Spooler.

Copyright 1992-1994., Apple Computer, Inc.

Tech Info Library Article Number:10276

Tech Info Library

LaserWriter IINTX: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

LaserWriter IINTX: Description (Discontinued)

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Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article describes the LaserWriter IINTX.

DISCUSSION -----

The LaserWriter IINTX is a high-performance expandable network laser printer for individuals and workgroups.

The first laser printer from Apple to feature a 68020 microprocessor running at 16 Mhz, the LaserWriter IINTX prints significantly faster than previous LaserWriters. The LaserWriter IINTX is configured with 2MB of RAM and 1MB of ROM. Eleven font families (35 typefaces) are included with the LaserWriter IINTX.

The LaserWriter IINTX features several expansion options -- up to 12MB of RAM. When expanded, its capacity for downloading typeface fonts is increased and page processing and printing is even faster. An external SCSI port lets users connect up to seven external hard disks for the storage of additional fonts. Font expansion cards, to be offered by third parties, can be installed directly in a single slot in the controller board, increasing the number of high-speed ROM-resident fonts in the printer.

The LaserWriter IINTX features built-in support for the AppleTalk Personal Network and works with any software that outputs PostScript-compatible files.

An RS-232 port provides easy connection to MS-DOS computers. The LaserWriter IINTX support the Diablo 630 Emulation Mode and LaserJet Plus Emulation Mode. MS-DOS users can access the printer by purchasing an

AppleTalk PC Card or the appropriate RS-232 cable.

The LaserWriter IINTX is compatible with the Macintosh Plus, Macintosh SE, Macintosh II, and Apple IIGS, as well as the Apple LaserShare Print Spooler.

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Tech Info Library Article Number:10277

LaserWriter IISC: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

LaserWriter IISC: Description (Discontinued)

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Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the LaserWriter IISC.

DISCUSSION ----------

The LaserWriter IISC is Apple's entry-level, single-user laser printer. It brings the individual Macintosh user full-page, high-resolution text and graphics.

The LaserWriter IISC features a 68000 microprocessor providing high-speed performance. A SCSI interface provides high-speed data transfer for faster printing.

Because it relies on QuickDraw in the Macintosh -- instead of PostScript -- to process documents, there are no fonts resident in the LaserWriter IISC.

The LaserWriter IISC is compatible with the Macintosh Plus, Macintosh SE, and Macintosh II computers, and connects through a SCSI port.

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Tech Info Library Article Number:10278

Tech Info Library

LaserWriter Plus: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

LaserWriter Plus: Description (Discontinued)

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Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the LaserWriter Plus.

DISCUSSION ----------

The LaserWriter Plus has all the features and power of the LaserWriter, with seven additional typeface families including ITC Avant Garde, ITC Bookman, Helvetica Narrow, New Century Schoolbook, Palatino, ITC Zapf Dingbats and ITC Zapf Chancery. The LaserWriter Plus has one full megabyte of ROM (one-half megabyte more than the LaserWriter). The LaserWriter Plus is available as a pre-assembled package.

The LaserWriter Plus Kit enables users to upgrade a LaserWriter into a LaserWriter Plus. Here are the kit components:

- Sixteen 512K ROM chips contain 11 built-in type families
- A Printer Installation Disk with print drivers for the LaserWriter (All LaserWriter users' systems must be updated with the Printer Installation Disk.)
- A Fonts Disk which includes a copy of the Font/DA Mover and the screen fonts for all printer fonts shipped in the LaserWriter Plus Kit
- A revised LaserWriter Manual, describing all the new software features
- A Dealer Instruction Sheet, return mailer with label, and return form
- A LaserWriter Plus label to affix to the outside of the LaserWriter after the ROMs have been installed

..TIL10279-LaserWriter_Plus-Description_Discontinued.pdf

Copyright 1992-1994, Apple Computer, Inc.

Tech Info Library Article Number:10279

Tech Info Library

Macintosh 12-Inch RGB Display: Specifications (Discontinued)

Revised: 6/20/94
Security: Everyone

Macintosh 12-Inch RGB Display: Specifications (Discontinued)

==========

Article Created: 26 May 1992

TOPIC ----------

This article gives technical specifications for the Macintosh 12-inch RGB Display.

DISCUSSION ----------

Picture Tube

- 12-inch (30.5 cm) diagonal
- Phosphor EIA Type P22 (aluminized)
- High-contrast antiglare (international versions only)
- Shadow mask

Input Signal

- Video: RS-343 standard
- Sync: Separate sync, negative going, TTL

User Controls

- Power Switch (back panel)
- Brightness, with detent reference (right side)
- Contrast (right side)

Scanning Frequencies

- Horizontal 24.48 kHz
- Vertical 60.15 Hz
- Dot Clock 30.24 MHz

Resolution

- 512 (H) dots by 384 (V) lines - Macintosh II

• 560 (H) dots by 384 (V) lines - Mac LC with Apple IIe Card

Active Video Display Area

Adjusted at the factory to produce an active video area of 8.08-inch (205 mm) horizontal by 6.02-inch (153 mm) vertical. The remainder of the screen is used for the dark border around the display.

Size

• Height: 12.2 inches (31.0 cm)
• Width: 14.4 inches (36.5 cm)
• Depth: 10.2 inches (25.9 cm)
• Weight: 24 lbs (10.8 kg)

Power Requirements

• 90 watts maximum

Input Voltage

• Operating range 100 to 120 volts
• Frequency   50-60 Hz

Environmental

• Operating Ambient Temperature 50 to 104 degrees F (10 to 40 degrees C)
• Operating Humidity 95% maximum, non-condensing
• Operating Altitude 10,000 feet (3,000m) maximum

Fuse Protection

The monitor contains internal power line fuse protection. This fuse should be replaced with the same type by a qualified service technician.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10280

Tech Info Library

Personal LaserWriter LS: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Personal LaserWriter LS: Description (Discontinued)

==========

Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Personal LaserWriter LS.

DISCUSSION ----------

The Apple Personal LaserWriter LS offers text and graphics printing, versatility, and ease of use. It's designed for individual use. It is compact to fit on any desktop, and you don't need to purchase additional cabling, interface cards, or software drivers.

A built-in multipurpose tray holds different sizes of paper and envelopes, as well as labels. With optional cassettes you can print automatically up to 250 sheets of letter- or legal-size paper or 15 envelopes.

You have the flexibility of printing high-quality text in a wide range of styles in any size you like. The personal LaserWriter LS comes with 39 TrueType fonts, including Times, Helvetica, Palatino, ITC Avant Garde Gothic, and Symbol. You can use TrueType fonts available from other suppliers, including text and headline fonts, symbol fonts for special purposes, display fonts, and novelty fonts for decoration.

Features

- Print Quality
  - 300-dot-per-inch (dpi) resolution for high-quality text and graphics
  - 39 TrueType fonts for printing a wide range of styles in any size

- Affordability
  - Complete, ready-to-use printer; no additional cabling, interface cards, or software drivers necessary

    - Outstanding durability and nearly maintenance-free performance

- Flexibility
    - Built-in multipurpose tray for print materials used most commonly, including letter- and legal-size paper, and envelopes
    - Optional cassettes for 250 sheets of paper or 15 envelopes

Order Number

Personal LaserWriter LS B0454LL/D

Copyright 1992-1994, Apple Computer, Inc.

Tech Info Library Article Number:10281

Tech Info Library

Personal LaserWriter NT: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Personal LaserWriter NT: Description (Discontinued)

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Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Personal LaserWriter NT.

DISCUSSION ----------

The Apple Personal LaserWriter NT printer features a compact, space-saving design and offers affordable high-quality laser printing. It has an integral paper cassette as well as a multipurpose tray that can handle different printing materials and paper sizes automatically.

Features

- 300 dot-per-inch resolution which produces near-typeset quality text, graphics and scanned images.
- Motorola 68000 processor, which supports printing up to 4 pages per minute.
- Canon LBP-LX laser xerographic print engine which offers durability and nearly maintenance-free performance. It provides a minimum performance life of 150,000 pages (equivalent to printing 100 pages/day, 5 days/week, 52 weeks/year for 5 years).
- PostScript support, which offers virtually unlimited versatility in creating and manipulating text and graphics. You can print documents from nearly all Macintosh applications, some Apple IIGS programs, MS-DOS and OS/2 applications, and, using additional software, AT&T UNIX programs.
- AppleTalk Network System Interface, which offers cost-effective printing by allowing multiple user access. This interface also allows printing from Macintosh, Apple IIGS, MS-DOS, or OS/2 computers (using the LocalTalk PC card).
- HP LaserJet Plus and Diablo emulations, which allow anyone whose computer

supports an RS-232-C interface to print documents similar to the way they print documents on HP LaserJet Plus or Diablo 630 printer.
- 37 built-in fonts let you print documents in virtually any type size and a wide range of styles.
- Support for different printing materials which lets you print on a variety of media, such as overhead transparency film, photocopy bond, and so on.
- Integral paper cassette provides automatic feeding of up to 250 sheets of paper.
- Multipurpose tray simplifies printing on different paper sizes, envelopes, or labels.
- Optional envelope cassette lets you print up to 15 envelopes automatically.
- Background printing lets you continue to work on your Macintosh computer while you print.

Order Number

- Personal LaserWriter NT B0325LL/A

Copyright 1992-1994, Apple Computer, Inc.

Tech Info Library Article Number:10282

Tech Info Library

Personal LaserWriter NT: Specifications (Discontinued)

Revised: 9/27/93
Security: Everyone

Personal LaserWriter NT: Specifications (Discontinued)

==========

Article Created: 26 May 1992

TOPIC ----------

This article gives technical specifications for the Personal LaserWriter NT.

DISCUSSION ----------

Marking Engine

• Canon LBP-LX laser xerographic

Controller

• The LaserWriter controller hardware contains a 12MHz 68000 CPU, 1.25MB of ROM, 2MB of RAM, LocalTalk interface, and RS-232-C serial interface

Print Quality

• 300 dots per inch for text and graphics

Built-in Font Families

• ITC Avant Garde Gothic, ITC Bookman, Courier, Helvetica, Helvetica Narrow, New Century Schoolbook, Palatino, Symbol, Times, ITC Zapf Chancery, ITC Zapf Dingbats, and IBM PC Graphics Extended Character Set (ECS)

Support for Additional Fonts

• Any PostScript font from a variety of suppliers

Speed

• Four pages per minute maximum (actual speed depends on the images printed)

Interfaces

- LocalTalk, RS-232-C, and RS-422

Printing Protocols

- PostScript, HP LaserJet Plus, and a subset of the Diablo 630 command set

Recommended Duty Cycle

- Toner cartridge: 3,500 pages
- Printer: minimum 150,000 pages, with no monthly page limit

Paper Feed

- Input
  - Automatic with paper cassette
  - Automatic or manual with multipurpose tray
- Output
  - Face down or face up options

Print Materials

- Media: Apple recommends 20-lb. photocopy or typewriter bond (75 g/m^2), though the printer also accepts 16-lb. (60 g/m^2) to 28-lb. (105 t/m^2) paper. For best results, use envelopes that are recommended for laser printers.
- Sizes
  - Paper: U.S. letter, U.S. legal, A4, B5 (Japanese Industry Standard)
  - Envelopes: minimum 3.5 x 7 inches (86 x 178mm); maximum 7.4 x 10.5 inches (188 x 267mm)

Paper Capacities

- Paper cassette: 250 sheets of 20-lb. (75 g/m^2) paper
- Multipurpose tray: up to 50 sheets of paper or 5 envelopes
- Optional envelope cassette: 15 envelopes (To print envelopes, you can use the multipurpose tray with automatic or manual feed, or the optional envelope cassette. To print labels, use the multipurpose tray using manual feed.)

Printable Surface

- Maximum printable line: 8.1 inches (205.9mm)
- Minimum top and bottom margins: 0.235 inches (6.0mm)
- Minimum left margin: 0.197 inches (5.0mm)
- Minimum right margin: 0.197 inches (5.0mm)
  (The actual printable area may vary depending on the application.)

Emulation

- HP LaserJet Plus and Diablo 630

Size and Weight

- Height: 9.8 inches (24.8cm)
- Width: 15 inches (38cm)
- Depth with letter-size cassette: 18.3 inches (46.4 cm)
- Weight: 32 lb. (15 kg)

Operating Environment

- Temperature: 50 to 90 F (10 to 32 C)
- Humidity: 20 to 80 percent
- Toner cartridge transit environment:
  -4 degrees F to +104 degrees F (-20 degrees C to +40 degrees C)

Power Requirements

- U.S./Japan: 100 to 115 volts AC, 50 to 60 hertz
- Europe/Australia: 220 to 240 volts AC, 50 to 60 hertz

Power Consumption

- 600 watts maximum at 115 volts
- 550 watts maximum at 220 volts

System Requirements

To use the Personal LaserWriter NT, you'll need one of these systems:

- One or more Macintosh (minimum 512K of RAM) or Apple IIGS computers connected via the LocalTalk cabling system
- One or more Apple IIe computers equipped with an Apple II Workstation Card and connected via the LocalTalk cabling system
- An MS-DOS or OS/2 computer with a LocalTalk PC Card or an RS-232-C cable and appropriate software
- Any other computer with an RS-232-C cable and appropriate software

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Tech Info Library Article Number:10283

Tech Info Library

Personal LaserWriter SC: Description (Discontinued)

Revised: 9/21/95
Security: Everyone

Personal LaserWriter SC: Description (Discontinued)

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Article Created: 26 May 1992
Article Reviewed/Updated: 21 September 1995

TOPIC ----------

This article describes the Personal LaserWriter SC.

DISCUSSION ----------

The Apple Personal LaserWriter SC printer is compact enough to fit on a desktop, offers improved paper handling, and comes with a selection of fonts in six sizes. It has one paper cassette that can handle 250 sheets and a second multipurpose tray that can handle different printing materials and paper sizes automatically. The Personal LaserWriter SC can be upgraded to a Personal LaserWriter NT by having the controller board replaced by an authorized Apple dealer.

Features

- 300 dot-per-inch resolution, which produces near-typeset quality text, graphics and scanned images.
- Motorola 68000 processor, which supports printing of up to 4 pages per minute.
- Canon LBP-LX laser xerographic print engine, which offers durability and nearly maintenance-free performance. It provides a minimum performance life of 150,000 pages (equivalent to printing 100 pages/day, 5 days/week, 52 weeks/year for 5 years).
- A variety of Macintosh typefaces and type sizes: Times, Helvetica, Courier and Symbol.
- Support for different printing materials, which lets you print on a variety of media such as overhead transparency film, photocopy bond, and so on.
- Integral paper cassette provides automatic feeding of up to 250 sheets of paper.
- Multipurpose tray simplifies printing on different paper sizes, envelopes, or labels.

- Optional envelope cassette lets you print up to 15 envelopes automatically.
- Background printing lets you continue to work on your Macintosh computer while you print.
- Upgrade path protects your investment by letting you upgrade to the Personal LaserWriter NT through replacement of the controller board.

System Requirements

- Macintosh computer with the Personal LaserWriter SC driver.

Article Change History:
21 Sep 1995 - Corrected minor typo.

Support Information Services

Copyright 1992-1995, Apple Computer, Inc.

Tech Info Library Article Number:10284

Tech Info Library

Personal LaserWriter SC: Specifications (Discontinued)

Revised: 9/27/93
Security: Everyone

Personal LaserWriter SC: Specifications (Discontinued)

==========

Article Created: 26 May 1992

TOPIC ----------

This article gives technical specifications for the Personal LaserWriter SC.

DISCUSSION ----------

Marking Engine

- Canon LBP-LX laser Xerographic

Controller

- The LaserWriter controller hardware contains an 8MHz 68000 CPU, 64 kilobytes of ROM, 1MB of RAM, and SCSI interface.

Print Quality

- 300 dots per inch for text and graphics

Macintosh Fonts (On Disk)

- Courier, Helvetica, Symbol, and Times in 9-, 10-, 12-, 14-, 18-, and 24-point sizes, with their corresponding 4 x fonts (36-point, 40-point, 48-point, 56-point, 40-point, 48-point, 56-point, 72-point, and 96-point)
- Font styles: plain, bold, italic, and bold italic, with additional styles depending on the application. (For best results, these fonts should be installed in the System file in your Macintosh computer from the disks shipped with the Personal LaserWriter SC.)

Support for Additional Fonts

- The Personal LaserWriter SC can support additional fonts from Apple and from other suppliers. For best results, install two sizes for each font:

One should be the point size you want to work with on the screen, and the other should be four times that size for the printer to use.

Speed

- Four pages per minute maximum (actual speed depends on the images printed)

Interface

- SCSI (Small Computer System Interface)

Recommended Duty Cycle

- Toner cartridge: 3,500 pages
- Printer: minimum 150,000 pages, with no monthly page limit

Paper Feed

- Input
  - Automatic paper cassette
  - Automatic or manual with multipurpose tray
- Output
  - Face down or face up options

Print Materials

- Apple recommends 20-lb. photocopy or typewriter bond (75 g/m^2), though the printer also accepts 16-lb. (60 g/m^2) to 28-lb. (105 g/m^2) paper. For best results, use envelopes that are recommended for laser printers.
- Sizes
  - Paper: U.S. letter, U.S. legal, A4, B5 (Japanese Industry Standard)
  - Envelopes: minimum 3.5 x 7 inches (86 x 178mm); maximum 7.4 x 10.5 inches (188 x 267 mm)

Paper Capacities

- Paper cassette: 250 sheets of 20-lb. (75 g/m^2) paper
- Multipurpose tray: up to 50 sheets of paper or 5 envelopes
- Optional envelope cassette: 15 envelopes (To print envelopes, you can use the multipurpose tray with automatic or manual feed. To print labels, use the multipurpose tray using manual feed.)

Printable Surface

- Maximum printable line: 8.1 inches (205.9mm)
- Minimum top and bottom margins: 0.235 inches (6.0mm)
- Minimum left margin: 0.197 inches (5.0mm)
- Minimum right margin: 0.197 inches (5.0mm)
  (The actual printable area may vary depending on the application.)

Size and Weight

- Height: 9.8 inches (24.8cm)
- Width: 15 inches (38cm)
- Depth with letter-size cassette: 18.3 inches (46.4cm)
- Weight: 32 lb. (15 kg)

Operating Environment

- Temperature: 50 to 90 F (10 to 32 C)
- Humidity: 20 to 80 percent
- Toner cartridge transit environment: -4 to +104 F (-20 to +40 C)

Power Requirements

- U.S./Japan: 100 to 115 volts AC, 50 to 60 hertz
- Europe/Australia: 220 to 240 volts AC, 50 to 60 hertz

Power Consumption

- 600 watts maximum at 115 volts
- 550 watts maximum at 220 volts

System Requirements

- To use the Personal LaserWriter SC, you'll need a Macintosh personal computer with the Personal LaserWriter SC driver.

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Tech Info Library Article Number:10285

Tech Info Library

Apple Serial NB Card: Specifications

Revised: 6/8/92
Security: Everyone

Apple Serial NB Card: Specifications

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Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article gives technical specifications for the Apple Serial NB Card.

DISCUSSION -----

Connector

- DB-62 connector for multiple-port connectivity (cable available separately from Apple Computer)

Interface

- NuBus plugs into any computer in the Macintosh II family

Processor

- Motorola 68000 running at 10 megahertz

Memory

- 512K of RAM, expandable to 1MB

Power Dissipation

- 10 watts

Transmit/Receive Data Rates

- 19.2 kilobits per second

• 64 kilobits per second using the specified IMA-backed ports

System Requirements

To use the Apple Serial NB Card, you'll need:

• A computer system in the Macintosh II family
• Macintosh system software version 6.0.3 (or later)

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10286

Tech Info Library

Apple StyleWriter: Description (Discontinued)

Revised: 6/7/94
Security: Everyone

Apple StyleWriter: Description (Discontinued)

==========

Article Created: 26 May 1992

TOPIC ----------

This article describes the Apple StyleWriter printer.

DISCUSSION ----------

The Apple StyleWriter printer is designed for individual use, providing near-laser-quality print at 360 dots per inch (dpi) while using thermal ink-jet technology. The Image utility allows conversion of 300 dpi halftone images (PICT format) for printing at 360 dpi, which is the maximum resolution of the StyleWriter printer. The StyleWriter works with any Macintosh and is an ideal companion for the Macintosh Classic, the Macintosh LC, and Macintosh IIsi personal computers. This printer offers a printing alternative for users sharing a networked Apple LaserWriter printer.

No additional cables, memory, or interface cards are needed to use the StyleWriter. The detachable sheet feeder automatically feeds up to 50 sheets. This printer can be used without the sheet feeder with front and rear manual feed options. The front and rear manual feed options simplify the printing of single sheet paper, envelopes, labels, or transparencies. The user replaceable ink cartridge prints up to 500 pages of text and graphics.

Apple's TrueType advanced font technology is incorporated into the package with Times, Helvetica, Courier, and Symbol font designs standard with each StyleWriter. Additional compatible TrueType fonts are available from other suppliers, including headline, text, symbol, and novelty designs. TrueType, in conjunction with the Apple StyleWriter, allows for production of documents containing equations and formulas. Virtually any type size and a wide range of styles can be used.

System Requirements

• Macintosh personal computer with at least 1MB RAM

- System software 6.0.7 or later

Order Number

StyleWriter B0438LL/C

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Tech Info Library Article Number:10287

Tech Info Library

Apple SuperDrive, External: Description (Discontinued)

Revised: 6/7/94
Security: Everyone

Apple SuperDrive, External: Description (Discontinued)

==========

Article Created: 26 May 1992

TOPIC ----------

This article describes the Apple External SuperDrive.

DISCUSSION ----------

The Apple SuperDrive is a floppy disk drive that offers high-capacity storage to owners of Macintosh and Apple II personal computers. Because it uses high-density, double-sided 3.5-inch floppy disks, the Apple SuperDrive gives you access to almost twice the storage capacity of standard 800K disk drives.

The Apple SuperDrive used with a Macintosh computer makes it possible for you to exchange information between Macintosh and MS-DOS, OS/2, and ProDOS systems. Using the Apple File Exchange utility or third-party translators, the Apple SuperDrive works with files stored in many different formats. For example, it can read from and write to Macintosh 400K disks, Apple II and Macintosh 800K and 1.4MB disks, as well as MS-DOS and OS/2 720K and 1.4MB disks.

The disk drive also comes with a high-density disk detector that allows the drive to automatically format to the correct disk capacity (800K or 1.4MB). It plugs directly into the floppy drive port on the back panel of most Macintosh systems or the connector in the back of the Apple II 3.5 Controller Card.

Features

- Capacity
  - 1.4MB of storage for most Macintosh and Apple II computers -- almost twice the capacity available from 800K disks
  - 800K of storage for Macintosh Plus and Apple IIc Plus computers, as well as Apple IIGS computers that aren't equipped with the Apple II 3.5

Controller Card
- Flexibility
  - Can read from and write to 400K, 800K, and 1.4MB disks on a Macintosh computer and 800K and 1.4MB disks on an Apple II computer.
  - Allows you to work on your Macintosh with files stored on MS-DOS, OS/2, or ProDOS disks using the Apple File Exchange utility or third-party translators
- Ease of Use
  - Plug-and-play simplicity with any Macintosh or Apple II computer
  - Automatic formatting to correct disk capacity

Copyright 1992-1994, Apple Computer, Inc.

Tech Info Library Article Number:10288

Tech Info Library

Apple SuperDrive (External): Specifications (Discontinued)

Revised: 6/7/94
Security: Everyone

Apple SuperDrive (External): Specifications (Discontinued)

==========

Article Created: 26 May 1992

TOPIC

This article gives technical specifications for the Apple External SuperDrive.

DISCUSSION

Recording Media
- Disk diameter: 3.5 inches
- Recording surfaces: 2
- Number of cylinders: 80

Capacity
- Formatted data: 1.416MB
- Unformatted data: 2.0MB

Drive Characteristics
- Seek time (track-to-track): 6 milliseconds maximum
- Settle time: 30 milliseconds maximum
- Data transfer rates: 500 kilobits per second
- Drive startup time: 600 milliseconds maximum

Interface
- Apple proprietary interface

Electrical Requirements
- +12 volts
  - Typical: 185 milliamps
  - Peak: 600 milliamps
- +5 volts
  - Standby: 20 milliamps
  - Typical: 220 milliamps

Operating Environment
- Temperature: 50 to 104 degrees F (10 to 40 degrees C)
- Relative humidity: 5% to 90% noncondensing

System Requirements
- Any Macintosh Classic or Classic II, Macintosh SE (with upgraded ROMs to support an internal SuperDrive), Macintosh IIcx, Macintosh IIci, or Macintosh IIsi personal computer
- Any Apple IIGS, Apple IIc Plus, or Apple IIe personal computer with the Apple II 3.5 Controller Card

Size and Weight
- Height: 2.01 inches (51 mm)
- Width: 4.72 inches (120 mm)
- Depth: 7.87 inches (200 mm)
- Weight: 2.8 lb. (1.3 kg)

Article Change History

12/14/92 - Corrected to show which systems can use an External SuperDrive.

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Tech Info Library Article Number:10289

Tech Info Library

AppleColor High-Res. RGB Monitor (13): Descr. (Discontinued)

Revised: 10/7/93
Security: Everyone

AppleColor High-Res. RGB Monitor (13"): Descr. (Discontinued)

==========

Article Created: 26 May 1992

TOPIC ----------

This article describes the AppleColor High-Resolution RGB Monitor (13-inch).

DISCUSSION ----------

The AppleColor High-Resolution RGB Monitor is a high resolution color display for the Macintosh.

Features

- 640 x 480 pixel resolution and analog input format.
- A 13-inch Trinitron CRT that allows users to display information in either color or black and white (with a resolution of 69 DPI).
- With the Macintosh II Video Card, the AppleColor High-Resolution RGB Monitor can display 16 colors or gray scales simultaneously from a palette of 16 million, or 256 colors or gray scales simultaneously with Macintosh II Video Card Expansion Kit.

Order Number

- AppleColor High-Resolution RGB Monitor (13-inch)
  M0401LL/B

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10290

Tech Info Library

AppleColor RGB Monitor: Description (Discontinued)

Revised: 6/3/94
Security: Everyone

AppleColor RGB Monitor: Description (Discontinued)

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Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article describes the AppleColor RGB Monitor.

DISCUSSION -----

The AppleColor RGB Monitor simultaneously displays high-resolution text color graphics for the Apple IIGS.

Features

- A 12-inch screen.
- High-resolution analog RGB color.
- Direct connection to the RGB port of the Apple IIGS; the connector cable is supplied and no adaptor or interface card is necessary.
- Display of all 4,096 colors generated by the Apple IIGS; 256 colors can be displayed at one time.
- Crisp 80-column text as well as graphics, eliminating the need for separate monitors for your applications.
- Platinum finish that matches the Apple IIGS.

Benefits

- Presentation of a full range of colors in a sharp, true image.
- Presentation of color text and graphics clearly at the same time.
- Easy installation; no interface card is required.
- A complete color solution for Apple IIGS.

Order Number

- AppleColor RGB Monitor

A2M6014

Copyright 1992-1994, Apple Computer, Inc.

Tech Info Library Article Number:10291

AppleColor Composite Monitor IIe: Specifications (Discontinued)

Revised: 6/2/94
Security: Everyone

AppleColor Composite Monitor IIe: Specifications (Discontinued)

==========

Article Created: 26 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article gives technical specifications for the AppleColor Composite Monitor IIe.

DISCUSSION ----------

Picture Tube

- 14-inch diagonal (13-inch view)
- 0.52 mm slot pitch
- High contrast (black matrix)

Input Signal

- Composite-only sync negative 1.0 +- 0.5 volts peak to peak, internally terminated with 75 ohm resistor

User Controls

- Front power switch
- Contrast
- Brightness
- Color
- Tint
- White Only button
- Vertical height (back)
- Vertical hold (back)
- Horizontal hold (back)

Scanning Frequencies

- Horizontal
  - 15.734 kHz NTSC/60
  - 15.659 kHz NTSC/50
- Vertical
  - 60 Hz NTSC/60
  - 50 Hz NTSC/50

Color Reference Frequency

- 3.579545 MHz NTSC/60
- 3.562456 MHz NTSC/50

Video Bandwidth

- Text (Monochrome) 8.0 MHz NTSC
- Graphics (Color) 3.0 MHz NTSC

Weight

- 12.5 kg (27.56 lbs) maximum

Power Requirement

- 50 watts under normal viewing conditions; 75 watts maximum

Input Voltage

- 120 v Model: 108-132 operating range, 50-60 Hz power frequency
- 220 v Model: 198-242 operating range, 50-60 Hz power frequency
- 240 v Model: 216-264 operating range, 50-60 Hz power frequency

Operating Ambient Temperature

- 0 to 50 C

Fuse Protection

- The monitor contains internal power line fuse protection. This fuse should be replaced with the same type by a qualified service technician.

Copyright 1992-1994, Apple Computer, Inc.

Tech Info Library Article Number:10292

Tech Info Library

Apple Token Ring 4/16 NB Card: Setup and Insertion Sequence

Revised: 6/8/92
Security: Everyone

Apple Token Ring 4/16 NB Card: Setup and Insertion Sequence

==========

Article Created: 2 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I can get the Token Ring 4/16 card to work on a Macintosh IIci, but not on a Macintosh Quadra. The system just reverts to the LocalTalk connection. I'm using the latest Network Installer Disk and have made sure that AppleTalk is active BEFORE installing the software.

What causes this problem?

DISCUSSION ----------

We suspect that you haven't connected the Macintosh/card to a MAU, or a problem prevents the card from becoming inserted on the ring.

Follow these steps to connect to a Token Ring:

1) Install the card and software (using Network Software Installer 1.1 or better yet, 1.2), and restart the Macintosh.

2) Open the Network CDEV and choose TokenTalk. You'll receive a dialog warning you that "Changing your AppleTalk connection will interrupt current network services..." Click OK.

3) Switch off the previous AppleTalk network connection.

4) If you have never configured this card before, you'll get a dialog asking if you want a 4MB or 16MB connection. After selecting this, insert the Token Ring card onto the ring with the parameters specified in the TokenRing CDEV.

5) If you can get close enough to the MAU that the Macintosh device cable

is attached to, you should listen for the sound of the MAU relay closing (audible click) inserting the Macintosh onto the ring. If there is no click, then you have one of the following situations:

- The TokenTalk software isn't properly installed on the Macintosh.
- The device cable isn't attached or is defective.
- The MAU port needs to be reset with the MAU set-up tool.
- The MAU port is defective.

Be sure the card isn't connected to the Ring-in or Ring-out ports on the MAU. They are for Trunk cables, and don't have relays to allow proper ring insertion.

If you hear a click, followed by another click, this indicates that the card tried to insert, and, based on network feedback, determined that it wasn't welcome. Two common causes for this are:

- Attempting to use the wrong network speed
- The address assigned is in use by another active device.

If you hear just one click, then the Macintosh has inserted successfully on the Token Ring.

Caution: When installing or removing NuBus cards from a Macintosh Quadra, turn it off, AND unplug the power cord! Macintosh Quadras continue to supply power to the NuBus, as stated in the NuBus '90 specifications. This is a potential hazard to NuBus cards being installed or removed. Specifically, low current at +5V is available on the new STDBYPWR pin when main power is off, and the AC cord is plugged in.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10295

Tech Info Library

Apple Products That Contain Non-Volatile Memory (3/94)

Revised: 3/31/94
Security: Everyone

Apple Products That Contain Non-Volatile Memory (3/94)

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Article Created: 18 June 1992
Article Reviewed/Updated: 31 March 1994

TOPIC ----------

Which Apple products contain non-volatile memory, and how much? Can user-generated data be stored there? If yes, how is it erased?

DISCUSSION ----------

Through March 1993, the only Apple products that contain non-volatile memory are the Macintosh computers and the LaserWriter printers.

Here are some details:

The Macintosh 128K, Macintosh 512K, and Macintosh 512Ke contain 20 bytes of parameter RAM (PRAM). These 20 bytes of PRAM are documented on pages II-369 through II-371 of Inside Macintosh Volume II.

The Macintosh Portable has 128 bytes of PRAM, and the remaining computers in the Macintosh family have 256 bytes of PRAM.

PRAM contains only configuration information, not user data.

The same is true for non-volatile memory in Apple LaserWriter printers -- only configuration information, like page count, baud rate, emulation mode, and port to use, is stored. The printer memory, like computer memory, is erased when the power is turned off.

With System 6, to clear PRAM, press and hold the Command, Shift, and Option keys while opening the Control Panel. Not all PRAM is cleared with this method -- the original 20 bytes of PRAM (refer to Inside Macintosh Volume II, pages II-369 through II-371) are not cleared. Only the remaining bytes, which are considered confidential, are.

With System 7, to clear PRAM, press and hold the Command, Option, P, and R

keys while you restart the Macintosh. This clears all PRAM.

Article Change History:
31 March 1994 - Reviewed for accuracy, updated formatting.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10299

Tech Info Library

Macintosh Quadra Series: Cache Allocation for Ethernet

Revised: 6/23/92
Security: Everyone

Macintosh Quadra Series: Cache Allocation for Ethernet

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Article Created: 18 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

How much cache does the Macintosh Quadra allocate for Ethernet?

DISCUSSION ----------

For standard configurations (8 receive and 8 transmit buffers), 31K is used by the system heap for the Ethernet buffer. That is roughly 1500 per buffer, plus memory for the Sonic and drvr data structures.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10302

Tech Info Library

Macintosh PC Exchange: Workaround to Get AFE to Recognize DOS

Revised: 9/1/94
Security: Everyone

Macintosh PC Exchange: Workaround to Get AFE to Recognize DOS

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Article Created: 19 October 1992
Article Reviewed/Updated: 01 September 1994

TOPIC ----------

When I have Macintosh PC Exchange installed (or DOS mounter, AccessPC, and so on), Apple File Exchange (AFE) or MacLink Plus PC don't recognize DOS disks as DOS disks. Because Macintosh PC Exchange makes a PC disk appear as a Macintosh disk, AFE thinks it's a Macintosh disk and won't display the MS-DOS menus.

DISCUSSION ----------

This is how we would expect AFE and Macintosh PC Exchange to behave.

The workaround for AFE is as follows:

1) Insert the MS-DOS disk.

2) From the "Mac to Mac" menu, select the "Other translations..." menu item.

3) Select the translator you want to use.

4) Make sure the "Add" radio button is selected and click "OK".

5) Repeat the process for all of the translators you want to use.

This will add the translator(s) to the "Mac to Mac" menu. Now all you have to do is select the translator(s) so it's checked in the menu and you will be able to use it.

Alternatively, you can disable Macintosh PC Exchange during the session with Apple File Exchange or MacLink Plus PC.

..TIL10303-Macintosh_PC_Exchange-Workaround_to_Get_AFE_to_Recognize_DOS_(TA28021)

Article Change History
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01 Sep 1994 - Reviewed for technical accuracy, revised formatting.
11 Dec 1992 - Revised to add alternative method.

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Tech Info Library Article Number:10303

Tech Info Library

A/UX 3.0: Macintosh Quadra 900 Ethernet NB Card Address (12/94)

Revised: 12/14/94
Security: Everyone

A/UX 3.0: Macintosh Quadra 900 Ethernet NB Card Address (12/94)

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Article Created: 21 September 1992
Article Reviewed/Updated: 14 December 1994

TOPIC ----------

The Macintosh Quadra 900 on-board Ethernet hardware address vendor code isn't the standard Apple code. The Apple identification for all Apple Ethernet-based hardware is 080007. The older EtherTalk NB card was actually a 3COM card, and carried their identification of 02608C.

Under A/UX, I ran the program etheraddr, and this was the result:

```
bedevere.root # etheraddr
10:00:e0:29:a6:c3
```

(My computer name is bedevere.usc.edu and I'm logged in as root.)

I get the same address when I'm just running System 7 and ask for the Ethernet address in the MacTCP CDEV (by using option-click on the network icon in the MacTCP CDEV).

I also see this address in the ARP caches of Novell servers and cisco routers that I ping.

DISCUSSION ----------

This problem was fixed after the release of A/UX 3.0. The information has also been posted on both ftp.support.apple.com, and aux.support.apple.com servers. Here is the description of the Read Me file:

The enclosure file contains two new Ethernet modules, 'ao' (on-board) and 'as' (Ethernet NB card), and an executable file, 'etheraddr', for A/UX 3.0. These are the patches for where the internal Ethernet physical address appears on Ethernet NB card, and the Sonic chip set on Quadra 900/ 950 main logic board in which the address was burned in bitwise reverse from the original EtherTalk NB (ae6) card.

Article Change History:
14 Dec 1994 - Added fix to this article.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10304

Tech Info Library

LaserWriter IIf and IIg: Serial Configuration

Revised: 6/8/92
Security: Everyone

LaserWriter IIf and IIg: Serial Configuration

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Article Created: 2 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I have a SPARCstation connected to a LaserWriter IINT via serial cable at 38.4 Kbaud. I use the PostScript program shown on page 120 of the LaserWriter IINT/NTX Owner's Guide. I just recently upgraded the printer to a LaserWriter IIf, and haven't successfully downloaded the same PostScript file.

Here are my questions:

1) Can the LaserWriter IIf communicate at 38.4 Kbaud?

2) Is the PostScript command to download changes different?

DISCUSSION -----

In answer to your questions:

1) The LaserWriter IIf and IIg can't communicate at 38.4Kbaud. The available rates are 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600, 19.2, and 57.6.

2) While PostScript Level 2 does these things a bit differently than previous implementations, a compatibility operator does exist for setsccbatch. This allows old programs to work as before, assuming they use the proper arguments. An advantage of the new methods would be more detailed control over the parameters for each push-wheel position. For instance, the below code sets position 9 to 9600 baud with 8 data bits, 1 stop bit, no parity, DTR flow control, and PostScript Binary mode to allow software-controlled emulation switching:

```
(%Serial_NV4)                %We're going to modify the 4th changeable pos.
<< /Baud 9600                %Mark a dictionary on the stack with key/value
   /DataBits 8               %pairs for the various settings.
   /StopBits 1
   /Parity /None
   /FlowControl /Dtr
   /Protocol /Binary
   /Interpreter /PostScript
   /On true
   /Enabled true
>> setdevparams              %Create the dictionary and execute
setdevparams.
                             %(which uses it to modify the parameter set.)
```

A large number of combinations are available, just as when using the setsccbatch operator. The difference is that this is a little more flexible, a little easier to read, but is also device specific (at least currently) to the LaserWriter IIf and IIg.

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Tech Info Library Article Number:10305

Tech Info Library

LaserWriter IIf and IIg: Aldus PPD Files and Print Area

Revised: 6/8/92
Security: Everyone

LaserWriter IIf and IIg: Aldus PPD Files and Print Area

==========

Article Created: 2 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

The printable area of the LaserWriter IIf and IIg is much smaller than the earlier Apple LaserWriter printers. These are the actual print areas in the PPD files from PageMaker 4.2:

- General: 197.2 x 280.8mm
- LaserWriter IIf & IIg: 191.9 x 275.2mm
- LaserWriter IINTX: 199.0 x 290.0mm

Is there a fix to this problem?

DISCUSSION ----------

Aldus purposely created their PPD files for the LaserWriter IIf and LaserWriter IIg this way. Their reason is that a 2MB LaserWriter IIf or a 5MB LaserWriter IIg with PhotoGrade turned on, have a smaller imageable area as compared to previous Apple LaserWriter printers.

If you use a LaserWriter IIf with 4MB of RAM or a LaserWriter IIg with 8MB of RAM, Aldus suggests using the "General" PPD and modifying the "PDX" file to adjust the number of lines and screen angle. To do this, look on page 67 of the "New Features Manual." If you need more information, please contact Aldus Technical Support.

You can find contact information for the various vendors in the Tech Info Library. An alphabetic listing of vendors is in the Third Party Company Directory folder.

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Tech Info Library Article Number:10307

Tech Info Library

Macintosh: PDS Expansion Slot Differences (2/95)

Revised: 2/24/95
Security: Everyone

Macintosh: PDS Expansion Slot Differences (2/95)

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Article Created: 2 June 1992
Article Reviewed/Updated: 24 February 1995

TOPIC ----------

Are all Processor Direct Slot (PDS) connectors in various Macintosh models different? If so, what are the differences?

DISCUSSION ----------

Macintosh computers use two main types of hardware expansion:
• A single processor-direct expansion slot
• NuBus expansion slots

A single PDS is used by the Macintosh SE, SE/30, LC, LC II, Portable.

Models that provide both PDS and NuBus slots are the Macintosh IIci, IIfx, Quadra 610 (smaller, 7-inch NuBus slot), 650, 700, 800, 900, and 950, the Power Macintosh 7100 series, and Power Macintosh 8100 series.

Note: The Macintosh Classic, Classic II, and PowerBook computers have no hardware expansion slots, although they do provide for internal memory expansion.

A PDS implementation brings the microprocessor address, control, and data lines, along with clock, power, and a few model-specific signals, to a single expansion connector on the main logic board. Apple uses the PDS expansion interface on compact, or small-footprint Macintosh computers such as the Macintosh SE, the SE/30, LC, or any design for which NuBus is inappropriate. The Macintosh II class of computers, such as the IIfx and the Quadras, also include a PDS connector, but their primary means of expansion is the NuBus interface.

Apple attempts to limit the number of PDS configurations available without compromising the Macintosh design, but since the PDS expansion interface is an extension of the microprocessor, the configuration of the slot connector will change whenever a newer, more powerful microprocessor is used.

68000 and 68020 PDS Interfaces

The Macintosh SE was the first Macintosh offering a PDS expansion. The SE uses a 96-pin expansion connector. The 96-pin expansion connector on the Macintosh Portable is physically identical to that of the SE, but the pinouts and signals available are different. The 68020 PDS interface in the LC is also a 96-pin connector that is physically identical to that in the SE and Portable; however, the pinouts and signals are different.

68030 PDS

Both the SE/30 and the IIfx have 120-pin connectors. Once a PDS adapter card is installed in the IIsi, it also provides a 120-pin PDS expansion connector. Whereas most of the signals on the 68030 PDS connector are the same on all models, a few signals are computer-specific. Therefore, PDS cards developed to take advantage of computer-specific signals may not work in other "030" Macintosh computers.

Macintosh LC and LC II

The 68020 PDS in the Macintosh LC uses a Euro-DIN 96-pin connector, as does the 68030 PDS in the LC II and the LC III. The PDS in LC-class models are electrically and physically identical.

The PDS used in the Macintosh 630 family is similar to that used in the LC, many PDS cards designed for the LC family will work in a Macintosh 630 class computer with the exception of the IIe Card.

68040 PDS

The 68040 PDS in the Macintosh Quadra is a 140-pin connector. The Macintosh Quadra's PDS cards aren't compatible with other Macintosh computers, and vice versa. The connectors are physically different, and the signals and logic were designed to support the 68040.

AV Macintosh computers

The 660AV and Quadra 840AV do not have a PDS connector. The 660AV has only a NuBus adapter slot.

Macintosh 630 family computers

The Macintosh 630 family, including the LC 630 and the Performa 63x computers, have three unique internal expansion slots. They include:

- One 114-pin LC compatible PDS
- One 112-pin communication port for modem and ethernet
- One 60-pin video-in slot for real time video display, capture and overlay

To verify that a particular third-party product is compatible with a specific Macintosh, we recommend you check with the supplier of that product. Additional technical information on PDS is documented in these manuals:

- Designing Cards and Drivers for the Macintosh Family
- Guide to the Macintosh Family Hardware

Article Change History:
24 Feb 1995 - Corrected Macintosh II systems that have PDS and NuBus slots.
17 Aug 1994 - Revised Macintosh 630 family details.
18 Jul 1994 - Added Quadra 630 family to discussion.

Support Information Services

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Tech Info Library Article Number:10308

Tech Info Library

Personal LaserWriter NTR: Added RAM for Font Storage and Cache

Revised: 6/29/92
Security: Everyone

Personal LaserWriter NTR: Added RAM for Font Storage and Cache

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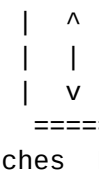
Article Created: 11 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What page sizes are available with the Personal LaserWriter NTR? Will adding memory increase the printable area?

DISCUSSION ----------

With 3MB of RAM (standard configuration), the Personal LaserWriter NTR provides these page sizes:



Page Type	Inches	Points	Inches	Points
a4	7.89	568.32	11.42	822.00
a4small	7.57	545.28	11.00	792.00
b5	6.72	483.84	9.81	706.56
legal	8.11	583.68	13.67	984.00
letter	8.11	583.68	10.67	768.00
lettersmall	7.89	568.32	10.30	741.84

Adding RAM does not increase the printable area -- added RAM is used for font storage and font cache.

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Tech Info Library Article Number:10309

Tech Info Library

Kodak Photo CD: Session Format, Compression, and QuickTime

Revised: 6/8/92
Security: Everyone

Kodak Photo CD: Session Format, Compression, and QuickTime

==========

Article Created: 2 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I understand that the existing CD-ROM drives are single session. Is Kodak's service of putting slides on CD going to be single, multiple, or both session format? Secondly, will the images be compressed using Kodak's compression? If so, will we get a new QuickTime compression INIT?

DISCUSSION ----------

Kodak's Photo CD incorporates the Orange book specification. This is the multisession specification. However, it's possible to have a "single multisession" or one session while using the Orange book specification. In other words, if the first session of a multisession CD fills the entire CD, it will be considered a single session, while still providing all the appropriate disc information to comply with the multisession specification. There just won't be a second session on the disc.

The AppleCD SC Plus and the AppleCD 150 both read the first session of a multisession CD. If the first session fills the entire disc, then these two Apple drives will be able to read the entire disc. The first CD-ROM drive from Apple, the AppleCD SC, won't be able to read a Kodak Photo CD.

Kodak will be using their own lossless compression technique. The compression 'codec' (COmpressor-DECompressor) will be supplied in a new release of QuickTime. The details of how the Photo CD codec will be supplied haven't been stated yet. It's possible to create a codec that doesn't require a new version of the QuickTime extension. However, as with the codecs that ship with the current version of QuickTime, they can be incorporated directly into the QuickTime extension itself. Since this is possible, it's unclear how the Photo CD codec will be shipped.

..TIL10312-Kodak_Photo_CD-Session_Format_Compression_and_QuickTime.pdf

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10312

Tech Info Library

PowerBook: Terminal Emulation and Cursor Keys 8/92

Revised: 5/16/94
Security: Everyone

PowerBook: Terminal Emulation and Cursor Keys 8/92

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Article Created: 2 June 1992
Article Reviewed/Updated: 5 August 1992

TOPIC ----------

I'm using emulation software such as MacTerminal 3.0 and Mac330 in VT320, VT220, and VT100 emulation mode on a PowerBook. When run on other Macintosh desktop units, I get correct cursor key emulation. On Mac330 program, cursor keys work, but on MacTerminal they don't. What is the mapping of the cursor keys for the MacTerminal software? Is this a problem with MacTerminal or the PowerBook?

DISCUSSION ----------

This is a known problem with the VT320 and VT102 Tools. They don't recognize the PowerBook keyboards. Mac330 probably uses its own VT330 emulation either in its own Tool, or application, and therefore doesn't have this problem.

Engineering is working on the next version of the Tools to fix this problem. The Arrow keys in the MacTerminal Keys menu should work. You can use a macro program such as QuicKeys to map the PowerBook's arrow keys to those keys in the menu.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10313

Tech Info Library

Apple PC 5.25 Drive: Description

Revised: 6/8/92
Security: Everyone

Apple PC 5.25 Drive: Description

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Article Created: 28 May 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the Apple PC 5.25 Drive.

DISCUSSION ----------

The Apple PC 5.25 Drive, in combination with the Apple File Exchange utility and the Macintosh II PC Drive Card or the Macintosh SE-Bus PC Drive Card, enables users to exchange data between their Apple and MS-DOS formatted 5.25-inch disks.

Both the Macintosh II and Macintosh SE-Bus PC Drive Cards are designed to work with the Macintosh II and Macintosh SE as controllers for the Apple PC 5.25 Drive. Internally mounted, these cards provide the interface that allows the Macintosh II and Macintosh SE to read and write files in the format familiar to MS-DOS programs.

Apple File Exchange provides the software link to the data in the 5.25 drive. Apple File Exchange also provides a translation capability. For example, with the proper translator, it can translate a WordStar document to a MacWrite document. Apple and other companies will provide Apple File Exchange application-to-application translators.

Third-party developers market coprocessor cards that work with the Apple PC 5.25 Drive, and are designed to allow the Macintosh II or Macintosh SE to run MS-DOS application software.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10314

Apple Hard Disk 80SC: Description (Discontinued)

Revised: 6/20/94
Security: Everyone

Apple Hard Disk 80SC: Description (Discontinued)

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Article Created: 1 June 1992
Article Reviewed/Updated: 20 May 1994

TOPIC ----------

This article describes the Apple Hard Disk 80SC.

DISCUSSION ----------

The Apple Hard Disk 80SC provides disk storage for Macintosh, Apple IIe, and Apple IIGS computers. It allows you to access data up to six times faster than 3.5-inch floppy-disk drives. SCSI expansion lets you connect as many as three additional SCSI devices to an Apple IIe or Apple IIGS or as many as six to a Macintosh.

Features

- 80 megabytes of storage
- Fast data access: 30 milliseconds
- Industry-standard SCSI (Small Computer System Interface)

Benefits

- Provides space for data-intensive files, large documents, and sophisticated applications.
- Lets you build an AppleShare system.
- Makes it easy to work in the AT&T UNIX environment.
- Provides faster data transmission than a serial interface.
- Allows expansion with additional hard disks, tape backup systems, or other SCSI peripherals.
- Provides connection to the Apple Tape Backup 40SC for efficient file backup and restoration.
- Assures a growth path.

Order Numbers

- Apple Hard Disk 80SC M2688
- Apple SCSI System Cable M0206
- Apple Cable Terminator M0209
- Apple II SCSI Interface Card A2B2087

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10315

Tech Info Library

Apple SuperDrive, Internal: Upgrade Description

Revised: 6/8/92
Security: Everyone

Apple SuperDrive, Internal: Upgrade Description

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Article Created: 1 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article describes the Apple Internal SuperDrive.

DISCUSSION -----

The Apple Internal SuperDrive maximizes internal floppy disk storage for the Macintosh SE, Macintosh II, and Macintosh IIx computers. It also exchanges information between Macintosh files and MS-DOS, OS/2, and ProDOS files.

It provides access to 75 percent more storage space than 800K disk drives. It can format, read from, and write to Apple 400K, 800K, and 1.4MB disks, as well as MS-DOS 720K, 1.44MB, and compatible 3.5-inch disks.

Features

- Uses high-density (HD), double-sided 3.5-inch floppy disks
- Compatible with Macintosh, MS-DOS, OS/2, and ProDOS formatted disks
- High-Density disk detector
- Internal drive

Benefits

- Provides almost twice the capacity of on-line data storage available from 800K disks.
- Holds large data files and applications on one disk, reducing the need to swap disks.
- Protects data, because disks are rugged and easy to carry.
- Can read from and write to Macintosh 400K, 800K, and 1.4MB disks.

- Allows Macintosh users to work with files stored on MS-DOS 720K or 1.44MB MFM disks and ProDOS disks, using the Apple File Exchange utility.
- Automatically formats to correct disk capacity (Apple 800K or 1.4MB format, or MS-DOS 720K or 1.44MB format).
- Saves desk space.

Order Number

- Apple Internal SuperDrive
  M0247

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10316

Tech Info Library

Apple SuperDrive, Internal: Specifications (9/95)

Revised: 9/19/95
Security: Everyone

Apple SuperDrive, Internal: Specifications (9/95)

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Article Created: 1 June 1992
Article Review/Updated: 19 September 1995

TOPIC ----------

This article gives technical specifications for the Apple Internal SuperDrive.

DISCUSSION ----------

Recording Media

- Disk diameter: 3.5 inches
- Recording surfaces: 2
- Number of cylinders: 80

Capacity

- Formatted data: 1.416MB
- Unformatted data: 2.0MB

*

Drive Characteristics

- Seek time (track-to-track): 6 milliseconds maximum
- Settle time: 30 milliseconds maximum
- Data transfer rates: 500 kilobits per second
- Drive startup time: 600 milliseconds maximum

Interface

- Apple proprietary interface (same as existing 800K drive)

Environmental Requirements

- Operating temperature: 50 to 104 F (10 to 40 C) ambient
- Storage temperature: -40 to 140 F (-40 to 60 C) no condensation

• Relative humidity: 5% to 90%

Size

• Height: 1.60 inches (4.1 cm)
• Width: 4.16 inches (10.6 cm)
• Depth: 6.56 inches (16.7 cm)

System Requirements

To use the Apple Internal SuperDrive Upgrade, you need the following:

• Macintosh SE, Macintosh II, or Macintosh IIx computer.
• System software 6.0.3 or later

NOTE:
This upgrade has been discontinued.

Article Change History:
19 Sep 1995 - Revised to show discontinued upgrade.

Support Information Services

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Tech Info Library Article Number:10317

MacX25: Where to Find MacPAD Scripting Interface Documentation

Revised: 10/2/92
Security: Everyone

MacX25: Where to Find MacPAD Scripting Interface Documentation

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Article Created: 25 September 1992

TOPIC --------------------

What are the scripting interface parameters for the communication toolbox connection tool, MacPAD?

DISCUSSION --------------------

The scripting interface to MacPAD is described in Appendix F of the MacX25 Programmer's Guide, available from APDA. We HIGHLY recommend that all MacX25 developers acquire this document.

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Tech Info Library Article Number:10319

Tech Info Library

Apple File Exchange: Contrasted to File System Translators

Revised: 6/29/92
Security: Everyone

Apple File Exchange: Contrasted to File System Translators

==========

Article Created: 11 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What are the technical differences between translating AppleWorks files with AFE, and using the GS/OS HFS FST to copy them to an HFS disk? I tried this, and got the following results:

AFE:
Type:1A__
Creator: pdos
1 resource, type pdos, size 10 bytes, ID 0

HFS FST
Type: p___
Creator: pdos
No resource fork present.

The purpose of this is to translate some AppleWorks files into GreatWorks or ClarisWorks using the XTND translators. If I translate them with AFE, everything works as intended. Why doesn't it work with the HFS FST, and why didn't the creators of the FST make it produce the same results as the previous translation standard (AFE)?

DISCUSSION ----------

The most important difference between AFE and any FST is that AFE is a file CONTENT translator, while FST (File System Translator) is a file SYSTEM translator.

A file translator does the following:

• Changes any filetype-specific information.

- Translates the specific information into a different layout.
- Adds any needed datatypes or header information.
- Possibly eliminates unneeded data.

This is specific to content of individual files, such as converting AppleWorks documents to ClarisWorks documents.

FST, on the other hand, translates the file system, including the following:

- Directory structures
- Subdirectory structures
- File types
- Block structures
- Other elements of the filing system

An FST DOESN'T translate the contents of an individual file. An FST DOES allow a foreign file system to reside on a native computer. For example, the Apple IIGS Finder desktop can display Macintosh HFS diskettes.

The results obtained are in line with each of the procedures. Translating the file contents from ProDOS to Macintosh OS requires adding some items, such as the resource fork and a specific file type. Generally a program that translates the contents of a file will also add a file type. This often allows double-clicking the translated file to open the file and application.

The contents of a file aren't touched when copying a file while an FST is in use. In the case presented, the 'p___' type is a generic type representing "some type of (unknown) ProDOS file."

AFE is an appropriate procedure for translating the contents of a file from one application format to another application format. FST is an appropriate method for allowing a disk from one operating system to mount while using a different operating system.

Thinking of FSTs as the "current translation standard" and AFE as the "previous translation standard" is an incorrect approach to understanding the purpose of these two entirely different operations. The creators of FST didn't have anything close to AFE in mind when they began to design their product. Their intention was to translate the filing system information, not the file contents. AFE was designed to translate the file contents, not the system of filing.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10321

Tech Info Library

AppleTalk Remote Access: Using Long Phone Numbers

Revised: 8/13/92
Security: Everyone

AppleTalk Remote Access: Using Long Phone Numbers

==========

Article Created: 11 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I need to allow about 40-50 digits in the AppleTalk Remote Access dial string to use the corporate phone network.

DISCUSSION -----

Remote Access can accommodate a phone number up to 128 characters. The real limitation lies in a modem's command buffer, which is typically 30 characters. Keep in mind that the modem command to dial (ATDT) takes up 4 of those characters; so the maximum length for a phone number is actually 26.

The workaround is to break the long phone number into two parts. Hard code the first part within the modem script. Users enter the second part as they would normally enter a phone number.

Most modems support the ";" command, which tells the modem to return to local command state after dialing. This allows the modem to dial the first part of the phone number, go back to command state, then dial the second part of the phone number.

To do this, you need to modify the Remote Access modem script and add the following two lines:

```
write "ATDTxxx...xxx;\13"
pause 80
```

"xxx...xxx" indicates the first part of the phone number, and can be up to 26 characters. "pause 80" tells Remote Access to wait 8 seconds before continuing. This gives the modem time to complete the first dial command.

You may need to modify this value for your particular modem. The Apple Data Modem 2400 takes about 8 seconds to dial a 26-character phone number.

Here's an example of the Apple Modem 2400 modem script with the modification:

```
!
! The modem is ready so enable answering, or originate a call
!
@LABEL 8
pause 5
ifANSWER 30
note "Dialing ^1" 3
write "ATDTxxx...xxx;\13"
pause 80
write "ATDT^1\13"
```

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Tech Info Library Article Number:10323

Tech Info Library

A/UX: Configuring to Access Name Server (9/94)

Revised: 9/21/94
Security: Everyone

A/UX: Configuring to Access Name Server (9/94)

==========

Article Created: 11 June 1992
Article Reviewed/Updated: 21 September 1994

TOPIC ----------

How do you configure an A/UX box to use an existing Domain Name Server on the network?

DISCUSSION ----------

The easiest way to make A/UX use an existing name server on the network, is to create a file called /etc/resolv.conf. The file should contain the domain you belong to and the IP address of the name server for that domain.

For example, the following lines would be the content of the /etc/resolv.conf file that points to the name server for the domain called testing.com:

```
domain testing.com
nameserver 192.1.1.1
```

This says that the domain you belong to is called testing.com, and that the nameserver is located at 192.1.1.1.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10324

Macintosh: What's Needed to Network with Altos 5000 (SCO UNIX)

Revised: 6/29/92
Security: Everyone

Macintosh: What's Needed to Network with Altos 5000 (SCO UNIX)

==========

Article Created: 11 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

An Altos 5000 running SCO UNIX, and TCP/IP net BIOS are necessary to connect a Macintosh IIci computer and a Macintosh Quadra 700 into a UNIX platform. As far as I know, I should be using 10Base-T with 64K buffered EtherNet cards and a TCP/IP hardware router. I'm uncertain of the software necessary.

DISCUSSION ----------

Using Ethernet to make the basic connection to the Altos 5000 sounds like an excellent choice. If the Altos is already connected to an existing network, all you need is an Ethernet card for the Macintosh and a TCP/IP-based connection application to start exchanging data with the UNIX host. As for the Ethernet card, we recommend the Apple Ethernet NB card.

There are several ways to access the server, and more specifically the data stored on the server. You could use any of the UNIX-based AFP packages available from various vendors. Using one of these packages allows the Macintosh ease of use without throwing in the complications of UNIX, FTP (File Transfer Protocol), Telnet, and so on.

Depending on what type of data you need to access and user expectations, you could use any of the MacTCP-based packages to log on to, and transfer files from, the server. You could also use a Macintosh NFS application, such as that available from Intercon or Cayman. This would allow the Macintosh users to access UNIX-resident files as though they were local files. You might consider the Intercon or Wollongong commercial products or the widely-used NCSA public-domain package. You might also consider a CommToolBox-based application. You could use any CommToolBox-based communications program, such as MacTerminal 3.0, VersaTerm Pro, and

so on. Or you might use a telnet/ftp tool available from a variety of sources, like InterCon and VersaTerm (ships the product with a telnet tool).

For details about these products, use "Macintosh and TCP/IP and Applications" as a search string. To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:10326

Tech Info Library

Apple IIGS: Using American Micro Research Floppy-Disk Drives

Revised: 11/4/92
Security: Everyone

Apple IIGS: Using American Micro Research Floppy-Disk Drives

==========

Article Created: 12 June 1992

Article Change History

11/03/92 - CORRECTED
- The vendor search string information

TOPIC ----------

I have an American Micro Research (AMR) 3.5-inch floppy disk drive connected to my Apple IIGS running GS/OS 6.0. The AMR drive hangs or continues to spin when accessing other drives. In addition, my AMR 5.25-inch drive does not appear on the desktop under GS/OS 6.0, or it spins forever. Both drives work fine under GS/OS 5.0.4.

DISCUSSION ----------

According to American Micro Research Technical Support, the 5.25-inch drive should boot properly under GS/OS 6.0. We suggest that you contact AMR directly to discuss this problem.

AMR said that their 3.5-inch drive will hang if a disk is not inserted in the drive before you boot the system. The recommended workaround is to insert a disk in the AMR 3.5-inch drive before you power up the computer.

AMR also said that using either GS/OS 5.0.4 or 6.0 is fine, but using the 5.0.4 driver with GS/OS 6.0 will not correct the problem.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:10330

Tech Info Library

PowerBook Series: Conditions that Block Sleep Mode (7/95)

Revised: 7/21/95
Security: Everyone

PowerBook Series: Conditions that Block Sleep Mode (7/95)

==========

Article Created: 26 June 1992
Article Reviewed/Updated: 21 July 1995

TOPIC ----------

My Macintosh PowerBook won't go into the Sleep mode when the PowerBook AC Adapter is plugged in.

DISCUSSION ----------

Here are the conditions under which the PowerBook computers will not go into Sleep mode:

Software

- The "Stay Awake when plugged in" box is checked in the Portable control panel.
- The PowerBook is connected to a network, or has network volumes mounted.
- File Sharing is enabled.
- AppleTalk is active, and the AC Adapter is plugged in.
- AppleTalk Remote Access is installed and the "Answer Calls" option is selected.
- Update SCSI driver with formatting software.
- Verify that third-party hard drive supports the sleep function.
- Verify that the formatting software is compatible with the system version on the PowerBook; update if appropriate.
- Some third-party applications keep the CPU busy, not allowing idle

processor time for sleep to occur.

• If you have any 7.5 Apple Guide help file open.

Hardware

• Check for failure of hard drive or hard drive cable.

• Check for possible logic board failure.

If none of these conditions is present, you may have a system software problem. Try re-installing the system software.

Article Change History:
21 Jul 1995 - Added information about 7.5 Guide files.
15 Apr 1994 - Additional possible causes added to article.

Support Information Services

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Tech Info Library Article Number:10333

Aldus Freehand: Use 3.0 or Later w/ PostScript Level 2 Printers

Revised: 6/30/92
Security: Everyone

Aldus Freehand: Use 3.0 or Later w/ PostScript Level 2 Printers

==========

Article Created: 15 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

The LaserWriter IIf evidently can't print documents with two or more logos. It hangs or times out. The font is a Type 3 PostScript font, created with Art Importer. It consists of various company logos.

I have tried printing over the network as well as printing to a single printer directly connected to a Macintosh. The results were the same. We use AppleTalk over twisted-pair.

DISCUSSION ----------

The problem is that the characters were created with Aldus Freehand 2.2 or earlier.

Aldus Freehand 2.2 and earlier versions improperly use the "setcolor" PostScript operator. This misuse causes problems with the LaserWriter IIf, LaserWriter IIg, Personal LaserWriter NTR, and any other PostScript Level 2 printer.

Use Aldus Freehand 3.0 or later to create the graphics and the problem should no longer occur.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10339

Tech Info Library

Macintosh Quadra 950: Video Characteristics

Revised: 7/16/92
Security: Everyone

Macintosh Quadra 950: Video Characteristics

==========

Article Created: 15 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

What are the statistics for the Macintosh Quadra 950 computer's video with respect to scan rates, resolution, and sense line configuration?

DISCUSSION -----

Here's the information on the Quadra 950 computer's support for 1024 x 768 (19-inch) monitors. Though Apple doesn't sell a monitor with these characteristics, there are third-party monitors that work with this timing. One example of a compatible monitor is the standard SuperMac 19-inch Trinitron display (we believe their Hitachi-tube display works also). The higher end multisync type of display, such as the NEC Multisync 5fg is another example. Other solutions exist, and you will want to contact your supplier to determine your options.

Extended Sense Codes

Note for extended sense codes: A sense pin pair value of 0 means those pins should be tied together (as opposed to grounding the pins to pin 11); a value of 1 means don't connect the pins. DON'T wire any of these pins to ground.

Macintosh Quadra 950 Video Port Characteristics

Display	Sense pins 4-10 10-7 7-4	Hor x Vert Pixels	Dot Clock	Vert Refrsh	Horiz Refrsh

19-inch	1	1	0	1024 x 768	80	74.93	60.241

Maximum Pixel Depths Supported

Display size	512K VRAM	1MB VRAM	2MB VRAM
19-inch Color	4 bpp	8 bpp	16 bpp

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Tech Info Library Article Number:10342

Tech Info Library

American Micro Research (AMR)

Revised: 7/22/93
Security: Everyone

American Micro Research (AMR)

==========

Article Created: 12 June 1992
Article Reviewed/Updated: 22 July 1993

American Micro Research

1787 E. 28th ST.
Long Beach, CA 90806

310-492-9000

310-426-3456 Fax

Company Profile:
Hardware, specializing in floppy-disk drives for Apple II and Macintosh computers.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10348

Tech Info Library

AppleTalk: Isolating from SNA Traffic

Revised: 6/19/92
Security: Everyone

AppleTalk: Isolating from SNA Traffic

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Article Created: 15 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I have two separate rings on one Token Ring network with the following set up:

• An AS400 on one ring, and

• An AppleShare file server on the other.

On one Macintosh, I would like to have access to the AS400 (not acting as a Gateway) and the AppleShare file server. I want to keep AFP/PAP on its own ring for now. Of course, I have two Token Ring cards in the Macintosh.

Configuration for SNA•ps 1.1 and Andrew Token Access software will be easy. How do I configure the Macintosh workstation (AppleTalk) software to access only the other TR card? Do I need the Internet router to accomplish this?

DISCUSSION -----

You can come close to the configuration that you describe, but there will be one twist, as you will see later. You can certainly limit the AppleTalk traffic to one of the rings. Using the network control panel on the computer connected to both rings, you choose the AppleTalk access to be the TokenTalk icon corresponding to the ring that has the AppleShare server on it. The Network control panel will have a TokenTalk icon representing each card installed in the computer, so it's just a matter of choosing the correct icon.

You don't want to have an Internet Router on this computer because that would imply that you would be routing AppleTalk to other physical networks (that is, the other Token Ring network).

Now, on the SNA•ps and Andrew side of things, you will have a SNA•ps gateway configured on this same computer. The gateway will be configured for APPC communications with the AS400 (necessary for the Andrew software). One note of caution at this point -- any Macintosh on the AppleTalk ring will be able to use this gateway if it has the appropriate SNA•ps client software. You won't be restricting this to just the gateway computer. There's still no AppleTalk on the other ring, but that's just a slightly different look at things. Of course, if you don't want other computers to have access to the gateway, don't give them the client software.

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Tech Info Library Article Number:10349

Tech Info Library

Helios USA (12/95)

Revised: 12/13/95
Security: Everyone

Helios USA (12/95)

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Article Created: 15 June 1992
Article Reviewed/Updated: 13 December 1995

Helios USA

10601 S. DeAnza Blvd., Ste. 103
Cupertino, CA 95014

408-864-0690

408-864-0694 Fax

Company Profile:
Specializing in networking and network management products, like netOctopus and in EtherShare and PCShare, TCP/IP-based applications, for the Macintosh and IBM PC, respectively, that handle PostScript protocols.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10353

Tech Info Library

Macintosh Portable Data Modem 2400: Description (Discontinued)

Revised: 6/20/94
Security: Everyone

Macintosh Portable Data Modem 2400: Description (Discontinued)

==========

Article Created: 8 June 1992

TOPIC ----------

This article describes the Macintosh Portable Data Modem 2400.

DISCUSSION ----------

The Apple Macintosh Portable Data Modem 2400 allows the Macintosh Portable computer to communicate with other personal computers, minicomputers, and mainframes to access and exchange information.

A standard asynchronous 2400-bps modem, the Macintosh Portable Data Modem 2400 can communicate with any standard data modem operating at 2400, 1200, or 300 bps.

Its low-power design preserves the battery power of the Macintosh Portable computer. And it can operate unattended; the modem is designed to receive files when the user is away from the computer.

Features
- Industry-standard modulation techniques: Bell 103, Bell 212A, CCITT V.22, CCITT V.22bis
- Automatic "wake up" feature
- Low-power design
- Auto dial and auto/manual answer
- Supports a subset of the AT command set

Benefits
- Lets you communicate with any computer that uses a standard data modem.
- Lets you receive files when away from the Macintosh Portable computer.
- Preserves the battery power of the Macintosh Portable computer.
- Saves time and effort by permitting unattended operation.
- Lets you control your modem through the use of direct modem commands.

Order Number

- Macintosh Portable Data Modem 2400
  M0250

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Tech Info Library Article Number:10356

Tech Info Library

Empower: Modifies SCSI Drivers

Revised: 6/30/92
Security: Everyone

Empower: Modifies SCSI Drivers

==========

Article Created: 16 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Does Empower substitute its own hard disk driver for the installed driver (Apple or PLI)? Sometimes when starting up, the system gets confused.

Does Apple recommend not using products like Empower that substitute hard disk drivers?

DISCUSSION -----

Empower does indeed modify the SCSI driver on the startup disk of systems where it's installed.

Apple doesn't have any specific recommendations to make in this area. If a customer requires the features provided by a product such as Empower, it's up to the customer to decide what product to purchase, if any. The use of such a product doesn't void any warranties nor relieve Apple of support responsibilities for the Apple hard disk.

If a customer is having problems with an Apple hard disk, Apple will ask the customer to install only Apple drivers on the hard disk. If the problem is resolved by this, Apple will tell the customer that the problem isn't related to the Apple equipment and to contact the manufacturer of the problem product.

If the third party can't solve the problem, Apple recommends not using the product, at least in that particular case.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10357

Tech Info Library

PowerBook: Re-Chooses AppleTalk Network ID After Sleep 10/92

Revised: 5/16/94
Security: Everyone

PowerBook: Re-Chooses AppleTalk Network ID After Sleep 10/92

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Article Created: 19 October 1992

TOPIC ----------

If I understand the AppleTalk protocol correctly, a CPU has a unique ID when it's connected to a network. A desktop Macintosh will assume that the network ID is the same even if it has been disconnected from the network (without reboot). This can of course cause a problem if the network ID has been assigned to another CPU in the meantime. Does this apply to the Macintosh PowerBook systems when they are put in sleep mode as well, or will the PowerBook ask if the old ID is still available when it wakes up?

Does the message displayed when I put it into sleep mode mean that I lose my network connections?

DISCUSSION ----------

When a Macintosh PowerBook system goes into "sleep" mode, the following alert is displayed:

> "Putting the computer to sleep may cause you to lose some network services. Check your connections in the Chooser next time you wake the Macintosh."

Actually, if the PowerBook is asleep for more than a minute or so, you will lose all of your AppleTalk connections.

If your PowerBook is put into sleep mode and another AppleTalk device acquires the PowerBook's AppleTalk node ID, the PowerBook will select another AppleTalk node ID.

We tested this with a PowerBook 170. First we determined what AppleTalk node ID the PowerBook 170 was using via Inter•Poll. We then put the PowerBook 170 into sleep mode. We connected a Macintosh SE to the same LocalTalk network and gave it the AppleTalk node ID the PowerBook 170 was using. We woke up the PowerBook 170, and it selected a new AppleTalk node ID.

..TIL10358-PowerBook-Re-Chooses_AppleTalk_Network_ID_After_Sleep_10-92.pdf

Support Information Services

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10358

Tech Info Library

Personal LaserWriter NTR: Printing Legal Size with PC Software

Revised: 11/11/92
Security: Everyone

Personal LaserWriter NTR: Printing Legal Size with PC Software

==========

Article Created: 19 October 1992

TOPIC ----------

I purchased a Macintosh Quadra 700, a 16-inch color monitor, and a Personal LaserWriter NTR. I have an application from VAR that I run under SoftAT. I found it impossible to print to the Personal LaserWriter NTR from within SoftAT.

I purchased an i386 PC just to run this software. Now I can print to the Personal LaserWriter NTR, but not legal size. The printer is set to HP Emulation. A setup string is in a dialog box that comes up in the UAR software. The book from UAR states that to print to an HP requires the setup string to read: HPII Chr(27);"&l3A". This string in the dialog box along with the switch on the HP set to legal will produce legal output, but there's no switch on a Personal LaserWriter NTR. Also, when I include the lower case "L" in the setup text string, I get a PostScript error.

Personal LaserWriter NTR Configuration:

- Thumb wheel set to position 8: This should yield HP IIP emulation.
- Baud rate of 9600
- Parallel port on the Personal LaserWriter NTR from the i386 PC
- DB-25 male to Centronics 36-pin parallel cable

DISCUSSION ----------

Our testing indicates that the only way to print legal size documents without a legal size paper tray installed is to set the port, in this case the parallel port, to PostScript mode and prepend all HP LaserJet IIP jobs with the following:

```
legal
currentfile /LaserJetIIP statusdict /emulate get exec
```

and end the job with a control-D (eof character).

The "legal" operator in the first line tells the LaserWriter to use a legal size frame buffer for the current job.

If you install a "Personal LaserWriter 250 Sheet Cassette Base" and use a legal tray, you should have no problems using the parallel port in HP LaserJet IIP emulation mode and printing legal size documents.

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Tech Info Library Article Number:10359

Tech Info Library

TCP/IP: Available TCP/IP-Based Macintosh Applications (12/95)

Revised: 2/13/96
Security: Everyone

TCP/IP: Available TCP/IP-Based Macintosh Applications (12/95)

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Article Created: 15 June 1992
Article Reviewed/Updated: 13 December 1995

TOPIC ----------

Here is a summary of TCP/IP-based applications available for Macintosh.

DISCUSSION ----------

For more information on a third-party vendor's applications, contact the vendor directly. The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Novell, Inc.

LAN WorkPlace for Macintosh provides Apple Macintosh users access to a broad range of hosts, servers, and workgroups on an Ethernet network. The components that make up LAN WorkPlace include:

- Telnet, which provides VT220, VT100 terminal emulation.
- FTP, for transferring files between hosts.
- Novell TCP/IP (or optionally MacTCP), the underlying transport layer.
- NetStat, a desk accessory for displaying network statistics.

Using the familiar Macintosh interface, users can access resources on an industry-standard TCP/IP network, including PCs, VAX minicomputers, IBM mainframes, UNIX workstations, and host-connected peripherals such as printers and plotters.

White Pine Software

White Pine Software Inc. offers a family of TCP/IP-based VT300 terminal-emulation and other applications for Macintosh.

The programs let Macintosh computers log on to VAX and UNIX computers to run text and graphics applications designed for DEC and compatible terminals.

Software Ventures Corporation

The MicroPhone communications software comes with a comprehensive set of tools for quick and easy TCP/IP access. Targeted to users of TCP/IP-based networks, such as the worldwide Internet. It feature new multisession communications capability, an improved scripting language and editor, new terminal emulation and new transfer protocols.

The Wollongong Group Inc.

Pathway Access for the Macintosh is a multiplatform graphical front end to TCP/IP services. With PathWay Access, users can transfer files between the Macintosh and any other computer that supports the open standard TCP/IP protocols. PathWay Access includes terminal emulations for DEC VT100, VT220, VT240, VT320, VT330 and VT340 terminals, as well as IBM 3278 Model 2, 3, 4 and 5 mainframe terminals.

Intercon

TCP Connect II is an integrated application that offers users the tools needed to become true hosts on a TCP/IP network. Using standards-based protocols, TCP/Connect II provides the user with a Macintosh interface to the most commonly used features of heterogeneous TCP/IP computing networks.

NFS/Share is a solution for Macintosh users wanting to take advantage of distributed file sharing within a multivendor environment.

NetShark is a next generation Internet application. NetShark includes a World-Wide Web browser and Email client. Both are designed to maximize function and performance letting you switch back and forth between web and mail.

InterServer Publisher is software that supports Web, FTP, and Gopher server functionality. The Web server includes support for forms and multiple connections. The FTP server supports different levels of access, from secure to anonymous. The Gopher server is background-friendly and self-configuring to let users quickly make information available on the Internet.

InterPrint will let Macintosh computers choose a UNIX PostScript printer on a TCP/IP network from the Chooser.

InterPPP II Lite is a standards-based solution that implements PPP according to published Requests for Comment (RFCs). Developed by the IETF, in cooperation with network vendors, PPP is a documented standard for connecting workstations to networks that is being deployed by many router and terminal server vendors as the standard solution for dial-in network access.

Planet X is an X Window System client for Macintosh computers. Any X Window System server, such as a Sun, Digital, HP, IBM workstation, X terminal, or even another Macintosh running an X server such as MacX can utilize the power of Planet X. The X server display shows exactly what is seen on the Macintosh screen, and the X server keyboard and mouse can be used to control the remote Macintosh.

UUCP/Connect provides a complete environment for reading electronic mail and USENET news via the UUCP protocol. Using Apple's Communications Toolbox, UUCP/Connect can be used over straight serial links, modems, AppleTalk, TCP/IP, ISDN, X.25, and more. It works with a number of common UUCP services, such as the service provided by Performance Systems International.

WatchTower is designed with network managers in mind, using the power and availability of the SNMP (Simple Network Management Protocol) standard combined with the Apple Macintosh to gain control over your network.

Advanced Software Concepts

TCPack provides all the necessary basic TCP/IP connectivity options. Advanced Software Concepts' products are Comm ToolBox tools which allow IBM terminal sessions and general telnet TCP/IP connectivity via a standard terminal emulator. There's no need to learn a new program. You just drop the tools in the System Folder, and start up a Comm ToolBox compatible terminal program. TCPack supports telnet and FTP (client and server) protocols.

Walker Richer & Quinn, Inc.

Reflection connectivity software gives Mac OS users the easiest possible access to host applications and data. A simple point-and-click of the mouse leads to a whole new world of information -- and dramatic improvements in productivity:

- Host connections are quick, simple, and reliable.
- Power Macintosh acceleration helps get the job done in record time.
- Routine tasks are easily automated with WRQ's powerful command language and support for Apple events and AppleScript.

Terminal emulations:

- HP 700/98, 700/96, 700/94, 700/92, 2392A, 2393A, and 2623A
- VT420, VT320, VT220, VT102, and VT52
- VT340 with ReGIS and sixel graphics, 330, 241, 240, and Tektronix 4010/4014

Specialized features: Full Macintosh functionality with Power Macintosh acceleration, Apple events support, multiple-session capability, fast drag-and-drop file transfer, keyboard mapping, extensive scriptability, and feature control tools.

Synergy Software

The VersaTerm family of applications (VersaTerm, VersaTerm-PRO, VersaTilities) provide high quality terminal emulations, TCP/IP network connections (including SLIP), and a graphical interface for exchanging information over the Internet.

Xinet

Xinet develops and markets Unix/Macintosh connectivity products. They specialize in client/server solutions that let Macintosh and Unix systems work together

efficiently and reliably. Xinet products include:

- FullPress: integrated OPI (Open Pre-press Interface) server software for prepress production.
- K-AShare: AppleShare file server software for Unix.
- K-Spool: A bi-directional print spooler for Unis and Macintosh.
- K-FS: AppleShare client software for Unix.
- MediaShare: High speed file sharing solution for prepress and media production.

AGE Logic, Formerly Pacer Software

AGE Logic is a leader in desktop connectivity software. Specializing in interoperability and connectivity software, AGE has developed a wide range of products that facilitate desktop to enterprise connectivity. AGE's family of high performance X servers are offered under the XoftWare (pronounced zoft'ware) brand name. A complete line of Macintosh to UNIX connectivity and interoperability products are offered under the Pacer brand name.

AGE's Macintosh family of UNIX connectivity products includes:

- XoftWare for Mac OS
- PacerTerm
- PacerShare
- PacerPrint
- PacerForum
- AppleTalk Technology
- DAL/ODBC Servers

Information Presentation Technologies, Inc. (IPT)

IPT's solution is based on configurations of Macintosh computers and a central UNIX database, file, print and mail server. Below are some of the IPT family of products:

- Canopi: AppleTalk file and print server including OPI.
- LessTalk: Reduces network "chatter" on AppleTalk networks.
- Partner: Allows Unix machines to be AppleTalk clients.
- TurboTalk: Speeds up netwrok transfers.
- uShare: AppleTalk file and print server.

Helios USA

EtherShare is a Macintosh file server for Unix computers running any of the standard versions of Unix, Digital, AIX RS-6000, Data General, HP, Sun OS and SGI. It integrates a high-performance file server, a print server handling PostScript protocols and an AppleTalk Internet router. It also provides terminal services and access to Unix mail.

Helios OPI is a high-performance desktop
publishing document server and printing enhancement system based on Unix computers that have been equipped with EtherShare.

Alisa Systems

AlisaMail is an easy-to-use enterprise electronic mail and corporate directory service integration system designed for demanding messaging environments that require support for standard and proprietary mail protocols. Based on Sybase relational database, its distributed architecture and comprehensive directory service make electronic message integration more reliable and simple to administer in a large E-mail environment. AlisaMail fully integrates a broad base of PC, Macintosh, Unix and DEC VAX E-mail systems. By allowing various hardware and software platforms to seamlessly and transparently exchange electronic messages, fully editable documents and binary files, AlisaMail integrates corporate E-mail with Microsoft Mail, Lotus cc:Mail, CE Software QuickMail, WordPerfect Office, X.400, SMTP and Digital's VMSmail, ALL-In-1 and Message Router (with access to PROFS, SNADS, PMDF, and so on) mail systems.

Rasmussen Software, Inc.

MacQT (Macintosh Quick Terminal) provides solid terminal emulation for any Macintosh. It emulates ADDS Viewpoint extended, with line-drawing set, attributes and function keys (emulated on minimal keyboards). It supports sizeable text, 80/132-column display, ASCII file transfer, pass-through print and pass-through PostScript. Host software is provided where necessary for file transfer.

Public Domain Software

There are several non-commercial (public domain) products that provide telnet and FTP services for the Macintosh. One of the most popular is NCSA Telnet. NCSA Telnet offers telnet and FTP (client and server) services to the Macintosh. NCSA Telnet supports MacTCP.

University of Illinois
Internet: softdev@ncsa.uiuc.edu

For people interested in doing TCP/IP programming, a MacTCP based socket library is available from the University of Toronto. This is a non-supported public domain product.

University of Toronto
Internet: milligan@utcs.utronto.ca

The Columbia AppleTalk Package (CAP) is a public domain software package that offers an AppleShare-compatible file server that can make a UNIX directory available to Macintosh users via the AppleShare client software. It also offers bi-directional print services to both the UNIX users and the Macintosh users. For spooling Macintosh files, CAP uses a UNIX program that behaves as a virtual LaserWriter, allowing any device that can print to a LaserWriter to use the spooler.

Available from several archive servers on the Internet.

Article Change History:

..TIL10365-TCP-IP-Available_TCP-IP-Based_Macintosh_Applications_12-95.pdf

13 Dec 1995 - Updated article, add keyword.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10365

Tech Info Library

A/UX 3.0: Installing on Magneto Optical Drive (9/94)

Revised: 9/21/94
Security: Everyone

A/UX 3.0: Installing on Magneto Optical Drive (9/94)

==========

Article Created: 18 June 1992
Article Reviewed/Updated: 21 September 1994

TOPIC ----------

I'm having difficulty with A/UX 3.0 and the Liberty 128 Magneto Optical.

To summarize several calls to Liberty Systems and FWB (FWB makes the Hard Disk Toolkit formatter that ships with the drive), the problem is with A/UX 3.0. According to them, 3.0 won't install on any third-party software partitioned hard drive, even if the partitions follow Apple's specifications. I must use the special version of HDSC Setup that comes with A/UX 3.0. Unfortunately, HDSC Setup won't format Magneto Opticals. FWB says there's nothing they can do; it's Apple's problem. And they say that no Magneto Optical works with A/UX 3.0.

DISCUSSION ----------

We called A/UX engineering to see which drives were tested with the Installer. There's an entry in the /etc/disktab file for a Sony E501 and it's referenced as SMOE501.

When a drive is partitioned with software other than HDSC Setup included with A/UX, the Installer assumes that the A/UX partitions are ready to have the software loaded into them. This means that the partition must exist in the partition map, be of the correct type, have a BZB (block Zero Block), and have a file system on it.

Most of the third-party disk partitioning tools create everything correctly, with the exception of the file system. The cause of the problem you describe could be the absence of a file system.

If you have this problem, here are two workarounds:

- Use HDSC SetUp that came with A/UX to create the partition.
  1) If you don't choose Easy Install in the Installer, you use Customize.
  2) Customize has 3 steps. The first one is "Prepare the Disk." Select

this step to call HDSC SetUp.
3) Choose "Partition" and then "Customize."
4) Once in the Customize screen, remove the A/UX partitions (Root, Autorecovery, Usr, and so on), and recreate them. This creates the entries in the partition map, but also creates a file system on them.
5) Exit HDSC and continue with the installation.
Note: If you run this HDSC while in the Macintosh operating system, the partitions will be created properly, but without a file system on them. So avoid running it under the Macintosh operating system unless you're prepared to create the file systems manually.

- Create the file system manually.
To create the file systems manually, you need to run the UNIX command "newfs" at a shell prompt. To get to a shell prompt you need to run the Installer in "debug" mode and quit from it.

1) Boot the system you'll be installing on with the appropriate installation disk.
2) When you get the first "A/UX Installer" screen, press Command-. (the Command key and period) to interrupt the boot process.
3) You should get a text window with a prompt "installer#." At this prompt enter the command:

```
boot_cd debug
```

This will start the installer in debug mode.

4) Once the Installer has loaded, press the "Quit" button and you'll be at a UNIX "#" prompt. At this point you need to type the command:

```
newfs /dev/dsk/c5d0s0 other
```

For this example, 5 is the SCSI ID of the drive. Replace the number 5 in the previous command with the appropriate number.

5) After this command is completed and you get your prompt back, enter

```
installer
```

and go into Custom installation. You should be able to perform steps 2 or 3.

Article Change History:
21 Sep 1994 - Reviewed.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10368

AppleTalk: Can't Enable DDP Checksums on All Out-Going Packets

Revised: 6/30/92
Security: Everyone

AppleTalk: Can't Enable DDP Checksums on All Out-Going Packets

==========

Article Created: 18 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

From "Inside AppleTalk" 2nd Ed, Chapter on DDP, pages 4-17:

> "The DDP checksum is provided to detect errors caused by faulty operation (such as memory and data bus errors) within routers on the internet. Implementers of DDP should treat generation of the checksum as an optional feature...
>
> [algorithm for computing 16-bit checksum (CkSum)]
>
> Reception of a datagram with CkSum equal to 0 implies that a checksum is not performed."

Looking at DDP packets on our network shows that the DDP checksum is set to 0 on all packets. Is there a way to turn on DDP checksum generation and destination checking on Macintosh computers?

We also plan to AppleTalk subnet behind cisco routers. So the problem may localize to a few zones behind the cisco (usually a building or department).

DISCUSSION -----

There's no way to enable DDP checksums on an over-all basis. Individual applications can choose to implement DDP checksums, but there's no way to enable it for all out-going DDP packets.

All data link protocols such as LocalTalk, 802.3, 802.5, HDLC, PPP, SLIP, and so on, build in CRC or checksum validity routines. These checks are usually implemented in hardware, and are therefore very quick. Doing the

CRC calculation at the network layer adds a fair amount of overhead to the transaction and effectively adds CRC checking to data that has already passed a CRC check.

It's true that the data in the network part of the packet could be damaged by random bit flipping within the hardware of the router after the packets were checked by the data link layer. But this should be a rare condition (a real hardware problem with an interface card), and not just caused by random noise on a T1 line.

The CRC fields in the DDP header are meant to guard against forwarded packets. In other words, if you send a packet to Joe's Macintosh which is on the same Ethernet cable as you, then you needn't concern yourself about end-to-end data integrity because the data link layer will handle it.

On the other hand, in the case where you send a packet to Sue, and Sue's Macintosh is 10 states away, several routers could be involved, and your packet could be damaged while one of them is routing your packet across its bus or one of its interface cards. Again, this form of error checking is meant for applications that need to ensure end-node to end-node data integrity for forwarded packets, and not meant for data link layer type checking. That's a job best left up to the data link layer.

RTMP and ZIP packets are broadcast onto the local Ethernet/Token Ring/LocalTalk by routers that believe these packets are destined for nodes on this cable. For this reason, we let the data link layer handle the CRC checking for the RTMP and ZIP protocols.

The Apple Internet router doesn't generate CRC for RTMP or ZIP packets. It will honor and check CRC if it receives packets from a router that generates RTMP and ZIP packets with a valid CRC (CRC field set to something other than 0).

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Tech Info Library Article Number:10369

LaserWriter IIf and IIg: Raw, Normal, and Binary Protocols

Revised: 6/30/92
Security: Everyone

LaserWriter IIf and IIg: Raw, Normal, and Binary Protocols

==========

Article Created: 19 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

In reference to the LaserWriter IIf and IIg, what are the differences among the normal, raw, and binary protocols?

DISCUSSION -----

Definitions

- Raw: Lets all data pass through unfiltered. Control characters such as End-of-file (CTRL-D) and status queries (CTRL-T) are passed through and not acted upon.

- Normal: Data passing through is filtered. Control characters perform their intended function. Status queries (CTRL-T) will have a status returned; End-of-file (CTRL-D) characters will end print job.

- Binary: We took the following from pages 15 to 17 of the "LaserWriter IIf and LaserWriter IIg Printers Developer Note" (APDA R0230LL/A):

  Binary serial protocol

  LaserWriter printers support an alternate protocol for the serial communication channels. While this protocol allows all character codes to be transmitted as data, it also allows certain characters to be used for specifying control functions, which may be handled asynchronously by the communications driver. Those control functions include requesting status, aborting a job, marking ends of jobs, and controlling flow for the serial channels.

  Because this protocol can transmit any character code, it can be used for

sending PostScript language jobs that contain binary images or for sending commands with any sequence of control characters to emulators.

Because this protocol can be used for sending both PostScript language programs and emulation jobs, it provides a way of switching between the PostScript interpreter and the emulators without flushing the input buffers. The manner of switching between PostScript language programs and emulations is described in Chapter 3 of the "LaserWriter Reference".

To select the binary serial protocol, set the operating mode switch to position 6, or use the LaserWriter Utility to set one of the changeable parameter sets to use binary protocol.

The binary serial protocol requires the host computer to insert a quoting character at certain places in the data stream and to modify the character codes for certain characters. (This procedure is described later in this section.) That means that the host computer must filter the data before sending it to the printer. The filtering may be done by an application program or within the operating system of the host computer.

When the binary serial protocol is enabled, it operates on communications in both directions. Therefore, the host computer must also filter any data it receives from the printer.

There are eight control characters that are treated as control functions rather than as data when they are received by the communications driver. The control characters are defined in Table 2-1.

Table 2-1 Control characters in the binary serial protocol

Hex value	ASCII name	ASCII function	Control function
01	SOH	CTL-A	Quote data byte
03	ETX	CTL-C	Abort job and flush to end of file
04	EOT	CTL-D	End-of-job marker
05	ENQ	CTL-E	None
11	DC1	CTL-Q	XON in XON/XOFF flow control
13	DC3	CTL-S	XOFF in XON/XOFF flow control
14	DC4	CTL-T	Request printer status
1C	FS	CTL-\	None

To transmit these characters as data, they must be quoted, as follows. To quote a character, the program replaces the character with the two-character sequence consisting of CTL-A followed by the result of the exclusive-OR (XOR) of the character to be transmitted with $40 (the dollar sign indicates hexadecimal). For example, to send a byte with the value $14, a program must send the 2-byte sequence $01$54. This method of quoting guarantees that whenever any of the eight special characters is received, the control function is intended, regardless of whether the preceding character is a CTL-A. Because of that character independence, the generation and processing of asynchronous control characters can take place at a lower level than the generation and consumption of the data

stream. In particular, on the host computer, the CTL-A quoting convention can be implemented by a user program while XON/XOFF processing is performed independently by the operating system.

All byte values other than those of the eight special characters are transmitted by simply sending the value.

After a CTL-A is received, the next character received that is not one of the eight special characters must be the result of XORing one of the special characters with S40. The reception of any other character constitutes an error in the input data. Between the CTL-A and the XORed character, any number of special characters may appear, except for the special characters that are handled synchronously—CTL-A and CTL-D. Reception of CTL-A or CTL-D between a CTL-A and the XORed character constitutes an error.

When one of the special characters arrives unquoted and it specifies no control function for the channel, the character is discarded. For example, if XON or XOFF is received and XON/XOFF flow control is not in use, the XON or XOFF character is discarded. The characters CTL-E and CTL-\ currently do not specify any control functions. They are included among the characters that must be quoted in case new control functions are added in the future.

The binary serial protocol is different from the simple serial protocol in that there is no mapping between end-of-line conventions with the binary protocol. Whatever end-of-line character (<CR>, <LF>, or <CR><LF>) is sent by the host is received by the interpreter or emulator in the printer. The PostScript interpreter handles different end-of-line characters in a uniform way, but a program that reads data (by means of a read or readstring operator) receives whatever characters were sent by the host. Likewise, whatever output is generated by a PostScript program (by means of a print or = operator) is sent unchanged.

Note: The standard end-of-line character in the PostScript language, corresponding to '\n' in a PostScript language string, is <LF>.

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Tech Info Library Article Number:10370

Tech Info Library

PostScript 51.8 & Earlier: Difficulty Printing Complex Graphics

Revised: 6/30/92
Security: Everyone

PostScript 51.8 & Earlier: Difficulty Printing Complex Graphics

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Article Created: 19 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Large print jobs in Word or Excel don't seem to print out on a LaserWriter IINT, but will print out on a LaserWriter IINTX. Normally they will print to a certain point and then get "hung" for at least a half hour, and then we get a printer time-out message.

We tried printing the same documents using different Macintosh computers, different system software, and different LaserWriter driver versions. We also tried boosting memory on applications, PrintMonitor, and so on.

We tried a NetMinder LocalTalk trace, which showed the failed print job to the LaserWriter IINT. After 9 pages, there was an increased number of packets going between the Macintosh and printer, but the job never printed.

DISCUSSION -----

The problem is due to the print job being too complicated for the amount of memory in the printers, and how the version of PostScript in these printers handles graphics.

There are two possible workarounds for the LaserWriter IINT printers:

1) In Page Setup, deselect "Graphics Smoothing?" and "Faster Bitmap Printing?". This will allow the LaserWriter IINT to print the documents that have been causing the problems.

2) Upgrade the printers with LaserWriter IIf logic boards.

Apple LaserWriter printers with PostScript versions prior to 51.8, such as the LaserWriter IINTX with revision 1 ROMs (PostScript 47) and the

LaserWriter IINT (PostScript 47), experience problems when printing complex graphics. In fact, workaround option 1 doesn't work with the original LaserWriter printer.

Newer LaserWriter printers, such as the LaserWriter IINTX with revision 3 ROMs (PostScript 51.8) or the LaserWriter IIf and IIg (PostScript Level 2) are much better at handling the complex graphics that are becoming more common.

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Tech Info Library Article Number:10371

AppleShare 3.0: Improper ProDOS Pathname Error

Revised: 9/18/92
Security: Everyone

AppleShare 3.0: Improper ProDOS Pathname Error

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Article Created: 19 June 1992

Article Change History

09/18/92 - REVISED
- Changed title to indicate issue.

TOPIC ----------

Network Configuration:

- Classic II 4/80 file server
- AppleShare 3.0
- Macintosh Classic, LC, and LC II (At least one of the LC systems has an Apple IIe Card with IIe software version 2.1 installed.)
- Apple IIe systems with the Apple IIe Workstation Card.

If the privileges are set to "All privileges enabled" then everything works great. When "All privileges enabled" isn't allowed (OFF), we get this message on the Macintosh LC with IIe card: "This volume does not have the proper ProDOS pathname and cannot be used: (volumename)."

We have four other sites all set up the same, but using AppleShare 2.0. When my version of AppleShare 2.0 is launched on the network, the LC with IIe card works fine.

DISCUSSION ----------

The only time we could duplicate this situation was when the Share button wasn't selected in the Privileges/Access Privileges… dialog. Once the server volume was highlighted in this dialog and the Share button was pressed, the error message about ProDOS pathnames didn't appear. (When the Share button has been pressed and the volume is being shared, the Share button's label changes to Unshare.)

The procedure for using the Share/Unshare button is different in AppleShare 2.0. This difference in procedure may be causing the problem.

Once this issue is resolved you may discover a problem with the ProDOS 1.9 Selector (the menu that appears when you type "bye"). ProDOS 2.0.1 needs to be used for the Selector to work correctly with network volumes. ProDOS 2.0.1 ships with GS/OS 6.0 and should be available from various information services and bulletin boards.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10372

AppleTalk Phase 1: Nodes Send RTMP Packets On Different Routes

Revised: 6/30/92
Security: Everyone

AppleTalk Phase 1: Nodes Send RTMP Packets On Different Routes

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Article Created: 18 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

It appears as if nodes on our nonextended (Phase 1) backbone (containing many routers) don't necessarily send data destined for a different zone along the route with the shortest distance. For example, during a copy, a node starts out sending packets to one router, and then switches, sending to different routers while still sending the same file. This creates excess traffic, as the routers have to forward the packets to the proper routers.

"Inside AppleTalk" Chapter on RTMP, pp. 5-17, 5-18 says that a node may listen for RTMP data packets and update its routing tables, causing its default router to "change continually (if there is more than one router on the network)."

With so many routers on one network, are the RTMP broadcasts causing all nodes to send data along different routes?

We plan to move completely to Phase 2 this summer, so the problem may not pertain to extended networks.

DISCUSSION ----------

Your assumptions are correct. Each end node captures RTMP packets which are broadcast onto its cable segment. If you have multiple routers attached to a single cable, the end nodes will set their "AROUTER" (a low mem global) variable to the address of the router that sent the last RTMP packet. This can cause data to take a less than optimal route to its destination, but this is only true for AppleTalk Phase 1.

AppleTalk Phase 2 has an enhancement to DDP called "best route" which

allows DDP to obtain a router to a remote node and then use that route for all future data transactions for the session. See "Inside AppleTalk" 2nd edition for more information concerning best route. As you stated, this won't be a problem as soon as the network is upgraded to Phase 2.

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Tech Info Library Article Number:10376

HSC Software

Revised: 7/13/94
Security: Everyone

HSC Software

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Article Created: 19 June 1992
Article Reviewed/Updated: 13 July 1994

HSC Software

1661 Lincoln Blvd.
Suite 101
Santa Monica, CA 90404

310-392-8441

310-392-6015 Fax

Company Profile:
Software publisher, specializing in multimedia software, including video, graphics, and sound.

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Tech Info Library Article Number:10377

Tech Info Library

Macintosh: Compatibility with SCSI-2 Devices (6/96)

Revised: 6/26/96
Security: Everyone

Macintosh: Compatibility with SCSI-2 Devices (6/96)

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Article Created: 19 October 1992
Article Reviewed/Updated: 26 June 1996

TOPIC ----------

Does any Macintosh computer support SCSI-2 either fully or partially? If not, are there any methods to add that functionality?

DISCUSSION ----------

Power Macintosh 7500, 7600, 8500, and 9500 computers

The Power Macintosh 7500, 7600 8500, and 9500 series computers partially support SCSI-2; they support Fast but not Wide SCSI. These computers have two SCSI buses: an external and internal SCSI bus. The external SCSI channel is SCSI-2 compliant but does not support Fast SCSI-2. The internal SCSI channel supports the Fast SCSI-2 standard at 10 MB per second for a hard disk array. Both internal and external buses are 8-bit only, not wide. For more detailed information about the SCSI-2 implementation in these computers, see Tech Info Library article, "Power Macintosh 7500, 8500, 9500 Series: SCSI-2 Compliance."

Other Macintosh computers

SCSI-2 commands are very similar to SCSI, but SCSI-2 is not a superset of SCSI. There is a chance a SCSI-2 drive will work on any of the Macintosh computers as long as the drive does not implement specific SCSI-2 functions (such as Fast SCSI or Wide SCSI). Since Apple does not make a SCSI-2 drive, any SCSI-2 drive would also need a device driver.

But there are other caveats too, so we highly recommend that if you want to purchase a SCSI-2 device check with the distributor for Macintosh compatibility information. The best solution for using SCSI-2 devices is to use a third-party SCSI-2 NuBus or PDS interface card. Compatibility and performance of any SCSI-2 device depends on the device itself, the interface card, and how these devices implement SCSI-2 protocols. You can get Information on compatibility from the third-party companies that supply these products.

SCSI Manager 4.3

SCSI Manager 4.3 helps provide additional SCSI-2 support on Macintosh computers, but it does not provide full SCSI-2 support. The Macintosh Quadra 660AV/840AV and Power Macintosh computers contain SCSI Manager v4.3 in their ROMs. Other Macintosh computers can take advantage of SCSI Manager 4.3 through the SCSI Manger 4.3 extension. This software is part of System 7.5 and is also available from online services Apple provides software updates to.

The additional SCSI-2 support provided though SCSI Manager 4.3 is still a limited implementation of SCSI-2. SCSI Manager 4.3 among other things, provides support for SCSI-2 messages and protocol actions.

What SCSI Manger 4.3 Provides

The SCSI Manager v4.3 is fully asynchronous, allowing each of several devices to have multiple requests outstanding. By queuing requests in this manner, it improves overall throughput. Other features such as DMA (Direct Memory Access) support, further enhance overall performance. It improves functionality through support for multiple buses and hardware configurations, and as mentioned above, support for SCSI-2 messages and protocol actions.

Article Change History:
26 Jun 1996 - Added additional computer model.
04 Jan 1995 - Added information about new Power Macintosh computers.
26 May 1995 - Added additional information on SCSI Manager 4.3.

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Tech Info Library Article Number:10378

..TIL10380-RadioMail_Corpformerly_Anterior_Technology.pdf

Tech Info Library

RadioMail Corp. (formerly Anterior Technology)

Revised: 7/16/93
Security: Everyone

RadioMail Corp. (formerly Anterior Technology)

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Article Created: 24 June 1992
Article Reviewed/Updated: 16 July 1993

RadioMail Corp.

2600 Campus Dr.
San Mateo, CA 94403

Mailing Address:
P.O. Box 1206
Menlo Park, CA 94026

415-286-7800

Fax: 415-286-7801

Company Profile:
Specializing in wireless E-mail gateways.

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Tech Info Library Article Number:10380

Frame Relay: Overview, and Sending AppleTalk Packets

Revised: 11/3/92
Security: Everyone

Frame Relay: Overview, and Sending AppleTalk Packets

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Article Created: 25 June 1992

Article Change History

11/03/92 - CORRECTED
- The vendor search string information

TOPIC ----------

Can I send AppleTalk packets via frame relay technology from AT&T or WilTel?

DISCUSSION ----------

Summary

Yes, you can send AppleTalk packets via frame relay, but you need to consider many factors that may adversely affect AppleTalk performance across frame relay.

First, there's no guaranteed maximum time delay between frames. This could significantly affect performance/usability of some AppleTalk-based services. AppleTalk services have many time-dependent functions that are hard-coded to a very low value and may fail in the presence of long frame delay times.

Second, frame relay has no recovery/re-transmission mechanisms to allow it to recover from lost frames. This forces the recovery mechanism to the higher level services (AppleTalk in this case), which may not be tuned for re-transmissions on such data links. The AppleTalk ATP TRel timer is a perfect example of this problem. If a TRel packet was lost while in transit across the frame relay network, you'd be forced to wait at least 30 seconds before the recovery process completed.

The third problem with frame relay and AppleTalk is related to the second problem, but with a slightly different slant. Frame relay supports the ability to drop packets in order to adjust the data stream for congestion reasons. For AppleTalk, this can lead to the same types of problems discussed in the last example.

Several router vendors (ACC, cisco, Coral, Network Equipment Technologies, Newbridge, Proteon, 3Com, and Wellfleet all currently offer AppleTalk routing services over frame relay.

We're not sure whether anyone has extensively tested AppleTalk over frame relay.

Frame Relay Compared to X.25

Frame relay is a packet-switching data link technology which can be thought of as a close cousin to present day X.25. Frame relay defines an interface, or access protocol, between two data communications devices. It operates at line speeds up to 2.048 Mbits/sec and can accommodate the bursty nature of LAN traffic without wasting link capacity or causing significant average delay.

Compared to the X.25 protocol, frame relay is a streamlined approach to wide-area packet switching and provides superior performance by eliminating the X.25's inherent overhead. Frame relay is also faster than X.25 because it uses the fidelity and reliability of modern digital facilities; the access speeds of frame relay can reach 2 megabytes per second, compared to 64,000 bytes per second for X.25.

Defined by ANSI, frame relay is a packet-mode service in which data is organized into individually addressed units. As a result, it retains the statistical multiplexing capabilities of X.25; multiple data streams can be multiplexed over a single serial line, allowing for port-sharing. However, frame relay eliminates most of the other X.25 functions. Frame acknowledgment, automatic retransmission in case of errors, and other X.25-like capabilities are handled by higher-layer protocols, such as TCP/IP and OSI Transport Class 4, in the source and destination devices. By essentially restricting its role to multiplexing and routing, frame relay is able to operate more efficiently -- and therefore more quickly -- than X.25.

Frame Relay Limitations

Because it is a stripped-down protocol, frame relay has certain limitations. It doesn't have error handling and flow control, so frame relay needs an error-free transmission path, such as a digital carrier circuit or fiber-optic span, and intelligent higher-layer protocols in the devices at each end of the connection. Although it recognizes transmission errors through a standard CRC, frame relay discards data with errors as well as excess packets that result from network congestion. Frame relay discards these frames without notifying the sender that they need to be retransmitted.

As with X.25, frame relay allows for frames of variable length, so the delay that network traffic encounters will vary. Because of this, frame relay isn't suitable for delay-sensitive traffic such as voice and compressed video.

Another important factor to consider is the service provider's committed information rate (CIR), usually available for each virtual circuit established.

Frame-relay data communications networking services are appealing due to their relatively low cost, but their burst-mode transmission makes reliability a big issue. Users are greatly concerned about the performance and quality of their wide area network (WAN) and local area network (LAN) communications systems. In bursty transmissions, congestion is a crucial concern, for the networks have the potential to become over-burdened if many users on a public frame-relay network send a lot of data at the same time.

Early frame-relay users, many of them customers of WilTel Communications Systems, Inc. and other large carriers, currently operate without a lot of traffic management control on their systems. WilTel has approached the issue conservatively, engineering its network so that users can't transmit at speeds above a certain level unless their burst is momentary. This approach is considered inefficient by some, due to the slim chance that WilTel's customers would all transmit at once.

Frame Relay NuBus Card Information

Multiaccess Computing Corp. offers a 1.544-Mbps frame-relay NuBus card that can be upgraded to SMDS. This is for users who want fast wide-area networks now, but hesitate to upgrade to not-ready-for-prime-time Switched Multimegabit Data Service. The MCC-1000F card lets you connect to frame-relay services expected from the regional Bell operating companies, AT&T Co., MCI, Sprint USA, or other interexchange carriers.

Frame relay is a technology that links remote network sites by dedicated virtual circuits, allowing access to multiple sites through a single physical connection. To speed transmission, it assembles network packets in super packets called frames, and routes them across a telephone network to remote sites. The technology offers a high-speed, expandable WAN environment, because it's easy to add new sites by subscribing to the same frame-relay service.

Multiaccess will ship software with the MCC-1000F card that provides AppleTalk-to-frame relay translation. Network resources, such as printers and servers, connected to a Macintosh by frame relay will appear in the Chooser as though they were on a local network. The MCC-1000F also supports applications that use Apple's MacTCP TCP/IP communications stack to access network resources. The card includes an integrated CSU/DSU (Channel Service Unit/Data Service Unit), hardware that provides the physical interface to long-haul digital telephone lines.

To locate a vendor's address and phone numbers, use the vendor name

as a search string.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10382

Tech Info Library

Macintosh: Localizer Tool for International Resources

Revised: 11/11/92
Security: Everyone

Macintosh: Localizer Tool for International Resources

==========

Article Created: 19 October 1992

TOPIC ----------

I'm interested in finding software for remapping the keyboard for German, and other languages.

DISCUSSION ----------

The software you need is called the Localizer, a development tool that enables you to install the country-specific international resources you desire: keyboard mapping, sorting order, International resources for such things as the proper currency indicator or format, date and time convention, proper Bundle resources, and so on. And after you've used the Localizer, your system file defaults to the keyboard and international resources of the version you selected.

System 6 and System 7 versions of the Localizer are available on the E.T.O., the "Essentials • Tools • Objects" CD-ROM. This subscription CD contains almost every major Macintosh software development tool created by Apple. The subscription for E.T.O. gives you four CDs per year, is available from APDA, and is targeted to software developers.

The Localizer is not posted on AppleLink or commonly available elsewhere, because Apple usually doesn't make localized software available outside of the target market for a number of good reasons. The Localizer is made available on the E.T.O. CD because our developers are creating software for use in multiple countries.

Another way to obtain localized software is to purchase it in the country where it's distributed. Use ResEdit to copy (from a copy of localized software) those specific resources needed, such as the appropriate KCHR, itlk, and kcs resources. Or subscribe to "develop," a quarterly periodical that includes a CD called Developer Essentials. On the Developer Essentials CD is virtually every current localized operating

system Apple distributes. That subscription is from APDA, and is also targeted toward developers.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10385

Tech Info Library

Nuvo Labs (Acquired by Focus Enhancements) (04/97)

Revised: 4/2/97
Security: Everyone

Nuvo Labs (Acquired by Focus Enhancements) (04/97)

==========

Article Created: 25 June 1992
Article Reviewed/Updated: 02 April 1997

Nuvo Labs

Acquired by Focus Enhancements, Inc in 1993.

800 W. Cummings Park
Suite 4500
Worburn, MA 01801

800-538-8866

617-938-8088
617-937-5500 (Tech. Support)

617-938-7741 Fax

Article Change History:
02 April 1997 - Removed expired eMail addresses.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10386

Tech Info Library

Multiaccess Computing Corp.

Revised: 7/13/93
Security: Everyone

Multiaccess Computing Corp.

==========

Article Created: 06/25/92
Article Reviewed: 07/13/93
Article Updated: 07/13/93

Multiaccess Computing Corp.

5350 Hollister Ave.
Suite C
Santa Barbara, CA 93111

805-964-2332 Contact: Tom Barich

805-681-7469 Fax

Company Profile:
Hardware and software, specializing in WAN adapters for the NuBus, supporting following protocols: SMDS, Frame Relay, T1/FT1, Switch 56 / Dedicated 56 Digital Services, ISDN

Article Change History: 07/13/93 New product information added

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10387

Tech Info Library

LaserWriter Family: PostScript Versions & ROM Sizes (2/95)

Revised: 2/8/96
Security: Everyone

LaserWriter Family: PostScript Versions & ROM Sizes (2/95)

==========

Article Created: 6 August 1987
Article Reviewed/Updated: 7 February 1996

TOPIC ----------

This article provides a list of PostScript versions in every LaserWriter printer.

DISCUSSION ----------

Begin_Table

Printer	PS Revision on Startup Page	PostScript Version	PostScript Level
LaserWriter	*	23.0	1
LaserWriter	2.0	38.0	1
LaserWriter	3.0	47.0	1
LaserWriter Plus	*	38.0	1
LaserWriter Plus	2.0	38.0	1
LaserWriter Plus	3.0	47.0	1
LaserWriter IINT	1.0	47.0	1
LaserWriter IINTX	1.0	47.0	1
LaserWriter IINTX	3.0	51.8	1

Personal LaserWriter NT	1.0	51.8	1
LaserWriter IIf	1.0	2010.113	2
LaserWriter IIg	1.0	2010.113	2
LaserWriter IIg	2.0	2010.130	2
Personal LaserWriter NTR	2.0	2010.129	2
LaserWriter Select 310	1.0	52.5	1
LaserWriter Select 360	1.0	2013.112	2
LaserWriter Pro 600	1.0	2010.130	2
LaserWriter Pro 630	1.0	2010.130	2
LaserWriter Pro 810	1.0	2011.113	2
Personal LaserWriter 320	1.0	2013.112	2
LaserWriter 16/600 PS	1.0	2014.106	2
LaserWriter 4/600	1.0	2014.107	2
Color LaserWriter 12/600	1.0	2014.108	2

End_Table

Notes:
* N/A - this is the original LaserWriter/LaserWriter Plus board and doesn't display a revision number.

The LaserWriter Plus with revision 3.0 ROMs incorrectly reports it has PostScript version 42.2: it actually has PostScript version 47.0.

Article Change History:
08 Feb 1996 - Added new printers and updated list.
20 Dec 1993 - Updated to include current printers.

..TIL10390-LaserWriter_Family-PostScript_Versions_and_ROM_Sizes_2-95.pdf

25 May 1993 - Corrected LaserWriter IIg/IIf ROM version.

Support Information Services

Copyright 1992-96 Apple Computer, Inc.

Tech Info Library Article Number:10390

Tech Info Library

Serial Switch: Using with Quadra 900 and 950 (5/95)

Revised: 5/18/95
Security: Everyone

Serial Switch: Using with Quadra 900 and 950 (5/95)

==========

Article Created: 29 June 1992
Article Reviewed/Updated: 18 May 1995

TOPIC ----------

I found that some third-party MIDI software requires running Serial Switch for the Quadra to work correctly. The switch is in the MIDI Manager Tools Diskette from APDA.

What is this serial switch, and how does it differ from the IIfx serial switch?

DISCUSSION ----------

As you surmise, the Macintosh IIfx, Quadra 900, and 950 all have intelligent I/O processors (IOPs) on the ports for the floppy disk, ADB, and serial I/O. These ASICs feature a built-in microprocessor, DMA controller, timer, and external Static RAM (SRAM), used to off-load floppy disk, ADB, modem, and printer port interrupts.

Those programs that don't use the I/O ToolBox routines, but instead directly address the I/O hardware (contrary to our programming recommendations) will have compatibility problems with these IOP-equipped systems. However, Apple wrote a utility called the Serial Switch that overrides the IOP controlling the serial ports, to help make compatible those applications that write directly to the serial hardware.

The first utility was called the Macintosh IIfx Serial Switch 1.0, which was revised and renamed to Serial Switch, to better reflect that it may also be used on the Quadra 900 and 950.

This newer version of the Serial Switch hasn't been as widely distributed as the previous version because most of the third-party incompatibilities have long since been corrected. But since there are still third parties who wish to use their own serial drivers, most notably MIDI developers, Apple provides the switch to developers to distribute with their applications should their applications require it.

NOTE: The latest version of the Serial Switch is 1.1. After launching it, you will read ver 1.1a1 in the top right corner of the switch's window.

The CDEV has two modes:

• Faster - When using the IOP.

• Compatible - Enables third-party developer's code to address the SCC hardware directly, bypassing the IOP.

NOTE: You will have to restart your computer after choosing a different mode for the change to take affect.

Since there's no way to bypass the IOP that controls the SWIM and ADB, applications that address that hardware must be modified to work on the Macintosh IIfx, Quadra 900, or Quadra 950.

You can obtain the Serial Switch from the MIDI Manager Tools Disk as you mention, as well as from:

• The E.T.O. CD (sent to developers on a subscription basis)
• Software Licensing
• AppleLink in Software Sampler

Note the Serial Switch is still sometimes referred to as the "Macintosh IIfx Serial Switch"; however, regardless of the name, version 1.1 will work on Quadras too.

Article Change History:
18 May 1995 - Made correction for clarity and updated format.
19 Jan 1994 - Reviewed for technical accuracy.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10391

Tech Info Library

Bernoulli Drive: Using as A/UX Volume

Revised: 6/30/92
Security: Everyone

Bernoulli Drive: Using as A/UX Volume

==========

Article Created: 29 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I'm using a Bernoulli 90MB dual cartridge drive with A/UX 3.0.
I'd like to use the second drive as a UNIX volume. Can you give
instructions on how to do this?

DISCUSSION -----

The SCSI driver supports 32 partitions per drive. This means we can put partitions 0-30 on the drive and use 31 to access the whole device. For a SCSI ID with more than 2 disks, the second disk can be addressed with the next set of 32 partitions; this is 32-63, using 63 to access the whole device. The devices for the needed partitions must be created in the /dev/dsk and /dev/rdsk directories. For consistency sake, use the following format for the names — /dev/dsk/cCdDsS where:

C is the SCSI address of the drive — the whole Bernoulli box.
D is the disk number — In the case tested, 0 was left and 1 was right.
S is the slice number — For drive 0 from 0 to 31, for drive 1, 32-63.

The same format applies for the character devices in /dev/rdsk.

Create Devices

Devices must be created for the second disk. The SCSI driver major device numbers range from 24 through 30 and correspond to SCSI addresses 0 through 6. For the purpose of example, we'll assume the SCSI address is 5, making the major device number 29 (since 0=24, 5=29). Therefore, based on the above paragraph and the information we know about major device numbers, we will create devices for the second disk as follows, using the mknod command.

- To access first partition:

  mknod /dev/dsk/c5d1s32 b 29 32 – creates block device file with major device number 29 and minor number (partition start number) 32

  mknod /dev/rdsk/c5d1s32 c 29 32 – creates character device file with major device number 29 and minor number (partition start number) 32

- To access whole disk:

  mknod /dev/dsk/c5d1s63 b 29 63 – creates block device file with major device number 29 and minor number (whole partition number) 63

  mknod /dev/rdsk/c5d1s63 c 29 63 – creates character device file with major device number 29 and minor number (whole partition number) 63

  *Note: You could use:

     mknod /dev/dsk/c5d1s0 29 32

  and access the device using slice number 0.

Format The Bernoulli Cartridge

Now you need to format the Bernoulli cartridge with an A/UX partition on it with SilverLining, CMS Utilities, or something with similar capabilities.

Make sure that when the software created the partition it created a bzb block (Block Zero Block) for that partition. If it's there, you'll see some information at the end of the entry for that partition that says something like:

  Made: [0]
  Mount: []...etc

If this is there, then check that it has a slice specified. If it doesn't, you'll have to modify the bzb for that partition using the dp command. Be sure you define the A/UX partition as Slice 0 when you created the partitions. (This is the only slice number you can access if you use 32.)

Use the dp command:

  dp /dev/rdsk/c5d1s63

and look at the partition map. You can use a 'P' (capital P) in order to print all the partitions in the drive. The A/UX partition you're trying to use should have a slice number associated with it. If it doesn't, you will need to assign one to it using the dp command. Be very careful with dp, since it can trash your whole partition map very easily if you type the wrong command.

Create A File System

Once you have the A/UX partition, you can use the newfs command to create a file system on the cartridge, and then mount it with the mount command.

Be sure to test that the device you're accessing is the correct one. You can use:

```
dd if=/dev/dsk/c5d1s32 of=/dev/null
```

If disk 0 is accessed, something is wrong; don't execute the newfs command. If the disk 1 flashes, everything is OK. A good precaution is to remove the disk from drive 0 before any testing, and replace it with an empty disk (or a disk with contents you don't care to keep) in drive 0.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10394

Tech Info Library

LaserWriter IIf & IIg: HP PCL 4+ Emulation Font Support

Revised: 7/13/92
Security: Everyone

LaserWriter IIf & IIg: HP PCL 4+ Emulation Font Support

==========

Article Created: 9 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

The LaserWriter IIf and IIg support HP PCL 4+ emulation. What fonts and font cartridges does this emulation support?

DISCUSSION -----

The LaserWriter IIf and IIg support all built-in HP fonts in some capacity.

The LaserWriter IIf and IIg HP LaserJet IIP emulation does not provide any of the fonts available in HP Font cartridges. However, you can download HP fonts to the printers while they are in HP LaserJet IIP emulation mode in the same way as it is done on the HP LaserJet IIP.

For a discussion on the differences between the HP LaserJet IIP and the HP LaserJet IIP emulation provided by the LaserWriter IIf and IIg, refer to the "LaserWriter IIf and IIg Owner's Guide" (pages 105 through 108).

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Tech Info Library Article Number:10400

Tech Info Library

Display Card 8•24 GC: Control Panel 7.0.1 Corrects Problems

Revised: 9/30/94
Security: Everyone

Display Card 8•24 GC: Control Panel 7.0.1 Corrects Problems

==========

Article Created: 23 June 1992
Article Reviewed/Updated: 30 September 1994

Topic ----------

The software control panel "8•24 GC" that ships with the Macintosh Display Card 8•24 GC enables graphics acceleration with the card.

Apple has identified a bug in version 7.0 of the "8•24 GC" control panel. Although graphics are accelerated, the overall system slows because the cache is disabled. Performance is not enhanced, and in some cases performance is degraded.

Discussion ----------

Which systems are affected?

The problem affects Macintosh 68030-based systems -- specifically the Macintosh IIcx, IIci, IIsi, and IIfx -- with Macintosh Display Cards 8•24 GC installed.

IMPORTANT NOTE: In 68040-based systems, the Macintosh Display Card 8•24 GC disables acceleration. Apple continues to recommend that Quadra owners use the on-board video. The 8•24 GC control panel is not designed for use with 68040-based systems.

What is the fix?

The fix is a new control panel: "8•24 GC" version 7.0.1. The new control panel fully supports System 7 (with or without 7.0 Tune-Up), and corrects the data cache problem in 68030-based Macintosh systems.

System requirements

To use version 7.0.1 of the "8•24 GC" control panel, you need:
• System 7.0 or greater (do not use System 6.0.x).

• At least 3MB RAM.

Installation

Here's how to install "8•24 GC" 7.0.1 in a 68030-based Macintosh.

1) Drag the "8•24 GC" icon into the System folder on your startup disk.
   System 7 will place it in the Control Panels folder for you.

2) Restart your Macintosh. A picture of a rocket will move
   up your screen, indicating that the software has been
   installed correctly and acceleration is enabled.

   If the rocket does not move up your screen, appearing instead with
   a red line through it, there has been a problem installing the
   software. Check your Display Card 8•24 GC manual for
   troubleshooting information.

These articles can help you locate software updates mentioned here:

• Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

• Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple
  support information, and a subset of the Apple Tech. Info. Library

Article Change History:
30 Sep 1994 - Removed binary attachment. Explained where to located software.
02 Feb 1993 - Updated to explain how to locate the binary attachment if you
              are not using the on-line version of AppleLink.

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Tech Info Library Article Number:10405

Tech Info Library

MacTCP Token Ring Extension: Overview

Revised: 1/6/93
Security: Everyone

MacTCP Token Ring Extension: Overview

==========

Article Created: 22 June, 1992

Article Change History

01/05/93 - REVIEWED
•For technical accuracy

TOPIC ---

This article is an overview of the MacTCP Token Ring Extension product.

DISCUSSION ---

Introduction

This product is for customers who have standardized on TCP/IP over Token Ring. Apple's MacTCP has come standard with TCP/IP services over LocalTalk -- EtherTalk and Ethernet. However, MacTCP has the documented ability to incorporate Alternate Link Access Protocol (ALAP) modules much like System 7 uses extensions. With the MacTCP Token Ring Extension, Apple adds Token Ring to its list of supported TCP hardware platforms.

Hardware Requirements

• A Macintosh computer system with a Token Ring card.

Software Requirements

• The Token Ring card must use a driver that conforms to the .TOKN specifications, as do Apple's Token Ring cards and some third-party cards. (Apple's original 4M/s Token Ring card shipped with an incompatible driver. If you have one of these cards, you must install the .TOKN driver before using the MacTCP Token Ring Extension.)

• System 6.0.5 or later, and MacTCP 1.1 or later.

Installation
---

1) Use the latest Network Software Installer disk (NSI 1.2.1 or later), which installs the proper driver for your card.

2) After installing the driver, drag the MacTCP Token Ring Extension to the System Folder. (System 7 will place the extension into the Extensions Folder.)

3) Open the MacTCP Control Panel. (Depending on the hardware installed in your Macintosh, you'll see from 1 to 7 MDEVs, the MacTCP Devices seen in the upper section of the MacTCP Control Panel.) Click on the Token Ring MDEV.

   If you have more than one of a particular type of network card, MacTCP will place a reference number in parenthesis under each MDEV. The MacTCP Token Ring Extension manual explains how to convert the reference numbers into NuBus slot numbers for your particular Macintosh.

The rest of the configuration process is no different than the standard MacTCP configuration process, fully described in the manual.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10407

Tech Info Library

KanjiTalk: Authorized U.S. Dealers and VARs (4/97)

Revised: 4/2/97
Security: Everyone

KanjiTalk: Authorized U.S. Dealers and VARs (4/97)

==========

Article Created: 4 December 1992
Article Reviewed/Updated: 2 April 1997

TOPIC ----------

Following is a list of Apple dealers and VARs authorized to sell Apple Kanji products.

• Dealers are listed by geographic region.

• VARs are listed by technical specialty.

DISCUSSION ----------

For the latest information on resellers of KanjiTalk in the U.S., call 1-800-882-8856.

Authorized Apple Kanji Product Dealers

California

Computer Selection/Connecting Point
201 Mission Street
San Francisco, CA 94105
Dave Pinkham, Charles Hyland
415-543-9888; fax: 415-777-1177

Computer Selection Business Center
/Connecting Point
2001 Middlefield Road
Redwood City, CA 94063
Scott Grossman
415-368-8828 fax: 415-368-8803

Sun Computer
1 Civic Plaza, Suite 600
Carson, CA 90745
Ellis Goff, Mike Uesugi
310-538-8338; fax: 310-715-7222

Crossover Systems (VAR)
2856 W. Valley Blvd., #A
Alhambra, CA 91803
Bryan A. Sato
818-282-3899

DGM Resources Corp. (VAR)
584 Castro Street, #399
San Francisco, CA 94114
D'Wayne Gilmore
(General business apps)
415-252-1980

Rikei Corp. of America (VAR)
Vallco Park Financial Center
10051 North Wolfe Rd., SW1, Ste 290
Cupertino, CA 95014
408-257-7943; fax: 408-257-9001
(WAN solutions, DEC connect.)
Yoshi Honda

Future Now
699 Corporate Point, suite 200
Culver City, CA 90230
Mike Uesugi
310-215-0300 ext. 127
fax: 310-215-9666

CCIC/System Pacifica
605 Addison Street, Suite A
Berkeley, CA 94710
510-843-5626
Izumi Nara, Scot Campbell

Nova Associates
2550 9th Street, suite 207 A
Berkeley, CA 94710
tel: 510-548-6682
fax: 510-548-6689
Toshia Hotei

Northwest United States

Computer Stores NW
700 NE Multnomah, Ste 190
Portland, OR 97232
Bill May
503-238-1200

Computer Stores NW/Connecting Point
6406 Roosevelt Way NE
Seattle, WA 98115
Philip Abinante, Charlotte Platnick
206-522-0220; fax: 206-522-1159

Omni International
316 Westlake Ave. North
Seattle, WA 98109
Larry Owens
206-628-2924

Midwest United States

AC Computer/MicroAge
600 4th Street, 225 Terra Centre
Sioux City, Iowa 51101
Greg Axelson
712-279-8722; fax: 712-279-8724

Graham Bell Industries, Inc.
/MicroAge
2475 Crowne Point Drive
Cincinnati, OH 45241
Jim Rhoades, Jim Barrie,
Todd Graham
513-772-7753; 800-582-5505;
fax: 513-772-0368

Graham Bell Industries/MicroAge
133 South Pennsylvania Ave
Indianapolis, IN 46204
Keith Callahan, Mike Hall
317-634-8202; fax: 317-634-0400

AC3 Midwest Inc./MicroAge
413 East Huron Street
Ann Arbor, MI 48104
Rick Weir
313-994-6344

Alliance Computers/MicroAge
128 Skokie Valley Road
Highland Park, IL 60035
Keith Wagner
708-831-0535
Steve Feldman, Susan Takami
708-831-1192; fax: 708-831-0689

Lingua Media
112 North Third Street
Suite 304
Minneapolis, MN 55401-1651
Kristine Wagner
612-339-3557; fax 612-339-3557

Mac Center of America
148 Rockhurst Rd.
Bolingbrook, IL 60440
Stephen A. DeFreeuw
708-972-0915

Northeast United States

Byte Shop/MicroAge
1732 Sunrise Highway
Merrick, NY 11566
Hank Tucker, Takashi Shimazu
516-379-2983; fax: 516-379-2820

Custom Comp Specialist/Connecting Point
1775 Express Drive N.
Hauppaugh, NY 11788
Bob Schechter, Steve Manilla
516-582-6699 ext. 232;
fax: 516-582-6012

Language Engineering Corp.
385 Concord Ave.
Belmont, MA 02178
Glen Akers
617-489-4000 fax: 617-489-3850

Telecomet
245 Park Avenue, 24th Fl.
New York, NY 10167
Shirley Parcon
212-297-1000 fax: 212-687-3118

Tomio Creations (VAR)
2050 Center Avenue, Suite 625
Fort Lee, NY 07024
201-461-3010
Tomio Maeda

Computer App's of America (VAR)
Rockefeller Plaza, Suite 3236
New York, NY 10112
212-541-8351; fax: 212-541-8350
Doug Boltson

NDK International, Inc. (VAR)
1121 Avenue of the Americas, 41st Fl
NY, NY 10036
212-704-6884

Syscom (VAR)
45 Broadway, 6th Fl
NY, NY 10006
212-797-9131

Bryan E. Leonard

Marubeni America
200 Park Avenue
New York, NY 10166
Hitoshi Nagai
212-599-3750; fax: 212-599-7101

Naoki Aoyama

Mr. Sterling Beardsley
Harmony Sound, Inc.
1167 York Ave.
New York, NY 10021
212-319-5439 (fax)
212-751-9188

Pennsylvania House Limited
Brant Avenue Box 266
Inglmar, PA 15127
Martin Smith
412-367-7234
412-344-2253
fax: 412-344-3716
Link: PAHOUSELTD

Southeast United States

Connecting Point
2485 East North Street
Greenville, SC 29615
Carl Krezdorn
803-268-0461
803-292-7071; fax: 803-268-0461

Computer Source/Connecting Point
5775 Glenridge Dr. NE Bldg. B, #300
Atlanta, GA 3032
Ron Seitz
404-253-3100
Jack Bornstein
404-952-0337; Fax: 404-256-6054

Amano (VAR)
P.O. Box 3211
Chapel Hill, NC 27515
Taka Amano
919-493-0264

Hawaii

Connecting Point
1613 Nuuanu Avenue, #10A
Honolulu, HI   96817
Michael Klein
808-535-0900
Ruriko Inouye
808-523-0040; fax: 808-531-5244

CPU, Inc. (VAR)
1210 Queen St., Suite 5
Honolulu, HI 96814
808-535-0900 fax: 808-591-0094
Aaron Hara

Bezier International
1103 9th Avenue, #204
Honolulu, HI 96816
808-733-2002; fax: 808-733-2011
Yasuko Hacking

Authorized Apple Kanji Vars By Technical Specialty

Pre-press

Amano
P.O. Box 3211
Chapel Hill, NC 27515
919-493-0264
Taka Amano

Computer Applications of America
Rockefeller Plaza, Suite 3236
New York, NY 10112
212-541-8351; fax: 212-541-8350
Doug Boltson

CPU, Inc.
1210 Queen St., Suite 5
Honolulu, HI 96814
808-535-0900 fax: 808-591-0094
Aaron Hara

Crossover Systems
2856 W. Valley Blvd., #A
Alhambra, CA 91803
818-282-3899
Bryan A. Sato

DTP, LAN, Database

Bezier International
1103 9th Avenue, #204
Honolulu, HI 96816
808-733-2002; fax: 808-733-2011
Yasuko Hacking

NDK International, Inc.
1121 Avenue of the Americas, 41st Floor
NY, NY 10036
212-704-6884
Bryan E. Leonard

Rikei Corp. of America
Vallco Park Financial Center
10051 North Wolfe Rd., SW1, Ste 290
Cupertino, CA 95014
408-257-7943; fax: 408-257-9001
(WAN solutions, DEC connect.)
Yoshi Honda

Syscom
45 Broadway, 6th Floor
NY, NY 10006
212-797-9131
Naoki Aoyama

Other

DGM Resources Corp.
584 Castro Street, #399
San Francisco, CA 94114
415-252-1980
D'Wayne Gilmore
(General business apps)

Tomio Creations
2050 Center Avenue, Suite 625
Fort Lee, NY 07024
201-461-3010
Tomio Maeda
Link: TOMIO
(Fashion design, textile, DB)

Article Change History:
02 Apr 1997 - Removed expired eMail addresses
01 Mar 1995 - Article updated.

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Tech Info Library Article Number:10408

Tech Info Library

KanjiTalk 6.0.7, 6.0.7.1: Kanji TrueType Upgrade Kit

Revised: 9/24/92
Security: Everyone

KanjiTalk 6.0.7, 6.0.7.1: Kanji TrueType Upgrade Kit

==========

Article Created: 30 June 1992

Article Change History:

09/14/92 - REVIEWED
- for technical accuracy.

TOPIC ----------

This article provides information about the Kanji TrueType Upgrade Kit.

DISCUSSION ----------

Overview

TrueType is a unique outline font format developed by Apple Computer, Inc. It guarantees that, if your document looks good on your screen, it'll look even better in print. Unlike conventional fonts, which use bitmapped images, TrueType fonts offer a high quality print from any Macintosh computer and Macintosh-compatible printer.

There are several TrueType font families included with the Kanji TrueType Upgrade kit. The four Roman font families are Times, Helvetica, Courier, and Symbol. The Japanese font families include HonMincho and HeiseiKakuGothic. Like the conventional bitmap fonts, TrueType fonts need to be installed only on the Macintosh and not on the printer.

Installation

Installing TrueType fonts is easy. The Kanji TrueType Upgrade comes with an installation disk that installs the fonts directly into an existing KanjiTalk 6.0.7 or 6.0.7.1 System file. Use the Easy Install option to install both fonts, or if hard drive space is limited, use the Customize option to install only one of the Japanese fonts.

The Fonts

Two Japanese TrueType fonts are included with the Kanji TrueType Upgrade. Their names and characteristics are described here.

HonMincho-M is a TrueType Mincho-style font that allows high quality print on any Macintosh-compatible printer, including the Apple StyleWriter and the Personal LaserWriter LS. This font was developed by Ryobi Imagix in Japan and adapted for TrueType by BitStream, Inc., in the U.S.

HeisaiKakuGothic is a TrueType Gothic-style font that produces high quality print on any Macintosh-compatible printer, including the Apple StyleWriter and the Personal LaserWriter LS. The single-byte Roman and half-width (hankaku) kana characters in this font are non-proportional, enabling computer communications and data transfers to and from non-Macintosh word processors. This font was developed by the MITI Font Development and Promotion Center with participation from more than 60 companies.

Drivers

The Kanji TrueType Installer places a new set of printer drivers for the StyleWriter and Personal LaserWriter LS in your System Folder. These drivers have been optimized, allowing your computer to print faster than was previously possible when using a TrueType font.

Cache and Memory

The Kanji TrueType Upgrade kit contains a new technology that automatically stores your most recently used characters in a font cache as you use your system. This lets the computer access your frequently used characters quickly and easily. As the cache continues to fill, the speed of rendering characters on the screen and printing them increases.

System Requirements

Due to the large number of characters in each Japanese font (close to 7000 in JIS Level-2), Japanese TrueType fonts require more memory space than Roman fonts. This makes it impossible to install more than a few Japanese fonts in your System at one time. Apple Computer, Inc., recommends the following minimum system configuration for installation and use of the Kanji TrueType Upgrade:

- 4MB RAM
- A floppy disk drive capable of reading high-density (1.4MB) floppy disks
- A hard drive with at least 15MB of available space, or 10MB of available space if you are installing only one font
- KanjiTalk 6.0.7 or 6.0.7.1, pre-installed on the hard drive

For More Information

To find out more about Kanji TrueType, contact an authorized KanjiTalk dealer in your area.

For a list of authorized KanjiTalk dealers in the U. S, search the Tech Info Library under "KanjiTalk and dealers", or contact the Apple Dealer Location Operator at 800-538-9696.

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Tech Info Library Article Number:10409

Tech Info Library

GS/OS 5.0.4: Difficulty Downloading ImageWriter Emulator

Revised: 11/3/92
Security: Everyone

GS/OS 5.0.4: Difficulty Downloading ImageWriter Emulator

==========

Article Created: 20 October 1992

TOPIC ----------

I'm printing to a Personal LaserWriter NT from an Apple IIGS running GS/OS 5.0.4. When downloading the ImageWriter emulator, the system on Apple IIGS freezes and the Personal LaserWriter NT just blinks. The emulator downloads fine (takes about 1.5 minutes) to a LaserWriter IINT or IINTX.

DISCUSSION ----------

If you're downloading the ImageWriter emulator from floppy disk, the following information explains the probable reason for your problem.

While the Apple IIGS is reading data (the IWEM file) from the floppy, interrupts are disabled. The Personal LaserWriter NT responds faster than other LaserWriter printers for additional packets. Usually the Apple IIGS has interrupts disabled when the Personal LaserWriter NT makes this request, so it's ignored. Eventually, the Personal LaserWriter NT makes the request again and the Apple IIGS sends the next packet of data and then reads (and disables interrupts) again. The timing of the whole thing is such that it takes a very long time to download the IWEM from floppy. From a hard disk there is no problem.

This is fixed in GS/OS 6.0: the entire file is read into memory at the beginning of the download.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10410

Finder: How It Updates Remote Windows

Revised: 7/13/92
Security: Everyone

Finder: How It Updates Remote Windows

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Article Created: 10 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I have some questions about how the Finder does live updates for windows showing the contents of remote directories (for example, a folder on a file server).

Does the Finder do some type of periodic polling? If so, how often? What performance impact does this have on the local machine and the network?

RESPONSE ----------

The Finder periodically (approximately every 10 seconds), checks and updates open windows from remote servers.

The key facts here are that the Finder checks to see if a window needs updating, and it does this only for windows currently open on the desktop.

When an update is necessary, you see double arrows flashing at the left end of the menu bar as the Finder retrieves the necessary information from the server. This information includes icons to be displayed (depending on view chosen), disk space used, number of files in the folder, and, of course, filenames of new files.

The impact the retrieval of this information has on a network is typically minimal. There is not enough information being retrieved to generate a large number of packets.

The retrieval of this information can have an impact on the performance of the local machine. If network access to the server is slow -- whether due to traffic or a slow link (such as serial-based) -- the Finder will be locked into this updating process, and your machine will be unavailable

until the update is completed. Normally, this is not an issue, but slow links, high-traffic networks, multiple remote volumes mounted, or lost packets can delay the update enough to be noticeable.

The worst case scenario would be lost packets, which could add a delay of approximately 2 seconds to the update process. Although this would be unusual, if it happens repeatedly, you should search for the cause of the lost packets because this indicates a larger network problem.

With System 7, you can choose a particular configuration for your views (via the Views control panel) that improves performance of Finder updates. In List Views, deselect the "Calculate folder sizes" option and select the smallest icon size for the best performance.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10412

AppleTalk Remote Access and Hayes InterBridge: Problem and Fix

Revised: 11/4/92
Security: Everyone

AppleTalk Remote Access and Hayes InterBridge: Problem and Fix

==========

Article Created: 10 July 1992

Article Change History

11/03/92 - CORRECTED
. The vendor search string information

TOPIC ----------

This article describes
- a problem with AppleTalk Remote Access (ARA) and Hayes InterBridges with internal ROMs earlier than version 2.15, and
- the fix.

DISCUSSION ----------

Problem

When you are locally connected to an AppleTalk internet that has a Hayes InterBridge, all devices connected to that internet appear as expected in the Chooser. However, if you call in to a Macintosh on that same internet via ARA and select the Chooser, you will see a zone box but no zones -- and you can't choose any devices.

The routing information is not being handled correctly by the InterBridge. The InterBridge understands how to handle short-packet formats, but not long-packet formats, which ARA uses.

This problem is most prevalent with the oldest versions of the Hayes InterBridge (Phase 1 only), although the version that supports Phase 2 also exhibits the problem.

Fix

Upgrade to Hayes InterBridge ROM version 2.15, which Hayes Engineering says

fixes the problem.

Hayes is offering its customers a ROM upgrade at minimal cost. Contact Hayes Customer Support directly for information about their upgrade program.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10414

Tech Info Library

Sending Print Job:A Comparison Between LocalTalk & Direct Serial

Revised: 7/9/92
Security: Everyone

Sending Print Job:A Comparison Between LocalTalk & Direct Serial

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Article Created: 29 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

How can I determine the time difference between sending a print job from an MS-DOS computer to a Personal LaserWriter NTR via a serial port connection and an via an AppleTalk connection?

DISCUSSION ----------

Using 50K of data as an example, and assuming that you have a theoretically perfect AppleTalk network using LocalTalk (230 Kbaud per second) with no other traffic, it takes approximately 2 to 3 seconds to send 50K over an AppleTalk/LocalTalk network to another node, once the communication has been established with that node.

An AppleTalk Printer Packet consists of 617 bytes per packet, which equals 586 bytes of data and 31 bytes used for overhead. To determine how long it takes to send the 50K of data, use these calculations:

1) Calculate the number of packets needed by dividing the number of data bytes to be sent by the number of data bytes per packet.

   50,000 bytes divided by 586 bytes = 86 packets required

2) Multiply the number of overhead bytes by the number of packets.

   31 bytes x 86 = 2666 bytes of overhead

3) Convert the number of data bytes and overhead bytes to bits by multiplying each number by 8 (8 bits per byte).

   50,000 bytes x 8 = 400,000 bits of data

2,666 bytes x 8 = 21,328 bits of overhead

4) Calculate the total information to be sent by adding the data bits to the overhead bits:

   400,000 (data) + 21,328 (overhead) = 421,328 bits of information.

5) Calculate the time it'll take to send the total bits of information by dividing that number by 230,400 bits per second (LocalTalk speed).

   421,328 divided by 230,400 = 1.8 seconds

It takes about 8 seconds to send the same 50K of data through a direct serial connection at 57.6 Kbaud (8 data bits, 1 Stop bit, and so on).

At the 50K data level, there isn't an appreciable difference in the amount of time it takes to send the information to the Personal LaserWriter NTR. However, as the print jobs get larger, the time savings would be noticeable. For example, a 50-page document at 50K per page would take approximately 3 minutes longer to send via a serial connection.

Keep in mind that these calculations don't take into consideration the amount of time necessary for the printer to process the job. Much of the time required during the printing process is the actual time the printer requires to process the page. And, depending on the type of print job (text or graphics) being processed, the printer may not be able to process the entire job at once and may need to process the job in chunks page by page.

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Tech Info Library Article Number:10417

Tech Info Library

Macintosh Quadra and PageMaker 4.0 & 4.01: Incompatible Filters

Revised: 7/7/92
Security: Everyone

Macintosh Quadra and PageMaker 4.0 & 4.01: Incompatible Filters

==========

Article Created: 26 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

PageMaker 4.0 is not working on my Macintosh Quadra with cache enabled.

DISCUSSION ----------

Aldus reports that PageMaker 4.0 and 4.01 work on the Macintosh Quadra with cache enabled, if you are not using these filters, which are incompatible:

- Smart ASCII Import
- Smart ASCII Export
- Word 4.0 Import
- Story Importer
- RTF Imported

Aldus said that PageMaker 4.02 is 32-bit clean and fully compatible with the Macintosh Quadra with cache enabled. However, the Story Importer was renamed, so you must manually remove the older version or you may experience a crash with an Error 15.

To locate a vendor's address and phone numbers, search on the vendor's name.

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Tech Info Library Article Number:10418

Tech Info Library

Gravis MouseStick: Alternative Input Device

Revised: 7/7/92
Security: Everyone

Gravis MouseStick: Alternative Input Device

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Article Created: 29 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I heard that Advanced Gravis Computer Technology Ltd. has an alternative input device for the Macintosh. Do you have any information on it?

DISCUSSION -----

This is an overview of the Gravis MouseStick from their developers' notes:

The Gravis MouseStick is a programmable optical joystick that is interpreted by the Macintosh as a mouse. It consists of a controller (joystick) and a dedicated processing unit (GMPU) with on-board logic and memory. This system allows special control configurations to be created and saved for customized response to stick handle movements and button presses.

For detailed information on this product, contact Advance Gravis Computer Technology Ltd.

To locate a vendor's address and phone numbers, search on the vendor's name.

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Tech Info Library Article Number:10419

Tech Info Library

PowerBook: Connor 2.5-Inch 40MB Hard Drive Specifications

Revised: 5/17/94
Security: Everyone

PowerBook: Connor 2.5-Inch 40MB Hard Drive Specifications

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Article Created: 26 June 1992
Article Reviewed/Updated: 3 August 1992

This article provides the specifications of the Connor 2.5-Inch 40MB Hard Drive used in the Macintosh PowerBook 140, 145, and 170.

SPECIFICATIONS

Capacity

Formatted Data Capacity:	40MB
Data Surfaces:	4
Heads Per Surface:	1
Block Size:	512 bytes
Total Disk Blocks:	82,020

Characteristics

Average Seek Time:	20 milliseconds
Transfer Rate:	Greater than 1.5MB/sec
Rotation Speed:	3,333.3 RPM
Startup:	10-15 seconds
Spindown:	5-10 seconds

Physical

Form Factor:	2.5 inch (19 mm)
Weight:	2.09 kg (4.6 lbs) (internal configuration)

Environmental

Temperature:	
(Operating)	5 degrees C to 55 degrees C
(Non-Operating/Storage)	-40 degrees C to 65 degrees C

Relative Humidity:

(Operating)	10-90% non-condensing

Power Requirements

Voltage:	5V DC with tolerance of +/-5%	
Power Draw:		
(Startup)	1.110 amps (max.)	
	5.00 watts (max.)	
(Idle)	0.260 amps (mean)	0.300 amps (max.)
	1.30 watts (mean)	1.50 watts (max.)
(Shutdown)	0.080 amps (mean)	0.100 amps (max.)
	0.40 watts (mean)	0.50 watts (max.)

These limits include 1K ohm pull-up resistors on all signal lines.

Support Information Services

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Tech Info Library Article Number:10420

Tech Info Library

QuickMail: Use Installer 2.5 or Later With System 7

Revised: 7/7/92
Security: Everyone

QuickMail: Use Installer 2.5 or Later With System 7

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Article Created: 26 June 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I am trying to install QuickMail on my Macintosh Quadra running System 7 using QuickMail Installer 2.2.3, but the installation fails. I was using QuickMail on another Macintosh running System 7 before I moved up to the Macintosh Quadra.

DISCUSSION ----------

You need to use QuickMail Installer 2.5 or later. QuickMail Installer 2.2.3 is not compatible with System 7.

Notes from CE Software:

- In many instances, users running system software version 6.X used QuickMail Installer 2.2.3. When they upgraded to System 7, the QuickMail INITs and CDEVs were moved into the correct locations. However, this is not the case when you try to install QuickMail, using the Installer 2.2.3, on a Macintosh already running System 7.

- Workstations running QuickMail 2.5 or later are incompatible with servers running versions earlier than 2.5.

To locate a vendor's address and phone numbers, search on the vendor's name.

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Tech Info Library Article Number:10421

Tech Info Library

PowerBook: Error -39 May Be Corrupted Fax Monitor Pref File 6/92

Revised: 5/16/94
Security: Everyone

PowerBook: Error -39 May Be Corrupted Fax Monitor Pref File 6/92

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Article Created: 29 June 1992

TOPIC ----------

I'm using a Macintosh PowerBook 140. When I try to install a new cover page using the Fax Cover application, I get an error -39.

DISCUSSION ----------

The -39 error is an end-of-file error that can be caused by a corrupted Fax Monitor Pref file.

The Fax Monitor Pref file stores the Fax Cover Library information, which includes the name and path information of the Fax Cover files. This file can be corrupted if the system encounters an error during creation or modification of the file.

To correct the problem:

1) Remove the Fax Monitor Pref file from the Preferences folder in the System Folder.

2) Run the Fax Cover application to reinstall the cover pages into the Fax Cover Library.

The Fax Cover application creates a new Fax Monitor Pref file.

You should now be able to fax a document with the Fax Sender and select your cover pages.

Support Information Services

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10422

Tech Info Library

Macintosh OS and A/UX: Compatible Three-Button Input Devices

Revised: 2/12/93
Security: Everyone

Macintosh OS and A/UX: Compatible Three-Button Input Devices

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Article Created: 29 June 1992

Article Change History

01/15/93 - REVIEWED
• For technical accuracy.

TOPIC ----------

Do you know of any A/UX-compatible three-button mouse devices?

DISCUSSION ----------

To locate a vendor's address and phone number, use the vendor name as a search string.

These companies manufacture compatible three-button input devices:

• Logitech, Inc.

- MouseMan (mouse)
- TrackMan (trackball)
  Both are compatible with Macintosh OS, A/UX, and MacX

• Mouse Systems Corp.

- A3 Mouse
- A3 Trackball
  Both are compatible with Macintosh OS, A/UX, and MacX

• Advanced Gravis Computer Technology Ltd.

- Gravis SuperMouse

Compatible with Macintosh OS, A/UX, MacX, X11, and SoftPC

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Tech Info Library Article Number:10431

Kerberos: Security Authentication Software

Revised: 7/14/92
Security: Everyone

Kerberos: Security Authentication Software

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Article Created: 10 July 1992
Article Last Reviewed: 7 August 1992
Article Last Updated:

TOPIC ----------

Have you heard of a program called Kerberos? It's somehow being used in conjunction with Informix at one of my accounts.

DISCUSSION ----------

We found this information on Kerberos in the Internet RFC (Request for Comment). We should point out that A/UX and Macintosh OS do not support this authentication system.

From Site Security Policy Handbook Working Group RFC 1244

3.9.6 Authentication Systems

Authentication refers to the process of proving a claimed identity to the satisfaction of some permission-granting authority. Authentication systems are hardware, software, or procedural mechanisms that enable a user to obtain access to computing resources. At the simplest level, the system administrator who adds new user accounts to the system is part of the system authentication mechanism. At the other end of the spectrum, fingerprint readers or retinal scanners provide a very high-tech solution to establishing a potential user's identity. Without establishing and proving a user's identity prior to establishing a session, your site's computers are vulnerable to any sort of attack.

Typically, a user authenticates himself or herself to the system by entering a password in response to a prompt. Challenge/Response mechanisms improve upon passwords by prompting

the user for some piece of information shared by both the computer and the user (such as mother's maiden name, etc.).

3.9.6.1 Kerberos

Kerberos, named after the dog who in mythology is said to stand at the gates of Hades, is a collection of software used in a large network to establish a user's claimed identity. Developed at the Massachusetts Institute of Technology (MIT), it uses a combination of encryption and distributed databases so that a user at a campus facility can login and start a session from any computer located on the campus. This has clear advantages in certain environments where there are a large number of potential users who may establish a connection from any one of a large number of workstations. Some vendors are now incorporating Kerberos into their systems.

It should be noted that while Kerberos makes several advances in the area of authentication, some security weaknesses in the protocol still remain.[1]

[1] Bellovin, S., and M. Merritt, "Limitations of the Kerberos Authentication System", Computer Communications Review, October 1990.

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Tech Info Library Article Number:10432

Tech Info Library

PowerBook: Use VersaTerm 4.6 and VersaTerm-PRO 3.6

Revised: 5/17/94
Security: Everyone

PowerBook: Use VersaTerm 4.6 and VersaTerm-PRO 3.6

==========

Article Created: 10 July 1992

TOPIC -----

I'm using VersaTerm by Synergy Software on my Macintosh PowerBook 170. When I press the Enter key, nothing happens. The Enter key works fine with other applications like Microsoft Word and Microsoft Excel. Also, if I connect an Apple Extended Keyboard to the PowerBook, the Enter key on this keyboard works correctly.

DISCUSSION -----

On the Apple Extended Keyboard, the Enter key has a virtual key code of $4C; on the PowerBook keyboard, the Enter key has a virtual key code of $34. Both, however, generate ASCII code $03.

Synergy technical support said that you need to use VersaTerm 4.6 and VersaTerm-PRO 3.6 with the PowerBook computers. Contact Synergy Software directly for upgrade information.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History

11/03/92 - Corrected the vendor search string information

Support Information Services

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Tech Info Library Article Number:10435

Tech Info Library

MacTerminal 3.0: Emulate VT320 Function Keys with VT320 Tool

Revised: 7/24/92
Security: Everyone

MacTerminal 3.0: Emulate VT320 Function Keys with VT320 Tool

==========

Article Created: 15 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm using MacTerminal to access a VAX program. I want to map or redefine the function keys to send the VAX program specific escape sequences. Is there any way to do this using MacTerminal 3.0 with the VT320 terminal tool?

DISCUSSION ----------

According to the VT320 Tool section in the MacTerminal 3.0 User's Guide, there are three ways to emulate the functions provided by the function keys on the VT320 keyboard:

1) Regardless of the keyboard you have, the Keys menu provides selections that function identically to VT320 function keys.

2) In addition, the Extended ADB keyboard contains Function keys you can use to emulate the VT320 function keys. However, the Extended ADB keyboard contains Function keys F1 through F15, while the VT320 keyboard contains Function keys F6 through F20. The discrepancy is resolved by mapping Fx on the Extended ADB keyboard to F(x+5) on the VT320. For example, to generate a VT320 F6, use F1 on the Extended ADB keyboard.

3) You can also generate Function keys on the Macintosh keyboards by using the Keypad keys in combination with the Option key as shown below:

Macintosh keypad	plus OPTION equals	Function keys
Clear		F5
=		F6

/	F7
*	F8
7	F9
8	F10
9	F11
-	F12
4	F13
5	F14
6	F15
+	F16
1	F17
2	F18
3	F19
.	F20

For user-defined VT320 function keys, hold down the Shift key and the Option key while pressing the appropriate keypad key.

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Tech Info Library Article Number:10437

Tech Info Library

MacX: Copy Text (Not Bitmap Format) and Paste to Application

Revised: 7/24/92
Security: Everyone

MacX: Copy Text (Not Bitmap Format) and Paste to Application

==========

Article Created: 15 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm using MacX, but can't cut text from an Xterm client. I'm using PATHWORKS, and I'm using a VT100 Xterm window. I'd like to have the text in ASCII instead of the bitmap displayed on the screen, so I can use it in something like Excel. Is it possible to write to the MacX command output window when the copy is made in the DECterm X session?

DISCUSSION ----------

MacX has the ability to copy things to the Clipboard in the following ways:

• It can copy the screen or portions of it as a bitmap.

• It can copy text and put it in the Clipboard as text.

To copy text, just select the text, and it will automatically be placed in the Clipboard. In other words, if you select text from an Xterm window, and then switch from MacX to TeachText, you can paste the selected text without using a Copy command

One exception to this procedure is the DECterm client. If you are using DECterm, you must:

1) Select the text you want to copy.

2) Use the menu entry.

3) Copy from the DECterm edit menu and wait until the text is deselected before it appears in the Clipboard.

..TIL10439-MacX-Copy_Text_Not_Bitmap_Format_and_Paste_to_Application.pdf

If you use the menu entry, Copy screen to Clipboard, under the Window menu of MacX, it will place data in the Clipboard in bitmap format.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10439

Tech Info Library

VITAL (Virtually Integrated Technical Architecture Lifecycle)

Revised: 8/10/92
Security: Everyone

VITAL (Virtually Integrated Technical Architecture Lifecycle)

==========

Article Created: 15 July 1992
Article Last Reviewed: 7 August 1992
Article Last Updated:

TOPIC ----------

This article describes VITAL.

DISCUSSION ----------

VITAL (Virtually Integrated Technical Architecture Lifecycle) allows desktop computer users in an enterprise to view data and applications in a way that appears integrated. Users don't have to be concerned about where the data resides or how it's accessed. It also provides information professionals with a framework to develop vendor-independent corporate information systems that use the power of desktop computers in a client/server environment. It further allows information systems executives to maximize the systems they already have in place, and to plan cost-effective migration paths to new systems.

The VITAL framework was initially developed by Apple's internal information systems division, with early collaboration with Digital Equipment Corporation (DEC). VITAL was further refined over a period of three years, with input from some of Apple's largest corporate customers. Apple's internal guidelines encompass more than 1,000 pages of documentation, which aided Apple's information systems and technology division in building a number of information systems.

The VITAL framework groups information activities and resources in an enterprise into five areas:

- Data capture
- Data access
- Repository
- Desktop integration

• Systems infrastructure

Corporate customers commonly have all of these functions, often running on a variety of platforms. The VITAL framework provides a series of decision matrices and design templates which help customers make design decisions. VITAL is an open architecture.

Systems Integrators Announce Support

KPMG Peat Marwick, a major systems integrator, along with KPMG.ExIS, a Macintosh-focused integrator, have announced support for VITAL. They have staff trained and experienced in VITAL to help clients who want to implement VITAL in their own organizations.

Apple Announces Supporting Documentation and Programs

Corporate customers can obtain more information about VITAL through a series of white papers from Apple, the first of which, "Introduction to VITAL: Designing Information Systems for the 1990s," is available to U.S. customers by calling (800) 635-9550, ext. 502 -- or through their Apple National Account executives. Apple plans to deliver five more white papers, which are based on over 1,000 pages of IS&T documentation, over the next 18 months.

Apple also created a Customer Advisory Board, an independent board that will guide Apple in the further evolution of VITAL. Charter members include Liberty Mutual Insurance Group and Stanford University.

Apple will provide briefings to its corporate customers through its corporate briefing program. In addition, Apple will offer a series of Corporate Enterprise Computing Conferences beginning this summer.

A Persuasion presentation, and a Microsoft Word Q&A document are available on AppleLink:

The VITAL Presentation (Persuasion) article can be found in:

Apple Sales & Mktg
Presentations Library
Markets
Large Business
VITAL Presentation

The VITAL Q&A article can be found in:

Apple Sales & Mktg
Presentations Library
Markets
Large Business
VITAL Q&A

For more information, order the booklet "Introduction to VITAL, Designing Information Systems for the 1990s," part number L0189LL/A.

..TIL10440-VITAL_Virtually_Integrated_Technical_Architecture_Lifecycle.pdf

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Tech Info Library Article Number:10440

Tech Info Library

A/UX: Disktab Entry for LPS

Revised: 9/14/92
Security: Everyone

A/UX: Disktab Entry for LPS

==========

Article Created: 17 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I have A/UX 3.0 installed on a Quantum LP240S disk (Alliance Peripheral Systems). I need the correct information for this drive for the /etc/disktab file.

DISCUSSION -----

The Quantum LP240S drive is the same mechanism used for the Apple 230MB drive.

The following entries apply to both the Apple 230MB and the Apple 400MB drives:

```
# Quantum LP240S, Apple 230MB drive
#
  LP240S|HD230SC:\
      :ty=winchester:ns=60:nt=4:nc=1930:

# Seagate ST1480, Apple 400MB drive
#
ST1480|HD400SC:\
      :ty=winchester:ns=54:nt=9:nc=1760:
```

The entries for the file /etc/disktab can be created from the drive specifications, and we don't have access to all the drives in the market.

You should be able to request the following information from the vendor to create entries:

Number of Heads = nt

```
   Number of Sectors/Track = ns
   Number of Cylinders/Disk = nc
```

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10442

Tech Info Library

DAL/VTAM: Can't DESCRIBE Group ID or PUBLIC Tables (8/94)

Revised: 8/31/94
Security: Everyone

DAL/VTAM: Can't DESCRIBE Group ID or PUBLIC Tables (8/94)

==========

Article Created: 16 July 1992
Article Reviewed/Updated: 31 August 1994

TOPIC ----------

I'm running DAL 1.3.5 VTAM against a DB2 database. On a DESCRIBE databases command (which is generated when users load tables in client tools like GQL and Dataprism), I can only see tables that have been specifically granted to me on my user ID. I can't see tables that are in the Group ID or PUBLIC, even when I open the database with the "as User" clause using the DAL Tester application.

This causes the client tools to deny access to tables I'm really authorized to see. I can issue queries from the DAL Tester, so I know DAL is letting me access them, just not describe them.

Is this inability for the DESCRIBE command to see all tables authorized a limit of DAL 1.3.5? Or is there a problem in host configuration with DAL server, DB2, or ACF2?

DISCUSSION ----------

This isn't a limit in DAL. This is normally caused by the specific view or site-level view not being created at the same time that the DB2 catalogs deny read access to "Public." This normally results in the "-551" error from DB2.

The Database Administrator must create the correct view(s). Sample definitions for view creation are included in Appendix B of the Installation Guide.

If the DBA has created the view(s) and the problem persists, please send us the statement(s) used to create the view.

With a license agreement between Apple Computer and ITI (Independence Technologies, Inc.), ITI will market DAL products and provide all support to DAL customers. To locate ITI's address and phone number, use ITI as a search string.

Article Change History:
31 Aug 1994 - Added ITI information.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10443

Tech Info Library

Macintosh PC Exchange: Mapping Database Files (9/94)

Revised: 9/2/94
Security: Everyone

Macintosh PC Exchange: Mapping Database Files (9/94)

==========

Article Created: 16 July 1992
Article Reviewed/Updated: 02 September 1994

TOPIC ----------

Does Macintosh PC Exchange's extension mapping capability include the ability to map database files?

My guess is that I can set it up to open FileMaker, 4D, and so on, for files with the extension .dbf. But will it work? Are there applications on both or all three platforms (Macintosh, DOS, Windows) that will recognize and properly open files with this extension in the same way that Excel, Lotus, and so on, can open WKS files?

DISCUSSION ----------

The facility of mapping file types to a complementary file type on the Macintosh doesn't make Macintosh PC Exchange a file translation utility. You must be careful to specify the correct type of document that the Macintosh application will support. If you are unsure of which document type, use TEXT or launch the application and then choose the Open command from the File menu.

To our knowledge, FileMaker Pro version 2, Omnis 7, and FoxBase can open the data files of their equivalent Windows or DOS applications.

Article Change History:
02 Sep 1994 - Reviewed for technical accuracy, revised formatting.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10444

Tech Info Library

Macintosh: LCD Displays

Revised: 7/27/93
Security: Everyone

Macintosh: LCD Displays

==========

Article Created: 16 July 1992
Article Reviewed/Updated: 26 July 1993

TOPIC ----------

Do you know of any flat LCD display that can be connected to the Macintosh IIci or IIsi, and used in place of the regular 13-inch RGB Monitor?

DISCUSSION ----------

The only one we know of is the Dynamac LCDisplay, which works with the Macintosh IIci, IIsi, and LC. Although Dynamac is no longer in business, DOVatron International (formerly Dover Electronics) has taken over sales and support of the product.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
26 July 1993 - Company title changed from Dover Electronics to DOVatron International.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10445

Tech Info Library

American Communications Company (ACC)

Revised: 7/2/93
Security: Everyone

American Communications Company (ACC)

==========

Article Created: 07/15/92
Article Reviewed: 07/02/93
Aricle Updated: 12/03/92

American Communications Company

14200 Park Meadow Drive
Chantilly, VA 22021

703-968-6300

703-968-5151 Fax

Company Profile:
Hardware, specializing in network routers.
aka: ACC

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10447

..TIL10448-ATandT_Small_Business_Product_Division.pdf

Tech Info Library

AT&T (Small Business Product Division)

Revised: 7/22/93
Security: Everyone

AT&T (Small Business Product Division)

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Article Created: 15 June 1992
Article Reviewed/Updated: 22 July 1993

AT&T (Small Business Products Division)
---

224 Airport Parkway
Suite 500
San Jose, CA 95110

800-247-7000

408-452-6393 Fax

Company Profile:
Hardware specializing in network equipment.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10448

Tech Info Library

Coral Network Corporation

Revised: 7/6/93
Security: Everyone

Coral Network Corporation

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Article Created: 07/05/92
Article Reviewed: 07/06/93
Article Updated: 12/03/92

Coral Network Corporation
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8 Technology Dr.
Westborough, MA 01581

508-366-3600

508-870-1777 Fax

Company Profile:
Specializing in high-performance, totally fault-tolerant network bridges and routers.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10449

Tech Info Library

Newbridge Networks, Inc.

Revised: 7/14/93
Security: Everyone

Newbridge Networks, Inc.

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Article Created: 15 July 1992
Article Reviewed/Updated: 14 July 1993

Newbridge Networks, Inc.
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593 Herndon Parkway
Suite 200
Herndon, VA 22070

703-834-5300

703-471-7080 Fax

Company Profile:
Hardware and software, an international company that design, manufacturs, markets, and services multi-media, standards-based networking products for global, LAN, and WAN applications, all manageable by single-user, graphicly-rich network systems.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10450

Tech Info Library

Wellfleet Communications, Inc.

Revised: 7/20/93
Security: Everyone

Wellfleet Communications, Inc.

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Article Created: 15 July 1992
Article Reviewed/Updated: 20 July 1993

Wellfleet Communications, Inc.
---

8 Federal St.
Billerica, MA 01821

508-663-6676 (Front Desk)

Fax: 508-670-8765

Company Profile:
Specializing in network routers.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10451

Tech Info Library

WilTel Communications Systems, Inc.

Revised: 7/20/93
Security: Everyone

WilTel Communications Systems, Inc.

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Article Created: 15 July 1992
Article Reviewed/Updated: 20 July 1993

WilTel Communications Systems, Inc.

1701 Golf Road
Rolling Meadows, IL 60008

708-956-4700

Fax: 708-956-3965

Company Profile:
Specializing in network routers.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10452

Tech Info Library

DOVatron International (formerly Dover Electronics)

Revised: 7/7/93
Security: Everyone

DOVatron International (formerly Dover Electronics)

==========

Article Created: 07/16/92
Article Reviewed: 07/07/93
Article Updated: 07/07/93

DOVatron International

1198 Boston Avenue
Longmont, CO 80501

303-772-5933

303-776-1883 Fax

Company Profile:
Dover Electronics, specializing in printed circuit boards.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10456

Tech Info Library

Alliance Peripheral Systems

Revised: 7/2/93
Security: Everyone

Alliance Peripheral Systems

==========

Article Created: 07/17/92
Article Reviewed: 07/02/93
Article Updated: 07/02/93

Alliance Peripheral Systems

6131 Deramus Ave.
P.O. Box 4987
Kansas City, MO 64120-0877

816-478-8300

816-478-4596 Fax

Company Profile:
Hardware, specializing in hard disk drives and in a full line of accessories for the PowerBook series (cables, connector, carrying cases, etc.).

Article Change History: 07/02/93 Address changed

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10457

Tech Info Library

Macintosh: How To Connect an External SCSI Device

Revised: 7/17/92
Security: Everyone

Macintosh: How To Connect an External SCSI Device

==========

Article Created: 15 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

This article provides Apple's recommended procedure for connecting an external SCSI device to a Macintosh computer.

DISCUSSION -----

To connect an external SCSI device to your Macintosh, follow these instructions:

1) Turn off your Macintosh and ensure that the power cord is plugged into a grounded power outlet.

2) Ensure that the external SCSI device is turned off, then plug it into a grounded power outlet.

3) Touch any metal connector on the back of your computer to discharge any static electricity from your clothes or body.

4) Connect the SCSI System cable to the SCSI port on the back of your Macintosh.

5) Connect the other end of the SCSI System cable to one of the SCSI ports on the external device.

6) Add a terminator to the other SCSI port on the external device, if appropriate (see "Note" at the end of this article).

7) Turn on the external SCSI device.

8) Wait a few seconds for the device to come ready.

9) Turn on your Macintosh computer.

Note

Refer to the product User's Guides or search the Tech Info Library for related information about:

- SCSI termination
- SCSI ID numbers

and for information about SCSI chains when connecting more than one external device.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10459

Tech Info Library

Carnation Software

Revised: 4/4/97
Security: Everyone

Carnation Software

==========

Article Created: 07/16/92
Article Reviewed: 07/07/93
Article Updated: 04/04/97

Carnation Software

P.O. Box 608
Carnation, WA 98014

206-333-4288

206-333-4902 Fax

Company Profile:
Software, specializing in terminal emulation and file transfer programs for Macintosh-to-PICK OS connectivity.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10461

Tech Info Library

MacTerminal 3.0: Installation with System 7.0.1

Revised: 8/13/92
Security: Everyone

MacTerminal 3.0: Installation with System 7.0.1

==========

Article Created: 23 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I attempted to install MacTerminal 3.0 on a Macintosh II running System 7.0.1. This was a version I received about a year ago, that didn't mention System 7. All examples and instructions were keyed to System 6.

During the first floppy disk installation procedure, it flagged the Communications Toolbox as already existing on the target disk. But when installing the second floppy, it complained because it didn't find a Communications Toolbox folder where it expected to find or put various tools unique to MacTerminal 3.0.

I created a Communications Toolbox folder in my System Folder, and manually copied the tools from the floppy disk. This didn't work when I tried to run the application -- it simply said it couldn't find any tools.

How do I resolve this problem?

DISCUSSION ----------

Here's how to install MacTerminal 3.0 on System 7.x:

The Installer on Disk 1 of the MacTerminal 3.0 package installs the Macintosh Communications Toolbox. Since the Macintosh Communications Toolbox is built into System 7.x, you don't need to run the Installer.

1) Remove the Communications folder you created manually. In System 7.x, the Communications Tools reside in the Extensions folder in the System Folder. Drag these Tools from Disk 2 directly to the Extensions folder, or to a closed System Folder, and System 7.x will put the Tools in the Extensions folder.

2) Create a new folder called MacTerminal 3.0 on your hard disk, and drag the MacTerminal application and sample session documents from the MacTerminal disk to this new folder.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10464

Tech Info Library

Macintosh OS: No Multiple Password Assignment with File Sharing

Revised: 8/13/92
Security: Everyone

Macintosh OS: No Multiple Password Assignment with File Sharing

==========

Article Created: 23 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I have the same user ID definitions in multiple Macintosh computers that support File Sharing under System 7.0. Is it possible (or are any utilities available) to change the password in one Macintosh only, and automatically change the passwords in all other Macintosh computers?

This type of functionality exists in the UNIX world.

DISCUSSION -----

This facility isn't available under the Macintosh OS. This particular area of network management came about in the UNIX world as the complexity of managing multiple computers, groups of users, and so on became more common (especially in large computer environments, not in the single-user workstation environment).

And there is a lot of resistance to this in the Macintosh community (some find it intrusive), and raises different issues of security.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10465

Tech Info Library

AppleTalk Remote Access: When It Doesn't Relinquish Serial Port

Revised: 8/13/92
Security: Everyone

AppleTalk Remote Access: When It Doesn't Relinquish Serial Port

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Article Created: 23 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

AppleTalk Remote Access normally relinquishes the serial port it occupies while waiting to answer a call, if another communications program attempts to use the port. However, this doesn't happen when the following conditions are true:

1) The other communications program is using Communications Toolbox.

2) The connection tool selected is the "serial tool."

In the described case, the serial tool reports the port busy and AppleTalk Remote Access doesn't relinquish the port. I verified this using all configurations of:

Software: Microphone II v4.0 and MacTerminal
Hardware: Built-in serial port, built-in printer port, QuadraLink ports.

DISCUSSION -----

In order for an application to properly work with the Serial Port Arbitrator, it's necessary for it to:

1) Test to see whether the serial port arbitrator is present,

and if present,

2) Call OpenDriver to request use of the serial port.

AppleTalk Remote Access would then relinquish its "passive" claim on the

port to the application requesting its use. Once the application is done with the serial port, it calls CloseDriver, which allows AppleTalk Remote Access to reassert its "passive claim." Complete details are available in the AppleTalk Remote Access Developer's Toolkit (Product #R0128LL/A from APDA).

Keep in mind that "passive claim" is true only when AppleTalk Remote Access is set to answer calls.

Until applications are modified to work with the AppleTalk Remote Access Serial Port Arbitrator just described, you'll continue to get the "serial port busy" message. The only workaround is to turn off the answer calls option of AppleTalk Remote Access.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10467

Tech Info Library

Stabilant 22-A: Enhances Marginal Electrical Connections (2/96)

Revised: 2/14/96
Security: Everyone

Stabilant 22-A: Enhances Marginal Electrical Connections (2/96)

==========

Article Created: 21 July 1992
Article Reviewed/Updated: 14 February 1996

TOPIC ----------

Does Apple offer any products to service providers to help ensure solid electrical connections for the many different connectors found in Macintosh products and Apple printers?

DISCUSSION ----------

Apple does not offer any service tools for repairing or enhancing electrical connections. However, there are third-party products that can be safely used to repair and/or enhance connections without damaging the connection or the surrounding material.

Technicians agree that the most difficult troubleshooting involves intermittent problems and that many intermittent problems can be traced to poor electrical connections or connectors. Reseating the connection may temporarily correct the problem, but for long-term success, the connector should be repaired or replaced.

Stabilant 22-A is a contact-enhancing product by D.W. Electrochemicals Ltd., Ontario, Canada. It is a non-conductive block polymer that becomes conductive in the presence of an electrical field or when placed in a very narrow gap between electrical contacts. Stabilant 22-A remains non-conductive between adjacent contacts in a multiple-pin environment. Users of this product report that it works especially well on SIMM, serial, SCSI, and internal LaserWriter connections. It can also be used for audio and video connectors.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you

search for a particular vendor's address and phone number.

Article Change History:
14 Feb 1996 - Reviewed for accuracy.
11 Nov 1994 - Reviewed for technical accuracy, revised title.

Copyright 1992-96, Apple Computer, Inc.

Tech Info Library Article Number:10468

Tech Info Library

D.W. Electrochemicals Ltd.

Revised: 2/23/96
Security: Everyone

D.W. Electrochemicals Ltd.

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Article Created: 07/21/92
Article Reviewed/Updated: 23 February 1996

D.W. Electrochemicals Ltd.
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97 Newkirk Road North, Unit 3
Richmond Hill, Ontario L4C 3G4
CANADA

905-508-7500

905-508-7502 Fax

Company Profile:
D.W. Electrochemicals Ltd., hardware, specializing in tools, such as Stabilant, Stabilant 22A, and Stabilant 22-A, which enhance or repair intermittent electrical connections.

For Canada, Europe, and other international locations, contact the manufacturer for local distributor information. For a complete list of U.S. distributors, contact the manufacturer.

Copyright 1992-96, Apple Computer, Inc.

Tech Info Library Article Number:10469

Tech Info Library

A/UX: Magneto Optical (MO) Drives

Revised: 9/14/92
Security: Everyone

A/UX: Magneto Optical (MO) Drives

==========

Article Created: 23 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

What can you tell me about compatibility of A/UX 3.0 and 3.5-inch optical drives? In particular, DGR Tech. 128REM drive and MacProducts Magic128 Optical. I believe they both use a MOST mechanism, and come with FWB HD Toolkit Lite formatting software.

DISCUSSION ----------

According to A/UX compatibility testing, none of the Magneto Optical Disk drives was tested with A/UX 3.0. In general, if you can format and partition the drive for A/UX, and the A/UX generic disk driver can recognize the disk, then it should work OK. The Sony SMO-E501 and Hammer 600S optical drives work in A/UX since there's a disktab entry (in /etc/disktab) for them.

The Pinnacle Micro REO-130 works fine with all versions of A/UX, even A/UX 1.xx.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10471

Tech Info Library

Macintosh Quadra: Support for 16-Bit Color

Revised: 8/13/92
Security: Everyone

Macintosh Quadra: Support for 16-Bit Color

==========

Article Created: 23 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I have a Quadra 700 with VRAM upgraded to enable MILLIONS of colors. However the THOUSANDS selection isn't available in the Monitors control panel. Why?

Quadras with 13-inch RGB monitors have thousands and millions as bit-depth options. Why doesn't the 16-inch monitor?

DISCUSSION -----

The Quadra 700 and 900 don't support 16-bit color (thousands of colors). This was a feature added to the Quadra 950. A different chip containing a CLUT (Color Lookup Table) that could support 16-bit color was included in the redesign of the Quadra 950.

The ability to support this many colors isn't dependent on the size of the screen, but it influences the amount of VRAM you must have installed.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10472

Tech Info Library

PowerBook & Portable: Cracked AC Adapter Warning 7/92

Revised: 5/16/94
Security: Everyone

PowerBook & Portable: Cracked AC Adapter Warning 7/92

==========

Article Created: 23 July 1992

TOPIC ----------

This article discusses a problem with some AC Power Adapters that may damage the logic board fuse on a Macintosh PowerBook, Macintosh Portable, or Backlit Macintosh Portable.

DISCUSSION ----------

The suspect power adapters have chipped or cracked plastic insulation on the plug that attaches to the logic board. This chipped or cracked insulation could let the ring and tip leads of the connector short together and destroy the fuse. The connector can blow the fuse even if the power adapter is not plugged in to AC power -- the connector itself shorts the fuse.

If you find a power adapter with chipped or cracked insulation between the tip and ring leads on the connector, DO NOT USE IT. A visual check is all that is needed to confirm the problem.

Return any suspect power adapter to your local authorized service provider for replacement.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10477

Tech Info Library

Personal LaserWriter NTR: Parallel Pin-outs

Revised: 8/13/92
Security: Everyone

Personal LaserWriter NTR: Parallel Pin-outs

==========

Article Created: 24 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I need the exact pin-outs for the parallel port on the Personal LaserWriter NTR.

DISCUSSION ----------

The information is on page 88 (Appendix B) of the "Personal LaserWriter NTR User's Guide", which comes with the Personal LaserWriter NTR. Here are the pin-outs for the Centronics-type parallel port of the Personal LaserWriter NTR:

Pin	Description
1	Data Strobe
2	Data 1
3	Data 2
4	Data 3
5	Data 4
6	Data 5
7	Data 6
8	Data 7
9	Data 8
10	Acknowledge
11	Busy
12	Paper error
13	Select out
14	Autofeed
15	Select in
16	Signal ground
17	Chassis ground
18	None

19-30	Signal ground
31	Prime
32	Fault
33-36	None

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10480

Tech Info Library

AppleShare 3.0: Disabling Automatic Log On

Revised: 8/13/92
Security: Everyone

AppleShare 3.0: Disabling Automatic Log On

==========

Article Created: 24 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I'm setting up a lab where the systems will be connecting to an AppleShare file server. I want to disable automatic log on to the servers at startup. It's currently configured this way on my System 6.0.3 Chooser, but I'd like to modify the System 7 Chooser to do the same. Is this possible?

DISCUSSION -----

Modifying the System 7 Chooser to prevent auto-mounting of a remote server isn't a trivial programming task, and we don't recommend or support this. Fortunately, AppleShare 3.0 has a provision to prevent a remote AppleShare server from being mounted automatically on startup.

To prevent registered users from logging on to the server automatically at startup, launch the AppleShare Admin program and select File Server Preferences in the Server menu. Make sure the option, "Allow Users to Save Password for Automatic Login" isn't checked, and save any changes. From that point on, registered users can't check "Save My Name and Password."

Registered users who configured their systems to auto-mount a server before you disabled this option, will still be auto-mounting the server unless:

- The users reselect that server, updating the AppleShare Prep file,

  or

- The users' AppleShare Prep files (in the Preference folder) are thrown away. The AppleShare Prep file contains the auto log on details. A new Prep file will be created next time they choose to mount a server.

Note that only registered users will be prevented from auto-mounting a server. If you enable Guest access to the server, guests may still auto-mount a server, because a password isn't requested or required.

Some third-party INITs that prevent automatic mounting of a server are available, but the INITs we know of don't work properly with System 7.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10481

Tech Info Library

PowerBook: Configuring for Minimum Noise (8/93)

Revised: 5/17/94
Security: Everyone

PowerBook: Configuring for Minimum Noise (8/93)

==========

Article Created: 20 July 1992
Article Reviewed/Updated: 16 August 1993

TOPIC ----------

How can I set up a PowerBook for efficient, quiet use in meetings?

DISCUSSION ----------

Configuring a PowerBook especially for meetings can prolong battery life tremendously and reduce noise. Using this configuration, one can usually get a full day's work out of a single battery charge on non-color PowerBooks.

At least 6MB of RAM is required for this setup, and more is recommended. The more RAM you have, the larger your RAM disk can be, and the more files you can fit on it.

Here's a configuration to try:

- A 3.3MB RAM disk that holds a minimal System Folder plus a few items like a word processor application (no accessory files), and some documents (usually 50K to 200K).

- Don't run anything from the hard disk, so that it stays asleep essentially all the time. Copy documents to the hard disk, which powers the hard disk briefly, only once in a while. Not running the hard disk saves power, reduces noise, and greatly speeds wakeup and system performance. (If you want to keep the hard disk from spinning at all until the next startup, drag it to the Trash, unmounting it from the desktop. You will then need to restart the PowerBook for the hard disk to appear again.)

- Use the PowerBook File Assistant Sleep Fkey function (or a similar utility) so that you can put the PowerBook to sleep instantly from the keyboard by pressing the key sequence Shift-Command-0.

- Whenever there doesn't appear to be anything worth noting for the next several seconds, use the Sleep Fkey to put the PowerBook to sleep instantly. When you need to take a note, press a key to wake the PowerBook up and start typing instantly. The instant wakeup response is possible only if AppleTalk is turned off and you don't need to access the hard disk (as is the case if you're using a RAM disk). Otherwise, AppleTalk causes a delay of a second or two. Hard disk spinup causes a significantly longer delay. This way, your PowerBook may be asleep for most of the meeting and awake only while you're actually typing.

- Turn Off Sound Using the Sound CDEV
  Note: this won't turn off the startup sound on the PowerBook 100, 140, 145, 145B and 170. The only way you can turn it off completely on those machines is by inserting a dummy plug into the PowerBook sound-out port.

Article Change History:
16 August 1993 - Revised article.

Support Information Services

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10483

Tech Info Library

A/UX: MacWrite II, Temp File, and File is Locked Error

Revised: 9/14/92
Security: Everyone

A/UX: MacWrite II, Temp File, and "File is Locked" Error

==========

Article Created: 29 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

MacWrite II works just fine after logging in as root and moving MacWrite II into my A/UX system in the root (/) directory. However, if I try to use the same copy of MacWrite II logged in as another user, I get an error message that "File is locked." I do have a personal system folder for this other user. The only related file I could find in the /mac/sys/SystemFolder, the root SystemFolder, and the user's SystemFolder was "Claris Fonts".

I changed the permissions to 777 on all three of those files and the MacWrite II application, but this didn't help. There's no Claris Folder created for the translation scripts on the system.

Which file is locked?

DISCUSSION -----

The MacWrite II application creates a temporary file called "MacWrite II Temp" in the SAME directory with the MacWrite II application. If you don't have "write" permission in the directory where MacWrite II resides, you'll get the "File is locked" error. It has nothing to do with the "Claris Fonts" file.

A workaround for other users is to drag the MacWrite II application onto the desktop. This way the "MacWrite II Temp" file will be created under the user's "home/.mac/hostname/Desktop Folder" directory.

Note that the use of the "launch" command or making an alias for the application doesn't work either. It would be nice if the temporary file could be created under the current directory or in the /tmp directory while

using the "launch" command.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10487

Tech Info Library

DAL: How to Insert a NULL Character

Revised: 7/31/92
Security: Everyone

DAL: How to Insert a NULL Character

==========

Article Created: 29 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

The DAL API function "CLSend" accepts as input parameters: a session ID, a character string, and a length. If the length is -1, the character string is assumed to be null-terminated (that is, a C string). If the length is greater than zero, it is accepted as the length of the character string.

I run into a problem if I provide an explicit length because one of the characters in my character string happens to be a null (hex 00). The string is truncated at the null (rather than using the full length specified in the length parameter).

Fortunately, I can read a null from a column of data type character. It seems that I should be able to insert a null character into the database also. Therefore, I should be able to include a null character in a character string that I'm sending with "CLSend".

DISCUSSION ----------

The following is described in detail in the DAL Programmer's Reference:

A special literal, $NULL, is used to indicate that a DAL value is NULL. The $NULL literal can appear in assignment statements, for example:

```
integer x;
x = $NULL;
```

SQL statements and expressions can also contain the $NULL literal:

```
insert into mytable values ( 1, "ABC", $NULL );
```

..TIL10488-DAL-How_to_Insert_a_NULL_Character.pdf

In the strictest sense, $NULL is not a value, but an indication that a value isn't known. In most cases, however, you can use the symbolic constant $NULL as a DAL literal in expressions.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10488

Tech Info Library

OmniPage Pro: Use Version 2.1 with HP IIp Scanner and System 7

Revised: 8/13/92
Security: Everyone

OmniPage Pro: Use Version 2.1 with HP IIp Scanner and System 7

==========

Article Created: 31 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

I'm using a Macintosh IIci running System 7 (Tune-Up installed) with an HP IIp Scanner and OmniPage Pro 2.0 by Caere Corp.

The scanner works fine with HP software. However, when I try to use OmniPage Pro, I can see the scan taking place on the screen, but there's no physical action from the scanner. All I get is a blank scanned image.

DISCUSSION ----------

According to HP and Caere Corp., you need to use OmniPage Pro 2.1 with System 7 and the HP IIp Scanner. Contact Caere Corp. for upgrade information.

To locate a vendor's address and phone numbers, search with this syntax:

```
Vendor AND 3rd
```

where "Vendor" is the vendor's name.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10494

Tech Info Library

At Ease 1.0: Product Description (8/95)

Revised: 8/9/95
Security: Everyone

At Ease 1.0: Product Description (8/95)

==========

Article Created: 3 August 1992
Article Reviewed/Updated: 9 August 1995

TOPIC ----------

At Ease, an extension to System 7, provides an alternate environment for users who want a simple, uncluttered, interface for application and document launching, plus simple system and hard-disk protection. It's a friendly, safe, one-touch desktop designed especially for the education and home markets.

At Ease doesn't entirely replace the Macintosh Finder: you'll still need the Finder for throwing files away, adding new applications, and so on.

DISCUSSION ----------

Why Is At Ease Needed?

For many novice (especially young) Macintosh users, some elements of the Macintosh interface are difficult to master: for example, aiming the mouse, double-clicking, and using pull–down menus.

And school lab administrators have told us they need a better way to:

• Maintain standard settings on each computer.

• Prevent student from accidentally -- or maliciously -- trashing applications, documents, or System Folders.

• Limit students' access to a predetermined set of applications and documents.

• Teach young or novice users how and where to locate and save applications and documents.

At Ease simplifies the common tasks of finding and launching applications and documents, while providing a simple level of protection for a Macintosh computer's system settings, and for the files and folders on the hard drive.

Features

In addition to a simple and consistent interface, At Ease provides:

• Easy initial setup with a "Gather all Applications" button for quick setup.

• Optional password access to the Finder, System Folder, Control Panels, or any application or document not meant to be available to all user.

• Password protection, with a 'clue' to help young users remember the password. Files can't be thrown away or moved without the password.

• Documents and applications alphabetized for easy access.

• Mouse Practice, a fun and interesting tutorial on how to use a mouse.

Some At Ease options:

• Require that files be saved only to a floppy (so that nothing can be saved to the hard disk).

• Have buttons added automatically to At Ease.

• Remove items such as the Chooser from the Apple Menu Items folder, making them unavailable to users.

• Add specific Control Panels (Sound, for example) or aliases to the Apple Menu Items folder for quick access.

At Ease allows twelve to twenty icons per page, depending on display size. Displays less than 640 pixels wide contain four columns; larger displays contain five columns.

At Ease supports file Sharing, background printing, most Apple menu items, startup folder items, System 7 Tune-Up, and Balloon Help. And At Ease saves RAM -- as much as 200K.

The At Ease Package

At Ease consists of:

• A control panel with which a teacher, parent, or lab monitor turns on At Ease and sets up access to documents, applications, and hard drives.

• An application that handles application and document launching.

• An "At Ease Items" folder containing aliases to the objects displayed in At Ease.

• A Preferences file, which contains an encrypted version of the password.

Technical Details

When a user clicks on the 'on' button to start At Ease, the boot blocks of the boot volume are altered so that At Ease is used in place of the Finder. When the 'off' button is clicked, the boot blocks are restored.

When the At Ease system has been restarted (the At Ease control panel turned on), the extension contained in the control panel executes, installs some trap patches, and creates an 'At Ease Items' folder in the System Folder. Any Control Panels or folders put into the At Ease folder will be ignored.

Support

At Ease is simple to set up and use. Apple provides support toll-free for one year from date of purchase. (Because At Ease requires System 7, many customers will be upgrading to System 7 first, and then installing At Ease. The personnel answering At Ease questions can also answer System 7 questions.)

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10498

Tech Info Library

At Ease: Support Issues (8/95)

Revised: 8/4/95
Security: Everyone

At Ease: Support Issues (8/95)

==========

Article Created: 03 August 1992
Article Last Reviewed/Updated: 04 August 1995

TOPIC ----------

This article describes some support issues relative to the original At Ease software.

DISCUSSION ----------

- At Ease requires System Software version 7.0 or later. It does not run under System 6.x

- A 'back door' to At Ease allows the system to be started up from a System Disk, giving the user access to the entire system. Users cannot, however access the system by holding down the Shift key after a restart, or by doing a force quit.

- Once mounted, file servers cannot be unmounted without restarting the system, or launching the Finder.

- If the option to create a button in At Ease is selected, then a button will be created for every document -- even those saved to a floppy for transfer.

- Users cannot delete unwanted files from a floppy disk from At Ease -- they must go to the Finder.

- AppleTalk Remote Access Administration (accessing users and groups) cannot be done from At Ease. Again, users must launch the Finder.

- Clicking "Remove the original" in the Set Up control panel will truly remove -- permanently -- the original application or document from the hard drive.

- If there is a document button in At Ease, and the original is removed

in the Finder, the next time a user attempts to launch that document, a message will explain that the original cannot be found. At this point, At Ease will remove that document's icon from the document page. If At Ease cannot find the original document or application because the volume on which it resides is not connected, At Ease will explain this and will NOT remove the icon.

- When you go to Finder from At Ease, At Ease is still running and is making aliases to the documents you save. You can either go to the At Ease Setup Control Panel and press the "Setup Documents..." button and uncheck "Add a button to At Ease" -- or you can turn off At Ease and restart.

- When At Ease is running, fonts and sounds cannot be moved in and out of the System file. You must turn off At Ease and restart.

- If a user is connected to an At Ease system, and the host restarts, no warning will be sent to the user connected to the host. Disconnect is immediate.

- To remove At Ease, use the Installer: Choose Customize, hold down the Option key, and choose 'Remove'. Dragging the At Ease components to the Trash may prevent you from restarting the Macintosh.

Article Change History:
04 Aug 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:10499

Macintosh Finder: Cure for Disappearing Folders (5/96)

Revised: 5/25/96
Security: Everyone

Macintosh Finder: Cure for Disappearing Folders (5/96)

==========

Article Created: 31 July 1992
Article Reviewed/Updated: 25 May 1996

TOPIC ----------

A Macintosh running under System 6.0.x (I know this has happened under 6.0.3, 6.0.5, and 6.0.7) suddenly "loses" folders alphabetically. That is, folders up to a certain point (anywhere from C to S) DO appear on the desktop, and the rest appear to be missing. However, the computer still starts up from the System Folder ("missing"), and all the appropriate (if applicable) INITs load.

Find File cannot locate any of the missing folders or files within those folders. Norton Utilities (at least 1.0), as well as SUM, can't retrieve any missing files or folders. The size count across the top of an Icon view window shows the same material that was present before, but the number of items reduces to the visible ones.

Nothing that I've tried has ever brought those files back, although they're supposedly still present. Applications can't see the files either.

I reformatted the hard drive and restored the backups.

DISCUSSION ----------

Fortunately, the disk corruption you have encountered -- files and folders disappear -- rarely occurs when using System Software 6.0.x (and happens only slightly more often under System 7). Unfortunately, there are no simple workarounds to repair System 6 volumes.

Although the corruption and symptoms with System Software 6.0.x and System 7 are similar, the events leading to the corruption are different, as are the workarounds.

Workarounds

You have two options in dealing with this situation:

1) If you wish to continue to use System 6.0.x, perform frequent backups, and use them to restore the information on your hard drive. The System 7 Find command uses calls that don't exist under System 6.0.x. Therefore, to retrieve files from a 6.0.x volume, connect that drive to a Macintosh running System 7, and use the Find from System 7.

2) Upgrade to System 7 and Tune-Up 1.1.1.

NOTE: The Installation of the Tune-Up 1.1.1 extension patches and corrects some code in System 7. The first time that System 7.0.x is started up with the Tune-Up extension installed, the Tune-Up correction code is moved into the System file itself. This happens to avoid exposure of starting System 7.0.x with extensions off. The Tune-Up fix is always present once the Mac OS is started once with the Tune-Up installed.

Repairs Under System 7

Disk First Aid (DFA) v7.1 was revised to fix this corruption on System 7 volumes. It will ship with System 7.1. Our testing indicates DFA is much more successful in repairing the volume when used soon after the corruption occurred, the files or folders will reappear after repairing the corrupted file system structures. Therefore, if your files or folders disappear on your System 7 volume, don't use that drive if possible, until you can fix it with DFA.

Repairs Under System 6.0.x

Since Disk First Aid v7.1 will only repair System 7 volumes, you'll have to:

• Rely on third-party repair tools, and make sure the one you select addresses this problem specifically, or

• Recover what you can (see the Workarounds section), and reformat the drive.

Note that we haven't evaluated the effectiveness of using third-party repair tools. You may wish to check with the distributor prior to purchase or use.

Article Change History:
25 May 1996 - Updated for technical accuracy.

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Tech Info Library Article Number:10500

Tech Info Library

PowerBook 145: Questions and Answers 8/92

Revised: 5/16/94
Security: Everyone

PowerBook 145: Questions and Answers 8/92

==========

Article Created: 3 August 1992

TOPIC -----

This article answers some anticipated questions about the new PowerBook 145.

DISCUSSION -----

Q. How is it different from the PowerBook 140?
A. The 68030 processor in the PowerBook 145 has clock speed of 25 MHz, compared to the PowerBook 140's 16 MHz 68030. This gives the PowerBook 145 a 35% performance improvement over the PowerBook 140, which it replaces.

Q. What version of system software is used?
A. The PowerBook 145 uses System 7.0.1 with System 7 Tuner 1.1.1.

Q. If a user wants to add a 4MB memory card to a 4MB PowerBook 140, how much memory will be available?
A. A 4MB system has 2MB on the logic board and a 2MB memory card. The system will have 6MB, because the 2MB card would be removed (2MB on board + 4MB memory card = 6MB system).

Q. Can a user install an internal modem and still use both serial ports?
A. The printer serial port is always available; the user could switch between the modem serial port and the internal modem, but could not use both internal modem and modem serial port at the same time.

Q. Does the PowerBook 145 have a SCSI Disk Mode like the PowerBook 100 does?
A. No, the PowerBook 145 is based on the PowerBook 140, which does not support SCSI Disk Mode.

Q. How does the PowerBook 145 work with MIDI applications?
A. There is no problem with applications that support the MIDI Manager, except applications that require a large amount of data to be sent to

the computer, such as dumping samples back into the computer. Check with the developer to make sure the application uses the MIDI Manager. Applications that do not use the MIDI Manager will have problems running on the PowerBook 145.

Q. When transporting a PowerBook, which should I use: Sleep or Shut Down?
A. Use the Shut Down menu item. This saves power and causes you to save important documents.

Support Information Services

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Tech Info Library Article Number:10504

Tech Info Library

Codenoll Technology Corp.

Revised: 7/6/93
Security: Everyone

Codenoll Technology Corp.

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Article Created: 07/31/92
Article Reviewed: 07/06/93
Article Updated: 12/03/92

Codenoll Technology Corp.

1086 North Broadway
Yonkers, NY 10701

914-965-6300

914-965-9811 Fax

Company Profile:
Hardware and software, specializing in Ethernet, fiber-optic, and FDDI (Fiber Distributed Data Interface) tools and cables.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10508

Tech Info Library

SNA•ps: Compatibility with Other Apple Products (6/94)

Revised: 7/11/94
Security: Everyone

SNA•ps: Compatibility with Other Apple Products (6/94)

==========

Article Created: 4 August 1992
Article Reviewed/Updated: 29 June 1994

TOPIC ----------

What is the compatibility of SNA•ps with other Apple products?

DISCUSSION ----------

SNA•ps stands for Systems Network Architecture protocols and service, and is a family of applications that provide Macintosh users with integrated access to IBM mainframe (System/370 and System/390) and mid-range (AS/400 only) systems. SNA•ps 3270 or SNA•ps 5250 is end-user application software that presents the user with one or more 3270 or 5250 terminal sessions. It's designed to present the user with a text-based interface to applications, data, and services. The SNA•ps Gateway is server software that provides a network access to IBM mainframe and mid-range systems. It's designed to serve as an IBM gateway for multiple Macintosh computers attached to AppleTalk networks.

The SNA•ps 3270 application, which is included in both the SNA•ps 3270 and SNA•ps 3270 GC (gateway client) packages, will run on the Macintosh Plus and later systems. The SNA•ps Gateway application runs on one of the three Apple NuBus cards, and so requires any Macintosh II or Quadra system that incorporate NuBus. One caveat: the SNA•ps 3270 application includes support for certain connections (CUT and NLCA) on the Apple Coax/Twinax Card, which also requires a Macintosh II or Quadra computer.

The SNA•ps 5250 application software works with the Apple Token Ring 4/16 NB Card or Apple Serial NB Card installed in any Macintosh II or Quadra (NuBus capable) computer and supports directly connected or AppleTalk distributed 5250 sessions. SNA•ps 5250 sessions are distributed over AppleTalk allows SNA access for any Macintosh system connected to an AppleTalk network. SNA•ps 5250 also supports TCP/IP connections to an AS/400 for display support only. SNA•ps 5250 was recently enhanced to support AppleTalk Direct to the AS/400 using the IBM supplied AppleTalk ADSP stack.

SNA•ps requires Macintosh system software 7.0 or later.

A/UX doesn't support the SNA•ps 3270, SNA•ps 5250 and SNA•ps Gateway software at this time.

Ethernet supports SNA•ps, but only for connections between Macintosh clients and SNA•ps Gateways over AppleTalk networks. Ethernet is also supported to the AS/400 using the AppleTalk Direct solution. The connection between the SNA•ps Gateway and the mainframe currently must be either coax, SDLC, or Token Ring.

SNA•ps will run on the Apple TokenTalk NB Card (Apple's earlier 4M/bps Token Ring product) for SNA•ps 3270 GC via AppleTalk, SNA•ps 3270 single user full function SNA product (up to 5 sessions), and the SNA•ps 5250 single user full function SNA product (up to 5 sessions). Since you can't expand the MCP RAM on the TokenTalk NB Card beyond 512K, it is NOT recommended to run the SNA•ps Gateway products. Also, because of RAM limitations neither SNA•ps 3270 single user or SNA•ps 5250 single user products can run at the same time as TokenTalk.

SNA•ps will run on the Apple Token Ring 4/16 NB Card and an Apple Serial NB Card, and as a rule of thumb, a Serial or Token Ring card running SNA•ps gateways need 1MB. If multiple host connections are used (for example more than one host AS/400 and 3270 mainframe) at the same time than 2.5MB is suggested.

SNA•ps supports IBM's NetView network management. The NetView alerts supported are listed in Appendix E of the SNA•ps 3270 User's Guide (packaged with SNA•ps 3270 and SNA•ps 3270 GC). You can print directly from the IBM mainframe to a local Apple (or compatible) printer. The SNA•ps 3270 single user, SNA•ps 3270 GC, SNA•ps 5250 single user, and SNA•ps 5250 GC packages include an application called SNA•ps Print which allows you, for example, to send host output directly to a LaserWriter attached to your AppleTalk network.

The following is a partial list of third-party client software that can use the SNA•ps Gateway to access IBM hosts:

- Legent Corp. MacXCOM6.2
- Connectivité "Both."
- Tangram Systems AM:PM
- ASC asc3270
- Andrew Corp. TokenAxcess
- CEL Software Blacksmith
- Data Access Language (DAL) clients such as Brio DataPrism and DataPivot
- Microsoft Excel
- ACI US, Inc. 4th Dimension
- Fairfield Software ClearAccess
- Andyne GeoQuery

You can develop custom applications that use the SNA•ps Gateway services in C, Pascal, or Assembler. The SNA•ps Gateway supports both 3270, 5250 and APPC client application developments through Applications Programming Interfaces (API). These APIs are available from Wall Data directly. You can purchase the SNA•ps APPC Developer's Kit v1.0 and Apple 3270/5250 Developer's Kit v2.0.

To locate a vendor's address and phone numbers, use the vendor name as a search

string.

Article Change History:
29 Jun 1994 - Updated the article and TokenTalk NB Card information.
15 Mar 1993 - Updated, Acius now ACI US, Inc.

Support Information Services

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Tech Info Library Article Number:10509

Tech Info Library

SNA•ps: Gateway Required for Multiple Sessions

Revised: 8/13/92
Security: Everyone

SNA•ps: Gateway Required for Multiple Sessions

==========

Article Created: 6 August 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

We're upgrading from MacDFT to SNA•ps. The current DFT configuration enables multiple CUT sessions at the workstation. When we run the SNA•ps product without the gateway, we see only one session. With the gateway running on the same Macintosh, we see multiple (5) sessions. Can we have multiple CUT sessions without the gateway running? The network card is the Apple Twinax/Coax card.

DISCUSSION ----------

To clarify: CUT is one session only. When you were running MacDFT and getting five sessions, you were using DFT services, not CUT.

In the SNA•ps world, if you don't run the gateway, you'll be running in CUT mode, which means you'll be running a single session. If you want multiple sessions, you have to run the gateway.

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Tech Info Library Article Number:10511

Tech Info Library

SNA•ps 3270: Configuring for DFT (Multi Session) on Coax

Revised: 8/13/92
Security: Everyone

SNA•ps 3270: Configuring for DFT (Multi Session) on Coax

==========

Article Created: 6 August 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

How do I configure SNA•ps 3270 for DFT?

DISCUSSION ----------

First, verify the environment setup by:

- Making sure that the Apple Coax/Twinax card is installed into one of the slots of the Macintosh II class computer.

- Making sure that the Apple Coax/Twinax card is connected to a coax port from a terminal controller (that is, IBM 3174, IBM 3276, and so on).

- Ensuring the "upstream" SNA configurations are correct, meaning that:

  - The mainframe knows there are LUs defined as display sessions to the line going to the controller,

    and

  - The controller has assigned at least one display LU to the specific coax port that you are connected to.

It's possible to have a maximum of five LUs assigned to a COAX port on a terminal controller. These LUs can be a mix of Display LUs (327X Mod 2,3,4,5) or Printer LUs (3287).

Note: If you wish to get multi-session 327X terminal emulation capability on a non-NuBus based Macintosh (SE, Classic, LC, PowerBooks, and so on), you must use the SNA•ps 3270 GC or use the SNA•ps 3270 package to gain

sessions from a SNA•ps 3270 Gateway.

Next, install the gateway portion of SNA•ps 3270 package. Then run the SNA•ps Manager program to create a new configuration for a coax line. You will notice that it asks you for a combination of number of display or printer sessions (a maximum of five "sessions" between the two). Select the correct combination of printer and display LUs as given to you by the SNA network Administrator.

You'll notice that all "LU Numbers" are set to ZERO (0). There's no way to change these LU assignments in the COAX part of this gateway, so don't try to change them. The LU assignment is taken care of at the controller. Save this configuration file on the Macintosh computer's hard disk.

Start the gateway following these steps:

1) Select the coax line that should be appearing in your "Network Gateway Status" window.

2) Choose "SELECT CONFIGURATION FOR…"

3) Select the COAX definition that you created before.

4) Select the "START GATEWAY" from the GATEWAY menu.

If you didn't see a COAX line in your "Network Gateway Status" window, then the line going to the Apple Coax/Twinax card isn't correctly configured. Contact local System Administration personnel for further assistance here.

Once the Gateway is started:

1) Launch SNA•ps 3270.

2) Under the SESSIONS menu, select CONNECTIONS…

3) Select the gateway that you just started, and select a session from that gateway (either from a pool or from a specific session/LU).

4) Select "CONNECT" from the SESSIONS menu.

If all is correct, you should have a host splash screen on your SNA•ps 3270 Terminal Emulation window.

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Tech Info Library Article Number:10512

Tech Info Library

Macintosh: Unexpectedly Quit Error Codes

Revised: 8/13/92
Security: Everyone

Macintosh: "Unexpectedly Quit" Error Codes

==========

Article Created: 6 August 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Can you give me an explanation of all the possible error codes after "Unexpectedly Quit"?

DISCUSSION ----------

These codes and descriptions are useful mainly to the programmers who developed the applications that are crashing.

For example, error number 4 indicates that a program generated an instruction that caused the processor to try to divide by zero. As you can see, this isn't particularly useful to anyone but the programmer, who would need to debug the code to discover where this was happening.

Many of the other errors are even more esoteric. A number of books, including Inside Macintosh, contain detailed information on these errors. Here's a small portion of the list of error codes the Macintosh can generate in certain circumstances:

```
dsBusError = 1;                 {bus error }
dsAddressErr = 2;               {address error}
dsIllInstErr = 3;               {illegal instruction error}
dsZeroDivErr = 4;               {zero divide error}
dsChkErr = 5;                   {check trap error}
dsOvflowErr = 6;                {overflow trap error}
dsPrivErr = 7;                  {privilege violation error}
dsTraceErr = 8;                 {trace mode error}
dsLineAErr = 9;                 {line 1010 trap error}
dsLineFErr = 10;                {line 1111 trap error}
dsMiscErr = 11;                 {miscellaneous hardware
```

```
                                                    exception error}
dsCoreErr = 12;                                     {unimplemented core routine
                                                    error}
dsIrqErr = 13;                                      {uninstalled interrupt error}
dsIOCoreErr = 14;                                   {IO Core Error}
dsLoadErr = 15;                                     {Segment Loader Error}
dsFPErr = 16;                                       {Floating point error}
dsNoPackErr = 17;                                   {package 0 not present}
dsNoPk1 = 18;                                       {package 1 not present}
dsNoPk2 = 19;                                       {package 2 not present}
dsNoPk3 = 20;                                       {package 3 not present}
dsNoPk4 = 21;                                       {package 4 not present}
dsNoPk5 = 22;                                       {package 5 not present}
dsNoPk6 = 23;                                       {package 6 not present}
dsNoPk7 = 24;                                       {package 7 not present}
dsMemFullErr = 25;                                  {out of memory!}
dsBadLaunch = 26;                                   {can't launch file}
dsFSErr = 27;                                       {file system map has been
                                                    trashed}
dsStknHeap = 28;                                    {stack has moved into
                                                    application heap}
negZcbFreeErr = 33;                                 {ZcbFree has gone negative}
```

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Tech Info Library Article Number:10513

Tech Info Library

Light Source, Inc. (4/97)

Revised: 4/4/97
Security: Everyone

Light Source, Inc. (4/97)

==========

Article Created: 14 August 1992
Article Reviewed/Updated: 4 April 1997

Light Source, Inc.
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17 East Sir Francis Drake Blvd.
Suite 100
Larkspur, CA 94939

800-231-7226 (Order and Product Information)

415-499-9390 (Technical Support)
415-446-4200 (Main)
44-506-462-444 (Scotland number for customers Outside the U.S. and Canada)

415-461-8011 Fax

Company Profile:
Software, specializing in scanning software, including Ofoto (version 2.0.2), which ships with the Apple OneScanner and Apple Color OneScanner. Ofoto is supported directly by Light Source: version 2 for Macintosh and version 1 for Windows.

Light Source does NOT offer support for Ofoto version 1.0. Customers must purchase Ofoto version 2.0 or later to receive Light Source technical support. Customers can upgrade by calling Light Source at 1-800-231-7226. Customers who own Ofoto 2.0 or later can call Light Source Customer/Technical Support at 1-415-499-9390.

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Tech Info Library Article Number:10515

Tech Info Library

Kaleida Labs, Inc.

Revised: 7/12/93
Security: Everyone

Kaleida Labs, Inc.

==========

Article Created: 08/13/92
Article Reviewed: 07/12/93
Article Updated:

Kaleida Labs, Inc.

1945 Charleston Road
Mountain View, CA 94043

415-966-0400

415-966-0496 Fax

Company Profile:
A joint venture of Apple Computer, Inc. and IBM. It is devoted to the development of standards for multimedia software.

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Tech Info Library Article Number:10516

Tech Info Library

System 7: Key Combination Shortcuts and Tips (8/95)

Revised: 8/11/95
Security: Everyone

System 7: Key Combination Shortcuts and Tips (8/95)

==========

Article Created: 6 August 1992
Article Reviewed/Updated: 11 August 1995

TOPIC ----------

This article includes (in alphabetical order) the keyboard/mouse combinations you can use with System 7.5. Many of these tips are documented in Finder Shortcuts, under Balloon Help.

DISCUSSION ----------

Alphabetize Icons in a Window

Step 1

Activate the window you want to alphabetize.

Step 2

Choose "By Name" from the "View" menu.

Step 3

Choose "Select All" from the "Edit" menu.

Step 4

Drag all files to the icon that represents the active window.

Step 5

Choose "By Icon" from the "View" menu.

Bypass Set Start-up Device

==========

To bypass the currently selected start-up device (except on a Quadra 700), start or restart the computer while holding down the Command-Option-Shift-Delete keys.

Cancel a Print or Copy Job

To cancel a print or copy job Command-. (period) keys.

Change "About This Macintosh"

To change the menu entry from "About this Macintosh" to "About the Finder" hold down Option while choosing the About document under the Apple menu in the Finder.

Clean Up Icons

Move all icons to nearest point on the grid

Use one of these methods:

• Select Clean Up Window from the Special menu.

• Hold down the Option key and choose Clean Up By Name from the Special menu (this function alphabetizes and aligns icons to the grid and each other, the same as the previously explained Alphabetize Icons in a Window tip).

NOTE: Available in icon views only.

Align icon to grid

Hold down the Command key and drag then release the icon.

Close All Windows at Startup

To close all open windows on the desktop at startup, hold down the Option key. The folders remain closed on subsequent startups, unless you open them in the Finder.

Copy Selected Item to Clipboard

Use one of these methods:

• Select Copy from the Edit menu.
• Press the Command-C keys.

Cut Selected Item to Clipboard
==========

Use one of these methods:

• Select Cut from the Edit menu.
• Press the Command-X keys.

Diacritical Marks (Typing)
==========

Begin_Table

Character	Key Sequence	Example
Grave Accent	Option-`-(any character)	lèvre
Acute Accent	Option-e-(any character)	école
Umlaut	Option-u-(any character)	Böblingen
Circumflex	Option-i-(any character)	maître
Tilde	Option-n-(any character)	mañana
Cedilla	Option-c	façade

End_Table

NOTE: With the exception of the Cedilla (which is a specific character), diacritical marks can be applied to almost any character. The correct sequence is to press the Option key and the key that activates the accent mark. The accent mark is applied to the next key pressed after this sequence.

Dialog Boxes (Using Functions)
==========

Scroll Through List in Open Dialog Box

Use one of these methods:

• Click on the Up or Down arrows in the scroll bar.
• Use the Up or Down arrow keys on the keyboard.

Find a File Quickly in an Open Dialog Box

Type in the name of the file.

NOTE: The Delay until Repeat control in the Control Panel determines how many characters may be entered for a File search.

Select the First File in an Open Dialog Box

Use the Left or Right arrow keys on the keyboard.

Select the Last File in an Open Dialog Box

Press the tilde (~) key.

Switch Drives in an Open or Save Dialog Box

Use one of these methods:

- Click on Drive in the dialog box window
- Press the Tab key.

Switch Keyboard Layout

Press Command-Option keys. This causes the keyboard control panel under System 7 to switch between different keyboard layouts. System 7.5 installs many international keyboard layouts automatically when an easy install is performed.

Move Up File Hierarchy in an Open or Save Dialog Box

Click on the current disk icon or click on the directory name icon at the top of the dialog box to display the file hierarchy and select the one you want.

- Press the Command-Up arrow keys to move closer to the top-level directory.
- Press the Command-Down arrow keys to open a selected folder.

Disable Virtual Memory

Hold down the Command key at startup. Do not release the key until startup is complete.

NOTE: This disables virtual memory, but loads any system extensions. When you restart your Macintosh, virtual memory is turned on again.

Duplicate Item

Click on the item you want to duplicate and use one of these methods:

- Choose Duplicate from the File menu.
- Hold down the Option key and drag the icon to another folder.
- Press the Command-D keys.

Easy Access (Activating/Deactivating)

Easy Access is a function designed especially for the disabled. This function lets you lock modifier keys (Command, Control, Option, Shift, Clear) without having to hold them down. Easy Access must be installed in the System Folder - Control Panels folder.

Activate Easy Access

Without moving the mouse, press the Shift key five (5) times.

Deactivate Easy Access

Step 1: Without moving the mouse, press the Shift key five (5) times.
Step 2: Press any two modifier keys simultaneously.

• Press the modifier key(s) you want to use (do not press modifier keys simultaneously unless you want to deactivate Easy Access).

• Press a nonmodifier key to activate a function.

• Press the modifier key once to activate it for one function (the U icon should now appear with an arrow above it).

• Press the modifier key twice to lock it down for more than one function (the U icon should now be filled with an arrow above it).

If the modifier key is locked, pressing it again unlocks it.

Eject Floppy Disk

Use one of these methods:

• Press the Command-Y keys or choose Put Away in the File menu.

• Drag the floppy disk icon to the Trash.

• Choose Restart or Shut Down from the Special menu.

• Start or restart the computer, and hold down the mouse button.

• Press the Command-Shift-1 keys to eject internal floppy drive 1.

• Press the Command-Shift-2 keys to eject internal floppy drive 2 or an external floppy drive.

• Press the Command-Shift-0 keys to eject any other floppy disk drives.

Press the Command-E keys or choose Eject Disk from the Special menu - if no disks are selected, these function ejects all floppy disks. These functions leave a "greyed out" floppy disk icon on the desktop.

Last Resort

If the disk will not eject you can insert a straightened paper clip into the hole located on the right front of the floppy drive. However, this may damage the floppy drive.

Erase Disk

The Erase Disk command under the Special menu erases any selected disk except a write protected (locked) disk or the disk that contains the active operating system.

Erase Floppy Disk

To erase the selected floppy disk use one of these methods:

- Select Erase Disk from the Special Menu.
- Hold down the Command-Option-Tab keys while inserting the disk.

Extension Manager (System 7.5)

To bring up the Extension Manager at startup hold down the Space Bar.

Force Quit an Application

Press the Command-Option-Esc from within the application.

Use this feature with extreme caution. You should definitely not rely on this as a usual way to quit an application. It is useful in the event that you have unsaved work in other applications when your current application hangs. By using this feature, you can return to the Finder and save the work in your other applications. You should restart your computer after using this feature.

Get Info (Using Functions)

Information

Select the icon and then use one of these methods:

- Choose Get Info from the File menu.
- Hold down the Command-I keys.

Lock Item

Check or uncheck the Locked box in the lower left corner Get Info dialog box.

Change Application Memory Size

Click in the box located next to Preferred Size in the Get Info dialog box and enter the desired size.

NOTE: This function sets the amount of RAM that is allocated to an application when it is launched. It should not be set below the Suggested Memory Size number.

Hide Current Application When Switching to Next

Hold down the Option key while switching applications.

Keypad Mouse (Activate/Deactivate)

To set the keypad to control mouse movement, press the Command-Shift-Clear keys.

- The 1, 2, 3, 4, 6, 7, 8, 9, keys control movement and direction of the pointer.
- The 5 key is the mouse button.
- The 0 key locks the mouse button.
- The decimal point key unlocks the mouse button.

NOTE: This function does not work on a PowerBook without the Mouse Keys extension because there is no keypad.

New Folder Creation

Use one of these methods:

- Choose New Folder from the File menu.
- Press the Command-N keys.

Open a File or Folder

Click on the item you want to open and use one of these methods:

- Select Open from the File menu.
- Double-Click on the item you want to open.
- Press the Command-O keys.
- Press the Command-Down Arrow keys.

Paste From the Clipboard

After a Copy or a Cut, use one of these methods to Paste:

• Choose Paste from the Edit menu.
• Press the Command-V keys.

Postscript File Dump

This function lets you dump postscript files to disk rather than to the printer. The Postscript Files are labeled as Postscript X (where X is a number from 0 to 9). Background Printing must be turned off.

NOTE: This is for LaserWriter driver’s previous to 6.3. Version 6.3 and higher support printing to a PostScript file

Postscript File Dump With Laserprep

Use one of these methods:

• Select Print from the File menu.
• Press Command-P. When the print dialog box appears, click OK. Immediately after clicking OK, press the Command-F keys.

Postscript File Dump Without Laserprep

Use one of these methods:

• Select Print from the File menu.
• Press Command-P. When the print dialog box appears, click OK. Immediately after clicking OK, press the Command-K keys.

Print

Use one of these methods:

• Select Print from the File menu.
• Press the Command-P keys.

NOTE: The command key function is not available at the Finder level.

Put Away Items

Choose Put Away in the File menu to place a selected item(s) back into its folder.

Quit

====

Use one of these methods:

• Select Quit from the File menu.

• Press the Command-Q keys.

NOTE: This command is not available from the Finder level. It is used to quit from an application.

Rebuild the Desktop

Hard Drive

Start or restart the computer while holding down the Command-Option keys.

Floppy Disk

Insert the floppy disk while holding down the Command-Option keys.

NOTE: If the floppy disk is the start-up disk, start or restart the computer while holding down the Command-Option keys.

Screen Dump

The files are saved to disk as Picture X (where X is a number from 0 to 9).

Pict File Screen Dump

Press the Command-Shift-3 keys.

Screen Dump to Imagewriter

Press the Command-Shift-4 keys.

Dump of Active Window to Imagewriter

Press the Command-Shift-Caps Lock-4 keys.

NOTE: The Imagewriter dumps do not work on networked printers.

Select All Items in the Active Window

Press the Command-A keys.

Startup From CD-ROM

Hold down the letter c key (lower-case only).

On a Power Macintosh or Macintosh 630 family (Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630) computer, this directs the computer to startup from the CD-ROM drive instead of the hard drive or floppy.

Switch Startup Disk

Step 1

Open the Startup Control Panel.

Step 2

Select the device you want to use as your startup device.

Trash (Move Something To)

Drag the selected icon to the Trash Can

Delete Files Without Warning/Delete Locked Files

Hold down the Option key and drag a file to the Trash.

Turn Off Extensions (7.x)

Hold down the Shift key at startup until you see Welcome to Macintosh. Extensions off.

This disables, for this startup only, any items that load at startup, such as system extensions, control panels, or chooser extensions. It also disables virtual memory, and background printing with PrintMonitor, and turns the Disk Cache down to 16K (the minimum). It also prevents launching any items in the Startup Items folder.

Undo (the Last Editing Operation)

Use one of these methods:

- Choose Undo from the Edit menu.
- Press the Command-Z keys.

Windows (Manipulating)

Change Size of a Window

Use one of these methods:

- Drag the size box.
- Click the zoom box to expand or reduce the size of a window.

Close Active Window

Use one of these methods:

- Choose Close from the File menu.
- Click the active window’s close box.
- Press the Command-W keys.

Close All Windows

Use one of these methods:

- Hold down the Option key and choose Close from the File menu
- Hold down the Option key and click the active window's close box.
- Press the Command-Option-W keys.

Move Inactive Window

Hold down the Command key and drag on the inactive window’s title bar.

Return to the Finder With No Windows Open

Hold down the Option key while starting or quitting from an application.

Zap the PRAM (7.x)

This operation resets parameters stored in Parameter RAM (PRAM).

Hold down the Command-Option-P-R keys during the restart sequence. Your computer beeps for a normal startup and then beeps again. When you hear the second beep, you may release the keys.

Many default settings for the Macintosh, such as serial port speeds, default application font, mouse scrolling rate, and so on, are stored in PRAM. It is sometimes useful to zap the PRAM to clear these settings and reset them to default values. Reselect any customized values for these settings.

After this operation, you may want to check your General control panel settings. If you have more than 8 MB RAM, also check your Memory control panel settings.

Article Change History:
11 Aug 1995 - Reformatted to make more readible on the World Wide Web.
21 Feb 1995 - Added keyword; made several technical updates; reformatted.
23 Jan 1995 - Added Switch Keyboard Layout shortcut.

Support Information Services

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Tech Info Library Article Number:10517

Tech Info Library

DALnet Avatar 1.3.5 Network Adapter: Where To Find It

Revised: 8/7/92
Security: Everyone

DALnet Avatar 1.3.5 Network Adapter: Where To Find It

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Article Created: 6 August 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Where is the DAL 1.3.5 AVATAR client driver for clients using the Avatar Gateway (4.01) and MacMainFrame Client software?

DISCUSSION -----

You can find the DALnet Avatar 1.3.5 network adapter on the DAL 1.3.5 Install Disk. The path is:

```
DAL Install
  DAL Files
    DAL Network Adapters
```

Note that you need to do a "customized" installation to select support for 3270-type connections such as Avatar MacMainframe.

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Tech Info Library Article Number:10518

Tech Info Library

PowerBook 145: Specifications (Discontinued)

Revised: 3/22/95
Security: Everyone

PowerBook 145: Specifications (Discontinued)

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Article Created: 3 August 1992
Article Reviewed/Updated: 22 March 1995

TOPIC ----------

This article gives technical specifications for the Macintosh PowerBook 145 notebook computer.

DISCUSSION ----------

Microprocessor

• 68030, running at 25 MHz

Address and Data Bus

32-bit Address Bus
32-bit Data Bus

Memory

• Comes with 2MB or 4MB pseudostatic RAM on the logic board and one memory expansion slot.

• Expandable to 8MB of RAM by installing a RAM expansion card in the expansion slot.

Disk Storage

• One built-in 1.4MB drive that uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.

• One internal 40MB or 80MB hard disk

Display

• 10 inch (254 mm) diagonal

• Backlit Supertwist liquid crystal display

• 640 by 400 pixels

Battery

• NiCad, 2.5 ampere-hours, provides 2 to 3 hours of use before recharging is necessary

• Recharge time: 100% recharged after 5 hours; 80% recharged after 3 hours

Keyboard

• Built-in keyboard with standard Macintosh layout

• Two-level tilt adjustment

Trackball

• Dual-button trackball, 30 mm diameter,

Clock/Calendar

• CMOS custom chip with long-life lithium battery

Interfaces

• One Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices using a low-speed, synchronous serial bus

• Two RS-422 serial ports for LocalTalk networking, printers, modems, and other devices

• One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices

• One sound output port for external audio amplifier

• One sound-in port

Modem

• Optional internal 2400-baud modem with facsimile send at 9600 baud; includes facsimile send software

• Error correction and compression: MNP 4, 5 and V.42, V.42bis

Sound Generator

• Apple Sound Chip provides 8-bit sound, capable of driving stereo

headphones or other stereo equipment through the sound port.

Sound Input

• 8-bit sound, sampled at 11 or 22 kHz

Disability Access

• CloseView, Easy Access, and visible beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disability.

ADB Power Requirements

• Maximum current draw for all ADB devices is 200 milliamps (a maximum of three ADB devices is recommended)

Electrical Requirements

• Line voltage: 100 to 240 volts

• Frequency: 50 to 60 Hz

Environmental Requirements

• Operating temperature: 50 to 104 degrees F (10 to 40 degrees C)

• Storage Temperature: -40 to 65° C (-40 to 148° F)

• Relative humidity: 20% to 80% noncondensing

• Altitude: Operating: 3048 m (10,000 ft.) maximum
Shipping (non-operating) 0 to 15,000 ft. (0 to 4,722 m)

Size and Weight

• Height 2.25 inches (5.7 cm)
• Width 11.25 inches (28.6 cm)
• Depth 9.3 inches (23.6 cm)
• Weight 6.8 lb (3.03 kg)

Noise Level

Noise free except for floppy or hard disk use.

Article Change History
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22 Mar 1995 - Updated altitude information.
02 Jun 1993 - Updated to correct voltage specification.
19 Feb 1993 - Updated to correct storage temperature range.

..TIL10520-PowerBook_145-Specifications_Discontinued_(143_Mac).pdf

Support Information Services

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Tech Info Library Article Number:10520

Tech Info Library

A/UX: Formatting 1.4MB Disks

Revised: 9/14/92
Security: Everyone

A/UX: Formatting 1.4MB Disks

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Article Created: 7 August 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I'm running A/UX 3.0, and I can't format 1.4MB floppy disks.
I used these commands:

```
diskformat -dens 1440 /dev/rfloppy0
diskformat -dens 1440 /dev/rfd0
```

I also couldn't format 1.4MB floppy disks under A/UX 2.0.1. I have no problem formatting 800K floppy disks.

DISCUSSION -----

You shouldn't have difficulty formatting 1.4MB disks under A/UX 2.0.1 or 3.0. Here are some common scenarios that may help you discover the source of your problem:

- If you insert an unformatted floppy disk under A/UX CommandShell or A/UX Multi-Finder environment, it displays that the disk is unreadable and asks you to "Eject" or "Initialize". If you select "Initialize", it initializes in Macintosh HFS format.

- If you insert a formatted Macintosh HFS floppy under A/UX CommandShell, it displays that this is a Macintosh disk and asks if you want to use it as "UNIX Data" or "Macintosh" or "Eject". If you select "UNIX Data", the floppy disk icon disappears from the desktop. Then you can use any A/UX command, like "diskformat", "tar", "cpio", "dd", "newfs", and so on, to manipulate the floppy disk.

- If you insert a formatted Macintosh HFS floppy disk under A/UX MultiFinder, the floppy disk icon should appear on the desktop. If you

switch to A/UX CommandShell and try to format it with "diskformat", you get the "cannot open /dev/rfloppy0" message. This is due to the A/UX Finder currently occupying the floppy disk drive.

- If you insert a UNIX file type of floppy disk under A/UX CommandShell, no floppy disk icon appears on the desktop. You can manipulate the floppy disk in UNIX.

- If you insert a UNIX file type of floppy disk under A/UX MultiFinder environment, it will display that this isn't a Macintosh disk, and ask if you want to "Eject" or "Initialize".

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Tech Info Library Article Number:10522

A/UX 3.0: Doesn't Support Proxy ARP

Revised: 9/14/92
Security: Everyone

A/UX 3.0: Doesn't Support Proxy ARP

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Article Created: 10 August 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Does A/UX support Proxy ARP?

DISCUSSION -----

No, the current version of A/UX 3.0 doesn't support Proxy ARP (Address Resolution Protocol), which is an Internet protocol used to dynamically map between Internet IP and Ethernet addresses.

The routing mechanism supported under A/UX is for fixed routes set up in the routing table at startup time. Here's an example of configuration commands:

```
ifconfig ae0 130.43.4.10 netmask 255.255.255.0
```

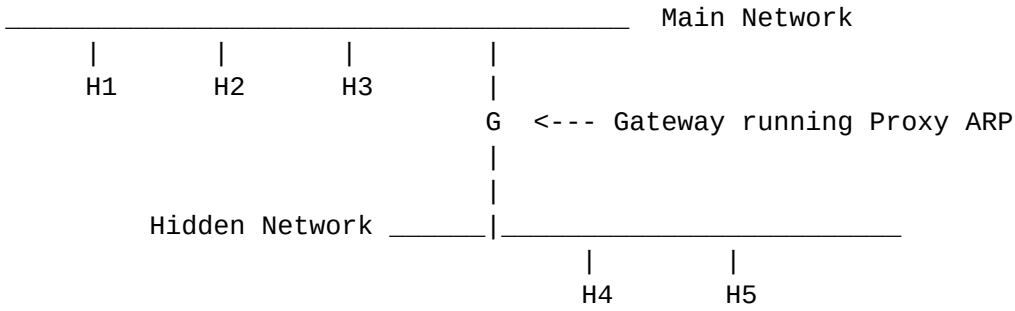
and/or

```
route add 130.43.6.0 130.43.4.1 1
```

This specifies that in order to reach network 130.43.6, a gateway at address 130.43.4.1 should be used.

A section of text in "Internetworking with TCP/IP" by Douglas Comer describes Proxy ARP in great detail. Here's a part of the text:

> The term proxy, promiscuous ARP, and the ARP hack refer to a second technique used to map a single IP network prefix onto multiple physical addresses. The technique, which only applies to networks that use ARP to bind internet addresses to physical addresses, can best be explained with an example below:



Proxy ARP technique (the ARP hack) allows one network address to be shared between two physical nets. Gateway G answers ARP requests on each network for hosts on the other network, giving its hardware address and then routing datagrams correctly when they arrive. In essence, G lies about IP-to-physical address bindings.

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Tech Info Library Article Number:10525

RS-232 Cable Length and Macintosh Performance

Revised: 9/22/92
Security: Everyone

RS-232 Cable Length and Macintosh Performance

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Article Created: 10 August 1992

TOPIC ----------

We have over 600 Macintosh computers on an AppleTalk network. The AppleTalk network is working fine. The problem is coming from the modem port. All of the computers are connected through this port to a Data General. We're using a terminal program called Pacer Link to access E-mail. The connection to the Data General is made through IAC boards, each capable of connecting up to 32 serial devices. From the IAC boards, the wiring goes to a punchdown block, and is routed to various offices using twisted pair.

We're currently purchasing numerous Macintosh IIsi computers. A significant number of these new computers can't see the Data General. All of these new computers are replacing computers that worked with the Data General just fine.

If the connection is moved from the modem port to the printer port, most of these new computers will then see the Data General and work just fine. So far, replacement of the logic board has made every computer recognize the Data General. We also have a Macintosh Portable that had a problem with the logic board. Before replacement of the logic board, the computer accessed the Data General. Now the computer doesn't see it. We put another new board in, and the Portable still doesn't see it.

We have tried a couple of things. The original cabling used pin 5 (RX-), pin 3 (TX-), and pin 4 (gnd). We tied pin 8 (RX+) to pin 4, but that didn't help. We moved the suspect computers to a location in the wiring closet within 50 feet of the Data General. Most of the Macintosh IIsi computers worked here, but the Portable didn't. We are currently checking the wiring to see if the Macintosh IIsi computers are all connected to the same IAC, or if there's some other common factor involved. Admittedly, some of these connections exceed the normal length limitations to send a serial signal. However, this system has been in place for about five years, and has worked well until now. I hate to keep replacing logic

boards if there's another solution to this problem. And in the case of the Portable, logic board replacement doesn't seem to be the solution.

DISCUSSION ----------

You specified that most or all cables are longer than 50 feet. You also mention that the cables are routed from the Data General to IAC boards, and from there to punch down blocks, and then finally routed out to the workstations via twisted pair. This can definitely be a problem. Here's an explanation.

RS-232-D Voltage Levels

RS-232-D uses unbalanced signal transmission. The voltage levels of RS-232-D are detected at the receiver as the difference between the signal circuit and the signal ground. This means that voltage at the interface point of an RS-232 circuit is measured relative to ground. Unfortunately, the transmitting and receiving stations usually have a different logic ground due to differences in their electronic components. As a consequence, a ground current can flow between the receiver and the transmitter. The wire has an electrical resistance, which produces a voltage drop. Therefore the signal detected by the receiver will appear differently than the signal sent by the transmitter.

If the difference is small, this potential difference won't cause any problems. However a signal of +5 volts with a ground potential difference of +3 volts means the receiver would see a +2 volt signal (an undefined transition region). A potential difference of -10 volts causes the receiver to see a 1 instead of the intended 0.

Cable Capacitance and RS-232

The cable capacitance specification of RS-232 can also present a problem. The standard states that the circuit capacitance isn't to exceed 2500 picofarads. A cable length of 50 feet is the maximum permitted distance because typical capacitance of multiconductor cable is 40 to 50 picofarads per foot. The end result of this is that transitions from 0 to 1 or from 1 to 0 take longer to achieve than permitted. This condition could result in the 1 bit being on for a longer period of time than the 0, or the 0 being on for a longer period of time than the 1. Either condition causes distortion of the signal, and possible problems with its reception and detection by the receiver.

We need the cable specifications to tell you how far to expect these connections to function. The RS-232-D specification states that it will function at distances of 50 feet. All Apple equipment will function within this specification when you use proper cable. As you replace the logic boards, you'll find some boards that work and others that don't. Differences in component types and tolerances can easily account for this.

Logic Board Components

You mention that the computers replaced by the Macintosh IIsi computers

worked fine with the exact same connections. As mentioned above, differences in component types and tolerances can easily account for the older systems working and the new Macintosh computers not working. This can also explain the reasons for some Macintosh IIsi computers working and some not.

There was a problem with some of the RC filters (RC2, RC3) that could cause the serial ports to fail. The RC filters you have in these affected Macintosh IIsi computers don't have the problem components. The date code was well beyond that of the affected filters. The Macintosh Portable was never affected by these component problems.

RS-422 Specification

The Macintosh Portable is designed to the RS-422 specification with the ability to meet the RS-423 specification. This means you can use it to communicate with most RS-232-D devices over distances up to approximately 50 feet. Shortening the cable to within specification or adding the "limited distance" modem (known as a "short-haul modem" in the U.S.) should resolve the connection problem.

Occasionally, computers can go beyond the RS-232 specification. However, if a computer works at lengths greater than 50 feet, it's considered the exception and not the rule.

The output power of all Macintosh models, including the Macintosh Portable, is completely within the EIA RS-423 specification. The RS-423 specification is designed to accommodate RS-232-D devices in an RS-422 environment. The RS-422 design is the Macintosh standard for serial ports and was chosen for its ability to carry serial signals over greater distances than the RS-232-D design. The RS-423 specification also encompasses the RS-232-C specification. This means that a device that conforms to RS-423 also conforms to RS-232-D.

The output power of most serial devices is determined by the line driver integrated circuits. The Macintosh systems in question all use the 23LS30 line driver IC, which is designed to meet the RS-422, RS-423, and RS-232-D specifications.

The RS-232-D specification states that a line driver output value more positive than +3 volts is considered ON (or SPACE or 0). The Macintosh serial ports provide a positive voltage level of +3.6 volts. The specification states that a line driver output level value more negative than -3 volts is considered OFF (or MARK or 1). The Macintosh serial ports provide a negative voltage of -3.6 volts. The output impedance specification is stated as greater than 300 ohms; the Macintosh serial ports provide 450 ohms.

Summary

One Macintosh works when the Macintosh Portable doesn't because the cable length falls outside the maximum distance stated in the RS-232-D specification of 50 feet (15.14 meters). Performance will be erratic and

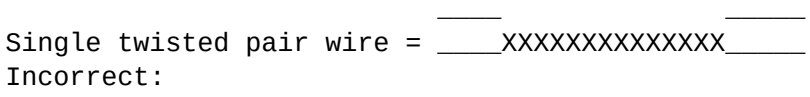
unpredictable. Because of slight design differences, part variances, and environmental changes, one model of Macintosh (or even different units of the same model, or even the same unit at different times) may work at distances greater than 50 feet, while another may not. Once the specification has been exceeded, these results most likely will be inconsistent.

If you use a communications cable which is 50 feet or less, unshielded, 24 AWG, 52.5pF/meter, you can be assured that the configuration will function properly. Inexpensive short haul modems would seem to be the most cost effective solution to this difficult situation.

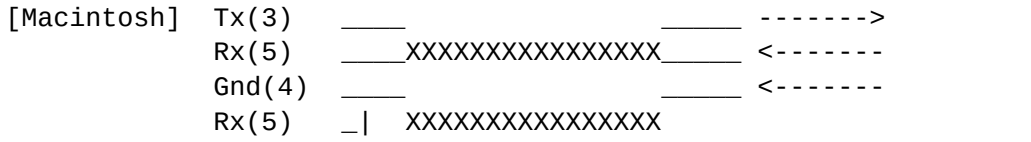
Connection Notes RS-423-A to RS-232-D

Maximum distance: 50 feet

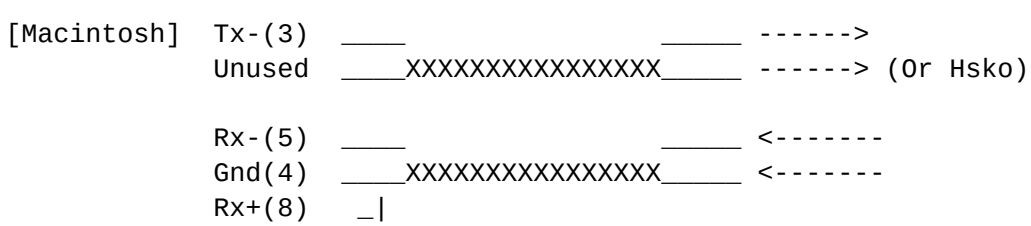
If you use both wires in the twisted pair wiring, make sure that the signals present on each wire of the pair are traveling in the same direction.



Incorrect:



Correct:



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Tech Info Library Article Number:10526

Tech Info Library

PowerBook 100, 140, and 170: Fix Dates of Three Components

Revised: 5/17/94
Security: Everyone

PowerBook 100, 140, and 170: Fix Dates of Three Components

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Article Created: 27 October 1992

TOPIC ----------

How can I tell if my PowerBook has all of the known fixes installed already?

DISCUSSION ----------

Below is a list of the manufacturing cut-in dates for the Inverter Shield, Display Cable Shim, and Revision B Floppy Disk Drive:

Inverter Shield:
F2150XXX 140's built in Fremont
CK205XXX 170's built in Cork

Display Shim:
F2208XXX 140's built in Fremont
FCXXXXXX 140's built in Fountain
CK212XXX 140's built in Cork

Rev B Floppy Drive:
F2211XXX 140's 4/40 built in Fremont
F2212XXX 140's 4/80 built in Fremont
FC213XXX 140's built in Fountain
CK213XXX 140's built in Cork
CK213XXX 170's built in Cork

Notes:

1) If a PowerBook has been sent back to the Central Product Repair Center for repair, it may have one or all of these fixes already installed.

2) All PowerBook 100 external floppy drives were built before the Revision B floppy drive was available, so all external floppy drives are Revision A mechanisms unless they have been returned to the Central Product Repair Center or a dealer for repair.

3) The Display Cable Shim and the Inverter Shield haven't been identified as necessary on the PowerBook 100.

Support Information Services

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Tech Info Library Article Number:10569

Tech Info Library

PowerBook: Battery Shelf Life (6/94)

Revised: 6/13/94
Security: Everyone

PowerBook: Battery Shelf Life (6/94)

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Article Created: 27 October 1992
Article Reviewed/Updated: 13 June 1994

TOPIC ----------

How long can I store my PowerBook battery?

DISCUSSION ----------

Apple uses three different types of batteries for PowerBook computers: Sealed Lead Acid (SLA), Nickel Cadmium (NiCad), and Nickel Metal Hydride (NiMH). Each type of battery has different storage life characteristics.

Sealed Lead Acid Batteries (SLA)

- 2 to 3 months - Battery should still have minimal charge to operate the PowerBook
- 12 to 18 months - Battery can still be charged
- 24 + months - Uncertain

Nickel Cadmium Batteries (NiCad)

- 1 to 2 months - Battery should still have minimal charge to operate the PowerBook
- 6 to 12 months - Battery can still be charged
- 24 + months - Uncertain

Nickel Metal Hydride Batteries (NiMH)

- 1 to 2 months - Battery should still have minimal charge to operate the PowerBook
- 6 to 12 months - Battery can still be charged
- 24 + months - Uncertain

NOTE: The PowerBook Intelligent Battery (NiMH) has improved charging abilities and has the following characteristics:

- A fully charged battery has a six month shelf life
- If the battery is discharged in sleep as far as it will go to the point that the computer goes into shutdown, the computer can stay in this state for six weeks.

Batteries may be damaged if stored for prolonged periods with a closed circuit. The environmental temperature will also affect the storage life of any battery. Cool environments are best, and are assumed for the above estimates. All storage times are based on storage starting with the battery fully charged.

Article Change History:
13 June 1994 - Updated to include information on the PowerBook Intelligent Battery.

Support Information Services

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Tech Info Library Article Number:10571

Tech Info Library

PowerBook: What To Do When It Won't Run On the Battery (11/94)

Revised: 11/7/94
Security: Everyone

PowerBook: What To Do When It Won't Run On the Battery (11/94)

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Article Created: 27 October 1992
Article Reviewed/Updated: 07 November 1994

TOPIC ----------

This article discusses why a PowerBook may not run on the battery, but will operate normally when plugged into AC power. Issues surrounding a damaged O ring on the power adapter tip have been resolved by Apple.

DISCUSSION ----------

PowerBook 100

- Check that the storage switch on the back of the computer next to the power connector is in the up position. This switch disables all battery power, but will allow you to use the unit with AC power.

- A fuse on the logic board may blow if the lithium batteries aren't removed before the unit is taken apart. It's also important that the unit is completely reassembled before the batteries are reinstalled. The logic board can be shorted out quite easily since the keyboard is a part of the circuit. The symptom of the failure is that the PowerBook will run on the AC Adaptor, but not on the battery.

- A blown fuse may be linked to a damaged or defective power adaptor. In particular, the black insulating "O" ring on the tip of the adaptor may be damaged and shorting out against the logic board. Replacement of the power adaptor and the main logic board will fix the problem.

PowerBook 140, 160, 170, and 180

On these computers, a blown fuse may be linked to a damaged or defective power adaptor. In particular, the black insulating "O" ring on the tip of the adaptor may be damaged and shorting out against the logic board. Replacement of the power adaptor and the main logic board will fix the problem.

A new logic board design includes a replaceable fuse. Part numbers for the revised logic boards are as follows:

PowerBook 140, 145, 145B, and 170 computers
661-0708

PowerBook 160, 165, and 180 computers
661-0746

PowerBook 165c and 180c computers
661-0765

PowerBook 150

The PowerBook 150 will show similar symptoms as the PowerBook 140 and 170 with a blown fuse. The unit will run with the AC Adapter connected but not from battery only. Additionally, the unit will not run from AC Adapter power if the battery is removed. Check the logic board fuse if it fails to run from battery.

Article Change History:
07 Nov 1994 - Added part number information for replaceable fuse logic boards.
31 Aug 1994 - Information on damaged O ring added to PowerBook 100 section.
18 Jul 1994 - Added PowerBook 150.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10572

Tech Info Library

PowerBook: What Causes Duplicate Faxes (11/92)

Revised: 5/18/94
Security: Everyone

PowerBook: What Causes Duplicate Faxes (11/92)

==========

Article Created: 27 October 1992

TOPIC ----------

The FaxSender software I got with my PowerBook keeps resending the same group of faxes.

DISCUSSION ----------

If you put a queue of faxes in, and one of those numbers is unreachable, the FaxSender software will send the fax to the whole queue each time it retries the number that can't be reached. This seems to occur when you have four fax machines in queue.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10573

Tech Info Library

PowerBook: Cause of Feedback When Attaching Microphone (11/92)

Revised: 5/18/94
Security: Everyone

PowerBook: Cause of Feedback When Attaching Microphone (11/92)

==========

Article Created: 27 October 1992

TOPIC ----------

FaxSender doesn't turn off the sound port after sending a fax.

DISCUSSION ----------

When you send a document using FaxSender and then plug the microphone into the microphone jack without restarting, it will produce feedback because the sound port is still open.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10574

Tech Info Library

PowerBook: Identifying Inverter Board Revisions (11/92)

Revised: 5/18/94
Security: Everyone

PowerBook: Identifying Inverter Board Revisions (11/92)

==========

Article Created: 27 October 1992

TOPIC ----------

The Service Price Pages for the PowerBook 140 show a Revision A and a Revision B of the inverter board, but don't describe them the way the Technical Procedures do.

DISCUSSION ----------

The Technical Procedure Manuals describe them as "RED" and "BLUE" to match the color of the display cable. The Illustrated Parts List does list them to match the Technical Procedure Manuals. Here's how they correlate:

Part Number 699-0271 = Rev A = Blue
Part Number 699-0272 = Rev B = Red

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10580

Tech Info Library

PowerBook: Modem Drops Line (11/92)

Revised: 5/18/94
Security: Everyone

PowerBook: Modem Drops Line (11/92)

==========

Article Created: 27 October 1992

TOPIC ----------

I'm using a PowerBook 140 with the optional internal Apple Fax/Data Modem and different software packages for connecting to a mainframe computer. The modems will appear to connect, but as soon as they do, they disconnect. I can plug in an external modem and use the same software to connect with no problems.

DISCUSSION ----------

The Apple PowerBook Fax/Data Modem uses a number of error correction and data compression protocols to increase the efficiency of data transfer. Normally, if the remote modem doesn't support the same features, the PowerBook modem turns off the extended feature set and retransmits the data using normal protocols. Certain modems don't allow the PowerBook modem time enough to turn off these features, and they drop the connection.

A workaround for this situation is to manually turn off the error correction protocols in the PowerBook modem every time you're connecting to a system and experience these problems. This can be done by entering "&Q0" (ampersand, letter Q, number zero) in the modem string section of your software or between the "AT" and the "DT" of the dial command. You can find this command on page 102 of the Fax/Data Modem User's Manual.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10581

Tech Info Library

PowerBook: Fax/Data Modem Part Number (4/95)

Revised: 4/6/95
Security: Everyone

PowerBook: Fax/Data Modem Part Number (4/95)

==========

Article Created: 27 October 1992
Article Reviewed/Updated: 06 April 1995

TOPIC ----------

The Getting Started manual for the PowerBook and the Standard Retail Price list have different part numbers for the US internal Fax/Data Modem. Which is correct?

DISCUSSION ----------

The price list is correct with part number M0970.

The Getting Started manual is incorrect, and shows the part number as M0980. This modem is discontinued.

Article Change History:
06 Apr 1995 - Noted modem is now discontinued, added keyword.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10582

Tech Info Library

PowerBook: Software in the Extensions Folder (11/92)

Revised: 5/18/94
Security: Everyone

PowerBook: Software in the Extensions Folder (11/92)

==========

Article Created: 28 October 1992

TOPIC ----------

The PowerBook has several new files in the Extensions folder that I don't recognize.

DISCUSSION ----------

Apple provides the Serial Tool, Text Tool, TTY Tool, VT102, VT320 Tool, and Xmodem Tool that are all part of the Basic Connectivity Set.

The Fax Switcher Extension is used in conjunction with the Send Fax software.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10583

Tech Info Library

PowerBook: PRAM Settings (9/94)

Revised: 9/23/94
Security: Everyone

PowerBook: PRAM Settings (9/94)

==========

Article Created: 28 October 1992
Article Reviewed/Updated: 23 September 1994

TOPIC ----------

What is stored in the Parameter RAM of the PowerBooks, in addition to the standard System 7 settings?

DISCUSSION ----------

PowerBooks save the following Portable control panel information in Parameter RAM:

- Minutes Before System Sleep (8 Minutes)
- Minutes Before Hard Disk Sleep (4 minutes)
- Macintosh PowerBook Rest (default is Rest)
  To change the default on a PowerBook 100, 140, 145, or 170, hold down the option key in the Portable control panel, and click "Minutes before Automatic Sleep." To change the default on a PowerBook 160, 180, or Duo, hold down the option key and click on the Options button.
- Stay awake when plugged in (default is unselected)
- Modem Selection (default is internal for any PowerBook running a version of MacOS earlier than System 7.5. For System 7.5, the default is external.)
- Wake on Ring (default is unselected and can be changed in the Portable control panel for Internal Modem)

The PowerBook 170 also stores:

- Power Saver on the PowerBook 170 (default is Off).

Article Change History:
23 Sep 1994 - Added info on System 7.5.

Support Information Services

..TIL10586-PowerBook-PRAM_Settings_9-94.pdf

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10586

Tech Info Library

PowerBook: How to View Modem Settings (11/92)

Revised: 5/18/94
Security: Everyone

PowerBook: How to View Modem Settings (11/92)

==========

Article Created: 28 October 1992

TOPIC ----------

How do I view the current configuration of my PowerBook internal Fax/Data Modem?

DISCUSSION ----------

To see what the modem profile looks like at any time, use the AT&V command. This will dump the contents of the ACTIVE profile, as well as STORED PROFILE 1 & 2 and any saved phone numbers (see page 104 in the manual).

at&v

ACTIVE_PROFILE:
B1 E1 L2 M1 N0 Q0 V1 X4 Y0 &C1 &D2 &G0 &J0 &K3 &L0 &P0 &Q5 &R0 &S0 &T4 &X0
&Y0
S00:002 S01:000 S02:043 S03:013 S04:010 S05:008 S06:002 S07:060
S08:002 S09:006 S10:014 S12:050 S14:AAH S16:80H S18:000 S21:30H
S22:76H S23:17H S25:080 S26:001 S27:49H

STORED_PROFILE 1:
B1 E1 L2 M1 N0 Q0 V1 X4 Y0 &C1 &D2 &G0 &J0 &K3 &L0 &P0 &Q5 &R0 &S0 &T4 &X0
S00:002 S14:AAH S18:000 S21:30H S22:76H S23:17H S25:080 S26:001
S27:49H

STORED_PROFILE 2:
B1 E1 L2 M1 N0 Q0 V1 X4 Y0 &C1 &D2 &G0 &J0 &K3 &L0 &P0 &Q0 &R0 &S0 &T4 &X0
S00:002 S14:AAH S18:000 S21:30H S22:76H S23:17H S25:080 S26:001
S27:40H

TELEPHONE NUMBER:
&Z0=

Support Information Services

..TIL10588-PowerBook-How_to_View_Modem_Settings_11-92.pdf

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10588

Tech Info Library

PowerBook: Hard Disk Intermittently Available (11/92)

Revised: 5/18/94
Security: Everyone

PowerBook: Hard Disk Intermittently Available (11/92)

==========

Article Created: 28 October 1992

TOPIC ----------

When I use the power adapter on my PowerBook, the hard disk disappears intermittently. Then I see the flashing question mark. I don't have any problems starting up with a battery. Why is this?

DISCUSSION ----------

The most probable cause for this type of problem would be a faulty power adapter. It's possible the filter network in the power adapter is leaking some AC noise and affecting the SCSI signals. It's also possible that the power adapter is supplying a marginal voltage -- enough to power on the logic, but not enough to spin up the hard drive.

The problem you described may also be caused by the main logic board. The main logic board also has a filter for external power which, if it's faulty, can also affect the SCSI signals or SCSI chip.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10589

Tech Info Library

MacX: Positioning Windows with Multiple Monitors

Revised: 10/2/92
Security: Everyone

MacX: Positioning Windows with Multiple Monitors

==========

Article Created: 25 September 1992

TOPIC ----------

On a system with multiple monitors, MacX assumes that the logical tops of the screens are at an equal height. For example, on my system, I have an Apple 13-inch RGB and a Radius TPD. The RGB is slightly lower than the TPD, and is to the left of it. I have changed positioning in the Monitors control panel to reflect this. When bringing up a client application in rootless mode, MacX can position it at the top of the bounding rectangle formed by both monitors, therefore positioning it "off the top" of the RGB monitor, and rendering the window inaccessible.

I can work around this by running in rooted mode, or by positioning the logical tops of the screens so that they are equal.

DISCUSSION ----------

This behavior is known, and in fact, it is documented in the PATHWORKS for Macintosh, MacX User's Guide, page 65. To move the windows, use the Temporarily Adorn command or the Option key as described in the same manual, on pages 68-69.

The position in which a DECwindows client window appears when you open it is preset. Usually the client window appears approximately in the middle of the screen. Occasionally, in the preset position only part of the window might be visible, or the window might not be visible at all. This situation might occur if you have more than one monitor connected to your Macintosh.

In the Macintosh environment, the desktop extends across all monitors connected to the same workstation. Because of the different sizes of monitors and the ways in which they can be positioned relative to one another (using the Monitors control panel), the Macintosh desktop can have portions that are not visible.

When DECwindows attempts to position a window in the nonvisible part of the desktop, the MacX Window Manager takes over and places the window near the desktop's point of origin (the upper-left corner). If more than one window needs to be placed, MacX positions the windows in a cascading sequence. MacX automatically places a window on the largest monitor best-suited to display it; for example, it puts a color window on the largest color monitor available.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10596

Tech Info Library

ASC Systems (Formerly ASC Computer Systems)

Revised: 7/2/93
Security: Everyone

ASC Systems (Formerly ASC Computer Systems)

==========

Article Created: 08/12/92
Article Reviewed: 07/01/93
Article Updated: 07/01/93

ASC Computer Systems

26401 Harper Avenue
P.O. Box 566
St. Clair Shores, MI 48080

313-882-1133

Company Profile:
Software, specializing in client software that can use the SNA•ps Gateway to access IBM hosts, communications network software and video and image processing.

Article Change History: 07/01/93 Name change, New products

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10598

Tech Info Library

CEL Corporation (formerly Cel Software, Inc.)

Revised: 7/6/93
Security: Everyone

CEL Corporation (formerly Cel Software, Inc.)

==========

Article Created: 08/12/92
Article Reviewed: 07/06/93
Article Updated: 07/06/93

CEL Corporation, Advanced Technology Center

9650-20th Avenue, Suite 112
Edmonton, Alberta T6N 1G1
Canada

403-463-9090

403-428-5376 Fax

Company Profile:
Software, specializing in client software that can use the SNA•ps Gateway to access IBM hosts, communications software

Mailing Address:
P.O. Box 8339
Edmonton, Alberta T6H 4W6
Canada

Article Change History: 07/06/93 Address Information Added, New Product Information Added

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10599

Tech Info Library

Tangram

Revised: 7/20/93
Security: Everyone

Tangram

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Article Created: 12 August 1992
Article Reviewed/Updated: 20 July 1993

Tangram

5511 Capital Center Drive
Suite 400
Raleigh, NC 27606

919-851-6000

Fax: 919-851-6004

Company Profile:
Software, specializing in client software that cand use the SNA•ps Gateway to access IMB hosts.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10601

Tech Info Library

System 7: Saving Chained Documents as PostScript Files

Revised: 8/13/92
Security: Everyone

System 7: Saving "Chained" Documents as PostScript Files

==========

Article Created: 21 July 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

Some programs, like Microsoft Word and FrameMaker, let you specify what file to print after the current file. Using this feature, you can split a long or complex document into multiple files and still have them act as one chained document when printing.

Under System 6, if you wanted to save these multiple files as PostScript files for a chained document, you could send the first file to print and immediately press and hold Command-K (if you're using Laser Prep) or Command-F (without Laser Prep) while all jobs printed, and these files would be saved as PostScript files.

I tried this under System 7, and the first file was saved as PostScript, but the remaining files were printed.

How can I get a chained document saved to PostScript under System 7?

DISCUSSION -----

There doesn't seem to be a direct workaround under System 7. Neither Microsoft Word nor FrameMaker preserves the same print record for all the jobs; that is, they don't display the job or print dialog for all print records they use to print. Therefore, the 7.X driver can't give the user an option to save the remaining files to PostScript.

With the 6.X driver, the choice to save to a PostScript file was done by checking the keyboard when imaging began. If the driver sensed that Command-K or Command-F was pressed, the files were saved as PostScript. This method didn't require a print dialog for each file -- although you did have to continue pressing Command-K or Command-F while all jobs were

printing.

Workarounds

There are two workarounds you can use:

• Go back to System 6 and use the LaserWriter 6.X drivers.

• Use the LaserWriter 6.X drivers under System 7. Here's how:

  1) Drag a copy of the LaserWriter 6.X driver (and Laser Prep) to the top level of the System Folder.

  2) Select this driver in the Chooser.

  3) Turn off Background Printing.

  4) Ensure that you are not using TrueType fonts.

  5) When you print the first of the chained files, immediately press and hold Command-K (or Command-F) until the job has finished printing.

Note

You can create a maximum of 10 PostScript files, named PostScript0 through PostScript9, with this method. If you try to create more than 10, the 11th job will overwrite PostScript0, the 12th job will overwrite PostScript1, and so on.

Copyright 1992 Apple Computer, Inc.

Tech Info Library Article Number:10602

Tech Info Library

SNA•ps 3270: Doesn't Have API Support for CUT or NLCA

Revised: 9/14/92
Security: Everyone

SNA•ps 3270: Doesn't Have API Support for CUT or NLCA

==========

Article Created: 13 August 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

Does the SNA•ps 3270 API support either CUT or NLCA as an access method?

DISCUSSION ----------

The SNA•ps 3270 API supports neither CUT nor NLCA as an access method. There are no plans to add this functionality to the API, and we don't know of a third-party developer that provides this capability.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10603

Tech Info Library

Macintosh: Moving Fonts and Error -192

Revised: 8/13/92
Security: Everyone

Macintosh: Moving Fonts and Error -192

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Article Created: 7 August 1992
Article Last Reviewed:
Article Last Updated:

TOPIC -----

I tried to move fonts into the System suitcase, but get error -192.

DISCUSSION -----

The error means resource not found. In most cases, this is a conflict with an extension.

Restart the computer with all extensions off, move the fonts into the system, and restart with extensions on.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10606

Tech Info Library

Macintosh: ADB Numeric Keypads

Revised: 9/17/92
Security: Everyone

Macintosh: ADB Numeric Keypads

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Article Created: 14 August 1992

TOPIC -----

I'm looking for a numeric keypad to connect to the Macintosh via Apple Desktop Bus.

Are you aware of a company distributing such a device?

DISCUSSION -----

Switchboard from Datadesk International offers keyboard modules, including a numeric keypad. Switchboard is compatible with Macintosh computers with ADB ports. An RJ-11 connector allows you to use it with the Macintosh Plus.

For PowerBooks, there's the Kensington NoteBook KeyPad with Function and Arrow keys. It comes in domestic and international versions. It's designed for Macintosh PowerBooks, and is compatible with any ADB device.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10607

Tech Info Library

Ricoh Corp.

Revised: 7/16/93
Security: Everyone

Ricoh Corp.

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Article Created: 14 August 1992
Article Reviewed/Updated: 16 July 1993

Ricoh Corp.
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5 Dedrick Place
West Caldwell, NJ 07006

201-882-2000

Company Profile:
Hardware and software, specializing in Fax, copiers, and scanners

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10608

Tech Info Library

Xecom, Inc.

Revised: 7/21/93
Security: Everyone

Xecom, Inc.

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Article Created: 14 August 1992
Article Reviewed/Updated: 21 July 1993

Xecom, Inc.
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374 Turquoise Street
Milpitas, CA 95035

408-945-6640

Fax: 408-942-1346

Company Profile:
Software, specializing in Fax/data modem server products for Macintosh computers.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10609

Tech Info Library

Tribe Computer Works

Revised: 4/4/97
Security: Everyone

Tribe Computer Works

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Article Created: 14 August 1992
Article Reviewed/Updated: 4 April 1997

Tribe Computer Works
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960 Atlantic Ave.
Suite 101
Alameda, CA 94501

510-814-3900

Fax: 510-814-3980

Company Profile:
Hardware and software, specializing in AppleTalk network connectivity and management products.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10610

Tech Info Library

PowerBook: When Application Processing Slows Down (4/95)

Revised: 4/3/95
Security: Everyone

PowerBook: When Application Processing Slows Down (4/95)

==========

Article Created: 21 August 1992
Article Reviewed/Updated: 03 April 1995

TOPIC ----------

I'm using some mathematics software on the PowerBook 170. When the application is processing an equation and plotting the results on the screen, the system slows down, then halts screen plotting. Moving the trackball seems to "wake up" the system, and plotting continues. This occurs whether the unit is plugged in or under battery power.

Is this a known problem, and is there a workaround?

DISCUSSION ----------

The power consumption of the PowerBook's microprocessor is reduced automatically when it detects that no activity requiring its attention has taken place for a period of time. This feature is called "system rest" in System 7.0; it is called "processor cycling" in System 7.0.1 or later.

The microprocessor comes back up to speed instantaneously when you resume using the computer. You don't need to do anything for system rest or processor cycling to take effect. But this may be the cause of your problems. Try turning off system rest or processor cycling while using the program.

To turn off system rest in System 7.0.1 (using the Portable control panel):

1) Choose Control Panels from the Apple menu, and open the Portable control panel.

2) Hold down the Option key while clicking "Minutes Until Automatic Sleep."

3) Click Don't Rest.

4) Click OK.

To turn off processor cycling in System 7.1 or greater (using the PowerBook control panel):

1) Choose Control Panels from the Apple menu, and open the PowerBook control panel.

2) Hold down the Option key on the keyboard and click the Options button.

3) Click "Don't allow cycling."

4) Click OK.

Important: To conserve power most efficiently, turn off system rest or processor cycling only when using a program that interferes with this feature. Turn system rest or processor cycling back on again as soon as possible. This feature is turned back on automatically the next time you choose Restart or Shut Down.

Article Change History:
03 Apr 1995 - Reviewed for technical accuracy.
16 Aug 1993 - Added changes in terminology as of System 7.1.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10614

Tech Info Library

VT320 Tool: Emulating LK201 Keyboard for All-In-1

Revised: 9/17/92
Security: Everyone

VT320 Tool: Emulating LK201 Keyboard for All-In-1

==========

Article Created: 21 August 1992

TOPIC ----------

I want to emulate the LK201 keyboard when using MacTerminal to connect to the DEC system "All in One Office Automation." Menu F-keys work fine, but I want to use physical F-keys on an extended keyboard, specifically F10 to exit. Using the MacTerminal VT320 Keyboard Emulation doesn't work.

DISCUSSION ----------

According to the VT320 Tool section in the MacTerminal 3.0 User's Guide, there are three ways to emulate the functions provided by the function keys on the VT320 keyboard:

1) Regardless of the keyboard you have, the Keys menu provides selections that function identically to VT320 function keys.

2) In addition, the Extended ADB keyboard contains Function keys that you can use to emulate the VT320 function keys. However, the Extended ADB keyboard contains Function keys F1 through F15, while the VT320 keyboard contains Function keys F6 through F20. The discrepancy is resolved by mapping Fx on the Extended ADB keyboard to F(x+5) on the VT320. For example, to generate a VT320 F6, use F1 on the Extended ADB keyboard.

3) You can also generate Function keys on the Macintosh keyboards by using the Keypad keys in combination with the Option key, as shown in this table:

Macintosh keypad	plus OPTION equals	Function keys
Clear		F5
=		F6
/		F7
*		F8

7	F9
8	F10
9	F11
-	F12
4	F13
5	F14
6	F15
+	F16
1	F17
2	F18
3	F19
.	F20

For user-defined VT320 function keys, hold down the Shift key and the Option key, while pressing the appropriate keypad key.

The question is whether these F-keys you want to use are VT320 F-keys or LK201 F-keys. When you use a real DEC VT320 terminal with the application, you press F10 to exit, but using MacTerminal 3.0 with the VT320 Tool, you should press F5 on the extended keyboard (offset of 5). You can also use the Macintosh keypad 8 and the Option key to generate F10.

If this still doesn't work for your LK201 keyboard, you may want to check into using a macro program such as QuicKeys to map the function keys. This is much easier than trying to map the resources in the VT320 Tool.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10619

Tech Info Library

DAL: DESCRIBE Statement and Accessing Data Dictionary (8/94)

Revised: 8/31/94
Security: Everyone

DAL: DESCRIBE Statement and Accessing Data Dictionary (8/94)

==========

Article Created: 21 August 1992
Article Reviewed/Updated: 31 August 1994

TOPIC ----------

Is it possible to access the data dictionary information in a DB2 database from DAL? We can query against our tables using third-party products like DataPrism and ClearAccess. The problem is that we may not know what a "sale" means in different tables.

For example, in one table a sale field might mean that the product had an invoice filled out, but not shipped yet. In another table, sale might mean the product was shipped, but money wasn't collected yet. Another table might define sale as product shipped and money collected.

When we query against the database, we have to access the data dictionary to determine the meaning of the fields. Without the ability to access the data dictionary, users can query and get information that may not be what they were expecting, based on the definition.

DISCUSSION ----------

DAL provides information about the structure and organization of entities that it manipulates through a special data-manipulation statement. Using the DESCRIBE statement, the client application can determine the names and data types of the entities stored in the database and any implicit relationships among them. The client application can have DAL describe:

- The supported DBMS brands on a particular host system
- Available databases for a particular brand
- Currently open DBMS brands and databases
- The tables in a database
- The columns in a table
- The linksets in a database

The DESCRIBE statement generates a rowset containing the requested definition in

the same way as the SELECT statement creates rowsets.

The DESCRIBE COLUMNS statement is probably what you need, because it returns, among other fields, the column title and column remarks. For more information regarding the DESCRIBE statements, please refer to the DAL Programmer's Reference, available from APDA, part number M0877LL/B.

With a license agreement between Apple Computer and ITI (Independence Technologies, Inc.), ITI will market DAL products and provide all support to DAL customers. To locate ITI's address and phone number, use ITI as a search string.

Article Change History:
31 Aug 1994 - Added ITI information.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10624

Tech Info Library

PowerBook Modem: Getting It to Ignore the Dial Tone 8/92

Revised: 5/16/94
Security: Everyone

PowerBook Modem: Getting It to Ignore the Dial Tone 8/92

==========

Article Created: 21 August 1992

TOPIC --

I have a PowerBook, which I use to fax documents. Some phone systems have a different kind of dial tone, so I make a manual connection and the Fax software works. Is there another way to send a fax and ignore the dial tone?

DISCUSSION --

Normally you could enter an X1 modem command either manually or through a modem script to tell the modem to ignore dial tone, but with the Fax Sender software that isn't possible. One workaround is to enter a comma as the first character of the phone number (that is, ",408-555-1212"). A comma is intended to insert a pause in the dialing sequence, but one of the side effects is that everything after the comma is blind dialed, ignoring dial tone. It's an odd but effective way to use the modem when it doesn't recognize dial tone.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10627

Tech Info Library

Macintosh: Replacement Case Screws

Revised: 12/8/92
Security: Everyone

Macintosh: Replacement Case Screws

==========

Article Created: 30 November 1992

TOPIC ----------

What is the size of the machine screw used to fasten the cover of the Macintosh II, IIcx, IIci, LC, IIsi, Quadra 700, and Quadra 900? This screw is no longer packaged with the machines and I would like to keep users from stealing components.

DISCUSSION ----------

The screw is a metric screw, so its specification looks very different from SAE specs. The spec reads the diameter first, the length, and then the pitch, all in millimeters. Generally speaking, a Phillips Pan Head is most common, but if you want to lock the machines up you may want to try a tamper-proof screw (one way) or perhaps an Allen, Torx™, or Robertson head. You do not need an integral lock washer as the internal screws use (commonly called a SEMS screw).

The screw is called a M3.5 x 12 x .8. You may want one about 10 millimeters long for some of the systems (such as the IIsi), but 12mm is a good all-purpose length.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10629

Macintosh Quadra 900 and 950: Layout of SIMM Banks

Revised: 9/17/92
Security: Everyone

Macintosh Quadra 900 and 950: Layout of SIMM Banks

==========

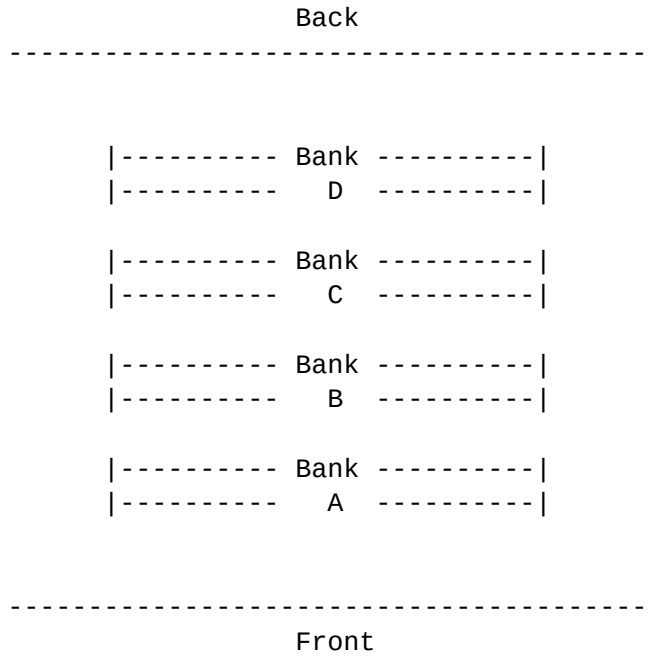
Article Created: 27 August 1992

TOPIC -----

This article discusses the layout of the Macintosh Quadra 900 and 950 SIMM banks and provides memory configuration and dynamic RAM (DRAM) information.

DISCUSSION -----

The layout of the DRAM SIMM banks for Macintosh Quadra 900 and 950 differs from other Macintosh models, which are aligned vertically. The Macintosh Quadra 900 and 950 have four SIMM banks that are aligned horizontally with two slots on the left and two slots on the right as shown in this diagram.



- The Macintosh Quadra 900 and 950 accept standard 1MB or 4MB SIMMs rated at 80 ns or faster. Although acceptable, there is no speed improvement when using RAM rated faster than 80 ns because the memory control unit (MCU) is programmed for 80 ns RAM.

- Each slot in a given bank must be either empty OR fully populated with four SIMMs of the same size and same speed. If a bank is either not empty or not fully populated with SIMMs of the same size, you will hear chimes at startup, indicating a hardware failure.

- Apple's documentation states that all filled banks must use SIMMs of the same speed. You cannot mix RAM SIMMs of different speeds, even between banks.

- Each bank is independent; therefore, you can populate the banks in any order. For example, four 1MB SIMMs in bank B and four 4MB SIMMs in bank D is an acceptable configuration.

- The available memory configurations for the Macintosh Quadra 900 and 950 are 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 48, 52, and 64MB of RAM.

Memory expansion kits are available from Apple. Contact your authorized Apple Service Provider for price and installation information.

Notes

- When large amounts of DRAM are installed, the memory check at startup is lengthy. There is no software indication that the system is running the memory check.

- The use of 16MB SIMMs has not been thoroughly tested with these Macintosh computers and, therefore, available memory configurations when using 16MB SIMMs are not included in this article.

- The use of 256K and 2MB SIMMs is not supported for these Macintosh models.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10632

Tech Info Library

ARA: Nodes Allowed to Install Under License Agreement (6/96)

Revised: 6/4/96
Security: Everyone

ARA: Nodes Allowed to Install Under License Agreement (6/96)

==========

Article Created: 21 August 1992
Article Reviewed/Updated: 4 June 1996

TOPIC ----------

I purchased Apple Remote Access (ARA) Personal Server for Macintosh. How many nodes am I allowed to install according to the ARA Personal Server license?

DISCUSSION ----------

This License allows you to copy and install the Apple Software for your own use on up to two Apple computers owned and/or operated by you. In addition, you may make one copy of the Apple Software in machine-readable form for backup purposes only.

Article Change History:
04 Jun 1996 - Updated article for accuracy.

Copyright 1992-96, Apple Computer, Inc.

Tech Info Library Article Number:10634

Tech Info Library

SNA•ps 3270 and 3270 GC: Comparison

Revised: 9/15/92
Security: Everyone

SNA•ps 3270 and 3270 GC: Comparison

==========

Article Created: 6 August 1992

TOPIC --

Which 3270 terminal emulation package should I buy, SNA•ps 3270 (M0499Z/B) or SNA•ps 3270 GC (M1220Z/B) ?

DISCUSSION --

SNA•ps 3270 should be used for direct connections from a Macintosh to IBM mainframes over coax, SDLC, or Token Ring cabling. This means that the Macintosh is connecting directly to the mainframe without going through an AppleTalk LAN gateway (such as the Apple SNA•ps Gateway software running on a Macintosh CPU).

Conversely, the SNA•ps 3270 GC (Gateway Client) software IS intended to run in an AppleTalk LAN where one or more SNA•ps Gateways are installed. The user's Macintosh communicates to the SNA•ps Gateway using AppleTalk (over LocalTalk, Ethernet, or Token Ring cabling) with the SNA•ps Gateway Macintosh connected to the mainframe over SDLC or Token Ring cabling.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10635

Tech Info Library

SNA•ps Gateway: Meaning of Versions 8, 32, and 64

Revised: 9/15/92
Security: Everyone

SNA•ps Gateway: Meaning of Versions 8, 32, and 64

==========

Article Created: 6 August 1992

TOPIC --

What's the difference between the SNA•ps Gateway versions: SNA•ps Gateway/8, SNA•ps Gateway/32, and SNA•ps Gateway/64?

DISCUSSION --

The three products are functionally identical except for the number of LUs (Logical Units) they support: 8, 32, or 64. Logical Units are defined in IBM's Systems Network Architecture (SNA), and equate roughly to the number of sessions that can be concurrently running between Macintosh clients and IBM mainframes.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10636

Tech Info Library

Macintosh Coprocessor Platform (MCP) Card: RAM Upgrade (4/95)

Revised: 4/21/95
Security: Everyone

Macintosh Coprocessor Platform (MCP) Card: RAM Upgrade (4/95)

==========

Article Created: 6 August 1992
Article Reviewed/Updated: 21 April 1995

TOPIC ----------

This article briefly describes what Macintosh Coprocessor Platform (MCP) cards are, and tells you where to find upgrades for them.

DISCUSSION ----------

MCP is an Apple trademarked name for an intelligent processor card design incorporating a 68000 CPU, 512K RAM, and multitasking operating system on NuBus card. Apple's Coax/Twinax, TokenTalk NB, Token Ring 4/16 NB, and Serial NB are all MCP cards.

The SNA•ps Gateway software was designed to run on an Apple MCP card, a design that frees the main CPU memory and processor to run other applications more effectively.

Memory for these cards can be difficult to locate. However, if you want to upgrade MCP card RAM, the following information will be helpful:

• Toshiba part No. TC514400AZ (from third-party distributors)

Article Change History:
21 Apr 1995 - Updated memory part number and availability information.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10637

Tech Info Library

SNA•ps Gateway: Software Package

Revised: 9/15/92
Security: Everyone

SNA•ps Gateway: Software Package

==========

Article Created: 6 August 1992

TOPIC ----------

Do the SNA•ps Gateway packages include a copy of SNA•ps 3270 GC, and a hardware card for host connections?

DISCUSSION ----------

The SNA•ps Gateway doesn't include any application software other than its administration and configuration programs. SNA•ps 3270 GC, or SNA•ps-compatible third-party applications, must be purchased separately for each Macintosh user who will access the SNA•ps Gateway.

SNA•ps Gateway packages don't include a hardware card for host connections. SNA•ps is a family of software-only products that provide Macintosh user access to IBM host systems. The SNA•ps Gateway software runs on Macintosh computers that have an Apple Coax/Twinax Card (for coax cabling), Apple Serial NB Card (for SDLC cabling), or an Apple Token Ring 4/16 NB Card (for Token Ring cabling) installed.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10638

Tech Info Library

Using Screen Savers With LCDs (2/95)

Revised: 2/15/95
Security: Everyone

Using Screen Savers With LCDs (2/95)

==========

Article Created: 4 March 1992
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

Do LCDs, like those used with the Macintosh PowerBook and Macintosh Portable, suffer from burn-in like CRTs used with desktop Macintosh computers?

Are screen savers recommended for the Macintosh PowerBook series?

DISCUSSION ----------

An image left on an LCD screen for an extended period (approx. 24 hours, depending on the image) can leave a "ghost" image. Unlike CRTs, an LCD will recover over time and eventually erase the ghost image.

To allow this recovery, either shut down the system or put it into sleep. The time it takes to recover depends on the original image and how long the image was left on the screen. It generally takes between one and two times as long to remove the ghost image as it took to create it.

With regards to a screen saver, using the sleep feature or shutting down the PowerBook when it won't be used for extended periods should reduce the need for a screen saver. However, if you still would like to use one, be sure you choose one that is appropriate for your PowerBook model.

Active Matrix Display Models

PowerBook computers with Active Matrix displays include the PowerBook 170, 230, 180, 180c, 540, 540c, PowerBook Duo 250, 270c, 280, and 280c. With these computers, you should use a screen saver image with a completely white background. Below are two screen saver examples for use with active matrix displays and After Dark:

• In MacDraw Pro, or other similar application, create a completely white document by drawing a page-size white-filled box and then saving the file as a

PICT image. Use this file in conjunction with the Picture Frame module within After Dark to produce a white background screen-saver image.

• WhiteOut is a stand-alone After Dark module.

Passive Matrix Display Models

The PowerBook 100, 140, 145, 145B, 150, 160, 165c, 520, 520c and PowerBook Duo 210 use a Passive Matrix Display. With these displays, like the monitors used with our desktop computers, you can use a standard screen saver that displays a dark background.

Article Change History

15 Feb 1995 - Added specific models for Active and Passive Matrix Displays.
26 Sep 1994 - Reviewed for technical accuracy, removed attachments.
20 Aug 1992 - Changed title, defined appropriate screen-saver type for each PowerBook model.

Support Information Services

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Tech Info Library Article Number:10639

Tech Info Library

AppleTalk Remote Access: Initiating a Telnet Session

Revised: 10/2/92
Security: Everyone

AppleTalk Remote Access: Initiating a Telnet Session

==========

Article Created: 25 September 1992

TOPIC -----

Can I use Telnet across AppleTalk Remote Access? Do I need MacTCP on both computers, and will dynamic addressing work?

DISCUSSION -----

Yes, Telnet sessions can be initiated from a remote Macintosh using AppleTalk Remote Access and MacTCP. MacTCP only needs to be on the remote Macintosh; the host Macintosh only acts as an AppleTalk bridge. MacTCP behaves as if it were on LocalTalk; dynamic addressing does work.

For more details, read the Tech Info Library article "AppleTalk Remote: Troubleshooting Inability to Reach TCP/IP Host"

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10642

Tech Info Library

MacMainFrame for PATHWORKS: DECnet to IBM Connectivity

Revised: 9/17/92
Security: Everyone

MacMainFrame for PATHWORKS: DECnet to IBM Connectivity

==========

Article Created: 9 September 1992

TOPIC ----------

Is there 3270 Terminal Emulation software that runs on the Macintosh via the DECnet protocol?

I want to use 3270 terminal emulation to the VAX. The VAX would be the gateway to a 3090 mainframe. The protocol between the VAX and the 3090 would be SNA.

DISCUSSION ----------

MacMainFrame for PATHWORKS allows Macintosh computers in a DECnet environment to connect to an IBM host via Digital Equipment Corporation's DECnet/SNA Gateway.

Macintosh computers must be equipped with PATHWORKS for Macintosh and MacMainFrame for PATHWORKS software in order to establish host connections through the DECnet/SNA Gateway. PATHWORKS allows Macintosh computers to use DECnet to connect directly to a DECnet/SNA Gateway that resides on the network. PATHWORKS also lets Macintosh computers use AppleTalk to connect to the DECnet/SNA Gateway via PATHWORKS' built-in AppleTalk-to-DECnet gateway software. Once the Macintosh is connected to the DECnet/SNA Gateway, MacMainFrame for PATHWORKS instructs the gateway to establish host sessions.

Once a Macintosh in the DECnet environment is connected to the host, users can take full advantage of all MacMainFrame features including IBM 3278/3279 terminal and 3287 printer emulation, copy and paste, keyboard remapping, pull-down and tear-off menus, jump key facilities, customizable color palettes, Easy Keys, on-screen font size selection, System 7 support, and DO structured field-based file transfer.

Users can access financial, word processing and electronic mail host applications and can copy and paste information into Macintosh applications

including Microsoft Excel, Word, and so on. MacMainFrame's multi-session capability allows users to have up to eight host sessions open at one time. And the software's multi-server feature allows users to connect to more than one DECnet/SNA Gateway and to more than one IBM host simultaneously.

Custom applications developed with the MacMainFrame Programmer's Toolkit Application Programming Interface (API) are compatible with MacMainFrame in the DECnet environment.

MacMainFrame for PATHWORKS also supports Avatar's MacMainFrame Graphics -- an optional software package that allows users to edit mainframe graphics packages on the Macintosh. In addition, MacMainFrame for PATHWORKS also supports FrontCard, Avatar's HyperCard-based programmer's toolkit for custom 3270 interface development.

MacMainFrame Workstation for PATHWORKS is available directly through Avatar or Digital Equipment Corporation. Site licenses are available.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:10643

Tech Info Library

Quadra: ARA and Practical Peripherals Modem Issue (9/94)

Revised: 9/26/94
Security: Everyone

Quadra: ARA and Practical Peripherals Modem Issue (9/94)

==========

Article Created: 20 October 1992
Article Reviewed/Updated: 26 September 1994

TOPIC ----------

I'm using AppleTalk Remote Access (ARA) on a Macintosh Quadra 700 to connect to a Macintosh IIfx. Both Macintosh systems are using Practical Peripherals 9600sa modems.

When the MC68040 processor caches are enabled on the Quadra 700 and an ARA connection is initiated to the Macintosh IIfx, the modems communicate, but a connection can't be made.

ARA generates a message saying that it's communicating at 9600, but the "connected" message and the clock never appear on the screen. After a minute, the connection times out and disconnects. When the processor caches are disabled, it works fine. Two different Macintosh Quadra 700 systems have this problem.

What is the cause of this problem, and is there a workaround?

DISCUSSION ----------

The problem you are experiencing is actually due to the command handling speed of the modem, and can be fixed with a new script. Macintosh Quadra systems issue CCL instructions too quickly for the Practical Peripherals 9600SA to respond. This problem may exist on other modems as well.

The solution is to insert a suitable "pause" before each write command in the CCL script. Testing on a Macintosh Quadra 700 with the "Practical Peripherals 9600SA" script indicates "pause 1" gives 275ms delay, "pause 2" gives 375ms, and so on. A "pause 1" should be sufficient for any modem. One side effect is that the entire dial/connect sequence takes approximately one second more.

Contact Practical Peripherals for an updated script or information on how to modify your current script to add this pause.

Article Change History:
26 Sep 1994 - Reviewed for technical accuracy, removed attachment.

Support Information Services

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Tech Info Library Article Number:10647

Tech Info Library

PowerBook 145: Peculiarities With System Software Version 7.0.1

Revised: 5/18/94
Security: Everyone

PowerBook 145: Peculiarities With System Software Version 7.0.1

==========

Article Created: 2 September 1992

TOPIC ----------

The Macintosh PowerBook 145 ships with system software version 7.0.1. Because version 7.0.1 was released before the PowerBook 145 was introduced, the system software doesn't contain information with which to report this computer as a PowerBook 145.

This article addresses some peculiarities you may notice.

DISCUSSION ----------

About This Macintosh ...

When you check the "About This Macintosh ..." item in the Apple menu, it shows PowerBook 140. However, both the product label on the bottom case and the silkscreen on the display bezel correctly show the model as a Macintosh PowerBook 145.

Installing System Software

If you select "Custom Install", there is no Installer script labeled PowerBook 145. Choose the script labeled PowerBook 140 to install the proper software.

If you select "Easy Install", the correct software will be installed.

These items have been fixed in system software version 7.1.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10648

Tech Info Library

PowerBook 145: Power-Saver Mode In System 7.1, Not 7.0.1 9/92

Revised: 5/16/94
Security: Everyone

PowerBook 145: Power-Saver Mode In System 7.1, Not 7.0.1 9/92

==========

Article Created: 2 September 1992

TOPIC ----------

Can I put the Macintosh PowerBook 145, which runs at 25 MHz, into power- saver mode (16 MHz) via the Battery desk accessory, like the PowerBook 170?

DISCUSSION ----------

No, with system software version 7.0.1, you cannot slow the Macintosh PowerBook 145 processor down to 16 MHz.

This feature is available with System 7.1. It's been moved from the Battery DA to an option in the new PowerBook control panel.

Note

If the PowerBook 145 had its expansion board replaced with the PowerBook 170 board, you can put it into power-saver mode via the Battery DA with version 7.0.1.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10650

Tech Info Library

System Software: Easy Install versus Custom Install

Revised: 9/2/92
Security: Everyone

System Software: "Easy Install" versus "Custom Install"

==========

Article Created: 2 September 1992

TOPIC -----

Why is "Easy Install" the preferred method for installing system software?

DISCUSSION -----

If you choose the "Easy Install" option for installing system software, the Installer checks the system's configuration when it is launched and installs all necessary and appropriate software for the configuration, including network, printer, and file-sharing software.

If you choose the "Custom Install" option, you must select each of these items individually for your particular configuration.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10654

Tech Info Library

System Software: Install Me First Disk and System Enablers

Revised: 11/2/92
Security: Everyone

System Software: "Install Me First" Disk and System Enablers

==========

Article Created: 2 September 1992

TOPIC --------------------

Will Apple be providing a solution to the problems, addressed in the article titled "PowerBook 145: Peculiarities With System Software Version 7.0.1", for future PowerBook models that are introduced without a new release of system software?

DISCUSSION --------------------

Yes. Apple will be including an "Install Me First" disk (referred to as a "System Enabler") with future PowerBook models.

This System Enabler disk will include minor changes to the system software shipped with the new product that are specific to that product.

System Enabler disks began shipping with System 7.1 installation disks.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10655

Tech Info Library

System 7.1: PowerBook and Macintosh Portable Installer Scripts

Revised: 5/19/94
Security: Everyone

System 7.1: PowerBook and Macintosh Portable Installer Scripts

==========

Article Created: 2 September 1992

TOPIC ----------

Will system software version 7.1 include custom installer scripts for the entire Macintosh PowerBook series? Or, will we have a similar situation to the PowerBook 145 introduction that is discussed in article "PowerBook 145: Peculiarities With System Software Version 7.0.1"?

DISCUSSION ----------

System software version 7.1 will include custom installer scripts for these PowerBook and Portable products:

- Macintosh Portable
- Macintosh PowerBook 100
- Macintosh PowerBook 140/145
- Macintosh PowerBook 170

The new PowerBook products being introduced in fall 1992 each include an "Install Me First" disk (referred to as a "System Enabler") with system software version 7.1 installation disks.

This System Enabler disk includes minor changes to the system software shipped with the new product that are specific to that product.

See these related TIL articles for more details:

PowerBook 145: Peculiarities With System Software Version 7.0.1
System Software: "Install Me First" Disk and System Enablers

Support Information Services

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Tech Info Library Article Number:10656

Tech Info Library

LaserWriter IIg: How to Get the Ethernet Address

Revised: 9/17/92
Security: Everyone

LaserWriter IIg: How to Get the Ethernet Address

==========

Article Created: 8 September 1992

TOPIC -----

Is there a way to obtain an Ethernet address for the LaserWriter IIg without using the LaserWriter Utility? Is the address on a sticker or printed on the logic board?

DISCUSSION -----

The only way to obtain the Ethernet address of the LaserWriter IIg is through the PostScript interpreter. It isn't printed on the logic board or a sticker.

You can use the LaserWriter Utility or the following PostScript program to get the Ethernet address of the LaserWriter IIg:

```
/Times-Roman findfont
15 scalefont
setfont
72 700 moveto
/str 20 string def
(Ethernet Address:  ) show
(%EtherTalk%) currentdevparams /EthernetAddress get str cvs show
showpage
```

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10659

Tech Info Library

Macintosh: Switched 56K Connection from MultiAccess

Revised: 9/28/93
Security: Everyone

Macintosh: Switched 56K Connection from MultiAccess

==========

Article Created: 20 October 1992

TOPIC ----------

Will the Apple ISDN card work with a Switched 56 leased line?

DISCUSSION ----------

No. Switched 56 is a synchronous 56Kbps dial-up data link. It isn't ISDN.

A 56K card for the Macintosh is available from MultiAccess Computing Corporation. It offers Switched 56K connection. Here's some information on this card:

MCC-256 -- Switched 56K connection for the Macintosh
- Supports applications in Switched 56K Service as well as leased 56K (DDS) and fractions T1 at 192 Kbps
- V.35/RS-422 HDLC message encapsulation with error detection
- RS-366 or V.25 bis automatic dialing control
- RS-232 auxiliary port for disaster recovery or additional bandwidth
- Standard Apple NuBus form factor

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:10660

Tech Info Library

Heuristic Optimized Processing System (HOPS)

Revised: 9/8/92
Security: Everyone

Heuristic Optimized Processing System (HOPS)

==========

Article Created: 8 September 1992
Article Last Reviewed:
Article Last Updated:

TOPIC ----------

This article describes the HOPS (Heuristic Optimized Processing System) software available from HOPS International, Inc.

DISCUSSION ----------

HOPS speeds up indexing, sorting and algebra operations in relational databases. You can use it on a Macintosh with 5MB of RAM and appropriate storage.

HOPS features a series of algorithms that speed up indexing, sorting and algebra operations in relational databases on the Macintosh. For example, 100,000 records can be fully indexed in 25 seconds, or 1,000,000 records in three minutes. Only one disk access is required per seek, even when dealing with a billion or more records. Sorts, Boolean scans, insertions, and so on, are equally as fast.

During coding, a "seed" is described via a simplified definition module and inserted into a host program (Pascal, C, and so on). Although this insertion is somewhat analogous to the insertion of subroutine, the magnitude and complexity of tasks that can be accomplished with a single "seed" serves to distinguish this tool.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10665

Tech Info Library

HOPS International, Inc.

Revised: 7/9/93
Security: Everyone

HOPS International, Inc.

==========

Article Created: 09/09/92
Article Reviewed: 07/09/93
Article Updated:

HOPS International, Inc.
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800 West Ave.
Miami Beach, FL 33139

305-672-2361

305-538-8044 Fax

Company Profile:
Software, specializing in Heuristic Optimized Processing System (HOPS), a program that speeds up indexing, sorting and algebra operations in relational databases.

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10666

Tech Info Library

LaserWriter IIf, IIg, NTR: Setting Serial Timeouts

Revised: 9/22/92
Security: Everyone

LaserWriter IIf, IIg, NTR: Setting Serial Timeouts

==========

Article Created: 16 September 1992

TOPIC ----------

We have a number of LaserWriter IIf and LaserWriter IIg printers that have active serial connections to terminal servers. We have VAX print queues pointed at the terminal server ports so that users can access the printers.

When we send a print job to the printer's serial port, it prints the job and then goes into a "busy, status:Waiting" state. The printer stays in this state for 5 minutes, after which it returns to an idle state. During this time, additional print jobs sent to the serial port will print, but jobs sent to the LocalTalk or Ethernet ports won't print. These jobs must wait until the printer goes back to its idle state.

A possible solution to this problem would be to reduce the timeout period on the printer from 5 minutes to something less (for example, 30 seconds). We can do this by sending a PostScript command to the printer. What is the specific command?

DISCUSSION ----------

Here is the PostScript Level 2 program to change the "WaitTimeout" value in the LaserWriter IIf and IIg, and Personal LaserWriter NTR:

```
<</WaitTimeout xx
  /Password (yy)
>> setsystemparams
```

"xx" is the timeout value in seconds and "yy" is the system password. If the system password is zero (the default), it's okay to leave out the "/Password" line. For example, if you want to change the "WaitTimeout" value to 30 seconds and have zero for a password, either one of the following PostScript Level 2 programs will do the job:

```
<</WaitTimeout 30
```

```
>> setsystemparams

or

<</WaitTimeout 30
  /Password (0)
>> setsystemparams
```

More important than changing the "WaitTimeout" value is properly terminating print jobs sent to the serial port. You do this by ending any print job with the CTRL-D character which is also known as an end-of-file character (eof). The CTRL-D character has an ASCII value of $04. If this character is sent at the end of a print job, there will be no waiting at all for the serial port to time out.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10667

LaserWriter: Problem Printing Linked Files as PostScript

Revised: 11/11/92
Security: Everyone

LaserWriter: Problem Printing Linked Files as PostScript

==========

Article Created: 20 October 1992

TOPIC ----------

I want to create PostScript files from linked documents in Word 5.0 and FrameMaker. I've used Command-K when printing to create the PostScript files, and they were numbered 0 through 9.

Now, if I select PostScript File in the Print dialog, it saves the first linked document as a PostScript file, then sends the rest of the linked documents directly to the printer. The documents are linked by page number in Word, and are part of a "book file" in FrameMaker. I called Microsoft and Frame, and they say the Apple driver must be at fault. I tried using the LaserWriter 5.2 driver and that worked, but the printing device can't print PostScript files created with that driver.

What's happening here?

DISCUSSION ----------

This is a known problem with the LaserWriter driver and is discussed in Macintosh Technical Note #312. Here is an excerpt from the technical note:

Like many Printing Manager calls, PrJobMerge is implemented by the currently chosen printer driver. This makes sense after consideration -- since the printer driver may store job-specific information anywhere in the print record, only the printer driver can correctly merge this into a destination print record.

The LaserWriter driver's implementation of PrJobMerge has a few bugs in versions 7.0 and 7.1.

Fun Thing #1

Historically, PrJobMerge hasn't worked correctly in the LaserWriter driver. The driver does not correctly merge all job-related data (like the number of copies requested) into the destination print record, so printing multiple copies of multiple documents from the Finder isn't really possible with the LaserWriter driver.

The only possible workaround is to present a different job dialog for each document to be printed, but this isn't recommended -- especially since the job dialog doesn't tell you which document you’re about to print.

Fun Thing #2

As if this wasn't enough excitement for one driver, in versions 7.0 and 7.1 of the LaserWriter driver PrJobMerge actually manages to destroy all the job-specific information in the source print record after it doesn't copy it into the destination print record.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10668

A/UX: Change Printcap to Use Printer in Another Zone (9/94)

Revised: 9/7/94
Security: Everyone

A/UX: Change Printcap to Use Printer in Another Zone (9/94)

==========

Article Created: 25 September 1992
Article Reviewed/Updated: 6 September 1994

TOPIC ----------

Is it necessary to include the zone name with the printer name (that is, full path name) in the printcap file entry for a printer that is located in a remote zone? And, if so, what is the syntax to do this?

I want to use the lpr command to send a print job to a remote printer defined in the printcap file. I don't want to have to go through the Chooser to select the printer. As it is defined now (without the full path name), I'm getting a message saying that the printer can't be found.

DISCUSSION ----------

If the printer is in another zone, it's necessary to define the zone in which the printer is located with a full path name. You can then "hardwire" a printer name including the zone for a particular printer queue.

The best way to do this is to make a copy of the /usr/spool/lpd/AppleTalk directory and give it a name related to the printer you want to use. Modify the file ifilter/ofilter/nfilter (it's the same file with 3 hard links) in this directory. Also modify the /etc/printcap file to create a new printer queue.

We'll use our system as an example; modify it to reflect your situation.

First, create the new directory and put the correct files in it. NOTE that we're using mknod to create the pipe file.

```
mkdir Idaho
chown daemon Idaho
chgrp daemon Idaho
cp AppleTalk/ifilter Idaho/ifilter
cd Idaho
ln ifilter ofilter
```

```
  ln ofilter nfilter
  mknod pipe p
  chown daemon *
  chgrp daemon *
```

We have a printer called "Idaho Spooler" in the zone "West" while my system is on the zone "East." So all I do is modify the /usr/spool/lpd/Idaho/ifilter file (you can use vi or TextEditor) and change the line that defines the value for Printer:

```
  from

  Printer=`basename "cwd"`

  to

  Printer="Idaho Spooler:LaserWriter@West"
```

In the /etc/printcap file I copy the entry for AppleTalk (all six lines) and change any reference to AppleTalk to the name I used for my new directory. Again, in my case I used "Idaho" as the directory name so my /etc/printcap file looks like:

```
  #
  # pragma ident "@(#)lpr:printcap        5.4 90/03/27 "
  #
  # Copyright 1990 Apple Computer, Inc.
  # All Rights Reserved.
  #
  # Remote AppleTalk printer (selected by Chooser)
  # For an AppleTalk printer which doesn't support PostScript remove last 2
  names.
  lp|at|AppleTalk|postscript|PostScript:\
        :lp=/dev/null:\
        :if=/usr/spool/lpd/AppleTalk/ifilter:\
        :of=/usr/spool/lpd/AppleTalk/ofilter:\
        :nf=/usr/spool/lpd/AppleTalk/nfilter:\
        :sd=/usr/spool/lpd/AppleTalk:
  lp2|Idaho:\
        :lp=/dev/null:\
        :if=/usr/spool/lpd/Idaho/ifilter:\
        :of=/usr/spool/lpd/Idaho/ofilter:\
        :nf=/usr/spool/lpd/Idaho/nfilter:\
        :sd=/usr/spool/lpd/Idaho:
```

After all these steps are completed, restart the printer queue with the command

```
  lpc restart all
```

Now you should be able to send a print job to the printer in the other zone with the command:

```
  lpr -Plp2 /etc/passwd
```

```
  or

  lpr -PIdaho /etc/passwd
```

Article Change History:
6 Sept 1994 - Reviewed.

Support Information Services

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Tech Info Library Article Number:10669

Tech Info Library

ARA: Turn On AppleTalk in Chooser After Installing ARA

Revised: 8/2/93
Security: Everyone

ARA: Turn On AppleTalk in Chooser After Installing ARA

==========

Article Created: 19 October 1992
Article Reviewed/Updated: 30 July 1993

TOPIC ----------

Upon initial installation of AppleTalk Remote Access (ARA), AppleTalk is turned off in the Chooser. When new users select ARA, they get a message saying that ARA wasn't correctly installed or is corrupted and they should re-install. Repeated installation efforts give the same results. The dialog is persistent whether it's a brand new installation or an existing (and previously working ARA) setup.

The real problem is that AppleTalk is turned off, and you must turn on AppleTalk in the Chooser for ARA to work at all.

Does Apple plan to change the dialog box to instruct users to turn AppleTalk on?

DISCUSSION ----------

This problem will be fixed in the next release of AppleTalk Remote Access. The error dialog will say something about going into the Chooser and turning on AppleTalk.

Note: You can also use the Always AppleTalk software which is part of the PowerBook File Assistant collection of software. This allows a System 7.1 user to switch between AppleTalk being active and inactive without restarting the computer.

Cause of Incorrect Messages in Several Utilities

The problem is that the 7.0 Tune Up doesn't load enough of AppleTalk to let anyone know that AppleTalk is turned off. As a result, ARA and several other network utilities are unable to function, and display a false error message.

There is a way to tell whether AppleTalk can be turned on. The revised meaning of the Gestalt 'atkv' selector is that if the selector is present, it returns the "available" version of AppleTalk. If the selector isn't present, then AppleTalk isn't available.

Note that this differs from the 'atlk' selector, which returns zero if AppleTalk is currently off, and the AppleTalk version if AppleTalk is currently on. But this only tells you the current state; it doesn't tell you if AppleTalk COULD be turned on in the Chooser without restarting.

AppleTalk Remote Access calls gestalt with the 'atkv' selector to make sure that the correct AppleTalk is installed. But, there is no 'atkv' selector because Tune Up prevented the AppleTalk boot code (which installs the selector) from running. ARA then complains that your software is incorrectly installed if the selector is not present. At the time ARA was released, this was the correct behavior. Since Tune Up has come along, the rules have changed. Now the lack of an 'atkv' selector means that AppleTalk can't be turned on without restarting.

Another aspect of the problem is that when the LAP manager loads, it checks PRAM to see if AppleTalk has been configured. If these bits in PRAM have never been configured or if PRAM has been "zapped," the LAP manager would believe that AppleTalk was turned off. If PRAM is zapped, then the AppleTalk status setting may be left in an indeterminate state. There was a change, beginning with AppleTalk 57 on how the setting in PRAM is interpreted:

AppleTalk Version	<57	>=57
PRAM setting ON	ON	ON
PRAM setting indeterminate	ON	OFF
PRAM setting OFF	OFF	OFF

Therefore if you ever zapped PRAM, the AppleTalk status setting may have been left in an indeterminate state. AppleTalk Remote Access updates AppleTalk to version 57.0.1, and displays the "improperly installed" message because it determines that AppleTalk is turned off.

(PowerBook users don't know any of this. Their computers come with Tune Up pre-installed and AppleTalk off.)

Other utilities and applications will also suffer from the problem. The Network control panel, MacTCP, and DAL with Tune Up installed and AppleTalk off all suffer from the same problem and the user is presented with a similar "not installed correctly" message.

- MacTCP gives the error -43 (driver not installed).

- DAL will just not connect to any of its servers or the DAL installation checker will show no network adaptor (drivers) cards.

- The Apple Internet Router give the error message "The router software was damaged or incorrectly installed. Please re-install the router."

The Solution

AppleTalk version 57.0.4 fixes these problems for most cases.

- If PRAM is unconfigured, it no longer believes that AppleTalk is off, instead it believes it is on.

- The Network control panel now displays a more appropriate message telling users that AppleTalk is turned off instead of telling them that their software has been incorrectly installed.

- Future revisions of AppleTalk Remote Access and Apple Internet Router will have more meaningful error messages.

- In System 7.1 MacTCP, LAT, and DAL will load whether AppleTalk has been turned on or off.

Article Change History:
30 July 1993 - Revised to add note about Always AppleTalk software.
6 January 1993 - Revised to add information about the effect of zapping PRAM on AppleTalk status.

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Tech Info Library Article Number:10670

Tech Info Library

Macintosh Color Display: Compared to AppleColor RGB Monitor

Revised: 10/12/92
Security: Everyone

Macintosh Color Display: Compared to AppleColor RGB Monitor

==========

Article Created: 19 October 1992

TOPIC ----------

This article shows how the Macintosh Color Display differs from the AppleColor High Resolution RGB Monitor.

DISCUSSION ----------

These are the features the two monitors share:

- Trinitron CRT
- .26mm stripe pitch
- 66.7 Hz refresh rate
- 640 x 480 pixel map
- 70 dpi
- Autodegauss at start-up
- ELF/VLF magnetic field compliant

Here are the features new to the Macintosh Color Display:

- Built-in tilt/swivel base
- Power and brightness/contrast controls on the front of the display
- ELF/VLF electric field compliant
- 53 Watts average use

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10671

Tech Info Library

Macintosh Color Display: Description

Revised: 10/13/92
Security: Everyone

Macintosh Color Display: Description

==========

Article Created: 19 October 1992

TOPIC ----------

This article describes the Macintosh Color Display, and gives features, benefits, and compatibility information.

DISCUSSION ----------

The Macintosh Color Display features a flat Trinitron tube that gives maximum screen area, sharp focus, and minimum distortion. Its automatic degaussing at start-up provides distortion-free viewing and a stripe pitch of .26mm for clarity. This is Apple's brightest mid-range monitor. The electronics are designed to optimize clarity at this brightness.

The 66.7 hertz screen refresh rate gives flicker-free performance to minimize eye strain. Magnetic and electric emissions are very low, conforming to strict SWEDAC guidelines. The built-in tilt swivel allows viewing angle adjustment.

Features

- Trinitron CRT with .26 stripe pitch
- High brightness and contrast
- Color and brightness uniformity
- 640 x 480 pixels at 70 dpi
- Autodegauss at power-up
- Tilt/swivel stand built in
- 66.7 Hz refresh rate
- Low emissions

Benefits

- Trinitron technology allows more accurate focusing of the RGB electron beam for a brighter, clearer picture.
- The .26 mm stripe pitch improves focus.

- High contrast design enhances the distinction between black and white on the screen to improve focus and reduce eyestrain.
- Produces pure and uniform colors over the entire screen area.
- 35% more screen area than the 12-inch RGB monitor
- Autodegauss eliminates distortion from external magnetic fields, and guarantees consistent color purity.
- Tilt/swivel stand allows adjustment for the best viewing angle.
- 66.7 Hz refresh rate reduces flicker.
- Meets SWEDAC recommendations for ELF and VLF magnetic and electric emissions.

Compatibility

All Macintosh modular computers support the Macintosh Color Display to 256 colors. The Macintosh LC II needs the VRAM upgrade to support 256 colors. The Macintosh Quadra 700, 900, and 950 support 24 bits per pixel, for 16.7 million colors.

All Apple video cards and on-board video connections in the Macintosh II family support the Macintosh Color Display at varying bit depths.

Part Number

Macintosh Color Display M1198LL/A

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10672

Tech Info Library

Performa 600: Control Chips

Revised: 9/10/92
Security: Everyone

Performa 600: Control Chips

==========

Article Created: 14 September 1992

TOPIC --------------------

This article describes the Macintosh Performa 600's control chips.

DISCUSSION --------------------

VASP

The VASP controls all timing, video generation, memory mapping, sound, and clock generation. VASP is a modification of the V8 ASIC used in the Macintosh LC and Macintosh LC II.

Ariel

Ariel is the 256x24 bit color look-up table (CLUT) for Performa 600.

CoMBo Chip (85C80)

The CoMBo chip provides identical serial and SCSI interface control for Performa 600. Performa 600 provides on-board SCSI termination when no external SCSI device is connected to the DB-25 connector.

Egret (68HC05)

The Egret chip provides keyboard scanning, real-time clock, ADB interface, parameter RAM storage, power on reset, and power supply control.

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Tech Info Library Article Number:10675

Tech Info Library

Performa 600: Expansion

Revised: 9/10/92
Security: Everyone

Performa 600: Expansion

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Article Created: 14 September 1992

TOPIC ----------

This article describes the Macintosh Performa 600's expansion possibilities.

DISCUSSION ----------

The Macintosh Performa 600 features three NuBus expansion slots and one accelerator card slot.

The power budget for each NuBus slot is 13.9 watts (same as the Macintosh IIci) for a total of 41.7 watts.

The power budget for the accelerator card slot is 5 watts (same as the Macintosh IIci cache budget). Accelerator cards must conform to a 3x6-inch form factor (identical to the Macintosh IIci cache card form factor).

There are no openings for any on the back of the Performa 600 enclosure to support external connections for this card. The accelerator connector signals are a subset of the those provided by the Macintosh IIci cache connector. Processor address, data, and some control signals are provided. Cache control signals are not provided.

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Tech Info Library Article Number:10676

Tech Info Library

Performa 600: Internal Video Support

Revised: 9/10/92
Security: Everyone

Performa 600: Internal Video Support

==========

Performa 600: Internal Video Display Support

Article Created: 14 September 1992

TOPIC -----

This article describes the Macintosh Performa 600's internal video display support.

DISCUSSION -----

The following chart lists the monitors supported by Performa 600's internal video:

MON ID 3 2 1	Monitor Selected	Cols/ Rows	Vertical Refresh	Horizontal Refresh	Bandwidth
0 0 1	reserved				
0 1 0	12" RGB	512 x 384	60.15 Hz	24.48 KHz	15.6672 MHz
1 1 0	12" B/W, 13" RGB	640 x 480	66.67 Hz	35.0 KHz	30.24 MHz
0 0 0	reserved				
0 1 1	VGA	640 x 480	59.94 Hz	31.47 kHz	25.18 MHz
1 0 0	reserved				
1 0 1	reserved				
1 1 1	no monitor connected				

* 640 x 480 displays are supported at 8 bits/pixel with 512K VRAM and 16

bits/pixel with 1 MB of VRAM

Note: The monitor ID pins 3, 2, and 1 refer to pins 10, 7, and 4 on the DB-15 external video port.

The monitor ID must be asserted in the monitor by grounding lines for zeros and leaving no connection for ones. No co nects are pulled high by pullup resistors on the Performa 600 logic board.

Standard Macintosh video timing calls for a 30.24 MHz pixel clock for 640 x 480 displays. Performa 600 deviates from the standard by using the CPU clock, at 31.3344 MHz, as a pixel clock for those displays. This results in an extra 32 pixels per horizontal line. The active pixels are center in the active video field with 16 extra pixels on each side. Horizontal and vertical scan rates remain unchanged. The effect of this change is that square pixels are visually 3% thinner. The 12" monochrome display compensates for this aberration, but the 13" color display does not. Monitor ID 2 is grounded within Performa 600, which triggers the 12" monochrome display to realize that it is connected to a Performa 600 and allows the monitor to compensate for the slightly different timing.

VGA monitors use the monitor ID of 011 which is the same as the two-page monochrome monitor. VGA monitors use the extended monitor sense codes which is enabled by tying the ID 3 and ID 2 lines together at the monitor end. The extended sense for a VGA monitor is 01 01 11.

One other anomaly in Performa 600 is that it does not support 1 bit/pixel mode on 512 x 384 monitors.

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Tech Info Library Article Number:10677

Tech Info Library

Performa 600: RAM Configurations

Revised: 9/11/92
Security: Everyone

Performa 600: RAM Configurations

==========

Article Created: 14 September 1992

Article Change History

09/15/92 - UPDATED
- To include correct product name of new AppleCD 300i.

TOPIC ----------

This article outlines the Macintosh Performa 600's possible RAM configurations.

DISCUSSION ----------

Without an AppleCD 300i installed, the Macintosh Performa 600 has 4MB of DRAM soldered to the logic board.

The 5MB configuration, used with the internal AppleCD 300i, has another 1MB of DRAM installed in the four 30-pin DRAM SIMM sockets.

The sockets support up to 16MB DRAM SIMMs for a maximum DRAM configuration of 68MB. All DRAM must be at least 80 ns, fast-page mode.

Possible DRAM configurations:

- 4MB 4MB soldered to logic board, empty SIMMs
- 5MB 4MB soldered, 1MB in SIMMs (four 256K SIMMs)
- 8MB 4MB soldered, 4MB in SIMMs (four 1MB SIMMs), part #M5952LL/A
- 12MB 4MB soldered, 8MB in SIMMs (four 2MB SIMMs)

- 20MB 4MB soldered, 16MB in SIMMs (four 4MB SIMMs)
- 68MB 4MB soldered, 64MB in SIMMs (four 16MB SIMMs)

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Tech Info Library Article Number:10678

Tech Info Library

Performa 600: ROM

Revised: 9/10/92
Security: Everyone

Performa 600: ROM

==========

Article Created: 14 September 1992

TOPIC --------------------

This article describes the Macintosh Performa 600's ROM and memory map.

DISCUSSION --------------------

The Macintosh Performa 600 has 1MB of ROM. ROM upgrades are possible via the ROM expansion SIMM.

Memory Map (32-bit)

DRAM —4 MB on logic board	$00000000 - $003FFFFF
Expansion DRAM (in SIMMs)	$00400000 - $043FFFFF (up to 68MB)
Unassigned DRAM space	$04400000 - $3FFFFFFF
ROM read	$40000000 - $403FFFFF
ROM flash write	$40400000 - $407FFFFF
Repeated ROM images	$40800000 - $4FFFFFFF
VIA1	$50x00000 - $50x01FFF (x = $0 - F)
SCC	$50x04000 - $50x05FFF
SCSI	$50x10000 - $50x11FFF
SCSI DMA	$50x12000 - $50x13FFF
SCSI Handshake	$50x06000 - $50x07FFF
Sound	$50x14000 - $50x15FFF
SWIM	$50x16000 - $50x17FFF
VDAC	$50x24000 - $50x25FFF

VIA2/VASP registers	$50x26000 - $50x27FFF	
CPUID	$5FFFFFFC - $5FFFFFFF	
VRAM	$60000000 - $600FFFFF	(up to 1MB)
VRAM repeated images	$60100000 - $6FFFFFFF	
NuBus space	$70000000 - $FFFFFFFF	

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10679

Tech Info Library

Performa 600: Sound Capabilities

Revised: 9/10/92
Security: Everyone

Performa 600: Sound Capabilities

==========

Article Created: 14 September 1992

TOPIC -----

This article describes the Macintosh Performa 600's sound capabilities.

DISCUSSION -----

All sound processing is accomplished by the VASP gate array.

The sound system includes a built-in speaker and an external stereo headphone jack.

CD audio tracks are played in stereo, and computer-generated sounds are played in mono through both channels.

If no headphones are attached, CD audio plays through the internal speaker in mono.

System beeps and CD audio are mixed together so both can be heard through either the headphone or internal speaker.

Sound input is accomplished through a stereo mini-phone jack.

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Tech Info Library Article Number:10680

Tech Info Library

Performa 600: Specifications (7/94)

Revised: 7/26/94
Security: Everyone

Performa 600: Specifications (7/94)

==========

Article Created: 14 September 1992
Article Reviewed/Updated: 26 July 1994

TOPIC ----------

This article provides the specifications for the Macintosh Performa 600 computer system.

DISCUSSION ----------

Processor

MC68030, 32-bit architecture, 31.3344 MHz clock frequency, integrated Paged Memory Management Unit (PMMU)

Coprocessor

Optional MC68882 floating-point unit, 31.3344 MHz clock frequency

Memory

• Comes with 4 MB of RAM (5 MB of RAM for internal CD-ROM version), expandable to 68 MB. Four SIMM slots require 80ns (or faster) fast-paged mode RAM.

• 1MB ROM

• 256 bytes of non-volatile parameter memory (PRAM)

Video RAM

512K video RAM, upgradable to 1 MB (Internal CD-ROM version comes with 1 MB of VRAM).

• 512K video RAM supports the following modes:
  – Macintosh 12" RGB Display (512 x 384 pixels) at 1, 2, 4, 8, and 16 bits

per pixel
  — Macintosh 12" Monochrome Display, AppleColor High-Resolution RGB Monitor, Macintosh Performa and Performa Plus Display and the Macintosh Color Display (640 x 480 pixels) at 1, 2, 4, and 8 bits per pixel

• 1 MB video RAM supports the following modes:
  — Macintosh 12" RGB Display (512 x 384 pixels) at 1, 2, 4, 8, and 16 bits per pixel
  — Macintosh 12" Monochrome Display (640 by 480 pixels) at 1, 2, 4 and 8 bits per pixel
  - AppleColor High-Resolution RGB Monitor, Macintosh Performa and Performa Plus Display and the Macintosh Color Display (640 x 480 pixels) at 1, 2, 4, 8 and 16 bits per pixel

Disk Drives

• Apple SuperDrive 1.4 MB high-density floppy disk drive

• Internal Apple SCSI hard disk drive (third- or half-height, 80 MB to 400 MB)

• Support for a second internal half-height 5.25-inch SCSI device, such as a AppleCD 300i CD-ROM drive or a hard disk drive

• External SCSI port supports up to six additional SCSI devices

Interfaces

• Two ADB ports support keyboard, mouse, and other daisy-chained devices via synchronous serial bus (maximum of three devices).

• Three NuBus expansion slots accommodate expansion cards with a maximum power budget of 15 watts per slot.

• One PDS (processor-direct slot) accommodates an accelerator card with a maximum power budget of 5 watts.

• Two RS-232/RS-422 serial ports, 230.4 Kbits/second maximum (up to 0.920 Mbit/sec if clocked externally).

• SCSI interface supports up to six external SCSI devices.

• Sound output port capable of delivering monophonic sound from computer generated sounds to both channels of a stereo device. Audio CD's deliver stereo sound to the port. (Audio CD's can play in mono through the built-in speaker on the Performa 600)

• Sound input port for monaural sound input

AC Line Input

• Line voltage: 100-240 volts AC, RMS automatically configured

• Frequency: 50-60 Hz single-phase

• Power: 112 watts maximum, not including monitor power

AC Line Output

• Output receptacle: 100-240 volts AC, RMS, 3 ampere maximum

DC Power

• 112 watts maximum

+5 volt	15.0 amps
+12 volt	2.5 amps
-12 volts	0.6 amps

Clock/Calendar

• CMOS custom chip with long-life lithium battery

Displays

The internal video logic supports a variety of color and monochrome monitors, including:
• Macintosh Performa Display
• Macintosh Performa Plus Display
• Macintosh Color Display
• Macintosh 12" Monochrome Display
• Macintosh 12" RGB Display
• AppleColor High-Resolution RGB Monitor
• 640 x 480 pixel VGA displays (special adapter cable required)
• Other third-party monitors

Monitors not supported by Performa 600's internal video are supported by NuBus video (or display) cards.

Input Devices

• Standard or extended Apple keyboard with ADB connector

• ADB mouse: mechanical tracking, optical shaft, or contact encoding

• Microphone: electret type, omnidirectional, power provided by the computer. Output voltage is 4 millivolts peak to peak at normal speaking volume.

Dimensions

• Weight	11.3 kg (25 lb.)
• Height	152 cm (6 in.)
• Width	330 mm (13 in.)
• Depth	419 mm (16.5 in.)

Environment

- Operating temperature: 10° C to 40° C (50° F to 104° F)
- Storage temperature: -40° C to 47° C (-40° F to 116.6° F)
- Relative humidity: 5% to 95% (noncondensing)
- Altitude: 0 to 3048 m (0 to 10,000 ft.)

Software Already Installed

- System 7 software for Performa computers, designed specifically to make the Performa easy for everyone in the family to use.
- At Ease software, which helps prevent other users from accidentally erasing your valuable files.
- Macintosh PC Exchange software so you can work with MS-DOS and Windows disks you bring home from work.
- Application software, including a program that combines word processing (for memos and letters, spreadsheet (for financial calculations), and graphics (for drawing and painting).

Article Change History:
26 Jul 1994 - Expanded information on sound out capabilities.
19 Jan 1993 - Updated to include memory configuration of internal CD ROM version.
09 Nov 1992 - Updated to further expand list of display options.
02 Nov 1992 - Updated to list of displays, and to clarify SCSI information.

Support Information Services

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Tech Info Library Article Number:10681

Tech Info Library

Performa 600: Video RAM

Revised: 9/11/92
Security: Everyone

Performa 600: Video RAM

==========

Article Created: 14 September 1992

Article Change History

09/15/92 - UPDATED
- To include full name of AppleCD 300i.

TOPIC ----------

This article describes the Macintosh Performa 600's VRAM (video RAM).

DISCUSSION ----------

The Performa 600 uses VRAM for video and sound data storage. This internal video support is similar to that of the Macintosh LC and LC II. It is an improvement on the Macintosh IIci and IIsi scheme, which used available main DRAM for video and sound, causing delays when both the video circuitry and the CPU were accessing DRAM at the same time. The VRAM is installed into two 68-pin SIMM sockets with pinouts identical to that of VRAM sockets on the Macintosh LC and LC II, and Macintosh Quadras. Both SIMM sockets must be filled with either 256K or 512K SIMMs. The video data path is 32 bits wide.

Two 256K SIMMs (part #M5953LL/A) yield 512K of VRAM and support 640 x 480 displays at up to 8 bits/pixel (256 colors or shades of gray) or 512 x 384 displays at up to 16 bits/pixel (thousands of colors).

Two 512K SIMMs (part #M0517LL/A) yield 1MB of VRAM, which supports 640 x 480 and 512 x 384 displays at up to 16 bits/pixel. This 1MB VRAM configuration is standard on any Performa 600 configured with the optional AppleCD 300i.

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..TIL10682-Performa_600-Video_RAM.pdf

Tech Info Library Article Number:10682

Tech Info Library

Performa 600: Optional AppleCD 300i

Revised: 9/11/92
Security: Everyone

Performa 600: Optional AppleCD 300i

==========

Article Created: 14 September 1992

Article Change History

09/15/92 - UPDATED AND RETITLED
• To include correct name of AppleCD 300i.

TOPIC ---

This article describes the AppleCD 300i CD-ROM drive available as an option with the Macintosh Performa 600 computer.

DISCUSSION ---

Key features of the Macintosh Performa 600's optional AppleCD 300i:

• Faster data access than the AppleCD 150.

• Support for Kodak's Photo CD technology. A new version of CD Remote, and a Photo CD file system translator that understands the Photo CD format, are included.

Speed

This drive rotates a disc at twice the normal speed, resulting in faster data access and more immediacy in interactive applications. This drive can operate at both normal speed and double speed, so any application (such as CD audio) that relies on the normal spin rate is not affected.

Transfer Rates	Normal Mode 1	150 kbytes/sec.
	Normal Mode 2	171.1 kbytes/sec.
	Double Mode 1	300 kbytes/sec.
	Double Mode 2	342.2 kbytes/sec.

..TIL10683-Performa_600-Optional_AppleCD_300i.pdf

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Tech Info Library Article Number:10683

Tech Info Library

At Ease: Cannot Disable Application's Functions (8/95)

Revised: 8/4/95
Security: Everyone

At Ease: Cannot Disable Application's Functions (8/95)

==========

Article Created: 14 September 1992
Article Reviewed/Updated: 04 August 1995

TOPIC -----

When they launch Microsoft Works from At Ease, students have access to the Delete command from the File menu, which can be used to delete almost anything from the hard disk.

Can I can disable the Delete command?

DISCUSSION -----

At Ease, a front-end on the Macintosh Operating System, does not disable application functions.

Apple cannot suggest nor endorse any workarounds involving third-party software. Try contacting the vendor to see if they can provide any supported solutions.

Article Change History:
04 Aug 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:10690

Macintosh: Effect of Locking Extensions and Drivers

Revised: 9/23/92
Security: Everyone

Macintosh: Effect of Locking Extensions and Drivers

==========

Article Created: 16 September 1992

TOPIC ----------

This article answers some questions about the effects of locking various files.

DISCUSSION ----------

Q) Control panels and extensions are lockable. Other than not allowing the file to be thrown away, I'm under the impression that locking self-modifying files will prevent modification.

A) While it's true that you can lock control panels and extensions with ResEdit or similar utilities, this isn't a good idea. Some control panels and extensions expect to have write access to themselves, and may not behave gracefully when locked. We recommend AGAINST locking any file in the System Folder that doesn't come locked.

Q) Are the PostScript LaserWriter drivers and AppleShare extension self-modifying?

A) The PostScript LaserWriter drivers are self-modifying, but the AppleShare extension isn't. The AppleShare extension has its own Preference file, kept in the Preferences folder, called "AppleShare Prep."

Q) I assume that in AppleShare, locking would prevent the extension from remembering any servers that were selected to auto-mount.

A) Locking the "AppleShare Prep" file will indeed prevent the extension from remembering any servers that were selected to auto-mount. Actually, you'll get one or two error messages, depending on whether you saved just your name or your name and password in the Chooser.

Q) Wouldn't locking the LaserWriter driver prevent it from selecting a different printer?

A) Yes, but it also prevents the LaserWriter driver from working. To use the LaserWriter driver, it must remain unlocked. If it's locked, you'll get an error message stating the driver was unable to locate the selected printer.

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Tech Info Library Article Number:10692

Tech Info Library

A/UX 2.0 and 3.0: Easy Access Is Not Compatible (4/95)

Revised: 4/26/95
Security: Everyone

A/UX 2.0 and 3.0: Easy Access Is Not Compatible (4/95)

==========

Article Created: 17 September 1992
Article Reviewed/Updated: 26 April 1995

TOPIC ----------

Does Easy Access work under A/UX 3.0? I know that Easy Access doesn't work under A/UX 2.0, since A/UX doesn't support the ADB manager.

DISCUSSION ----------

Easy Access does not work under A/UX 3.0. The reason is the SAME -- A/UX Toolbox DOES NOT support Mac OS ADB (Apple Desktop Bus). Please refer to page 5-2 of "A/UX Toolbox: Macintosh ROM Interface" documentation.

Article Change History:
26 Apr 1995 - Made correction of typographical errors.

Support Information Services

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Tech Info Library Article Number:10693

Tech Info Library

Macintosh Quadra 900 & 950: About This Macintosh Peculiarity

Revised: 9/17/92
Security: Everyone

Macintosh Quadra 900 & 950: "About This Macintosh" Peculiarity

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Article Created: 15 September 1992

TOPIC ----------

I recently upgrade my Macintosh Quadra 900 to a Macintosh Quadra 950. When I checked the "About This Macintosh ..." in the Apple menu, it showed only "Macintosh Quadra" instead of the expected "Macintosh Quadra 950".

DISCUSSION ----------

This is a function of the system software version 7.0.1 Installer. To have the "About This Macintosh ..." window display the 950 model number on a Macintosh Quadra 900 that was upgraded to a Macintosh Quadra 950, you need to reinstall the system software using the Installer.

Note

There is no impact to the user in terms of functionality when the 950 model number is omitted.

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Tech Info Library Article Number:10694

Tech Info Library

Non-PostScript Printers: Problems Printing Shadowed Text

Revised: 10/2/92
Security: Everyone

Non-PostScript Printers: Problems Printing Shadowed Text

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Article Created 23 September 1992

TOPIC --------------------

I have a PowerBook 170 and a StyleWriter. I try to print Helvetica, Times, and Geneva in size 48. When choosing shadowed style, I get the same printout as if I chose outlined style.

DISCUSSION --------------------

The problem involves the print driver translation of a 72 dpi screen image to 360 dpi printed output. On the screen, shadowed text is offset by one pixel, or 1/72 of an inch. The StyleWriter print driver also offsets shadowed text by one pixel, but one pixel is only 1/360 of an inch. If you look closely enough at the output you can discern the difference.

This problem affects all non-PostScript devices. Shadowed text on ImageWriter II printers at 72 dpi appear fine. With LaserWriter LS printers at 300 dpi, the problem is a little more pronounced. With StyleWriter printers at 360 dpi the problem is most pronounced.

Unfortunately, there is no workaround.

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Tech Info Library Article Number:10699

Tech Info Library

Kodak Photo CD

Revised: 9/17/92
Security: Everyone

Kodak Photo CD

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Article Created: September 14, 1992

TOPIC ----------

This article provides an overview of Kodak Photo CD technology.

DISCUSSION ----------

Kodak Photo CD is a technology for transferring 35mm film images to CD-ROM discs, making the images fully accessible to computer graphics applications. A Photo CD foreign file translator and a revised CD Remote application are included with each Performa equipped with an AppleCD 300i.

Note: QuickTime and Photo CD are required. The QuickTime and Photo CD extensions must be placed in the System Folder in order to view the images on a Photo CD. Because QuickTime has Photo CD support, any application that can open a PICT file can open a Photo CD file.

The AppleCD 150 and AppleCD SC Plus drives also support Photo CD, but what sets AppleCD 300i apart is its ability to read multiple sessions of Photo CD images. A reference used for some of the information that follows is "Photo CD: A Planning Guide for Developers" (August 1991 revision).

The Kodak Photo CD planning guide lists the following as benefits of Photo CD technology:

- Rapid retrieval and display of images.
- High-quality continuous-tone printing. Near optical-quality hard copy is possible with the equivalent of 2000-line resolution digital images.
- Consistent and optimum image quality.
- Support for a wide range of colors. The original scan from film records 36 bits per pixel of color information.

- Support for current and future television formats. Five resolutions of each image are stored, with the base resolution excellent for today's televisions. The 4x base resolution is ideal for high-definition television.

- Image duplication without degradation. With digital images, the copy is identical to the original.

- Powerful image manipulation. Powerful applications such as Adobe Photoshop are able to seemlessly work with Photo CD images.

A Photo CD session consists of all of the images contained on one roll of film (whether it is 12, 24, or 36 exposures). Until now, CD drives were able to read only one session. Kodak recently introduced equipment with the ability to encode several sessions of images onto one disk, and new CD drives (including the Apple CD 300) are being introduced that can read those sessions. A single Photo CD can now hold up to 100 images. The projected cost for developing a 24-exposure roll of 35mm film and pressing the Photo CD is about $24. The customer receives a Photo CD, the image negatives, and if desired, prints or slides of the images (the prints or slides will cost an additional $4 to $5). With the next set of pictures, the user would take in both an undeveloped roll of film and the once-used Photo CD. The CD would then be encoded with the new images and returned.

Film to CD

A high-speed scanner converts the images on the roll of film to digital data of 2048 lines of 3072 pixels with a depth of 12 bits per each primary color (a total of 36 bits per pixel). Each image is represented by 18MB of information. Next, a Sun SPARCstation is used to adjust the digital file for color and density and compress it (with no loss of image information) to an average of about 4.5MB.

Each image is represented in five different resolutions. The base resolution is 512 x 768 pixels, sufficient to display the image on a television or computer monitor. The 4base and 16base images are created by successive interpolation and correction schemes between pixels. The 4x and 16x representations are useful for displaying the images on high-definition television systems or printing on high-quality devices at thousands of lines per inch. The lower resolutions are useful because they can be quickly retrieved (less data to move around) and displayed as thumbnail representations of the images, indexes, and icons.

The five resolutions stored for each image and some uses for each are:

- Base/16 — 128 lines of 192 pixels image thumbnails, icons

- Base/4 — 256 lines of 384 pixels display of multiple images or slide shows

- Base — 512 lines of 768 pixels normal display media

- 4Base 1024 lines of 1536 pixels high quality display

- 16Base 2048 lines of 3072 pixels high quality hard copy output

The 4Base and 16Base resolutions are stored as residuals which record the differences between the pixels at the next lower resolution. Huffman encoding is also used to further compress the 4Base and 16Base resolutions of each image. The complete data for an image is stored in something called an "Image Pac". The information is stored on a CD-ROM using the CD-ROM XA Mode 2 form 1 sector format. This standard is call the Orange Book and was developed by Sony and Philips. Refer to the Sony/Philips specification called Recordable Compact Disc Systems "Orange Book" for details on the standard.

What's On a Photo CD?

When the gold-colored Photo CD comes back from the photofinisher, the user can place it in the AppleCD 300i and the system will mount the disc just like a hard disk or floppy disk volume. The Photo CD volume will have the name "PCDnnnn", where PCD stands for Photo CD and the four numbers identify the photofinisher. The name cannot be changed. If the user double-clicks the Photo CD icon, the system opens up the volume and displays photos folders, a Kodak folder, a "Slideshow" file, the Slideshow Viewer application, and a Photo CD folder.

Each resolution folder contains a file for every image on the disc at that specific resolution (such as 768 by 512). The Photo CD folder contains technical information about each of the images. The Slideshow file and Slideshow Viewer application allow the user to browse the images as a slide show.

If the user opens one of the resolution folders, a numbered icon for each image on the CD is displayed. Each icon is a thumbnail image of the image contained within the file.

If the user double-clicks on the icon, the system presents a dialog box asking if the user wishes to view the image in TeachText. TeachText displays the image (if enough memory is available) and allows the user to copy and paste the image into the Clipboard, Scrapbook, or any other document.

The Photo CD Viewer application displays one image at a time with window controls that allow users to automatically play each image, scroll to a specific image, or incrementally scroll through the images.

Photo CD Technology

A Photo CD image is a rectangular array of square pixels in a 3:2 aspect ratio that matches ratio of 35mm film. Pixels represent colors encoded with Kodak's PhotoYCC color-encoding scheme. Each pixel is separated into an 8-bit luma (brightness) component and two 8-bit chroma (color)

components. PhotoYCC encoding was chosen because it provides the proper dynamic range (ratio between the minimum and maximum intensities attainable) and color gamut needed for high-quality color printing. PhotoYCC encoding can be easily converted into RGB information. PhotoYCC encoding also allows for a very efficient data compression schemes. To facilitate efficient video display, Kodak based the PhotoYCC scheme on video standards. PhotoYCC is based on aspects of CCIR Recommendation 601-1 and the international recommendation for high-definition television production, CCIR 709.

Conversion from the 36 bit per pixel RGB scan to PhotoYCC is accomplished in three steps. First, a nonlinear transformation is applied to the image signals. Next, the transformed values are converted to one luma and two chroma components. Finally, the three components are converted to 8-bits per component data.

Note: Although the Photo CD Image Pac format contains definitions for larger-format film, initially only 35mm film will be supported.

Apple Software

A Photo CD file system translator, and a new version of CD Remote, understand the Photo CD format.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10701

Tech Info Library

AppleCD 300i: Specifications

Revised: 11/24/92
Security: Everyone

AppleCD 300i: Specifications

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Article Created: 14 September 1992

TOPIC ----------

This article provides the specifications for the AppleCD 300i internal CD-ROM drive, available as an option on the Macintosh Performa 600 computer.

DISCUSSION ----------

Disc

- Data surfaces 1
- Disc diameter 12 cm
- Disc center hole 15 mm
- Thickness 1.2 mm
- Track pitch 1.6 microns (15,875 tracks per inch)
- Scanning velocity 1.2 - 1.4 meters per second
- Rotation speed varies over radius
  Normal speed ~530 to 230 rpm
  Double speed ~1060 to 460 rpm
- Latency (average) varies over radius
  Normal speed ~55 to 130 milliseconds
  Double speed ~27.5 to 65 milliseconds
- Blocks per rotation ~8.4 to 19.5 variable
- Average access time

Normal speed	350 milliseconds
Double speed	295 milliseconds

Data

• Data capacity	656MB (mode 1) 748MB (mode 2)
• Blocks per disc	270,000 (typical)
• Data per block	2048 bytes (mode 1) 2336 bytes (mode 2)
• Address description	minutes, seconds, frames

Audio Capacity

• Playing time	74 minutes and 42 seconds

Data Streaming and Transfer Rates

• Blocks per second	75
• User bytes per second	150KB (mode 1) 171.1KB (mode 2)
• SCSI bus transfer rate	1.5MB per second

Modes Supported

- CD-Audio
- CD-ROM, modes 1 and 2
- CD-ROM XA mode 2 form 1
  mode 2 form 2

Noise

• Drive on (seek)	<50 dB
Drive on (non-seek)	<46 dB

Environment

• Operating temperature	+5° C to 40° C (+41° F to +104° F)
• Storage (6 months)	-30° C to 50° C (-22° F to +122° F)

• Transit (72 hours)	-40° C to +65° C (-40° F to +149° F)
• Operating Humidity	10% to 90% noncondensing
• Storage Humidity	5% to 95% noncondensing

Power Requirements

• AC input (Universal)	100 to 240 V AC, 50 to 60 Hz

Power Consumption

• Drive on	0.28 A

Interface

• SCSI	Two 50-pin connectors

PhotoYCC Conversion Formulas

From "Kodak Photo CD System: A Planning Guide for Developers" (August 1991).

Nonlinear Transformation

The nonlinear transformation corresponds to the opto-electronic transfer characteristic defined in CCIR 709. The following mathematical equations express the nonlinear transformation of scanned image color data:

For R, G, B ≥ 0.018:

R‘ = 1.099 R (superscript 0.45) - 0.099
G‘ = 1.099 G (superscript 0.45) - 0.099
B‘ = 1.099 B (superscript 0.45) - 0.099

For R, G, B ≤ 0.018:

R‘ = -1.099 |R| (superscript 0.45) + 0.099
G‘ = -1.099 |G| (superscript 0.45) + 0.099
B‘ = -1.099 |B| (superscript 0.45) + 0.099

For -0.018 < R, G, B < 0.018:

R‘ = 4.5R
G‘ = 4.5G
B‘ = 4.5B

Conversion To Luma/Chroma Components

The luma and chroma encoding equations correspond to CCIR Recommendation

601-1. The following equations define the conversion from RGB data to luma and chroma data:

Luma = 0.299R‘ + 0.587G‘ + 0.114B‘
Chroma1 = -0.299R‘ - 0.587G‘ +0.886B‘
Chroma2 = 0.701R‘ - 0.587G‘ - 0.114B‘

Conversion To 8-bit Data

Conversion of the luma and chroma values is accomplished by the following equation:

Luma (8-bit) = (255/1.402) Luma
Chroma1 (8-bit) = 111.40 (Chroma1) + 156
Chroma2 (8-bit) = 135.64 (Chroma2) + 137

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Tech Info Library Article Number:10702

Kodak Photo CD: Q & A

Revised: 9/17/92
Security: Everyone

Kodak Photo CD: Q & A

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Article Created: September 14, 1992

TOPIC ----------

This article answers some common questions about Kodak Photo CD technology.

DISCUSSION ----------

Q. Does the AppleCD 300i support Kodak's Photo CD?

A. Yes, AppleCD 300i supports multiple sessions of Photo CD images and can hold up to 100 images of 35mm pictures.

Q. Can I open the image files with my paint program?

A. Yes. Because Photo CD support has been added to QuickTime, any application that can read a PICT file can open a Photo CD image file. Images can be altered and stored on other media, or printed.

Q. What is the data format for the image files on a Photo CD?

A. Kodak has created a special PhotoYCC data format for the image files which provides more thorough color information and lends itself to very efficient data compression scheme. PhotoYCC files can be translated to RGB information easily.

Q. Can I see my prints and decide which ones I want on my Photo CD?

A. Initially, Kodak is supporting only the transfer of entire rolls of film to CD. As the technology becomes more of a standard, users will have more flexibility.

Q. What film sizes are supported?

A. The potential for film sizes other than 35mm is built in to the Photo CD standard but will not be implemented until later.

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Tech Info Library Article Number:10703

Tech Info Library

SNA•ps: Configuring for Fewer than 5 LUs with Coax

Revised: 10/2/92
Security: Everyone

SNA•ps: Configuring for Fewer than 5 LUs with Coax

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Article Created 23 September 1992

TOPIC ----------

How do I configure SNA•ps 1.1 3270 for use on a coax line that has fewer than five LUs defined (for instance, two display LUs and one printer LU)?

DISCUSSION ----------

You need to create a configuration file so that the gateway "knows" how to set itself up to correctly present the LUs to the AppleTalk-based clients. Here's how:

1) If you're using SNA•ps 3270 (standalone), follow these steps:

   a) Run the SNA•ps Manager program.
   b) Select NEW CONFIGURATION and COAX, and the program will tell you that you have 5 Display LUs and 0 (zero) Printer LUs.
   c) Continue with step 3.

2) If you're using SNA•ps 3270 Gateway (8/32/64), follow these steps:

   a) Run the SNA•ps CONFIG program.
   b) Select NEW CONFIGURATION and COAX, and the program will tell you that you have 5 Display LUs and 0 (zero) Printer LUs.
   c) Continue with step 3.

3) Type into the DISPLAY LU box the MAXIMUM number of display LUs currently defined for this coax line (in this case, type 2). Please notice that the number of available printer LUs automatically goes to 3 (2 + 3 = 5).

   You'll notice that no matter what number you type into this box, it will always force the complementary LU setting to balance to a total of 5 LUs. It does this even though it isn't an accurate reflection of the display and printer LUs actually defined on the coax line (3 in

this case).

If you configure the coax line for one printer LU, the program forces the number of display LUs to 4. But if you actually have 2 display LUs and one printer LU defined on that line, the SNA•ps 3270 terminal emulation program tells you that there are 3 display LUs. If you try to connect to the "third" LU, you don't get a connection to an "expected" display LU complete with host splash screen. If you now run the SNA•ps 3287 printer emulation software, it can't find the printer LU.

By configuring the gateway for 2 display LUs (thereby forcing the printer LUs to 3), SNA•ps 3270 will find the 2 display LUs and the SNA•ps 3287 program will find the single defined printer LU.

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Tech Info Library Article Number:10704

AppleTalk: Effects of Redundancy on Some Network Configurations

Revised: 11/11/92
Security: Everyone

AppleTalk: Effects of Redundancy on Some Network Configurations

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Article Created: 29 September 1992

TOPIC -----

We have a cisco router which provides redundant paths to several AppleTalk networks. The internet routers now flip-flop between the two AGSs as their next router. Is what we're doing a legal network configuration? If it is, what causes the internet routers to swap between what they see as their next router?

Given our number of AT devices, number of physical networks, and zones (312), we're extremely sensitive to traffic issues. I would like to know more about increased traffic due to redundancy and how split horizon may help.

Also, from a desktop view, once a process is initiated from a Macintosh computer to some service on a remote network, do all packets follow the same path until the connection is broken? In other words, if I connect to a server on a remote network, and the packet can be forwarded by either CISCO 3 or CISCO 6, will all packets be forwarded through the same CISCO for the duration of the process? Is there a difference if the connection is to a server versus a printer or a Macintosh, and so on?

DISCUSSION -----

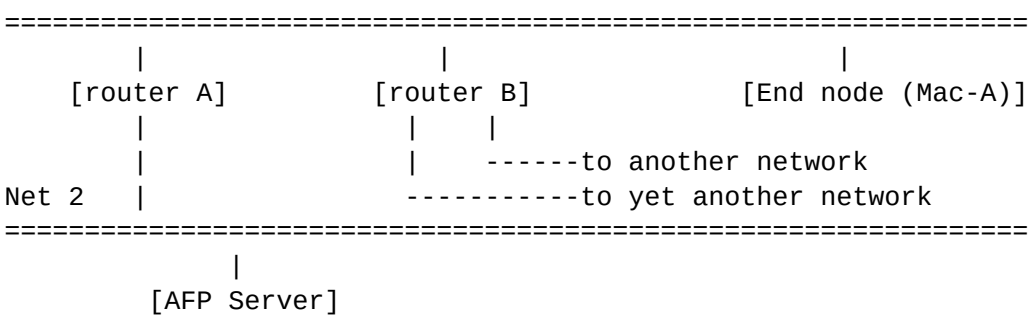
Configuration

The network configuration you've created is perfectly legal and the behavior you see is correct. RTMP assumes the latest route to a specific network is the most recent information, and replaces the information currently in the routing table, even if the route "cost" (hop count) is equal.

DDP "Best Router" Functionality

"Best route" reduces the number of needless routers used when a DDP session

is in use. Its primary purpose is to eliminate the following situation:



Here's the order of events:

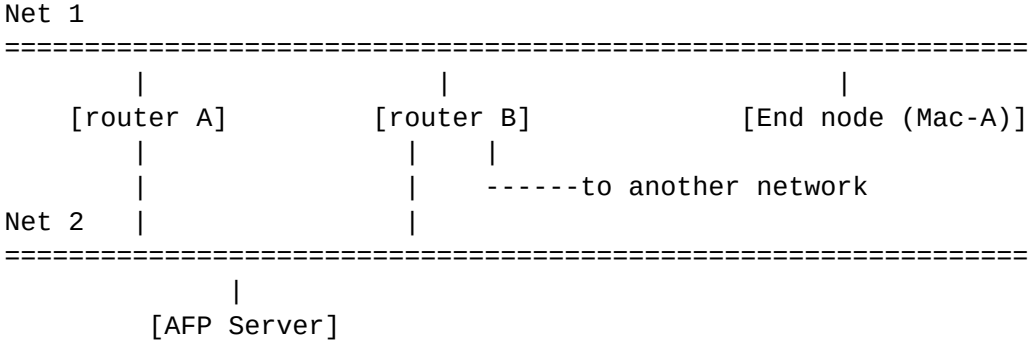
1) When end node (Mac-A) on network 1 initiates a connection to the AFP server on network 2, the initial packet might be sent to router B. This is because end nodes don't really keep any routing information. They rely on the routers to keep up with the routing tables, and as such they just sit and listen for the last RTMP packet broadcast on their cable.

2) The end nodes then use the address of that router for all routing functions. If router B was the last router that the end node saw broadcasting an RTMP packet, then the initial NBP lookUp for the AFP server is sent to router B, even though router A is the best choice.

3) Eventually, the packet gets to the AFP server, and the AFP server responds directly to the end node through router A, leaving router B completely out of the picture.

4) The end node then caches the address of the router that sent the packet, and all subsequent traffic to the server for this communications process uses router A. That's the basic reason for the DDP "best route" mechanism.

Now let's redraw the picture making router B a redundant link between network 1 and network 2.



In this case, either router A or router B would work as the "best route" to network 2. In detail:

1) The end node (Mac-A) sends an NBP lookUp for the AFP server on network 2

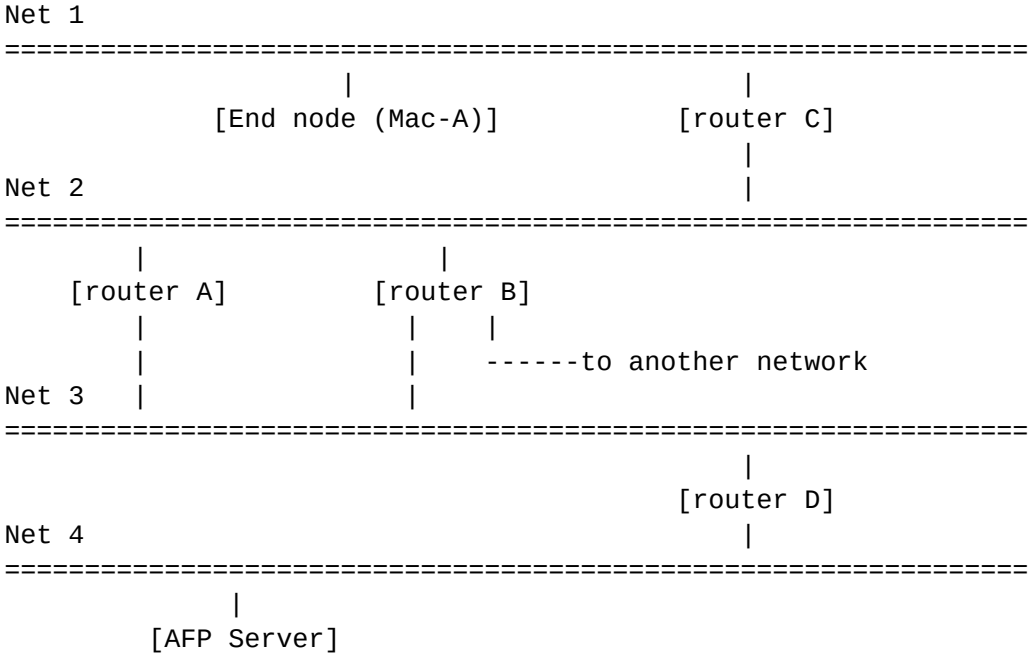
to either router A or router B, whichever broadcast its routing table last.

2) Either of the routers are capable of delivering the packet to network 2, but let's say router B was chosen. Router B passes the NBP packet on to network 2 where the AFP server picks it up and responds directly to the end node.

3) If the AFP server last saw an RTMP packet from router A, then router A would be the choice to get the packet to network 1. Since router A has connectivity to network 1, it passes it along and the end node (Mac-A) picks it up.

4) When the end node picks it up, it sees that the last router that was used was router A, and it then caches router A as the "best route" for the connection to the AFP server. The AFP server could just have easily last heard from router B, which would cause router B to be chosen as the "best route".

In a 3rd scenario, let's separate the redundant path by yet another router.



This actually looks more like what you've installed. In this scenario, DDP "best route" does nothing to allow better use of the redundant path. Let's look at the example:

1) If the end node (Mac-A) wants to talk to the AFP server on network 4, it performs an NBP lookUp.

2) The lookUp is sent to router C, and router C uses either router A or router B to deliver the packet to router D and network 4.

3) Router C uses the router that has a valid path and was the last one

heard from on network 2, either A or B. This is because the RTMP tables on router C are constantly changing state for the entry to network 4, and since both are offering the same cost, the newest entry is used.

4) The packet eventually gets to network 4, and the AFP server responds to the end node.

5) The end node will cache router C as the "best route" because it was the last router to touch the packet.

Nothing in the DDP "best route" caching mechanism does anything to load balance the link or to use one router over the other.

Increased NBP and RTMP Traffic and RTMP Packet Size

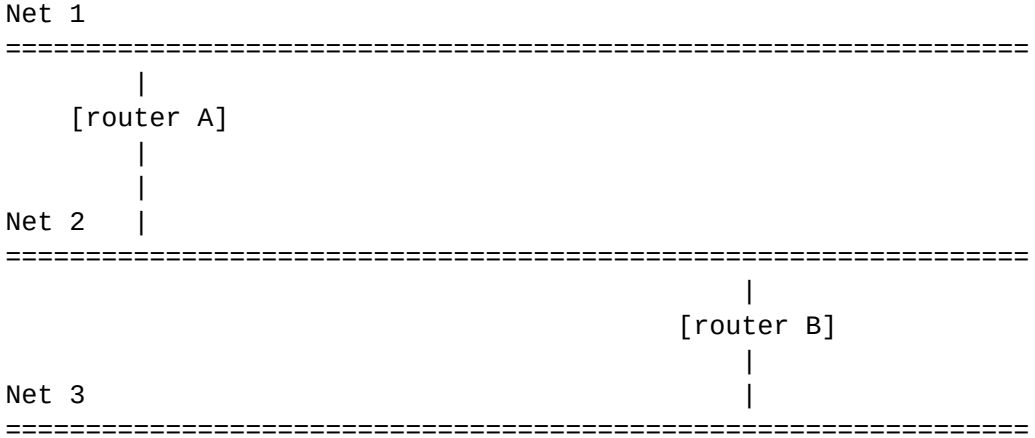
Increased NBP and RTMP traffic and large RTMP packets usually don't cause problems unless your network is already heavily loaded.

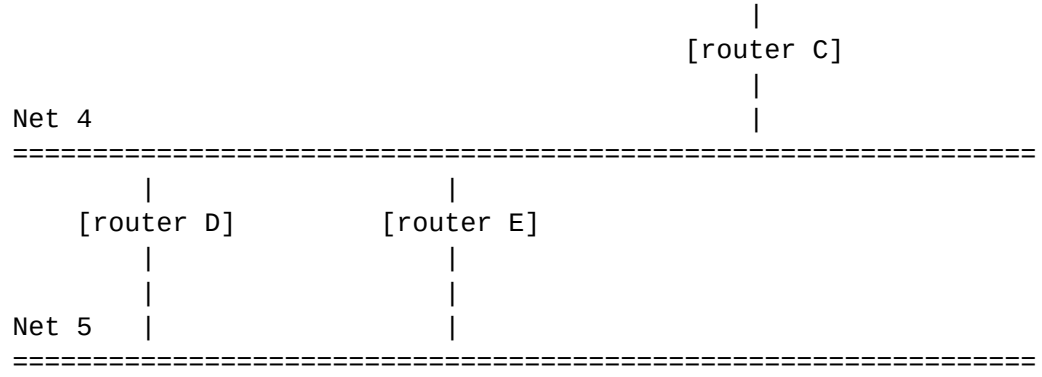
Increased NBP traffic can be attributed to additional devices on the cable. When anyone does an NBP lookUp for those particular types of devices, you'll have increased NBP traffic.

Your RTMP tables will be the same size; there are no additional routes to advertise, so the size of the table won't increase. Please note that on the cables where redundant routers are connected, the number of RTMP packets will double as both routers will be sending RTMP packets. In an internet where redundant routers are present, the split horizon mechanism does nothing to reduce the size of the RTMP tables over the size reduction already realized.

Problem with Redundant AppleTalk Routers

There is at least one small problem with redundant AppleTalk routers, and there may be others. Large enterprise networks have routes that sometimes flap. A route that flaps is stable (marked as good), then unstable (marked as suspect), then stable, then unstable (you get the idea). This is a common occurrence in large AppleTalk environments. You should ultimately find the cause of the flapping route and fix it, but sometimes it's caused by nothing more than a router that was momentarily overloaded.





Here's what happens in a situation with redundant routers. Let's say router A gets overloaded and isn't able to get its RTMP packets broadcast as often as needed to sustain the valid routes throughout the internet. Router B is the first router to discover this, and marks the route as bad. Router B then tells router C, and router C then tells router D and router E.

Router D gets the message that the route is bad. Router E does the same thing, but at the same time router E was in the process of sending out an RTMP packet to network 5. This RTMP packet says that router E has a valid route to network 1, and updates its tables accordingly. Router D then advertises that on network number 4, and the message is propagated through the network. This problem will only manifest itself for about 60 seconds, since router E will eventually time out the entry and cause the whole chain to break down. But it does create a "black hole" for 60 seconds and can cause problems for end users in the intervening time. If you have a rock solid network, you'll never see this problem. It's common for large AppleTalk networks to occasionally suffer from flapping routes. You can even see this type of anomaly under normal conditions when a router is taken down for maintenance purposes.

This may seem to be a trivial problem, but it caused our network here at Apple considerable grief when we experienced this phenomenon. After going through this experience, we hesitate to recommend redundant routers in a large AppleTalk network. Redundant AppleTalk routers are less useful than redundant links for protocols such as TCP/IP that have routing protocols to deal with redundancy. They are perfectly legal, but may not be very useful.

Conclusion

Redundant routers may be an excellent way to provide reliable service to critical parts of the network, and may work great if your network is rock solid, but as it stands today we recommend that you leave one of them turned off until it's actually needed.

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Tech Info Library Article Number:10724

Tech Info Library

AppleTalk: Hop Count Limit

Revised: 10/9/92
Security: Everyone

AppleTalk: Hop Count Limit

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Article Created: 30 September 1992

TOPIC -----

What is the maximum number of hops (that is, number of routers) a packet will go through before it is stopped, assuming all existing routers are AppleTalk Phase 2 routers?

DISCUSSION -----

The hop count limit, which is 15, is the same for AppleTalk Phase 1 and AppleTalk Phase 2. This is documented on page 4-17 of "Inside AppleTalk, Second Edition."

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Tech Info Library Article Number:10725

Tech Info Library

MacTCP 1.1.1: 7K Hosts File Limitation Removed

Revised: 10/26/92
Security: Everyone

MacTCP 1.1.1: 7K Hosts File Limitation Removed

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Article Created: 1 October 1992

TOPIC -----

I'm having problems with the size of the hosts file; only the first 20 to 30 nodes are visible to choose from in the MacTCP tool. Would MacTCP 1.1.1 help me?

DISCUSSION -----

Yes, the limitation of a 7K Hosts file in MacTCP has been removed in MacTCP 1.1.1.

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Tech Info Library Article Number:10734

Tech Info Library

AppleShare: Troubleshooting Unexpected Change in Default Zone

Revised: 11/11/92
Security: Everyone

AppleShare: Troubleshooting Unexpected Change in Default Zone

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Article Created: 1 October 1992

TOPIC ----------

An AppleShare 2.0.1 server running on a Macintosh IIfx using a Shiva EtherPort II card in Phase 2 repeatedly loses its default zone and ends up in Ether2. This happens about once every night. In the morning the users find the server in Ether2. What could be causing this? We checked associated routers on the same segment of Ethernet.

DISCUSSION ----------

The default zone is stored in PRAM, which, if the battery is functional, should store the selected zone without a problem. If the lithium battery isn't fully functional, then the values in Parameter RAM can get corrupted, and you can see the symptoms you describe.

If PRAM isn't getting refreshed, you're likely to have problems with the clock, double-click setting, sound volume, and so on.

If you aren't experiencing any other difficulties with this Macintosh, it could be that the locations that store the zone data could be bad, and this would cause a specific failure. The best plan of action would be to replace the Macintosh IIfx logic board, and see how things progress from there.

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Tech Info Library Article Number:10736

Tech Info Library

MacTCP: Problems Connecting Over Token Ring Card to RS6000

Revised: 11/4/92
Security: Everyone

MacTCP: Problems Connecting Over Token Ring Card to RS6000

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Article Created: 1 October 1992

TOPIC ----------

I'm having trouble establishing a TCP/IP session with an RS6000 using a 4/16MB Token Ring Card and MacTCP. The Token Ring card is working (green light on) after startup. I can ping the Macintosh from the RS6000, but can't ping from the Macintosh.

Configuration:

- Macintosh IIcx
- Token Ring card in slot 2
- MacTCP
- Token Ring extension
- System 7.0 and the tune up disk

I've cleaned from the system, all INITS and extensions that aren't essential. I'm using TelNet v2.5 going over the Token Ring card to the RS/6000. I've used the ping utility from the RS/6000 (IBM) to check the connection, and it seems fine. Before the Macintosh was on this connection, an IBM was at this connection on the ring. I've tried other connections to the network, but the same thing happens.

DISCUSSION ----------

This is a known IBM RS6000 AIX bug. IBM has patches available to fix the problem. We've included some information below about each of these patches. You should contact IBM to obtain the patches.

Two IBM patches:

- if_tr patch
  This is a modified token ring driver. This is an official fix, but it won't be included in AIX 3.2. It will be available as an update. AIX v3.2 is coming out in February 1992.

- netinet patch
  Many customers have already discovered some bugs. This patch fixes many bugs, including the one you describe. This patch is already included in the AIX v3.2. So if an RS6000 is running AIX v3.2, you don't have to (or should not) install this patch.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10737

HyperCard 2.1 Player (9/94)

Revised: 9/20/94
Security: Everyone

HyperCard 2.1 Player (9/94)

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Article Created: 1 October 1992
Article Reviewed/Updated: 20 September 1994

TOPIC ----------

In September 1992, Apple began bundling HyperCard 2.1 Player with Macintosh systems sold in the United States. HyperCard 2.1 Player was either on a floppy disk or installed on the hard disk.

In December 1993, Apple took ownership of HyperCard and began sales of HyperCard 2.2. HyperCard 2.2 has the ability to create standalone applications.

DISCUSSION ----------

HyperCard 2.1 Player is a run-time version of HyperCard. It consists of:

- the HyperCard run-time engine
- a Home stack
- a Read Me file

(No sample stacks are included.)

HyperCard 2.2, running on a Macintosh with System 7, can be used to create a standalone application from any HyperCard stack. Standalone applications work on their own: others can use your stacks even if they don't own HyperCard.

HyperCard is available from Apple Software Resellers, Apple Resellers and from APDA.

Owners of HyperCard 2.1 and 2.2 have access to toll-free telephone support by calling Apple Assurance at (800) SOS-APPL. Advanced scripting support is available for a fee by calling (800) 950-2442.

Article Change History:
20 Sep 1994 - Added information about HyperCard 2.2.

..TIL10741-HyperCard_2-1_Player_9-94.pdf

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10741

Tech Info Library

Apple Font Pack

Revised: 10/1/92
Security: Everyone

Apple Font Pack

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Article Created: October 1, 1992

TOPIC ----------

The Apple Font Pack, a retail software product, includes a selection of TrueType fonts from leading type vendors. The Apple Font Pack addresses the typographic needs of mainstream customers. It requires minimal system overhead, and makes fonts easy to use with one-click installation and a booklet to educate customers on how to effectively use type to create compelling documents. It is available through authorized resellers.

DISCUSSION ----------

Contents

The Apple Font Pack contains:

- 25 new Apple fonts, all from leading type foundries. These are listed below.
- 18 of the fonts Apple has been shipping with the LaserWriter and StyleWriter printers.
- The Apple LaserWriter Driver and LaserWriter Font Utility software for using the fonts with Apple and third-party PostScript laser printers.

The Apple Font Pack, added to the 21 fonts that come with System 7, brings Apple's font offering for the Macintosh computer to 64.

Enhanced LaserWriter Printers

The 25 new fonts will also be added to the library of fonts included with Apple's network printers: the LaserWriter IIf, LaserWriter IIg, and Personal LaserWriter NTR. This boosts the font offering to 64 for

customers using any Macintosh computer with these printers.

Compatibility and Configurations

The Apple Font Pack requires a Macintosh personal computer running System 7. The LaserWriter IIf, LaserWriter IIg, and Personal LaserWriter NTR printer font sets are compatible with Macintosh computers running System 6.0.7 or System 7. Once installed, the fonts are compatible with any Macintosh printer or output device, and with third-party printers.

The 25 New Apple Fonts

- AGFA Division of Miles, Inc.
  Delphian
  Nadianne
  Nadianne Bold
  Oxford

- Bigelow & Holmes, Inc.
  Lucida Bright
  Lucida Bright Bold
  Lucida Bright Italic
  Lucida Bright Bold Italic

- Bitstream, Inc. (all licensed to ITC)
  ITC Garamond Narrow
  ITC Garamond Narrow Bold
  ITC Garamond Narrow Italic
  ITC Garamond Narrow Bold Italic

- Font Bureau, Inc.
  Zeal

- International Typeface Corporation
  ITC Machine
  ITC Lubalin Graph
  ITC Lubalin Graph Bold
  ITC Lubalin Graph Oblique
  ITC Lubalin Graph Bold Oblique

- Linotype-Hell
  Helvetica Black
  Helvetica Black Oblique
  Helvetica Compressed
  Helvetica Compressed Oblique

- Monotype Typography
  Old English

Swing Bold
Onyx

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10742

Tech Info Library

System Software: Network Install Not Supported Before System 7

Revised: 11/11/92
Security: Everyone

System Software: Network Install Not Supported Before System 7

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Article Created: 9 October 1992

TOPIC ----------

I'm having difficulty with installing system software on a large AppleTalk network. I'm using Installer 3.2 and trying to install System 6.0.8.

I've never been able to install System 6.0.8 using the network installation feature of the Installer. The System 6.0.7 network installation worked sporadically. When an installation failed, the error message was always "The Installer can not find the resources necessary for this installation. Please contact your network administrator." or something like that. I've checked access privileges and pathnames, and everything is correct.

DISCUSSION ----------

System Software network installation is supported beginning with System 7.0. You're trying to use the Installer (v3.2) from System 7.0 with an installer script from System 6.0.8, which doesn't support network installs. Technically, it might be possible to create an appropriate script, but it's neither supported nor recommended.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10743

Tech Info Library

Ethernet NB Card: LW Bridge 1.0 Is Not Compatible (6/95)

Revised: 6/2/95
Security: Everyone

Ethernet NB Card: LW Bridge 1.0 Is Not Compatible (6/95)

==========

Article Created: 1 December 1992
Article Reviewed/Updated: 2 June 1995

TOPIC ----------

Is the LaserWriter Bridge 1.0 Utility compatible with the Apple Ethernet NB Card?

DISCUSSION ----------

No. We called Sonic Systems Technical Support. They told us their LaserWriter Bridge 1.0 Utility software product does not work with the Apple Ethernet NB Card (M0417LL/A). They said the LaserWriter Bridge 1.0 Utility does work properly with the old Apple EtherTalk NB Card (M0410LL/A).

They also said they have no plans to upgrade their product to work with the Apple Ethernet NB Card (M0417LL/A). For more information, please contact Sonic Systems, Inc. The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

The LaserWriter Bridge 2.0 is compatible, and you can obtain it free. It is included on the Network Software Installer (NSI) 1.5 disk.

The LocalTalk Bridge is also fully compatible, and is sold as a separate product (M3246Z/A).

These articles can help you locate the NSI 1.5 software mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Part numbers mentioned in this article are accurate as of this writing. Before

ordering, verify that they are still correct as they are subject to change.

Article Change History:
02 Jun 1995 - Added LaserWriter Bridge 2.0 and LocalTalk Bridge.
17 Oct 1994 - Changed LaserBridge to LaserWriter Bridge Utility.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10745

Tech Info Library

System 7: Limits on Application Memory Allocation

Revised: 11/2/92
Security: Everyone

System 7: Limits on Application Memory Allocation

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Article Created: 19 October 1992

TOPIC ----------

I would like to increase the maximum memory for an application to more than 99MB via "Get Info" under System 7. Apparently the maximum memory currently is 99MB.

How can I increase the maximum memory to more than 99MB for an application?

DISCUSSION ----------

The current or "preferred" memory size assigned to an application (via Get Info) is limited to:

System 7 or 7.0.1	System 7.1
less than 100,000K	1,000,000K

We recommend that you upgrade to System 7.1.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10746

Tech Info Library

DAL: AS/400 Server Q & A

Revised: 2/18/93
Security: Everyone

DAL: AS/400 Server Q & A

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Article Created: October 6, 1992

Article Change History

02/18/93 - REVIEW
- For technical accuracy.

TOPIC ----------

On September 1, 1992, Apple announced a Data Access Language (DAL) Server to support IBM's AS/400 family of mid-range computers. For those not familiar with the client/server world, this article answers some questions about these products.

DISCUSSION ----------

Q: What is a DAL?
A: DAL is software that resides on both the AS/400 (server) and the Macintosh (client). The software allows Macintosh applications to use/access the client to make SQL queries of data on the host.

Q: What does DAL mean?
A: DAL stands for Data Access Language, and it means being able to enter the AS/400 system (server) via a desktop computer (client) and access database information. That information can then be brought onto the desktop system where it can be manipulated and managed the same as any application on the desktop. Data access is different than accessing a file server. With a file server, the desktop user is able to drag or copy an entire file from the server such as a letter, an application, or an entire spreadsheet (file transfer). Data access allows the desktop user to selectively retrieve portions of data (not the entire file or database that may be millions of records large) by interacting with the server's database management system to obtain the specific

data the desktop user needs.

Q: Is it only for IBM midrange and mainframe computers?
A: No. DAL has been in existence for three years and permits connectivity with a number of platforms, including Digital VAX/VMS minicomputers and popular UNIX machines such as Sun Sparc, HP9000, and IBM RS6000, and Mainframes. Including the AS/400, Apple's DAL database connectivity solution includes support for 13 major database host operating environments in addition to 13 different relational databases. In fact, the AS/400 is one of the "last frontiers" for connectivity to IBM hardware by Macintosh.

Q: What is an AS/400 computer and what functions would it typically perform?
A: The AS/400 is a family of midrange computers from IBM, primarily used to run applications software for running a small business or a department or division of a large enterprise as servers to PCs on a network. There are approximately 175,000 AS/400s installed and over 9000 applications packages available. The most common use of AS/400 is to run general purpose business software such as an integrated manufacturing software package that would handle bills of materials, engineering production schedules, order entry, accounts receivable, purchasing, general ledger and payroll. For example at Apple, AS/400 computers have been used to handle product distribution.

Macintosh access to the data used to run and measure a business is becoming increasingly important. To date, access to an AS/400 computer was provided only through terminal emulation, a less than satisfactory solution because terminal emulation does not take advantage of the point-and-click Macintosh user interface; it simply recreates the old character-based terminal interface on the Macintosh. It is expected that this capability will further enhance Apple's attractiveness to large, mid-size and small companies alike.

Q: Describe a typical business scenario of a Macintosh being used to access a AS/400.
A: A typical business scenario would be a mid-sized company that uses the AS/400 to build and store database information, such as sales report information. While this company originally grew up with IBM PCs as the dominant platform, many Macintosh systems are in place for a variety of functions and customers increasingly want to be able to integrate them into the network they already have in place, thus AS/400 connectivity is desired.

Another important thing to consider as you look at typical scenarios is the growing popularity of the PowerBook by large sales forces. As in the example above, many of these sales people using PowerBooks have a need to access information residing in the AS/400 servers, such as sales info or the sales history of a particular company, while they're on the road. The DAL Server for AS/400 will allow them to access that information.

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..TIL10747-DAL-AS-400_Server_Q_and_A.pdf

Tech Info Library Article Number:10747

Tech Info Library

Multivendor Network Solutions Guide: How to Order

Revised: 7/27/93
Security: Everyone

Multivendor Network Solutions Guide: How to Order

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Article Created: 9 October 1992
Article Reviewed/Updated: 27 July 1993

TOPIC ----------

How can I order "Apple Multivendor Network Solutions Guide"?

DISCUSSION ----------

The "Apple Multivendor Network Solutions Guide" is available from Apple StartingLine (formerly Apple InPrint). Order part number M6198/D.

This guide describes networking solutions and environments. It also gives company contact information for the third-party companies that sell networking products compatible with Apple products.

The Solutions section provides overviews and specific technology for:

- Data links
- Internetworking
- Network systems
- Network services
- Application development tools
- Network management tools
- Telecommunications
- Network support and training services

The Environments section describes:

- A/UX
- Banyan
- Digital Equipment Corporation
- Hewlett-Packard
- IBM
- Microsoft
- Novell

- Prime
- Sun Microsystems
- Tandem
- UNIX
- Wang

Article Change History:
27 July 1993 - Company title updated from Apple InPrint to Apple StartingLine.
13 January 1993 - Reviewed, to summarize the contents of this guide.

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Tech Info Library Article Number:10748

Tech Info Library

LaserWriter Toner Cartridges May Be Reconditioned (2/95)

Revised: 2/2/95
Security: Everyone

LaserWriter Toner Cartridges May Be Reconditioned (2/95)

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Article Created: 23 November 1992
Article Reviewed/Updated: 02 February 1995

TOPIC ----------

The latest LaserWriter toner cartridges have a sticker that says the cartridge may contain recycled parts. Are these "new" toner cartridges actually refurbished?

DISCUSSION ----------

Beginning in March 1992, Apple started shipping toner cartridges with some recycled parts. This was an environmentally motivated decision to reduce landfill waste and use resources effectively.

The toner cartridges themselves are not recycled or just refilled. They are completely disassembled and some parts are reused or are melted down and recast.

Before implementing this program, Apple conducted extensive testing which compared new toner cartridges to reconditioned ones. Based on the test results, Imaging Engineering determined that the reconditioned toner cartridges have equal or better performance than new toner cartridges.

During Canon's manufacturing process, every toner cartridge receives the label that the toner cartridge "may contain reconditioned parts and remolded materials."

Article Change History:
02 Feb 1995 - Changed access privileges of article.

Support Information Services

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Tech Info Library Article Number:10750

Macintosh: Which Models Can Use Two Chip 1MB SIMMs (3/94)

Revised: 3/31/94
Security: Everyone

Macintosh: Which Models Can Use Two Chip 1MB SIMMs (3/94)

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Article Created: 9 October 1992
Article Reviewed/Updated: 31 March 1994

TOPIC ----------

I'm trying to use the new "quad density" 1MB RAM SIMMs (two chips per SIMM) in older Macintosh computers.

By trial and error, I discovered that the two-chip SIMMs won't work in the Macintosh Plus or Macintosh II. I tested some of these SIMMs from a Macintosh Quadra in a revision A Macintosh II and they cause it to fail the memory test.

In what Macintosh computers will these SIMMs work?

DISCUSSION ----------

The two-chip SIMMs are one-megabyte SIMMs that use four megabit components (four megabits per chip times two chips equals 8 megabits -- eight megabits divided by eight bits per byte is one megabyte). The four megabit components are now cheaper than the one megabit components previously used.

The following models do work properly with these two-chip SIMMs:

- Macintosh Classic II
- Macintosh SE/30
- Macintosh LC/LC II
- Macintosh IIsi
- Macintosh IIcx
- Macintosh IIci
- Macintosh IIvx/IIvi
- Macintosh Quadra 700
- Macintosh Quadra 900/950

Article Change History:
31 March 1994 - Clarified title and Topic, clarified which systems support two chip SIMMs, revised formatting.

..TIL10751-Macintosh-Which_Models_Can_Use_Two_Chip_1MB_SIMMs_3-94.pdf

Support Information Services

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Tech Info Library Article Number:10751

Macintosh Quadra: Speed of On-Board Video vs. Display Card 8•24

Revised: 11/3/92
Security: Everyone

Macintosh Quadra: Speed of On-Board Video vs. Display Card 8•24

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Article Created: 9 October 1992

TOPIC ----------

What is the speed difference using on-board video in the Macintosh Quadra 950 compared to using a Macintosh Display Card 8•24?

DISCUSSION ----------

The Quadra 950's built-in video is faster.

Here are the video test results from Speedometer 3.1 (a shareware benchmarking program) for the Macintosh Quadra 900 using built-in video and the Macintosh Display Card 8•24. Note: Speedometer 3.1 uses a Macintosh II with the original Macintosh II Video Card as a reference speed of 1.0 with a higher number meaning faster:

Macintosh Quadra 900 Using Built-in Video

Black & White: 4.468
4 Colors: 4.692
16 Colors: 4.685
256 Colors: 4.528
Color Test Average: 4.593

Macintosh Quadra 900 Using the Macintosh Display Card 8•24

Black & White: 3.476
4 Colors: 3.300
16 Colors: 2.860
256 Colors: 2.417
Color Test Average: 3.013

Macintosh Quadra 950 Using Built-in Video

Black & White: 5.894

4 Colors: 6.350
16 Colors: 6.513
256 Colors: 6.568
Color Test Average: 6.331

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10752

Tech Info Library

LaserWriter IIf & IIg 2.0 ROMs: Issues Addressed (7/95)

Revised: 7/7/95
Security: Everyone

LaserWriter IIf & IIg 2.0 ROMs: Issues Addressed (7/95)

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Article Created: 19 October 1992
Article Reviewed/Updated: 07 July 1995

TOPIC ----------

What issues do the LaserWriter IIf/IIg Revision 2.0 ROMs address and correct?

DISCUSSION ----------

The Revision 2.0 ROM release for the LaserWriter IIf and IIg controller boards corrects these problems:

- The inability to place the LaserWriter IIg in different zones or to rename it, with the Namer application, on an EtherTalk network.

Note:
This does not apply to the LaserWriter IIf because it does not have EtherTalk capabilities.

- The inability to return proper font outlines to a limited number of font manipulation packages using the PostScript "pathforall" operator.

. In this situation, the application cannot retrieve a bitmapped font
. from the printer when the application requests one.

- Incompatibility with spoolers resulting in incomplete print jobs, printing errors, and the inability to capture the printer on the spooler.

- Serial port errors resulting from the printer echoing an extra end-of-file indicator (Control-D).

. In this situation, the printer status indicates busy when actually
. it is idle.

- Difficulty connecting some third-party hard drives to a LaserWriter IIf or IIg.

. When using the LaserWriter Utility, the user is unable to "see" the
. hard drive attached to the LaserWriter.

Note:
Some third-party hard drives may not be compatible with Apple products, regardless of this ROM upgrade. Check product compatibility with the hard drive manufacturer.

If your LaserWriter IIf or IIg is experiencing any of these problems, contact your Authorized Service Provider to purchase the LaserWriter IIf/IIg 2.0 ROM upgrade. This upgrade is only available as a service upgrade, and it is not a user installable upgrade.

Article Change History:
07 Jul 1995 - Changed wording for easier searching
28 Apr 1995 - Added information on where to get upgrade.

Support Information Services

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Tech Info Library Article Number:10758

LaserWriter Utility 7.2 and 7.3: Difference

Revised: 10/8/92
Security: Everyone

LaserWriter Utility 7.2 and 7.3: Difference

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Article Created: 19 October 1992

TOPIC --------------------

What is the difference between LaserWriter Utility 7.2 and 7.3?

DISCUSSION --------------------

LaserWriter Utility 7.3 lets the user put a LaserWriter IIg on an Ethernet network in any zone that has been defined for that Ethernet network.

For information on the problems corrected with the Revision 2.0 ROMs, see Tech Info Library article "LaserWriter IIf & IIg Revision 2.0 ROMs: Issues Addressed."

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Tech Info Library Article Number:10762

Tech Info Library

LaserWriter Driver 7.1.1 and 7.1.2: Differences

Revised: 11/11/92
Security: Everyone

LaserWriter Driver 7.1.1 and 7.1.2: Differences

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Article Created: 8 October 1992

TOPIC ----------

What are the differences between LaserWriter Drivers 7.1.1 and 7.1.2? When should a user upgrade?

DISCUSSION ----------

The changes in LaserWriter Driver 7.1.2 are as follows:

- Support for the Fonts Folder within the System Folder of System 7.1.

- Workaround for a very rare bug in the LaserWriter IIg: printing TrueType fonts after they are downloaded to the printer's hard drive sometimes results in incorrect or no output.

- Fix for a very rare bug when printing to a Personal LaserWriter NTR with some TrueType fonts: the printer purges the current job and restarts.

- Support for fonts with foreign names.

- Enhanced printer memory allocation when printing with TrueType fonts.

Apple recommends upgrading to this driver if you are:
- Using System 7.1.
- Printing TrueType fonts to a LaserWriter IIg with a hard drive.
- Printing TrueType fonts to a Personal LaserWriter NTR.
- Using international system software.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10763

Tech Info Library

Macintosh IIvx: Displays Larger than 14 Inches (7/93)

Revised: 7/19/93
Security: Everyone

Macintosh IIvx: Displays Larger than 14 Inches (7/93)

==========

Article Created: 19 October 1992
Article Reviewed/Updated: 12 July 1993

TOPIC ----------

Why doesn't the Macintosh IIvx support monitors larger than 14 inches?

DISCUSSION ----------

The Macintosh IIvx (Performa 600) has internal video support for the 12-inch, 13-inch, 14-inch, and VGA (Video Graphics Array) displays. However, the internal video doesn't support monitors greater than 14 inches.

Macintosh IIvx video logic is based on the Macintosh LC II. Time to market urgency made major alterations of the Macintosh LC ASIC impossible.

Customers must purchase an appropriate NuBus Card such as the Macintosh Display Card 8•24 to drive their larger monitors.

Article Change History:
07/12/93 - Revised to include 14-inch color displays, and Performa 600.

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Tech Info Library Article Number:10768

Tech Info Library

Macintosh IIvx: Why a Sheet Metal Enclosure

Revised: 10/13/92
Security: Everyone

Macintosh IIvx: Why a Sheet Metal Enclosure

==========

Article Created: October 19, 1992

TOPIC -----

Why did Apple select the sheet metal box enclosure for the Macintosh IIvx?

DISCUSSION -----

There are several advantages to the new sheet metal box over the previously used molded plastic.

- Metal is a natural EMI (Electro-magnetic Interference) barrier. On molded plastic systems, expensive coatings must be used on the inside as a shield.

- The longevity of a tool used to fabricate a metal cabinet is 3 times as long as that for a plastic mold.

- The roomier size supports many potential configurations. The front and rear bezels are product-specific but the rest of the container is designed to adapt to several different product designs.

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Tech Info Library Article Number:10769

Tech Info Library

Macintosh IIvx/Centris/Quadra 650: Logic Board Upgrade (8/94)

Revised: 8/5/94
Security: Everyone

Macintosh IIvx/Centris/Quadra 650: Logic Board Upgrade (8/94)

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Article Created: 19 October 1992
Article Reviewed/Updated: 13 July 1993

TOPIC ----------

What logic board upgrade options are available for the Macintosh IIvx, Centris 650, or Quadra 650?

DISCUSSION ----------

Wherever possible, Apple has given customers the opportunity to upgrade to a newer logic board. Apple has made available a logic board to upgrade a Macintosh IIvx, Performa 600, or Quadra/Centris 650 to a Power Macintosh 7100/66 or 7100/66AV model.

The part number for the 7100/66 is M2474LL/A. The part number for the 7100/66AV model is M2840LL/A.

For details about this upgrade contact your local Apple authorized dealer.

Article Change History:
05 Aug 1994 - Revised to show upgrade to Power Macintosh 7100/66.
13 Jul 1993 - Revised to add available upgrade path to Centris 650.

Support Information Services

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Tech Info Library Article Number:10770

Tech Info Library

Macintosh IIvx: Not Designed to Operate Vertically (7/93)

Revised: 9/14/93
Security: Everyone

Macintosh IIvx: Not Designed to Operate Vertically (7/93)

==========

Article Created: 19 October 1992
Article Reviewed/Updated: 14 September 1993

TOPIC ----------

Can I operate my Macintosh IIvx in a vertical position?

DISCUSSION ----------

The Macintosh IIvx (and the similar Performa 600 and Centris 650) were designed, built, and tested to perform reliably in the horizontal position. When operated in the horizontal position, these computers meet or exceed Apple Computer's regulatory compliance specifications. Using these computers in any other orientation may damage sensitive internal components and isn't recommended.

Further, when you place one of these computers on a work surface, be sure the L on the left side of the system remains unobstructed.

However, should you require a vertical position for your system, you must use an appropriate accessory stand to ensure regulatory compliance and continued reliability. An appropriate stand holds the computer safely without disrupting the air flow that keeps the computer's components cool. (The Apple CD 300i functions properly on its side.)

Article Change History:
07/13/93 - Revised to include Performa 600.
09/14/93 - Revised to include Centris 650.

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Tech Info Library Article Number:10771

Tech Info Library

MacX 1.2 Distribution Channels and Support

Revised: 10/13/92
Security: Everyone

MacX 1.2 Distribution Channels and Support

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Article Created: October 19, 1992

TOPIC -----

How will MacX 1.2 be distributed and supported?

DISCUSSION -----

Sales Channels:
• Apple direct sales force, NAES, SEs.
• Product availability through Apple resellers.
• Product availability through UNIX resellers: Ingram, Merisel, MicroD.
• Apple Direct (800#) product availability, effective October 1, 1992.

Support:
• Built-in 30-day customer assistance phone support.
• Additional support available through 6-incident call or yearly contract.

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Tech Info Library Article Number:10772

Tech Info Library

Macintosh IIvx: IIci Cache Card, Accelerator Slot Incompatible

Revised: 10/13/92
Security: Everyone

Macintosh IIvx: IIci Cache Card, Accelerator Slot Incompatible

==========

Article Created: October 19, 1992

TOPIC ----------

Can I use the IIci Cache Card in the new Accelerator slot?

DISCUSSION ----------

No. The Macintosh IIci Cache Card is incompatible with the new accelerator slot. The accelerator slot does not accommodate cache-only cards.

Macintosh IIvx has its cache architecture on the logic board, which means the accelerator slot is left open for a third-party accelerator card.

Accelerator cards such as 50 MHz 68030s or cards based on 68040s are meant for this slot.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10773

Tech Info Library

MacX 1.2 Product Overview (4/95)

Revised: 4/26/95
Security: Everyone

MacX 1.2 Product Overview (4/95)

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Article Created: 9 October 1992
Article Reviewed/Updated: 26 April 1995

TOPIC ----------

This article is an overview of MacX 1.2 and its new features.

DISCUSSION ----------

MacX 1.2 is the current revision of MacX that retains the benefits of the earlier releases and primarily offers compatibility with the latest release of the Macintosh Operating System 7.1 and later. Aside from bug fixes, here are the major differences between MacX 1.1.7 and 1.2:

• System 7.1 and later compatibility. MacX 1.2 is compatible with all versions of the Macintosh Operating System from 6.0.5 to 7.x -- and A/UX versions 2.0, 2.0.1, and 3.x.

• Backing Store & Save Under. MacX 1.2 provides industry-standard Backing Store and Save Under capability, allowing users to regulate the frequency of window display updates to improve accuracy and performance

• Colormap, Animation & Host Access control defaults. A number of defaults have been changed to improve application compatibility and user convenience. Disable smooth animation by default for improved performance. Disable host access alert boxes by default.

MacX 1.2 retains the following major features supported in earlier versions:

• X Window System standard conformance. MacX implements the X Window System Version 11, Release 4 standard, ICCCM window management, XLFD font protocol.

• Macintosh System 7. MacX users can take advantage of complete System 7 functionality and intuitive interface while accessing X applications.

• Macintosh applications. Thousands of easy-to-use, consistent applications available to use on the same desktop as X Window System applications.

• Macintosh Windows and Ease-of-use. X applications appear in Macintosh windows for easy moving and resizing. MacX allows users to access and customize clients using Macintosh pull down menus.

• Copy & Paste between Macintosh and X. Users can share text and color graphics data between X Window System and Macintosh applications by simply using Copy & Paste.

• Open System networking. Supports all major networking protocols for the Macintosh: AppleTalk, TCP/IP, DECnet.

• Macintosh platform & technology. Support for all Macintosh computers. Runs on Mac OS and A/UX. Supports multiple monitors and 8-bit color.

Article Change History:
26 Apr 1995 - Made correction of typographical errors.
02 Feb 1995 - Changed keywords.
05 Jan 1995 - Checked for technical accuracy.

Support Information Services

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Tech Info Library Article Number:10774

Tech Info Library

Macintosh IIvx: B & W Mode Unsupported by 12 RBG Display

Revised: 10/13/92
Security: Everyone

Macintosh IIvx: B & W Mode Unsupported by 12" RBG Display

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Article Created: October 19, 1992

TOPIC ----------

Why doesn't my Macintosh IIvx support black and white mode on my 12" RBG Display?

DISCUSSION ----------

The Macintosh IIvx internal video logic does not support one bit per pixel mode on the 12" RBG Display.

When the Monitors desk accessory is launched, only 2, 4, 8, and 16 bits per pixel options are offered for that display.

There may be some applications that require black and white mode.

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Tech Info Library Article Number:10776

Tech Info Library

Macintosh IIvx: Hardware and Software Compatibility (3/93)

Revised: 7/23/93
Security: Everyone

Macintosh IIvx: Hardware and Software Compatibility (3/93)

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Article Created: 19 October 1992
Article Reviewed/Updated: 22 July 1993

TOPIC ----------

This article lists hardware and software products that are compatible with the Macintosh IIvx.

DISCUSSION ----------

Developer	Product	Versions
Abacus Concepts	SV4.0	4.0
Abacus Concepts	SV SE + Graphics	1.04
Abacus Concepts	MacSpin	3.01
Abacus Concepts	SuperAnova	1.11
Abacus Concepts	StatView II	1.04
Abacus Concepts	StatView Student	1.0
Adobe Systems Inc.	Adobe Type Manager	3.0
Adobe Systems Inc.	Type 1 Fonts	5.0
Adobe Systems Inc.	Premiere	1.0
Aladdin Systems, Inc.	StuffIt Lite	3.0.1
Aladdin Systems, Inc.	StuffIt Deluxe	3.0.1
Aladdin Systems, Inc.	StuffIt SpaceSaver	1.0.1
Aladdin Systems, Inc.	Popcorn	1.0.1
Aldus Consumer Div.	Gallery Effects/Classic Art Vol. 1	1.0
Aldus Consumer Div.	Personal Press(TM)	2.0
Aldus Corporation	PageMaker SRD	4.0
Aldus Corporation	Persuasion	2.1
Aldus Corporation	Freehand	3.1
Aldus Corporation	PageMaker	4.2a
Aldus Corporation	Persuasion SRD	2.0
Amtex Software Corp.	Tristan Pinball	1.04
Andrew Corp.	Boxer	
Andrew Corp.	NetAxcess	

Andrew Corp.	MacTwin	
Andrew Corp.	TokenAxcess	
Andrew Corp.	TwinAxcess Link	1.0607
Andyne Computing Limited	GQL	3.0
Articulate Systems	Voice Navigator II	2.2
Articulate Systems	Voice Navigator Software	2.3
Articulate Systems	Voice Record	2.1
Articulate Systems	Voice Impact	
Articulate Systems	Voice Impact Pro	
Ashlar Incorporated	Ashlar Vellum 3D	2.12
Attain Corporation	In Control	1.0/English
Attain Corporation	In Control	1.1/English
Attain Corporation	In Control	1.0/German
Avatar Corporation	MacMainFrame	5.0
Berkeley Systems	After Dark	2.0w
Brio Technology	Data Pivot	1.1
Brio Technology	Data Prism	1.8.1
Brøderbund Software	Carmen, America's Past	1.0
Brøderbund Software	Carmen, World Deluxe	1.0
Brøderbund Software	Carmen, Europe	1.2
Brøderbund Software	Carmen, USA	1.2
Brøderbund Software	Carmen, World	1.3
Brøderbund Software	Carmen, Time	1.2
Brøderbund Software	Algebra	1.0
Brøderbund Software	Kid Pix	1.2
Brøderbund Software	Kid Pix Companion	1.0
Brøderbund Software	Bannermania	1.1
Brøderbund Software	Geometry	1.3
Brøderbund Software	Patton Strikes Back	1.0
Brøderbund Software	Spelunx	1.0
Brøderbund Software	Spelunx	1.0
Brøderbund Software	The Playroom	2.0
Brøderbund Software	TypeStyler	2.01
Brøderbund Software	Type	1.0
Brøderbund Software	Just Grandma & Me CD-ROM	1.1
Caere Corporation	OmniPage Direct	1.0
Casady & Greene	Mission Thunderbolt	1.0.6
Casady & Greene	Glider	4.0.6
Casady & Greene	Crystal Quest	2.0.03
Casady & Greene	Pararena	2.0
Casady & Greene	Mission Starlight	1.1.6a
Casady & Greene	Sky Shadow	1.1.6
Chancery Software	MacSchool	3.1
Chancery Software	Précis	1.0
Concentrix Technology	Connections	2.1
Contact Software	ACT	1.0B16
Corel Corporation	Corel Draw for Macintosh	1.0
Dantz Development Corp.	DiskFit Pro	1.1
Dantz Development Corp.	Retrospect	1.3
Dantz Development Corp.	Retrospect Remote	1.3
Dantz Development Corp.	DiskFit Pro/Kanji	1.0
Davidson & Associates	Kidworks 2	1.0
Davidson & Associates	Headline Harry	1.1

Daystar Digital, Inc.	Powercache	
Daystar Digital, Inc.	RAM Powercard	
Deneba Software	Canvas English, French, German, Swedish, Spanish, Italian, Japanese	3.04
Digital Comm.	IRMA Workstation for the Mac	2.1.1
Digital Comm.	IRMALAN Client for the Macintosh	2.1.1
Digital Comm.	IRMA Graphics for the Macintosh	2.1.0
Digital Comm.	MacIRMA	2.1.2
DiVA Corporation	DiVA VideoShop	1.0
Drew Pictures	Iron Helix	1.0
E-Machines	E-Machines Control Panel	3.51
E-Machines	E-Machines Ethernet driver	1.2
E-Machines	E-Machines Ethernet driver	1.1
EduCorp	Educorp	7.0
EduCorp	Educorp CD Sampler	2.0
EduCorp	Digital Video Library	1.0
EduCorp	Africa Wildlife	
EduCorp	Sound F/X	
EduCorp	World Travel v.1	
EduCorp	USA Travel	
EduCorp	Aquatic Art	
EduCorp	DTP	2.0
EduCorp	Swimsuit	
EduCorp	Graphic Designs	
EduCorp	Olivid	3.0
EduCorp	People Business	
EduCorp	Antique Toys	
EduCorp	Donatelli Portfolio	
EduCorp	Heavenly Bodies v.1	
EduCorp	People at Leisure	
EduCorp	Heavenly Bodies v.2	
EduCorp	Mister X	
EduCorp	International Graphic Library	
EduCorp	Spaceship Warlock	
EduCorp	Encyclopedia of Living World	
EFI	Cachet	1.0.1
EnerAnalytics	Mirror Quick!	1.0
Farallon Computing	NetAtlas	1.1A7
Farallon Computing	TrafficWatch	1.0A9
Farallon Computing	CheckNet	2.0
Farallon Computing	NetStats	1.0
Farallon Computing	LWStats	1.03
Farallon Computing	NodeHint	1.03
Farallon Computing	StarCommand	3.1
Farallon Computing	Liaison	3.0.4
Farallon Computing	TB2	4.0.3
Farallon Computing	TB2/Japanese	4.0.3
Farallon Computing	TB2 Remote	3.
Farallon Computing	Kanji TB2	4.0.3
Frame Technology Corporation	FrameMaker	3.0
FTL Games	OIDS	1.3
Great Plains Software	Great Plains Accounting	6.1
Great Plains Software	Great Plains Accounting Client Server	6.1

Grolier Electronic Publishing	New Grolier Multimedia Encyclopedia	4.od84
Gryphon Software	Morph	1.0
Gryphon Software	Morph	1.0.1
Gryphon Software	Morph	1.1
Hayes Microcomputer Products	SmartCom for the Mac	1.0B
Hayes Microcomputer Products	HayesConnect	3.0C
Hayes Microcomputer Products.	SmartCom II for the Mac	3.4A
HyperGlot Software	Berlitz Think and Talk French	1.0
HyperGlot Software	Berlitz Think and Talk German	1.0
HyperGlot Software	Berlitz Think and Talk Spanish	1.0
HyperGlot Software	Berlitz Think and Talk Italian	1.0
HyperGlot Software	Learn to Speak French	1.0
HyperGlot Software	Learn to Speak Spanish	1.0
HyperGlot Software	Learn to Speak English from Spanish	1.0
HyperGlot Software	Learn to Speak English from French	1.0
HyperGlot Software	Learn to Speak English from Japanese	1.1
HyperGlot Software	Learn to Speak English from Italian	1.0
HyperGlot Software	Learn to Speak English from Portugese	1.0
HyperGlot Software	Learn to Speak English from English	1.1
Image Club Graphics, Inc	ArtRoom CD ROM	5.0
Image Club Graphics, Inc	DarkRoom CD ROM	1.0
Image Club Graphics, Inc	Art & Type Vendor CD ROM	1.6
Image Club Graphics, Inc	LetterPress CD ROM	2.0
Image Club Graphics, Inc	Evolution	2.0.2
Image Club Graphics, Inc	Typeface Library	
Image Club Graphics, Inc	DigitArt	
Image Club Graphics, Inc	CG Interactive	1.0
Imagine That, Inc.	Extend	2.0
In-Line Design	Darwin's Dilemma 2.0	2.01
In-Line Design	Tesserae	1.04
In-Line Design	3 in Three	1.2
In-Line Design	Swamp Gas-USA	1.02
In-Line Design	Mutant Beach	1.02
In-Line Design	Tesserae/Italian	1.04
In-Line Design	Tesserae/French	1.04
Insignia Solutions	Universal SoftPC	2.52
Interactive Media Corp.	Media Cataloger	1.0
Interactive Media Corp.	Special Delivery	1.0
Kurta Corporation	Penworks ADB	7.0.1
Kurta Corporation	Xactaline	1.0.1
Language Systems	FORTRAN	3.0.1
Language Systems	Soft Polish	1.1
Lapis Technology	Display Server	
Lapis Technology	Color Server 16-16	
Lapis Technology	Color Server 21	
Lotus Development Corporation	Lotus 1-2-3	1.1
LucasArts	Monkey Island	1.0
LucasArts	Loom	1.0
LucasArts	Pipe Dream	1.0
LucasArts	Indiana Jones 3	1.0
MacroMedia	SoundEdit Pro/French	1.0
MacroMedia	SoundEdit Pro	1.0
MacroMedia	Director	3.1

MacroMedia	ClipMedia	
MacroMedia	ModelShop II	1.2
MacroMedia	Swivel 3D Pro	2.0.4
MacroMedia	Life Forms	1.0.1
MacroMedia	SoundEdit Pro/German	1.0
MacroMedia	Authorware Professional	1.7.1
Maxis	SimLife	0.92
Maxis	SimAnt	1.0
Maxis	RoboSport	1.0
Maxis	SimEarth	1.0
Maxis	SimCity	1.4
MicroNet	MicroNet SCSI Utility	5.3.6
Microsoft	Microsoft Project	3.0
Microsoft	Microsoft Excel	4.0
Microsoft	Microsoft Word	4.0
Microsoft	Microsoft Word	5.0
MicroTech Int, Inc.	Nova Hard Drive	
MicroTech Int, Inc.	Europa Hard drive	
MicroTech Int, Inc.	HD Formatter	3.59
MicroTech Int, Inc.	Europa Formatter	3.59
Mitem	MitemView 3.0	3.0.1
MotionWorks	ProMotion	1.0.2
MotionWorks	ADDMotion II	2.0
MotionWorks	PrimeTime	1.0
Mountain Lake Software	MakeTest	2.0b17
MySoftware Company	MyDataBase	2.1.4
MySoftware Company	MyMail List	3.0
MySoftware Company	MyLabel Designer	1.0
Neon Software, Inc.	NetMinder Ethernet	2.2B
Nisus Software Inc.	Nisus XS	3.11
Nisus Software Inc.	Qued/M	2.5
Nisus Software Inc.	Nisus Compact	3.3
Nisus Software Inc.	Nisus	3.06
Nisus Software Inc.	Nisus International/Arabic	3.5
Nisus Software Inc.	Nisus International/Czech	3.5
Nisus Software Inc.	Nisus International/Hebrew	3.5
Nisus Software Inc.	Nisus International/Hungarian	3.5
Nisus Software Inc.	Nisus International/Polish	3.5
Nisus Software Inc.	Nisus International/Russian	3.5
Nisus Software Inc.	Nisus International/Finnish	3.5
Nisus Software Inc.	Nisus International/Japanese	3.5
Nisus Software Inc.	Nisus International/Korean	3.5
No Hands Software	Magnet	1.0re1
Opcode Systems	AudioShop	1.03
Passport Designs	Alchemy	2.5.2
Passport Designs	Audio Trax	1.0.1
Passport Designs	Encore	2.5.2
Passport Designs	Encore/Japanese	2.5.2
Passport Designs	Midi Player	1.0.1
Passport Designs	Music Time	1.0
Passport Designs	Master Tracks Pro 5	5.0.2
Passport Designs	Trax	2.2
PLI	PLI Formater on PL240Tybo	

Portfolio Systems	Dynodex	3.0
Power Up! Software	Address Book Plus	2.0.1
Power Up! Software	Calendar Creator	1.0.1
Power Up! Software	Fast Forms	2.0
Power Up! Software	Letter Writer Plus	1.0.2
RasterOps	24 STV	
RasterOps	24 XLTV	
RasterOps	24 MxTV	
RasterOps	MediaTime	
RasterOps	24 XLi	
RasterOps	Graphic System software	1.66
RasterOps	Accelerator	3.0
RasterOps	Accelerator	2.93
Ray Dream Inc.	Add Depth	1.0
S.S.A.	Panzer Battles	1.3.3
S.S.A.	Halls of Montezuma	1.3.3
S.S.A.	Rommel	1.3.3
Satori Software	Components General Ledger	1.02
Satori Software	Components Accounts Receivable	1.04
Satori Software	Components Accounts Payable	1.04
Satori Software	Comp. Accts Job Cost Time Billing	1.04
Scholastic Software	Bank Street Writer	1.0.5
Scholastic Software	SuperPrint	1.1
Scholastic Software	SuperPrint Bilingual Ed. English, Spanish	1.1
Scholastic Software	Operation Frog	1.0
Scholastic Software	Point of View	2.0
Shana Corporation	Informed Designer	1.3
Shana Corporation	Informed Manager	1.3
Shana Corporation	Informed Number Server	1.0.1
Shana Corporation	Informed Revision Distributor	1.0
Shana Corporation	Informed Autoform	1.2.2
Sun Select (Formerly Sitka)	MacTOPS	3.1.1
Softsync/BLOC Publishing	Accountant Inc (multiuser)	3.5b1
Softsync/BLOC Publishing	Accountant Inc	3.0.1
Softsync/BLOC Publishing	Accountant Inc.(multiuser)	3.5b2
Spectrum Holobyte	SuperTetris B & W	1.0
Spectrum Holobyte	Faces B & W	1.0
Spectrum Holobyte	Faces Color	1.0
SSI	Dark Queen	
Storm Technology	PictureDecomPress	2.0.4
Storm Technology	PicturePress	2.0.4
Symmetry Software	Mariah	1.1.3
Symmetry Software	Acta 7	1.0.3
Systat, Inc.	Systat	5.2.1
Systat, Inc.	Systat FPU	5.2.1
T/Maker	Writenow	3.0
Team Building Technologies	Agent DA	2.1
Team Building Technologies	Agent DA/French	2.1
The Voyager Company	A Silly Noise	1.0
The Voyager Company	A World Alive	1.0
The Voyager Company	Amanda Stories	1.0
The Voyager Company	Baseball's Greatest Hits	1.0

The Voyager Company	Beethoven:Symphony No 9, CD Companion	2.0
The Voyager Company	Mozart: The "Dissonant" Quartet, CD Companion	1.0
The Voyager Company	Shubert: "The Trout Quintet", CD Companion	1.0
The Voyager Company	Stravinsky: The Rite of Spring, CD Companion	1.0.2
The Voyager Company	Eadweard Muybridge: A Videodisc Companion	1.0
The Voyager Company	Expanded Books	1.2.3
The Voyager Company	Exotic Japan	1.0
The Voyager Company	I Photograph to Remember	1.0
The Voyager Company	Louvre Vol. 1:Painting and Drawing: A Videodisc Companion	1.0.2
The Voyager Company	Louvre Vol. 2:Sculpture and Objets d'Art: A Videodisc Companion	1.0
The Voyager Company	Louvre Vol.3: Antiquities: A Videodisc Companion	1.0
The Voyager Company	Louvre Compendium	1.0
The Voyager Company	Orsay Museum: A Videodisc Companion	1.0
The Voyager Company	Last Chance to See	1.0
The Voyager Company	You Can't Get There From Here	1.0
The Voyager Company	Poetry in Motion	1.0
The Voyager Company	I Photograph to Remember/Spanish	1.0
The Voyager Company	To New Horizons	1.0
The Voyager Company	Michelangelo: Self-Portrait: A Videodisc Companion	1.0
The Voyager Company	The National Gallery of Art: A Videodisc Companion	2.0
The Voyager Company	Regard for the Planet: A Videodisc Companion	1.0
The Voyager Company	Salamandre: A Videodisc Companion	1.0
The Voyager Company	Van Gogh Revisited: A Videodisc Companion	2.0
The Voyager Company	Videodisc Accessory Series	1.4
The Voyager Company	Voyager VideoStack	2.2
The Voyager Company	Voyager CD AudioStack	1.2
The Voyager Company	Voyager Expanded Book Toolkit	1.0
Trans Par Software	TurboWriter-TC	2.0
Vividus	Cinemation	1.0
Wings for learning	Explorer: Waves	1.2
Wings for learning	Explorer: Electro Dynamics	1.2
Wings for learning	Explorer: Ripple Tank	1.2
Wings for learning	Learn About Animals	1.0
Wings for learning	Blockers & Finders	1.0
Wings for learning	Story Book Theatre	1.0.2
Wings for learning	MediaText	1.2
Wings for learning	Field Trip into the Sea	1.2
Wings for learning	1-2-3 Sequence Me	1.0
Wings for learning	Memory Building Blocks	1.0
Wings for learning	GroupWRITER	1.0
Wings for learning	Geometric Support: Triangles	1.0

Wings for learning	Geometric Support: Quadrilaterals	1.0
Wings for learning	Hot Dog Stand	1.0
Wings for learning	Muppets on Stage	1.0
Wings for learning	Data Models	1.0
Wings for learning	Statistics Workshop	1.0
Wolfram Research	Mathematica Enhanced	2.1
Wolfram Research	Mathematica Standard	2.1

Article Change History:
14 July 1993 - Updated company names.
2 March 1993 - Corrected to reflect Version 2.0w of After Dark is compatible, not 2.01.

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MacX: Target Markets

Revised: 10/13/92
Security: Everyone

MacX: Target Markets

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Article Created: 9 October, 1992

TOPIC ----------

Why was MacX developed, and what are its target markets?

DISCUSSION ----------

X Window System was developed, and was initially adopted, by the technical and scientific community using UNIX workstations as their primary system for the development and deployment of X Window System applications. As a networked based client/server solution, X is now becoming more and more popular in large business environments as well as government agencies, universities and research institutes. Target market can more specifically described as follows:

- IS/MIS managers and programmers developing and using in-house and commercial X Window System applications for open systems. These applications can then be accessed throughout the whole organization using UNIX workstations, X terminals, or Macintosh computers running MacX.

- Target markets operate in multi-vendor environments where both UNIX machines and Macintosh computers for productivity applications are present.

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Tech Info Library

Macintosh IIvx: How It Differs from Performa 600

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Security: Everyone

Macintosh IIvx: How It Differs from Performa 600

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Article Created: October 19, 1992

TOPIC -----

What is the difference between the Macintosh IIvx and the Performa 600?

DISCUSSION -----

The Macintosh IIvx is identical to the Performa 600 except for the following:

Macintosh IIvx

- Features a 68882 math coprocessor, running at 32 MHz, which executes mathematical computations quickly.

- Has a built-in 32K direct-mapped cache.

Performa 600

- Will be distributed through new consumer-channel dealers only.

- Is bundled with the following:
  Apple Extended Keyboard
  Application software
  Simplified interface for new users
  Special warranty service program

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Tech Info Library

Macintosh IIvx: Description (Discontinued)

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Security: Everyone

Macintosh IIvx: Description (Discontinued)

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Article Created: October 19, 1992

TOPIC ----------

This article describes the features and benefits of the Macintosh IIvx.

DISCUSSION ----------

The Macintosh IIvx is a mid-range Macintosh, similar to the Macintosh IIci and IIsi while offering greater expansion flexibility and improved internal video support. It is identical to the Performa 600, except it has a built-in 32MHz 68882 math coprocessor and 32K direct-mapped cache.

The Macintosh IIvx has a new sheet-metal enclosure, which allows for three expansion slots, a built-in hard disk, floppy and an optional built-in AppleCD 300i drive.

The optional built-in AppleCD 300i is a double-speed drive (twice as fast as most currently available CD-ROM drives) that supports multiple-session Kodak Photo CD technology.

Product Features

Power and speed
- 32MHz 68030 microprocessor
- 32MHz 68882 math coprocessor (FPU)
- 32K cache

Memory
- 4MB RAM, expandable to 68MB

Expansion
- Room for three internal storage devices, including the AppleCD 300i internal CD-ROM drive
- Three NuBus expansion slots
- One accelerator slot

Display
• Built-in support for Apple monitors
• 256 colors, expandable to 32,000

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Tech Info Library

Macintosh IIvx Compared to Other Apple Products

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Macintosh IIvx Compared to Other Apple Products

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Article Created: October 19, 1992

TOPIC ----------

The following table compares the Macintosh IIvx with other Apple products.

	IIsi	IIvi	Performa 600	IIci	IIvx
Processor	68030	68030	68030	68030	68030
Clock	20 MHz	16 MHz	32 MHz	25 MHz	32 MHz
Motherboard Clk	20 MHz	16 MHz	16 MHz	25 MHz	16 MHz
Cache	-	-	-	32K *	32K
FPU	Optional	Optional	Optional	Included	Included
Max DRAM	17MB	68MB	68MB	128MB	68MB
NuBus	see "Other slots"	3	3	3	3
Power Supply	65 Watts	112 Watts	112 Watts	90 Watts	112 Watts
Other slots	PDS/NuBus adapter	Accelerator	Accelerator	Cache*	Accelerator
Video	DRAM	512K VRAM	512K VRAM	DRAM	512K VRAM
Video Expansion	via NuBus or PDS	to 1MB	to 1MB	via NuBus	to 1MB

* 32KB cache occupies the "Cache" slot. Most Macintosh IIci systems

ship with cache.

	IIsi	IIvi	Performa 600	IIci	IIvx
12" Mono	256 gray	256 gray	256 gray	256 gray	256 gray
12" Color	256 color	256-32,000	256-32,000	256 color	256-32,000
13"/14" RGB	256 color	256-32,000	256-32,000	256 color	256-32,000
15" Portrait	16 gray	-	-	16 gray	-

	IIsi	IIvi	Performa 600	IIci	IIvx
Internal Storage	SuperDrive 3.5" x 1"	SuperDrive 3.5" x 1/2H 5.25" removable	SuperDrive 3.5" x 1/2H 5.25" removable	SuperDrive 3.5" x 1"	SuperDrive 3.5" x 1/2 5.25" removable
Mic Input	X	X	X	-	X
CD Audio In	-	X	X	-	X
External SuperDrive	X	-	-	X	-
ADB	1	2	2	2	2
Performance relative to a Classic (mono)	4.7	3.7	5.1	6.6	7.0
Relative to LC (8-bit color)	1.3	1.6	1.9	2.4	2.6

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Macintosh IIvx: Control Chips (7/93)

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Security: Everyone

Macintosh IIvx: Control Chips (7/93)

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Article Created: 19 October 1992
Article Reviewed/Updated: 12 July 1993

TOPIC -----

This article describes the Macintosh IIvx (Performa 600) control chips.

DISCUSSION -----

VASP

The VASP controls all timing, video generation, memory mapping, sound, and clock generation. VASP is a modification of the V8 ASIC used in the Macintosh LC and Macintosh LC II.

Ariel

Ariel is the 256x24 bit color look-up table (CLUT) for Macintosh IIvx.

CoMBo Chip (85C80)

The CoMBo chip provides identical serial and SCSI interface control for Macintosh IIvx. Macintosh IIvx provides on-board SCSI termination when no external SCSI device is connected to the DB-25 connector.

Egret (68HC05)

The Egret chip provides keyboard scanning, real-time clock, ADB interface, parameter RAM storage, power on reset, and power supply control.

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07/12/93 - Revised to include Performa 600.

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Tech Info Library

Macintosh IIvx: Memory (7/93)

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Macintosh IIvx: Memory (7/93)

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Article Created: 19 October 1992
Article Reviewed/Updated: 12 July 1993

TOPIC ----------

This article describes the Macintosh IIvx (Performa 600 and Performa 600CD) DRAM, VRAM, ROM configurations, and the Memory Map.

DISCUSSION ----------

DRAM (Dynamic Random Access Memory)

All Macintosh IIvx configurations have 4MB of DRAM soldered to the logic board. The 5MB configuration with the AppleCD 300i CD-ROM drive has another 1MB of DRAM installed in the four 30-pin DRAM SIMM sockets. The sockets support up to 16MB DRAM SIMMs, for a maximum of 68MB. All DRAM must be at least 80 ns fast page mode.

Possible DRAM Configurations

4MB	4MB soldered to logic board, empty SIMMs
5MB	4MB soldered and 1MB in SIMMs (four 256K SIMMs)
8MB	4MB soldered and 4MB in SIMMs (four 1MB SIMMs)
12MB	4MB soldered and 8MB in SIMMs (four 2MB SIMMs)
20MB	4MB soldered and 16MB in SIMMs (four 4MB SIMMs)
68MB	4MB soldered and 64MB in SIMMs (four 16MB SIMMs)

VRAM (Video RAM)

The Macintosh IIvx uses VRAM for video and sound data storage. This internal video support is similar to that of the Macintosh LC and Macintosh LC II. It's an improvement on the Macintosh IIci and IIsi scheme, which uses available main DRAM for video and sound, causing delays when both the video circuitry and the CPU were accessing DRAM at the same time. The VRAM is installed into two 68-pin SIMM sockets with pinouts identical to that of VRAM sockets on the Macintosh LC and Macintosh Quadras. Both SIMM sockets

must be filled with either 256K or 512K SIMMs. The video data path is 32 bits wide.

Two 256K SIMMs (part #M5953LL/A) yield 512K of VRAM and support 640 x 480 monitors at up to 8 bits per pixel (256 colors or shades of gray) or 512 x 384 monitors at up to 16 bits per pixel (thousands of colors).

Two 512K SIMMs (part #M0517LL/A) yield 1MB of VRAM, which supports 640 x 480 and 512 x 384 monitors at up to 16 bits per pixel. This 1MB VRAM configuration is standard on any Macintosh IIvx configured with the AppleCD 300i.

ROM

Macintosh IIvx has 1MB of ROM and can be upgraded via the ROM expansion SIMM (for ROM SIMM pinout see article "Macintosh IIvx: Pinouts").

Memory Map (32-bit)

DRAM —4MB on logic board	$00000000 - $003FFFFF	
Expansion DRAM (in SIMMs)	$00400000 - $043FFFFF	(up to 68MB)
Unassigned DRAM space	$04400000 - $3FFFFFFF	
ROM read	$40000000 - $403FFFFF	
ROM flash write	$40400000 - $407FFFFF	
Repeated ROM images	$40800000 - $4FFFFFFF	
VIA1	$50x00000 - $50x01FFF	(x = $0 - F)
SCC	$50x04000 - $50x05FFF	
SCSI	$50x10000 - $50x11FFF	
SCSI DMA	$50x12000 - $50x13FFF	
SCSI Handshake	$50x06000 - $50x07FFF	
Sound	$50x14000 - $50x15FFF	
SWIM	$50x16000 - $50x17FFF	
VDAC	$50x24000 - $50x25FFF	
VIA2/VASP registers	$50x26000 - $50x27FFF	
CPUID	$5FFFFFFC - $5FFFFFFF	
VRAM	$60000000 - $600FFFFF	(up to 1MB)
VRAM repeated images	$60100000 - $6FFFFFFF	
NuBus space	$70000000 - $FFFFFFFF	

Article Change History:
07/12/93 - Revised to include Performa 600 and Performa 600CD.

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Tech Info Library Article Number:10784

Macintosh IIvx: Sound Capability

Revised: 10/13/92
Security: Everyone

Macintosh IIvx: Sound Capability

==========

Article Created: October 19, 1992

TOPIC --------------------

This article describes the Macintosh IIvx sound capabilities.

DISCUSSION --------------------

All sound processing in the Macintosh IIvx is accomplished by the VASP gate array. The sound system includes one built-in speaker and an external stereo headphone jack.

CD audio tracks are played back through the external speaker/earphone jack in stereo. Macintosh sounds are played in mono through both channels.

If no headphone is attached, CD audio plays through the internal speaker in mono. System beeps and CD audio are mixed together so both can be heard through either the headphone or internal speaker.

Sound input is accomplished through a stereo mini-phone jack.

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Tech Info Library Article Number:10785

Tech Info Library

Macintosh IIvx: NuBus Expansion and Accelerator Slots (7/93)

Revised: 7/19/93
Security: Everyone

Macintosh IIvx: NuBus Expansion and Accelerator Slots (7/93)

==========

Article Created: 19 October 1992
Article Reviewed/Updated: 13 July 1993

TOPIC ----------

This article describes the Macintosh IIvx (Performa 600) expansion possibilities.

DISCUSSION ----------

The Macintosh IIvx features three NuBus expansion slots and one accelerator card slot. The power budget for each NuBus slot is 13.9 watts (same as the Macintosh IIci) for a total of 41.7 watts.

The power budget for the accelerator card slot is 5 watts (same as the Macintosh IIci cache budget). Accelerator cards must conform to a 3 by 6 inch form factor (identical to the Macintosh IIci cache card form factor).

There are no openings on the back of the Macintosh IIvx enclosure to support external connections to the accelerator card. The accelerator connector signals are a subset of those provided by the Macintosh IIci cache connector. Processor address, data, and some control signals are provided. Cache control signals are NOT provided. Some third-party cards that work in the Macintosh IIci will work on the Macintosh IIvx, but the IIci cache card will not.

Macintosh IIvx does not have on-board Ethernet, but it can be added via the three NuBus expansion slots.

Article Change History:
07/13/93 - Revised to include Performa 600.

Copyright 1992, 1993, Apple Computer, Inc.

Tech Info Library Article Number:10786

Tech Info Library

Macintosh IIvx: Internal Video Support

Revised: 10/13/92
Security: Everyone

Macintosh IIvx: Internal Video Support

==========

Article Created: October 19, 1992

TOPIC ----------

This article describes the Macintosh IIvx internal video monitor support.

DISCUSSION ----------

The following chart lists the monitors supported by Macintosh IIvx internal video:

MON ID 3 2 1	Monitor Selected	Cols/ Rows	Vertical Refresh	Horizontal Refresh	Bandwidth
0 0 1	reserved				
0 1 0	12" RGB	512 x 384	60.15 Hz	24.48 KHz	15.6672 MHz
1 1 0	12" B/W, 13" RGB	640 x 480	66.67 Hz	35.0 KHz	30.24 MHz
0 0 0	reserved				
0 1 1	VGA	640 x 480	59.94 Hz	31.47 kHz	25.18 MHz
1 0 0	reserved				
1 0 1	reserved				
1 1 1	no monitor connected				

* 640 x 480 displays are supported at 8 bits/pixel with 512K VRAM and 16 bits/pixel with 1MB of VRAM

Note: The monitor ID pins 3, 2, and 1 refer to pins 10, 7, and 4 on the

DB-15 external video port.

The monitor ID must be asserted in the monitor by grounding lines for 0's and leaving no connection for 1's. No connects are pulled high by pullup resistors on the Macintosh IIvx logic board.

Standard Macintosh video timing calls for a 30.24 MHz pixel clock for 640 x 480 displays. Macintosh IIvx deviates from the standard by using the CPU clock, at 31.3344 MHz, as a pixel clock for those displays. This results in an extra 32 pixels per horizontal line. The active pixels are center in the active video field with 16 extra pixels on each side. Horizontal and vertical scan rates remain unchanged. The effect of this change is that square pixels are visually 3% thinner. The Macintosh 12" Monochrome Display compensates for this aberration, but the 13" Color Display does not. Monitor ID 2 is grounded within Macintosh IIvx which triggers the 12" Monochrome Display to realize that it is connected to a Macintosh IIvx and allows the monitor to compensate for the slightly different timing.

VGA monitors use the monitor ID of 011, which is the same as the Two-page Monochrome Monitor. VGA monitors use the extended monitor sense codes, which is enabled by tying the ID 3 and ID 2 lines together at the monitor end. The extended sense for a VGA monitor is 01 01 11.

One other anomaly in Macintosh IIvx is that it does not support 1 bit/pixel mode on 512 x 384 monitors.

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Tech Info Library Article Number:10787

Macintosh IIvx: Pinouts

Revised: 10/13/92
Security: Everyone

Macintosh IIvx: Pinouts

==========

Article Created: October 19, 1992

TOPIC --------------------

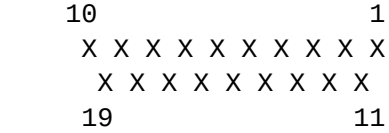
This article describes the external and internal pinouts for the Macintosh IIvx computer system.

DISCUSSION --------------------

EXTERNAL PORT PINOUTS

The pinouts listed are for the back of the Macintosh IIvx.

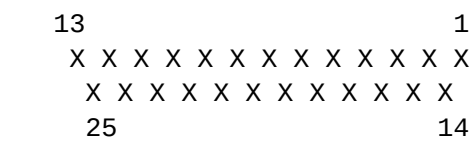
DB-19 External Drive Connector



Pin	Signal	Description
1, 2, 3, 4	GND	Ground
5	-12 V	-12 Volt Supply
6	+5 V	+5 Volt Supply
7	+12 V	+12 Volt Supply
8	12 V	+12 Volt Supply
9	nc	(Not Connected)
10	+5 V	+5 Volt Supply
11	PHASE0	Motor Phase 0 Output
12	PHASE1	Motor Phase 1 Output
13	PHASE2	Motor Phase 2 Output
14	PHASE3	Motor Phase 3 Output

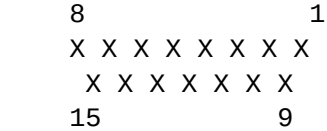
15	W/REQ	Write Request
16	SEL	Register Select Line
17	ENABLE2	Drive Enable
18	RD	Read Data Input
19	WR	Write Data Output

DB-25 External SCSI Connector



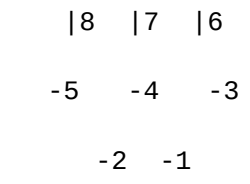
Pin	Signal	Description
1	REQ~	Request
2	MSG~	Message
3	I/O~	Input/Output
4	RST~	SCSI Bus Reset
5	ACK~	Acknowledge
6	BSY~	Busy
7	GND	Ground
8	DB0~	Data bit 0
9	GND	Ground
10	DB3~	Data bit 3
11	DB5~	Data bit 5
12	DB6~	Data bit 6
13	DB7~	Data bit 7
14	GND	Ground
15	C/D~	Command/Data
16	GND	Ground
17	ATN~	Attention
18	GND	Ground
19	SEL~	Select
20	DBP~	Data parity
21	DB1~	Data bit 1
22	DB2~	Data bit 2
23	DB4~	Data bit 4
24	GND	Ground
25	TPWR	Terminator power

DB-15 Monitor Video Connector



Pin	Signal	Description
1	RED.GND	Red Video Ground
2	RED.VID	Red Video
3	CSYNC~	Composite Sync.
4	MON.ID1	Monitor ID, Bit 1
5	GRN.VID	Green Video
6	GRN.GND	Green Video Ground
7	MON.ID2	Monitor ID, Bit 2
8	nc	(Not Connected)
9	BLU.VID	Blue Video
10	MON.ID3	Monitor ID, Bit 3
11	C&VSYNC.GND	CSYNC & VSYNC Ground
12	VSYNC~	Vertical Sync.
13	BLU.GND	Blue Ground
14	HSYNC.GND	HSYNC Ground
15	HSYNC~	Horizontal Sync.
Shell	CHASSIS.GND	Chassis Ground

Mini DIN-8 RS-232/RS-422 Serial Connector



Pin	Signal	Description
1	HSKo	Handshake Output DTR
2	HSKi	Handshake Input CTS
3	TxD-	Transmit Data (inverted)
4	SG	Signal Ground
5	RxD-	Receive Data (inverted)
6	TxD+	Transmit Data
7	GPi	General Purpose Input DCD
8	RxD+	Receive Data

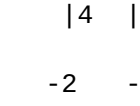
Miniature Sound Input Jack

Contact	Signal	Description
Sleeve	GND	Signal ground
Ring Mic	PWR	Microphone power, +8 V +/- 5% @ 1 mA
Tip	SND.IN	Sound input signal, 1.6 K Ω +/- 10 % impedance, 4 mV max signal w/o clipping

Miniature Stereo Sound Output Jack

Contact	Signal	Description
Sleeve	GND	Signal ground
Ring	RIGHT	Right Channel, 1.5 V peak-to-peak audio signal
Tip	LEFT	Left Channel, 1.5 V peak-to-peak audio signal

Mini DIN-4 Apple Desktop Bus Connector



Pin	Signal	Description
1	DATA	ADB Data
2	PO	Power On
3	+5 V	+5 Volt
4	GND	Ground

INTERNAL PORT PINOUTS

The pinouts listed are for the internal connectors on the Macintosh IIvx logic board.

ROM SIMM

Pin	Signal	Pin	Signal
1	VCC	33	A10
2	+12 V VPP	34	A11
3	FLASHWE (IOW)	35	A12
4	A2	36	A13
5	A3	37	A14
6	A4	38	A15
7	A5	39	A16
8	A6	40	A17
9	A7	41	A18
10	GND	42	A19
11	ROM DISABLE (+5 V)	43	A20

12	ROMOE	44	A21
13	VCC	45	A22
14	D0	46	VCC
15	D1	47	D16
16	D2	48	D17
17	D3	49	D18
18	D4	50	D19
19	D5	51	D20
20	D6	52	D21
21	D7	53	D22
22	D8	54	D23
23	D9	55	D24
24	D10	56	D25
25	D11	57	D26
26	D12	58	D27
27	D13	59	D28
28	D14	60	D29
29	D15	61	D30
30	GND	62	D31
31	A8	63	VCC
32	A9	64	GND

Accelerator Slot

Pin	Signal	Pin	Signal	Pin	Signal
A1	A(30)	B1	RESET*	C1	R/W*
A2	HALT*	B2	A(29)	C2	pullup [1]
A3	A(31)	B3	A(25)	C3	A(28)
A4	A(26)	B4	A(27)	C4	+5 V
A5	RMC*	B5	A(24)	C5	pullup[2]
A6	D(31)	B6	GND	C6	+5 V
A7	D(30)	B7	D(29)	C7	N/C
A8	D(28)	B8	D(27)	C8	GND
A9	D(26)	B9	D(25)	C9	+5 V
A10	D(24)	B10	D(23)	C10	GND
A11	D(22)	B11	D(21)	C11	GND
A12	D(20)	B12	D(19)	C12	IPL2*
A13	D(18)	B13	D(17)	C13	pulldown[3]
A14	D(16)	B14	+5 V	C14	+5 V
A15	A(22)	B15	A(21)	C15	+5 V
A16	A(20)	B16	A(19)	C16	GND
A17	A(18)	B17	A(17)	C17	N/C
A18	A(16)	B18	A(15)	C18	GND
A19	A(14)	B19	A(13)	C19	+5 V
A20	A(12)	B20	A(11)	C20	pulldown[4]
A21	A(10)	B21	GND	C21	GND
A22	FC(1)	B22	A(9)	C22	+5 V
A23	A(8)	B23	FPU* [5]	C23	GND
A24	FC(2)	B24	FC(0)	C24	CIOUT*
A25	D(15)	B25	D(14)	C25	IPL1*

A26	D(13)	B26	D(12)	C26	IPL0*
A27	D(11)	B27	D(10)	C27	CBREQ*
A28	D(9)	B28	D(8)	C28	D(7)
A29	D(6)	B29	BGACK*	C29	D(5)
A30	D(4)	B30	D(3)	C30	D(2)
A31	D(1)	B31	D(0)	C31	+5 V
A32	ROM*	B32	A(7)	C32	A(6)
A33	A(5)	B33	A(4)	C33	A(3)
A34	A(2)	B34	A(1)	C34	A(0)
A35	BG*	B35	+5 V	C35	CBACK*
A36	A(23)	B36	CPUDIS	C36	BR*
A37	DSACK0*	B37	AS*	C37	DS*
A38	15.6672MHz [6]	B38	DSACK1*	C38	BERR*
A39	GND	B39	+5 V	C39	SIZ1
A40	GND	B40	N/C [7]	C40	SIZ0

NOTES

Notes and differences between Macintosh IIvx and IIvi and Macintosh IIci:

pullup[1]: This pin was connected to STERM* on the Macintosh IIci cache connector. STERM is not generated by any logic on the motherboard. This signal is pulled up with a 1K resistor.

pullup[2]: This pin was connected to CFLUSH* on the Macintosh IIci cache connector. The cache flush function is different on Macintosh IIvx, so this pin cannot be supported. It is pulled up with a 1K resistor.

pulldown[3]: This pin was connected to CACHEENABLE* on the Macintosh IIci cache connector. The cache enable function is different on Macintosh IIvx, so this pin cannot be supported. It is pulled down with a 100 ohm resistor. NOTE: THIS IS THE CACHE ENABLED STATE.

pulldown[4]: This pin was a no connect on the Macintosh IIci cache connector. It is pulled down with a 100 ohm resistor to allow certain third party accelerator cards to operate correctly.

FPU* [5]: This signal was a no connect on the Macintosh IIci cache connector. It is now connected to the FPU decode logic on the PCB. This logic is active at all times. The logic board FPU, if present is disabled if the CPUDISable signal is asserted.

15.6672 MHz [6]: This signal was the 25 MHz CPU clock on the Macintosh IIci cache connector. It is now the 15.6672 MHz clock generated from the VASP for all systems. It is not the 31.3344 MHz CPU clock for the Macintosh IIvx. This clock was chosen because it must be used to synchronize access to the VASP chip, which always operates at 15.6672 MHz.

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Tech Info Library Article Number:10788

Tech Info Library

Macintosh IIvx: Specifications (Discontinued 10/93)

Revised: 10/21/93
Security: Everyone

Macintosh IIvx: Specifications (Discontinued 10/93)

==========

Article Created: 19 October 1992
Article Reviewed/Updated: 05 November 1992

TOPIC ----------

This article provides the technical specifications for the Macintosh IIvx computer system.

Microprocessor

- 68030, running at 32 MHz
- 68882 math coprocessor, running at 32 MHz
- Integral Paged Memory Management Unit (PMMU)

Cache

- 32K cache

Memory (DRAM)

- 4MB of RAM standard
- Expands to up to 68MB of RAM by installing four 16MB SIMMs in the expansion bank
- Includes RAM disk software
- 80 ns fast page mode (or faster)

Disk storage

- 1.4MB internal Apple SuperDrive
- Support for one 3.5-in. hard disk drive
- Support for one 5.25-in. half-height device, such as the AppleCD 300i internal CD-ROM drive.

AppleCD 300i configuration

- operates at twice the speed of ordinary CD-ROM drives
- Data streaming rate, double speed (2x)
  - Mode 1: 300 KB/sec
  - Mode 2: 342 KB/sec
- Automatic lens cleaning and double front-loading door for dust protection
- Auto-inject caddy loading
- Support for multi-session Kodak Photo CD format
- Support for bootable CDs
- 5MB RAM
- 1MB video RAM

Video display

- Supports Apple monochrome and color monitors, including:
  - Macintosh 12" Monochrome Display
  - Macintosh 12" RGB Display
  - AppleColor High-Resolution RGB Monitor
  - Macintosh Color Display
- Supports some VGA monitors

Video RAM (VRAM)

- 512K minimum supports 256 colors on Apple color video displays listed above
- Expandable to 1MB for support of 32,000 colors on the same displays

Interfaces

- Three internal NuBus expansion slots
- One accelerator slot
- SCSI bus interface
- Video port to support RGB and monochrome monitors of various sizes and resolutions
- One sound output port for stereo playback from CDs and monaural playback of Macintosh sounds
- One sound input port
- Two serial (RS-232/RS-422) ports, 230.4 Kbit/sec maximum (up to 0.920 Mbit/sec if clocked externally)
- Two Apple Desktop Bus (ADB) ports, supporting a keyboard, mouse, and other devices daisy-chained through a synchronous serial bus

Keyboard

- Supports all Apple Desktop Bus keyboards

Mouse

- Apple Desktop Bus Mouse; mechanical tracking, optical shaft, or contact encoding

Sound generator

- Custom Sound Chip drives stereo miniature headphone jack

Clock/calendar

• Custom chip with long-life lithium battery

Microphone

• Electret, omnidirectional; output voltage is 4 mV, peak to peak, at normal volume

Disability access

• CloseView, Easy Access, and visible beep are included with system software. These built-in features and third-party options provide alternative input and output tools for people with disabilities.

Electrical requirements

• Line voltage: 100 to 240 V AC, RMS automatically configured
• Frequency: 50 to 60 Hz, single phase
• Power: 112 W maximum, not including monitor power

ADB power requirements

• Maximum current draw for all ADB devices: 500 mA (a maximum of three ADB devices is recommended)
• Mouse draws 10 mA
• Keyboard draws 25 to 80 mA, depending on the keyboard model used

Operating environment

• Operating temperature: 50° F to 104° F (10° C to 40° C)
• Storage temperature: -40° F to 116.6° F (-40° C to 47° C)
• Relative humidity: 5% to 95% noncondensing
• Maximum altitude: 10,000 ft. (3,048 m)

Size and Weight

Main unit:
• Height: 6.0 in. (15.2 cm)
• Width: 13.0 in. (33.0 cm)
• Depth: 16.5 in. (41.9 cm)
• Weight: 25 lbs. (11.3 kg)
weight varies with internal devices installed

Mouse

• Height: 1.1 in. (2.8 cm)
• Width: 2.1 in. (5.3 cm)
• Depth: 3.8 in. (9.7 cm)
• Weight: 6 oz. (170 g)

System Software Requirements

Macintosh IIvx uses System 7.1

Article Change History:
05 November 1992 - Revised to include DRAM specifications.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10789

Tech Info Library

Apple Ethernet NB Card: Specifications

Revised: 11/11/92
Security: Everyone

Apple Ethernet NB Card: Specifications

==========

Article Created: 29 September 1992

TOPIC ----------

This article gives technical specifications for the Apple Ethernet NB Card.

DISCUSSION ----------

The Apple Ethernet NB Card provides physical and link level access to data communications networks meeting IEEE 802.3 and 802.2 Logical Link Control (LLC) type 1 standards. Several networking protocols can be used with the Ethernet NB Card.

Configurations

- AppleTalk protocol, Macintosh OS, EtherTalk software
- AppleTalk protocol, A/UX, EtherTalk for A/UX software
- TCP/IP protocol, Macintosh OS, MacTCP software
- TCP/IP and NFS, A/UX, B-NET software

Connector

- Apple Ethernet

Transmit/Receive Data Rate

- 10-megabits-per-second maximum data rate

Processor

- Motorola 68000 running at 10 megahertz

RAM

- 512K standard, expandable to 1MB with Apple order No. M0145LL/A,

or 2.5MB with third-party memory expansion modules

Environmental Requirements

- Operating Temperature
  50° F to 104° F (10° C to 40° C)
- Humidity
  20% to 95% noncondensing at a temperature range of
  25° C to 40° C

Ethernet Controller

- National Semiconductor DP83932 (SONIC)

System Requirements

- Macintosh II family
  In addition to the Apple Ethernet NB Card and accompanying software, the following are required to connect one of the Macintosh II family of personal computers to an Ethernet network:
  - One available NuBus slot in the computer. Or, with the Macintosh IIsi, a NuBus Adapter Card. Macintosh system software version 6.0.4 or later; or A/UX system software version 2.0 or later.
  - If you're using AppleTalk network services, the network must use AppleTalk Phase 2 protocols.
  - An Apple Ethernet Cable System media adapter.

- Apple Ethernet Thin Coax Transceiver
  Provides plug-and-play networking in a high-performance Ethernet environment. The Ethernet NB Card, the Apple Ethernet Thin Coax Transceiver, and the 2-meter segment of thin coaxial cable included with the Transceiver are all you need to connect your Macintosh NB computer to an Ethernet network. No terminators or other Ethernet hardware is required.

  The Apple Ethernet Self-Terminating Cable -- 5 Meter and Apple Ethernet Self-Terminating Cable -- 13-Meter Plenum, or other RG 58 A/U thin coaxial cable, can be used to connect devices that are more than 2 meters apart.

- Apple Ethernet Twisted-Pair Transceiver
  The Apple Ethernet Twisted-Pair Transceiver is used to connect the Ethernet NB Card to an Ethernet network using unshielded twisted-pair cable.

  To use Ethernet with unshielded twisted-pair media, you need an IEEE 802.3 10BASE-T-compatible hub, sold separately from third-party vendors.

- Apple Ethernet AUI Adapter
  The Apple Ethernet AUI Adapter provides the Ethernet NB Card

with a standard IEEE 802.3 Attachment Unit Interface (AUI). The AUI can be used to connect the Ethernet NB Card to an external transceiver.

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Tech Info Library Article Number:10792

Tech Info Library

Apple StartingLine (Formerly Apple InPrint)

Revised: 7/20/93
Security: Everyone

Apple StartingLine (Formerly Apple InPrint)

==========

Article Created: 9 October 1992
Article Reviewed/Updated: 20 July 1993

Apple StartingLine

P.O. Box 17461
Denver, CO 80217

Phone: 800-825-2145

Fax: 303-297-2258

Company Profile:
Formerly Apple InPrint, specializing in Apple publications, video's and review material

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Tech Info Library Article Number:10793

Tech Info Library

MacTCP 1.1: Internet Address Range 192.0.0.rrr Reserved

Revised: 10/21/92
Security: Everyone

MacTCP 1.1: Internet Address Range 192.0.0.rrr Reserved

==========

Article Created: 13 October 1992

TOPIC ----------

I have a problem with MacTCP 1.1 and applications based on MacTCP, such as NCSA Telnet 2.5 and Oracle for Macintosh OS.

My network number was 192.0.0.rrr; that's the default class C network in MacTCP. Changing the network number made everything work properly.

DISCUSSION ----------

This isn't a bug. According to RFC 1166 (page 47), internet addresses in the range 192.0.0.rrr are reserved. MacTCP knows this, doesn't allow this address to be used, and issues a "bad ip or LAP configuration error" (error id = -23001).

Addresses in the range 192.0.0.rrr are valid, but they are reserved.

MacTCP, MacTCP 1.1.1 inclusive, does have a problem in that it doesn't allow the use of internet addresses in the range 192.0.1.rrr. We have reported this problem to the MacTCP engineering team.

For a complete list of assigned and reserved internet addresses, please see pages 7 through 100 of RFC 1166.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10794

Tech Info Library

Macintosh RAM: How Long It's Maintained After Power Loss (2/95)

Revised: 2/24/95
Security: Everyone

Macintosh RAM: How Long It's Maintained After Power Loss (2/95)

==========

Article Created: 13 October 1992
Article Reviewed/Updated: 24 February 1995

TOPIC ----------

I have these questions about the Macintosh Quadra computers:

1) What is the specified time period after removing power that volatile component memory loses data?

2) Where is non-volatile memory located, and is memory field addressable?

DISCUSSION ----------

1) This varies from vendor to vendor and from board to board.

According to Apple's Component Engineering group, static RAM loses data seconds after power down.

Dynamic RAM and Video RAM (DRAM and VRAM) are the same in that they both have refresh cycles. There are tiny capacitors internal to these devices that hold a charge. These capacitors are recharged, specified by the manufacturer, every n nanoseconds to preserve the data that has been written to them. Due to these capacitors and the capacitance of the logic board itself, the data will remain for a short time longer than the individual device.

The opinion of Apple's Component Engineering group, based on what has been seen, is DRAM will lose data within 5 minutes after power down.

To ensure that absolutely zero data is stored on DRAM or VRAM devices, allow 30 minutes with power removed from the system.

In addition, the Motorola MC68040 processor has DRAM for cache built in. Motorola doesn't specify how long it takes for the MC68040 to lose its data. However, Motorola feels comfortable with the 30 minute power down time.

2) The only Apple products that contain non-volatile memory are Macintosh systems and LaserWriter printers; mouse devices, keyboards, scanners, tape drives, CD-ROM drives, disk drives, and display systems don't have non-volatile memory. Here are the details:

The Macintosh 128K, Macintosh 512K, and Macintosh 512Ke contain 20 bytes of Parameter RAM (PRAM). These 20 bytes of PRAM are documented on pages II-369 to II-371 of Inside Macintosh Volume II.

The rest of the computers in the Macintosh family have 256 bytes of PRAM -- except for the Macintosh Portable, which has 128 bytes. PRAM only contains configuration information, not user data.

Not all of PRAM is cleared and reset to default values when using the "hold down the Command, Shift, and Option keys while opening the Control Panel" method of System 6, or the Command, Option, P, R keys with System 7. The original 20 bytes of PRAM documented on pages II-369 to II-371 of Inside Macintosh Volume II aren't cleared. Only the other 236 bytes that are considered confidential. This should be sufficient for your needs. Note: The Command, Option, P, R method in System 7 clears all of PRAM and resets it to default values.

The same is true for the non-volatile memory in the Apple LaserWriter printers. Only configuration information like page count, baud rate, emulation mode, and port to use are stored. The printer memory, like a computer's memory, is erased, after a certain amount of time when the power is turned off.

Article Change History:
24 Feb 1995 - Reviewed for technical accuracy, revised formatting.

Support Information Services

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Tech Info Library Article Number:10795

Apple File Exchange and Macintosh PC Exchange: A Comparison

Revised: 11/4/92
Security: Everyone

Apple File Exchange and Macintosh PC Exchange: A Comparison

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Article Created: 19 October 1992

TOPIC ----------

This article provides an overview of Apple File Exchange and Macintosh PC Exchange, and compares the two products.

DISCUSSION ----------

Apple File Exchange Overview

Apple File Exchange is a file translation utility that converts a file from one format to another. For example, Apple File Exchange can take a DOS-formatted file and translate it to a Macintosh format. The file can then be opened by Macintosh applications designed to read the format into which the file has been translated.

Macintosh PC Exchange Overview

Macintosh PC Exchange is a software product that lets Macintosh computers, running System 7 and equipped with an Apple SuperDrive or a third-party 5.25-inch MS-DOS-compatible disk drive, easily read, write, and format DOS disks. DOS files appear on the Macintosh desktop just like Macintosh documents, and can be opened, saved, renamed, moved, copied, or deleted. The DOS file format is in no way altered by Macintosh PC Exchange. The application that you specify to open a DOS file must be able to read that DOS file format.

Apple File Exchange and Macintosh PC Exchange: A Comparison

Macintosh PC Exchange is an easier and more intuitive method for opening DOS-format disks. Macintosh PC Exchange also lets the Finder handle DOS files in the same manner as Macintosh files. The main differences between Macintosh PC Exchange and Apple File Exchange are:

- Macintosh PC Exchange is activated when you start up your Macintosh and automatically recognizes a DOS-format disk when it's inserted in an Apple SuperDrive. Apple File Exchange is a separate utility that must be manually launched every time you want to read a DOS disk.

- Macintosh PC Exchange lets you manipulate DOS files in the Finder, just like other Macintosh documents. It also lets you pre-assign the application to open when you double-click a DOS file. Apple File Exchange cannot automatically launch an application when a DOS file is double-clicked.

- Apple File Exchange comes with three special translator files that let you translate documents between Macintosh and DOS file formats. Macintosh PC Exchange doesn't contain any document translation capabilities.

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Tech Info Library Article Number:10797

Tech Info Library

System 7.1: Compatibility with Third-Party Applications

Revised: 10/14/92
Security: Everyone

System 7.1: Compatibility with Third-Party Applications

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Article Created: 19 October 1992

TOPIC ----------

Will I have to upgrade my applications to run with System 7.1?

DISCUSSION ----------

Most applications that are compatible with System 7.0 and 7.0.1 are also compatible with System 7.1, although there are a few exceptions.

To determine if the applications you are using will compatible with System 7.1 when you upgrade:

- For System 6.0.X users, run Compatibility Checker 2.0, which is included with your System 7.1 Upgrade Kit on your hard drive. Compatibility Checker 2.0 contains compatibility information on approximately 3500 applications.

- For System 7.0 and 7.0.1 users, check the Software Compatibility list included in the 7.1 Update Kit.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10798

Tech Info Library

System 7.1: Use AppleShare 3.0.1 Server Software

Revised: 10/14/92
Security: Everyone

System 7.1: Use AppleShare 3.0.1 Server Software

==========

Article Created: 19 October 1992

TOPIC -----

Is AppleShare 3.0 compatible with System 7.1?

DISCUSSION -----

To run an AppleShare file server or print server on a Macintosh running System 7.1, you need AppleShare 3.0.1 server software.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10799

Tech Info Library

System 7.1: Using Adobe Type Manager (ATM)

Revised: 10/14/92
Security: Everyone

System 7.1: Using Adobe Type Manager (ATM)

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Article Created: 19 October 1992

TOPIC ----------

I just upgraded to System 7.1. I'm using Adobe Type Manager, and the on-screen fonts are not smooth.

DISCUSSION ----------

Contact Adobe for a free upgrade to the latest version of ATM. In the meantime, if you're using ATM, you must move any PostScript printer fonts located in the Font folder to the Extensions folder. After you upgrade to the new version of ATM, these fonts will work correctly when placed in the Font folder.

Adobe is offering Apple computer owners a free copy of their latest ATM software. With ATM, you'll gain access to thousands of PostScript Type 1 fonts for use on-screen. ATM software can be used with all Macintosh-supported printers, including the ImageWriter, StyleWriter, and PostScript typesetters.

Adobe is including four typefaces from the Adobe Garamond family with this offer. Adobe is charging only a minimal shipping and handling charge for this software for U.S. and Canadian residents. Orders outside the U.S. and Canada carry a larger shipping and handling charge.

Contact Adobe directly for more details, including shipping and delivery information.

For Adobe contact information, search the Tech Info Library with "Adobe Systems".

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Tech Info Library Article Number:10800

Tech Info Library

System 7.1: Claris Programs May Have Font Compatibility Problems

Revised: 1/27/93
Security: Everyone

System 7.1: Claris Programs May Have Font Compatibility Problems

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Article Created: 19 October 1992

TOPIC ----------

I upgraded to System 7.1, and now Claris MacWrite II 1.1v3 reports that some fonts are missing.

DISCUSSION ----------

Some Claris programs may have problems using fonts with System 7.1.
Contact Claris for specific compatibility and update information.

For Claris contact information, search the Tech Info Library with "Claris".

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10801

Tech Info Library

System 7.1: New Control Panels

Revised: 10/14/92
Security: Everyone

System 7.1: New Control Panels

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Article Created: 19 October 1992

TOPIC -----

This article provides information about the new System 7.1 control panels.

DISCUSSION -----

Date & Time Control Panel

This control panel lets the user change the values for the current date and current time, as well as letting the user customize the date and time formats.

General Controls Control Panel

The General Controls control panel has a new icon with System 7.1.

You can still use the General Controls control panel to change the date and time values, but customizing the date and time formats is handled in the new Date & Time control panel.

Numbers Control Panel

This control panel lets the user set separators for large numbers, and set and position currency symbols.

Text Control Panel

This control panel is for use with WorldScript I and WorldScript II System extensions and provides the user with the ability to switch between languages (alphabets, writing systems) installed on the system.

PowerBook Control Panel

This control panel replaces the Portable control panel that was used with

System 7.0 and 7.0.1 and incorporates several new battery conservation features.

The PowerBook control panel:

- Provides SCSI Disk Mode for those PowerBook computers capable of SCSI Disk Mode.
- Has an Automatic Wake-Up setting.
- Has a single slider bar for Battery Conservation that gives the user a choice of "Maximum Performance" or "Maximum Conservation". This replaces the twin slider bars used in the Portable control panel.

  Below the slider bar is an options button for selecting "Don't sleep when plugged in" to an electrical outlet and for turning the processor cycling on or off.

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Tech Info Library Article Number:10802

Tech Info Library

System 7.1 Upgrade: DAL Is Not Included

Revised: 10/14/92
Security: Everyone

System 7.1 Upgrade: DAL Is Not Included

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Article Created: 19 October 1992

TOPIC -----

Is the DAL extension included with the System 7.1 upgrade?

DISCUSSION -----

No. DAL is not part of the System 7.1 upgrade. DAL will be included in third-party networking packages.

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Tech Info Library Article Number:10803

Tech Info Library

System 7.1: Fixes Disappearing Folders and Files Problem

Revised: 10/14/92
Security: Everyone

System 7.1: Fixes Disappearing Folders and Files Problem

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Article Created: 19 October 1992

TOPIC ----------

Does System 7.1 fix the problem of disappearing folders and files that was reported with System 7.0?

DISCUSSION ----------

System 7.1 includes the contents of the System 7 Tune-Up 1.1.1 disk, as well as Disk First Aid 7.1. Disk First Aid 7.1 now repairs hard drives with the disappearing folders and files problem.

Before this, there was no utility to effectively repair this problem. The only fix was to back up your hard drive and reinitialize the drive.

To prevent this problem from recurring, either upgrade to System 7.1 or install System 7 Tune-Up 1.1.1 over System 7.0 or 7.0.1.

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Tech Info Library Article Number:10804

Tech Info Library

System 7.1: File Sharing Access Privileges Change

Revised: 10/14/92
Security: Everyone

System 7.1: File Sharing Access Privileges Change

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Article Created: 19 October 1992

TOPIC -----

This article discusses a change made to file sharing default access privileges.

DISCUSSION -----

The file sharing default access privileges were changed for security purposes. Specifically, the Guest check box is unchecked when you choose to share a volume or a folder.

If you want to share a volume or folder with a Guest, you must check the Guest check box.

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Tech Info Library Article Number:10805

Tech Info Library

System 7.1: General Description

Revised: 10/14/92
Security: Everyone

System 7.1: General Description

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Article Created: 19 October 1992

TOPIC ----------

This article provides a general description of System 7.1 software.

DISCUSSION ----------

Overview

Macintosh System 7.1 software brings your Apple Macintosh personal computer more powerful capabilities and greater ease of use.

System 7.1 comes with all of the features of the original System 7 release. One of the most significant advances in personal computing since the introduction of the Macintosh, award-winning System 7 makes any Macintosh computer ready for hundreds of applications that take advantage of its power. And since System 7 runs virtually all current applications, you'll enjoy its benefits right away.

Built-in file sharing allows you to share files over an AppleTalk network, simply and easily. Multitasking lets you keep several applications open at once and continue to work while you print, search for, copy, or share files. Publish and Subscribe lets you create links between documents, so when you make a change in one document you see the change made automatically in all related documents -- like spreadsheets, reports, and presentations.

System 7 also includes Apple's TrueType font technology, which displays letters perfectly on the screen with no jagged edges and produces outstanding results from almost any printer. System extensions, like QuickTime, allow you to cut, copy, and paste everything from video footage to animation and sound as easily as you work with text and graphics today.

Providing new, more far-reaching tools, System 7.1 comes with Apple's new WorldScript technology. It will support versions of System 7.1 in most

languages (writing systems, or alphabets), and will pave the way for your Macintosh to become a multilanguage personal computer.

Features

- Out-of-the-Box Power
  - New Finder simplifies working with folders, documents, and applications
  - Built-in file sharing with security features
  - Improved multitasking for working with several applications at once
  - Publish and Subscribe for automatic document updating across applications or networks
  - TrueType advanced font technology
  - New Font Folder provides a single location for all fonts, including TrueType, Adobe Type 1, and bitmapped fonts
  - Aliases for access to documents and applications from two or more locations
  - Virtual memory for running more applications without adding RAM

- Compatibility
  - Runs on any Macintosh computer with at least 2MB of RAM (4MB recommended)
  - Runs virtually all Macintosh applications

- Ease of Use
  - Simple, sure, one-step installation
  - "Learn as you work" Balloon Help

Product Details

- Finder
  The Finder displays all of the pull-down menus and icons needed to manage files, folders, disks, and applications in the Macintosh and over a network. It includes:

  - Apple menu with control panels, desk accessories, and other selected items
  - File menu
    - Locate files by name, date, size, label, or kind
    - Open applications, documents, and folders
    - Print documents and directories
    - Share folders with other users
    - Make an alias for an application, document, or folder
    - Get file information
  - Edit menu, to Cut, Copy, and Paste information
  - Views menu
    - View the contents of a Finder window by icon, name, size, kind, date, or label
    - View an outline of a folder's contents
  - Labels menu, to assign labels or colors to icons
  - Special menu
    - Clean up windows and desktop

    - Sort by icon, name, size, kind, date, or label
    - Erase the contents of disks
    - Restart and shut down the computer
  - Balloon Help menu, to display information about items on the screen
  - Application menu, to switch among open applications
  - Trash container, to discard files and folders

- Control Panels
  Control panels let you change many of the settings for the Macintosh, and include:

  - General controls for desktop patterns and color, time, and date
  - Startup device, to select the disk drive to be used for startup
  - Mouse, to set mouse speed and responsiveness
  - Keyboard, to set keyboard repeat rate and layout for international use
  - Monitors
    - Choose the number of colors/grays to display
    - Specify positions of multiple monitors
  - Color, to select highlight and window color
  - Memory, to increase system memory by using hard disk space, set the disk cache, and turn on 32-bit addressing
  - Labels, to customize labels in the Finder
  - Views, to customize icons and information
  - Sharing Setup, to identify the Macintosh to the network, start file sharing, and turn on program linking
  - Network, to specify network cabling system (LocalTalk, EtherTalk, or TokenTalk)
  - Users & Groups
    - Administer names and passwords of users who will have access to files and folders
  - Sound, to specify system alert sounds and volume levels
  - Date and Time, to customize formats for displaying dates and times
  - Numbers, to customize formats for display of numbers

Desk Accessories:

  - Chooser, to select printers, file servers, and other network resources
  - Key Caps, to display characters of different fonts
  - Alarm Clock/calendar
  - Four-function Calculator
  - Eight-page Note Pad for text
  - Scrapbook for storage of frequently used graphics and text

Built-in TrueType Fonts:

  - Times (plain, bold, italic, and bold italic), Helvetica (plain and bold), Palatino (plain, bold, italic, and bold italic), Symbol, Courier (plain and bold), Chicago, New York, Monaco, and Geneva

Utilities:

  - Apple File Exchange
  - Disk First Aid

- LaserWriter Font Utility
- TeachText
- Apple HD SC Setup

Software Extensions supports:

- QuickTime
- Macintosh PC Exchange
- AppleTalk Remote Access
- At Ease
- ColorSync
- Other system software extensions

Print drivers:

- ImageWriter
- LaserWriter
- Personal LaserWriter LS
- Personal LaserWriter SC
- ImageWriter LQ
- Apple StyleWriter
- AppleTalk ImageWriter
- AppleTalk ImageWriter LQ

System Requirements

A Macintosh personal computer with 2MB of RAM (4MB recommended for running multiple applications) and a hard drive

Ordering Information

System 7.1 Personal Upgrade Kit (M7200LL/A)*:

- System 7.1 software (six 1.4MB disks)
- "Before You Install" with Compatibility Checker 2.0 (one disk)
- QuickTime Extension and Scrapbook (one disk)
- Complete setup, learning, and reference documentation
- 1 year of toll-free upgrade assistance
- Limited warranty statement

*For System 6.0.X users.

System 7.1 MultiPack (up to 10 users) (M7201LL/A)*:

- System 7.1 CD-ROM disk with:
  - System 7.1 software
  - System 7.1 disk images (800K and 1.4MB)
  - "Before You Install" with Compatibility Checker 2.0 (one disk)
  - Networking Administrator Tools
- Floppy disks of all System 7.1 software (six 1.4MB disks)
- QuickTime Extension and Scrapbook (one disk)
- Complete setup, learning, and reference documentation

- System 7.1 Administrator's Handbook
- 1 year of toll-free upgrade assistance
- Limited warranty statement

*For System 6.0.X users or networked System 7.0 or 7.0.1 users.

System 7.1 Update Kit (M7202LL/A)*:

- All software and accessories included with System 7 Personal Upgrade Kit
- System 7.1 Update Guide
- 1 year of toll-free upgrade assistance

*For System 7.0 or System 7.0.1 users.

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Tech Info Library Article Number:10806

Tech Info Library

Apple IIe Card: Requires SW Ver. 2.2.1 with System 7.1 (7/94)

Revised: 7/6/94
Security: Everyone

Apple IIe Card: Requires SW Ver. 2.2.1 with System 7.1 (7/94)

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Article Created: 19 October 1992
Article Reviewed/Updated: 06 July 1994

TOPIC ----------

If I upgrade my Macintosh LC II with an Apple IIe Card to System 7.1, what version of software do I need for the Apple IIe Card?

DISCUSSION ----------

To use the Apple IIe Card on a Macintosh LC II, Macintosh LC III, or Performa 400 series running System 7.1 or System 7.1P, you need version 2.2.1 of the Apple IIe Card software. You should upgrade to version 2.2.1 ONLY if you are using System 7.1.

Any error listed “Error Type 1” through an “Error Type 4”, an error 10019, a “defective card error”, and/or a partial screen in the IIe mode are indicators of the incorrect version of the IIe Card software.

You can purchase a software upgrade kit to upgrade older Apple IIe card software.

Note

You can use the Apple IIe Card software version 2.2 with the original Macintosh LC, but it's not required.

Article Change History:
06 Jul 1994 - Reviewed for technical accuracy.
23 Nov 1993 - Revised to add current version of software.
12 Jul 1993 - Revised to add Macintosh Performa 400 series.

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Tech Info Library Article Number:10807

Tech Info Library

System 7.x: Improved Font Management (5/95)

Revised: 5/26/95
Security: Everyone

System 7.x: Improved Font Management (5/95)

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Article Created: 14 October 1992
Article Reviewed/Updated: 26 May 1995

TOPIC ----------

This article contains a series of questions and answers about fonts and font management with systems newer than System 7.0 and 7.0.1.

DISCUSSION ----------

Question: Do fonts work differently with System 7.1 and greater than they did with System 7.0 and 7.0.1?

Answer: No, fonts function the same as they did with System 7.0 and 7.0.1. However, they no longer reside in the System file. All fonts, including PostScript Type 1 fonts (which were stored in the Extensions folder under System 7.0 and 7.0.1), TrueType, and bitmapped fonts, as well as font suitcases, now reside in the new Font folder within the System Folder.

Question: When I upgrade to a system newer than System 7.0 or 7.0.1 (such as System 7.1 or System 7.5), what happens to the fonts installed in my System file?

Answer: The Installer copies your fonts to the new Font folder and stores each font family in a separate suitcase. Then the Installer removes those fonts from the System file. However, the Installer does not remove the Chicago, Geneva, or Monaco fonts from the System file, even though it has copied them to the Font folder. These three fonts must be present for the System to function properly. You can remove these fonts from the System file and the Fonts folder to save disk space, because the System retains an invisible set for its own use.

Question: What are the "Apple Classic Fonts"?

Anwer: These fonts, also known as the city fonts, came with the original

Macintosh computer in 1984. They are bitmapped fonts, and TrueType versions are not available from Apple.

Question: How are fonts installed?

Answer: Fonts are installed by dragging a font suitcase or font file to the System Folder. They are automatically placed in the Font folder.

Question: What is a font suitcase?
Answer: In System 7.0 and 7.1, a suitcase behaved exactly like a folder. A suitcase, on the other hand, can store only font files.

Question: What is a bitmapped font?

Answer: A bitmapped font is defined as a font with a specific point size and a resolution of 72 dots per inch. With System 7 and later, bitmapped fonts are used to display on-screen text in the specified point size. Bitmapped fonts cannot be scaled and are not designed for quality printed output.

Question: What is a TrueType font?

Answer: A TrueType font is a mathematical representation of a font that can be scaled to any size and displayed on-screen or printed to any printer.

Question: What is a PostScript (or printer) font?

Answer: A PostScript font is a mathematical representation of a font that is used by a PostScript printer to yield high-quality output. To be used, a PostScript font must be accompanied by a bitmapped version of the same font or the Adobe Type Manager (ATM) extension needs to be installed.

Question: How can I tell if a font is a PostScript, bitmapped, or TrueType font?

Answer: Fonts types have distinctive icons. PostScript fonts' icons vary, depending on the font designer. A bitmapped font's icon looks like a rectangle with the upper left corner folded over and a single letter "A" in the center of the rectangle. A TrueType font has a similar icon, except it shows three different sizes of the letter "A" that overlap in the rectangle. Also, the name of bitmapped fonts end with a number; TrueType fonts do not.

Question: If I have a TrueType version of a font, do I also need a bitmapped version of the same font?

Answer: No. The TrueType font is all you need to display the font on your screen and to print it at the highest possible resolution on your printer.

Question: Why does Apple include both bitmapped fonts and TrueType fonts if all I need is the TrueType version?

Answer: Having bitmapped fonts available increases the speed of screen redraws on the lower-end Macintosh computers.

Question: Is it better to keep my fonts in a suitcase or to put them into the Font folder as individual files?

Answer: The Font folder is limited to a total of 128 suitcase and font files (PostScript fonts are not included in the 128 file limit). Suitcases can hold an unlimited number of font files, as long as 16MB of disk space is not exceeded. By storing your fonts within a suitcase in the Font folder, you use less RAM, and the number of fonts is limited only by the size of the hard drive.

Question: How do I create a font suitcase?

Answer: You cannot create a font suitcase with System 7.1 or greater, but you can duplicate an existing suitcase. If you need an empty suitcase, duplicate an existing suitcase and trash its contents. You can duplicate the remaining suitcase as many times as you need.

Question: Can I merge suitcase files?

Answer: Yes, by dragging one suitcase file on top of another suitcase file.

Article Change History:
25 May 1995 - Updated to reflect System 7.5; reformatted.

Support Information Services

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Tech Info Library Article Number:10808

Tech Info Library

System 7.1: Installation (5/96)

Revised: 5/21/96
Security: Everyone

System 7.1: Installation (5/96)

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Article Created: 12 October 1992
Article Reviewed/Updated: 21 May 1996

TOPIC ----------

This article takes you through all preparation, installation, and post-installation steps you should take to properly install system software version 7.1 on a Macintosh computer.

DISCUSSION ----------

Print and read the Read Me file, located on the Tidbits disk inside the Apple Utilities folder. This file contains current information on System 7.1. Also, system disks supplied with Macintosh computers come with an Install Me First disk. If you have this disk, follow the instructions on it.

If you do not have an Apple hard drive, or use third-party software to format your hard drive, verify that the formatting software is compatible with System 7.1. Contact the software developer.

System software version 7.1 requires a Macintosh computer with at least 2 MB of RAM (4 MB of RAM is strongly recommended), and a hard disk with at least 5 MB of disk space available.

You can install over System 6 or System 7, or on a hard drive that does not have a System Folder. The Installer cannot install on a hard drive with System 5 or earlier. If you have System 5 or earlier, it is important to follow the instructions for a clean installation. These instructions can be found in a related document titled "System 7.1 Clean Installation".

Back Up Your Hard Disk

Copy the data on your hard disk to another hard disk or to floppy disks. There are several software utilities available that perform this operation. Or you can select the items you want to copy, and then drag them to the disk where you want to copy them. If you cannot copy everything, at least copy your System

Folder to another disk.

Check Available Hard Disk Space

Be sure you have at least 5, 120K (5 MB) of disk space available on the hard drive where you plan to install the system software. To check disk space, follow these steps:

1) Choose Control Panels from the Apple menu.

2) Double-click the Views control panel to open it.

3) In the Views control panel, check "Show disk info in header".

4) Open your hard disk's window.

The amount of available disk space appears in the upper-right corner of any open window.

If there is less than 5,120K available, you will need to delete some unnecessary files by dragging them to the Trash. Choose Empty Trash from the Special menu and you will have more disk space available.

Check Compatibility

If you are upgrading from an earlier version of System 7 to 7.1, check the Software Compatibility list.

If you are upgrading from System 6, run Compatibility Checker 2.0. It is a stand-alone application that you run following these steps:

1) Copy the Compatibility Checker 2.0 application to your hard disk.

2) Double-click the Compatibility Checker icon to launch the application. The Introduction screen appears.

3) Click the continue button.

4) Click the OK button if you want Compatibility Checker to scan all of your hard disks. Otherwise, click the check boxes to deselect any hard disk you don't want scanned. A dialog box marks the scanning progress.

5) If Compatibility Checker finds potentially incompatible items, a window appears.

6) Click one of the two buttons at the bottom of the window. If you click the Move button, it moves the items to a folder on the hard disk named "May Not Work With System 7.1." In either case, Compatibility Checker's report window appears.

7) Use the Sections menu to navigate around the report. (It is best to print the report and use it as a guide to update your software if

necessary.)

8) When you are finished with Compatibility Checker, click the Quit button. A dialog box appears, asking if you want to save the report.

9) After you have made your choice, another dialog box appears if you previously moved items out of your System Folder.

10) Review the report, following the instructions detailed there. Vendors are the best source of information; please contact them directly if you have any questions.

Virus and Security Software

If you have installed virus protection or security software, you will need to remove them from the system. Follow removal instructions in the user manual provided with the software.

Run Disk First Aid

Disk First Aid can detect and repair problems that an Apple hard disk. Be sure you followed the instructions under "Virus and Security Software" before you begin.

1) Start up with the Disk Tools disk. To do this, turn on your Macintosh. If it is already on, select Restart from the Special menu.

2) Put the Disk Tools disk in the main floppy drive right after you hear the chime. The Disk Tools disk icon appears in the upper-right corner of the desktop.

   If it does not appear there, select Restart from the Special menu. The disk ejects -- push it back into the drive immediately.

3) Double-click the Disk First Aid icon, and make sure the startup disk is selected. If it is not, click the Drive button to select the startup hard disk.

4) Click on Open and then on Start. Disk First Aid will check your hard disk for any potential problems. If it finds problems, you should let the software repair them.

5) Repeat this procedure for each hard disk attached to the system.

6) When you are finished verifying the hard disks, choose Quit from the File menu to return to the desktop.

If Disk First Aid cannot repair a hard disk, you should back up the hard disk and reinitialize it using the appropriate formatting utility for that drive. For Apple drives, use Apple HD SC Setup.

Update Hard Disk Drivers

Drivers are small pieces of software that tell your hard disk how to interact with your Macintosh computer. You must update these drivers on an Apple hard disk before installing System 7.0 or higher. (Please note: if you already have an earlier version of System 7, you do not need to upgrade your drivers.)

If you don't have an Apple hard disk or use third-party software to format your disk, do not use the Apple HD SC Setup utility. However, you should contact your hard disk vendor to verify that your formatting software is compatible with system software version 7.1.

If you have an Apple hard drive, you should update the drivers with the version of Apple HD SC Setup that's on the Disk Tools disk.

1) Follow the instructions numbered 1 and 2 in the "Run Disk First Aid" section to start up your Macintosh with the Disk Tools disk.

2) Double-click the Apple HD SC Setup icon.

3) Click the Update button in the dialog box that appears. If the update is successful, it will display the message "Driver Update Successfully Completed."

   (NOTE: If the Update button is dimmed, no update is required or a third-party utility was used to format the hard disk.)

4) Click the Quit button.

Install System 7.1

System 7.1 software consists of either:

- A set of nine 800K disks: Disk Tools, Install, Install 2, Install 3, Printing, Fonts, Fonts 2, Tidbits, and Tidbits 2, or

- A set of six 1.44 MB (High Density or FDHD) disks: Disk Tools, Install, Install 2, Printing, Fonts, and Tidbits.

1) If you are installing from 1.44 MB disks, start your Macintosh computer. If it is already on, select Restart from the Special menu. Put the Install disk in the main floppy drive right after you hear the chime.

   If you are installing from 800K disks, start up from the Disk Tools disk. Then eject the Disk Tools disk and insert the Install disk. Since the 800K Install disk doesn't contain a System file, you cannot use it as a startup disk. You will have to swap between the Disk Tools and Install disks 4 to 6 times before the Installer begins.

   A welcome message appears.

2) Click the OK button. The Easy Install window appears. At this point you have two options:

- Easy Install, which installs the Macintosh system software and printer software recommended for your computer, or

- Customize Install, which lets you override the recommended software and choose the software you want installed.

Note For Macintosh Quadra, PowerBook, and LC Users: When installing System 7.1 on the Quadra 700, 900, and 950; Macintosh LC and LCII; and PowerBooks 100, 140, and 170, use the Easy Install option, or choose "System software for any Macintosh" in the Custom Install window. Do not use Custom Install for other software choices -- the Monitors control panel will not install properly if you use this option.

Easy Install
---

1) Click the Switch Disk button to select the disk you want to install with system software.

2) Click the Install button to do the Easy Install.

3) Follow the instructions on the screen. Messages appear, prompting you for the proper disks. When installation finishes, a dialog box appears.

4) Click the Quit Button.

5) Select Restart from the Special menu.

Customize Install
---

1) Click the Customize button.

2) When a window appears, click the Switch Disk button to select the disk you want to install with system software.

3) Select the items you want to install. Press the Shift key, and click to select multiple items. Your selections appear beneath the scrolling window.

4) When you have made your selections, click the Install button. Messages appear, prompting you for the proper disks. You will see a message telling you that installation is complete.

5) Click the Quit button.

Net Install

If someone has previously set it up, you can install System 7.1 over a network:

1) Connect to the shared disk that contains the Net Install folder.

2) Open the Net Install folder.

3) Double-click the Installer icon.

4) Follow the instructions under "Easy Install" or "Customize Install," which appear earlier in this document.

If Installation Fails

If a normal installation fails, you need to do a "clean" system software installation. If you want to use the fonts installed in your old system file, you'll have to temporarily remove them:

- If you are currently using system software version 7.0 or 7.0.1, double-click the System file and remove any needed fonts or sounds from the System file.

- With versions of System 6, use Font/DA Mover to save fonts and desk accessories to a font suitcase.

Start up with the Disk Tools disk. To do this, shut down the Macintosh, insert the Disk Tools disk into the floppy drive, then startup your Macintosh.

If the computer ejects the Disk Tools disk and will not start up from it, be sure you have an Apple SuperDrive (formerly called FDHD). If your computer does not have a SuperDrive, you need 800K disks. Call the Apple Order Center to get them.

If you already have 800K disks, and your computer will not start up from the Disk Tools disk, you may have a computer that will not start up from System 6. Boot from the Disk Tools disk that shipped with your Macintosh and follow the instructions in a related document titled "System 7.1 Clean Installation". A clean system installation will create a completely new System Folder on the hard disk. This new System Folder will have fresh copies of all the system components.

After Installation is Complete

If you want to use the fonts and desk accessories that were installed in your old System file, drag the font files to the new System Folder on your hard drive. The system will automatically place the fonts into the Font folder. Drag the desk accessories to the Apple Menu Items folder.

If you installed any software that modified your old System file, you need to reinstall that software after you install System 7.1. Delete the old System file from the desktop. The Installer program doesn't install QuickTime 1.5 automatically. Use the QuickTime disk to install the QuickTime extension.

If you need to create an empty suitcase, duplicate an existing suitcase. Drag the contents of the duplicated suitcase to the Trash. You can duplicate the remaining suitcase whenever you need one.

This article is one of many available through the Apple Fax center. For a

complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
21 May 1996 - Updated for technical accuracy, revised formatting
01 Nov 1994 - Reviewed for technical accuracy, revised formatting.
29 Aug 1994 - Matched article to fax document.

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Tech Info Library Article Number:10809

Tech Info Library

System 7.1: Use MacTCP 1.1.1 or Later (7/94)

Revised: 7/21/94
Security: Everyone

System 7.1: Use MacTCP 1.1.1 or Later (7/94)

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Article Created: 19 October 1992
Article Reviewed/Updated: 21 July 1994

TOPIC ----------

I upgraded from System 7.0 to 7.1. Virtual memory worked fine in the past. But now, after enabling Virtual Memory, the system bombs on restart with an error message that the System File is damaged, and to use the Installer to fix it. Reinstalling doesn't help, but turning Virtual Memory off lets the system boot normally.

The README file with System 7.1 says that I must upgrade to MacTCP 1.1.1. How do I get MacTCP 1.1.1?

DISCUSSION ----------

The system file isn't really damaged. MacTCP 1.1 will cause this message to appear if it's installed. MacTCP isn't fully compatible with System 7.1, and you should upgrade to version 1.1.1 or later.

If you have MacTCP 1.1 or earlier installed on your Macintosh, remove it from your System Folder before you upgrade to System 7.1. The system will crash when you start up if you don't do this.

Which Version of MacTCP should I use?

Both MacTCP 1.1.1 and later are compatible with System 7.1.

MacTCP 1.1.1 and later versions offer better support for larger "Hosts" files and for extension products, such as:

- AppleTalk Remote Access (ARA)
- Serial Line IP (SLIP)
- Point-to-Point Protocol drivers (PPP)

As of November 1993, the current version of MacTCP is 2.0.4.

Changes to the Distribution and Update Process

With the release of MacTCP 1.1.1 and later versions, there are some changes in the distribution and update process. Depending on how you obtained earlier versions, the method of obtaining new versions varies:

- Current MacTCP site license users receive the MacTCP 1.1.1 update free of charge. Developers with MacTCP commercial distribution licenses and customers with MacTCP internal use licenses have been sent updates. Developers or customers with these licenses, who haven't yet received their update, should contact Apple Software Licensing.

- Purchasers of the single user license of MacTCP 1.1 from APDA can obtain the MacTCP Developer Upgrade Kit (R0446LL/A) for a fee from APDA. The upgrade kit is only for MacTCP 1.1 customers who don't presently have a MacTCP commercial distribution license or internal site license.

- Customers who received MacTCP as part of MacX will be updated through MacX 1.2 update programs. You can order the MacX 1.2 update see your local dealer. This upgrade is for MacX 1.0, 1.1, or 1.1.7 and A/UX customers. Proof of purchase is required.

- MacTCP 2.0.2 is available on the price list as TCP/IP Connection for the Macintosh, or TCP/IP Administration for the Macintosh.

- MacTCP 2.0.4 is an update in a patch to update MacTCP 2.0.2.

- Purchasers of a commercial retail product that included MacTCP should contact the product's developer for details of any updates they may offer.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
21 Jul 1994 - Changed current version to MacTCP 2.0.4.
10 May 1994 - Removed reference to Apple Catalog.
01 Oct 1993 - Added symptom of using MacTCP 1.1 and System 7.1, and MacTCP 2.0.2 availability information.
23 Sep 1993 - Added MacTCP 2.0 information.
09 Dec 1992 - Revised, added availability information.

Support Information Services

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Tech Info Library Article Number:10810

Tech Info Library

System 7.1: Get Info Window Change

Revised: 10/14/92
Security: Everyone

System 7.1: "Get Info" Window Change

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Article Created: 19 October 1992

TOPIC ----------

This article explains the change to the "Get Info" window in the File menu.

DISCUSSION ----------

The "Get Info" window in the File menu has been changed with System 7.1 to improve memory management.

There are now three "Memory" fields:

- Suggested Size (Constant)
- Minimum Size (Changeable)
- Preferred Size (Changeable)

When an application is launched, it will try to open with the Preferred Size. If that amount of memory is not available, the application will try to open with (at least) the Minimum Size.

Each application has a minimum memory requirement written in the program. The Minimum Size field can be set below this number; however, the system will warn the user that the application may crash at this setting.

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Tech Info Library Article Number:10811

Tech Info Library

System 7.1: Ordering Information (5/96)

Revised: 5/24/96
Security: Everyone

System 7.1: Ordering Information (5/96)

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Article Created: 19 October 1992
Article Reviewed/Updated: 24 May 1996

TOPIC ----------

This article provides ordering information for System 7.1 Upgrade Kits.

DISCUSSION ----------

System 7.1 is available in three kits.

For Users Upgrading from System 6.0.X

- The System 7.1 Personal Upgrade Kit (M7200LL/A) contains the software you need to upgrade from System 6.0.X to System 7.1 on a single Macintosh.

- The System 7.1 MultiPack (M7201LL/A) contains the software you need to upgrade from System 6.0.X to System 7.1 for up to 10 Macintosh computers.

The MultiPack provides a set of system enablers. The Personal Upgrade Kit and MultiPack Kit come with a new Compatibility Checker that doesn't require the HyperCard application.

The Personal Upgrade kit and the MultiPack are available through your local dealer.

For Users Upgrading from System 7.0 or 7.0.1

- The 7.1 Update Kit (M7201LL/A) contains the software yo@o upgrade from System 7.0 or 7.0.1 to System 7.1 on a single Macintosh.

You can order the 7.1 Update Kit by calling the Apple Order Center. The Tech Info Library article titled "Locating Vendor Information" can help you search for Apple Order Center's phone number.

Telephone Support

When you buy any System 7.1 kit, you get 1 year of telephone support.

For details of what is included in each kit, see Tech Info Library article "System 7.1: General Description."

Article Change History:
24 May 1996 - Updated for technical accuracy.

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Tech Info Library Article Number:10813

Tech Info Library

System 7.1: Special Note for Installing on a Quadra

Revised: 10/14/92
Security: Everyone

System 7.1: Special Note for Installing on a Quadra

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Article Created: 19 October 1992

TOPIC ----------

This article gives special instructions for installing System 7.1 on a Macintosh Quadra 700, 900, or 950.

DISCUSSION ----------

When installing System 7.1 on a Macintosh Quadra, use the Installer's Easy Install option or choose "System software for any Macintosh" in the Custom Install window.

Do not choose the "Macintosh Quadra" option in the Custom Install window, because parts of the Monitors control panel will not install properly.

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Tech Info Library Article Number:10814

Tech Info Library

System 7.1: System Enablers Described (7/93)

Revised: 7/16/93
Security: Everyone

System 7.1: System Enablers Described (7/93)

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Article Created: 19 October 1992
Article Reviewed/Updated: 6 July 1993

TOPIC ----------

System enablers are software modules, each specific to a given CPU (hardware model). A system enabler overrides system resources at startup to allow existing system software to support new Macintosh models. This mechanism eliminates the need to release CPU-specific system software each time a new Macintosh model is released. System Enablers are located at the top level of the System Folder -- not in the Extensions folder.

The System 7.1 base system has built-in support for all Macintosh models that shipped before the release of System 7.1 (from the Macintosh Plus through the Macintosh Quadra 950 and PowerBook 145). All new Macintosh models shipping after the release of System 7.1 will include System Enabler software specific for that model or a particular family of models, like the Macintosh PowerBook family.

This article describes System Enablers in more detail.

DISCUSSION ----------

New CPUs No Longer Require New System Releases

System enablers (which were called "gibblies" in early documentation and system development releases) replace the release strategy that Apple used in the past for minor system changes needed for new hardware. The old strategy was to release a new version of the system software, such as version 6.0.8 or 7.0.1. With enablers, the differences in hardware no longer require a new system release, but instead each new computer has its own enabler (if necessary) to make the system work for that hardware.

This change was made for two reasons:

• Creating an enabler instead of a whole new system release reduces Apple's

quality assurance and testing time. By creating an enabler, we're testing new code only on new computers. Past computers aren't affected since the new enabler won't run on those computers. This also reduces third-party testing time, since they will no longer have to install a new system release on all older computers and test for compatibility.

- Enablers reduce user confusion and unnecessary upgrades. In the past, every time a computer was released, with its corresponding new software release, users of older computers were unsure if they needed to upgrade to the new system. Many assumed that since it was newer, it was better. This usually wasn't the case. For instance, upgrading from 7.0 to 7.0.1 on a Macintosh IIcx, gives you nothing new.

Apple will continue to use system extensions or components to add new functionality across the product line, as with QuickTime and Macintosh Easy Open.

Some General Rules About Their Behavior

System enablers are system software, designed and intended solely for the use of Apple Computer. Their functionality and implementation will change. An enabler is essentially an extension to the System file; from a programmatic standpoint it is the System file.

The Resource Manager was changed slightly to recognize references to the System file (CurResFile(0), for example) as being references to the System file and the current enabler. The code or other resources included in the enabler file appear to actually reside in the System file.

If there are multiple enablers in a computer's System Folder, the system will use only one of them. The system software (System file plus enabler) is responsible for arbitrating which enabler is used on a specific computer. It looks at the computer type it's currently running on, the computers that the enabler supports, and some enabler-internal applicability flags. Note that this is how the decision is currently made; as enablers are used for more computers and in different situations, more variables may be added to the decision process.

Enablers and Reference Releases

A specific enabler may not stay around forever. Apple has announced its intention to have "reference releases" every year to 18 months. These are the system upgrades that all users will be encouraged to install. Some enablers may be rolled into a reference release, so a computer that needed an enabler for System 7.1 may not need one for System 8. This isn't a hard and fast rule; some enablers may stay around forever, depending on the functionality they enable.

Article Change History:
07 July 1993 - This article was adapted from a column in Issue 14 of "develop" magazine.

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Tech Info Library Article Number:10815

Tech Info Library

System 7 and System 7.1: System Requirements (9/93)

Revised: 9/23/93
Security: Everyone

System 7 and System 7.1: System Requirements (9/93)

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Article Created: 19 October 1992
Article Reviewed/Updated: 23 September 1993

TOPIC ----------

This article discusses System 7 and System 7.1 system requirements.

DISCUSSION ----------

System 7 and System 7.1 run on all Macintosh Plus and later Macintosh models that have 2MB RAM and a hard drive -- though some features are not available on all models.

The minimum RAM requirement for System 7 and 7.1 is 2MB. However, Apple is encouraging customers to use at least 4MB for running multiple applications and to accommodate many of the popular Macintosh applications that individually require 1MB or more of RAM to run.

In addition, if you have a 68030 microprocessor or a 68020 microprocessor with a Paged Memory Management Unit (PMMU) installed, you can use the Virtual Memory feature.

Printing

System 7 and System 7.1 are compatible with all printers that work under previous versions of the Macintosh operating system. Networked Macintosh computers running System 7 or System 7.1 can share laser printers with Macintosh computers running System 6.0.X, running the proper LaserWriter driver.

- With System 7, use LaserWriter Driver 7.0 or later. (Note: Apple recommends that System 7.0 & 7.0.1 users install System 7 Tune-Up, which will install LaserWriter Driver 7.1.1.)

- With System 7.1, use LaserWriter Driver 7.1.2 or later.

Notes:

- LaserWriter Driver 7.0 and 7.1.2 are completely compatible with System 6.0.X.

- LaserWriter Driver 8.0 is compatible with System 6.0.7 and higher.

- It is not possible, however, to run a System 7 LaserWriter driver and earlier LaserWriter drivers on the same Macintosh.

- It is possible to have both LaserWriter Driver 7.x and LaserWriter 8.0 on the same Macintosh, as they do not conflict with each other.

Article Change History:
23 September 1993 - Added additional LaserWriter 7.x and 8.0 information.
2 February 1993 - Reviewed For technical accuracy.

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Tech Info Library Article Number:10816

Tech Info Library

System 7.1: What's New?

Revised: 10/14/92
Security: Everyone

System 7.1: What's New?

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Article Created: 19 October 1992

TOPIC -----

What does System 7.1 offer that's different from System 7.0 or 7.0.1?

DISCUSSION -----

System 7.1 includes:

- WorldScript software, which simplifies support of language scripts in Macintosh system software.
- Several new control panels to allow users to customize the formats for dates, times, numbers, and text behavior -- sort and case conversion, for example.
- Improvements made by System 7 Tune-Up 1.1.1.
- The QuickTime software extension that provides multimedia capability for your Macintosh.
- The new Font folder within the System Folder for a single place to store all fonts.
- System Enablers that provide compatibility between Macintosh CPU hardware and system software. Compatibility is achieved by adding a software module, not by reinstalling a new system.

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Tech Info Library Article Number:10818

Tech Info Library

System 7.1: Who Should Upgrade?

Revised: 10/14/92
Security: Everyone

System 7.1: Who Should Upgrade?

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Article Created: 19 October 1992

TOPIC -----

Does Apple recommend that every Macintosh user upgrade to System 7.1?

DISCUSSION -----

Apple recommends upgrading to System 7.1 if you are currently running System 6.0.X, or if you are running System 7.0 or 7.0.1 and want WorldScript functionality.

System 6.0.X users get:

- The benefits of System 7 (built-in TrueType, file sharing, Publish and Subscribe, improved Finder, multitasking, Balloon Help, and so on).
- The ability to use At Ease and future system extensions based on System 7.1.
- Improved support for two-byte languages (alphabets) and fonts, like Japanese, Chinese, and Korean.

Current System 7 users get:

- Improved font handling with the new Font folder.
- Improved stability with the integration of System 7 Tune-Up 1.1.1 and other fixes.
- Improved mechanism to support future Macintosh models with System Enablers.

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Tech Info Library Article Number:10819

Tech Info Library

System 7.1: WorldScript Technology (1/94)

Revised: 1/26/94
Security: Everyone

System 7.1: WorldScript Technology (1/94)

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Article Created: 19 October 1992
Article Reviewed/Updated: 26 January 1994

TOPIC ----------

This article describes Apple's WorldScript technology.

DISCUSSION ----------

Overview

WorldScript is a system-level technology that provides support for most languages (alphabets, or writing systems) worldwide, including support to handle the complexities of non-Roman alphabets. This technology includes system-level support of both one-byte languages, like Arabic and Hebrew, and two-byte languages, like Japanese, Chinese, and Korean. (Two-byte languages are those with more than 256 characters.)

WorldScript allows multiple languages to coexist on the same system for users to write in multiple languages.

By integrating this technology into the Macintosh operating system, System 7.1 allows the Macintosh computer to be quickly localized for any language. WorldScript I and WorldScript II are system extensions that eliminate the need for separate extensions for each script. The consolidation of all the scripts into these two extensions provides these benefits:

- Consistent behavior across scripts
- Reduced space requirements for multiple script systems
- Easier maintenance and testing

Script-specific resources, such as keyboard layout and fonts must be provided for each specific script. In addition, Traditional and Simplified Chinese, Japanese and Korean require an input method to map the keystrokes to their large character set.

How WorldScript Differs from Previous Scripting Implementations

Prior to System 7.1, all script systems were developed independently, usually in the countries where they were used. Each script system contained code that handled its own language. This code was updated and tested with each system software release.

Now there are two scripts that consolidate script systems:

- WorldScript I is for non-Roman, single-byte languages, like Arabic, Thai, and Hebrew. It handles right-to-left languages and special character formats.

- WorldScript II is for non-Roman double-byte languages, like Japanese, Chinese, and Korean, and provides support for fonts sets with a large number of characters, special methods of text input, and multi-directional text. There are also extensions to provide compatibility with System 6 fonts, Japanese input methods, and a new Text Services Manager.

InputBackSupport is an extension created to support Japanese fonts already in use that aren't TrueType fonts. It also provides backwards compatibility with Japanese 6.x input methods.

The Text Services Manager manages, catalogs, and provides access to software modules that provide a service for inputting text. It's especially useful for script systems like Japanese, Chinese, and Korean that have complicated text input. It provides a database service for applications to search for input methods, find information about the methods, and communicate directly with those services.

Installation

In addition to WorldScript I and II, you'll need language-specific extensions in your System Folder to view and create documents in other languages. The script bundle contains all of the files needed to support a single language. To install a specific language, you need to drag the script bundle, at least one font from that script, and the WorldScript extension onto the System Folder icon. These script bundles are not yet available.

If you have WorldScript installed along with the necessary language extensions and fonts, you'll see a Keyboards menu icon in the Finder between the Application and Balloon Help menus. To see this menu, you must have the proper software installed, as described in the previous paragraph, and you must have an application launched that supports multiple scripts within a single document.

Control Panels

Several new control panels are included with System 7.1 that let users customize the formats for dates, times, numbers, and text behaviors, like sort order and case conversion. The Text Control Panel is required with WorldScript I and II. For detailed information on the new System

7.1 control panels, see Tech Info Library article "System 7.1: New Control Panels."

WorldScript Availability

As of 26 January 1994, the following Apple products incorporating WorldScript and language extensions are available:

- Japanese Language Kit
  - Inside the USA, order product number M1648LL/A
  - Outside the USA, order product number M1648Z/A
- Chinese Language Kit
  - Inside the USA, order product number M2368LL/A
  - Outside the USA, order product number M2368Z/A

Note

WorldScript does not include support for Unicode; however, it provides an ideal platform for future Unicode support.

For more information on the script system, see the APDA documents "Worldwide Development: Guide to System Software" and "Guide to Macintosh Software Localization."

Article Change History:
26 January 1994 - Added info on Chinese Lanaguage Kit, updated product numbers for inside and outside USA.
23 September 1993 - Added Information on the Japanese Language Kit and availability details.
3 February 1993 - Reviewed for technical accuracy.
9 November 1992 - Updated, expanded information on how to use WorldScript.

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Tech Info Library Article Number:10820

Macintosh Color Display: Specifications (8/94)

Revised: 8/3/94
Security: Everyone

Macintosh Color Display: Specifications (8/94)

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Article Created: 19 October 1992
Article Reviewed/Updated: 3 August 1994

TOPIC ----------

This article gives technical specifications for the Macintosh Color Display.

DISCUSSION ----------

Picture Tube

• 14-inch diagonal, 13-inch viewable Trinitron CRT
•.26mm aperture grill pitch
• High-contrast glass

Input Signals

• Red, green, and blue video signals
• Composite sync., negative going TTL

User Controls

• Power switch
• Brightness, with detent reference
• Contrast
• V-twist misconvergence adjustment
• H-stat misconvergence adjustment

Scanning Frequencies

• Horizontal: 35.0 kHz
• Vertical: 66.7 Hz

Video

• Resolution: 640 horizontal pixels by 480 vertical lines

- Active display area: Adjusted at the factory to produce an active video area of 235 mm (9.3 inches) horizontal by 176 mm (6.9 inches) vertical. The remainder of the screen is used for the dark border around the display.
- 70 dots per inch

Size and Weight

- Weight: 24 lb. 14 oz. (11.3 kg)
- Height: 13 inches (33 cm)
- Width: 13.4 inches (34.0 cm)
- Depth: 14.0 inches (35.6 cm)

Input Electrical Requirements

- Voltage: 90 to 270 Vrms
- Power: 37 W normal operation, 55 W maximum
- Frequency: 47-63 Hz

Environmental Requirements

- Ambient operating temperature: 10° C to 40° C (50° F to 95° F)
- Operating humidity: 90% maximum, non-condensing
- Operating altitude: 10,000 feet maximum

Fuse Protection

- The monitor contains internal power line fuse protection. This fuse should be replaced with the same type by a qualified service technician.

Warm-up Time

- 20 minutes to meet all specifications

Safety Information

- Meets SWEDAC recommendations for ELF and VLF magnetic and electric emissions.

System Requirements

- A modular Macintosh computer with on-board video support, such as a Macintosh LC II or Macintosh IIvx personal computer, or any NuBus-capable modular Macintosh that requires a video card (the Macintosh II, IIx, IIcx or IIfx).

- Video cards supported include:
- Macintosh II Video Card
- Macintosh II Hi-Resolution Video Card
- Macintosh II Extended Hi-Resolution Video Card
- Macintosh Display Card 4•8
- Macintosh Display Card 8•24

- Macintosh Display Card 8•24 GC

Article Change History:
09 Sep 1992 - Revised to include expanded system requirements.
21 Oct 1992 - Revised to include measurement information.
03 Aug 1994 - Revised to add safety information.

Support Information Services

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Tech Info Library Article Number:10824

Tech Info Library

AppleCD 300 and 300i CD-ROM Drives: General Description

Revised: 8/19/96
Security: Everyone

AppleCD 300 and 300i CD-ROM Drives: General Description

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Article Created: 19 October 1992
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

This article provides a general description of the AppleCD 300 (external) and AppleCD 300i (internal) CD-ROM drives.

DISCUSSION ----------

Overview

The new high-performance AppleCD 300 drive is the perfect tool for accessing the world of CD-ROM and multimedia.

Designed for use with the Apple Macintosh personal computer, the AppleCD 300 spins at twice the speed of ordinary CD-ROM drives to give you much faster access to the tremendous amount of information stored on CD-ROM discs. So it's easier than ever to work efficiently with the wealth of commercially available reference libraries, software, databases, clip art/graphics collections, educational programs, and games. In addition, the faster spin speed of the AppleCD 300 means smoother playback of your QuickTime movies, video, and animation.

But the AppleCD 300 is not just a faster drive, it's also a far more versatile one. With the support of QuickTime, for instance, it can read the new multisession Kodak Photo CD discs. Take your original film, negatives, or slides to designated Kodak centers for conversion into high-quality images onto a Kodak Photo CD disc. Then -- because the AppleCD 300 can conveniently access Kodak Photo CD images -- you can cut and paste them into your favorite word-processing, presentation, and graphics applications.

To give you access to the diverse library of CD-ROM titles, the AppleCD 300 is compatible with the industry-standard ISO 9660/High Sierra file formats, as well as with the Macintosh HFS. It is CD-ROM XA-ready and also supports

other CD-ROM formats, such as CD+G and CD+MIDI. It not only plays standard audio CDs, but can also transfer CD digital audio data via the SCSI bus to your Macintosh for further editing.

Performance

- Operates at twice the speed of ordinary CD-ROM drives
- Double-speed (300KB/sec) data transfer rate
- Average access time of 295 ms (in double-speed mode)
- 256KB buffer for faster data transfer

Compatibility

- Fully compatible with Macintosh operating system software, including System 7 and QuickTime
- Compatible with ISO 9660/High Sierra and Macintosh HFS formats
- Supports multiple CD-ROM formats, including CD-ROM XA, multisession Photo CD, CD+G, CD+MIDI
- Plays standard audio CDs
- CD digital audio data via SCSI

Ease of Use

- Set up and use in minutes -- plug-and-play
- Easy, cost-effective network access
- Speed Select Switch software for choosing single- or double-speed operation

Reliability

- Automatic lens cleaning and double front-loading door for better dust protection

Ordering Information

AppleCD 300 (external) (M2710LL/A) includes:

- AppleCD 300 Drive
- CD caddy
- Installation disk
- QuickTime disk
- CD-ROM disc collection
- Power cord
- Complete setup, learning, and reference documentation
- Limited warranty statement

AppleCD 300i (internal) (M1903LL/A) is the mechanism for the Upgrade Kits listed below.

Upgrade Kits include:

- CD 300i mechanism (M1903LL/A)
- CD Setup disk
- QuickTime disk
- CD caddy
- User's Guide
- The appropriate brackets and bezels for installation.

AppleCD 300i Upgrade Kits

B1332LL/A AppleCD 300i Internal Drive Kit - Centris/Quadra 610 & 660AV
B1329LL/A AppleCD 300i Internal Drive Kit - Centris/Quadra 650 & IIvx
B1328LL/A AppleCD 300i Internal Drive Kit - Quadra 900 & 950
B1330LL/A AppleCD 300i Internal Drive Kit - Quadra 800 & 840AV

Cables and Accessories

- AppleCD Caddy (box of 5) (M2705)

- Apple SCSI System Cable (M0206)

- Apple SCSI Cable Terminator (M0332LL/A)

- Apple SCSI Peripheral Interface Cable (M0207)

- Apple SCSI Cable Extender (M0208)

Article Change History:
19 Aug 1996 - Corrected misspelling.
02 Nov 1993 - Added 300i Upgrade Kit information

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Tech Info Library Article Number:10825

Tech Info Library

AppleCD 300 (External) Drive: Specifications (Discontinued)

Revised: 8/19/96
Security: Everyone

AppleCD 300 (External) Drive: Specifications (Discontinued)

==========

Article Created: 19 October 1992
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

This article provides specifications for the AppleCD 300 external CD-ROM drive.

DISCUSSION ----------

Playback Medium

- 12 cm optical disc installed in a CD caddy (any CD-ROM or audio compact disc is compatible)

Capacity

- Mode 1: 656MB
- Mode 2: 748MB
- Recording surfaces: 1
- Data/block (available to user):
  - Mode 1: 2048 bytes
  - Mode 2: 2336 bytes
- Blocks per disc: more than 270,000

Audio Playback

- Playing time: more than 1 hour
- Frequency response: 20 to 20,000 Hz

Characteristics

- Rotational Speed:
  - Normal speed (1X): 230 to 530 rpm
  - Double speed (2X): 460 to 1060 rpm

- Average Access Time:
  - Normal speed (1X): 360 ms
  - Double speed (2X): 295 ms

- Data Streaming Rate, Normal Speed (1X)
  - Mode 1: 150KB/sec
  - Mode 2: 171KB/sec

- Data Streaming Rate, Double Speed (2X)
  - Mode 1: 300KB/sec
  - Mode 2: 342KB/sec

- Block Rate:
  - Normal speed (1X): 75 blocks/sec
  - Double speed (2X): 150 blocks/sec

- SCSI Bus Transfer Burst Rate (over one CD-ROM block): 2.5MB/sec

- Buffer Size: 256KB

Formats Supported

- Multisession Kodak Photo CD
  (QuickTime required)
- ISO 9660/High Sierra
- Macintosh HFS
- CD-ROM XA (requires additional ADPCM hardware to read compressed audio)
- CD+G
- CD+MIDI
- Standard Audio CDs
- CD Digital Audio Data Via SCSI Bus

Interfaces

- One Headphone Jack (front panel)
- Two SCSI 50-Pin Connectors (for connection to the Macintosh and other
  SCSI devices) (rear panel)
- Two RCA Audio Output Jacks (for external amplifier or amplified speakers)
  (rear panel)

Electrical Requirements

- Power Requirements:
  - External: 100 to 240 V AC, 50/60 Hz
  - Internal: +5 V DC +/-5%,12 V DC +/-10%

- Power Consumption:
  - External: 0.28A AC (drive on)

  • Internal: 350 mA maximum for +5 V and 750 mA average,
    1.5A peak for +12 V

Operating Environment

• Temperature:
  • External: 41° F to 104° F (5° C to 40° C)
  • Internal: 41° F to 122° F (5° C to 50° C)

• Relative Humidity: 5% to 90% noncondensing

Non-operating Environment

• Storage Temperature (6 months): -22° F to 122° F (-30° C to 50° C)

• Transportation Temperature (72 hours): -40° F to 149° F (-40° C to 65° C)

• Relative Humidity: 5% to 95% noncondensing

System Requirements

• Macintosh SE or later model Macintosh personal computer

• Macintosh system software version 6.0.7 or later

• Depending on configuration, a separate SCSI system or peripheral cable
  (not included) is required

Size and Weight

• Height: 1.96 in. (5.0 cm)
• Width: 7 in. (17.75 cm)
• Depth: 13.1 in. (33.4 cm)
• Weight: 6.29 lb. (2.85 kg)

Article Change History:
19 Aug 1996 - Corrected misspelling.

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Tech Info Library Article Number:10826

Tech Info Library

Macintosh PowerBook Duo: Accessories (5/94)

Revised: 5/17/94
Security: Everyone

Macintosh PowerBook Duo: Accessories (5/94)

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Article Created: 19 October 1992
Article Reviewed/Updated: 17 May 1994

TOPIC

This article lists the Apple accessories available for the Macintosh PowerBook Duo series.

DISCUSSION

Macintosh Duo Dock (512K VRAM)
Order No. M1928LL/A

Macintosh Duo MiniDock
Order No. M4181LL/A

Macintosh PowerBook Duo Floppy Adapter
Order No. M4180LL/A

Macintosh PowerBook Duo 4MB Memory Expansion Kit
Order No. M4184LL/A

Macintosh PowerBook Duo 8MB Memory Expansion Kit
Order No. M4185LL/A

Macintosh HDI-20 External 1.4MB Floppy Disk Drive
Order No. M8061

Apple HDI-30 SCSI System Cable
Order No. M2538LL/A

Apple HDI-30 SCSI Disk Adapter
Order No. M2539LL/A

Macintosh PowerBook Express Modem
Order No. M4186LL/A

Macintosh PowerBook Duo Rechargeable Battery
Order No. M1835LL/A

Macintosh PowerBook Duo AC Adapter
Order No. M4174LL/A

Macintosh PowerBook Duo Battery Recharger
Order No. M4178LL/B

Article Change History:
17 May 1994 - Updated for current model numbers and remove temporary info.

Support Information Services

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Tech Info Library Article Number:10827

Tech Info Library

PowerBook Duo 210: Description (Discontinued)

Revised: 3/14/95
Security: Everyone

PowerBook Duo 210: Description (Discontinued)

==========

Article Created: October 19, 1992
Article Reviewed/Updated: 14 March 1995

TOPIC ----------

This article describes the Macintosh PowerBook Duo 210 notebook computer.

DISCUSSION ----------

Overview

The Apple Macintosh PowerBook Duo 210 offers high performance in a 4-pound package that you can take anywhere and can become part of a complete desktop Macintosh system when you bring it back to your desk. It includes a CPU, full-size 16-gray-level supertwist display, keyboard and trackball, battery, and disk storage.

The PowerBook Duo 210 can be transformed into a desktop Macintosh by attaching it to an optional Duo Dock or MiniDock. You can then work with a large color display, full-size keyboard, printers, and network servers.

PowerBook Duo 210 Features

• Processor: 25-MHz 68030 microprocessor

• Memory: 4MB RAM, expandable to 24MB

• Weight: 4.2 lb. (1.9 kg)

• Expansion: Docking connector, connectors for internal modem and RAM

• Display: Backlit Supertwist, 16-level gray scale, 640 by 400 pixels

• Battery: Nickel hydride batteries for approximately 2 to 4.5 hours of use

• System software: System 7.1, with multitasking, file sharing, Balloon

Help, and TrueType fonts

- Networking: Built-in AppleTalk networking, file sharing without a dedicated server

- Compatibility: Macintosh, MS-DOS, OS/2, and ProDOS floppy disk formats

Article Change History:
14 Mar 1995 - Corrected wording of MiniDock.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10828

Tech Info Library

PowerBook Duo 210: Specifications (Discontinued 10/93)

Revised: 5/18/94
Security: Everyone

PowerBook Duo 210: Specifications (Discontinued 10/93)

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Article Created: October 19, 1992
Article Reviewed/Updated: 02 June 1993

TOPIC ----------

This article provides the technical specifications for the Macintosh PowerBook Duo 210 computer.

DISCUSSION ----------

Microprocessor

• 68030, running at 25 MHz

Address and Data Bus

32-bit Address Bus
32-bit Data Bus

Memory

• Comes with 4MB low-power DRAM on the logic board.

• Expands to up to 24MB of RAM by installing Macintosh PowerBook Duo 4MB or 8MB Memory Expansion Kits or larger-capacity third-party memory expansion cards in the expansion slots.

Disk storage

• One internal 80MB hard disk with 19 ms access time.

Display

• 9 in. (229 mm) diagonal

- Bright backlit Supertwist liquid crystal display

- 16-level gray scale, 640 by 400 pixels

Battery

- Nickel hydride, provides approximately 2 to 4.5 hours of use before recharging is necessary.

- Recharge time: about 2 hrs. recharged standalone in computer.

Keyboard

- Built-in keyboard with standard Macintosh layout.

- Two-level tilt adjustment.

- LED shows when caps lock key is engaged.

Trackball

- 19-mm-diameter, dual-button trackball.

Interfaces

- One 152-pin PDS connector for attaching a Macintosh Duo Dock, Macintosh Duo MiniDock, Macintosh PowerBook Duo Floppy Adapter, or other expansion devices.

- One RS-422 serial port for printer, modem, or other serial device.

- One RJ-11 Port for optional internal modem.

- One power adapter port.

File Transfer Options

- LocalTalk cables and System 7 file sharing.

- Serial cable and System 7 file sharing.

- Fax/data modem and AppleTalk Remote Access software.

- With Duo MiniDock: External Apple SuperDrive, SCSI Disk Adapter, and HDI-30 SCSI System Cable for external hard drives.

- With Duo Dock: Internal Apple SuperDrive, optional internal hard drive, and HDI-30 SCSI System Cable for external hard drive.

Modem

- Optional internal Macintosh PowerBook Express modem. 14,400 bits per second (bps) data, with fax send and receive at 9600 bps; includes Express

Fax software:
- Hardware supports V.32bis, CCITT, and Bell standards.
- Software supports CCITT standard V.42 and V.42bis (for up to 57,000 bps effective throughput), MNP 2-5.
- Supports standard Hayes AT command set.

Microphone (built-in)

- Internal electret, omnidirectional.

Sound

- Built-in speaker.

- Monophonic 8-bit sound, capable of supplying the same signal to both channels of stereo headphones or other stereo equipment through the sound jack.

- 8-bit sound output, sampled at 11 or 22 kHz.

Disability access

CloseView, Easy Access, and visible beep are included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

Size and weight

- Height: 8.5 in. (21.6 cm)

- Width: 10.9 in. (27.7 cm)

- Thickness: 1.4 in. (3.6 cm)

- Weight: 4.2 lb. (1.9 kg)

Electrical requirements

- Line voltage: 100 to 240 V

- Frequency: 50 to 60 Hz

Environmental requirements

- Operating temperature: 50° F to 104° F (10° C to 40° C)

- Storage Temperature: -40 to 65° C (-40 to 148° F)

- Relative humidity: 20% to 95% noncondensing

- Altitude: 0 to 15,000 ft. (0 to 4722 m)

- Operating altitude: 0 to 10,000 ft.(0 to 3048 m)

Article Change History:

06/02/93 - Updated to correct voltage specification.
02/19/93 - Updated to correct storage temperature range.

Support Information Services

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Tech Info Library Article Number:10829

Tech Info Library

PowerBook Duo 230: Description (Discontinued)

Revised: 3/14/95
Security: Everyone

PowerBook Duo 230: Description (Discontinued)

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Article Created: 19 October 1992
Article Reviewed/Updated: 14 March 1995

TOPIC ----------

This article describes the Macintosh PowerBook Duo 230 notebook computer.

DISCUSSION ----------

The Apple Macintosh PowerBook Duo 230 offers top-of-the-line performance in a 4-pound package that you can take anywhere and can become part of a complete desktop Macintosh system when you bring it back to your desk. It includes a CPU, full-size screen, keyboard and trackball, battery, and disk storage. The PowerBook Duo 230 also includes a 16-gray-level supertwist display.

The PowerBook Duo 230 can be transformed into a desktop Macintosh by attaching it to an optional Macintosh Duo Dock or MiniDock. You can then work with a large color display, full-size keyboard, printers, and network servers.

Features

- Processor: 33-MHz 68030 microprocessor
- Memory: 4MB RAM, expandable to 24MB
- Weight: 4.2 lb. (1.9 kg)
- Expansion: Docking connector and connectors for internal modem and RAM
- Display: Backlit Supertwist, 16-level gray scale, 640 by 400 pixels
- Battery: Nickel hydride batteries for approximately 2 to 4.5 hours of use
- System 7.1, with multitasking, file sharing, Balloon Help, and TrueType fonts
- Networking: Built-in AppleTalk networking, file sharing without a dedicated

server

• Compatibility: Macintosh, MS-DOS, OS/2, and ProDOS floppy disk formats

Article Change History:
14 Mar 1995 - Corrected wording of MiniDock.

Support Information Services

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Tech Info Library Article Number:10830

Tech Info Library

PowerBook Duo 230: Specifications (8/94) (Discontinued)

Revised: 8/26/94
Security: Everyone

PowerBook Duo 230: Specifications (8/94) (Discontinued)

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Article Created: October 19, 1992
Article Reviewed/Updated: 26 August 1994

TOPIC ----------

This article provides technical specifications for the Macintosh PowerBook Duo 230 computer.

DISCUSSION ----------

Microprocessor

• 68030, running at 33 MHz.

Address and Data Bus

32-bit Address Bus
32-bit Data Bus

Memory

• Comes with 4MB low-power DRAM on the logic board.

• Expands to up to 24MB by installing Macintosh PowerBook Duo 4MB or 8MB Memory Expansion Kits or larger-capacity third-party memory expansion cards in the expansion slots

Disk storage

• One internal 80MB or 120MB hard disk with 19 ms access time.

Display

• 9 in. (229 mm) diagonal.

- Bright backlit Supertwist liquid crystal display.

- 16-level gray scale, 640 by 400 pixels.

Battery

- Nickel hydride, provides approximately 2 to 4.5 hours of use before recharging is necessary.

- Recharge time: about 2 hrs. recharged standalone in computer.

Keyboard

- Built-in keyboard with standard Macintosh layout.

- Two-level tilt adjustment.

- LED shows when caps lock key is engaged.

Trackball

- 19-mm-diameter, dual-button trackball.

Interfaces

- One 152-pin PDS connector for attaching a Macintosh Duo Dock, Macintosh Duo MiniDock, Macintosh PowerBook Duo Floppy Adapter, or other expansion device.

- One RS-422 serial port for printer, modem, or other serial device.

- One RJ-11 Port for optional internal modem.

- One power adapter port.

File transfer options

- LocalTalk cables and System 7 file sharing.

- Serial cable and System 7 file sharing.

- Fax/data modem and AppleTalk Remote Access software.

- With Duo MiniDock: External Apple SuperDrive, SCSI Disk Adapter, and HDI-30 SCSI System Cable for external hard drives.

- With Duo Dock: Internal Apple SuperDrive, optional internal hard drive, and HDI-30 SCSI System Cable for external hard drive.

Modem

Optional internal Macintosh PowerBook Express modem; 14,400 bits per second (bps) data with fax send and receive at 9600 bps.

Includes Express Fax software:
- Hardware supports V.32bis, CCITT, and Bell standards.
- Software supports CCITT standard V.42 and V.42bis (for up to 57,000 bps effective throughput), MNP 2-5.
- Supports standard Hayes AT command set.

Microphone (built-in)

- Internal electret, omnidirectional.

Sound

- Built-in speaker.

- Monophonic 8-bit sound, capable of supplying the same signal to both channels of stereo headphones or other stereo equipment through the sound jack.

- 8-bit sound output, sampled at 11 or 22 kHz.

Disability access

CloseView, Easy Access, and visible beep are included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

Size and weight

- Height: 8.5 in. (21.6 cm)

- Width: 10.9 in. (27.7 cm)

- Thickness: 1.4 in. (3.6 cm)

- Weight: 4.2 lb. (1.9 kg)

Electrical requirements

- Line voltage: 100 to 240 V

- Frequency: 50 to 60 Hz

Environmental requirements

- Operating temperature: 50° F to 104° F (10° C to 40° C)

- Storage Temperature: -40 to 65° C (-40 to 148° F)

- Relative humidity: 20% to 95% noncondensing

- Altitude: 0 to 15,000 ft. (0 to 4722 m)

- Operating altitude: 0 to 10,000 ft.(0 to 3048 m)

Article Change History:

26 Aug 1994 - Discontinued product.
08 Feb 1994 - Removed erroneous discontinuance notice.
02 Jun 1993 - Updated to correct voltage specification.
19 Feb 1993 - Updated to correct storage temperature range.

Support Information Services

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Tech Info Library Article Number:10831

Tech Info Library

PowerBook Duo: Battery Information 10/92

Revised: 5/16/94
Security: Everyone

PowerBook Duo: Battery Information 10/92

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Article Created: October 19, 1992

TOPIC ----------

The PowerBook Duo battery is different from the batteries in other PowerBook systems.

DISCUSSION ----------

Advantages

Compared to the NiCad batteries used in other PowerBook models, the nickel-metal hydride (NiHy) rechargeable batteries in the PowerBook Duo:

• Are smaller and lighter.

• Have a 20% greater power capacity for the same size and voltage.

• Are considered environmentally safer because they lacks cadmium.

A fully-charged PowerBook Duo battery will operate approximately 2 to 4.5 hours, depending on the operating temperature, the age of the battery, and the power-saving features implemented.

A NiHy battery has a similar discharge curve to a NiCad, with a sharp drop of available power as the battery approaches discharge. This drop is predictable, and system software will give the user adequate warning to recharge or replace the battery before full discharge.

The terminals on the NiHy battery are more recessed than those on the NiCads, and there is little likelihood of an accidental external short. The batteries will ship with a case to ensure that nothing damages the battery or the customer.

Precautions

Nickel-metal hydride batteries requires certain precautions:

- Because the self-discharge rate of a stored battery is approximately twice that of a NiCad, stored batteries must be frequently recharged.

- A NiHy battery is much more sensitive to temperature, especially high temperatures (over 40°C). Approximately 50% of the battery capacity will remain if the battery has been stored for 14 days at 40°C. If left for months at this temperature, the battery could be permanently damaged. Charging NiHy batteries below 5° C can also cause irreversible damage to the battery.

- Overcharging, or over-discharging, will cause permanent battery damage. Due to this sensitivity, a special power management chip was built into the PowerBook Duo to control charging and discharging. The chip will also stop charging when the battery temperature exceeds a specific value.

Battery Charging

A NiHy battery, like a NiCad, should be fully discharged in order to obtain a full charge. To maximize battery life, fully discharge and then recharge the battery once every 30 days. This should be done any time you note that the run time of the battery has decreased. With proper care, a battery should last for at least a year.

It should take about two hours to charge a fully depleted battery with the computer shut down or in sleep.

Specifications

Maximum dimensions	17.8 x 77.8 x 106 cm 0.7 x 3.06 x 0.17 in
Maximum weight	.75 lb
Battery capacity	approximately 900 to 950 mAh
Operating Temperature	0 - 45°C

Disposal

Dispose of batteries in accordance with the mandatory or voluntary battery collection scheme in each country.

- In the United States, dead batteries should be taken to an Authorized Apple Service Provider, who will return the battery to Apple for recycling.

- European countries have separate collection and/or recycling programs for dead batteries.

- In other countries, an Apple Service Provider should be contacted for

appropriate battery disposal.

Support Information Services

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Tech Info Library Article Number:10832

Tech Info Library

PowerBook Duo: Optional Battery Charger (10/95)

Revised: 10/2/95
Security: Everyone

PowerBook Duo: Optional Battery Charger (10/95)

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Article Created: October 19, 1992
Article Reviewed/Updated: 2 October 1995

TOPIC ----------

The PowerBook Duo Battery Charger is an optional accessory which can charge two PowerBook Duo batteries. Each battery slot works independently, so a user can insert or remove batteries at any time.

The recharger can be plugged directly into the power adapter that comes with the PowerBook Duo. You can also purchase a second power adapter to attach to the recharger.

Type I, II, and III Duo batteries can all be recharged in the recharger model M1812 (Marketing number M4178LL/B).

DISCUSSION ----------

Indicator Lights

The lights on the recharger indicate the following:

- No light: the recharger is not plugged in, or the battery is defective. If the light goes off during recharging, the battery is defective.

- Yellow light: the battery is charging.

- Green light: the battery is fully charged.

- Red light: If a red light appears when you place a Type III battery into the recharger, the recharger is either the older model recharger which will not work with a Type III battery, or it is a new recharger that needs to be updated.

To learn more about the different rechargers and how to update a recharger see the TIL article titled, "PowerBook Duo: Type III Battery Q & A."

Recharging Time

Recharging time in the Battery Charger for a fully depleted battery:

One battery	approximately 2 hours
Two batteries	approximately 4.5 hours

It takes about 2 hours to charge a fully depleted battery in a standalone Duo.

Both the battery in the PowerBook Duo, as well as a battery in the external charger, can be charged simultaneously using the same power supply. The charge times will differ depending on the following circumstances:

- The PowerBook is on and contains a battery that is not fully charged: The computer will charge the internal battery first, which should take about 2 hours. The external battery will not begin to charge until the internal battery is fully charged. After this, if the computer is in use, it will take approximately another 2 hours for one external battery or approximately another 4.5 hours for two external batteries to fully charge.

- The PowerBook is in sleep or shut down and contains an internal battery that is not fully charged. The internal and external batteries will charge simultaneously. If both batteries are fully depleted, it will take approximately 4.5 hours to charge both batteries.

- The PowerBook is in sleep or shut down and the internal battery is fully charged or absent. The external battery charges as if the recharger were not connected to the computer. If fully depleted, it will take about 2 hours to recharge.

Article Change History:
10 Oct 1995 - Corrected information about two batteries charging.
04 May 1995 - Added information about red light and new recharger model.

Support Information Services

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Tech Info Library Article Number:10833

Tech Info Library

PowerBook 200 & 2300 Series: Docking/Undocking Procedures 10/95

Revised: 10/12/95
Security: Everyone

PowerBook 200 & 2300 Series: Docking/Undocking Procedures 10/95

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Article Created: 19 October 1992
Article Reviewed/Updated: 12 October 1995

TOPIC ----------

This article explains the different scenarios under which it is safe to dock, undock, and sleep a PowerBook 200 or 2300 series computer connected to a Duo Dock, Duo Dock II, Duo Dock Plus, MiniDock, or Duo Floppy Adapter.

DISCUSSION ----------

The only time that hardware or data is at risk when connecting externals to a PowerBook 200 or 2300 series computer is if the computer is turned on and awake while the externals are being connected. If you work with the rule that the PowerBook is always off or sleeping when externals are connected, you should be safe in any situation. The following is a more specific synopsis of the different docking scenarios.

Duo Dock (includes all Duo Dock products)

The PowerBook computer must be off when docking to a Duo Dock. If docking is attempted while the PowerBook computer is asleep, the dock will eject the PowerBook computer. The PowerBook computer will crash if it is on when trying to Dock.

The PowerBook computer will not sleep when docked to a Duo Dock.

Pressing the eject button on the Duo Dock while the PowerBook computer is on will issue the Shutdown procedure and then eject the PowerBook computer.

You can physically lock the Duo Dock so that the computer cannot be removed. If you attempt to eject the computer, a dialog box explains that you must unlock the docking station before the Duo can be ejected.

MiniDock

The PowerBook computer can be connected to the MiniDock in sleep mode as long as there is not an external monitor or SCSI device attached.

The PowerBook computer can sleep when docked to a MiniDock as long as there is not an external monitor attached. If there is an external monitor attached, you will get the message the PowerBook computer cannot sleep.

The MiniDock can be removed when the PowerBook computer is off or sleeping.

Duo Floppy Adapter

The PowerBook computer can be connected to the Duo Floppy Adapter in sleep mode.

The PowerBook computer can sleep when docked to a Duo Floppy Adapter.

The Duo Floppy Adapter can be removed when the PowerBook computer is off or sleeping.

Article Change History:
12 Oct 1995 - Reviewed for technical accuracy.
03 Apr 1995 - Revised Insert and Eject chart, other technical updates.

Support Information Services

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Tech Info Library Article Number:10835

Tech Info Library

PowerBook Duo: Power Management Features 10/92

Revised: 5/16/94
Security: Everyone

PowerBook Duo: Power Management Features 10/92

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Article Created: October 19, 1992

TOPIC ----------

To increase battery run time, Apple introduced a power management system in the original Macintosh Portable and PowerBook. This power management system has been upgraded in the Macintosh Duo, and is called the InCharge Battery Saver.

InCharge Battery Saver is a combination of hardware and software that maximizes battery run time. The core of the InCharge Battery Saver is a custom microcontroller chip that automatically controls power management.

DISCUSSION ----------

A notebook computer's battery run time is affected by three key parts of the CPU:

- Screen Backlighting. Full brightness uses the maximum amount of battery power, whereas minimum brightness uses the minimum amount.

- Hard Drive Activity. Constantly spinning the hard drive up and down takes the most power; it is best to keep the drive off entirely, or turn it on only when necessary.

- Logic Board. The microprocessor itself requires the largest amount of power, and drain on the battery increases dramatically with an increase in system clock speed. InCharge can reduce power use in the Macintosh Duo up to 90% during idle periods by modulating the clock speed.

Power Saving Features

The InCharge Battery Saver provides the following power-saving features in the PowerBook Duo:

- Powers only a custom PowerBook Duo chip and DRAM in Sleep mode.

- Turns off the microprocessor when not in use.
- Spins down the hard drive after a predetermined amount of inactivity.
- Puts the CPU to Sleep after a predetermined amount of inactivity (user sets the interval).
- Turns off these components when not in use: modem, screen backlighting, ADB, serial ports, trackball, keyboard scanning, sound, real-time clock, and parameter RAM.
- Lets the user replace batteries while the Duo is in Sleep.
- Automatically charges the battery when the Duo is plugged in to AC or docked into a docking station that's plugged into AC.
- Controls charging of the batteries in the external battery charger when attached to the AC adapter.
- Supports Nickel Hydride (NiHy) batteries.
- Provides a battery gauge to monitor battery level.
- Automatically senses if the AC adapter is plugged into a power outlet.
- Has worldwide AC adapter.
- Automatically keeps hard drive spun up when docked in Duo Dock.
- Turns PowerBook display off when it's docked in Duo Dock.
- Can operate PowerBook Duo on the power adapter without the main battery installed.

Support Information Services

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Tech Info Library Article Number:10837

Tech Info Library

PowerBook 160, 180, and Duo: Control Panels (7/95)

Revised: 7/20/95
Security: Everyone

PowerBook 160, 180, and Duo: Control Panels (7/95)

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Article Created: 19 October 19 1992
Article Reviewed/Updated: 20 July 1995

TOPIC ----------

For the PowerBook 160, 180, and PowerBook 200 series (Duo) models, one control panel is changed and two are new:

- The control panel previously called Portable is now called PowerBook.
- The new AutoRemounter control panel mounts file servers when the system comes out of sleep.
- The new PowerBook Display control panel controls screen dimming and a new feature called mirroring.

DISCUSSION ----------

PowerBook Control Panel

This control panel no longer includes separate controls for system and hard drive sleep.

Like the PowerBook 100, the PowerBook 160 and 180 support SCSI Disk Mode. The SCSI ID number for SCSI Disk Mode is set from this control panel.

The options button lets the user keep the system awake when plugged in and set the processor speed.

The Reduced speed button reduces the clock speed by half and adds 10 to 15 minutes to battery life.

The options dialog is reduced on the PowerBook 160 and 180 to make sure the user does not turn off power cycling (system rest). To get the full dialog, hold down the Option key while clicking the Options button. When power cycling is turned off and a 16-in. monitor is used with full hard drive access, the system is not

able to charge the battery.

PowerBook Display Control Panel

This control panel lets the user set the amount of time the PowerBook takes before the backlight and external monitor turn off to save power. The display is dimmed and turned off only after a period of no keyboard or mouse activity. This is one of the best ways to increase battery life.

The video mirroring feature lets the PowerBook display the same content simultaneously on both the internal display and external display. Mirroring sets the screen size to 640 by 400, letting the presenter look at the PowerBook screen and see exactly what is on the external display or projection device. Video Mirroring uses QuickDraw to catch the calls to the screen to implement video mirroring. If an application or init does not use QuickDraw, it does not work with video mirroring; such applications have to be modified to work with this feature.

AutoRemounter Control Panel

This control panel reconnects file servers when the system wakes up from sleep or from shut down. When AutoRemounter is turned on, the user does not see the dialog box stating network services will be lost when Sleep is selected.

Article Change History:
20 Jul 1995 - Corrected AutoRemounter spelling; reviewed article; reformatted

Support Information Services

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Tech Info Library Article Number:10838

Tech Info Library

PowerBook 160 and 180: 16-Level Gray Scale Display 10/92

Revised: 5/16/94
Security: Everyone

PowerBook 160 and 180: 16-Level Gray Scale Display 10/92

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Article Created: October 19, 1992

TOPIC -----

The internal display in the PowerBook 160 and 180 can be set to 2, 4, or 16 gray levels. A gray-scale display allows more realistic images and icons.

DISCUSSION -----

Overview

	PowerBook 160	PowerBook 180
Display size	640 x 400	640 x 400
Type	Supertwist	Active Matrix
Response time	200 ms	100 ms

Support Issues

The display has a fixed color lookup table, which may cause some incompatibility with applications that expect to change the values in the color table. The PowerBook gray-scale display is the first device with multiple color/gray levels that does not allow the application to change the color table: the application tries to change the color table, but the screen values don't change. This will cause problems on the internal display but not an external display. If problems are seen on the external display, set the internal display to black and white, and move the menu bar to the external display. Applications that have this problem include MacroMind Director and some graphics programs.

The Supertwist display will have problems displaying one-pixel gray lines on the screen. The line may shake on the screen in some of the gray-scale values.

Adjusting the contrast or brightness will help in most cases, but in other cases the gray level will pulse or shake. The Active Matrix display has none of these display features. Setting the display to black and white clears up the problem.

Support Information Services

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Tech Info Library Article Number:10839

Tech Info Library

PowerBook 160 and 180: RAM Expansion (12/96)

Revised: 12/3/96
Security: Everyone

PowerBook 160 and 180: RAM Expansion (12/96)

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Article Created: 19 October 1992
Article Reviewed/Updated: 2 December 1996

TOPIC ----------

The PowerBook 160 and 180 can be expanded to 14 MB of RAM.

DISCUSSION ----------

4 MB of RAM is on the logic board and there is one memory slot. The slot is physically identical to the PowerBook 100, 140, 145, and 170 memory connector, but uses a previously unused pin to determine the speed of the RAM chips installed.

If existing RAM cards (100 ns) are used, an extra wait state will be included when the system accesses that memory. The PowerBook 180 will run faster if 85 ns chips are used, but this is not the case with the PowerBook 160. Apple will sell two 4 MB cards: one for existing units and another for the PowerBook 180.

PowerBook 180 RAM Speed	Wait States
85 ns (recommended)	two
100 ns	three

Third-party vendors will make 4 MB, 8 MB, and 10 MB cards available for the PowerBook 160 and 180. These cards will not work with other PowerBook models.

Article Change History
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02 Dec 1996 - Corrected info about size of RAM cards available.
31 Mar 1995 - Reviewed for technical accuracy.
18 Feb 1993 - Revised to mention 10MB cards from third parties.

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Tech Info Library Article Number:10841

Tech Info Library

PowerBook 160 and 180: Video Output 10/92

Revised: 5/16/94
Security: Everyone

PowerBook 160 and 180: Video Output 10/92

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Article Created: October 19, 1992

TOPIC ----------

The PowerBook 160 and 180 support external video displays.

DISCUSSION ----------

There is a high-density video connector on the back of the PowerBook 160 and 180, and a high-density to standard DB-15 cable is included with the unit. An additional 512K of VRAM, on the logic board, supports video output.

The following displays are supported (all 8 bits per pixel):
• Macintosh 12" Monochrome Display
• Macintosh 12" RGB Display
• AppleColor High Resolution RGB Monitor (13")
• Macintosh Portrait Display
• Macintosh 16" Color Display
• VGA Monitors (special third-party VGA cable required)
• SVGA Monitors (VGA cable, 600 x 800 screen size)

The location of the internal floppy drive requires that external displays be placed on the left side of the PowerBook.

For any display not sold by Apple, check with the vendor to make sure it will work, or test the display before buying. The VGA/SVGA cable is the same cable used to connect the Macintosh LC or LC II to a VGA monitor.

A new custom video output chip was added to the processor card, and the I/O board was modified with an additional mini-15 connector. The cable that is included turns the mini-15 into the standard DB-15 connector with standard Apple video connector pinouts. The 512K of VRAM on the logic board can not be expanded to support higher bit depth displays. The video chip will only support 256 color displays. When using external monitors the computer should be plugged in to the power adapter.

..TIL10843-PowerBook_160_and_180-Video_Output_10-92.pdf

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10843

Tech Info Library

AppleCD 150 and AppleCD 300: Differences

Revised: 8/19/96
Security: Everyone

AppleCD 150 and AppleCD 300: Differences

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Article Created: 19 October 1992
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

This article provides an overview of how the AppleCD 300 differs from the AppleCD 150 (obsolete).

DISCUSSION ----------

The AppleCD 300 is a high-performance, feature-rich CD-ROM drive that provides capabilities not available on the AppleCD 150.

The AppleCD 300 drive gives users faster access to data because it can spin twice as fast as most existing CD-ROM drives. For optimal use of all CD titles, the drive can be operated in both single-speed (1X) mode and double-speed (2X) mode. Compared to the AppleCD 150, QuickTime movies and animation are much smoother.

The AppleCD 300 can read Kodak multisession Photo CD discs -- a capability not available on the AppleCD 150.

The AppleCD 300 drive also enables CD-ROM title development in two new formats (CD+G and CD+MIDI) and allows CD digital audio data to be transferred to the Macintosh over the SCSI bus for editing and recording.

Refer to these Tech Info Library articles for more detailed information about both the AppleCD 150 and AppleCD 300 drives:

- AppleCD 150: Description
- AppleCD 150: Specifications
- AppleCD 300 and 300i CD-ROM Drives: General Description
- AppleCD 300 (External) Drive: Specifications

Article Change History:

..TIL10844-AppleCD_150_and_AppleCD_300-Differences.pdf

19 Aug 1996 - Corrected misspelling.

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Tech Info Library Article Number:10844

Tech Info Library

AppleCD 300i: Use at least Macintosh CD-ROM Setup 4.0.4 (1/95)

Revised: 1/17/95
Security: Everyone

AppleCD 300i: Use at least Macintosh CD-ROM Setup 4.0.4 (1/95)

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Article Created: 19 October 1992
Article Reviewed/Updated: 17 January 1995

TOPIC ----------

What version of Macintosh CD-ROM Setup do I need for the AppleCD 300i?

DISCUSSION ----------

Use Macintosh CD-ROM Setup version 4.0.4 or higher. This version is also compatible with System 7 and QuickTime.

A list of the lastest versions of Apple Software is available in the Tech Info Library in the article "Apple Software: Current Versions".

Article Change History:
17 Jan 1995 - Updated for current version.
01 Jul 1993 - Updated for version 4.0.4
27 May 1993 - Updated for version 4.0.2

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10845

Tech Info Library

AppleCD 300i: How to Install Macintosh CD-ROM Setup Software

Revised: 10/13/92
Security: Everyone

AppleCD 300i: How to Install Macintosh CD-ROM Setup Software

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Article Created: 19 October 1992

TOPIC ----------

I purchased a Macintosh with the optional AppleCD 300i CD-ROM drive. How can I tell if the CD-ROM software necessary to run that drive is installed?

If the software isn't installed, how do I install it?

DISCUSSION ----------

To check for CD-ROM software, pull down the Apple menu and look for "CD Remote". If "CD Remote" appears in that pull-down menu, the CD-ROM software is installed.

If "CD Remote" isn't in the Apple menu, follow these step to install the software:

1) Insert the Macintosh CD-ROM Setup disk into your computer's floppy disk drive.

2) Open the Macintosh CD-ROM Setup disk icon.

3) Open the Installer icon. The Easy Install dialog box appears.

4) Click Install.

5) When the installation is complete, restart your Macintosh.

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Tech Info Library Article Number:10848

Tech Info Library

PowerBook Duo: Main Interface Connector Signal Assignments 10/92

Revised: 5/24/95
Security: Everyone

PowerBook Duo: Main Interface Connector Signal Assignments 10/92

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Article Created: October 19, 1992

TOPIC

This article defines the interface connection provided by the 152-pin main interface connector. The following table provides a complete list of signal assignments for the connector. A slash in front of a signal name (for example /PLUG IN) indicates an active-low signal.

DISCUSSION

Main Expansion Connector Signal Assignments

Pin #	Signal name	Description
1	PR+24 V EXT	Raw +24 V from AC adapter
2	PR+24 V EXT	Raw +24 V from AC adapter
3	/PLUG IN	Power surge control (ground)
4	GND	Ground
5	PR MAIN BAT POS	Positive battery power output
6	PR MAIN BAT POS	Positive battery power output
7	/ON/OFF OUT	On/off switch
8	/CIOUT	Cache inhibit out
9	/STERM	Synchronous termination
10	/DS	Data strobe
11	/AS	Address strobe
12	+5 V MAIN OUT	+5 V regulated power
13	/HALT	Halt
14	/BERR	Bus error
15	/BGACK	Bus grant acknowledge
16	/IPL0	Interrupt priority level 0
17	/IPL1	Interrupt priority level 1
18	/IPL2	Interrupt priority level 2
19	GND	Logic Ground
20	GND	Logic Ground

21	ADDR[0]	Address bit 0
22	ADDR[2]	Address bit 2
23	ADDR[4]	Address bit
24	ADDR[6]	Address bit
25	ADDR[8]	Address bit 8
26	ADDR[10]	Address bit 10
27	ADDR[12]	Address bit 12
28	ADDR[14]	Address bit 14
29	+5 V MAIN OUT	+5 V regulated power
30	GND	Ground
31	ADDR[18]	Address bit 18
32	ADDR[20]	Address bit 20
33	ADDR[22]	Address bit 22
34	ADDR[24]	Address bit 24
35	ADDR[26	Address bit 26
36	ADDR[28]	Address bit 28
37	ADDR[30]	Address bit 30
38	GND	Logic Ground
39	GND	Logic Ground
40	FIOCLK	15.6672 MHz I/O clock
41	SIZ[1]	Transfer size bit 1
42	+5 V MAIN OUT	+5 V regulated power
43	DATA[0]	Data bit 0
44	DATA[1]	Data bit 1
45	DATA[2]	Data bit 2
46	DATA[3]	Data bit 3
47	DATA[4]	Data bit 4
48	DATA[5]	Data bit 5
49	DATA[6]	Data bit 6
50	DATA[7]	Data bit 7
51	GND	Logic Ground
52	DATA[17]	Data bit 17
53	DATA[18]	Data bit 18
54	DATA[19]	Data bit 19
55	+5 V MAIN	+5 V regulated power
56	DATA[20]	Data bit 20
57	DATA[21]	Data bit 21
58	DATA[22]	Data bit 22
59	DATA[23]	Data bit 23
60	+5 V.MAIN OUT	+5 V regulated power
61	GND	Logic Ground
62	/SCC IRQ	SCC interrupt request
63	SERVEE	–5 V for SCC transceivers and modem
64	+5 V MAIN OUT	+5 V regulated power
65	GND	Logic Ground
66	GND	Logic Ground
67	+8 V SOUND	Special "clean" +8V power for sound output
68	+5 V MODEM	+5 V power for modem
69	LINET/R	Modem DAA line talk/receive
70	+5 V SOUND	+5 V power for sound output
71	SND OUT R	Sound output, right channel
72	SND OUT L	Sound output, left channel
73	EXT MIC FILT R	Right input signal from ext. microphone

74	EXT MIC FILT L	Left input signal from external microphone
75	DAA GND	Modem ground
76	DAA GND	Modem ground
77	PR+24 V EXT	Raw +24 V from AC adapter
78	PR+24 V EXT	Raw +24 V from AC adapter
79	PR+24 V EXT	Raw +24 V from AC adapter
80	GND	Logic Ground
81	GND	Logic Ground
82	PR MAIN BAT POS	Battery power output
83	ADB DATA	Apple Desktop Bus data
84	/ADBPWRON	ADB power On key
85	/CBACK	Cache burst acknowledge
86	/CBREQ	Cache burst request
87	/DSACK1	Data size acknowledge bit 1
88	/DSACK0	Data size acknowledge bit 0
89	/BR	Bus request
90	/BG	Bus grant
91	/SLEEP	Sleep-state signa
92	FC[1]	Function code bit 1
93	FC[0]	Function code bit 0
94	/RMC	Read-modify-write cycle
95	CPUCLK	CPU bus clock
96	/CPURESET	CPU reset (bus invalid)
97	ADDR[1]	Address bit 1
98	ADDR[3]	Address bit 3
99	ADDR[5]	Address bit 5
100	ADDR[7]	Address bit 7
101	ADDR[9]	Address bit 9
102	ADDR[11]	Address bit 11
103	ADDR[13]	Address bit 13
104	ADDR[15]	Address bit 15
105	ADDR[16]	Address bit 16
106	ADDR[17]	Address bit 17
107	ADDR[19]	Address bit 19
108	ADDR[21]	Address bit 21
109	ADDR[23]	Address bit 23
110	ADDR[25]	Address bit 25
111	ADDR[27]	Address bit 27
112	ADDR[29]	Address bit 29
113	ADDR[31]	Address bit 31
114	/SLOT IN	Bar plugged in grounds pin
115	GND	Logic Ground
116	RD	Read/Write
117	SIZ[0]	Transfer size bit 0
118	DATA[8]	Data bit 8
119	DATA[9]	Data bit 9
120	DATA[10]	Data bit 10
121	DATA[11]	Data bit 11
122	+5 V EXT SENSE	+5 V external sense
123	DATA[12}	Data bit 12
124	DATA[13]	Data bit 13
125	DATA[14]	Data bit 14
126	DATA[15]	Data bit 15

127	DATA[16]	Data bit 16
128	DATA[24]	Data bit 24
129	DATA[25]	Data bit 25
130	DATA[26]	Data bit 26
131	DATA[27]	Data bit 27
132	DATA[28]	Data bit 28
133	DATA[29]	Data bit 29
134	DATA[30]	Data bit 30
135	DATA[31]	Data bit 31
136	MI	Memory controller inhibit for cache access
137	/SWIM CS	SWIM chip select
138	/SLOT IRQ	Pseudo-NuBus expansion slot E interrupt
139	/PFW	Power fail warning (shutdown bit)
140	/IO RESET	Reset output to I/O systems
141	GND	Ground
142	GND	Ground
143	DAA CNTLF	Modem DAA control
144	DAA ID IN	ID input from 152-pin modem card connector
145	/RING DET	Ring detect signal from the modem DA
146	/RB DVR	Modem relay B driver
147	/RA DVR	Modem relay A driver
148	EXT MIC SEL	External microphone plugged in
149	(EXT MIC)	No connect (ext. line or microphone level)
150	/SPKR SEL	External speaker plugged in
151	DAA GND	Modem DAA ground
152	DAA GND	Modem DAA ground

Support Information Services

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Tech Info Library Article Number:10851

Tech Info Library

PowerBook Express Modem: Description and Software (4/95)

Revised: 4/4/95
Security: Everyone

PowerBook Express Modem: Description and Software (4/95)

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Article Created: 19 October 1992
Article Reviewed/Updated: 04 April 1995

TOPIC ----------

This article describes the Macintosh PowerBook Express Modem.

DISCUSSION ----------

The Macintosh PowerBook Express Modem features high-speed data communications and fax send/receive capability for members of the PowerBook family.

The Express Modem is available in two models:

• one for the PowerBook 160 and PowerBook 180

• one for the PowerBook Duo family.

There is no difference in features between the two. Each is a low-power modem that fits neatly into the computer.

The PowerBook Express Modem can send data at a rate as high as 14,400 bits per second (bps) when communicating with compatible V.32bis modems.

In terms of compatibility, the Express Modem supports the Hayes AT command set CCITT, Bell, Hayes, and Fax Group 3 standards.

When running the Express Fax software that comes with the modem, you can send and receive faxes at 9600 bps. The package also supports fax forwarding, quick-send, and calling card. The Fax Viewer application lets you view, copy, print, and save faxes as MacDraw-compatible documents.

The modem software takes over the external modem port. When the modem is turned on, it requires 300K of system RAM.

Article Change History:
04 Apr 1995 - Corrected maximum data rate for modem.

Support Information Services

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Tech Info Library Article Number:10853

Tech Info Library

Macintosh Duo Dock: Description (7/95)

Revised: 7/6/95
Security: Everyone

Macintosh Duo Dock: Description (7/95)

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Article Created: October 19, 1992
Article Reviewed/Updated: 6 July 1995

TOPIC ----------

This article describes the features of the Macintosh Duo Dock.

DISCUSSION ----------

Overview
========
The Macintosh Duo Dock provides expansion capabilities for the Macintosh PowerBook Duo computers.

The Duo Dock allows you to connect your PowerBook Duo to a complete desktop system -- which can include a large color display, an extended keyboard, a mouse, and other peripherals -- and provides expansion card capabilities and connections to your network and network servers.

Apple's new PowerLatch docking technology ensures easy, automatic docking between the Macintosh PowerBook Duo and the Duo Dock, so there is no need to plug and unplug cables or to reconfigure the system each time you insert the PowerBook Duo into the Duo Dock.

Macintosh Duo Dock Features
==========
• PowerLatch docking technology for easy, automatic, one-step docking

• Internal 1.4MB Apple SuperDrive

• Built-in video support for 256 colors, expandable to 32,000 colors

• Supports most Apple displays, including the Macintosh 16" Color Display, as well as some VGA and SVGA displays

• Two NuBus expansion slots

- 10 built-in ports, including SCSI port for up to six peripherals, such as an external hard disk or CD-ROM drive

- Security key for locking PowerBook Duo and slot for a security cable

Ordering Information

Macintosh Duo Dock **

- Order No. M4179LL/A
- Macintosh Duo Dock with internal 1.4MB Apple SuperDrive
- Mouse and microphone
- Power cable
- Security keys
- Complete setup, learning, and reference documentation
- Limited warranty statement

Macintosh VRAM Expansion Kit

Order No. M1311LL/A

Macintosh Math Coprocessor

Order No. M6775LL/A

Apple Ethernet NB Card

Order No. M0417LL/A

Macintosh HDI-20 External 1.4MB Floppy Disk Drive

Order No. M8061LL/A

Apple HDI-30 SCSI Disk Adapter

Order No. M2539LL/A

Apple HDI-30 SCSI System Cable

Order No. M2538LL/A

Article Change History:
06 Jul 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:10854

Tech Info Library

Macintosh Duo Dock & Duo MiniDock: Specifications 1/96

Revised: 1/3/96
Security: Everyone

Macintosh Duo Dock & Duo MiniDock: Specifications 1/96

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Article Created: 19 October 1992
Article Reviewed/Updated: 3 January 1996

TOPIC ----------

This article provides the technical specifications for the Macintosh Duo Dock and Macintosh Duo MiniDock.

DISCUSSION ----------

MACINTOSH DUO DOCK TECHNICAL SPECIFICATIONS

Coprocessor

• Optional 68882 math coprocessor

Disk Storage

• One internal 1.4MB Apple SuperDrive

• Bay for optional 1-in. high 3.5-in. SCSI hard disk drive (many capacities available)

Video Display

• Built-in video support for most Apple displays, up to and including the Macintosh 16" Color Display

• Supports some VGA and SVGA monitors with adapter cable

Video RAM

• 512K (256 colors or shades of gray), expandable to 1MB (32,000 colors) with optional 512K VRAM SIMM

- Provides enhanced video performance when optional 512K VRAM is installed

Interfaces

- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other input devices
- One video port
- Two internal NuBus expansion slots for cards that provide Ethernet, Token Ring, additional video, or other capabilities
- Two RS-422 serial ports for printers, modems, and other serial devices
- Pass-through port for the optional modem in Macintosh PowerBook Duo notebook computer (RJ-11 or Mini-DIN-8)
- One HDI-30 SCSI port for external hard disks, scanners, CD-ROM drives, and other devices
- One sound-in port for monaural sound input
- One sound output port for external audio amplifier

Security

- Key lock prevents removal of the Macintosh PowerBook Duo from the Macintosh Duo Dock
- Slot for cable to secure the Macintosh Duo Dock to a desk

Electrical Requirements

- Line voltage: 85 to 270 V
- Frequency: 47 to 63 Hz

Environmental Requirements

- Operating temperature: 50° F to 104° F (10° C to 40° C)
- Storage temperature: -40° F to 116° F (-40° C to 47° C)
- Relative humidity: 20% to 95% noncondensing
- Altitude: 0 to 15,000 ft. (0 to 4722 m)

Size and Weight

- Height: 4.75 in. (12.1 cm)
- Width: 12.25 in. (31.1 cm)

- Depth: 16.25 in. (41.3 cm)

- Weight: 13.1 lb. (5.95 kg)
  (weight will be greater with internal hard disk)

MACINTOSH DUO MINIDOCK TECHNICAL SPECIFICATIONS

Video Display

- Built-in video support for most Apple displays, up to and including the Macintosh 16" Color Display

- Supports some VGA and SVGA monitors with adapter

Video RAM

- 512K (256 colors or shades of gray)

Interfaces

- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices

- One video port

- Two RS-422 serial ports for printers, modems, and other serial devices

- Pass-through port to support the optional Macintosh PowerBook Express Modem in Macintosh PowerBook Duo notebook computer (RJ-11 or Mini-DIN-8)

- One HDI-30 SCSI port for external hard disks, scanners, CD-ROM drives, and other devices

- One HDI-20 port for the external 1.4MB floppy disk drive (MS-DOS compatible)

- One sound-in port for monaural sound input

- One sound output port for external audio amplifier

Security

- Slot for security cable

Electrical requirements

- Line voltage: 85 to 270 V

- Frequency: 47 to 63 Hz

Environmental requirements

- Operating temperature: 50° F to 104° F (10° C to 40° C)
- Storage temperature: -40° F to 116° F (-40° C to 47° C)
- Relative humidity: 20% to 95% noncondensing
- Altitude: 0 to 15,000 ft. (0 to 4722 m)

Size and weight

- Height: 2.1 in. (5.3 cm)
- Width: 10.6 in. (26.9 cm)
- Depth: 3.2 in. (8.1 cm)
- Weight: 1.24 lb. (.56 kg)

ORDERING INFORMATION

Macintosh Duo Dock ** Order No. M4179LL/A

- Macintosh Duo Dock with internal 1.4MB Apple SuperDrive
- Mouse and microphone
- Power cable
- Security keys
- Complete setup, learning, and reference documentation
- Limited warranty statement

Macintosh Duo MiniDock ** Order No. M4181LL/A

- Macintosh Duo MiniDock
- Complete setup, learning, and reference documentation (U.S., Japan)
- Limited warranty statement

Macintosh PowerBook Duo Floppy Adapter* Order No. M4180LL/A

- Macintosh PowerBook Duo Floppy Adapter
- Plastic case for storage and travel

- Limited warranty statement

Other Products

Macintosh VRAM Expansion Kit Order No. M1311LL/A

Macintosh Math Coprocessor Order No. M6775LL/A

Apple Ethernet NB Card Order No. M0417LL/A

Macintosh HDI-20 External 1.4MB Floppy Disk Drive
Order No. M8061LL/A

Apple HDI-30 SCSI Disk Adapter Order No. M2539LL/A

Apple HDI-30 SCSI System Cable Order No. M2538LL/A

** These devices have not been approved by the Federal Communications Commission. These devices are not, and may not be, offered for sale or lease, or sold or leased, until approval of the FCC has been obtained.

Support Information Services

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Tech Info Library Article Number:10855

PowerBook Duo: Connecting External Monitors (5/95)

Revised: 5/18/95
Security: Everyone

PowerBook Duo: Connecting External Monitors (5/95)

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Article Created: 19 October 1992
Article Reviewed/Updated: 18 May 1995

TOPIC ----------

To connect an external monitor to your PowerBook 200 Series computer, it must be connected to a docking station that supports external video.

NOTE:
The PowerBook 200 Series includes the Duo 210, 230, 250, 270c, 280, and 280c PowerBook computers.

Apple produces three docking stations for the PowerBook 200 Series:

• The Macintosh Duo Dock

• The Macintosh Duo Dock II+. The Duo Dock II+ replaces the Duo Dock II. The Duo Dock II+ has the same video output capabilities as the Duo Dock II.

• The Macintosh Duo MiniDock

Each of these stations supports external video.

DISCUSSION ----------

Macintosh Duo Dock

The Macintosh Duo Dock has 512K VRAM standard and an external DB-15 video-out port. It supports these displays and bit densities:

Display	Bit Density	# of Colors/Shades of Gray
Apple 12-in. Monochrome	8 bit	256 shades of gray
Apple 12-in. RGB	8 bit	256 colors/shades of gray
AppleColor Hi-Res RGB	8 bit	256 colors/shades of gray

Apple Color	8 bit	256 colors/shades of gray
Apple Portrait	8 bit	256 shades of gray
Apple 16-in. RGB	8 bit	256 colors/shades of gray
VGA (640 by 480)	8 bit	256 colors/shades of gray
SVGA (800 by 600)	8 bit	256 colors/shades of gray

You can add an additional 512K VRAM SIMM to the Duo Dock. This is the same 512K VRAM SIMM that is used in the Macintosh LC and LC II.

With 1MB of VRAM installed, the Duo Dock supports these displays and bit densities:

Monitor	Bit Density	# of Colors/Shades of Gray
Apple 12-in. Monochrome	16 bit	256 shades of gray
Apple 12-in. RGB	16 bit	32,000 colors or 256 shades of gray
AppleColor Hi-Res RGB	16 bit	32,000 colors or 256 shades of gray
Apple Color	16 bit	32,000 colors or 256 shades of gray
Apple Portrait	16 bit	32,000 colors or 256 shades of gray
Apple 16-in. RGB	16 bit	32,000 colors or 256 shades of gray
VGA (640 by 480)	16 bit	32,000 colors or 256 shades of gray
SVGA (800 by 600)	16 bit	32,000 colors or 256 shades of gray

NOTE:
It is only possible to display 256 shades of gray, even if the bit density is greater than eight.

Macintosh Duo Dock II+ and Duo Dock II (Discontinued)

The Duo Dock II+ comes with 1 megabyte of VRAM standard and is not expandable. The Duo Dock II+ supports the multiple resolutions of the Multiple Scan displays without needing an adaptor. The Duo Dock II+ supports these displays and bit densities:

Monitor	Bit Density	# of Colors/Shades of Gray
Apple 12-in. Monochrome	16 bit	256 shades of gray
Apple 12-in. RGB	16 bit	32,000 colors or 256 shades of gray
AppleColor Hi-Res RGB	16 bit	32,000 colors or 256 shades of gray
Apple Color	16 bit	32,000 colors or 256 shades of gray
Apple Portrait	16 bit	32,000 colors or 256 shades of gray
Apple 16-in. RGB	16 bit	32,000 colors or 256 shades of gray
VGA (640 by 480)	16 bit	32,000 colors or 256 shades of gray
SVGA (800 by 600)	16 bit	32,000 colors or 256 shades of gray
Apple 17-in. Multiple Scan:		
640 x 480	16 bit	32,000 colors or 256 shades of gray
832 x 624	16 bit	32,000 colors or 256 shades of gray
1024 x 768	8 bit	256 colors/shades of gray
Apple 20-in. Multiple Scan:		
640 x 480	16 bit	32,000 colors or 256 shades of gray
832 x 624	16 bit	32,000 colors or 256 shades of gray
1024 x 768	8 bit	256 colors/shades of gray

1152 x 870	8 bit	256 colors/shades of gray

NOTE:
The Duo Dock requires a video display adapter to change resolutions on Mulitple Scan monitors unless System 7.5 is installed.

Macintosh Duo MiniDock

The Macintosh Duo MiniDock comes with 512K VRAM standard. Its VRAM cannot be upgraded.

The Macintosh Duo MiniDock can be configured so the external monitor and the Duo screen display the same image. In this case, the external monitor is limited to a video display of 640 by 400 pixels, the same as the LCD.

The Macintosh Duo MiniDock supports these displays and bit densities:

Monitor	Bit Density	# of Colors/Shades of Gray
Apple 12-in. Monochrome	8 bit	256 shades of gray
Apple 12-in. RGB	8 bit	256 colors/shades of gray
AppleColor Hi-Res RGB	8 bit	256 colors/shades of gray
Apple Color	8 bit	256 colors/shades of gray
Apple Portrait	8 bit	256 shades of gray
Apple 16-in. RGB	8 bit	256 colors/shades of gray
VGA (640 by 480)	8 bit	256 colors/shades of gray
SVGA (800 by 600)	8 bit	256 colors/shades of gray

NOTE:
A DB-15 to VGA or SVGA adapter cable is needed to connect a VGA or SVGA monitor to either Apple docking station.

No displays are supported by the Apple docking stations other than the ones listed above.

This article was published in the "Information Alley":
Volume II, Issue 2, Page 8

Article Change History:
19 May 1995 - Updated with Duo Dock II+ info; added Info Alley info.
21 Apr 1995 - Added information on System 7.5 and Display adapaters.
12 Dec 1994 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:10856

Tech Info Library

System 7: Optimizing Performance with Virtual Memory

Revised: 11/2/92
Security: Everyone

System 7: Optimizing Performance with Virtual Memory

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Article Created: 19 October 1992

TOPIC ----------

1) Is it true that I shouldn't set the virtual memory to more than twice the real RAM installed in the machine, to avoid too much "bank switching"?

2) Is there any performance loss by placing the virtual memory file on a hard disk other than the startup disk?

3) Will I get better performance if I set virtual memory to LESS than twice the amount of real RAM?

DISCUSSION ----------

1) With 32-bit addressing on and enough space available to allocate on hard disk, you can create a very large virtual memory address space. However, it's best for performance reasons to limit the size of your virtual memory to twice the size of installed RAM. By limiting the size of your virtual memory, you will help eliminate excessive paging activity, known as "thrashing".

2) You should place your memory file on a drive that is least accessed. If you place the memory file on a disk that has the system file and data files that are accessed by applications, then performance of virtual memory will degrade because the disk read/write heads must be jumping around to satisfy the system or application requests. By placing your file on the least accessed disk, the read/write head will more likely be left in a state where it won't have to travel far on its next request.

3) You will get better performance by using less than twice the amount of real memory. This is because more of your application will reside in main memory than on disk -- reducing paging activity. The flip side of this is that there will be less room in memory for

additional applications.

The Macintosh file system manages files efficiently by fragmenting them, but fragmentation can eventually slow your Macintosh computer's overall performance and increase wear on the drive. By defragmenting your files, including the virtual memory file, you can improve the disk access speed and therefore improve performance. Central Point Software has a product (Central Point Optimizer) that will defragment your disk.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:10862

Tech Info Library

System 6.0.8L: ReadMe File (8/95)

Revised: 8/17/95
Security: Everyone

System 6.0.8L: ReadMe File (8/95)

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Article Created: 19 October 1992
Article Reviewed/Updated: 17 August 1995

TOPIC ----------

System 6.0.8L was a limited maintenance release of system software for markets in Apple Pacific. It was engineered to address some special needs for those markets that did not have access to System 7 at the time.

The following is the Read Me file included with the software.

DISCUSSION ----------

UPDATE

SYSTEM SOFTWARE VERSION 6.0.8L

For the Macintosh Classic II and Macintosh PowerBook 100

What is version 6.0.8L?

System software version 6.0.8L allows you to use System 6 on your computer while sharing a network with System 7 users. As the L in the version number indicates, this software runs on a limited number of computers. It is primarily intended for the Macintosh Classic II and Macintosh PowerBook 100. However, it also runs on the Macintosh Classic, Macintosh LC, and Macintosh LC II. System software version 6.0.8L does not work on any other Macintosh computers.

Before you install version 6.0.8L

Before using the Installer program to install system software version 6.0.8L, be sure to remove any virus detection or security programs from your System Folder. After you have installed version 6.0.8L, you can reinstall those programs. If you are running system software version 7.0 or later on your computer, you should start up your computer using the 6.0.8L System Startup floppy disk and remove the System 7 System Folder from your hard disk before installing version

6.0.8L on your hard disk.

If you install a version earlier than 6.0.8L

If, after having installed version 6.0.8L on your hard disk, you decide to install an earlier version of system software, you must first remove the version 6.0.8L System Folder from your hard disk.

Sharing a LaserWriter on a network

If you upgrade to system software version 6.0.8L and you are on a network of shared LaserWriter printers, everyone on your network should upgrade to version 6.0.8 or 6.0.8L, or to System 7. If someone prefers not to upgrade their system software, they should at least install the new printing software using the Customize option in the Installer program found on the 6.0.8L System Startup disk. If someone prints on a network with a version of printing software earlier than 6.0.8, the printer must stop and "initialize" for that earlier version each time it's used. This slows down the printing process for everyone.

Using a Personal LaserWriter LS

In order to print with a Personal LaserWriter LS, you will need to upgrade your Personal LaserWriter LS driver to version 7.1.1 or greater. To obtain an upgrade for this driver, call the toll-free Apple software upgrade line, 800-947-5176, or pick up a mail-in upgrade coupon from your Apple dealer.

Using a LaserWriter IIsc

The Personal LaserWriter SC printing software replaces the earlier LaserWriter IIsc software. When you upgrade your system software to version 6.0.8L, the Installer automatically replaces the LaserWriter IIsc software with the Personal LaserWriter SC software. The new software works with both the Personal LaserWriter SC and the LaserWriter IIsc.

Differences between System 6 and System 7

A number of things in system software version 6.0.8L work differently than they do in System 7. Some System 7 features are not available in System 6. Some System 7 features are different from equivalent features in System 6.

These are System 7 features that do not exist in version 6.0.8L:

- the Help menu

- the Views control panel

- outline views of folders

- keyboard navigation in the Finder

- aliases

- file sharing

- virtual memory

- stationery pads

- custom icons

- Startup Items and Apple Menu Items folders

- automatic updating with publish and subscribe

- labels for icons in list views

- the ability to open and save documents on the desktop using the Open and Save dialog boxes

These are System 7 features that work differently in version 6.0.8L:

- the Application menu (in System 6 you use the MultiFinder icon instead)

- the System Folder's organization of files

- desk accessories

- fonts and sounds

- control panels

- the Find command (in version 6.0.8L you use the Find File desk accessory instead)

- the timing of when the Trash is emptied

Where to get a manual for System 6

To get complete documentation for system software version 6.0.8L, you can ask your Apple dealer for a copy of the Macintosh Reference (part number 030-4015-B). Your dealer can order that book for you. The Macintosh Reference and this update together contain all of the information you need to use system software version 6.0.8L.

Apple Computer Inc., 1992

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Article Change History:
17 Aug 1995 - Changed title, reformatted, added Read Me information.

..TIL10863-System_6-0-8L-ReadMe_File_8-95_(TA28558).pdf

Support Information Services

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Tech Info Library Article Number:10863

Tech Info Library

QuickTime 1.5

Revised: 10/19/92
Security: Everyone

QuickTime 1.5

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Article Created: October 19, 1992

TOPIC -----

This article answers questions about QuickTime 1.5

DISCUSSION -----

What is QuickTime, and How Is It Used?

QuickTime is the multimedia architecture for the Macintosh family. It allows any color-capable Macintosh to integrate dynamic data types such as video, sound, and animation into presentations, training materials, and documents. Hundreds of commercial applications support QuickTime.

QuickTime appeals to a broad range of users in numerous industries, who use QuickTime for training, entertainment, communication, and presentations.

The QuickTime architecture has four key components:
- True synchronization of streams of information in time -- video and sound, for example.
- A variety of compression schemes, to minimize storage requirements.
- A standard graphical interface for navigating, manipulating, and editing data.
- A rich, flexible file format that readily accommodates these new information types.

What's New in QuickTime 1.5?

QuickTime 1.5, which is offered as an extension to System 7, provides:
- Better performance.
- Higher compression ratios.
- Better frame rates.
- Larger movie frame sizes.
- Support for Kodak's new Photo CD technology.
- Support for full-screen/full-motion video with available add-on hardware.

QuickTime 1.5 Features

- Larger screen software-only movie playback. Up to 320 x 240 pixels at up to 15 frames per second, or four times the screen area on a Macintosh LC II. Movies on screen will now be twice as big. Alternatively, movies of 160 x 120 pixels can be played back at up to 30 frames per second on a Macintosh LC II.

- Full support for full-screen, full-motion digital video cards from third-party developers. Hardware-assisted playback performance is also doubled. QuickTime supports third-party solutions offered by SuperMac, NuVideo, and RasterOps at video sizes up to 640 x 480 pixels at 30 frames per second.

- Integrated support for Kodak Photo CD enables users to have their photos digitized onto a CD-ROM where QuickTime can access them. Features include easily viewed "thumbnails," QuickTime overview movie of photo images, and file-format translation -- so that Photo CD images can be pasted into any Macintosh application that supports PICT files.

- Improved CD-ROM data handling for enhanced QuickTime movie playback from a CD.

- Improved network performance for better CD playback over a network.

- Faster 1-bit dithering offers enhanced and smoother viewing of QuickTime movies on PowerBooks and other monochrome computers.

- Generic media handlers allow developers to incorporate different data types into QuickTime movies to create new movie track types.

- Text Track, a new feature that allows integration of texts into QuickTime movies.

- Human Interface support for compression settings, sound input devices, and video digitizers. Developers can now easily change settings and features in their hardware.

How Do I Get QuickTime 1.5?

QuickTime 1.5 is bundled with:

- System 7.1 Update Kit
- System 7 Personal Upgrade Kit
- System 7 MultiPack.

QuickTime 1.5 will also be distributed by APDA, on the Developer CD, with many third-party products, and from bulletin boards and user groups. Apple offers developer licensing programs.

What Are the Hardware Requirements?

QuickTime works with all Macintosh computers that have at least a 68020

processor, 2MB of memory, and System 6.0.7 or any version of System 7.

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Tech Info Library Article Number:10864

Tech Info Library

Performa 200: Specifications

Revised: 4/5/93
Security: Everyone

Performa 200: Specifications

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Article Created: 22 October 1992

Article Change History

04/05/93 - CORRECTED
• But 4MB configuration still includes just 2MB on the board.
01/19/93 - CORRECTED
• Now ships in 4MB configuration.
11/02/92 - REVISED
• To correct system software version number

TOPIC ----------

This article provides technical specifications for the Macintosh Performa 200 computer.

DISCUSSION ----------

Microprocessor

- MC68030, 32-bit architecture, 16 MHz clock speed

Memory

• The Performa 200 comes with 2MB of RAM on the logic board and two memory expansion slots for SIMMs (Single In-line Memory Modules), which are initially filled with 2 1MB SIMMs for a total of 4MB.

• Expandable to 10MB of RAM by installing SIMMs in the available slots (dealer installation required).

• 512K of ROM

• Virtual Memory capable

Disk Drives

- Built-in Apple SuperDrive 1.4MB floppy disk drive
- 1/3 height internal 80MB Apple SCSI hard disk drive
- Optional external Apple SCSI hard disk drive(s)

Video display

- Built-in 9-inch diagonal, high-resolution (512 by 342 pixels) bitmapped monochrome display

Interfaces

- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices daisy-chained through a low-speed synchronous serial bus
- Two serial (RS-232/RS-422) ports, 230 kilobits per second maximum (up to 0.920 megabits per second if clocked externally)
- SCSI interface, using a 50-pin internal connector and a DB-25 connector for the first external device; all subsequent SCSI-based peripherals use standard SCSI-to-SCSI interface cables.
- 3.5-inch external floppy disk drive (800K or 1.4MB) interface
- Sound port for external audio amplifier or headphones
- Sound-in port for monaural sound input

Keyboard

- ADB keyboard with numeric keypad
- Two-level tilt adjustment

Mouse

- Apple Desktop Bus (ADB) Mouse, mechanical tracking, optical shaft or contact encoding: 90 to 110 pulses per inch (3.51 to 4.29 pulses per mm) of travel

Microphone

- Electret, omnidirectional; output voltage is 4 millivolts, peak to peak, at normal volume.

Sound Generator

- Monophonic 8-bit digital-analog conversion using 11- or 22-kilohertz sample rate, capable of driving stereo headphones or other stereo

equipment through the sound jack

Clock/Calendar

• Custom chip with long-life lithium battery

Fan

• 10 cu. ft./min. axial

• Positive pressure cooling

System Software

At introduction, the Performa 200 ships with System Software version 7.0.1P. This version has all the functionality and power of System 7.0.1, with special enhancements for first-time users:

• Application Launcher. Provides easy location and launching of all applications while retaining full Finder access.

• Default Document Folder. Provides a default location for storing documents.

• Layer Hiding. Provides easier navigation by hiding non-active layers. Users can easily switch to the Finder or to another program from the application menu.

• At Ease. Lets adults share the Performa 200 with others, and makes it easy for children to launch applications -- while protecting the hard disk.

• Backup & Restore. An easy way to create a set of back-up disks, and to restore the contents of the hard disk if necessary.

Disability Access

• CloseView, Easy Access, and visible beep included with system software. These features and third-party options provide alternative input and output tools for people with disabilities.

Electrical Requirements

• Line voltage: 120 volts AC, RMS (nominal)

• Frequency: 47 to 63 Hz, single phase

• Power: 100 watts maximum

ADB Power Requirements

• Maximum current draw for all ADB devices: 500 milliamps (a maximum of three devices is recommended)

• Mouse draws 80 milliamps.

• Keyboard draws 25 milliamps.

Size and Weight

• Main unit
  - Height 13.2 inches (33.6 cm)
  - Width 9.7 inches (24.6 cm)
  - Depth 11.2 inches (28.5 cm)
  - Weight 17.1 lb. (7.8 kg)

• Mouse
  - Height 1.1 inches (2.8 cm)
  - Width 2.1 inches (5.3 cm)
  - Depth 3.8 inches (28.5 cm)
  - Weight 6 oz. (.17 kg)

• Keyboard
  - Height 1.3 inches (3.3 cm)
  - Width 16.0 inches (40.5 cm)
  - Depth 5.9 inches (15.1 cm)
  - Weight 1.96 lb. (.89 kg)

Operating Environment

• Operating temperature: 50 to 104 degrees F (10 to 40 degrees C)

• Storage temperature: -40 to 116.6 degrees F (-40 to 47 degrees C)

• Relative humidity: 5% to 95% noncondensing

• Maximum altitude: 15,000 ft. (4,722 m)

Noise Level

  < 40db measured from the seated operator position.

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Tech Info Library Article Number:10867

Tech Info Library

Performa 400: Specifications

Revised: 7/26/94
Security: Everyone

Performa 400: Specifications

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Article Created: 22 October 1992

TOPIC ----------

This article gives technical specifications for the Macintosh Performa 400 computer.

DISCUSSION ----------

Processor

- MC68030, 32-bit architecture, 15.6672 megahertz (MHz) clock frequency (includes built-in memory management unit).

Memory

- 4MB RAM, expandable to 10MB
- 512K of read-only memory (ROM)
- 256 bytes of parameter memory (PRAM)
- Virtual Memory Capable

Video RAM

- Comes with 512K video RAM. The following video modes are supported:
  - Macintosh 12" RGB Display (512 x 384 pixels) at 1, 2, 4, 8 and 16 bits per pixel
  - Macintosh High-Resolution Monochrome Display, AppleColor High-Resolution RGB Monitor, Macintosh Performa and Performa Plus Display and Macintosh Color Display (640 x 480 pixels) at 1, 2, 4 and 8 bits per pixel

Disk Drives

- Built-in Apple SuperDrive 1.4MB high-density floppy disk drive
- Internal 80MB SCSI hard disk drive
- Optional external Apple SCSI hard disk drive

Sound Generator

Custom sound chip, including mono sampling generator capable of driving stereo miniature phone jack headphones, or stereo equipment by sending the same output into each channel.

Power Input

- Line voltage: 100-240 volts AC, RMS automatically configured
- Frequency: 50-60 Hz ±3 Hz single phase
- Power: 50 watts maximum, not including monitor power

Clock/Calendar

CMOS custom chip with long-life lithium battery

Interfaces

- One Apple Desktop Bus port supports a keyboard, mouse, and other devices daisy-chained through a low-speed, synchronous serial bus (maximum of three chained devices)
- Two serial (RS-232/RS-422) ports, 230.4 kilobits per second maximum (up to 0.920 megabits per second if clocked externally)
- SCSI interface
- Video port supports RGB and monochrome monitors of various sizes and resolutions
- Internal expansion slot for processor-direct expansion card
- Sound output port capable of delivering monophonic sound to both channels of a stereo device
- Sound input port for monaural sound input

Monitors

- Supports the following monitors:
  - Macintosh Performa Display
  - Macintosh Performa Plus Display
  - Macintosh 12-inch RGB Display
  - Macintosh 12-inch Monochrome Display
  - AppleColor High-Resolution RGB Monitor
  - Macintosh Color Display

Keyboards

Supports all Apple Desktop Bus (ADB) keyboards

Mouse

ADB mouse: either mechanical tracking, optical shaft, or contact encoding

Apple Desktop Bus Power Requirements

- Maximum power draw for all ADB devices: milliamperes (mA)
- Mouse draws 80 mA

• Keyboard draws 25-80 mA (varies with the keyboard model used)

Note: Up to three ADB devices can be daisy-chained to the ADB port.

RAM Configurations

RAM in the Performa 400 is provided both on the logic board and in packages called Single In-line Memory Modules, or SIMMs. The SIMMs contain dynamic RAM chips on a single circuit board, with electrical "finger" contacts along one edge that plug into the SIMM sockets on the computer's logic board.

The Performa 400 can work with any of several RAM configurations, depending on the density of the RAM chips that are mounted on the SIMMs. The Performa 400 can use only 1MB, 2MB, or 4MB RAM SIMMs. Don't purchase 256K SIMMs for use with the Performa 400. Possible RAM configurations include 4MB, 6MB, 8MB, and 10MB.

Important: Performa 400 SIMMs should be fast-paged mode 100 nanoseconds (ns) RAM access time or faster. The slower 120 ns and 150 ns SIMMs available for some other models of Macintosh computers DO NOT work in the Performa 400.

Microphone/Sound

The microphone is an electret type, omnidirectional microphone that is powered by the computer. Microphone output voltage is 4 millivolts (mV) peak-to-peak at normal speaking volume.

Note: You can also use adapters to input sound from audio equipment with line level outputs, but the line level signals must be attenuated before reaching the computer's sound input port. An attenuation of 500:1 is recommended when inputting line level signals. Appropriate attenuation cables and adapters are available from electronics stores.

System Software

At introduction, the Performa 400 ships with System Software version 7.0.1P. This version has all the functionality and power of System 7.0.1, with special enhancements for first-time users:

• Application Launcher. Provides easy location and launching of all applications while retaining full Finder access.

• Default Document Folder. Provides a default location for storing documents.

• Layer Hiding. Provides easier navigation by hiding non-active layers. Users can easily switch to the Finder or to another program from the application menu.

• At Ease. Lets adults share the Performa 400 with others, and makes it easy for children to launch applications -- while protecting the hard disk.

• Backup & Restore. An easy way to create a set of back-up disks, and to restore the contents of the hard disk if necessary.

Size and Weight

- Main Unit
  Weight: 8.8 lb. (4.0 kg)
  Height: 3.0 inches (77 mm)
  Width: 12.2 inches (310 mm)
  Depth: 15.0 inches (382 mm)
- Mouse
  Weight: 6 oz. (0.17 kg)
  Height: 1.1 inches (27.9 mm)
  Width: 2.1 inches (53.3 mm)
  Depth: 3.8 inches (96.5 mm)
- Keyboard
  Weight: 2 lb. (1 kg)
  Height: 1.8 inches (44 mm)
  Width: 16.5 inches (418 mm)
  Depth: 5.6 inches (142 mm)

Environment

- Operating temperature
  10 degrees C to 40 degrees C (50 degrees F to 104 degrees F)
- Storage temperature
  –40 degrees C to 47 degrees C (–40 degrees F to 116.6 degrees F)
- Relative humidity
  0% to 80% (noncondensing)

Altitude
  0 to 3048 m (0 to 10,000 ft.)

Article Change History:
20 Jan 93 - Revised to include 512K VRAM version and remove 256K VRAM version.
02 Nov 92 - Revised to expand display information and correct errors.
09 Nov 92 - Revised to further expand display information.

Support Information Services

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Tech Info Library Article Number:10868

E-Machines DoubleColor SX Bundle: NuBus Adapter

Revised: 11/11/92
Security: Everyone

E-Machines DoubleColor SX Bundle: NuBus Adapter

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Article Created: 11 November 1992

TOPIC -----

Does the Macintosh IIsi require a NuBus adapter to work with the E-Machines DoubleColor SX Video Adapter plus Macintosh 16" Color Display bundle?

DISCUSSION -----

Apple is bundling the E-Machines DoubleColor SX Video Adapter with the Macintosh 16" Color Display. The DoubleColor SX Video Adapter provides 8-bit video (256 colors) and graphics acceleration.

A Macintosh IIsi NuBus Adapter (part number M0481LL/A) must be used to connect the DoubleColor SX Video Adapter or any other NuBus expansion card to a Macintosh IIsi.

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Tech Info Library Article Number:10870

QuickTime 1.5: Technical Overview

Revised: 8/19/96
Security: Everyone

QuickTime 1.5: Technical Overview

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Article Created: October 26, 1992
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

QuickTime 1.5 includes support for Photo CD images. This allows applications to open PhotoYCC (Kodak's color digital image format) files as if they were Macintosh picture files. Special translators and plug-ins are not needed.

With QuickTime 1.5 and the new CD-ROM Setup 4.0 software, any AppleCD drive can read Photo CD discs:

- The new AppleCD 300 and AppleCD 300i support both single and multisession Photo CDs.

- All earlier AppleCD drives (AppleCD SC, AppleCD SC Plus, and AppleCD 150) support single session Photo CDs only.

This article describes the new features of QuickTime 1.5 that make this possible.

DISCUSSION ----------

MOVIETOOLBOX

High Level Editing

QuickTime 1.5 provides support for pasting different data types into a movie. For example, QuickDraw pictures and standard sound data can be pasted directly into a movie. If the application uses the Movie Controller, this support happens transparently and nothing needs to be changed in those applications. New support calls provide for pasting in any data type for applications that make calls to the Movie Toolbox directly to do editing.

Data Fork Movies For QuickTime 1.5

New routines are provided for storing and retrieving movies stored in the data fork of a file. These routines provide more robust data reference resolution and better low-memory performance than was possible using NewMovieFromHandle and PutMovieIntoHandle in QuickTime 1.0.

IMAGE COMPRESSION MANAGER

CompactVideo Compressor

The new CompactVideo Compressor is best suited to compressing 16-bit and 24-bit video sequences. It's a lossy algorithm that's highly asymmetrical. In other words, it takes significantly longer to compress a frame than it does to decompress that frame. Compressing a 24-bit 640x480 image on a Macintosh IIfx takes approximately 4 minutes, achieving a compression ratio of 13.5:1. Decompressing the image takes less than a second.

Compared to QuickTime's original video compressor, CompactVideo obtains higher compression ratios, better image quality, and faster playback. When used in conjunction with MovieShop, CompactVideo can constrain data rates to user-definable levels. This is particularly important when compressing material for playback from CD.

For best results, CompactVideo should be used on raw source data that has never been compressed with a highly lossy compressor before (including CompactVideo).

Alignment Calls

New window alignment calls provide a mechanism for positioning and dragging windows to optimal screen positions based on the depth of the screen. Rectangles on 1-bit and 2-bit screens are horizontally aligned to multiples of 16 pixels, 4-bit to multiples of 8, 8-bit to multiples of 4, and 16-bit to multiples of 2. Alignment on 32-bit screens only occurs on 68040-class systems or greater, and then it's to multiples of 4 pixels. When the alignment rectangle crosses more than one screen, the alignment of the strictest screen is used. Decompression to non-optimally aligned destinations can reduce performance by as much as 50%, so these calls should be used whenever possible.

The default alignment behavior will be adequate for the vast majority of cases where alignment is desired. However, when alignment characteristics specific to particular video hardware is needed, or for other reasons, default alignment can be overridden.

Changes to Standard Compression

Most of the changes to the Standard Compression dialog have been below the surface: bug fixes and better memory management in particular. Please note that movies recorded under QuickTime 1.0 won't play back under 1.5 with the improvements in screen size, faster rate, and so on. To see these

improvements, you must record under QuickTime 1.5. Here are descriptions of changes visible to the application developer and the user:

- Movie Controller
  Two new calls in the Movie Controller make it easier to deal with edit menus. And some new action flags were added to make it easier to detect and intercept clicks.

- Video Digitizers
  Support is added for digitizer cards with capabilities previously unaddressed. For example, features were added to deal with cards that can provide compressed video images directly.

- Movie Import and Export
  MovieImport and MovieExport components provide a standard way for applications to get any type of data into and out of a QuickTime movie.

  - MovieImport components take data from a file or handle and put it into a movie.

  - MovieExport components take a portion of a movie and put it into a file or handle.

  Both MovieImport and MovieExport components may have a dialog that is presented to the user to configure the translation, but the components should work even if the dialog is not displayed.

  A typical use of a MovieImport component would be to allow a user to paste a PICT from a favorite paint application into a movie. Another use would be to convert a PICS file into a QuickTime movie. A MovieExport component might be used to export the sound track of a movie to an AIFF file so that it can be edited in a non-QuickTime-aware sound-editing application.

  MovieImport components can be requested to add data to a movie in one of three ways. The caller may specify that the data go into:

  - A particular existing track.

  - A new track, created by the MovieImport component.

  - One or more existing tracks, creating new tracks if necessary

  MovieExport components can be requested to take data from either a movie, or from a single track.

- Sound Digitizers
  New selectors have been added to support the new sound input configuration dialogs supplied by the Sequence Grabber.

Article Change History:
19 Aug 1996 - Corrected misspelling.
18 Dec 1992 - Revised to include information about movie playback.

..TIL10874-QuickTime_1-5-Technical_Overview.pdf

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Tech Info Library Article Number:10874

Tech Info Library

System 7: Bus Error Message After Installing

Revised: 11/9/92
Security: Everyone

System 7: Bus Error Message After Installing

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Article Created: 28 October 1992

TOPIC ----------

I'm getting bus error messages after installing System 7. Should I begin to look at the SCSI bus?

DISCUSSION ----------

The appearance of a bus error doesn't indicate there is a SCSI bus problem, although it doesn't exclude it either. That error could indicate a problem with ANY bus, since there are data busses internal to the processor and address and data busses external to the processor. It's best not to assume that "Bus Error" refers only to the SCSI bus when troubleshooting this problem.

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Tech Info Library Article Number:10875

Tech Info Library

MacWrite II: Locks Up on Macintosh with More Than 16MB of RAM

Revised: 11/29/92
Security: Everyone

MacWrite II: Locks Up on Macintosh with More Than 16MB of RAM

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Article Created: 28 October 1992

TOPIC ----------

MacWrite II 1.1v2 locks up my Quadra (20MB RAM, 32-bit addressing, cache on or off) every time I try to run the spell checker. Is this a known bug, and is there a fix?

DISCUSSION ----------

Claris Tech Support says this is a recognized problem with all versions of MacWrite II and any CPU with over 16MB of RAM. MacWrite II must load into low memory to get around this problem. One way to do this is to make the system heap 4MB or larger. This will leave 16MB of memory available, allowing MacWrite II to run properly. You can do this by increasing the RAM cache to 4MB. Another way is by loading 4MB of applications into memory before running MacWrite II.

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Tech Info Library Article Number:10876

Tech Info Library

Mac/PC Exchange: Not Recognizing DOS Disks

Revised: 11/29/92
Security: Everyone

Mac/PC Exchange: Not Recognizing DOS Disks

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Article Created: 28 October 1992

TOPIC -----

My Macintosh with Mac/PC Exchange installed won't recognize DOS disks. The computer ejects the disk or wants to initialize it.

DISCUSSION -----

Remove Virus Blockade which interferes with the operation of the PC/Exchange control panel.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10878

Tech Info Library

Microsoft Word 5.0: Scrambled Menu

Revised: 11/29/92
Security: Everyone

Microsoft Word 5.0: Scrambled Menu

==========

Article Created: 28 October 1992

TOPIC ----------

After installing Microsoft Word 5.0 the menu is garbage, the icon in the top right hand corner is an inverse character, and balloon help has disappeared. Restarting with extensions off clears up the problem.

DISCUSSION ----------

According to Microsoft Tech Support, there could be an INIT conflict. Also, the Word Settings Preference file will cause garbage in menus when it's corrupted. Remove the Word Settings file to see if the problem clears up.

There have also been reports to Microsoft of MacroMaker causing this problem. Microsoft Tech Support also said that the 5.0 installer will add fonts to the System file and if there is an incompatible INIT present in the System Folder, it could interfere with the installation of 5.0. Worst scenario would be to reinstall the System after exhausting other ideas.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10879

Tech Info Library

AppleShare 3.0 Print Server: Upgrade for Dayna EtherPrint

Revised: 11/30/92
Security: Everyone

AppleShare 3.0 Print Server: Upgrade for Dayna EtherPrint

==========

Article Created: 28 October 1992

TOPIC --

I have recently installed AppleShare 3.0 Print Server and Dayna EtherPrint boxes. Now I can't print to my printer. Do I need to upgrade the Dayna boxes to get this to work?

DISCUSSION --

Yes, there is a firmware upgrade required. Depending on which version of the EtherPrint hardware you have, there are different upgrade versions:

Dayna EtherPrint 1.6
Dayna EtherPrint Plus 1.4

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10880

Tech Info Library

System 7: Quadra 900 and Tune Up Bug

Revised: 11/29/92
Security: Everyone

System 7: Quadra 900 and Tune Up Bug

==========

Article Created: 28 October 1992

TOPIC ----------

When I run my Quadra 900 as a server, without keyboard and monitor, the system hangs with the keylock in the secure position. Have you heard of this, and how can I fix it?

DISCUSSION ----------

There's a bug on the Quadra 900 with System 7 Tune Up installed that will only manifest itself in keyboardless (that is, server) environments when the keylock is in the secure (or locked) position. In this scenario, the system will hang.

If you want to benefit from the enhancements in System 7 Tune Up and still use the Quadra 900 as a keyboardless server with the keylock in the locked position, remove the System 7 Tune Up extension from the Extensions folder. Then reboot the computer.

Quadra 900 customers typically have 4MB or more DRAM in their systems and therefore the low memory conditions that the System 7 Tune Up extension addresses is much less an issue on this computer than on 2MB computers.

Without the System 7 Tune Up, choosing "About This Macintosh..." in the Apple menu will show "System Software 7.0.1" and not "System Software 7.0.1•".

You will still benefit from the other features of the System 7 Tune Up kit, such as a new Chooser, and new LaserWriter, StyleWriter and File Sharing extensions.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10881

Tech Info Library

TrueType Fonts: Installing on Macintosh Plus with No Hard Disk

Revised: 11/29/92
Security: Everyone

TrueType Fonts: Installing on Macintosh Plus with No Hard Disk

==========

Article Created: 28 October 1992

TOPIC ----------

I have a 1MB Macintosh Plus with no hard disk, and I just purchased a StyleWriter printer. I want to print with TrueType fonts, but without a hard disk I have little room on an 800K disk. Is there a solution?

DISCUSSION ----------

Here are the steps to get TWO TrueType fonts on the disk and have about 46K left.

Follow these steps to install the minimal system software:

1) Format an 800K disk.
2) Run the install from the System 6.0.7 disk.
3) Be sure to click on Switch Disk and Eject Disk buttons as needed.
4) Insert the new formatted disk and do a minimum install for Macintosh Plus (this leaves about 435K available).

Follow these steps to install the StyleWriter software:

1) Insert the StyleWriter Installation disk.
2) Custom install for the TrueType (INIT) - 101K and the StyleWriter driver (163K).

You should now have about 150-170K available.

Follow these steps to install the individual TrueType fonts (remember that the fonts each take up 60-70K):

1) Insert the TrueType fonts disk from the StyleWriter package.
2) Open the Font/DA Mover.
3) The right window should show information (fonts) in the System file.
4) Click on Open in the right window.

5) Shift-click to select the desired fonts. (Please note at this point you probably can only select two fonts because of minimal space left on the disk.)
6) Click on Copy.
7) Restart the computer from your new startup disk.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10882

Tech Info Library

AppleShare 3.0: Access Privileges for a User Folder

Revised: 11/9/92
Security: Everyone

AppleShare 3.0: Access Privileges for a User Folder

==========

Article Created: 28 October 1992

TOPIC -----

A client on an AppleShare 3.0 server wants to set up a folder, and then set up access privileges without involving the server administrator. How do they do that?

DISCUSSION -----

Follow these steps:

1) Create a new folder on the server.
2) Select the folder.
3) Under System 7: Select Sharing under the File menu.
4) Under System 6: Select Get Privileges under the File menu.

This brings up a dialog box which will allow you to set up access privileges for that folder.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10885

Tech Info Library

System 7.0.1: System Crashes with 68000 Accelerators

Revised: 12/14/92
Security: Everyone

System 7.0.1: System Crashes with 68000 Accelerators

==========

Article Created: 28 October 1992

TOPIC ----------

I have an accelerator card with a 68020 installed in my Macintosh Plus. After installing System 7.0.1, I'm getting system crashes at start up. What's happening?

DISCUSSION ----------

There's code that causes problems on 68000 computers with 68020/68030 accelerators. This same problem afflicts the 7.0 Tune Up. A different implementation works fine in 7.0. But neither the 7.0, nor the 7.0.1 version would handle a case of a 68000 accelerated by a 68040.

This code has some other problems. Apparently SwapSerialClock is a valid selector on 68000 computers, but on an accelerated 68000 computer there's no way to call it. Presumably, if the table gets set up correctly, it would solve this problem.

Finally, there's a related problem. The 7.0.1 implementation of FlushInstructionCache (_HWPriv with a selector of 1) just calls jFlushCache. This simplifies things since there's only one implementation of FlushInstructionCache to worry about. But vCacheFlush is never patched correctly if a different CPU from the one supported by the ROM is installed.

The table of selector functions is referenced by the instruction:

```
  MOVE.L  emHwPrivTable(A0),A0; Point A0 to the hwPriv jump vector table
```

It appears that such a table never gets set up on 68000 computers. In the following instruction, the immediate value #0 gets updated with the correct value for the size of the table.

```
  SelectorNum CMPI.W #0,D0   ; Is the selector in range? (gets filled in
```

```
  at install time)

Since CPUFlag indicates we're no longer running on a 68000 computer,
it falls through to the preceding instruction.  Because no table gets
installed, the instruction determines that the selector is out of range,
and branches off to tryTheROM.  Since there's no HWPriv in ROM on an SE,
for example, this defaults to _Unimplemented.
```

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10886

LaserWriter Driver 7.1: Incompatible with NetWare Print Services

Revised: 11/29/92
Security: Everyone

LaserWriter Driver 7.1: Incompatible with NetWare Print Services

==========

Article Created: 28 October 1992

TOPIC -----

Novell describes a compatibility problem with the LaserWriter 7.1 driver. This information will ship with future versions of NetWare, and is also the information that Novell is giving to customers.

The recommendation is that Novell users of NetWare for Macintosh Print Services (v3.x) remove the 7.1 driver and use the 7.0 driver. If other problems arise, customers should call Novell.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

DISCUSSION -----

NetWare for Macintosh Print Services have serious compatibility problems with Apple's new LaserWriter v7.1 rDev. ATPS.NLM, the print services module of NetWare for Macintosh 3.x, IS compatible with LaserWriter v.5.x, 6.x, and 7.0. The 7.1 problems are evidenced as follows:

1) Jobs printed to the ATPS print spooler from Macintosh computers using the LaserWriter 7.1 rDev will fail to print due to a PostScript Error. The message returned by the printer via ATPS is:

   %%[Error: syntaxerror; Offending Command: --nostringval--]%%

   The offending command may also be gibberish.

   There is no known workaround for this problem, which affects ATPS.NLM v3.1, shipped with NetWare for Macintosh 3.01. Until it is addressed, Novell recommends NetWare for Macintosh customers user LaserWriter 7.0 in preference to 7.1.

2) A secondary problem is caused if a Macintosh using the LaserWriter 7.1 rDev prints to the server before anyone has ever printed using the 7.0 rDev. It's symptom is that all the print jobs produced by LaserWriter 7.0 or 7.1 printed by the ATPS print server will fail, and ATPS will return the message:

```
printer <printername> returned bad dictionary status: %%[
Error:timeout;
Offending Command: timeout ]%%
PAP write: no such device or address
```

This occurs because ATPS makes an incomplete copy of the 7.x ProcSet Query from the Macintosh client printing with LaserWriter 7.1.

This problem affects ATPS.NLM v3.1, shipped with NetWare for Macintosh v3.01. To correct it permanently, go to the ATPS directory on the server (default:SYS:SYSTEM\ATPS) and erase the file containing the query (APP710.QRY). Now print to the ATPS print spooler with the LaserWriter 7.0 rDev to create a complete query file on the server.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10887

Tech Info Library

AppleShare 3.0: Server Crashes Caused by Virex

Revised: 11/9/92
Security: Everyone

AppleShare 3.0: Server Crashes Caused by Virex

==========

Article Created: 28 October 1992

TOPIC -----

A customer using AppleShare 3.0 is experiencing server crashes.

DISCUSSION -----

Virex 3.6 and 3.8 is incompatible with AppleShare 3.0, and causes server crashes. These virus programs should be removed.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10888

Tech Info Library

AppleShare: Switch Launching Over 3Com Networks

Revised: 11/25/92
Security: Everyone

AppleShare: Switch Launching Over 3Com Networks

==========

Article Created: 28 October 1992

TOPIC --

I've heard that Switch Launching can be done over the network if I have a 3Com card installed in my Macintosh. Is this true?

DISCUSSION --

"Switch Launching" is available over LocalTalk or Ethernet for the indicated versions:

- 3Com's System 6.0.X Apple Workstation Software and
  - 3+Share File Server (1.2.1 through 1.6.1) - Supported
  - 3+Open File Server (All versions) - Supported
  - AppleShare File Server (All versions) - NOT Supported

- 3Com's System 7.0.X Apple Workstation Software and
  - 3+Share File Server (All versions) - NOT Supported
  - 3+Open File Server (All versions) - NOT Supported
  - AppleShare File Server (All versions) - NOT Supported

(This is noted on a small piece of paper provided with the 3+Open Administrator software and update guide or it will be relayed by a 3Com Support Technician if you call 3Com for support.)

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10889

Tech Info Library

AppleShare 3.0: Workstation Software Disk Space

Revised: 11/25/92
Security: Everyone

AppleShare 3.0: Workstation Software Disk Space

==========

Article Created: 28 October 1992

TOPIC ----------

How much room does Workstation 3.0 software take compared to Workstation software 2.0 with regard to disk space? This is important because I use Macintosh Plus computers with 800K floppy disks, and every bit of space is important.

DISCUSSION ----------

We tested three versions of AppleShare, configured on an 800K floppy disk with System 6.0.7 minimal install of software for any Macintosh:

System Folder size is 599K:

- AppleShare 2.0.1 - 45K
- AppleShare 2.0.2 - 44K
- AppleShare 3.0 - 74K

Based on these figures, AppleShare 3.0 workstation software occupies about 30K more than versions of 2.0 workstation software.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10890

Tech Info Library

AppleShare 3.0: Remote User Activity Performance Test

Revised: 11/25/92
Security: Everyone

AppleShare 3.0: Remote User Activity Performance Test

==========

Article Created: 28 October 1992

TOPIC ----------

Does adjusting the Remote User Activity in the AppleShare File Server affect the performance of files being copied on a network? Is there any way of telling how much performance is affected?

DISCUSSION ----------

Adjusting the Remote User Activity does affect the File Server, dramatically in some cases. A test involving a limited network produced the following results:

The network consisted of:

- Server - Macintosh Plus with 4 Megabytes of RAM running System 7.0 and an AppleShare File Server only (no extensions or applications running).

- Client - Macintosh Plus with 4 Megabytes of RAM running System 6.0.8 with no application or INITs running.

Both computers were networked using PhoneNet cabling. They were the only computers on the network. A folder containing 1 Megabyte exactly was used. The file was copied from the server to the client.

Here are the test times:

Remote User Activity set at:
10% = 4 minutes and 50 seconds
50% = 2 minutes and 00 seconds
100% = 1 minute and 22 seconds

As you can see the speed difference varies between 10% to 100%.

Note: Times may vary depending upon configuration and CPU used.

..TIL10891-AppleShare_3-0-Remote_User_Activity_Performance_Test.pdf

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10891

Tech Info Library

AppleShare 3.0: Users & Groups File Damaged On Upgrade (6/95)

Revised: 6/9/95
Security: Everyone

AppleShare 3.0: Users & Groups File Damaged On Upgrade (6/95)

==========

Article Created: 28 October 1992
Article Reviewed/Updated: 9 June 1995

TOPIC ----------

I just completed an upgrade to AppleShare 3.0, and I discovered that my Users and Groups file was damaged during the upgrade. Why did this happen?

DISCUSSION ----------

As part of the 2.0 to 3.0 upgrade, 3.0 is designed to replace 2.0's explicit access privileges with inherited privileges for any folder whose access privileges are the same as those of the folder's parent. Unfortunately, the code which determines whether inherit privileges are appropriate, only checks that the access privileges check box matrix matches, not that the folder is owned by the same user and used by the same group. The end result is that, after upgrade, some folders' access privileges will have inherited privileges and be reassigned to other Users and Groups.

Admin's "Compact Volume Access Privileges" menu item calls the same code that does the 2.0 to 3.0 upgrade. It will result in the same bug: Incorrect assignment of inherited privileges for folders whose parent folder has different access privileges.

Here are definitions for explicit and inherit access privileges:

Explicit - Retain access privileges regardless of the enclosing folder.
Inherit - Always change to reflect access privileges of enclosing folder.

The default on an AppleShare Server is explicit.

Article Change History:
09 Jun 1995 - Added definition for explicit and inherit.

Support Information Services

..TIL10892-AppleShare_3-0-Users_and_Groups_File_Damaged_On_Upgrade_6-95.pdf

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10892

Tech Info Library

PowerBook Drives: DOS Mounter and Disk Noise (4/94)

Revised: 4/1/94
Security: Everyone

PowerBook Drives: DOS Mounter and Disk Noise (4/94)

==========

Article Created: 28 October 1992
Article Reviewed/Updated: 1 April 1994

TOPIC ----------

My PowerBook disk drive makes strange noises when it's reading a disk. I installed DOS Mounter and everything was fine until I mounted my first DOS disk. Since then, the drive has made this strange (and loud) noise. What's wrong?

DISCUSSION ----------

According to Dayna Communications tech support, the stepping routine for the drive is stored in PRAM. While the noises are normal, they are only supposed to happen when the drive is reading a DOS disk. Unfortunately, the stepping routine is supposed to return to its default for normal Macintosh operating system disks, but it doesn't.

Dayna Communications fixed this problem as of version 3.02 of DOS Mounter. DOS Mounter 3.02 or greater -- including DOS Mounter Plus -- will correctly reset the stepping routine.

To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
1 April 1994 - Reviewed for accuracy, updated formatting.
16 March 1993 - Revised with information about problem fix versions.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10893

Tech Info Library

AppleShare 3.0: What the WorkStation Installer Updates (4/94)

Revised: 4/1/94
Security: Everyone

AppleShare 3.0: What the WorkStation Installer Updates (4/94)

==========

Article Created: 28 October 1992
Article Reviewed/Updated: 1 April 1994

TOPIC ----------

I have a question about the installation of the new Client software for AppleShare 3.0. Does the Installer actually install any resources INTO the System file or into any other file?

DISCUSSION ----------

In general the only thing that happens during the installation of the AppleShare 3.0 workstation software is that the AppleShare file is copied into the Extensions folder. However, if the system has been updated from a version of system software prior to 6.0.3 and hasn't had AppleShare workstation software installed, it's necessary to update some of the AppleTalk files.

The recommendation is that if you fit these criteria, go ahead and use the drag install. If problems arise on that workstation, use the Installer provided.

Article Change History:
1 April 1994 - Reviewed for accuracy, updated formatting.
27 January 1993 - Reviewed for accuracy.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10894

Tech Info Library

Display Card 8•24 GC: Use Control Panel 7.0.1 with System 7.1

Revised: 11/30/92
Security: Everyone

Display Card 8•24 GC: Use Control Panel 7.0.1 with System 7.1

==========

Article Created: 26 October 1992

TOPIC -----

Which version of the Macintosh Display Card 8•24 GC control panel is compatible with System 7.1?

DISCUSSION -----

Version 7.0.1 of the control panel is compatible with System 7.1.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10898

Tech Info Library

Macintosh Color Display: How Its Size Is Measured

Revised: 11/3/92
Security: Everyone

Macintosh Color Display: How Its Size Is Measured

==========

Article Created: 3 November 1992

TOPIC ----------

How does Apple measure the Macintosh Color Display?

DISCUSSION ----------

The Macintosh Color Display measures approximately 14 inches from corner to corner of the CRT (with the front bezel removed). This is the industry-standard method of measuring displays, and all display vendors call this CRT size a 14" display.

Apple formerly measured its displays from inside corner to inside corner of the front bezel. By this measurement, the Macintosh Color Display and the previous AppleColor High-Resolution RGB Display measure approximately 13".

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10899

Tech Info Library

PowerBook and External Hard Drive: SCSI Termination Problem

Revised: 10/30/92
Security: Everyone

PowerBook and External Hard Drive: SCSI Termination Problem

==========

Article Created: October 30, 1992

TOPIC ----------

When I use my third-party external hard drive with my desktop Macintosh, I can trash the hard drive and then power it off without a problem. But when I do the same thing on my Powerbook 170, as soon as I power down the hard drive, the PowerBook hangs.

DISCUSSION ----------

The problem is the lack of SCSI termination power. The Macintosh Plus, Macintosh Portable, and Macintosh Powerbooks do not provide SCSI termination power. In the scenario you describe, it is the external hard drive providing the appropriate termination, since all Apple hard drives (and some third-party hard drives) provide termination power. Much like signal termination on a network, once it is removed (as when you power down the HD) the SCSI bus loses its integrity and the PowerBook crashes.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10900

Tech Info Library

PowerBook 160: Specifications (Discontinued 9/13/93)

Revised: 5/18/94
Security: Everyone

PowerBook 160: Specifications (Discontinued 9/13/93)

==========

Article Created: 19 October 1992
Article Reviewed/Updated: 19 February 1993

TOPIC ----------

This article provides the technical specifications for the Macintosh PowerBook 160 notebook computer.

DISCUSSION ----------

Microprocessor

• 68030, running at 25 MHz.

Address and Data Bus

32-bit Address Bus
32-bit Data Bus

RAM

• Comes with 4MB pseudostatic RAM on the logic board.

• Expandable to 14MB with expansion PSRAM cards.

Storage

• One built-in 1.4MB Apple SuperDrive disk drive that uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.

• One internal 40MB, 80MB, or 120MB hard disk.

Display

- 10 in. (254 mm) diagonal backlit supertwist liquid-crystal display.

- 16 shades of gray, 640 x 400 pixels

- Built-in support for up to 256 colors on a variety of external displays, including:
  Macintosh 12" Monochrome Display
  Macintosh 12" RGB Display
  AppleColor High Resolution RGB Display
  Macintosh Color Display
  Macintosh 16" Color Display
  Macintosh Portrait Display
  Some VGA and SVGA monitors

- Two video-out modes:

  1) Video mirroring for simultaneous display of the same image on two screens.

  2) Dual display for full use of both screens.

Battery

- NiCad (nickel-cadmium), provides 2.5 to 3 hours of use before recharging is necessary. (AC power adapter is included.)

Keyboard and Trackball

- Built-in keyboard with standard Macintosh layout and two-level tilt adjustment.

- Dual-button trackball, 30 mm diameter.

Clock/Calendar

- CMOS custom chip with long-life lithium battery.

Microphone

- Built-in omnidirectional; output voltage is 4 mV, peak to peak, at normal volume

Interfaces

- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices.

- Two RS-422 serial ports for LocalTalk networking, printers, modems, and other devices.

- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices.

- One slot for optional modem.

- One video-out port, supporting 8 bit/256 colors.

- One sound output port for external audio amplifier.

- One sound-in port.

- Security slot for use with third-party equipment to lock the computer.

Modem

- Optional internal PowerBook Express Modem; 14,400 bits per second (bps) data with fax send and receive at 9600 bps; includes Express Fax software.

- Optional internal 2400 bps modem with fax send at 9600 bps; includes fax send software.

Sound Generator

- Apple Sound Chip provides 8-bit sound, capable of driving stereo headphones or other stereo equipment through the sound port.

Sound Input

- 8-bit sound, sampled at 11 or 22 kHz.

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

ADB Power Requirements

- Maximum current draw for all ADB devices is 200 milliamps (a maximum of three ADB devices is recommended)

Electrical Requirements

- Line voltage: 100 to 240 volts

- Frequency: 50 to 60 Hz

Environmental Requirements

- Operating temperature: 50 to 104° F (10 to 40° C)

- Storage Temperature: -40 to 65° C (-40 to 148° F)

- Relative humidity: 20% to 80% noncondensing

- Altitude: 0 to 15,000 ft. (0 to 4722 m)

• Operating altitude: 0 to 10,000 ft. (0 to 3048 m)

Size and Weight

• Height: 2.25 in. (5.7 cm)

• Width: 11.25 in. (28.6 cm)

• Depth: 9.3 in. (23.6 cm)

• Weight: 6.8 lb. (3.1 kg)

Noise Level

Noise free except for disk drive use.

Article Change History:
4 June 1992 - Updated to correct voltage specification.
19 February 1993 - Updated to correct storage temperature range.

Support Information Services

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10902

Tech Info Library

PowerBook 180: Specifications (Discontinued)

Revised: 8/2/94
Security: Everyone

PowerBook 180: Specifications (Discontinued)

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Article Created: 19 October 1992
Article Reviewed/Updated: 4 June 1993

TOPIC ----------

This article provides the technical specifications for the Macintosh PowerBook 180 notebook computer.

DISCUSSION ----------

Microprocessor

• 68030, running at 33 MHz.

• 68882 Math Coprocessor, running at 33 MHz

Address and Data Bus

32-bit Address Bus
32-bit Data Bus

RAM

• Comes with 4MB pseudostatic RAM on the logic board.

• Expandable to 14MB with expansion PSRAM cards.

Storage

• One built-in 1.4MB Apple SuperDrive disk drive that uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.

• One internal 80MB or 120MB hard disk.

Display

- 10 in. (254 mm) diagonal backlit active-matrix liquid-crystal display.

- 16 shades of gray, 640 x 400 pixels

- Built-in support for up to 256 colors on a variety of external displays, including:
  - Macintosh 12" Monochrome Display
  - Macintosh 12" RGB Display
  - AppleColor High Resolution RGB Display
  - Macintosh Color Display
  - Macintosh 16" Color Display
  - Macintosh Portrait Display
  - Some VGA and SVGA monitors

- Two video-out modes:

  1) Video mirroring for simultaneous display of the same image on two screens.

  2) Dual display for full use of both screens.

Battery

- NiCad (nickel-cadmium), provides 2.5 to 3 hours of use before recharging is necessary. (AC power adapter is included.)

Keyboard and Trackball

- Built-in keyboard with standard Macintosh layout and two-level tilt adjustment.

- Dual-button trackball, 30 mm diameter.

Clock/Calendar

- CMOS custom chip with long-life lithium battery.

Microphone

- Built-in omnidirectional; output voltage is 4 mV, peak to peak, at normal volume

Interfaces

- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices.

- Two RS-422 serial ports for LocalTalk networking, printers, modems, and other devices.

- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices.

- One slot for optional modem.
- One video-out port, supporting 8 bit/256 colors.
- One sound output port for external audio amplifier.
- One sound-in port.
- Security slot for use with third-party equipment to lock the computer.

Modem

- Optional internal PowerBook Express Modem; 14,400 bits per second (bps) data with fax send and receive at 9600 bps; includes Express Fax software.
- Optional internal 2400 bps modem with fax send at 9600 bps; includes fax send software.

Sound Generator

- Apple Sound Chip provides 8-bit sound, capable of driving stereo headphones or other stereo equipment through the sound port.

Sound Input

- 8-bit sound, sampled at 11 or 22 kHz.

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

ADB Power Requirements

- Maximum current draw for all ADB devices is 200 milliamps (a maximum of three ADB devices is recommended)

Electrical Requirements

- Line voltage: 100 to 240 volts
- Frequency: 50 to 60 Hz

Environmental Requirements

- Operating temperature: 50 to 104 degrees F (10 to 40 degrees C)
- Storage Temperature: -40 to 65° C (-40 to 148° F)
- Relative humidity: 20% to 80% noncondensing

- Altitude: 0 to 15,000 ft. (0 to 4722 m)

- Operating altitude: 0 to 10,000 ft. (0 to 3048 m)

Size and Weight

- Height: 2.25 in. (5.7 cm)

- Width: 11.25 in. (28.6 cm)

- Depth: 9.3 in. (23.6 cm)

- Weight: 6.8 lb. (3.1 kg)

Noise Level

Noise free except for disk drive use.

Article Change History:
04 Jun 1993 -Updated to correct voltage specification.
19 Feb 1993 -Updated to correct storage temperature range.

Support Information Services

Copyright 1992-1994, Apple Computer, Inc.

Tech Info Library Article Number:10903

Tech Info Library

PowerBook 160 and Accessories: Ordering Information 10/92

Revised: 5/16/94
Security: Everyone

PowerBook 160 and Accessories: Ordering Information 10/92

==========

Article Created: October 19, 1992

Macintosh PowerBook 160 4/40 - Order No. M4500LL/A

• Macintosh PowerBook 160 personal computer with 4MB RAM
• one 40MB internal hard disk
• one built-in 1.4MB Apple SuperDrive
• Battery and AC adapter
• System 7.1 software
• Training software
• Complete setup, learning, and reference documentation
• Limited warranty statement

Macintosh PowerBook 160 4/80 - Order No. M4510LL/A

• Macintosh PowerBook 160 personal computer with 4MB RAM
• one 80MB internal hard disk
• one built-in 1.4MB Apple SuperDrive
• All software and accessories included with the PowerBook 160 4/40

Macintosh PowerBook 160 4/120 - Order No. M4520LL/A

• Macintosh PowerBook 160 personal computer with 4MB RAM
• one 120MB internal hard disk
• one built-in 1.4MB Apple SuperDrive
• All software and accessories included with the PowerBook 160 4/40

Other Products

• Macintosh PowerBook 4MB Memory Expansion Kit - Order No. M1033LL/A

• Macintosh PowerBook Fax/Data Modem
  U.S., Canada, Japan - M0970LL/A
  Europe, Australia, some South American countries - M0980/A

• Macintosh PowerBook Express Modem Kit

U.S., Canada, Japan - Order No. M1366LL/A
Europe, Australia, some South American countries - Order No. M1365/A

- Macintosh PowerBook Rechargeable Battery - Order No. M5545LL/B
- Macintosh PowerBook AC Adapter - Order No. M4660LL/A
- Macintosh PowerBook Battery Recharger - Order No. M1027LL/A
- Apple HDI-30 SCSI Disk Adapter - Order No. M2539LL/A
- Apple HDI-30 SCSI System Cable - Order No. M2538LL/A

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10904

Tech Info Library

PowerBook 180 Accessories: Ordering Information (Discontinued)

Revised: 6/6/94
Security: Everyone

PowerBook 180 Accessories: Ordering Information (Discontinued)

==========

Article Created: October 19, 1992

Macintosh PowerBook 180 4/80 - Order No. M4400LL/A

- Macintosh PowerBook 180 personal computer with 4MB RAM
- one 80MB internal hard disk
- one built-in 1.4MB Apple SuperDrive
- Battery and AC adapter
- Video-out cable
- System 7.1 software
- Training software
- Complete setup, learning, and reference documentation
- Limited warranty statement

Macintosh PowerBook 180 4/120 - Order No. M4410LL/A

- Macintosh PowerBook 180 personal computer with 4MB RAM
- one 120MB internal hard disk
- one built-in 1.4MB Apple SuperDrive
- All software and accessories included with the PowerBook 180 4/80

Other Products

- Macintosh PowerBook 4MB Memory Expansion Kit - Order No. M4664LL/A

- Macintosh PowerBook Fax/Data Modem
  U.S., Canada, Japan - Order No. M0970LL/A
  Europe, Australia, some South American countries - Order No. M0980/A

- Macintosh PowerBook Express Modem Kit
  U.S., Canada, Japan - Order No. M1366LL/A
  Europe, Australia, some South American countries - Order No. M1365/A

- Macintosh PowerBook Rechargeable Battery - Order No. M5545LL/B

- Macintosh PowerBook AC Adapter - Order No. M4660LL/A

- Macintosh PowerBook Battery Recharger - Order No. M1027LL/A
- Apple HDI-30 SCSI Disk Adapter - Order No. M2539LL/A
- Apple HDI-30 SCSI System Cable - Order No. M2538LL/A

Support Information Services

Copyright 1992-1994, Apple Computer, Inc.

Tech Info Library Article Number:10905

Tech Info Library

PowerBook 160 and 180: Summary of Differences (10/92)

Revised: 5/16/94
Security: Everyone

PowerBook 160 and 180: Summary of Differences (10/92)

==========

Article Created: October 19, 1992

TOPIC ----------

This article summarizes the differences between the Macintosh PowerBook 160 and the Macintosh PowerBook 180 computers.

DISCUSSION ----------

	Processor	Hard Drive Options	Display
PowerBook 160	68030, 25MHz	40MB, 80MB, 120MB	Supertwist
PowerBook 180	68030, 33MHz 68882 coprocessor	80MB, 120MB	Active-matrix

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10906

Tech Info Library

System 7: Retaining AppleShare Access Privileges at Install

Revised: 9/23/93
Security: Everyone

System 7: Retaining AppleShare Access Privileges at Install

==========

Article Created: 30 October 1992
Article Reviewed/Updated: 23 September 1993

TOPIC ----------

Is there a way to reinstall System 7.x and retain the folder privileges assigned in AppleShare 3.0.x?

DISCUSSION ----------

Yes. After installing a new System Folder, or even a system file of 7.0.x, you MUST go to "Sharing Setup" in the Control Panels and name your Macintosh BEFORE launching the Admin program. The "Macintosh Name" will be the name of the Server, and can be named anything.

There are three things to watch for to retain privileges:

1) Make sure the Volume names haven't been changed.

2) If installing a new System 7.x folder and AppleShare 3.0.x, remember to drag the System 7.x Users and Groups data file from the Preferences folder into the trash. Drag the saved 3.0.x Users and Groups file into the Preferences folder and restart the Macintosh.

3) MAKE SURE to open "Sharing Setup" in the control panel and set the "Macintosh Name:" field to the server name you want to use, BEFORE launching the Admin Program.

Article Change History:
23 September 1993 - added System 7.x and AppleShare 3.0.x terms

Copyright 1992-93, Apple Computer, Inc.

Tech Info Library Article Number:10908

Tech Info Library

AppleShare 1.x or 2.0x: Forgotten Admin Key

Revised: 11/29/92
Security: Everyone

AppleShare 1.x or 2.0x: Forgotten Admin Key

==========

Article Created: 30 October 1992

TOPIC ----------

I'm an Administrator, and I forgot my AppleShare Admin Key.

DISCUSSION ----------

For AppleShare 1.0 or 1.1 see page 137, chapter 6, in the "AppleShare Administrator's Guide" (Apple Part #030-1343-A).

Here are the steps on page 137:

WARNING: Before you use this procedure, make sure that you have a backup copy of the Users & Groups file. See "Backing Up Users and Groups Lists" in Chapter 2 for more information.

1) Use the "AppleShare Server Installer" disk to start up the server's Macintosh Plus.

2) While in the Finder, locate the Users & Groups file in the Server folder of the startup volume, drag it to the trash, and choose Empty Trash from the Special menu.

3) Open the AppleShare Admin application.

4) Select the same startup volume that you had before.

5) When you're asked to select a Users & Groups file, select the backup copy of the Users & Groups file.

Click Volume until you see the disk name. Click Eject to insert another disk. If necessary, open any folders in the list until you see the backup copy of the file. Select the file and click Open.

6) When asked, type the server name and the new Admin key.

7) Continue to follow the procedure for preparing the server.

See "Installing AppleShare Server Software" in Chapter 4 for more information.

For AppleShare 2.0 or 2.0.1 File Server, see page 204, chapter 7, in the "AppleShare File Server Administrator's Guide" (Apple Part # 030-1343-B).

Here are the steps on Page 204:

WARNING: Before you use this procedure, make sure you have a backup copy of the Users & Groups file.

1) Use the "Server Administration" disk to start up the server's Macintosh.

2) While in the Finder, locate the Users & Groups file in the Server folder of the startup volume, drag it to the trash, and choose Empty Trash from the Special menu.

3) Open the AppleShare Admin application.

4) Prepare the same startup volume you had before.

5) When you're asked to select a Users & Groups file, select the backup copy of the Users & Groups file.

Click Volume until you see the disk name. (If necessary, click Eject and then insert another disk.) Open any necessary folders in the list until you see the backup copy of the file. Select the file and click Open.

6) When asked, type the new Admin key.

7) Continue to follow the procedure for preparing the server.

See "Installing AppleShare File Server Software" in Chapter 5 for more information.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10909

Tech Info Library

AppleShare 3.0: New Users Don't Appear in Aristotle Menu (4/94)

Revised: 4/1/94
Security: Everyone

AppleShare 3.0: New Users Don't Appear in Aristotle Menu (4/94)

==========

Article Created: 30 October 1992
Article Reviewed/Updated: 1 April 1994

TOPIC ----------

Within AppleShare 3.0, I can create new users on the server, but they don't appear in the Aristotle menu. How can I make this happen?

DISCUSSION ----------

AppleShare 2.0.1

Here's what works in AppleShare 2.0.1:

1) Create user "Joe".

2) Make "Joe's" primary group "Student".
   Admin automatically assigns "Student" to the "User/Group:" field of the folder "Joe".

3) Aristotle can now build a user list that includes "Joe".

AppleShare 3.0 and 3.0.1

Here's information about the problem with AppleShare 3 and Aristotle. Step 4 didn't work until we threw away the Users folder and let AppleShare create a new one when Apple II Startup was enabled.

Here's the bug:

1) Create user "Joe".

2) Make "Joe's" primary group "Student"
   All is well, except Admin will have FAILED to update the "User/Group:" field of the folder "Joe"!

4) Workaround: Select Joe and do a "Verify Apple II Startup Info..." from the startup menu. Click "Yes" when asked if you want to "Reset Access Privileges to allow Apple II startup...". The folder "Joe" will now have its "User/Group:" field set to "Student". Aristotle can now see "Joe".

5) Supplemental 3.0 bug: Whenever the "Verify Apple II Startup Info..." menu is used (as in the above workaround), it MAY change the "Users" folder to have "Same As Enclosing Folder" access privileges. You can check and correct this by looking at the "Users" folder using the "Access Information..." dialog. The "Users" folder must have the "See Folders" checkbox checked for "Everyone:" to allow Apple II startup.

To make the workaround as easy as possible, we suggest the following steps:

1) Make sure "Everyone:" has at least "See Folders" access to the root of the primary volume in the "Access Information..." dialog. ("See Folders" AND "See Files" is even better.)

2) Create all users and assign their primary group to "Student" as each is created.

3) After all users have been created, select "Student" in the group list and do the "Verify Apple II Startup Info..." answering "Yes" when asked if you want access privileges reset. (Doing "Verify Apple II Startup Info..." for a single group rather than each individual user is a big time and step saver.)

4) When verification is complete, set the "Users" folder so that the "See Folders" checkbox for "Everyone:" is set in the "Access Information..." dialog.

Article Change History
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1 April 1994 - Reviewed for technical accuracy, updated formatting.
27 January 1993 - Reviewed for technical accuracy.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10911

Tech Info Library

System 7: Causes for VM to Disappear from About This Macintosh

Revised: 1/7/93
Security: Everyone

System 7: Causes for VM to Disappear from "About This Macintosh"

==========

Article Created: 10 December 1992

Article Change History

01/07/93 - REVISED
- To add another situation that causes VM to disappear.

TOPIC ----------

I'm using Virtual Memory, but it no longer shows up under "About this Macintosh."

DISCUSSION ----------

A couple of situations can cause Virtual Memory to disappear from "About this Macintosh" under the Apple menu.

If you lock or copy protect the VM Storage file from the Preferences menu in AppleShare Admin when you use Virtual Memory on a server, you lose Virtual Memory.

Also, if you rename the hard disk designated as Virtual Memory storage, you lose the VM. This doesn't damage anything, but you won't have Virtual Memory. There are two workarounds:

1) Rename the hard disk to its original name,

or

2) Open and close the Memory control panel, then restart. This option apparently rewrites the correct information to the system.

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..TIL10912-System_7-Causes_for_VM_to_Disappear_from_About_This_Macintosh.pdf

Tech Info Library Article Number:10912

Tech Info Library

AppleShare: Trashed Item from Server Remains in Window

Revised: 11/29/92
Security: Everyone

AppleShare: Trashed Item from Server Remains in Window

==========

Article Created: 2 November 1992

TOPIC -----

Sometimes when I drag something to the trash that resides on an AppleShare server, I get the message "Filename cannot be left in the trash. Do you want to delete it immediately?" And, if I click OK to delete the item, the icon for the item remains in the window until closing and reopening it. Why does this happen?

DISCUSSION -----

This happens when you have write access to a folder, but not the whole volume that the folder resides on. For some reason, AppleShare needs write access to the whole volume to create the Network Trash Folder (which is invisible).

To reproduce, share a volume and don't give write access to the top level of the volume. Give write access to a folder inside the volume. Then log on and try to trash something from within the folder.

WORKAROUND: Have the Administrator give the client write access to the root level of the volume. Then have the client delete an item. No dialog comes up, as the client has write access to create the Network Trash Folder.

But if you want to keep the same access, you'll end up with the above message.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10913

Tech Info Library

System 7: System Magic Works On Folders

Revised: 11/29/92
Security: Everyone

System 7: System Magic Works On Folders

==========

Article Created: 2 November 1992

TOPIC ----------

Will the System magic work on folders dragged to the System Folder?

DISCUSSION ----------

YES, the System magic will work on folders! Just drag a folder full of fonts, suitcases, control panels, or extensions and the System will route the items to the appropriate subfolder. It will look one level deep.

NOTE: If the folder contains only suitcases, after moving the fonts and DAs you'll see an error message for each suitcase and folder. The message says that the item couldn't be deleted because it contains items that are in use. Then it deletes the suitcases, but the folder remains.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10915

Tech Info Library

System 7: Spooling Options and Print Server Options

Revised: 7/26/93
Security: Everyone

System 7: Spooling Options and Print Server Options

==========

Article Created: 2 November 1992
Article Reviewed/Updated: 22 July 1993

TOPIC ----------

Are there any alternatives to PrintMonitor and/or the AppleShare print server?

DISCUSSION ----------

Yes. SuperLaserSpool from 5th Generation Systems will do background printing to LaserWriters and all the ImageWriters and HP LaserJets, DeskJets and DeskWriters. It also includes the desk accessory, LaserQueue, that lets you preview and prioritize documents, re-route them to other printers, or print to several printers simultaneously.

Print Central is an "enhanced" Print Server from Compumation Inc. It includes printer load balancing, an authorized user list, remote status and control, and redirection of print jobs to other printers. They also have an enhanced Print Central called Color Central. Color Central allows you to use low-resolution art files in your documents, but print corresponding high-resolution graphics that are stored on the server.

Blue Parrot from Casa Blanca Works Inc. is a control panel that displays the print queue for any networked printer in your zone. For it to work effectively, all Macintosh computers that print must run copies of the program.

Other multi-user print servers include:

- PServe from CoOperative Printing Solutions Inc.
- QSpool from Baseview Products Inc.
- SpeedDriver from Digital Technology International

Other single-user print spoolers include:

- MacTOPS from Sun Select (formerly Sitka Corp.)
- TurboSpool from PLI

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
23 July 1993 - Company title changed from Sitka Corp. to Sun Select.

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Tech Info Library Article Number:10916

Tech Info Library

AppleShare 3.0, 3.0.1: Copying Locked files on Server (4/94)

Revised: 4/1/94
Security: Everyone

AppleShare 3.0, 3.0.1: Copying Locked files on Server (4/94)

==========

Article Created: 10 December 1992
Article Change History: 1 April 1994

TOPIC -----

If I try to duplicate a locked file with AppleShare 3.0 File Server running, I get the message: "The file 'filename' couldn't be written, because you do not have enough access privileges. Do you want to continue copying?"

DISCUSSION -----

This is an issue. The workarounds are:

- Unlock the file from either the Privileges menu in the Admin application, or the Get Info window in the finder.

- Duplicate from a workstation.

- Shut down the AppleShare server.

Article Change History:
1 April 1994 - Reviewed for technical accuracy.
2 February 1993 - Reviewed for technical accuracy.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10919

Tech Info Library

AppleShare 3.0: Custom Icon

Revised: 12/7/92
Security: Everyone

AppleShare 3.0: Custom Icon

==========

Article Created: 3 December 1992

TOPIC ----------

I have put a custom icon on a folder on my AppleShare 3.0 server. A client who doesn't have access privileges, can't see the custom icon. What's going on?

DISCUSSION ----------

Custom icon information is contained in an invisible file within the folder it's assigned to. If you don't have access privileges to a folder, you can't access the custom icon file either.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10920

Macintosh: Holding Spooled Print Jobs

Revised: 12/7/92
Security: Everyone

Macintosh: Holding Spooled Print Jobs

==========

Article Created: 3 December 1992

TOPIC --------------------

Can I spool print jobs (using Print Monitor) and hold them for printing at a later time?

DISCUSSION --------------------

Yes. Before printing, open Print Monitor by double-clicking on the application (in the Extensions folder). When it's open, select "stop printing" from the File menu. Leave the window open and print the jobs you want. They will line up in the window. When you want to send them to the printer, just select "resume printing" from the file menu or select each job and set a print time, then select "resume printing."

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10926

Tech Info Library

System 7: Running QuickMail and AppleShare 3.0

Revised: 12/7/92
Security: Everyone

System 7: Running QuickMail and AppleShare 3.0

==========

Article Created: 3 December 1992

TOPIC ----------

Is there a problem running QuickMail and System 7 and AppleShare 3.0 on the same computer?

DISCUSSION ----------

There are two problems:

- The QuickMail NameServer (a Control Panel that scans the network and updates the database of QuickMail users) is erratic on a computer running AppleShare 3.0.

- If you have AppleShare Print Server and QuickMail running on the same computer, you get Fatal Errors from the Print Server. BUT, running just QuickMail (without NameServer) and AppleShare 3.0 worked fine in our testing. Please be aware that actual server usage varies from site-to-site..

Here is the official statement from the Technical Support Group, CE Software, Inc.

"AppleShare Server 3.0, which includes both file and print servers, is incompatible with the QuickMail mail server.

"This means that customers cannot use the same Macintosh computer as both an AppleShare 3.0 and QuickMail server. This incompatibility affects all versions of the QuickMail server from 2.2.x to 2.5.1. This is the same incompatibility that prevents using the QM Server and System 7.0 Personal File Sharing on the same machine. Customers who use AppleShare Server 2.01 and earlier in conjunction with the QM Server will not experience any problems.

"This problem does not effect AppleShare Server machines that operate as QuickMail clients, nor does it effect machines that act as AppleShare server clients and QuickMail clients.

CE Software recommends that any customer who needs to use both AppleShare 3.0 (and Print Server) and QuickMail run these servers on separate machines unless you have obtained a copy of AppleShare AppleShare Server 3.0.1, which corrects the problem."

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10928

Tech Info Library

AppleShare: Access Error on Workstations Using System 6.0.5

Revised: 12/7/92
Security: Everyone

AppleShare: Access Error on Workstations Using System 6.0.5

==========

Article Created: 4 December 1992

TOPIC ----------

We have AppleShare workstations using system software version 6.0.5, and an AppleShare 3.0 server. We created a drop folder within a folder that has privileges set to See Files and See Folders but not to Make Changes. We're getting an Access Error when moving a file into the drop folder. We have no problems from a System 7.0 workstation. We tried with both AppleShare 2.0 and 3.0 workstation software on the workstations.

DISCUSSION ----------

Upgrade the workstations to use system software version 6.0.7 to solve the problem.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10929

Tech Info Library

AppleShare 3.0: Print Server Launch Requires LaserWriter Driver

Revised: 12/7/92
Security: Everyone

AppleShare 3.0: Print Server Launch Requires LaserWriter Driver

==========

Article Created: 4 December 1992

TOPIC ----------

We want to use AppleShare print server software for an AppleTalk ImageWriter II printer only. We can't launch the print server software. We get a message saying, "The print server had trouble getting to the LaserWriter file. Please make sure the print drivers are installed correctly."

DISCUSSION ----------

AppleShare 3.0 print server software requires the LaserWriter driver before it can launch. It won't function properly with just the AppleTalk ImageWriter driver.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10930

Tech Info Library

AppleShare 3.0: Installing Over the Network

Revised: 12/7/92
Security: Everyone

AppleShare 3.0: Installing Over the Network

==========

Article Created: 4 December 1992

TOPIC ----------

The AppleShare 3.0 Administrator's Guide, on page 161, says to do a live install from either a System 7 or a System 6 computer. After telling the Installer which files I'll need and clicking on the Install button, I get this error message: "The files needed for this installation could not be found on your server volume 'server name'. Please contact your network administrator."

DISCUSSION ----------

A live installation can actually be done, but there's an error in the manual. It says to name the workstation software folder on the server "AppleShare". The Installer is looking for an "AppleShare Workstation" folder or disk and can't complete the installation. Please rename the folder "AppleShare Workstation".

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10932

Tech Info Library

Macintosh: Printing Incompatibility with Irwin Accelerator

Revised: 12/7/92
Security: Everyone

Macintosh: Printing Incompatibility with Irwin Accelerator

==========

Article Created: 4 December 1992

TOPIC ----------

I can see my printer in the Chooser and can select it, but when I print, the system can't find the printer. I'm using a Macintosh SE with an Irwin Magnetics Accelerator 20/25.

DISCUSSION ----------

Irwin Magnetics confirmed the card isn't compatible. The easy solution is to disable it from the control panel.

However, they did mention that one of their customers made some custom changes to their own control panel and released it as shareware that supposedly takes care of the problem. They said it could be downloaded from America Online or CompuServe.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10933

Tech Info Library

System 7.x: Generic Icons After Installing (8/95)

Revised: 8/31/95
Security: Everyone

System 7.x: Generic Icons After Installing (8/95)

==========

Article Created: 4 December 1992
Article Reviewed/Updated: 31 August 1995

TOPIC ----------

You upgrade to System 7.x and complete the installation successfully. But when you restart, you find that all your icons (including system extensions, Control Panels, and applications) look generic. Disk First Aid says no repair is necessary. Everything seems to be there, and the Macintosh boots with no problems. Rebuilding the desktop does nothing. What's going on?

DISCUSSION ----------

==========
System 7.5
==========

This problem seems to occur with v7.5 system software when you install from the new v2.0 CD. This is also a problem with any newly produced Power Macintosh systems with v7.5 software installed on the Apple hard drive. You get generic icons after a desktop rebuild.

The reason the generic icons appear is because the bundle bits on the Apple v2.0 CD are set incorrectly. When you install from this CD, the installed system file has its bundle bit turned off (it should be on) and the system enabler has its bundle bit turned on (it should be off).

Workaround
==========
If you cannot download the System 7.5 Update 1.0 at this time, but still want to fix the problem temporarily, you can try rebuilding the desktop after starting with extensions off. To do this:

Step 1

Restart your Macintosh while holding down the shift key.

Step 2

Continue holding the shift key until you see the "Welcome to Macintosh, Extensions off" Screen.

Step 3

Let go of the shift key and hold down the option and command keys simultaneously.

Step 4

Click "Okay" when the message "Are sure you want to rebuild the desktop file..." appears.

If rebuilding the desktop with the hard drive as the startup disk does not work, try rebuilding the desktop while booting from Disk Tools or System CD.

If you still have generic icons and you have a disk editor like Norton, MacTools, or ResEdit, simply turn the bundle bits on (system) and off (enabler), as described above, and rebuild your desktop file. You will be able to have the system enabler installed and get properly displayed icons.

Solution
========
Install the System 7.5 Update 1.0 to correct the issue.

These articles can help you locate the System 7.5 Update 1.0 mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates.

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

NOTE:
This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

System 7
========

On older versions of System 7, the problem is most likely that there was enough room on the hard disk to successfully install the system software, but not enough room to build the desktop correctly.

The solution is to move or delete some files to make more room on the hard disk and rebuild the desktop. You will find that all of your icons are restored.

Article Change History:
31 Aug 1995 - Added information about solution.
27 Jun 1995 - Added information about newer enablers.
28 Apr 1995 - Added information about rebuilding desktop while booting from CD or floppy.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10934

Tech Info Library

AppleShare: Excel 2.2 Can't See Files in Subfolders

Revised: 12/7/92
Security: Everyone

AppleShare: Excel 2.2 Can't See Files in Subfolders

==========

Article Created: 4 December 1992

TOPIC --

An AppleShare file server version 2.0.1 has an Excel spreadsheet buried in folders three levels deep. Everyone can see the files. One client can't open the Excel file, but can see it and copy it to the hard disk, and then open it. The client can open the file from a different computer using his password and access privileges -- so it isn't an access issue with AppleShare. He can also open the file if it's moved up one folder level on the server.

What is going on here?

DISCUSSION --

This can occur if you're using Excel 2.2. Excel can't see a file when it's more than two levels deep. Upgrading to Excel 2.2a fixes the problem.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10935

Tech Info Library

PowerBook 160 &180: Use New AC Adapter and Battery (3/95)

Revised: 3/31/95
Security: Everyone

PowerBook 160 &180: Use New AC Adapter and Battery (3/95)

==========

Article Created: 30 October 1992
Article Reviewed/Updated: 31 March 1995

TOPIC ----------

This article explains why the use of 15 wat power adapters is not recommended for PowerBook computers that require higher wattage adapters.

DISCUSSION ----------

The Macintosh PowerBook Rechargeable Battery (M5545LL/A) is only a 2.5 amp/hour battery, whereas the new "universal" battery, the Macintosh PowerBook Rechargeable Battery M5545LL/"B" (for the PowerBook 140, 145, 160, 170, and 180) is a 2.8 amp/hour battery. If the older battery is used on the PowerBook 160 and 180, there will be shorter operating life -- in the range of 1.5 hours or less.

The Macintosh PowerBook AC Adapter (M1058LL/A) is also not recommended for use on the new PowerBook 160 and 180 because it outputs only 15 watts, compared to the new AC adapter (M4660LL/A), which outputs 19 watts. If the older AC adapter is used with the PowerBook 160 or 180, the internal battery at the very least will not charge, and at worst will drain while the PowerBook is being used. The lower wattage on the original adapter does not allow for video out (no external monitors can be used).

The new AC adapter can be used with full functionality on the previous PowerBook computers.

Article Change History
---
31 Mar 1995 - Reviewed for technical accuracy.
09 Dec 1992 - Multiple corrections.

Support Information Services

..TIL10938-PowerBook_160_and180-Use_New_AC_Adapter_and_Battery_3-95.pdf

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:10938

Tech Info Library

A/UX: Unable to Use vi with DGD200 Terminal Emulation (9/94)

Revised: 9/27/94
Security: Everyone

A/UX: Unable to Use vi with DGD200 Terminal Emulation (9/94)

==========

Article Created: 30 October 1992
Article Reviewed/Updated: 27 September 1994

TOPIC ----------

I have a Data General terminal connected to a Macintosh running A/UX 3.0. I set the terminal type to be d200 in the /etc/ttytype file; my TERM, then, is set to dgd200. However, when I try to edit a file in vi, I get an error that vi doesn't know what a DGD200 is, and I'm unable to use vi. What should I do to eliminate this problem?

DISCUSSION ----------

The problem is the 'vi' application uses the System V terminfo database (not termcap) entry to do terminal emulation, and the 'dgd200' entry doesn't appear in the /usr/lib/terminfo/d directory. The 'dgd200' termcap entry does exist in /etc/termcap though.

Fortunately, there is a public domain utility program called "captoinfo" that converts a termcap database file to a terminfo source file. It reads the termcap file from standard input and writes the terminfo source to standard output. After converting to the terminfo source file, you then use 'tic' to translate it into the compiled format file. For example:

```
captoinfo < dgd200.cap > dgd200
tic dgd200
```

The dgd200 terminfo entry will be automatically put in the /usr/lib/terminfo/d directory.

The "captoinfo" utility has been posted to www.info.apple.com. Here is the URL:

```
ftp://ftp.info.apple.com/Apple.Support.Area/Extras/AUX/captoinfo.Z
```

Article Change History:

27 Sep 1994 - Updated article to show where to get the "captoinfo"
utility.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:10939

Tech Info Library

A/UX: How Disk Space is Partitioned

Revised: 10/28/92
Security: Everyone

A/UX: How Disk Space is Partitioned

==========

Article Created: 28 October 1992

TOPIC ----------

On a preinstalled A/UX system with a 400M drive, only about about 200 megabytes of disk space can be seen. Where's the rest of the disk space?

DISCUSSION ----------

By default, the 400M drive includes the following partitions with these approximate sizes:

```
     16K   MacDriver
      3M   Autorecovery
     18M   Swap
      4M   MacPartition
     160M  Root & Usr slice 0
     200M  Free UNIX slice 3
```

On a preinstalled A/UX system slice 3 is not mounted. To verify this, use the "df -B" command. You should see output similar to the following:

```
     Filesystem              kbytes    used      avail     %used  Mounted on
    /dev/dsk/c0d0s0   112311   90997   15698   85%       /
```

In the above output, "/dev/dsk/c0d0s0" refers to slice 0 on the device with scsi id (controller) 0.

To mount the other partition, first login as root. Next, create a directory to mount the slice 3 filesystem onto, such as:

```
     mkdir /slice3
```

(/slice3 is an example name; this can be any name that doesn't already exist.) Then, edit the /etc/fstab file and add the line:

```
     /dev/dsk/c0d0s3 /slice3 4.2 rw 1 1
```

where the controller/scsi id matches that of slice 0 from the "df" command output. After saving the changed /etc/fstab file, mount the filesystem:

```
     mount /slice3
```

If any errors show up, then there is probably a "typo" in the /etc/fstab file. If no errors appear, verify that the filesystem is mounted using the "df -B"

command.
The slice 3 filesystem will now be automatically mounted when the system is rebooted.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10943

Tech Info Library

A/UX: bad sblock magic number Error When Backing Up

Revised: 11/11/92
Security: Everyone

A/UX: "bad sblock magic number" Error When Backing Up

==========

Article Created: 28 October 1992

TOPIC ----------

When creating a backup of an A/UX filesystem, I get the following message:

```
  DUMP: bad sblock magic number
  DUMP: The ENTIRE dump is aborted.
```

DISCUSSION ----------

The dump.bsd command takes as its last argument the raw device file, rather than a block device (directory name). For all filesystems except the root filesystem, dump.bsd will look up the block device in /etc/fstab and use the raw device file listed there.

This error can be reproduced as follows:

```
# dump.bsd 0f /dev/null /
  DUMP: Date of this level 0 dump: Wed Oct 21 12:29:00 1992
  DUMP: Date of last level 0 dump: the epoch
  DUMP: Dumping / to /dev/null
  DUMP: bad sblock magic number
  DUMP: The ENTIRE dump is aborted.
```

Replacing the block device with the raw device in the example above will allow the dump.bsd command to execute correctly:

```
# dump.bsd 0f /dev/null /dev/rdsk/c0d0s0
  DUMP: Date of this level 0 dump: Wed Oct 21 12:43:56 1992
  DUMP: Date of last level 0 dump: the epoch
  DUMP: Dumping /dev/rdsk/c0d0s0 to /dev/null
  DUMP: mapping (Pass I) [regular files]
  DUMP: mapping (Pass II) [directories]
  DUMP: dumping (Pass IV) [regular files]
```

..TIL10944-A-UX-bad_sblock_magic_number_Error_When_Backing_Up_(TA28609).pdf

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10944

AppleShare 3.0: How to Remove and Return to System 7

Revised: 12/7/92
Security: Everyone

AppleShare 3.0: How to Remove and Return to System 7

==========

Article Created: 4 December 1992

TOPIC ----------

How do I remove AppleShare 3.0 from my Macintosh and return it to System 7?

DISCUSSION ----------

1) Remove the Users & Groups data file from the Preferences folder and restart.
2) Insert the AppleShare File Server disk in the drive and double-click the Installer.
3) Choose Customize.
4) Select items to remove. You can remove these individually or all at once depending on which you select:

   • AppleShare File Server (v3.0)
   • AppleShare Print Server (v3.0)
   • Apple II Setup (v2.1.3)
   • AppleShare Workstation (v3.0)

5) Hold down the Option key, and when the Install button becomes the REMOVE button, click on it.
6) Restart the computer.
7) The system creates a new Users & Groups data file. If you want to return to the data file you used before installing AppleShare 3.0, copy the original System 7 data file to the Preferences folder from a backup (the AppleShare 3.0 Users & Groups data file won't work).

Here's a list of the files automatically removed:

• AppleShare File Server
• AppleShare Print Server
• File Server Extension

- IWEm

There are three other files that aren't removed that you can remove manually:

- AppleShare Log (loose in System Folder)
- File Server Folder (in Preferences folder)
- AppleShare Print Server Folder (in Preferences folder)

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10948

Tech Info Library

QuickTime: Incompatibility with Third-Party Video Capture Boards

Revised: 12/8/92
Security: Everyone

QuickTime: Incompatibility with Third-Party Video Capture Boards

==========

Article Created: 4 December 1992

TOPIC --

When trying to capture video with Movie Recorder and a third-party video capture board, I sometimes get a system bomb, or sound but no video.

DISCUSSION --

According to SuperMac Tech Support and TrueVision Tech Support there's a beta copy of a "VDIG" INIT that solves these problems. You can get the necessary "VDIG" INIT from video capture board vendors when the INIT is final.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10950

Tech Info Library

At Ease 1.0: Can't Save Within Folders On Floppy Disk (6/95)

Revised: 6/13/95
Security: Everyone

At Ease 1.0: Can't Save Within Folders On Floppy Disk (6/95)

==========

Article Created: 4 December 1992
Article Reviewed/Updated: 13 June 1995

TOPIC ----------

I set up At Ease 1.0 to save to a floppy disk. When I try to save a document to a folder on the floppy disk, I get the dialog "Sorry, your work was NOT saved. You can only save onto a floppy disk. Please save again."

DISCUSSION ----------

If you have difficulty saving within a folder on a floppy disk, make sure neither of these choices are selected from the At Ease control panel:

- Add a button to At Ease
- Require a floppy disk

Unfortunately, this allows users to save to the hard disk as well as to the floppy disk.

When you select "Add a Button to At Ease" and "Require a Floppy Disk" from the At Ease control panel, some applications allow saving into a folder on a floppy disk and some won't. However, all applications will allow saving to the root level of the floppy disk.

As of the most recent article revised date below, here are some applications that allow saving to a folder:

- Microsoft Word 5.0
- Teach Text 7.1
- More 3.1
- Script Editor

As of the most recent article revised date below, here are some applications that won't allow saving to a folder:

- Microsoft Works 3.0
- Microsoft Excel 4.0
- MacWrite II 1.1v3
- Resolve 1.1v1
- Quicken 3.0
- FileMaker Pro
- Org Plus 1.0
- PageMaker 4.2
- AppleLink

Article Change History:
13 June 1995 - Corrected spelling and added 1.0 to the version number
04 May 1993 - Added an application that doesn't allow saving within folders

Support Information Services

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Tech Info Library Article Number:10951

Tech Info Library

Macintosh PC Exchange: Symptoms of INIT Conflicts

Revised: 4/30/93
Security: Everyone

Macintosh PC Exchange: Symptoms of INIT Conflicts

==========

Article Created: 4 December 1992

TOPIC ----------

What kind of symptoms are usually associated with INIT conflicts when using Mac PC Exchange?

DISCUSSION ----------

Here are some typical symptoms of INIT conflicts:

- System won't mount a correctly formatted DOS disk without being told that it's unreadable.
- Can't open the Macintosh PC Exchange control panel to make changes.
- System freezes when mounting a correctly formatted DOS disk.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10953

Tech Info Library

Macintosh PC Exchange: PC Icon on a Hard Disk

Revised: 4/30/93
Security: Everyone

Macintosh PC Exchange: PC Icon on a Hard Disk

==========

Article Created: 4 December 1992

TOPIC ----------

When I place the PC file onto the hard disk, I'm unable to assign a creator/type. The file always shows up as a PC icon and never takes on the icon of the application it's assigned to.

DISCUSSION ----------

The assignment of the suffix to a creator/type applies to files that are on MS-DOS floppy disks only. Macintosh PC Exchange's creator/type selector won't access files you mount via a network, removable hard disk, or optical disk.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10954

Tech Info Library

Macintosh PC Exchange: Apple 5.25-Inch Disk Drive

Revised: 4/30/93
Security: Everyone

Macintosh PC Exchange: Apple 5.25-Inch Disk Drive

==========

Article Created: 4 December 1992

TOPIC ----------

I have a Macintosh LC with an Apple 5.25-inch disk drive attached. When I put a ProDOS or MS-DOS disk in the drive, the computer doesn't mount it to the Desktop. Why ?

DISCUSSION ----------

A Macintosh LC uses an Apple 5.25-inch disk drive in Apple IIe mode only. Macintosh PC Exchange is only active in Macintosh mode, and therefore won't be active. A Macintosh LC in Apple IIe mode won't recognize MS-DOS disks, and a Macintosh LC in Macintosh mode won't recognize ProDOS disks. When in Apple IIe mode, it should recognize ProDOS disks.

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Tech Info Library Article Number:10955

Tech Info Library

Macintosh PC Exchange: Losing Diacritical Marks

Revised: 4/30/93
Security: Everyone

Macintosh PC Exchange: Losing Diacritical Marks

==========

Article Created: 4 December 1992

TOPIC ----------

When I convert a foreign word processor or text file (German, Spanish, French), from a DOS application to the Macintosh application, the special accent characters change or disappear from the document. Why does this happen, and what can I do to resolve the problem?

DISCUSSION ----------

Because Macintosh PC Exchange isn't a language translator, it's up to the specific Macintosh application to support the extended ASCII character set of the PC application. Be sure to use an application that supports these diacritical marks, so you won't lose them during the DOS-to-Macintosh translation of the document.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10956

Tech Info Library

At Ease: Incompatible SCSI Drivers (10/93)

Revised: 10/13/93
Security: Everyone

At Ease: Incompatible SCSI Drivers (10/93)

==========

Article Created: 4 December 1992
Article Reviewed/Updated: 13 October 1993

TOPIC -----

I selected Add Buttons in At Ease, and saved new documents to the removable drive that I mounted in the Finder mode. Now that I start up the computer in the At Ease mode, the Macintosh asks for the removable drive. When I insert the drive, the Macintosh still asks for the drive. There's no way out of this loop except to start up in the Finder mode with the extensions off.

DISCUSSION -----

Removable drives (such as Syquest) with incompatible drivers may not mount correctly. Therefore, when At Ease looks for the removable disk, and the documents that are on it, it can't resolve the alias causing the infinite loop.

Formatting the removable disk with a fully compatible SCSI utility program alleviates the problem.

Article Change History:
13 October 1993 - Added Syquest as an example.

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Tech Info Library Article Number:10958

Tech Info Library

Macintosh PC Exchange: RESOURCE.FRK File Seen on PC

Revised: 12/11/92
Security: Everyone

Macintosh PC Exchange: RESOURCE.FRK File Seen on PC

==========

Article Created: 10 December 1992

TOPIC ----------

After using Macintosh PC Exchange, I see a RESOURCE.FRK file when I put it into the PC. The PC didn't generate this. What is it, and why is it there?

DISCUSSION ----------

Macintosh PC Exchange creates a directory on the PC disk. Macintosh PC Exchange then installs resources to hold the information the same way it makes the Desktop files for the Macintosh volumes. This is normal and should be left alone if the disk will be used by the Macintosh. If you erase this file, Macintosh PC Exchange will recreate it the next time you insert the disk into a Macintosh.

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Tech Info Library Article Number:10960

Tech Info Library

System 7.1: Free Components (4/93)

Revised: 4/22/93
Security: Everyone

System 7.1: Free Components (4/93)

==========

Article Created: 29 October 1992

Article Change History

04/22/93 - REVISED
• To include QuickTime 1.6

TOPIC ----------

What components of System Software 7.1 are free-of-charge and can be distributed to the public?

DISCUSSION ----------

The following System 7.1 components can be distributed free-of-charge to our customers.

• Disk First Aid 7.1
• QuickTime 1.6
• Compatibility Checker 2.0
• TeachText 7.0
• All printer drivers on the disk
(That is, LaserWriter Driver 7.1.2, StyleWriter Driver 7.2.3, etc.)
• All currently shipping System Enablers

Note: Bulletin boards, users groups and resellers may charge a nominal fee for materials, labor and connect time.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10962

Tech Info Library

PowerBook: Recharging Batteries (5/95)

Revised: 6/27/96
Security: Everyone

PowerBook: Recharging Batteries (5/95)

==========

Article Created: 2 November 1992
Article Reviewed/Updated: 9 May 1995

TOPIC ----------

This article discusses proper methods for recharging PowerBook batteries.

DISCUSSION ----------

All PowerBook models do not use the same kind of battery; it's important to know which type of battery you're using in order to recharge it properly.

Apple uses three different types of batteries for PowerBook computers:

- Sealed Lead Acid (SLA)
- Nickel Cadmium (NiCad)
- Nickel Metal Hydride (NiMH)

Each type of battery requires a different recharging technique to ensure maximum battery life.

Sealed Lead Acid

Recharge sealed lead acid batteries whenever they become depleted and never fully discharge the battery. Lead acid batteries should always be kept fully charged.

If a lead acid battery becomes fully discharged, it may experience sulfation. Sulfation occurs when the lead electrodes inside the battery convert to lead sulfate. This destroys the battery making it unable to hold a charge.

Nickel Cadmium

Recharge nickel cadmium batteries when they become depleted. Apple recommends fully discharging and recharging the battery approximately every 90 days.

Nickel cadmium batteries are subject to an issue known as "memory effect." If a NiCad battery is only partially discharged then recharged many times, it will begin to "remember" the level it was discharged to and won't fully recharge.

Here's an example: Let's assume your PowerBook battery has a normal capacity of 2.5 hours and you use your PowerBook for 1 hour a day, then recharge the battery overnight. After a period of time, approximately between 30-90 days, you'll discover that your battery now has a capacity of a little over an hour, instead of 2.5 hours.

The only way to recover the battery's full capacity is to fully discharge it, then fully recharge it.

Nickel Metal Hydride

Recharge nickel metal hydride batteries when they become depleted. Fully discharge and recharge the battery approximately every 30 days.

Nickel metal hydride batteries are also subject to "memory" and should be treated like nickel cadmium batteries.

How to fully discharge NiCad and NiMH Batteries

The best way to fully discharge NiCad or NiMH PowerBook batteries is to use your PowerBook normally, but to ignore the low-power messages that appear on the screen. Be sure, however, to save your work frequently. When the computer goes to sleep automatically, recharge the battery completely before using that battery again.

Length of time to recharge

Allow plenty of time to recharge a battery. It may take six to eight hours to completely charge a battery on some PowerBook models, longer if you're using the computer.

When you use the power adapter to run the computer and recharge the battery simultaneously, the battery may not be completely recharged during your work session. It's a good idea to leave the adapter plugged in overnight occasionally to assure that the battery is fully charged.

Here are some ways to recharge a fully depleted battery, from fastest to slowest:

- In an external recharger (one battery)
- In the computer while shut down
- In the computer in sleep mode
- In the computer while working

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Article Change History:
09 May 1995 - Reviewed.
05 May 1994 - Updated article to remove references to specific PowerBook models and to clarify information.
07 Jun 1993 - Added information about how long to recharge batteries, and to add newer PowerBook models.

Support Information Services

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Tech Info Library Article Number:10970

Tech Info Library

PowerBook: MIDI Problems and Workarounds (6/95)

Revised: 6/13/95
Security: Everyone

PowerBook: MIDI Problems and Workarounds (6/95)

==========

Article Created: 29 October 1992
Article Reviewed/Updated: 13 June 1995

TOPIC ----------

Some PowerBook owners have had problems using MIDI because PowerBook computers have difficulty reading long data streams through their printer and modem ports. This can cause dropouts in MIDI music sequences during playback.

This problem is mostly evident when recording System Exclusive dumps, in which libraries of information, such as sound patches, are recorded to a PowerBook. Playing system exclusive information (or other data) from a PowerBook, however, is not an issue.

This article provides:

- Overview of the problem
- Workarounds
- References and tips
- Utilities that improve compatibility

DISCUSSION ----------

Overview of the Problem

The serial communication problems on PowerBook computers affected two groups of users:

- Telecommunication users who communicated primarily in the 2400-19,200 bps (bits per second) range. Their problems were addressed by the changes incorporated into System 7.1.

- MIDI users who communicate at 38,400 bps. MIDI communication problems persist due to the much higher bps speed, and the fact that, in most cases, no error detection or correction protocol is used.

Because of design changes, the PowerBook 200 series computers do not have these MIDI problems. MIDI problems experienced by Macintosh IIvx users were addressed in version 1.0.1 of System Enabler 001. This Enabler is not required under System 7.5, since it is part of the system software.

The problems had to do with the transfer of large amounts of MIDI data TO a PowerBook. It has been resolved in the PowerBook 200 and 500 series, but is still present in PowerBook 160 and PowerBook 180.

In the PowerBook 200 and 500 series, the Power Manager disables interrupts for much shorter periods than in the PowerBook 100 series, removing the possibility of missing any interrupts from the Serial Communications Controller (SCC) chip.

Normal Recording and Playback Are Possible

With the majority of PowerBook computers and MIDI sequencers (a software-based version of the analog multi-track tape recorder), "standard" operations are possible. Such operations include recording, playback, instrument change, volume, pitch bend, and panning.

Data such as polyphonic aftertouch and pitch bend, the usual culprits (they require large amounts of data to express) do not cause a problem. The problem does not occur when sending single patches to a PowerBook 100 series computer.

The problem occurs when one is performing system exclusive functions such as dumping banks of data or samples (samples are much larger, usually, than any bank of patches) to a PowerBook 100 series computer.

A Workaround for System Exclusive Data

While large data dumps are at this time not possible with PowerBook 100 series computers, there is an alternative method. Instead of sending an entire bank of data, sending the information in smaller groups (one patch at a time) is possible. While this is inconvenient in comparison to sending the entire bank of info at once, it does allow system exclusive data to be transferred successfully.

It is common to have a desktop Macintosh in the home or at the office, and to use a PowerBook for live performance or for out-of-home recording work (such as at a professional studio). Patch and sample editing (which sometimes require data dumps from a MIDI device to the PowerBook) is rarely done on stage or during recording sessions. Sound editing on stage is usually impractical. As for studio work, it is much more economical to take care of pre-production tasks, such as sound editing, at home, or at a professional pre-production facility, which is almost always billed at a lower rate than recording time.

So, away from the studio, you can still easily transfer your banks, samples and sequences to your PowerBook 100 series computer via floppy, SCSI disk mode, or Personal AppleShare.

Then, once in the remote location (recording session, on stage, etc.) with your

PowerBook 100 series computer, you will be able to send patches, banks, samples, and sequences to any MIDI devices with no problems.

Clearly, this is only an interim solution, but it does show that many PowerBook 100 series computer MIDI users can still get a great deal of functionality from their setups in the meantime.

References and Other Tips

The June 1992 issue of "Keyboard" magazine has a well-written article by Geoffrey Ryle on using the PowerBook 100 series computers and MIDI. The missing files problem he mentions was solved by using System 7 Tuner version 1.1.1 with his Macintosh. The functionality of System 7 Tuner version 1.1.1 was included in System 7.1, so Tuner is not necessary with System 7.1 or greater. In addition, the PowerBook 200 and 500 series computers do not have these problems.

Remember to always use System 7 Tuner version 1.1.1 with Systems 7.0 and 7.0.1 to ensure optimum performance and to avoid any missing files problems. Before adding Tuner 1.1.1, it is advisable to back up your hard disk-based data, initialize the disk using Apple HD SC Setup (use Maximum Macintosh in most cases), install or restore your System Software, drop Tuner into your System Folder, and then restore your data. This is also a risk-free way to optimize your hard disk.

Utilities That Improve Compatibility

Two software utilities greatly enhance compatibility between PowerBook 100 series computers and MIDI programs. Until MIDI software developers provide upgrades that address the idiosyncrasies of PowerBook ports, these two programs are very useful to PowerBook 100 series computers/MIDI users:

- Apple's MIDI Management Tools version 2.0.2

  Software that consists of a small system extension and an application. This software will be posted to Apple software updates and ftp sites in the near future.

- Opcode's MIDI Mangler

  A shareware control panel. A program component of MIDI Management Tools, called Patchbay, lets users graphically connect the MIDI sequencer program to the correct PowerBook 100 series hardware port. The program is self-explanatory and easy to use. MIDI Mangler frees the printer and modem ports, allowing MIDI signals to pass freely through them.

This article was published in the "Information Alley":
Volume II, Issue 4, Page 6

Article Change History

13 Jun 1995 - Added Info Alley information; made several technical updates.
30 Mar 1995 - Reviewed for technical accuracy, combined two articles.
03 Jun 1993 - Noted Apple's MIDI Management Tools are available from APDA.

Support Information Services

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Tech Info Library Article Number:10971

Tech Info Library

Mark of the Unicorn

Revised: 4/4/97
Security: Everyone

Mark of the Unicorn

==========

Article Created: 10/30/92
Article Reviewed: 07/13/93
Article Updated: 04/04/97

Mark of the Unicorn, Inc.

1280 Massachusetts Ave.
Cambridge, MA 02138

617-576-2760

617-576-3609 Fax

Internet: http://www.motu.com
Company Profile:
Specializing in MIDI software and hardware products for the Macintosh.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:10972

..TIL10973-Passport_Designs.pdf

Tech Info Library

Passport Designs

Revised: 7/15/93
Security: Everyone

Passport Designs

==========

Article Created: 30 October 1992
Article Reviewed/Updated: 15 July 1993

Passport Designs, Inc.
---

100 Stone Pine Road
Half Moon Bay, CA 94019

Orders: 800-443-3210

415-726-0280

415-726-2254 Fax

Company Profile:
Specializing in multimedia and utility software for both Macintosh and MS-DOS systems.

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Tech Info Library Article Number:10973

Tech Info Library

Macintosh Portable: Purpose of Dip Switches

Revised: 11/3/92
Security: Everyone

Macintosh Portable: Purpose of Dip Switches

==========

Article Created: 3 November 1992

TOPIC ----------

What are the dip switches on the Macintosh Portable logic board used for?

DISCUSSION ----------

The dip switches at S1 on the Macintosh Portable (non-backlit model) were primarily used for internal testing purposes while debugging ROMs and the power manager during the development process. They remain on the board in case the ROM slot might be needed for a ROM card in the future. The other configurations should be ignored.

The jumper on the backlit Macintosh Portable at location W200 is also used for configuring the ROM slot.

It would be recommended to use the dip switch configuration as listed below.

The non-backlit Macintosh Portable has a 4 pin dip switch that controls the ROM configuration.
When the dip switch is: UP, DOWN, UP, UP = No ROM Card
UP, DOWN, DOWN, UP = ROM CARD

The backlit Macintosh Portable has a jumper to control the ROM configuration. When the jumper is in place (shipped configuration) = No ROM Card. When the jumper is removed = ROM Card.

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Tech Info Library Article Number:10974

Tech Info Library

Macintosh Quadras: Applications Incompatible with Internal Cache

Revised: 12/8/92
Security: Everyone

Macintosh Quadras: Applications Incompatible with Internal Cache

==========

Article Created: 4 December 1992

TOPIC ----------

Every time I try to start up one or more of my applications, my Quadra crashes. The applications work fine on my other Macintosh computers. The problem even happens when I restart with extensions off. What can I do to stop this?

DISCUSSION ----------

One or more of your applications may be incompatible with the Quadra's 68040 internal cache. Try using the Cache Switch (found on the System 7.0.1 or 7.1 Tidbits disk) in the control panels, and switch it to "more compatible". Restart and try your application again.

If it works, you may want to see if a Quadra-compatible upgrade of your applications is available from the developer. Also be advised that with the Cache Switch in the "more compatible” mode, you sacrifice some of the Quadra's performance for the sake of the compatibility.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10975

Tech Info Library

System 7: Bus and Address Errors After Clean Install

Revised: 12/8/92
Security: Everyone

System 7: Bus and Address Errors After Clean Install

==========

Article Created: 7 December 1992

TOPIC ----------

I still get Bus errors or Finder Address errors even after a clean install. I have no third-party cards in the computer, and virtual memory and 32-bit addressing are off. What could be causing this?

DISCUSSION ----------

The problems could be caused by an improper SCSI configuration. You can test this by shutting down and disconnecting all external SCSI devices. Then repeat the clean install on your internal drive with no external SCSI devices connected. If the problems stop, then troubleshoot your SCSI chain.

Hint: check for long SCSI cables (5 feet or more), and replace them with shorter cables.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10976

Tech Info Library

System 7: Compatibility with Farallon Ethernet Drivers

Revised: 12/8/92
Security: Everyone

System 7: Compatibility with Farallon Ethernet Drivers

==========

Article Created: 7 December 1992

TOPIC ----------

I need a list of System 7 compatible Farallon drivers.

DISCUSSION ----------

Here's a list of Farallon compatible driver versions:

Product	Current Version	Minimum Required for System 7
Phonenet Ethernet (Nubus)	4.1	4.0.1
Phonenet Ethernet (SI,SE30)	4.0.1	4.0.1
EtherMac Cards	1.0	1.0

Incompatible Driver Problems

If the Ethernet driver software isn't updated to the minimum needed for System 7, you may experience a variety of problems, including:

- Intermittent network disconnects
- Data transfer slow-downs
- The inability to turn Ethernet on in the Network control panel

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:10977

Tech Info Library

System 7: 64K Buffer RAM on Farallon Card for AppleShare Server

Revised: 12/8/92
Security: Everyone

System 7: 64K Buffer RAM on Farallon Card for AppleShare Server

==========

Article Created: 7 December 1992

TOPIC --

My AppleShare server is responding very slowly since installing the Farallon Ethernet card. It's a System 7 compatible card and has System 7 compatible driver software. I sometimes experience temporary network disconnects.

DISCUSSION --

Farallon Ethernet-equipped Macintosh computers that get heavy network traffic like AppleShare file servers require additional buffer RAM on the Farallon Ethernet card. Most Farallon Ethernet cards ship with 16K of buffer RAM. But 64K is recommended if the network traffic is high. You can obtain the additional RAM from Farallon.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:10978

Tech Info Library

System 7: Novell Print Server Compatibility

Revised: 12/8/92
Security: Everyone

System 7: Novell Print Server Compatibility

==========

Article Created: 7 December 1992

TOPIC ----------

Does Novell provide print spooling to Macintosh computers on the Novell networks, and are they compatible with System 7?

DISCUSSION ----------

Novell Netware 286 Server, Netware for the Mac, version 2.2, provides print spooling for Macintosh computers printing to PostScript printers and it's System 7 compatible.

Novell Netware 386 Server, Netware for the Mac, version 3.0.1 or 3.0.1.1 provide print spooling for:

- Macintosh computers printing to PostScript printers, and
- Macintosh computers or PCs printing to networked printers or printers serially connected to the Novell server.

Both are System 7 compatible.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10980

Tech Info Library

System 7: Compact Virtual 3.0 and TransWarp Accelerator Board

Revised: 12/8/92
Security: Everyone

System 7: Compact Virtual 3.0 and TransWarp Accelerator Board

==========

Article Created: 7 December 1992

TOPIC ----------

I have Compact Virtual 3.0 from Connectix and a TransWarp accelerator board from Applied Engineering in my Macintosh SE. I have difficulty formatting floppy disks.

DISCUSSION ----------

Both Connectix and Applied Engineering say there's a problem with this configuration when using System 7. They tell us that System 7.1 should correct it.

If you're using System 7, turn off Compact Virtual when formatting floppy disks.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10981

Xanatech

Revised: 12/10/92
Security: Everyone

Xanatech

==========

Article Created: 30 October 1992

Article Change History

12/10/92 - UPDATED
- Company information.

Xanatech, specializing in software that helps users of two different Macintosh systems to reconcile multiple copies of files and a suite of desk accessories called Mishu to allow users to select and enter Chinese characters into Macintosh documents.

Xanatech
61 Oriole Crescent, Suite 1
Singapore 1128

Phone:
(65) 224-4073 (voice)
(65) 223-8324 (fax)
AppleLink: XANATECH

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10983

Tech Info Library

Performa and Performa Plus Display: Specifications (11/94)

Revised: 11/8/94
Security: Everyone

Performa and Performa Plus Display: Specifications (11/94)

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Article Created: 3 November 1992
Article Reviewed/Updated: 8 November 1994

TOPIC

This article contains the specifications for:

- Macintosh Performa Display
- Macintosh Performa Plus Display

The dot pitch is the key difference between the two displays.

DISCUSSION

Picture Tube

- Diagonal measurement: 14-in.
- CRT Type: P22 phosphor, single in-line gun, shadow-mask CRT

Input Signals

- Video: Analog, modified RS-343
- Sync: Composite horizontal and vertical sync

User Controls

- Front
  - Power on/off SK1 (including LED indicator)
  - Brightness
  - Contrast
  - Horizontal phase (centering)
  - Vertical centering

- Rear
  - Horizontal width
  - Vertical height

Scanning Frequencies

- Horizontal: 35 KHz
- Vertical: 66.7 Hz
- Dot clock: 31.91 ns

Video Specifications

- Resolution: 640 dots Horizontal x 480 lines Vertical
- Dot Pitch: Performa Display - .39mm
  Performa Plus Display - .29mm and .28mm
- Dots Per Inch: 67 DPI
- Bandwidth: 18 MHz
- Active Display Area: 240mm Horizontal x 180mm Vertical
- White Point: 9300 deg. K

The CIE coordinates

Red	x = .620(+-.020)	y = .340(+-.020)
Green	x = .305(+-.020)	y = .600(+-.020)
Blue	x = .155(+-.020)	y = .065(+-.020)

Shipping brightness is 32 (+-5) Foot-Lamberts

Physical Specs

- Weight: 35 lbs. (15.9 kg)
- Height: 12.75 inches (32.4 cm)
- Width: 13.9 inches (35.2 cm)
- Depth: 14.75 inches (37.5 cm)

Power Requirements

- Watts: 85 watts maximum
- Input Voltage: 98-132 VAC
- Frequency: 57-63 Hz

Environmental Requirements

- Operating ambient temperature: 50 to 104 deg. F (10 to 40 deg. C)
- Operating humidity: 90% maximum, non-condensing
- Operating altitude: 10,000 ft maximum

Input Signal Jack Pin Assignments

- Type of connector: DA-15 style connector

Pin	Function

| --- | -------- |
1	Red video ground
2	Red video
3	Composite TTL sync
4	Composite sync ground
5	Green video
6	Green video ground
7	(not used)
8	(not used)
9	Blue video
10	(not used)
11	(not used)
12	(not used)
13	Blue video ground
14	(not used)
15	(not used)
Shell	Shield ground

Article Change History:
08 Nov 1994 - Corrected White Point.
16 Aug 1994 - Corrected DPI of display to 67.
12 Jul 1994 - Added CIE coordinates.

Support Information Services

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Tech Info Library Article Number:10988

Tech Info Library

MacX 1.2 and A/UX 3.0: Compatibility and Upgrades

Revised: 11/11/92
Security: Everyone

MacX 1.2 and A/UX 3.0: Compatibility and Upgrades

==========

Article Created: 2 November 1992

TOPIC -----

This article answers several questions about MacX 1.2 and A/UX 3.0.

DISCUSSION -----

Q: Is MacX 1.2 compatible with A/UX 3.0?
A: Yes, MacX 1.2 is compatible with A/UX 3.0.

Q: If a customer has A/UX 3.0, is there a special (discounted) upgrade path to move from MacX 1.1.7 to MacX 1.2?
A: Please refer to the Apple Suggested Retail Price List for the MacX Update product for MacX 1.0, 1.1, or 1.1.7. The part number is M1197LL/B. This is your upgrade path.

Q: Does it make a difference if the customer has purchased A/UX 3.0 within the last month and also purchased the Right-to-Update A/UX 3.0?
A: No, to update to MacX 1.2 you need the MacX Update product which is available to you for a minimal charge.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10989

Tech Info Library

Baseline Publishing, Inc. (2/96)

Revised: 2/20/96
Security: Everyone

Baseline Publishing, Inc. (2/96)

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Article Created: 3 November 1992
Article Reviewed/Updated: 20 February 1996

Baseline Publishing, Inc.

1770 Moriah Woods Blvd.
Suite 14
Memphis, TN 38117-7118

901-527-2501

Company Profile:
Formerly Preferred Publishing, Inc., software, specializing in publishing systems for the Macintosh.

Copyright 1992-96, Apple Computer, Inc.

Tech Info Library Article Number:10991

Tech Info Library

Macintosh Quadra 700, 900: Built-In Video (3/93)

Revised: 3/25/93
Security: Everyone

Macintosh Quadra 700, 900: Built-In Video (3/93)

==========

Article Created: 9 October 1992

Article Change History

03/23/93 - REVISED
- To break into separate articles.
- To synchronize with similar article on Macintosh Centris series and Quadra 800.

- RETITLED
- To specify Quadra 700 and 900 models.

TOPIC ----------

This article, by the designer of the Macintosh Quadra's video hardware, discusses a number of general Quadra video topics.

DISCUSSION ----------

The Quadras were designed with a flexible video hardware section in order to support a wide variety of displays. Since the purchaser of one of these systems is paying for a frame buffer on the logic board (whether (s)he wants it or not), and since the Quadras were designed to be high-performance machines, the frame buffer was designed to be both very flexible (to support most displays a user may want to use) and to be relatively high performance (to match the computer's capabilities).

Obviously every display made by every third-party monitor vendor can't be supported by the onboard video, but the Quadras do support a much wider range of displays at a higher level of performance than any previous Macintosh. The Quadra 700 and 900 support pixel depths ranging from 1 to 32 bits per pixel (bpp), Apple displays ranging from the 512 x 384 12-inch color monitor through the 1152 x 870 21-inch color monitor, pixel clocks ranging from 12 to 100 MHz, and a variety of industry standards such as VGA, SVGA, NTSC, and PAL. The Quadra video port produces RS-343 RGB,

and also provides horizontal, vertical, and composite sync outputs.

Composite or S-video output is not provided, but can be accomplished by use of an external RGB-to-composite encoder. The Quadra 700 and 900 also support Apple convolution for flicker-reduction on interlaced displays (i.e., NTSC and PAL) at up to 8 bpp. The Quadras automatically detect the type of display attached to the video connector via three 'sense' pins on the video connector. Depending on the wiring of these three pins, software in ROM configures the video hardware for one of the supported display types. (A full description of sense pin wiring and supported display types is in another article.)

The Quadra series provides the highest built-in video performance of any Macintosh to date. In a (very) simplified graphics model, we could say that performance depends on two main factors: processor horsepower and the bandwidth the processor has into frame buffer memory. These systems already have a fast processor -- the 68040 -- which runs standard 32-bit QuickDraw. To provide high bandwidth into frame buffer memory, dedicated video RAM (VRAM) was used for the frame buffer, and that VRAM was placed directly on the 68040 processor's local bus. This provides the 68040 the same access time into frame buffer memory that it has into main system RAM. (Transfer rates can exceed 40MB/sec.) In addition, memory options such as fast page mode are supported, which can improve graphics performance for operations such as scrolling, offscreen-to-onscreen pixmap transfers, etc.

In a number of cases the design was optimized for high performance over low cost. A good example of this is 32 bpp operation on Apple's standard 13-inch RGB monitor at 640 x 480 resolution (and this also applies to VGA and NTSC), which is probably the most common color monitor in use on the Macintosh. The actual number of memory bytes needed to support 24 bpp is 640 x 480 x 3 = 921,600. This would seem to fit within 1MB of memory (as is the case with the Macintosh Display Card 8•24), but the Quadras actually require 2MB of VRAM for this mode. The 8•24 card supports 24 bpp at 640 x 480 by using a storage mode called 'chunky planar' to fully utilize all its 1MB of VRAM. However, this results in having to perform three separate memory accesses for each 24-bit pixel read from or written to the frame buffer. (This is done in hardware, so software only performs a single read or write.) On a NuBus video card, this inefficiency is partially masked by the synchronization delays which occur at the processor-bus/NuBus interface. However, when frame buffer memory is placed directly on the processor bus, this approach results in a nearly 3x performance degradation. This was judged unacceptable for the Quadras. Each 24-bit pixel occupies one longword (4-bytes) in VRAM, so the Quadras actually provide 32 bpp for the 640 x 480 resolution. This pushes the memory requirement for this mode over the 1MB boundary (640 x 480 x 4 = 1,228,800 bytes). Performance is improved still more by another frame buffer architectural feature. Frame buffer memory in the Quadras is organized into 4 'banks' of 512 KBytes per bank. As mentioned earlier, Quadra VRAM can operate in fast page mode. In addition, each bank of VRAM operates in fast page mode independently of the other 3 banks. This causes the number of in-page 'hits' to increase, and thus improves the effective bandwidth into the frame buffer. Also, at 32 bpp, 640 x 480 resolution, each row is set to 4096 bytes, or 1024 32-bit pixels. Each

successive row is assigned to a different VRAM bank (modulo 4, of course).

This memory organization improves performance during certain commonly performed graphics operations such as vertical scrolling.

In any design there are a number of tradeoffs to be made, and this is certainly true for the frame buffer in the Quadras. While the video does operate at 32 bpp on up to 16-inch displays, it does not support 21-inch displays at this pixel depth since this would have significantly raised the cost of the motherboard. (Memory capacity and bus bandwidths would essentially have to double, and this would be expensive.) It does support NTSC and PAL timing, but does not provide a composite video output. While it is much faster than any non-accelerated video card, there are accelerated video cards that are faster (and much more expensive). A separate graphics processor was not added primarily for cost reasons. However, a graphics processor such as the 29000 RISC chip on the Display Card 8•24 GC can only speed up the graphics operations that it was designed to know about. If an application program bypasses QuickDraw (which is what most Macintosh graphics accelerators are designed to speed up), a graphics accelerator will not improve performance, and can actually cause a performance degradation.

Overall, the Macintosh Quadra video provides a reasonable compromise of cost, performance, and features, which provides the video needed by the majority of Macintosh users at a reasonable price.

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Tech Info Library Article Number:10992

Tech Info Library

Performa 600: Difference Between Accelerator and NuBus Slots

Revised: 11/11/92
Security: Everyone

Performa 600: Difference Between Accelerator and NuBus Slots

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Article Created: 4 November 1992

TOPIC ----------

What is the difference between the Accelerator and NuBus Slots in the Performa 600?

DISCUSSION ----------

NuBus Slots

The NuBus slots of the Performa 600 are designed to accommodate networking, video, and other expansion cards. Expansion cards in NuBus slots are restricted to run at the clock speed of the NuBus, which is 10 MHz.

Accelerator Slot

The Accelerator slot of the Performa 600 is a 120-pin slot that is designed to accommodate a CPU accelerator card. The slot is directly connected to the microprocessor and doesn't have any restrictions on its clock speed. An accelerator card, which functionally replaces the microprocessor, must be able to run at high speed and cannot run in a NuBus slot, which is restricted to 10 MHz.

Note that the Performa 600's Accelerator slot signals are a subset of the Macintosh IIci cache connector slot. Processor address, data and some control signals are provided, but cache control signals are NOT provided. Cache cards, such as the Macintosh IIci cache card, will not work in the Performa 600's Accelerator slot.

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Tech Info Library Article Number:10994

Tech Info Library

StyleWriter: How to Clean Ink Stains From the Platen

Revised: 11/11/92
Security: Everyone

StyleWriter: How to Clean Ink Stains From the Platen

==========

Article Created: 4 November 1992

TOPIC ----------

How should I clean ink stains from a StyleWriter's platen?

DISCUSSION ----------

If your StyleWriter's platen becomes stained with ink, you should first run a few sheets of clean paper through the printer. If this doesn't remove all of the ink, dampen a soft cloth -- with water only -- and wipe the platen clean.

Do not use any chemicals or abrasives on the platen, as they will deteriorate the platen surface.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10995

Tech Info Library

MacX: bdf Extension Is the Key to Compiling bdf Fonts (11/92)

Revised: 2/16/93
Security: Everyone

MacX: bdf Extension Is the Key to Compiling bdf Fonts (11/92)

==========

Article Created: 30 November 1992

TOPIC ----------

When I try to compile bdf fonts in MacX, MacX returns the message "Unable to open font compiler output ..."

Disk space and access privileges are not a problem.

DISCUSSION ----------

When MacX compiles a bdf font, it gives the output file the same name as the input file, after stripping the .bdf extension. If the file does not have the .bdf extension to start with, MacX tries to overwrite the opened input file. Because this file is already open, MacX fails with the error you described above. The solution is to add the suffix .bdf to all the source files used to compile bdf files under MacX.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:10997

Tech Info Library

Apple 13 and 14 Color Displays Compared to VGA Monitors

Revised: 11/11/92
Security: Everyone

Apple 13" and 14" Color Displays Compared to VGA Monitors

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Article Created: 5 November 1992

TOPIC ----------

This article describes the main differences between VGA monitors and Apple's 13-inch and 14-inch color displays: the AppleColor Hi-Resolution RGB Monitor and the Macintosh Color Display.

DISCUSSION ----------

There are several variations of VGA monitors, but they all operate on newer MS-DOS computers that support the VGA standard.

The Apple displays you mention have a standard screen resolution of 640 by 480 pixels. There are, however, significant differences between the operational specifications of the Apple Monitors and VGA Monitors.

Refresh rate

VGA monitors	60 hz (actually 59.94 hz)
Apple displays	66.7 hz

Refresh rate is the number of times per second (or cycles) that a complete new screen is written. The Apple displays have a faster refresh rate than VGA monitors. This helps to produce an essentially flicker-free screen. In addition to looking better, it reduces eye strain that accompanies the 60hz rate of the typical VGA monitor.

Bandwidth

VGA monitors	18 to 24 Mhz
Apple displays	30.24 Mhz

Monitor bandwidth is the major factor that determines the amount of video

"detail" that is displayed on the screen. It is a direct function of the monitor hardware, and cannot be changed. Given the bandwidth specifications listed above, the Apple Monitors provide a superior video image when displaying highly detailed graphics.

CRT Flatness

The surface of the CRT screen of the Apple Monitors is considerably flatter than that of VGA monitors.

Flatter screens are easier to read, which makes using the Apple displays more pleasant than the comparable VGA monitor.

Dot pitch

VGA monitors	from 0.29 to 0.39 mm
Apple displays	0.26 mm

Dot pitch is the distance between CRT pixels. As the dot pitch gets smaller, the display becomes sharper. Dot pitch in the 0.29 to 0.39 mm range produce an increasingly grainy look as the dot pitch value approaches 0.39 mm. The Apple displays' smaller dot pitch provides a sharper and cleaner appearance than a VGA monitor.

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Tech Info Library Article Number:11003

Tech Info Library

GS/OS: Tools 50, 51, and 52 from FirstByte

Revised: 11/11/92
Security: Everyone

GS/OS: Tools 50, 51, and 52 from FirstByte

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Article Created: 6 November 1992

TOPIC ----------

How can I get tools 50, 51, and 52 for Apple IIGS?

DISCUSSION ----------

These tools are not produced by Apple. They were developed by FirstByte. It appears that the only place these tools are still available are from a company called The ByteWorks, whose product TalkingTools is application development libraries for programmers.

To locate a vendor’s address and phone numbers, use the vendor name as a search string.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11004

Tech Info Library

PowerBook RAM Upgrades: Don't Remove Rubber Heat Sinks 11/92

Revised: 5/16/94
Security: Everyone

PowerBook RAM Upgrades: Don't Remove Rubber Heat Sinks 11/92

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Article Created: November 9, 1992

TOPIC ----------

I have a third-party 4MB RAM upgrade I want to install in a PowerBook, but it doesn't fit because four chips on the daughterboard have a large 1/4- inch piece of rubber on top of them. What is the rubber for, and is it safe to remove it?

DISCUSSION ----------

The pieces of rubber on the chips are heat sinks. It is essential that you leave them in place, because if you remove them:

• Too much heat will be generated internally.

• Warranty coverage is voided.

Apple has given strict design guidelines to third-party developers, and we suggest that customers get verification that products meet Apple specifications.

Support Information Services

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Tech Info Library Article Number:11005

Tech Info Library

The ByteWorks, Inc.

Revised: 4/4/97
Security: Everyone

The ByteWorks, Inc.

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Article Created: 11/06/92
Article Reviewed: 07/06/93
Article Updated: 04/04/97

The ByteWorks Inc.

4700 Irving Blvd., NW, Suite 207
Albuquerque, NM 87114

(505) 898-8183

Company Profile:
Software, specializing in development tools for Apple II computers.

Copyright 1992-97, Apple Computer, Inc.

Tech Info Library Article Number:11008

Tech Info Library

System 7 Fonts Fldr: Advantage to Store Fonts Suitcase? (2/95)

Revised: 2/15/95
Security: Everyone

System 7 Fonts Fldr: Advantage to Store Fonts Suitcase? (2/95)

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Article Created: 11 November 1992
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

When using System 7.1 or 7.5, is there any advantage either in memory utilization or performance in storing fonts in one suitcase file in the Fonts folder, or storing them individually as font files?

DISCUSSION ----------

There is one advantage to storing the fonts all in one (or many) suitcase files in the Fonts folder. The Fonts folder is limited to 128 font or suitcase files, if you have many individual fonts, you can reach this limit fairly quickly. Combining multiple fonts into a font suitcase helps manage to this limit.

The only performance benefit with fonts in System 7.1 is during installation of the font. Under 7.1 and higher you simply drag fonts into a folder rather than opening up the system file.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy.
06 Sep 1994 - Additional benefits of suitcases documented.
23 Sep 1993 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:11010

Tech Info Library

Macintosh IIvx: Clock Speeds

Revised: 11/11/92
Security: Everyone

Macintosh IIvx: Clock Speeds

==========

Article Created: 11 November 1992

TOPIC -----

I've heard that the processor in the IIvx is not a "true" 32 MHz, and that the processor is similar to the Intel DX2 clock doubling technology. Is this true?

DISCUSSION -----

As you are aware, Apple has produced various architectural solutions to computing problems over the years. Some, like the IIfx and Quadras, do so by running the microprocessor and other associated components at a higher clock speed than the rest of the main logic board. For example, the IIfx has a 40 MHz 68030 and a 20 MHz I/O bus. The Quadra 700 and 900 have a 25 MHz 68040 and a 16 MHz I/O bus. And the Quadra 950 has a 33 MHz 68040 and a 25 MHz I/O bus.

On the IIvx, the cache, FPU, and the 68030 run at 32 MHz. Whereas, the RAM, ROM, VRAM and the I/O subsystem run at 16 MHz. The IIci and IIsi have the same main logic board and microprocessor clock speeds.

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Tech Info Library Article Number:11011

Tech Info Library

PowerBook/DOS Companion: Description

Revised: 3/14/94
Security: Everyone

PowerBook/DOS Companion: Description

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Article Created: 16 November 1992
Article Reviewed/Updated:9 February 1993

TOPIC ----------

This article describes the PowerBook/DOS Companion software product.

DISCUSSION ----------

With Apple's PowerBook/DOS Companion, you can:

- Connect a Macintosh PowerBook computer to any PC-compatible (Intel- or MS-DOS-compatible) computer, either desktop or laptop, either with the kit's cable or via modems.

- Transfer files between the two computers in either direction, and convert files between the most popular word processing, graphics, spreadsheet, and database formats.

- Use MS-DOS or Windows 3.5-inch diskettes as if they were Macintosh diskettes.

- Connect to most VGA monitors with a PowerBook 160 or 180, or with a PowerBook Duo 210 or 230 connected to a Macintosh Duo MiniDock.

- Print documents directly from your PowerBook with your printer -- whether it's a laser, ink-jet, or dot-matrix -- using PowerPrint.

What's Included

MacLinkPlus/PC from DataViz
- Handles file translations and transfers from DOS and Windows to Macintosh
- Works with more than 700 of the most popular word processing, graphics, spreadsheet, and database programs
- Includes direct connect cable

Macintosh PC Exchange software from Apple
• Recognizes MS-DOS, Windows, and OS/2 disks

MacVGA Video Adapter from James Engineering
• Supports most VGA and SVGA monitors to display work in 256 colors
• Works with PowerBook 160 and 180, and with PowerBook Duo 210 and 230 connected to a Macintosh Duo MiniDock

PowerPrint from GDT Softworks
• Supports print drivers for more than 1000 printers
• Includes serial-to-parallel cable

Support

All of these products work with desktop Macintosh computers, as well as with PowerBooks. Apple supports Macintosh PC Exchange; support for the other software products in the kit is provided by their respective vendors.

Ordering Information

• PowerBook/DOS Companion
• Order No. M9400LL/A

Article Change History

9 February 1993 - Retitled to the official product name.
2 December 1992 - Revised to include updated information.

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Tech Info Library Article Number:11013

Tech Info Library

SNMP Technical Introduction, Part 1 of 3

Revised: 11/24/92
Security: Everyone

SNMP Technical Introduction, Part 1 of 3

==========

Article Created: 10 November 1992

TOPIC ----------

This is the first of three articles that introduce SNMP (Simple Network Management Protocol). This article describes the evolution of management and troubleshooting tools used by network administrators, and describes network management for the Macintosh.

DISCUSSION ----------

Introduction

Since the early days of data communications, network administrators have been searching for ways to increase the availability, usefulness, and performance of their networks.

The networking environment has also changed. Data communications has become much more complex since the days of point-to-point low-speed serial connections. Today's networks consist of not only traditional point-to-point connections, but include LANs (Local-Area Networks) serving distributed databases, network servers, and other services. The ability to centrally administer services, configure network devices, detect and diagnose problems, and plan for future growth has become critical to the successful operation of any large network.

Packet Analyzers

One of the first tools developed was the packet analyzer. Early packet analyzers consisted of dedicated hardware and software, such as the Hewlett-Packard Datascope, or (more recently) Network General's Sniffer.

These devices capture and analyze network packets. They must be physically connected to the cable segment being monitored in order to see all the traffic. Packet Analyzers operate at the Physical and Data Link layers of

the OSI model. To decode and analyze the captured packets, the packet analyzer must understand the various protocols on the cable. Furthermore, to monitor connection-oriented protocols, the packet analyzer must maintain the state of the connection so it can understand the actions of the entities involved.

Interpreting and analyzing network packets usually requires technical knowledge of the protocols, so packet analyzers are used mainly by experienced network administrators.

Recently, various vendors have developed lower cost, lower performance packet analyzers which run on desktop computers. For example, the AG Group's EtherPeek and LocalPeek, and Neon Software's NetMinder Ethernet and NetMinder LocalTalk products run on the Macintosh.

Network Monitors

The second type of passive network management tool is the Network Monitor. A monitor observes network traffic to keep track of various services and other important network information. These products typically issue a warning if a service suddenly disappears, or if there is something odd about the traffic originating from a particular node. Network monitors rely on the traffic output by various services on the network, so are very useful in environments where services advertise themselves, such as AppleTalk.

Monitoring at the Transport and Network layers of the OSI model provide further advantage.

A number of Network Monitor tools have emerged for AppleTalk environments, including NetWatchman and TrafficWatch II. While network monitors are more useful in managing networks than packet analyzers, they still do not allow control of the network.

Pro-Active Network Management

The third class of tools involve pro-active network management. These tools can manage network routers, bridges, gateways, nodes, servers and other devices on the network. In multi-vendor networking environments, this is still a developing field. Perhaps the biggest risk of pro-active management is the security scheme implemented to prevent unauthorized manipulation of the network and its resources. And of course, everyone on the network must agree on the management protocol in order for this to be successful on a multi-vendor network.

Historically, the software to manage a particular networking device has been provided by the vendor of that device. Because no standards existed until recently, a specific vendor's console usually could not manage other vendors' devices, unless it was specifically designed to do so. As networks grew, customers often found themselves connecting networks with products from different vendors, and trying to manage their networks using different, and incompatible, management software. Consequently, managing large networks was, and still is, fairly difficult.

Pro-active network management requires access to all seven layers of the OSI model, as services such as file servers and print spoolers require management at the application layer.

SNMP is a good example of a tool with good pro-active management potential. SNMP has a number of advantages over proprietary management schemes, and these will be discussed in detail later.

Network Management and AppleTalk

AppleTalk networks are really no different from others in regards to troubleshooting, monitoring, and active management.

Many of Apple's customers, especially large customers, have been asking for tools to manage Macintosh computers and AppleTalk networks for a number of years.

Tools such as Apple's Inter•pol, and products like Status•Mac from Pharos Technologies and GraceLAN from Technology Works, Inc. have attempted to address this need through proprietary protocol implementations using AppleTalk as transport.

Recently, this demand has risen dramatically, as customers increasingly interconnected their networks and as network management solutions standards, like Simple Network Management Protocol (SNMP), started emerging. MacIS (a Macintosh users group consisting of Management Information Systems professionals) has put network management from Apple near the top of their wish list for two years (1990-91). In 1991, they further specified that this solution should be SNMP-based.

Recently, Apple had embarked on a strategy to implement yet another proprietary network management scheme utilizing new AppleTalk protocols, AppleTalk Management Protocol. In the process of creating this product, feedback from our customers, field support and sales staff, as well as internal project participants leads to a decision to change the direction of our network management strategy.

Instead of inventing a new protocol, the team decided to adopt an open industry-standard implementation leveraging off existing management and transport equipment and software -- a direction strongly supported by our customers, field support, sales staff, and organizations such as MacIS.

Besides addressing a major customer need with SNMP based network management products, Apple has an opportunity to have a major impact on the Internet-standard Network Management framework definitions, particularly those that address the AppleTalk environment. Further, this enhances the ability of Apple and third parties to develop unique and state of the art tools to aid in the design, setup, management and growth of new existing AppleTalk based devices in a multi-vendor, multi-protocol, environment.

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Tech Info Library Article Number:11015

SNMP Technical Introduction, Part 2 of 3

Revised: 11/24/92
Security: Everyone

SNMP Technical Introduction, Part 2 of 3

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Article Created: 10 November 1992

TOPIC ----------

This is the second of three articles that introduce SNMP (Simple Network Management Protocol). This article describes SNMP's history, management model, and architecture.

DISCUSSION ----------

SNMP History

Simple Network Management Protocol (SNMP) originated in the Internet community as a means for managing TCP/IP networks and Ethernet networks.

Every large network sooner or later displays a need for management and control, and the worldwide TCP/IP Internet is no exception.

In November 1987, a working group of the Internet Engineering Task Force (IETF) submitted a proposal to address some of these needs. They defined the Simple Gateway Management Protocol (SGMP), an early attempt at TCP/IP Internet management, and the forerunner of SNMP. SGMP is similar to SNMP in design and architecture, however syntax differences make the two incompatible.

In August 1988, the same four authors enhanced their proposal, and submitted a draft standard (Request For Comments 1098 entitled "A Simple Network Management Protocol"). RFCs are a method of defining and discussing enhancements to the Internet.

One of the main design criteria was simplicity. Another was to make the monitoring and control capabilities quite extensive. Due to the variety of devices on the Internet, the authors wanted to create an architecture independent of any specific host/gateway architecture.

In April 1989, RFC 1098 became an Internet Recommended Standard, and was rapidly implemented on the worldwide Internet.

SNMP's appeal broadened rapidly beyond the Internet community. SNMP attracted users looking for a proven and readily available way to manage their networks. SNMP's monitoring and control mechanisms operate completely independent of the TCP/IP protocol. SNMP requires only the datagram transport mechanism to operate. It can be implemented over any network media or protocol suite, including AppleTalk.

In May 1990, RFC 1098 was re-released, with typographical errors corrected, and a rewritten status section. RFC 1157 is the basis for Apple's network management strategy.

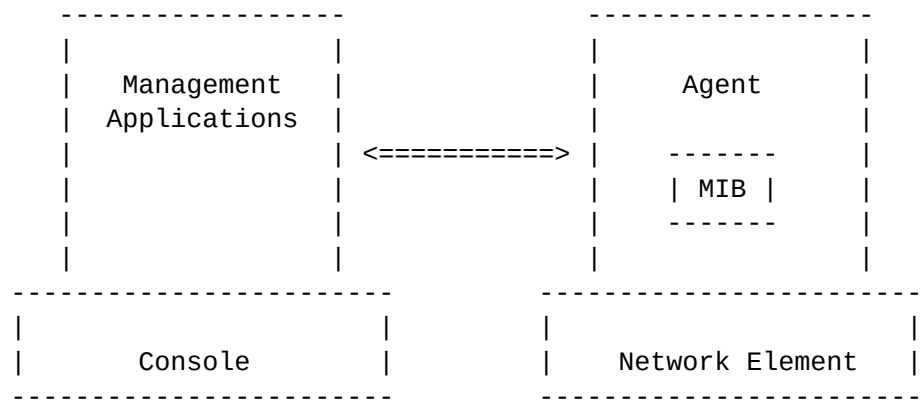
The Management Model

A network management system contains three main components:

- Several network elements, or nodes, which need to be managed.
- At least one management station used to administer the network.
- A management protocol that is used to communicate between the nodes and the manager.

SNMP Architecture

The SNMP architecture conforms to this management model. It defines these three major components: managed nodes (network elements), at least one network management station (console), and a protocol to communicate between the two. The diagram below displays this relationship in SNMP.



Network Elements (Nodes)

Network elements are devices such as hosts, gateways, terminal servers, and desktop computers. They are also known as managed nodes, nodes, or "entities." Network Elements can also be hubs or multiplexors. Although simple in concept, the network elements actually perform most of the work in SNMP, and contain all the information a management console needs to perform its function.

Consoles

Consoles are the management stations. They execute management applications to monitor and control network elements. They display, often graphically, the state of the current network and any alarms present.

The Protocol

SNMP is used to communicate management information between the network management stations and the agents in the network elements.

Inside the Network Element (Node)

Agents. Network Elements have agents responsible for performing the functions requested by the network management stations. Agents do the real work in SNMP management. Agents execute commands issued by the console, as well as reporting on unusual events.

Agents control and provide access to a Management Information Base (MIB), which contains the information to respond to console requests and updates.

Overview of the MIB

SNMP depends on the relationship between the console, agents, and the MIBs and agent controls.

The MIB contains groups, which are collections of objects.

Objects define data types, such as text strings, counters, gauges, time ticks, addresses, and integers. Each object has a unique name. (The naming convention used is discussed in the next section.)

The data fields that objects define are called variables. These are the fields where the actual data or value is stored. Each variable also has a unique name, using the same convention as the objects.

MIBs are encoded using OSI's Abstract Syntax Notation One (ASN.1). This language is used to define the objects in the MIB. ASN.1 is an international standard, implemented by most of the world's computer manufacturers. ASN.1 encoding makes the MIB platform independent.

The Structure and Representation of MIB Objects and Variable Names

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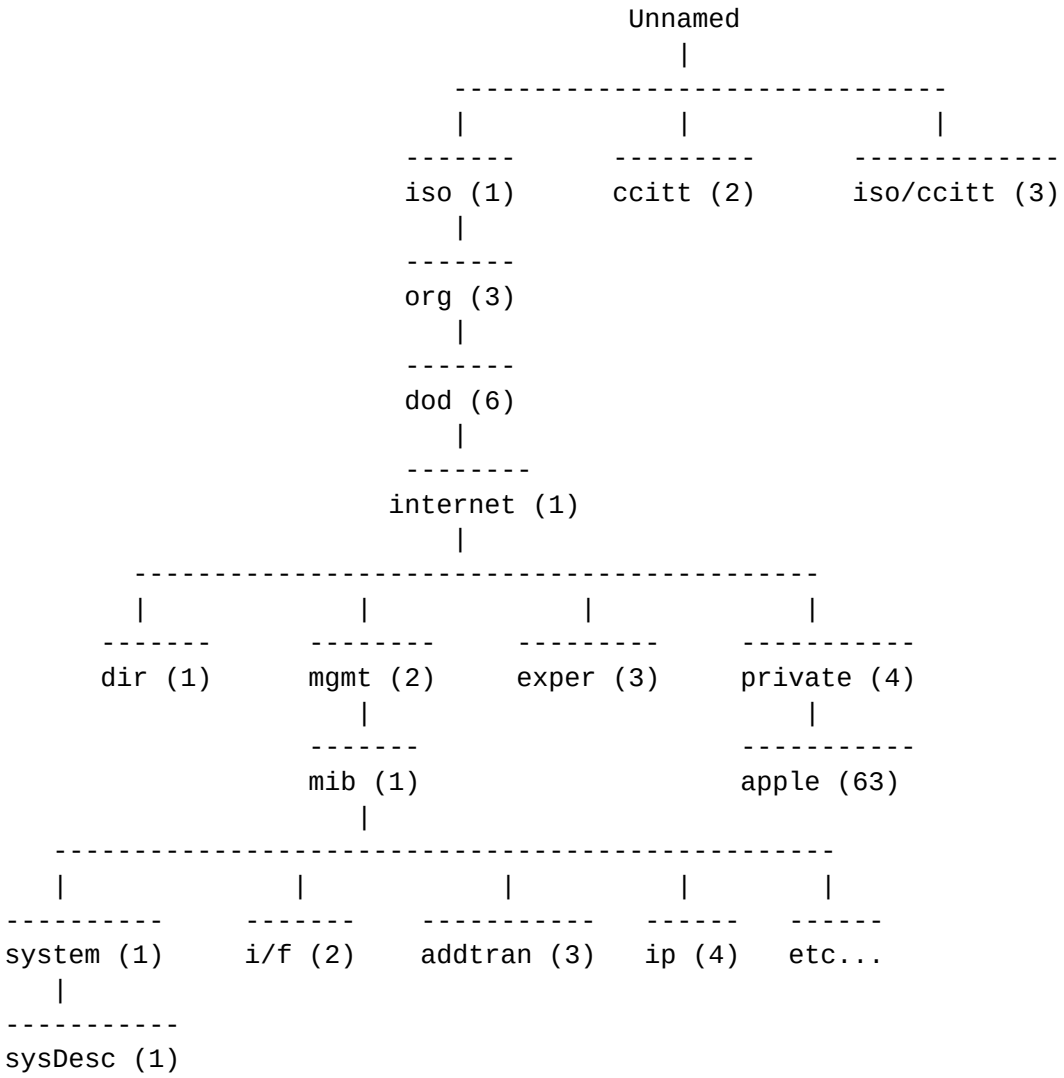
Names used for MIB objects and their variables are taken from the object identifier namespace, administered by ISO and CCITT. The key idea behind the object identifier is to provide an environment in which all possible objects can be uniquely named.

Authority for parts of the namespace is subdivided at each level, allowing individual groups to assign names without consulting a central authority for each assignment.

This tree structure is used to identify each and every MIB object, and in fact they are accessed programmatically using this structure.



In the figure above, each item has a number associated with it. These numbers correspond to specific paths to locate information in an SNMP network element, and give each object a unique name. For example, the unique name for the object that contains the system description (machine type) of the network element is described as:

iso.org.dod.internet.mgmt.mib.sys.sysDesc

The number representation of the above map is:

1.3.6.1.2.1.1.1

SNMP consoles actually use the number string to address the objects in the packets that travel the network, and in the programs used to construct the packets. Although this number string addresses the object, it is not enough to address the first variable containing the data or value, which is the number the console really wants.

There are no zeros on the map because a zero is used to reference the

actual data (value) of a variable.

To obtain a value from the object named sysDesc, add a zero to the number string. Therefore, a Get command would use 1.3.6.1.2.1.1.1.0 to obtain this value. An example of a response would be the text string "Macintosh IIx."

A significant benefit of this architecture is that it allows the development of consoles that can manage the products of many different vendors -- because all the objects are unique. Generic SNMP consoles, which often know little or nothing about specific manageable network devices, incorporate, or are able to import, MIBs because the coding and data representation rules are standardized, and the object names are preassigned and unique.

One of the main features of SNMP is allowing vendor-specific implementations of the MIB. Non-standard, vendor-specific MIBs would come under the Enterprise branch of the object identifier namespace. Organizations, such as Apple, can apply to the Internet Activities Board (IAB) for specific Enterprise numbers to keep their MIBs unique. Apple Computer's Enterprise number is 63, and over 100 other companies have applied for unique numbers, to provide an indication of how many vendor-specific MIBs will be implemented over time.

Consoles can compile imported MIBs and issue commands to agents. These consoles then display, often graphically, the information returned by the agents. Because these generic consoles are not product specific (MIBs are) they can even be used to manage network products that ship after the console itself is sold.

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Tech Info Library Article Number:11016

SNMP Technical Introduction, Part 3 of 3

Revised: 11/24/92
Security: Everyone

SNMP Technical Introduction, Part 3 of 3

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Article Created: 10 November 1992

TOPIC ----------

This is the third of three articles that introduce SNMP (Simple Network Management Protocol). This article describes SNMP Protocol and Operations, Management Concepts, and concludes with a comparison of OSI vs. SNMP.

DISCUSSION ----------

SNMP Protocol and Operations

The next step is to get the management console(s) in communication with the nodes on the network.

Messages
Communication among protocol entities is accomplished by the exchange of messages, each of which is entirely and independently represented in a datagram. SNMP messages require only an unreliable datagram service, and every message is entirely and independently represented by a single transport datagram.

With SNMP, TCP/IP networks use User Data Protocol (UDP) to exchange messages. With AppleTalk, the Datagram Delivery Protocol (DDP) is used.

A message consists of a version identifier, an SNMP community name, and a Protocol Data Unit (or PDU), which contains the command and its operands. As was the case with MIBs, messages and data all use the basic encoding rules of OSI's Abstract Syntax Notation One (ASN.1). This allows data exchanges to occur smoothly over a variety of platforms.

SNMP Command Set
The network management protocol allows the variables of an agent's Management Information Base (MIB) to be inspected or altered. The protocol is based on sending requests and getting responses. Most commands are

requests to either set the value of some parameter or to retrieve such a value.

To make SNMP simple, its designers defined a limited command set. A console can issue only three commands: Get, GetNext, and Set.

- The Get command allows a console to read a specified management variable in the managed device. An agent would execute a GetResponse command to return desired values to the console.

- The GetNext command allows the console to read the subsequent variables in the agent's database (MIB) without specifying the name of that particular variable. This command allows even consoles that do not have the appropriate MIB installed to manage SNMP based network devices. Perhaps the most powerful use of this command is to obtain an entire string of data with one call, as GetNext accepts multiple operands. SNMP advocates like to refer to this command as the "powerful GetNext command."

A console can also modify certain variables for which the console has the required access privileges using the Set command. This allows an administrator to reset a variable that keeps count of a certain occurrence, or to remotely set a flag that signals an agent to perform some specified function. An agent would execute a GetResponse command to return desired values to the console.

An agent can issue two commands: GetResponse and Trap.

- The GetResponse command is used by an agent to assemble and return values to the console.

- Finally, the Trap command allows a managed entity to send a message to a specific console, when a specified event occurs. The agent is responsible for detecting the event and issuing the Trap command.

Trap Implementations
Traps must be pre-programmed into Network Elements. They are not down line loaded to the network elements by the console.

SNMP uses a method called trap-directed polling. When an event causing a trap occurs, the managed node sends a single simple trap to the console. The console is responsible for initiating further interactions with the managed device to determine the problem. This is quite different from a polling approach, where each network element is constantly probed for status. It also minimizes management traffic on the network.

SNMP Management Concepts

SNMP Community
In the SNMP environment, a community is a relationship between SNMP agents and SNMP managers.

Each SNMP community is named by an NVT ASCII text string that is called the community name.

Community Views

Each managed device contains a community view. This view determines how much access (read only, read and write, or no access at all) the management console has for each given object.

Managed devices can belong to several communities at once. Each console can therefore have different views of the data contained in the managed device.

Security

The community name is a security feature in SNMP. For a console to reference a MIB or issue a set command, it must have the correct community name. Unfortunately, community names are not encrypted. Community names use the ASN.1 Display String (text) object type, which is transmitted in NVT ASCII. Someone monitoring the network with a packet analyzer could ascertain the community name in use by a particular console. IETF is currently working on a new security scheme for SNMP, which would encrypt community names.

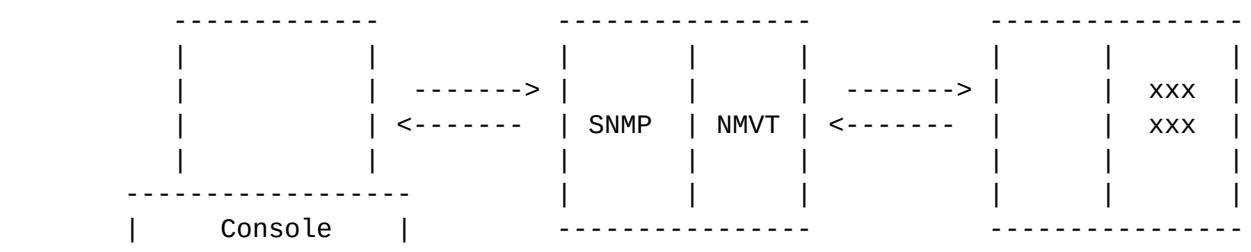
If the community name matches a name configured in the managed device, the console must have a correct view. As discussed earlier, this view determines if the console has read access, read and write access, or no access at all.

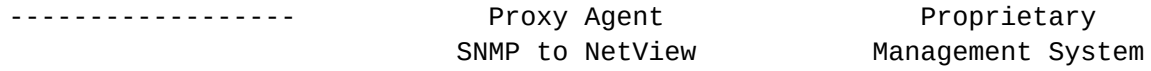
Managing "Foreign" Devices Using Proxy Agents

SNMP is independent of the architecture and mechanisms of particular hosts or particular gateways. SNMP can manage devices that do not conform to the architecture using Proxy Agents. Proxy agents allow SNMP to be used in environments that comprise multi-vendor devices using different protocols and different management schemes.

In the case of nodes that do not understand SNMP, a Proxy Agent can be used to translate one management protocol to another. An example would be a Proxy Agent that converts SNMP into Network Management Vector Transport (NMVT), the protocol used by IBM's NetView.

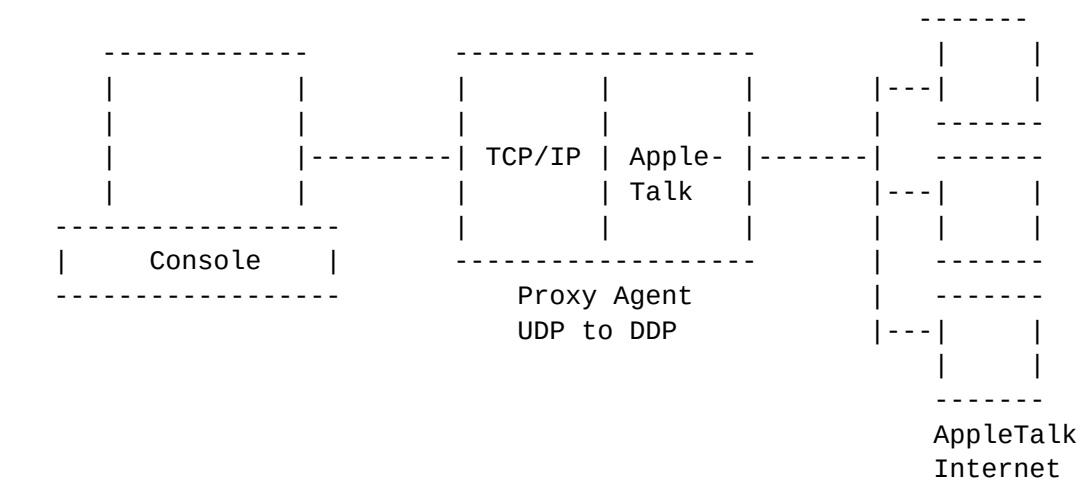
In the example below, the Proxy Agent is performing the aforementioned translation. An example is IBM's NetView 6000 running on an RS6000 platform, which implements SNMP translation for SNA networks. It is acting as an "application gateway."





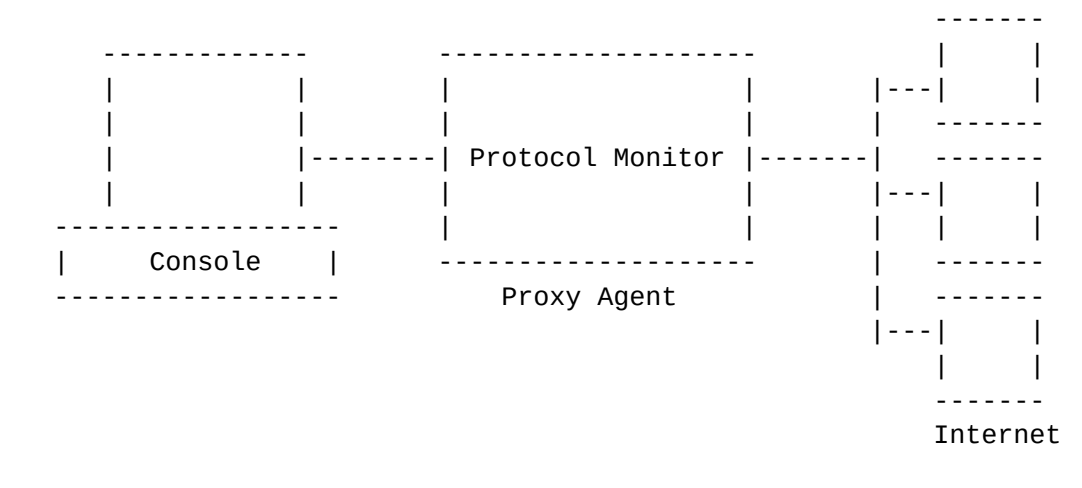
In the case of nodes that do not understand TCP/IP, but do support SNMP, a Proxy Agent can strip out the SNMP-specific data units and encapsulate them in another transport. A more complicated function of this type of agent is address remapping/resolution between the two networks.

Below is an illustration of a Proxy Agent that allows consoles using TCP/IP to manage AppleTalk networks using MacSNMP. This agent is acting as a "transport gateway" in standards parlance. Examples of this are the Cayman GatorBox, the Shiva FastPath, the Compatible System EtherRoute, and Cicso routers running release 9.0 gateway software.

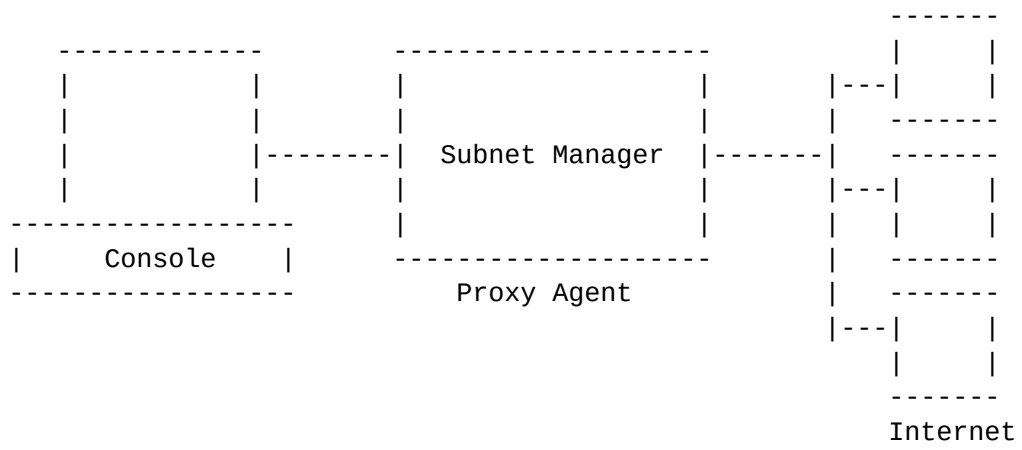


Other types of Proxy Agents can be used in SNMP networks. For example, Proxy Agents can sit on a network and monitor packet traffic, gather statistics, and send traps to consoles when certain conditions occur.

This is illustrated below. The console could then query these Proxy Agents to obtain their statistics, or to further analyze the trap condition reported. Examples are LANtern from Novell, Asante's network management hubs, and protocol monitor from Network General that also captures and decodes packets.



A Proxy Agent can be responsible for specific nodes on the network, monitoring them on behalf of the console and sending a high-level trap when something of interest happens. This is illustrated below.



This Proxy Agent has the added advantage of cutting down on network traffic, and frees the console from having to monitor a large number of nodes on a one-to-one basis. Subnet managers are under development by several vendors.

OSI vs. SNMP

SNMP and CMIP Differences

Many people are confused about the differences between SNMP and OSI's Common Management Information Services (CMIS) and its associated protocol, Common Management Information Protocol (CMIP).

Part of the confusion is that both protocols share some things in common. Both use Management Console/Agent architecture, and both use MIB structures to keep track of information -- but this is where the similarities end.

SNMP is a connectionless oriented protocol. Its commands and responses are transported with datagram transports like UDP and AppleTalk's DDP. These transports do not require formal session establishment between the manager and the managed to pass commands or responses. CMIP is a connection oriented protocol, requiring a session to be established between the manager and the managed to pass information. In the TCP/IP world, CMIP would use TCP as transport.

Another difference is the command set. CMIP uses Get and Set commands like SNMP, and has a command (similar to the SNMP Trap) called Event Report. The difference in the command set is that CMIP implements three additional commands: action, which can command a device to reboot for example; create, which is used to create new objects; and delete, which deletes objects.

One can duplicate the functions of these three commands in the SNMP world using the Set command to change a variable, which would then trigger an agent to perform specific programmed actions duplicating the function of action, create, and delete, but the SNMP command set does not support these

functions directly.

Additionally, CMIP uses a concept called scoping to locate a particular value by passing its locations and depth in the target node's tree. Further, these values can be filtered to segregate information.

What Is CMOT?

CMOT, short for CMIP Over TCP, implements the CMIP protocol in TCP/IP networks. Note the use of the connection oriented protocol, TCP, instead of UDP datagrams.

In Conclusion

The simplicity of the SNMP architecture and command structure has been discussed. It is a proven, established direction, with over 50 companies offering more than 200 networking products that support SNMP. SNMP is here today.

SNMP can be enhanced by extending the MIB to support product-specific features of different manufacture. This structure must be imported and compiled by the console to intelligently access different portions of a vendor-specific MIB.

Although SNMP seems simple on the surface, the detail is really in the MIB portion of the implementation, different than other management protocols with large detailed command sets.

SNMP has received some criticism in some areas. For instance, there is no capability defined to ensure that SNMP commands received by an agent really originated from an actual authorized management console. The IETF is working hard on improving security in SNMP, and this problem will be resolved shortly.

In the meantime, MIB variables can be protected by making them read only, but this will not allow the use of a Set command to change them. This lack of sophistication in authorization has made vendors reluctant to offer extensive functions that take advantage of SNMP's Set command. Hence, most routers are still configured with the vendor's own management utilities.

Additionally, the Trap command has caused practical problems in its implementation, as a managed device must constantly evaluate its function to determine if a trap should be executed, spending valuable CPU time and occupying memory in the process. In practice, this impact has proved to be relatively minor.

SNMP uses datagrams for transport. Datagrams do not provide delivery assurance. Messages can arrive out of sequence, or may be lost or duplicated. Most vendors implement a numbering scheme to address out-of-sequence conditions and duplications -- but messages can still get lost. On the other hand, when a network is in trouble, how can it be expected to support connection oriented sessions when the physical transport is unreliable?

In comparison to other network management proposals such as OSI's CMIP, SNMP is viewed by the OSI community to be not as versatile or applicable to a broad range of network products. In fact, some view SNMP as a "down-and-dirty fix" until CMIP is ready. And although SNMP's authors have done their best to map SNMP architecture into CMIP, they are incompatible.

However, SNMP's public domain distribution, relative ease of implementation compared to other network management scenarios, and its growing installed base make it a popular choice for users with multi-vendor networks.

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Tech Info Library Article Number:11017

Tech Info Library

Macintosh IIvx: New System Enabler Aids MIDI Transfers (9/94)

Revised: 9/26/94
Security: Everyone

Macintosh IIvx: New System Enabler Aids MIDI Transfers (9/94)

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Article Created: 21 January 1993
Article Reviewed/Updated: 26 September 1994

TOPIC ----------

System Enabler 001 version 1.0.1 corrects problems that a Macintosh IIvx may have with large transfers of MIDI data.

DISCUSSION ----------

Initially, the Macintosh IIvx encountered difficulty in receiving large System Exclusive (SysEx) transfers from other MIDI devices. This situation occurred due to interrupts being held inactive for periods longer than the MIDI protocol could handle without losing data.

This situation would not affect most SysEx transfers to the Macintosh IIvx, since a transfer could last for approximately 2.5 minutes without interruption. Since most MIDI devices can transfer all of their data in approximately 20-30 seconds, most MIDI devices would not encounter any difficulty. Samplers would be the most obvious exception. Because they transfer megabytes of data it would be possible to exceed the 2.5 minute time frame.

The issue has been addressed with the release of the enclosed System Enabler 001, version 1.0.1. This System Enabler for the Macintosh IIvx supersedes the earlier System Enabler 001, version 1.0.

System Enabler 001 version 1.0.1 easily allows a time frame of 5 minutes for a SysEx transfer. This is enough time for transfer 2MB of data from a MIDI device to the Macintosh IIvx. These are minimum specifications.

Standard 1MHz MIDI interfaces do not have any difficulty working with the Macintosh IIvx and the 1.0.1 version of the enabler. The use of faster MIDI interface boxes may cause the difficulty described above to reappear with the Macintosh IIvx even when used with the 1.0.1 version of the enabler.

Article Change History:
26 Sep 1994 - Removed binary attachment.

Support Information Services

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Tech Info Library Article Number:11018

Tech Info Library

PowerBook: Three Kinds of Batteries (6/94)

Revised: 6/9/94
Security: Everyone

PowerBook: Three Kinds of Batteries (6/94)

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Article Created: 11 November 1992
Article Reviewed/Updated: 9 June 1994

TOPIC ----------

Three different kinds of batteries are used in the various PowerBook models. This article describes which models use which kind of battery.

Each type of battery should be treated differently. A separate Tech Info Library article describes how to treat each battery type for maximum life. Also see the owner's guide for each PowerBook model.

DISCUSSION ----------

Battery Type	PowerBook Models
Sealed Lead Acid (SLA)	PowerBook 100
Nickel Cadmium (NiCad)	PowerBook 140, 145, 160, 165c, 170, 180, 180c
Nickel Metal Hydride (NiMH)	PowerBook Duo 210, 230, 250, 270c, 280, 280c PowerBook 520, 520c, 540, 540c

Article Change History:
9 June 1994 - Added PowerBook 280, 280c, 520, 520c, 540, 540c.
1 April 1994 - Updated formatting, added PowerBook 180c, Duo 250, and 270c.
16 March 1993 - Updated to add PowerBook 165c.

Support Information Services

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Tech Info Library Article Number:11020

Tech Info Library

PowerBook: How the Serial Port Arbitrator Works

Revised: 5/31/94
Security: Everyone

PowerBook: How the Serial Port Arbitrator Works

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Article Created: 28 October 1992

TOPIC -----

What is the Serial Port Arbitrator, and how does it work? Can I take it out?

DISCUSSION -----

The serial port requires exclusive access. Through the use of arbitration, multiple applications can use the serial port. Consider the situation where Remote Access is waiting for a call and you want to use AppleLink. When Remote Access is waiting for a call, it has "passive claim" on the serial port which is relinquished when AppleLink needs the port. When AppleLink relinquishes its "active claim" to the serial port, Remote Access then reestablishes its "passive claim".

Therefore, if you remove the arbitrator AND have Remote Access set to answer calls, Remote Access will have sole claim on the port and not allow any other programs to use it. This is the only situation where you will encounter a problem.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11021

Tech Info Library

QuickTime: QuickTime for Windows Description (9/94)

Revised: 6/5/96
Security: Everyone

QuickTime: QuickTime for Windows Description (9/94)

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Article Created: 11 November 1992
Article Reviewed/Updated: 8 September 1994

TOPIC ----------

QuickTime for Windows, a set of Windows Dynamic Linked Libraries (DLLs), can be installed on any PC and used by any Windows application adapted to QuickTime's application programming interface. The latest version of QuickTime for Windows is 1.1.1.

DISCUSSION ----------

With QuickTime for Windows, Apple has developed a cross-platform multimedia standard to provide users with a consistent interface and file format for working with digital video, sound, animation, and other multimedia data. Using QuickTime, authors and publishers will have a simple way to distribute their work in a single file format. QuickTime for Windows will also give multimedia programmers and developers one cross-platform multimedia programming interface.

QuickTime for Windows is an implementation of the QuickTime architecture on Microsoft's Windows environment. QuickTime for Windows provides Windows users with the portions of QuickTime needed to playback and control QuickTime Movie files and compressed still images. With the availability of QuickTime for Windows multimedia, authors, developers, publishers, and users can work with QuickTime Movies on Macintosh, Silicon Graphics, and PCs running Windows. Through QuickTime, users on Macintosh and Windows PCs will be able to easily exchange files, rely on a consistent human interface, and use a variety of modular compression technologies for storing multimedia information.

Support for add-in decompressors will allow third-party developers to add their own compression technologies to those already included with QuickTime for Windows. For instance, Apple and Intel are jointly integrating Intel's Indeo video compression technology into QuickTime on Macintosh and Windows.

New Features of QuickTime for Windows 1.1.1

QuickTime for Windows 1.1.1 offers improved performance, easier integration with existing Windows applications, and open extensibility for third-party developers.

Significance

QuickTime for Windows 1.1.1 provides significantly improved performance through support for Apple Compact Video, the advanced software compression technology introduced in QuickTime 1.5 on the Macintosh. Integration into existing Windows applications has been made easier through support for Windows 3.1 MCI (Media Control Interface) and OLE (Object Linking & Embedding) release 1.0. Support for customized add-in products enable third-party developers to add features such as custom decompression technology. Like QuickTime for Windows 1.0 and 1.1, version 1.1.1 includes the same QuickTime Movie file format, human interface, image decompression capabilities and programming interface as the Macintosh version of QuickTime, making it easier for developers to implement direct support of QuickTime in Windows applications.

Increased Performance

QuickTime for Windows 1.1.1 supports the advanced Apple Compact Video codec (compressor/decompressor), introduced in QuickTime 1.5 for Macintosh, that enables Movies to play either at twice the frame rate (up to 30 frames per second) or across four times the screen area (up to 320x240 screen size, software only) as supported by the earlier release. QuickTime for Windows 1.1.1 supports playback through video acceleration hardware, when used with display drivers that directly support QuickTime for Windows.

Windows Integration

Integration of QuickTime Movies into existing Windows applications is now easier with the support for MCI and OLE 1.0 in QuickTime for Windows 1.1.1. The new support for MCI integrates QuickTime for Windows into authoring and presentation applications for precise playback control. With OLE support, QuickTime Movies can be easily integrated into business applications that support OLE, adding impact with video footage, animation sequences and sound clips to documents, spreadsheets and presentations. Microsoft's Visual Basic 2.0 is also supported for creation of custom Windows multimedia applications using QuickTime.

Third-Party Hardware Support

Additional audio and video cards are supported in QuickTime for Windows 1.1.1, giving more Windows customers access to QuickTime technology. Digital video in QuickTime Movies is optimized for playback on display cards capable of showing from 256 colors (8-bit) to 16 million colors (24-bit).

Third-Party Software Support

Several software vendors have announced that they will support QuickTime for Windows in their products. Among those announcing are Adobe Systems; Corel Systems; Claris Corp.; Lotus Development Corp.; MacroMedia; and WordPerfect Corp. Additionally, several PC hardware and peripherals vendors have announced support for QuickTime for Windows in their products. The list includes

Creative Labs; Dolch Computer; and Media Vision.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Availability

QuickTime for Windows is bundled with various Windows and cross-platform multimedia CD-ROM titles, clip libraries, and applications. Apple offers QuickTime for Windows in a Software Development Kit (SDK) designed for professional programmers, and sold through the APDA, Apple's developer tools distribution group.

To receive a QuickTime Starter Kit, call 1-800-538- 9696, extension 175, to contact an Apple software reseller.

Requirements

QuickTime for Windows requires a minimum of a 386SX CPU running at 20 MHz, equipped with 4MB of RAM, an 80MB hard disk, and a VGA or better graphics card. Movies with sound require installation of a Windows-compatible PC sound card. Also required is MS-DOS 5.0 or later and Windows 3.1 or higher. A CD-ROM drive and graphics card displaying at least 256 colors are recommended.

Article Change History:
08 Sep 1994 - Reviewed for accuracy & added Fax information.
24 Feb 1994 - Retitled.
10 Aug 1993 - Added information about version 1.1.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:11023

Tech Info Library

Ethernet NB Card and Quadra Built-in Ethernet: Bus Width

Revised: 12/11/92
Security: Everyone

Ethernet NB Card and Quadra Built-in Ethernet: Bus Width

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Article Created: 11 November 1992

TOPIC --------------------

Does the Apple Ethernet NB card use a 16-bit data path or a 32-bit data path?

DISCUSSION --------------------

The Apple Ethernet NB card and the Ethernet LC card use a 16-bit data path.

The Macintosh Quadra built-in Ethernet interface utilizes a 32-bit data path.

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Tech Info Library Article Number:11027

Tech Info Library

PowerBook 160 & Later: AutoRemounter, Display, & Battery (7/95)

Revised: 7/20/95
Security: Everyone

PowerBook 160 & Later: AutoRemounter, Display, & Battery (7/95)

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Article Created: 12 November 1992
Article Reviewed/Updated: 20 July 1995

TOPIC ----------

There are three files included with the PowerBook 160, 165c, 180, 180c, and 200 series (Duo) computers that are not included with the System 7.1 Personal Upgrade Kit or Update Kit. They are:

- Battery desk accessory has no visible difference with the one included with system 7.1.

- PowerBook Display control panel controls the backlight and the built-in video.

- AutoRemounter control panel remounts any file servers that were connected when the system went to sleep.

DISCUSSION ----------

These control panels are not included with System 7.1 because they are computer specific.

The only one of these that works on all PowerBooks is the PowerBook Display control panel. It lets the backlight go off, thus conserving power. The control panel has two features: dimming and video mirroring. The video mirroring is supported only on the PowerBook computers that support external monitors with the built-in video port. The dimming feature works on all the PowerBook computers, including the PowerBook 100, 140,145, and 170. All PowerBook users can take advantage of this power saving feature.

When turned on, AutoRemounter lets a PowerBook sleep without a warning dialog box appearing about losing network services. It also remounts any file servers that were connected when the system went to sleep. AutoRemounter works with all models except the PowerBook 100, 140, 145, 145B, and 170.

The PowerBook File Assistant collection of software includes AutoRemounter and the PowerBook Display control panel. This is available to all PowerBook owners.

Article Change History:
20 Jul 1995 - Corrected AutoRemounter spelling; reviewed; reformatted.
03 Aug 1993 - Removed reference to control panel on AppleLink
expanded Display control panel info for 160 and later.
07 Jun 1993 - Included info on PowerBook Display, battery Desk Accessory,
and PowerBook File Assistant.

Support Information Services

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Tech Info Library Article Number:11029

Tech Info Library

LaserWriter Driver 7.x: Problem Printing Linked Files

Revised: 1/21/93
Security: Everyone

LaserWriter Driver 7.x: Problem Printing Linked Files

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Article Created: 20 January 1993

TOPIC ----------

A customer is having a problem when printing merged Extended PostScript (EPS) files from FrameMaker or Microsoft Word to a LaserWriter.

Using System 6 LaserWriter print drivers, they could print up to 10 EPS files at a time. Each file would be named "PostScript#" (where # is the number of the file, from 0-9).

When they use LaserWriter 7.x drivers in Microsoft Word, the first document is printed to a file and the remaining files are sent to the printer. When using the same drivers with FrameMaker, the system hangs or crashes.

DISCUSSION ----------

Printing linked or merged files is a known problem with the LaserWriter print drivers and is more fully discussed in Macintosh Technical Note #312. Here is a brief explanation of the problem:

The Printing Manager call, PrJobMerge, is responsible for printing merged or linked files. This call is implemented by the currently chosen printer driver. Since the printer driver may store job-specific printing information anywhere in the print record, only the printer driver can correctly merge this into a destination print record.

LaserWriter print driver version 7.x does not correctly merge all print job-related data (such as the number of copies requested) into the destination print record. As a result, the job may not print properly.

Also, in LaserWriter driver version 7.x, PrJobMerge destroys all the print job-specific information in the source print record after it fails to copy this information into the destination print record.

The best workaround is to unlink your files and print them separately.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11037

Tech Info Library

AppleCD 300: New Features Require Application Support

Revised: 12/8/92
Security: Everyone

AppleCD 300: New Features Require Application Support

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Article Created: 25 November 1992

TOPIC ----------

How do I access the CD+G, CD+MIDI, and CD-XA file formats of the AppleCD 300 family of CD players? When I play a CD+G compact disc, the audio portion plays easily, but the graphics never appear.

DISCUSSION ----------

The ability to access the various CD formats provided in the AppleCD 300 family requires a software application that can send the appropriate instructions to the AppleCD 300.

The same situation exists with the ability to play standard audio CDs on an Apple CD-ROM drive: you must have CD Remote (or a similar piece of software) to allow an Apple CD-ROM drive to play audio CDs. The general principle is that if a software application does not support a particular feature, that feature is unavailable.

At the announcement of the AppleCD 300, there are no available applications that provide access to the CD+G, CD+MIDI, and CD-XA features of the AppleCD 300 series.

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Tech Info Library Article Number:11038

Tech Info Library

Macintosh: 16-bit to 8-bit Audio Conversion

Revised: 12/8/92
Security: Everyone

Macintosh: 16-bit to 8-bit Audio Conversion

==========

Article Created: 25 November 1992

TOPIC ----------

I'm recording some voice audio files to be played back into MacroMind Director. I record them in 16-bit audio with digidesign's AudioMedia card. I convert the files to 8-bit audio with MacroMedia's SoundEdit Pro. The converted sound is very low quality.

I realize that 8-bit has a smaller dynamic range than 16-bit, but the noise added isn't just a steady noise. The noise is a hissing sound that seems to rise and fall with the speakers voice.

Is this sound degradation expected? Are other programs or sound formats better at converting 16-bit to 8-bit audio? Are there any steps I can take to reduce this noise?

DISCUSSION ----------

Downsampling (moving from 16-bit to 8-bit and moving from 44.1 KHz to 22 KHz) is strictly a software operation. Therefore, it's the method of changing from one bit-per-sample/sample rate format to another that is introducing the noise.

Downsampling only the bits (16-bit to 8-bit) is generally not the part of the sequence that introduces the most noise. Although, any method of changing the bit-per-sample count will cause a change of character in the sound. The conversion from 44.1 KHz sampling rate to a 22 KHz rate creates the most opportunity for major introduction of noise. The downsampling of sample rates is more an art than a pure science; thus, different programs could easily produce quite different results.

We discussed the issue of using SoundEdit Pro for this procedure with the MacroMedia Tech Support group. They suggested that the downsampling take place within the software package where the sampling originated. For example, if the original digital recording is in AudioMedia's Sound

Designer, downsample in Sound Designer. Then use the resulting sound file in SoundEdit Pro and MacroMind Director.

Degradation should be expected during the downsampling. The exact form it takes will be based on which hardware/software elements are used to perform the task. Many sound engineers who must work with 8-bit sound record the original digital recording in 8-bit. This provides far less room for error than recording in 16-bit sound and then converting to 8-bit.

The introduction of noise isn't related to the file format, unless compression (that is, MACE) is used when the file is saved. Compression can easily add noise, and should be expected when compressing.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:11039

Tech Info Library

DAL: Common F Messages Coming From VTAM DAL Server to a

Revised: 12/14/92
Security: Everyone

DAL: Common F Messages Coming From VTAM DAL Server to a Client

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Article Created: 13 November 1992

TOPIC ----------

This article describes the most frequent F Messages coming from a VTAM DAL server to a client.

DISCUSSION ----------

VTAM errors are documented in the VTAM Installation Guide and these errors never get sent to the client. There are 'F Messages' which can come from the VTAM server to the client, and the most common are:

F000000001	Terminal I/O Error
F000000004	Invalid or Missing Userid
F000000008	Invalid or Missing Password
F000000012	Password has Expired
F000000016	New Password is Invalid
F000000020	User not defined to Group
F000000024	RACINIT Failed
F000000028	Access has been Revoked
F000000032	RACF not Active
F000000036	Group Access Revoked
F000000100	Userid in Use
F000000108	Server Terminated by Cancel
F000000112	Server terminated by Closedown

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Tech Info Library Article Number:11040

Tech Info Library

Personal LaserWriter LS: Minimum Print Margins in Legal Size

Revised: 7/6/93
Security: Everyone

Personal LaserWriter LS: Minimum Print Margins in Legal Size

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Article Created: 7 December 1992

Article Change History

07/01/93 - Updated
- Added requirements needed to achieve minimum margins

05/13/93 - Updated
- To describe how to achieve minimum margins

TOPIC ----------

What are the minimum size margins one can obtain with a Personal LaserWriter LS using legal size paper and "Larger Print Area" ?

DISCUSSION ----------

Here are the minimum margins achievable on a Personal LaserWriter LS using Legal sized paper:

Minimum top and bottom margins for Legal: .75 (3/4")
Minimum left and right margins for Legal: .25 (1/4")

Requirements:

.5MB or 1MB RAM
Personal LaserWriter 7.2 driver
Larger Print Area ENABLED in Page Setup

The Personal LaserWriter LS drivers (earlier than version 7.2) were designed for 1-inch margins to maintain compatibility with the Personal LaserWriter SC. Customers who upgrade the Personal LaserWriter SC to the Personal LaserWriter LS will not encounter

margin issues.

The earlier Personal Laserwriter LS driver had these minimum margins with Legal paper:

- Top And Bottom .750 Inches
- Left And Right .875 Inches

Note: The Personal LaserWriter LS 1MB RAM upgrade DOES NOT provide minimum TOP and BOTTOM margins of .25 inches.

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Tech Info Library Article Number:11046

Tech Info Library

AT&T and IBM Cable Types and Specifications (2/95)

Revised: 2/2/95
Security: Everyone

AT&T and IBM Cable Types and Specifications (2/95)

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Article Created: 18 November 1992
Article Reviewed/Updated: 02 February 1995

TOPIC ----------

I need basic information on cabling specs, features, and benefits for discussions with customers regarding the following cable types:

- AT&T type 1 through 5
- IBM type 1 through 5

DISCUSSION ----------

IBM

Here is the information on IBM cable types. There is no type 4, nor type 7.

Type 1: 2 shielded, solid wire, twisted pair, 22 AWG, heavy jacket. Available for plenum or non-plenum interior use, and underground or aerial exterior use. Use of Type 1 permits transmission at 16 Mbps, and a maximum of 260 stations, 33 MAUs per ring. Maximum lobe length is 330 feet.

Type 2: 2 shielded, solid wire, twisted pair, 22 AWG, plus 4 twisted pairs of solid 26 AWG wires added between the shield and the insulation cable sheath. Type 2 also supports 16 Mbps transmission.

Type 3: Unshielded, telephone grade (22 or 24 AWG) twisted pair, typically found inside a building. Requires a media filter at (or within) the NIC, and limits the transmission rate to 4 Mbps, and the number of workstations to 72.

Type 5: 100/140 micron fiber optic cable, used to connect distant MSAUs with fiber optic repeaters.

Type 6: Patch cables consisting of data grade, stranded, shielded twisted pairs, 26 AWG. When used, the distance limits are 66% that of Type 1.

Type 8: Under carpet cable, data grade twisted pair cable, 26 AWG. When used, the distance limits are 50% that of Type 1.

Type 9: Shield twisted pair, 26 AWG approved for plenum installations. When used, the distance limits are 66% that of Type 1.

AT&T

Unlike IBM's cable types, which can be non-twisted pair, AT&T types (more often referred to as Level) are all twisted pair cables.

Level 1: Used for voice and low speed data, digital and analog, RS-232.

Level 2: Unshielded twisted-pair, equivalent to IBM Type 3. Used in IBM 3270, IBM System 3X/AS/400.

Level 3: Shield or unshielded, equivalent to DEC's 10BASE-T, 4 Mbps token ring.

Level 4: Used for high-speed data, 100 ohm plus/minus 15%, 16 Mbps token ring, or extended distance 10BASE-T environments, at up to 20 Mbps.

Level 5: High speed LAN, 100 ohm plus/minus 15%, IBM data grade, used in all applications supported by levels 1-4 and 100 Mbps CDDI.

We are not sure there is much to discuss about features and benefits of the cable specifications. As you can see, different vendors might have different type definitions, they do have equivalence to other vendors' specifications or industry standards. Customers need to understand their network requirements and select the correct cable types to support it. Things to consider are voice or data, speed, and cost.

Article Change History:
02 Feb 1995 - Changed access privileges of article.

Support Information Services

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Tech Info Library Article Number:11047

Tech Info Library

Powerbook Modem: International Questions 11/92

Revised: 5/16/94
Security: Everyone

Powerbook Modem: International Questions 11/92

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Article Created: 20 November 20 1992

TOPIC --

Four questions about PowerBook modems:

1) Can a U.S. customer order the international version of the modem (DAA jack)?

2) Is a cable adapter available to allow a DAA-based cable to connect to an RJ-11-based U.S. modem?

3) Does the AppleTalk Remote Access scripting kit provide details on scripting CCLs for international travel?

4) Is there a good source of information on international modem use?

DISCUSSION --

1) No, the International version of the modem can be purchased only overseas.

2) From a technical standpoint, the U.S. modem will work in many countries with the proper cable adapter: RJ-11 to local adapter. However, because the modem has not been adapted to meet local regulations nor certified by the appropriate agency -- Apple cannot recommend this solution. The same is true for the reverse scenario: using the international modem in the U.S.

3) The AppleTalk Remote Access Scripting Kit provides information only on how to create a CCL (modem script). Dealing with international connections requires more modem hardware knowledge in order to accommodate the country's phone system: for example, how to set the modem's registers appropriately to ignore the dial tone. The Appendix of the Macintosh PowerBook Modem User's Guide is a good place to start for information on configuring the modem.

4) To find the PTT international requirements, take a look at the CCITT Net 4 specification. It is a collection of all European PTT specifications and covers almost all the world (many countries recognize, or are close to, the Net 4 specification).

Support Information Services

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Tech Info Library Article Number:11048

Tech Info Library

Apple Products: Dates Introduced and Discontinued (2/97)

Revised: 2/25/97
Security: Everyone

Apple Products: Dates Introduced and Discontinued (2/97)

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Article Created: 20 November 1992
Article Reviewed/Updated: 25 February 1997

TOPIC ----------

This article lists the approximate date of introduction and, where applicable, the date when the model was discontinued for various Apple products. Dates which are missing from the table will be added as they occur.

DISCUSSION ----------

Begin_Table

COMPUTER SYSTEMS
==========

Apple II Series	Introduced	Discontinued
Apple II	August 1978	December 1982
Apple II+	June 1979	June 1983
Apple IIc	April 1984	September 1988
Apple IIc Plus	September 1988	November 1990
Apple IIe	January 1983	March 1985
Apple IIe Enhanced	March 1985	November 1993
Apple IIGS	September 1986	December 1992

Apple III Series	Introduced	Discontinued
Apple III	May 1980	September 1985
Apple III+	December 1983	September 1985

Lisa	Introduced	Discontinued
Lisa 2	January 1984	January 1985
Lisa 2/5	January 1984	January 1985
Lisa 2/10	January 1984	January 1985

Macintosh	Introduced	Discontinued
Mac 128K	January 1984	October 1985
Mac 512K	September 1984	April 1986
Mac 512Ke	April 1986	August 1986
Mac Plus	January 1986	October 1990
Macintosh Classic	October 1990	October 1991
Macintosh Classic II	October 1991	September 1993
Macintosh Color Classic	February 1993	May 1994
Macintosh LC	November 1990	March 1992
Macintosh LC II	March 1992	March 1993
Macintosh LC III	February 1993	February 1994
Macintosh LC 475	October 1993	
Macintosh LC 520	June 1993	February 1995
Macintosh LC 550	February 1994	April 1995
Macintosh LC 575	February 1994	April 1995
Macintosh LC 580	April 1995	
Macintosh LC 630	July 1994	April 1995
Macintosh LC 630 DOS Compatible	April 1995	April 1996
Macintosh Portable	September 1989	January 1991
Macintosh SE	March 1987	October 1990
Macintosh SE/30	January 1989	October 1990
Macintosh SE FDHD	August 1989	October 1990
Macintosh TV	October 1993	
Macintosh XL	January 1985	August 1986

Macintosh II	Introduced	Discontinued
Macintosh II	March 1987	January 1990
Macintosh IIx	October 1988	October 1990
Macintosh IIcx	March 1989	March 1991
Macintosh IIci	September 1989	February 1993
Macintosh IIfx	March 1990	April 1992
Macintosh IIsi	October 1990	March 1993
Macintosh IIvx	October 1992	October 1993

Centris	Introduced	Discontinued
Macintosh Centris 610	February 1993	October 1993
Macintosh Centris 650	February 1993	October 1993
Macintosh Centris 660AV	August 1993	October 1993

Quadra	Introduced	Discontinued
Quadra 605	October 1993	October 1994
Quadra 610	October 1993	May 1994
Quadra 630	July 1994	April 1995
Quadra 650	October 1993	September 1994
Quadra 660AV	October 1993	September 1994
Quadra 700	October 1991	March 1993
Quadra 800	February 1993	March 1994

Quadra 840AV	August	1993		July	1994
Quadra 900	October	1991		May	1992
Quadra 950	May	1992		October	1995

Power Macintosh	Introduced		Discontinued	
Power Macintosh 4400/160 (Europe only)	November	1996		
Power Macintosh 4400/200	February	1997		
Power Macintosh 5200/75 LC	April	1995	April	1996
Power Macintosh 5260/100	April	1996		
Power Macintosh 5260/120	October	1996		
Power Macintosh 5300/100 LC	September	1995		
Power Macintosh 5400/120	April	1996		
Power Macintosh 5400/180	October	1996		
Power Macintosh 5500/225	February	1997		
Power Macintosh 6400/200	October	1996		
Power Macintosh 6500/225	February	1997		
Power Macintosh 6500/250	February	1997		
Power Macintosh 6100/60	March	1994	January	1995
Power Macintosh 6100/60AV	March	1994	January	1995
Power Macintosh 6100/66	January	1995	October	1995
Power Macintosh 6100/66AV	January	1995	April	1995
Power Macintosh 6100/66 DOS Compatible	January	1995		
Power Macintosh 7100/66	March	1994	January	1995
Power Macintosh 7100/66AV	March	1994	January	1995
Power Macintosh 7100/80	January	1995	January	1996
Power Macintosh 7100/80AV	January	1995	August	1995
Power Macintosh 7200/75	August	1995	March	1996
Power Macintosh 7200/90	August	1995		
Power Macintosh 7200/120	April	1996		
Power Macintosh 7200/120 PC Compatible	April	1996	February	1997
Power Macintosh 7300/180	February	1997		
Power Macintosh 7300/200	February	1997		
Power Macintosh 7500/100	August	1995		
Power Macintosh 7600/120	April	1996		
Power Macintosh 7600/200	November	1997		
Power Macintosh 8100/80	March	1994	January	1995
Power Macintosh 8100/80AV	March	1994	January	1995
Power Macintosh 8100/100	January	1995	October	1995
Power Macintosh 8100/100AV	January	1995	August	1995
Power Macintosh 8100/110	November	1994	August	1995
Power Macintosh 8200/100	April	1996		
Power Macintosh 8200/120	April	1996		
Power Macintosh 8500/120	August	1995		
Power Macintosh 8500/132	April	1996		
Power Macintosh 8500/150	April	1996		
Power Macintosh 8500/180	August	1996		
Power Macintosh 8600/200	February	1997		
Power Macintosh 9500/120	June	1995	May	1996
Power Macintosh 9500/132	June	1995	July	1996

Power Macintosh 9500/150	April	1996		August	1996
Power Macintosh 9500/200	August	1996			
Power Macintosh 9500/180MP	August	1996			
Power Macintosh 9600/200	February	1997			
Power Macintosh 9600/200MP	February	1997			

PowerBook	Introduced		Discontinued	
PowerBook 100	October	1991	July	1992
PowerBook 140	October	1991	August	1992
PowerBook 145	August	1992	June	1993
PowerBook 145b	June	1993	July	1994
PowerBook 150	July	1994	October	1995
PowerBook 160	October	1992	August	1993
PowerBook 165	August	1993	July	1994
PowerBook 165c	February	1993	December	1993
PowerBook 170	October	1991	October	1992
PowerBook 180	October	1992	May	1994
PowerBook 180c	June	1993	March	1994
PowerBook 190/66	August	1995		
PowerBook 190cs/66	August	1995	September	1996*
PowerBook 520	May	1994	June	1995
PowerBook 520c	May	1994	September	1995
PowerBook 540	May	1994	October	1994
PowerBook 540c	May	1994	August	1995
PowerBook 550c (Available in Japan Only)	May	1995		
PowerBook 1400cs/117	October	1996		
PowerBook 1400c/117	October	1996	February	1997
PowerBook 1400c/133	October	1996		
PowerBook 3400c/180	February	1997		
PowerBook 3400c/200	February	1997		
PowerBook 3400c/240	February	1997		
PowerBook 5300/100	August	1995	August	1996
PowerBook 5300c/100	August	1995	September	1996**
PowerBook 5300ce/117	August	1995	September	1996
PowerBook 5300cs/100	August	1995	August	1996
PowerBook Duo 210	October	1992	October	1993
PowerBook Duo 230	October	1992	July	1994
PowerBook Duo 250	October	1993	May	1994
PowerBook Duo 270c	October	1993	May	1994
PowerBook Duo 280	May	1994	November	1994
PowerBook Duo 280c	May	1994	January	1996
PowerBook Duo 2300c/100	August	1995		

NOTE:
* The PowerBook 190cs 8/500 configuration was discontinued 9/96, the 4/500 configuration was not.
** The PowerBook 5300c 8/500 configuration was discontinued 9/96, the 16/750 configuration was not.

PowerBook Docking Solutions	Introduced	Discontinued

PowerBook Duo MiniDock	October	1992	August	1995
PowerBook Duo Dock	October	1992	July	1995
PowerBook Duo Dock II	May	1994	May	1995
PowerBook Duo Dock Plus	May	1995		

Performa	Introduced		Discontinued	
Performa 200	October	1992	April	1993
Performa 400	October	1992	April	1993
Performa 405	April	1993		
Performa 410	October	1993		
Performa 430	April	1993		
Performa 450	April	1993		
Performa 460	October	1993		
Performa 466	October	1993		
Performa 467	October	1993		
Performa 475	October	1993		
Performa 476	October	1993		
Performa 550	October	1993		
Performa 560	January	1994		
Performa 575	April	1994		
Performa 577	April	1994		
Performa 578	April	1994		
Performa 580	May	1995		
Performa 588	April	1995		
Performa 600	October	1992	October	1993
Performa 630	July	1994		
Performa 630CD	July	1994		
Performa 631	July	1995		
Performa 635	July	1994		
Performa 635CD	July	1994		
Performa 636	July	1994		
Performa 637CD	July	1994		
Performa 638CD	July	1994		
Performa 640 DOS Compatible	May	1995		
Performa 5200CD	July	1995		
Performa 5210	May	1995		
Performa 5215	July	1995		
Performa 5220	May	1995		
Performa 5300	October	1995		
Performa 6110	September	1994		
Performa 6112	September	1994		
Performa 6115	September	1994		
Performa 6116	July	1995		
Performa 6117	September	1994		
Performa 6118	September	1994		
Performa 6200	July	1995		
Performa 6205	August	1995		
Performa 6214	August	1995		
Performa 6216	July	1995		
Performa 6218	July	1995		
Performa 6220	July	1995		

Performa 6290	January	1996			
Performa 6230	July	1995			
Performa 6300	October	1995			
Performa 6320	April	1996		September	1996
Performa 6400	August	1996			
Performa 6360/160	October	1996			

Apple Servers	Introduced			Discontinued	
Network Server 500/132	April	1996			
Network Server 700/150	April	1996			
Network Server 700/200	September	1996			
Workgroup Server 60	July	1993		October	1993
Workgroup Server 80	March	1993		October	1994
Workgroup Server 95	March	1993		April	1995
Workgroup Server 6150/60	April	1994		April	1995
Workgroup Server 6150/66	April	1995		October	1995
Workgroup Server 7250/120	Feb	1996			
Workgroup Server 8150/80	April	1994			
Workgroup Server 8150/110	April	1995			
Workgroup Server 8550/132	September	1996			
Workgroup Server 8550/200	September	1996			
Workgroup Server 8550/132	April	1996			
Workgroup Server 9150/80	April	1994		October	1994
Workgroup Server 9150/120	April	1995			

PRINTERS
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ImageWriters	Introduced			Discontinued	
ImageWriter 15"	April	1984		September	1987
ImageWriter I	June	1984		December	1985
ImageWriter II	September	1985			
ImageWriter LQ	August	1987		December	1990

LaserWriters	Introduced			Discontinued	
Color LaserWriter 12/600	June	1995			
LaserWriter	March	1985		February	1988
LaserWriter 12/640 PS	June	1996			
LaserWriter 16/600 PS	September	1994			
LaserWriter Plus	January	1986		February	1988
LaserWriter IISC	January	1988		July	1990
LaserWriter IINT	January	1988		October	1991
LaserWriter IINTX	January	1988		October	1991
LaserWriter IIf	October	1991		May	1993
LaserWriter IIg	October	1991		October	1993
LaserWriter Pro 600	January	1993		October	1993
LaserWriter Pro 630	January	1993		September	1994
LaserWriter Pro 810	October	1993		November	1994
LaserWriter Select 300	February	1993		January	1995
LaserWriter Select 310	February	1993		January	1994

LaserWriter Select 360	October	1993		April	1996
Personal LaserWriter LS	March	1991		May	1993
Personal LaserWriter NT	July	1990			1994
Personal LaserWriter NTR	March	1992		September	1993
Personal LaserWriter SC	June	1990		September	1993
Personal LaserWriter 300	June	1993			1994
Personal LaserWriter 320	October	1993		September	1995

StyleWriters	Introduced		Discontinued	
Color StyleWriter 1500	February	1996		
Color StyleWriter 2200	June	1995		
Color StyleWriter 2400	September	1994		
Color StyleWriter 2500	February	1996		
Color StyleWriter Pro	February	1994	December	1995
Portable StyleWriter	June	1993	May	1995
StyleWriter	March	1991	January	1993
StyleWriter 1200	April	1995		
StyleWriter II	January	1993	April	1995

Other Printers	Introduced		Discontinued	
Apple Color Printer	January	1993	February	1994
Apple Daisy Wheel Printer	May	1980	September	1986
Apple Dot Matrix Printer	May	1980	December	1985
Scribe	April	1984	August	1986
Silentype	January	1980	June	1984

OTHER PRODUCTS

Scanners	Introduced		Discontinued	
Apple Scanner	August	1988	September	1991
Apple OneScanner	September	1991	June	1994
Apple Color OneScanner	January	1993		
Apple Color OneScanner 600/27	March	1996		
Apple Color OneScanner 1200/30	September	1996		

Digital Cameras	Introduced		Discontinued	
QuickTake 100	February	1994		
QuickTake 150	March	1995		
QuickTake 200	February	1997		

Monitors	Introduced		Discontinued	
AppleColor High-Res RGB	March	1987	December	1992
AppleColor RGB	September	1986	January	1993
AppleVision 1710	January	1996		
AppleVision 1710AV	August	1995		
Apple AudioVision 14	August	1993	October	1995

Apple Basic Color	February	1993		October	1993
Apple Color Plus Display	October	1993			
Apple High-Res Mono	March	1989		February	1991
Apple Multiple Scan 14	August	1995		February	1997
Apple Multiple Scan 15	July	1994		February	1997
Apple Multiple Scan 17	March	1994			
Apple Multiple Scan 20	March	1994			
Macintosh 12-inch Mono	December	1990		October	1993
Macintosh 12-inch RGB	October	1990		March	1993
Macintosh 16-inch Color	October	1991		April	1994
Macintosh 21-inch Color	October	1991		March	1994
Macintosh Color 14 Display	December	1992			
Macintosh Portrait Display	March	1989		December	1992
Macintosh Two-Page Mono	March	1989		December	1992
Performa Display	September	1992		July	1994
Performa Plus Display	September	1992			

Modems	Introduced		Discontinued	
Apple Personal Modem	September	1985	December	1990
Apple Modem 2400	July	1989	December	1992
PowerBook Data/Fax Modem	October	1991	November	1993
PowerBook Express Modem	October	1992		
PowerBook Express Modem II (Available in Europe Only)	October	1992		

PIE	Introduced		Discontinued
Apple MessagePad	August	1993	March 1994
Apple MessagePad 100	March	1994	January 1995
Apple MessagePad 110	March	1994	January 1995
Apple MessagePad 120	January	1995	
Apple MessagePad 130	March	1996	
Apple MessagePad 2000	February	1997	
Apple eMate 300	February	1997	

End_Table

Article Change History:
25 Feb 1997 - Added discontinued date for 5300ce.
24 Feb 1997 - Corrected name of a PowerBook 5300 model.
18 Feb 1997 - Added new PowerBook Computer and MessagePads.

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Tech Info Library Article Number:11051

Tech Info Library

After Dark: Use 2.0.x or Later With PowerBook Computers (2/95)

Revised: 2/2/95
Security: Everyone

After Dark: Use 2.0.x or Later With PowerBook Computers (2/95)

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Article Created: 19 November 1992
Article Reviewed/Updated: 02 February 1995

TOPIC ----------

When using After Dark, the displays of the PowerBook 160, PowerBook 180, Duo 210, and Duo 230 aren't refreshing after Idle -- or the external monitor is not refreshing.

Has this issue been addressed?

DISCUSSION ----------

After Dark 2.0x is 100% System 7.1 compatible. This new version is a maintenance upgrade and addresses some minor incompatibilities and bug fixes. After Dark 2.0x includes a new installer application, along with the option to globally mute all sounds from within the After Dark Control Panel.

The PowerBooks power conservation features will make After Dark’s animation slow down dramatically, then disappear completely. The settings for these features are located in the PowerBook (formerly Portable) Control Panel. To turn off these PowerBook features so that After Dark’s animation can continue uninterrupted, please consult your PowerBook manual.

Article Change History
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02 Feb 1995 - Changed access privileges of article.
27 May 1993 - Revised information on a compatible version of After Dark.

Support Information Services

Copyright 1992-95, Apple Computer, Inc.

Tech Info Library Article Number:11059

LaserWriter: What Happens to a Document After a Paper Jam

Revised: 12/14/92
Security: Everyone

LaserWriter: What Happens to a Document After a Paper Jam

==========

Article Created: 3 December 1992

TOPIC----------

What happens to the document being printed when a PostScript LaserWriter recovers from a paper jam?

DISCUSSION ----------

LaserWriter, LaserWriter Plus, LaserWriter IINT/NTX, Personal LaserWriter NT

After a paper jam is cleared, these printers discard ("flush") the page that was being printed when the printer jammed, then print the rest of the document.

Original LaserWriter IIf, LaserWriter IIg

The original LaserWriter IIf and LaserWriter IIg print two blank pages after a paper jam is cleared. This serves two purposes:

- To clean excess toner from the paper path
- To verify that a jam condition does not still exist before trying to image another page.

Unlike the earlier LaserWriter printers, the LaserWriter IIf and IIg re-print the page that was printing when the jam occurred.

Personal LaserWriter NTR, Upgraded LaserWriter IIf and LaserWriter IIg
---

A LaserWriter IIf or LaserWriter IIg that has had a ROM upgrade, and the Personal LaserWriter NTR, eject only one blank page before reprinting the remainder of the document. These printers also re-print the page

that was being printed when the paper jam occurred.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11060

Tech Info Library

A/UX: Making Apple DoubleFormat the Default File Format (6/94)

Revised: 6/23/94
Security: Everyone

A/UX: Making Apple DoubleFormat the Default File Format (6/94)

==========

Article Created: 30 November 1992
Article Reviewed/Updated: 23 June 1994

TOPIC ----------

How can I set the A/UX Finder to AppleDouble Format?

DISCUSSION ----------

Under A/UX, you can change the default file-creation format to AppleDouble Format (instead of AppleSingle Format). The steps below describe how to override the default, so that A/UX creates files in AppleDouble file format:

1) Change the kernel Toolbox TBFILEFORMAT environment variable from 0 (for AppleSingle Format) to 1, as appropriate to your login shell:

   If the login shell is the Bourne Shell (sh) or the Korn Shell (ksh), insert the following lines into the user's .profile file:

```
TBFILEFORMAT=1
export TBFILEFORMAT
```

   If the login shell is the C Shell (csh), insert the following line in the user's login file (NOT in .cshrc):

```
setenv TBFILEFORMAT 1
```

2) Log out and log in again to activate the change.

3) On the Apple Workgroup Server 95 you can edit the file /mac/bin/mac32 in order to make Apple Double Format the default format.

Important: After making this change, all Macintosh applications files created will be in AppleDouble format. You can, however, use the "fcnvt" utility to convert such files to any desired format.

Article Change History:
23 Jun 1994 - Included AWS 95 to article.

Support Information Services

Copyright 1992-94, Apple Computer, Inc.

Tech Info Library Article Number:11061

Tech Info Library

3COM 3+File INIT: Discontinued and Not Tested on PowerBook

Revised: 11/23/92
Security: Everyone

3COM 3+File INIT: Discontinued and Not Tested on PowerBook

==========

Article Created: 23 November 1992

TOPIC -----

3COM's 3+File INIT (v1.8) runs on my Macintosh SE with System 7.1, but not on my PowerBook 180.

DISCUSSION -----

According to 3COM Technical Support, the 3+File v1.8 is no longer marketed and is not being tested on new Macintosh hardware platforms or new Macintosh System software releases (it has never been tested by 3COM on any Apple PowerBook).

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11063

Tech Info Library

Macintosh Printing to HP LaserJet IIP on Novell Network

Revised: 12/22/92
Security: Everyone

Macintosh Printing to HP LaserJet IIP on Novell Network

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Article Created: 23 November 1992

TOPIC ----------

I have a Novell network on Ethernet. I have a Macintosh Classic connected to the Novell Network. I can make network connection to do file transfer to the Macintosh and running SoftPC and SoftNode to use the MS-DOS software on the server. The problem: I have an HP LaserJet IIP PCL-only printer with a serial and parallel port, connected to a node on the network through the parallel port. The file server is running Pserver as the print server, and sends any print jobs it receives to the printer node. The Macintosh cannot access the printer. Is there a way to get the Macintosh to print to the printer through the print server?

DISCUSSION ----------

You can get a software product such as Mosaic for Macintosh (from Insight Development Corp.), to print from your Macintosh to your HP LaserJet IIP printer. Below is a description of Mosaic for Macintosh, taken from Redgate.

Mosaic For Macintosh

Printer driver
Macintosh Plus or larger; 1MB of RAM; System 6.0 or later.

Mosaic for Macintosh allows Macintosh users to print documents from any application on HP LaserJet printers attached to a Novell network. Once Mosaic is installed, printing with HP LaserJet printers on a Novell network becomes transparent to users. Using the Chooser, users select the appropriate Novell queue and destination HP printer. When these selections have been made, Mosaic sends the print jobs directly to the designated NetWare queues. Mosaic is compatible with Novell's NetWare Desk Accessory, which provides users with information about print jobs and allows them to hold or delete jobs that have been submitted to the file server. Mosaic is

System 7 compatible and fully supports TrueType fonts.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11067

Tech Info Library

AppleShare 3.0, 3.0.1: Prob with ARA & Retrospect Remote (9/95)

Revised: 9/19/95
Security: Everyone

AppleShare 3.0, 3.0.1: Prob with ARA & Retrospect Remote (9/95)

==========

Article Created: 25 November 1992
Article Reviewed/Updated: 19 September 1995

TOPIC -----

This article describes a known bug and its solution in AppleShare 3.0 or 3.0.1 when used with AppleTalk Remote Access and Retrospect Remote Control Panel software.

DISCUSSION -----

There is a known bug in AppleShare Server 3.0 & 3.0.1 which is fixed in AppleShare Server 3.0.2. AppleShare 3.0.3 is the current release and should be used. Here are the details:

Macintosh systems that have the following software installed are affected:

AppleShare File Server 3.0 or 3.0.1
AppleTalk Remote Access 1.0
Retrospect Remote Control Panel

If the entire system is backed up with Retrospect Remote, subsequent attempts by AppleTalk Remote Access users to dial in to that system will fail with an "Unrecognized User" error message. The immediate, albeit temporary, solution is to restart the server Macintosh.

The solution is to use the AppleShare 3.0.3 Patch Program to update AppleShare 3.0 or 3.0.1 file servers to version 3.0.3. The AppleShare 3.0.3 Patch Program is available on Apple Computer's online services. These articles can help you locate the AppleShare 3.0.3 Patch software mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the

Apple Tech Info Library.

The previous workaround was to not back up the Users & Groups file with Retrospect Remote.

To locate Dantz's (the maker of Retrospect) address and phone number, search the Tech Info Library article titled "Locating Vendor Information" for help.

Article Change History:
19 Sep 1995 - Updated article to AppleShare 3.0.3 Patch software.
27 Aug 1993 - Revised article with AppleShare 3.0.2 solution information

Support Information Services

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Tech Info Library Article Number:11071

Tech Info Library

At Ease 1.0: Animation Locks Up in Mouse Practice

Revised: 12/1/92
Security: Everyone

At Ease 1.0: Animation Locks Up in "Mouse Practice"

==========

Article Created: 1 December 1992

TOPIC -----

I have a problem with "Mouse Practice" (At Ease 1.0). After running a while, the animation locks up when I click on the Sea Horse during the underwater sequence.

Configuration:

- Macintosh LC II 4/40
- 256 colors on a 12-inch display
- System 7.0.1

DISCUSSION -----

This is a problem with the amount of memory allocated to the application. If you look at Get Info under the File menu for the application, you'll find the allocated memory is 5000K. It's set this way from the factory. Lower it to the recommended 2048K. This has cleared up the problems that we have seen.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11075

AppleTalk Remote Access: How to Set a Password Remotely

Revised: 12/11/92
Security: Everyone

AppleTalk Remote Access: How to Set a Password Remotely

==========

Article Created: 1 December 1992

TOPIC ----------

Is there a way to change my password remotely when using Apple Remote Access?

DISCUSSION ----------

Yes, you can change your password remotely, but it's not an "intuitive" process. The key is to understand that AppleTalk Remote Access uses the Users & Groups file on the system acting as the AppleTalk Remote Access server.

The first step is to allow you, the user, to change your password. If you are running AppleShare 3.0 on the same system that AppleTalk Remote Access is running on, use the AppleShare Administration program to set this option. (The reason is that AppleShare converts the Users & Groups file to an AppleShare format.)

1) With System 7 Personal File Sharing on (through the File menu's "Sharing..." item), go to the User's & Groups control panel and click the icon bearing your name.

2) Make sure the "Allow user to change password" box is checked.

Important: If the ARA server is separate from the servers you are accessing remotely through ARA, you must mount a volume from the ARA server to be able to change the password.

As of November 1992, the only solution is to set up file sharing on the ARA server and allow yourself (and perhaps other users) to mount the server. You don't have to give access to the entire volume; you could create a folder with read-only access and only share it. This way, you

could log on to the ARA server and change your password without having access to information on the server.

The password-changing capability works when you mount a volume with the AppleShare icon in the Chooser. When you select the server, you will notice the set password button. If the ARA server is not doing any AppleShare work, personal file sharing, or server activities, then you cannot mount the server that would let you change your password.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11076

Tech Info Library

DAL for VTAM: Documentation for Writing SMF Exit

Revised: 12/14/92
Security: Everyone

DAL for VTAM: Documentation for Writing SMF Exit

==========

Article Created: 1 December 1992

TOPIC ----------

We're testing DAL for VTAM and want to write our own SMF Exit -- however, we're looking for documentation on how to program our own Exit. (The only information we have is from the ReadMe file on the installation tape.) We don't need to know how to program an SMF Exit. We need more detail about the fields and values from DAL than what is specified in the ReadMe file.

For example, we noticed a field called "db2time" -- what time is this? Is it an accumulated value? Are there explanations about the fields and values coming from the DAL (VTAM) server in the DAL documentation? If there is, where can we find them?

DISCUSSION ----------

The SMF exit refers to an IBM product, SMF (System Management Facility). SMF tracks resource usage under MVS and reports on it with a number of report formats.

DAL supports the collection of the standard items of data that people usually want to report. The ReadMe on the installation tape specifies the fields that will be returned (and the order in which they occur), if you wish to write your own exit to request the data. DAL does NOT give any information on how to write such an exit. It requires an Assembler programmer who is familiar with SMF -- at the very least.

There isn't any written documentation about the use of the exit other than the ReadMe file on the Installation Tape. The DAL SMF exit is called at each user's logon and logoff. The "times" will be zero at logon, and total amounts at logoff.

..TIL11077-DAL_for_VTAM-Documentation_for_Writing_SMF_Exit.pdf

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11077

Tech Info Library

Netware: Login Problem

Revised: 4/20/93
Security: Everyone

Netware: Login Problem

==========

Article Created: 1 December 1992

Article Change History

04/19/93 - REVISED
- To better describe the Netware UAM.

TOPIC ----------

I just installed Netware for Macintosh 3.xx. I was able to see the server show up in the Chooser and type in the customer's login name. When I entered the password, the system responded with "The password is incorrect. Please re-enter password." The customer entered the same login and password at his PC and logged in successfully. Any ideas on what's wrong?

DISCUSSION ----------

It sounds as if the server is expecting an encrypted password from the Macintosh. You either need to use the Netware UAM (it comes with Netware for Macintosh software) on the Macintosh which allows encrypted passwords, or from the file server console type "unencrypted password = on" if using the AppleShare workstation software.

Another option is to log on as a guest, if guest access to the server is allowed.

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Tech Info Library Article Number:11078

Tech Info Library

DAL Server for VMS: Ingres Group Permissions Supported

Revised: 12/14/92
Security: Everyone

DAL Server for VMS: Ingres Group Permissions Supported

==========

Article Created: 1 December 1992

TOPIC ----------

A University is using DAL to access student record information located on a VAX in Ingres. They are thinking of rolling this out to a large community of users, but would like to use the Ingres group permissions to apply permissions to different groups in the organization. Can Apple support this in DAL?

DISCUSSION ----------

With the 1.3.6 release of the DAL server for VMS, group permissions in Ingres is supported. To use it, the Ingres Knowledge Management Extension is also required. The DAL Open Database command can be in either of the following formats:

- Open Database "databasename -Ggroupid" (a space is required BEFORE the -G and no space is allowed between the -G and the groupid).

- Open Database "databasename" as user "userid -Ggroupid" (a space is required BEFORE the -G and no space is allowed between the -G and the groupid).

Either of these formats will cause the "EXEC SQL CONNECT" command, generated by DAL to Ingres, to include the "OPTIONS = -Ggroupid" parameter.

This has not been tested here, since we do not have the Knowledge Management Extension. However, since it is similar to the Roles format, which we know works, we expect it to work also.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11080

Tech Info Library

PowerBook 200 Series: Third-Party Internal Fax/Modem (9/95)

Revised: 9/19/95
Security: Everyone

PowerBook 200 Series: Third-Party Internal Fax/Modem (9/95)

==========

Article Created: 11 January 1993
Article Reviewed/Updated: 19 September 1995

TOPIC----------

Is there a third-party internal fax/modem available for the Macintosh PowerBook 200 (Duo) series computers?

DISCUSSION----------

There are several fax/modem options available to owners of the Macintosh PowerBook 200 series computers. You can use a third party internal modem, an Apple internal modem or an external modem.

We aware of only one third-party internal fax/modem available for these computers which is the Global Village PowerPort Mercury for the PowerBook Duo fax/modem. The Apple solution is the PowerBook Express Modem (finished good part number M4186LL/A). If you would rather not install an internal modem, an external fax/modem can be connected through the external serial port.

Article Change History:
19 Sep 1995 - Added information about Global Village modem.

Support Information Services

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Tech Info Library Article Number:11081

Tech Info Library

Apple IIe Card: How to Save Information to a Hard Drive

Revised: 12/9/92
Security: Everyone

Apple IIe Card: How to Save Information to a Hard Drive

==========

Article Created: 4 December 1992

TOPIC ----------

How do you specify applications on the IIe card to save on a hard drive with a ProDOS partition?

DISCUSSION ----------

There are two different methods of specifying the hard drive when saving applications on the Apple IIe or, in this case, the Apple IIe card. A ProDOS device is designated by a physical location and by path name. The physical location on an Apple IIe is determined by the physical location of the SCSI card.

On the Apple IIe card, use the control panel to configure where the hard drive partition is going to be phantomed to. This is done for software compatibility. If you look in the Apple IIe control panel slot assignments, you will find a hard-drive icon. When you place the hard drive in a slot (virtual, not physical), you assign how the drive will be accessed when referred to in the physical convention.

In other words, the Apple IIe card doesn't have any physical slots but has to emulate the Apple IIe. You use the control panel to configure how the software will see the Apple IIe card.

In ProDOS, the commands for saving a BASIC file are:

Physical Designation

```
    Save Programname, S7,D1    <---- S7 equals slot 7, D1 = Drive 1
                                     Change the slot number, Sx to your
                                     configuration.
```

Pathname Designation

Save VolumeName/ProgramName	If your hard drive were named ProDOS, you would type Save ProDOS/ProgramName

ProDOS also supports nested folders. All you would have to do is to specify the complete path name, such as VolumeName/Pathname/ProgramName

These commands are all from BASIC. Within an application, you will need to determine what the program is asking for. If it asks for slot and drive, type the slot you configured the hard drive for. If it is asking for path information, type the pathname.

NOTE. The above information applies only to ProDOS. Apple DOS, the original operating system for Apple II computers, does not support hard drives.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11086

Tech Info Library

QuickTime 1.0 and 1.5: User Tips

Revised: 12/8/92
Security: Everyone

QuickTime 1.0 and 1.5: User Tips

==========

Article Created: 4 December 1992

TOPIC ----------

This article describes user interface commands for QuickTime.

DISCUSSION ----------

In any QuickTime movie window that uses the standard movie controller, you can hold down the Control key and click in one of the single-step buttons at the right end of the controller. A tiny slider bar appears which you can then drag to play the movie at variable speed forward or backward.

Here are some other control commands that work in standard QuickTime movie windows.

Double-click on image	= play
Single-click on image	= pause
Shift-double-click on image	= play backward
Left, Right arrows	= single step
Up, Down arrows	= volume
Space, Return	= toggle play/pause
Option-click on speaker icon	= toggle sound mute
Shift-drag the play bar	= select section of movie

Finally, a good way to select a section of a QuickTime movie:

1) Position yourself at the start of the selection.

2) Hold down the Shift key, and type Space or Return.

3) When the movie starts playing, select the played portion as it goes by.

4) When you release the Shift key, the movies stops playing and the played

portion is selected.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11087

Tech Info Library

Macintosh and ISDN Access via Access Privilege Products

Revised: 12/11/92
Security: Everyone

Macintosh and ISDN Access via Access Privilege Products

==========

Article Created: 4 December 1992

TOPIC ----------

This article describes three products from Access Privilege. They allow Macintosh users access to ISDN (Integrated Service Digital Networks).

DISCUSSION ----------

Access Privilege has announced the availability in the United States of three ISDN products: The Planet-ISDN NuBus card, TheLink, and EasyTransfer software. Macintosh users can now transfer a 1MB file between San Francisco and New York on a single ISDN line in less than a minute, while talking to the person at the other end of the line. A company based in Atlanta can reliably interconnect its AppleTalk network with the corresponding networks in its European and Japanese subsidiaries. A Marketing Manager in New York can set up a video conference with sales representatives in Washington, Miami, or Boston through his Macintosh. There are already several companies in Europe, Australia, and Japan making use of these solutions in their daily work.

- Planet-ISDN, is a NuBus card designed by EuRoNIS, an Access Privilege subsidiary company, to connect the Macintosh to national and international ISDN. Planet-ISDN is available in 18 countries and is now compatible with ISDN-1, the American standard adopted by AT&T, Northern Telecom, and Siemens Stromberg-Carlson, for which conformance tests have been passed at Bellcore. Planet-ISDN is compatible with Apple Computer Inc.'s Communications ToolBox and Telephone Manager.

- TheLink, created by a partnership between Apple Computer Inc. and Access Privilege, is the only software solution capable of transparently interconnecting remote AppleTalk networks (LocalTalk, EtherTalk and TokenTalk) through ISDN and X25. TheLink provides access to various services present on all networks according to privileges defined by the

administrators. TheLink is compatible with the Communications ToolBox, working naturally with the Planet-ISDN board.

- EasyTransfer is software developed by Access Privilege for exchanging files or folders between remote Macintoshes through ISDN. It can be used with no special telecommunications knowledge. Its protected protocol, incorporating APC compression, optimizes transfers. Transfer speeds of up to 190 kbs/s have been achieved on a 64 kbs/s ISDN B channel using EasyTransfer and the Planet-ISDN board. EasyTransfer is compatible with the Communications ToolBox.

Planet-ISDN is a registered trademark of EuRoNIS. TheLink, EasyTransfer, and APC are registered trademarks of Access Privilege. For contact information, search the Tech Info Library for Access Privilege.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11088

Tech Info Library

PowerBook: Storage Temperature Correction (12/93)

Revised: 5/16/94
Security: Everyone

PowerBook: Storage Temperature Correction (12/93)

==========

Article Created: 22 December 1993

TOPIC ----------

According to Apple Portable Engineering, the storage temperature specifications in some PowerBook manuals are incorrect. This article provides a correction.

DISCUSSION ----------

All PowerBook models from the 1xx series to the Duos have a storage temperature range from -40° C to +65° C.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11091

Tech Info Library

PowerBook Duo Floppy-disk Adapter: Hole for Security Lock 12/92

Revised: 5/16/94
Security: Everyone

PowerBook Duo Floppy-disk Adapter: Hole for Security Lock 12/92

==========

Article Created: 7 December 1992

TOPIC ----------

There's a hole in the PowerBook Duo floppy-disk adapter. What's it for?

DISCUSSION ----------

The hole is for installing a Kensington lock, which disables the button from being depressed. This keeps the floppy adapter from being removed from the Duo. However, it does not lock the external drive from being removed from the floppy adapter.

Support Information Services

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11092

Tech Info Library

CD-ROM Drives: Why They're More Expensive than CD-Audio (9/95)

Revised: 9/7/95
Security: Everyone

CD-ROM Drives: Why They're More Expensive than CD-Audio (9/95)

==========

Article Created: 9 December 1992
Article Reviewed/Updated: 7 September 1995

TOPIC ----------

Why are CD-ROM drives more expensive than CD-audio ones?

DISCUSSION ----------

The key factors in the high cost of a CD-ROM drive, compared to a CD-audio counterpart, are:

- Speed
- Reliability and Performance
- Longer Warranty
- Economy of Scale
- Additional Electronics

Speed

Faster drive performance in a data environment increases productivity, whereas audio has to be played at a constant rate.

Reliability and Performance

CD-ROM drives are used in data environments which stress reliability and performance. Unlike CD-audio use, where losing a note of music may not even be heard by the listener, in a data environment not reading data accurately may be catastrophic. Additional electronics are needed to ensure data reliability.

Warranty

The typical CD-audio drive is warranted for 30 days. For CD-ROM drives, the warranty period is generally at least one year. The longer warranty period requires the use of more reliable and durable, and hence more expensive

components in CD-ROM drives. Also, many CD-ROM drives are purchased by major OEM customers who have stringent quality and reliability standard, which demand the use of more durable and more expensive components.

Economies of Scale

CD-audio drives are produced in the millions of units per month and can leverage off such large quantities. CD-ROM drives, however, are manufactured in smaller quantities, and the special components necessary, therefore tend to be more expensive.

Additional Electronics

The spindle motor (which rotates the disc). Most CD-ROM drives use brushless DC motors, which provide greater durability and reliability than the less-expensive brush motors that are used in most CD-audio drives. The CD-ROM motor typically has a MTTF (mean time to failure) in excess of 10,000 hours (the AppleCD 150 and other Apple CD-ROM drives are specified at 25,000 hours at a 100% duty cycle). The CD-audio brush motors, on the other hand, do not even typically have MTTF requirements: reliability is usually defined in the hundreds of hours, an extreme case being 1,000 hours.

The actuator (which determines the access time). Access time is a critical factor in data devices. In CD-ROM drives, typically a rack-and- pinion or linear motor type of actuator is used to provide access times of less than 500 ms (the AppleCD 300 has an average access time of 295 ms). In CD-audio drives, access time is unimportant, so cheaper, slower actuators are used. The actuator life in a CD-ROM drive must be substantially over 1 million back-and-forth seeks, while for a CD-audio drive one hundred thousand is more than adequate. Thus, a cheaper, less durable mechanism can be used for CD-audio.

CD caddy. In order to protect the disc from mishandling and misread data, many CD-ROM drives use a CD caddy to load the disc into the drive. This means that an additional caddy-loading mechanism is needed in such CD-ROM drives. CD-audio drives do not use caddies, because the loss of music is not catastrophic, as is the loss of data. As the CD-ROM industry gets more experience with CD-ROM disc reliability, there will be a trend to do away with the use of the CD caddy, as is evidenced in some newer, less-expensive CD-ROM drives.

Heavy-duty power supply. A drive with a faster access time and quicker spin-up time requirements, needs a larger, more powerful power supply, which results in additional cost for an external CD-ROM drive. A CD-audio drive can run off ordinary AA batteries, because access time is unimportant.

Error detection circuitry. The need for data reliability requires extra error-detection and error-correction electronics, which are not needed in CD-audio environments.

SCSI controller. An additional SCSI controller (or a comparable interface)

is needed to connect a CD-ROM drive to a computer. This is not needed for a CD-audio drive. For external CD-ROM peripherals, two SCSI connectors are typically provided.

Data buffer. To improve data transfer rates in CD-ROM drives, a data buffer is usually used -- typically 32KB or more (the AppleCD 300 has a 256KB buffer) -- resulting in additional cost. No such buffers are needed for CD-audio.

Article Change History:
07 Sep - Made minor correction.

Support Information Services

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Tech Info Library Article Number:11093

Tech Info Library

Apple Software: Current Versions (10/96)

Revised: 10/14/96
Security: Everyone

Apple Software: Current Versions (10/96)

==========

Article Created: 7 December 1992
Article Reviewed/Updated: 9 October 1996

TOPIC ----------

The table below lists versions of SHIPPING Apple software products and provides the following information for each:

Version

The current version number.

7.5.3 rev 2?

Whether the product is supported with System Software 7.5.3 rev 2 (SSW 7.5.3 rev 2).

Some products, are listed as unsupported, but may be fully compatible. For example, TeachText is listed as not supported with System 7.5, because it has been replaced by SimpleText. This does not necessarily mean that TeachText does not work with System 7.5.3 rev 2.

Notes

Additional information on the product

Additional articles in the Tech Info Library describe many of the products listed below more fully. This article does not cover any announced Apple products which are not currently shipping.

DISCUSSION ----------

Begin_Table

Product	Version	7.5.3 rev 2	Notes

32-Bit System Enabler	1.0.3	NO	For Mac II, IIx, IIcx, SE/30; Use MODE32 version 7.5
8*24 GC (Extension)	7.0.1	NO	Not Compatible with PowerMac
950 Color Addition	1.0	NO	Unnecessary with SSW 7.5
A/UX	3.0.1	NO	
A/UX	3.1	NO	Only supports the AWS 95.
A/ROSE	1.2.2	YES	Ships with SSW 7.5.3 rev 2
ADSP	1.5.1	NO	Not required, part of SSW 7.0 & higher
Apple IIe Card SW	2.2.1d1	YES	
Apple Backup	1.4	YES	Ships with SSW 7.5
Apple Built-In Ethernet	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Apple Color Printer	1.0	YES	See TIL article on GX drivers
Apple Ethernet CS	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Apple Ethernet LC	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Apple Ethernet NB	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Apple DocViewer	1.1.1	YES	Apple Extras folder of Power Macs
Apple Event Manager	1.0.3	NO	Not necessary w/ SSW 7.5.3 rev 2
Apple File Exchange	7.0	NO	Use PC Exchange, which ships w/SSW 7.5.3 rev 2
Apple Font Pack	1.0	YES	See separate article in Tech Info Library for contents of Font Pack
Apple HD SC Setup	7.3.5	YES	Ships with SSW 7.5.3 rev 2
Apple Guide	2.0.2	YES	Ships with SSW 7.5.3 rev 2
Apple Internet Router	3.0.1	YES	Install before NSI 1.4.5
Apple LAN Utility	1.0b4	YES	Posted online-non supported software area
AppleLink	6.1	YES	Contact Apple Online Services
Apple Media Tool	2.0	YES	
Apple Menu Options	1.1.2	YES	Ships with SSW 7.5.3 rev 2
Apple MIDI Manager	2.0.2	YES	APDA Developer's tool, posted online
Apple MIDI Driver	2.0.2	YES	APDA Developer's tool, posted online
Apple Modem Tool	1.5.5	YES	
Apple Personal Diagnostics	1.1.3	YES	Updater from 1.1 online
Apple Phone	1.0.1	NO	Application bundled with AV models
Apple Photo Access	2.1	YES	Ships with SSW 7.5.3 rev 2
Apple Printer Utility	2.0	YES	Part of LaserWriter 8.3, posted online
Apple Remote Access	2.1	YES	Separate Client, Personal Server & Multiport Server versions.
AppleScript	1.1	YES	Ships with SSW 7.5.3 rev 2
AppleSearch Client	1.5	YES	
AppleSearch Client (Win)	1.0	N/A	For Windows
AppleSearch Server	1.5.1	YES	
AppleShare Client (Win)	1.0.2	N/A	For Windows
AppleShare File Server	4.2.1	YES	4.0.2 or later required w/ SSW 7.5
AppleShare Print Server	4.2.1	YES	This version required w/ SSW 7.5

Apple Shared Lib. Mgr.	1.1.2	YES	
AppleTalk (driver)	v.60.1	YES	Ships with SSW 7.5.3 rev 2(If using Open Transport 1.1; Classic AppleTalk version remains 58.1.5)
AppleTalk ImageWriter	7.0.1	YES	Ships with SSW 7.5
AplTalk ImageWriter LQ	7.0.1	YES	Ships with SSW 7.5
Apple Telecom	2.3.3	YES	Ships with SSW 7.5.3 rev 2
Apple Video Player	1.4	YES	For Performa 6xx TV/Tuner Card
AppleVision Display SW	1.0.4	YES	Supports AppleVision & AudioVision Displays on System 7.5.x computers
Assistant Toolbox	1.3	YES	Ships with SSW 7.5.3 rev 2
At Ease	3.0	YES	Available from Claris
At Ease for Workgroups	3.0.2	YES	Patch Available online
Audio Volume	1.1	YES	Available online
AudioVision (extension)	1.0.2	NO	Extension for AudioVision 14 Display
Auto Power On/Off	1.0	YES	Ships with SSW 7.5.3 rev 2
AutoRemounter	1.2	YES	Ships with SSW 7.5.3 rev 2
AV Serial Extension	1.0	NO	Unnecessary with SSW 7.5.3 rev 2
AW Server 95	1.1	NO	Part of AWS 95 Update 1.1
AWS 95 Tune-Up	1.0	NO	System update disks (2) for the Apple Workgroup Server 95
Basic Color Monitor	1.0	NO	Unnecessary with SSW 7.5.3 rev 2
Basic Connectivity Set	1.1.1	YES	
Battery DA	7.1.1	NO	Part of control strip in SSW 7.5.3 rev 2
Battery Recondition	1.3	YES	Ships with SSW 7.5.3 rev 2
CD-ROM Setup	5.1.7	YES	Posted online
Chinese Language Kit	1.1.1	YES	See separate TIL article, Chinese Language Kit: Frequently Asked Questions
Chooser	7.5.4	YES	Ships with SSW 7.5.3 rev 2
CloseView	7.2.1	YES	Ships with SSW 7.5.3 rev 2
Color Picker	2.0.1	YES	Ships with SSW 7.5.3 rev 2
Color SW 2400	2.1.1	YES	Ships with SSW 7.5.3 rev 2
Color SW 2400 GX	1.0.1	YES	Installed by Quickdraw GX 1.1.2
Color SW Pro	1.5.2	YES	Ships with SSW 7.5.3 rev 2
ColorSync	2.0.1	YES	Ships with SSW 7.5.3 rev 2
Control Strip	1.3.1	YES	Ships with SSW 7.5.3 rev 2
CPU Energy Saver	1.0.6	YES	Ships with SSW 7.5.3 rev 2
Curare	1.0	NO	No longer offered by APDA
Cyberdog	1.1	YES	
DAL Software	N/A	N/A	Not Apple software, contact ITI
DART	1.5.3	NO	Not Apple software
Desktop Printer Ext.	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Desktop PrintMonitor	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Desktop Printer Spooler	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Disk Copy	4.2	YES	Ships with SSW 7.5.3 rev 2
Disk First Aid	7.2.2	YES	Ships with SSW 7.5.3 rev 2
Display Enabler	2.0	NO	Obsolete-changes included in SSW 7.5.3 rev 2
DocViewer	1.1.1	YES	

DOS Compatibility SW	1.5	YES	Available online.
Drive Firmware Update	1.2	YES	Available online.
Drive Setup	1.0.5	YES	Available online.
Duo Battery Patch	1.0	NO	Unnecessary with SSW 7.5.3 rev 2
Easy Access Ctrl Panel	7.2	YES	Ships with SSW 7.5
Energy Saver	1.1	YES	Ships with SSW 7.5.3 rev 2
EtherTalk	2.5.7	YES	Ships with SSW 7.5.3 rev 2
Express Modem**	2.3.3	YES	Control panel for Express Modem and GeoPort
Express Modem Tool**	2.3.3	YES	CTB Extension for Express Modem, GeoPort
Express Modem ARA 1.x**	2.3	YES	AppleTalk Remote Access CCL file
Express Modem ARA 2.x**	2.3	YES	AppleTalk Remote Access CCL file
Express Modem CCL**	2.3	YES	AppleLink CCL file
Extension Manager	3.0.3	YES	Ships with Display SW 1.2
Fax Extension**	2.3.3	YES	PB Modem, Express Modem, GeoPort
Fax Sender**	2.1	YES	PB Modem, Express Modem, GeoPort
Fax Sender GX**	2.3	YES	PB Modem, Express Modem, GeoPort
Fax Terminal**	2.3.3	YES	PB Modem, Express Modem, GeoPort
Fax Viewer**	2.3.3	YES	PB Modem, Express Modem, GeoPort
Fax Cover**	2.3.3	YES	PB Modem, Express Modem, GeoPort
Font/DA Mover	4.1	NO	Unnecessary with SSW 7.5.3 rev 2
GeoPort Extension	2.3.3	YES	See Apple Telecom 2.3 above
GeoPort for Power Mac	2.3.3	YES	See Apple Telecom 2.3 above
Hardware System Update	2.0.1	NO	Obsolete-changes included in SSW 7.5.3 rev 2
HyperCard	2.3	YES	APDA Product, avail from resellers; 2.3.5 Update available online
HyperCard Player	2.3.5	YES	Ships with Display SW 1.2
HyperScan	2.0.1	YES	OneScanner
ImageWriter	7.0.1	YES	Ships with Display SW 1.2
ImageWriter GX	1.1.1	YES	Installed by Quickdraw GX 1.1.2, replaced 1.0.1
ImageWriter LQ GX	1.1.1	YES	Installed by Quickdraw GX 1.1.2, replaced 1.0.1
Installer	4.0.3	YES	Ships with SSW 7.5
Inter*Poll	1.0.1	NO	Not supported w/ SSW 7.5.3 rev 2
Internal HD Format	1.3	YES	For use with IDE Drives Only, posted online
Japanese Language Kit	1.2	YES	From Apple Order Center
LaserWriter	7.2	YES	Ships with SSW 7.5
LaserWriter 8	8.3.4	YES	Ships with SSW 7.5.3 rev 2
LaserWriter Bridge	2.0.1	YES	Ships with NSI 1.5.1
LaserWriter GX	1.1.2	YES	Installed by Quickdraw GX 1.1.2, replaced 1.0.1
LaserWriter IISC GX	1.1.1	YES	Installed by Quickdraw GX 1.1.2, replaced 1.0.1
LaserWriter Utility	7.7	YES	Ships with SSW 7.5
LaserWriter Select 300	1.2	NO	Use LaserWriter 300 driver
LaserWriter 300	1.2	YES	Ships with SSW 7.5
LaserWriter 300 GX	1.1.1	YES	Installed by Quickdraw GX 1.1.2, replaced 1.0.1

LaserWriter Select 360	1.1	NO	Use LaserWriter 8.3.3 driver
LaserWrtr Select 360 Fax	1.1	NO	Use LaserWriter 8.2.3f driver
Likewise	1.0.1	NO	Discontinued 12/93
LocalTalk Bridge	2.0.1	YES	
LW Select 310	7.0.1	YES	Ships with SSW 7.5
MacApp	3.0.1	YES	APDA Product
MacCheck	1.0.5	NO	Discontinued
MacinTalk Pro	1.4	YES	Ships with Text-to-Speech software 1.4.1
Macintosh Basics	5.0	NO	Mac Tutorial is included in SSW 7.5.3 rev 2
Macintosh Common Lisp	3.0	YES	APDA Product
Macintosh Easy Open	1.1.2	YES	Ships with SSW 7.5.3 rev 2
Macintosh Quadra Extra	1.0	NO	Unnecessary with SSW 7.5.3 rev 2
Macintosh Visca Driver	1.2	YES	ADPA Product
MacODA	1.0	YES	
MacOSI	1.1	YES	
MacsBug	6.5.2	YES	Posted online
MacSNMP Admin	1.0.2	YES	
MacSNMP Client	1.0.2	YES	
MacTCP	2.0.6	YES	Ships with SSW 7.5.3 rev 2
MacTCP Admin	2.0.4	YES	
MacTCP Developer's Kit	N/A	YES	APDA Product
MacTCP Token Ring Ext.	2.0.4	YES	Ships with SSW 7.5.3 rev 2
MacTerminal	3.0	YES	
MacX	1.5	YES	
MacX.400	1.1	YES	
MacX25	1.3	YES	
MIDI Manager Extension	2.0.2	YES	APDA Developer's tool, posted online
Monitors & Sound	1.1	YES	Ships with SSW 7.5.3 rev 2
MountImage	1.2	NO	NOT APPLE SOFTWARE use at own risk
Mouse Basics	4.5	NO	Replaced by Macintosh Tutorial
MoviePlayer	2.1	YES	Update available online
MPW	3.3	YES	APDA Product
MPW 411	N/A	YES	APDA Product
MPW C++	3.2	YES	APDA Product
NetTrax	1.2	NO	No longer offered by APDA
Network Control Panel	3.0.3	YES	Part of System 7.5.3 rev 2
Network Launch Fix	1.0.2	NO	Unnecessary with SSW 7.5.3 rev 2
Network Software	1.5.1	NO	Obsolete-changes included Installer in SSW 7.5.3 rev 2
Network Software Selector	1.0	YES	Ships with SSW 7.5.3 rev 2
Newton Connection (Mac)	2.0.2	YES	For Macintosh
Newton Connection (Win)	2.0.3	N/A	For Windows, update online
Newton Toolkit	1.5.2b2	YES	Update online
Open Transport	1.1	YES	Ships with SSW 7.5.3 rev 2
Ofoto	2.0.1	YES	Color OneScanner Support
OfotoColor	1.0	YES	System Extension
Open Doc	1.1	YES	
PANTONE Files for Color LW	12/600	YES	Posted Online
PatchBay DA	2.0.1	NO	APDA Developer's tool, posted

			online
PC Exchange	2.0.5	YES	Ships with SSW 7.5.3 rev 2
PC Exchange	2.0.7	YES	Ships with DOS Compatibility 1.5 SW. It is only compatible with Mac OS computers supporting DOS and PC Comptibility Cards.
PC Net Exchange	1.0.1	YES	Ships with SSW 7.5.3 rev 2
PC Setup	1.5	YES	Ships with SSW 7.5.3 rev 2, NOT for Quadra 610 DOS Compatible
PDD Maker GX	1.1.1	YES	Ships with SSW 7.5.3 rev 2
Personal LaserWriter 300	1.2	NO	Use LaserWriter 300 driver
Personal LaserWrtr 320	1.0.1	NO	Use LaserWriter 8 driver
Personal LaserWriter NTR	2.0	NO	Use LaserWriter 8 driver
Personal LaserWriter SC	7.0.1	YES	Ships with SSW 7.5
PhotoFlash	2.0.1	YES	Fixes Enhance problem on PCI-based Macs
PlainTalk	1.4.1	YES	Bundled with Power Surge Power Macs in USA, available online.
Portable StyleWriter	1.0.1	YES	See TIL article on GX drivers
PowerBook Control Panel	7.5.3	YES	Ships with SSW 7.5.3 rev 2
PowerBook/DOS Companion		YES	See separate TIL article
PowerBook Display	7.5.2	YES	Ships with SSW 7.5.3 rev 2
PowerBook File Assistant	1.0	YES	
PowerBook Setup Ctl Pnl	7.3.1	YES	Ships with SSW 7.5.3 rev 2
PowerCD Setup	1.0.1	YES	
PowerShare	1.1	YES	Collaboration Server
PowerTalk	1.2.3	YES	Ships with SSW 7.5.3 rev 2
PowerTalk for PowerPC	1.0.2	NO	Use PowerTalk 1.1
Printer Share	1.1.3	YES	Ships with SSW 7.5.3 rev 2
Quadra 950 Color Addition	1.0	NO	Unnecessary with SSW 7.5.3 rev 2
QuickDraw GX	1.1.3	YES	Ships with SSW 7.5.3 rev 2
QuickTake (Mac)	2.0.2	YES	For Macintosh
QuickTake (Win)	1.5	N/A	For Windows
QuickTime	2.5	YES	
QuickTime (Win)	2.0.3	N/A	For Windows
QuickTime Conferencing	1.0.2	YES	Shipped on PowerMac 7500/8500
QuickTime Starter Kit	1.6.1	NO	Discontinued product
Rename Rescue	1.0	NO	Unnecessary with SSW after 7.0.1
ResEdit	2.1.3	YES	APDA Product
Responder	1.1.1	NO	Not required, built into System 7.x
SADE	1.3.2	NO	No longer offered by APDA
Scanner	3.0	YES	Color OneScanner Support
Screen	1.0.7	YES	Ships with SSW 7.5.3 rev 2
Script Editor	1.1.1	YES	Ships with SSW 7.5.3 rev 2
Scriptable Text Editor	1.1	YES	AppleScript Developer's Kit
SerialDMA	2.0.2	NO	Obsolete-changes included in SSW 7.5.3 rev 2
Serial Switch	1.2	YES	Ships with SSW 7.5.3 rev 2
Serial Tool	1.0.2	YES	Basic Connectivity Set 1.1.1
SimpleText	1.3.1	YES	Ships with SSW 7.5.3 rev 2, also supports QuickDraw 3D
SNA*ps APPC Developer's	N/A	N/A	APDA Kit

SNA*ps	N/A	N/A	Contact Wall Data, Inc.
Sound Control Panel	8.0.5	YES	Ships with SSW 7.5.3 rev 2
Sound Effects	1.0	YES	
Sound Manager	3.1	NO	Obsolete-changes included in SSW 7.5.3 rev 2
Speech Manager	1.4	YES	Ships with SSW 7.5.3 rev 2
StyleWriter 1200	2.1.1	YES	Ships with 7.5.3 rev 2
StyleWriter GX	1.1.1	YES	Installed by Quickdraw GX 1.1.2, replaced 1.0.1
StyleWriter II	1.2	YES	Ships with SSW 7.5
System Enablers* - Please see separate			Tech Info Library article: "System Enablers: Current Versions"
System Picker	1.0	NO	NOT APPLE SOFTWARE use at own risk
System Update	3.0	NO	Update for System 7.1.x
System 7.5 Update	2.0.4	YES	Update for System 7.5.3 rev 2
System 7.5.2	1.1	YES	Specific to System 7.5.2, online Printing Fix
TeachText	7.2	NO	Use SimpleText, which ships with 7.5.3 rev 2
Telephone Manager	1.1.1	YES	
Thread Manager	2.0.1	YES	Comes with PowerTalk/System 7.5
Token Ring Control Pnl	1.0.1	YES	Ships with SSW 7.5.3 rev 2
Token Ring	1.0.2	YES	Ships with SSW 7.5.3 rev 2, for the Token Ring 4/16 NB and Token Ring NB/c cards
Token Ring	2.5.2	YES	Ships with SSW 7.5.3 rev 2, for TokenTalk NB card
TokenTalk	2.5.7	YES	Ships with SSW 7.5.3 rev 2
TV Setup Cntl Panel	1.0.2	YES	System Update Disk v 3.0
Type III Battery (Ext.)	1.0	NO	To use Type III batteries on PB Duos (other than 280) running pre-System 7.5
Video (control panel)	1.0.2	NO	Cntl pnl for AudioVision 14 Monitor
Video Monitor	1.0.1	YES	Bundled with AVs and Power Macs
VideoSync	1.0	NO	No longer offered by APDA
Virtual Monitor Switch	1.0	NO	Unnecessary with SSW 7.5.3 rev 2
Virtual User	2.0.1	YES	APDA Product
WorldScript II	7.5.1	YES	
Xmodem Tool	1.1	YES	Ships with SSW 7.5.3 rev 2

End_Table

* System Enablers provide machine specific support for new Macintosh Computers introduced beginning in October 1992. System 7.5 eliminates the need for a machine specific enabler, on systems shipping prior to October 1994.

** All of these Express Modem files are part of the Apple Telecom 2.3.2 software package.

This article provides some information about non-Apple software products. Please contact the appropriate vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

These articles can help you locate the software updates mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
09 Oct 1996 - Updated PC Exchange version information.
04 Oct 1996 - Added AppleTalk ImageWriter LQ 7.0.1.
11 Sep 1996 - Updated CD-ROM Setup 5.1.7, Cyberdog 1.1 and Open Doc 1.1.
30 Aug 1996 - Review and update, several changes.

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Tech Info Library Article Number:11094

Tech Info Library

Apple Software: Current Versions (11/96)

Revised: 4/21/97
Security: Everyone

Apple Software: Current Versions (11/96)

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Article Created: 7 December 1992
Article Reviewed/Updated: 26 November 1996

TOPIC ----------

The table below lists versions of SHIPPING Apple software products and provides the following information for each:

Version

The current version number.

7.5.3 rev 2?

Whether the product is supported with System Software 7.5.3 rev 2 (SSW 7.5.3 rev 2).

Some products, are listed as unsupported, but may be fully compatible. For example, TeachText is listed as not supported with System 7.5, because it has been replaced by SimpleText. This does not necessarily mean that TeachText does not work with System 7.5.3 rev 2.

Notes

Additional information on the product

Additional articles in the Tech Info Library describe many of the products listed below more fully. This article does not cover any announced Apple products which are not currently shipping.

DISCUSSION ----------

Begin_Table

Product	Version	7.5.3 rev 2	Notes

32-Bit System Enabler	1.0.3	NO	For Mac II, IIx, IIcx, SE/30; Use MODE32 version 7.5
8*24 GC (Extension)	7.0.1	NO	Not Compatible with PowerMac
950 Color Addition	1.0	NO	Unnecessary with SSW 7.5
A/UX	3.0.1	NO	
A/UX	3.1	NO	Only supports the AWS 95.
A/ROSE	1.2.2	YES	Ships with SSW 7.5.3 rev 2
ADSP	1.5.1	NO	Not required, part of SSW 7.0 & higher
Apple IIe Card SW	2.2.1d1	YES	
Apple Backup	1.4	YES	Ships with SSW 7.5
Apple Built-In Ethernet	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Apple Color Printer	1.0	YES	See TIL article on GX drivers
Apple Ethernet CS	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Apple Ethernet LC	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Apple Ethernet NB	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Apple DocViewer	1.1.1	YES	Apple Extras folder of Power Macs
Apple Event Manager	1.0.3	NO	Not necessary w/ SSW 7.5.3 rev 2
Apple File Exchange	7.0	NO	Use PC Exchange, which ships w/SSW 7.5.3 rev 2
Apple Font Pack	1.0	YES	See separate article in Tech Info Library for contents of Font Pack
Apple HD SC Setup	7.3.5	YES	Ships with SSW 7.5.3 rev 2
Apple Guide	2.0.2	YES	Ships with SSW 7.5.3 rev 2
Apple Internet Router	3.0.1	YES	Install before NSI 1.4.5
Apple LAN Utility	1.0b4	YES	Posted online-non supported software area
AppleLink	6.1	YES	Contact Apple Online Services
Apple Media Tool	2.0	YES	
Apple Menu Options	1.1.2	YES	Ships with SSW 7.5.3 rev 2
Apple MIDI Manager	2.0.2	YES	APDA Developer's tool, posted online
Apple MIDI Driver	2.0.2	YES	APDA Developer's tool, posted online
Apple Modem Tool	1.5.5	YES	
Apple Personal Diagnostics	1.1.3	YES	Updater from 1.1 online
Apple Phone	1.0.1	NO	Application bundled with AV models
Apple Photo Access	2.1	YES	Ships with SSW 7.5.3 rev 2
Apple Printer Utility	2.0	YES	Part of LaserWriter 8.3, posted online
Apple Remote Access	2.1	YES	Separate Client, Personal Server & Multiport Server versions.
AppleScript	1.1	YES	Ships with SSW 7.5.3 rev 2
AppleSearch Client	1.5	YES	
AppleSearch Client (Win)	1.0	N/A	For Windows
AppleSearch Server	1.5.1	YES	
AppleShare Client (Win)	1.0.2	N/A	For Windows
AppleShare File Server	4.2.1	YES	4.0.2 or later required w/ SSW 7.5
AppleShare Print Server	4.2.1	YES	This version required w/ SSW 7.5

Apple Shared Lib. Mgr.	1.1.2	YES	
AppleTalk (driver)	v.60.1	YES	Ships with SSW 7.5.3 rev 2(If using Open Transport 1.1; Classic AppleTalk version remains 58.1.5)
AppleTalk ImageWriter	7.0.1	YES	Ships with SSW 7.5
AplTalk ImageWriter LQ	7.0.1	YES	Ships with SSW 7.5
Apple Telecom	2.3.3	YES	Ships with SSW 7.5.3 rev 2
Apple Video Player	1.4	YES	For Performa 6xx TV/Tuner Card
AppleVision Display SW	1.0.4	YES	Supports AppleVision & AudioVision Displays on System 7.5.x computers
Assistant Toolbox	1.3	YES	Ships with SSW 7.5.3 rev 2
At Ease (Basic)	3.0.3	YES	Available from Claris
At Ease for Workgroups	3.0.3	YES	Available from Claris
At Ease	4.0	YES	Part of Apple Network Administrator Toolkit
Audio Volume	1.1	YES	Available online
AudioVision (extension)	1.0.2	NO	Extension for AudioVision 14 Display
Auto Power On/Off	1.0	YES	Ships with SSW 7.5.3 rev 2
AutoRemounter	1.2	YES	Ships with SSW 7.5.3 rev 2
AV Serial Extension	1.0	NO	Unnecessary with SSW 7.5.3 rev 2
AW Server 95	1.1	NO	Part of AWS 95 Update 1.1
AWS 95 Tune-Up	1.0	NO	System update disks (2) for the Apple Workgroup Server 95
Basic Color Monitor	1.0	NO	Unnecessary with SSW 7.5.3 rev 2
Basic Connectivity Set	1.1.1	YES	
Battery DA	7.1.1	NO	Part of control strip in SSW 7.5.3 rev 2
Battery Recondition	1.3	YES	Ships with SSW 7.5.3 rev 2
CD-ROM Setup	5.1.7	YES	Posted online
Chinese Language Kit	1.1.1	YES	See separate TIL article, Chinese Language Kit: Frequently Asked Questions
Chooser	7.5.4	YES	Ships with SSW 7.5.3 rev 2
CloseView	7.2.1	YES	Ships with SSW 7.5.3 rev 2
Color Picker	2.0.1	YES	Ships with SSW 7.5.3 rev 2
Color SW 2400	2.1.1	YES	Ships with SSW 7.5.3 rev 2
Color SW 2400 GX	1.0.1	YES	Installed by Quickdraw GX 1.1.2
Color SW Pro	1.5.2	YES	Ships with SSW 7.5.3 rev 2
ColorSync	2.0.1	YES	Ships with SSW 7.5.3 rev 2
Control Strip	1.3.1	YES	Ships with SSW 7.5.3 rev 2
CPU Energy Saver	1.0.6	YES	Ships with SSW 7.5.3 rev 2
Curare	1.0	NO	No longer offered by APDA
Cyberdog	1.1	YES	
DAL Software	N/A	N/A	Not Apple software, contact ITI
DART	1.5.3	NO	Not Apple software
Desktop Printer Ext.	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Desktop PrintMonitor	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Desktop Printer Spooler	1.0.3	YES	Ships with SSW 7.5.3 rev 2
Disk Copy	4.2	YES	Ships with SSW 7.5.3 rev 2
Disk First Aid	7.2.2	YES	Ships with SSW 7.5.3 rev 2
Display Enabler	2.0	NO	Obsolete-changes included

			in SSW 7.5.3 rev 2
DocViewer	1.1.1	YES	
DOS Compatibility SW	1.5	YES	Available online.
Drive Firmware Update	1.2	YES	Available online.
Drive Setup	1.0.5	YES	Available online.
Duo Battery Patch	1.0	NO	Unnecessary with SSW 7.5.3 rev 2
Easy Access Ctrl Panel	7.2	YES	Ships with SSW 7.5
Energy Saver	1.1	YES	Ships with SSW 7.5.3 rev 2
EtherTalk	2.5.7	YES	Ships with SSW 7.5.3 rev 2
Express Modem**	2.3.3	YES	Control panel for Express Modem and GeoPort
Express Modem Tool**	2.3.3	YES	CTB Extension for Express Modem, GeoPort
Express Modem ARA 1.x**	2.3	YES	AppleTalk Remote Access CCL file
Express Modem ARA 2.x**	2.3	YES	AppleTalk Remote Access CCL file
Express Modem CCL**	2.3	YES	AppleLink CCL file
Extension Manager	3.0.3	YES	Ships with Display SW 1.2
Fax Extension**	2.3.3	YES	PB Modem, Express Modem, GeoPort
Fax Sender**	2.1	YES	PB Modem, Express Modem, GeoPort
Fax Sender GX**	2.3	YES	PB Modem, Express Modem, GeoPort
Fax Terminal**	2.3.3	YES	PB Modem, Express Modem, GeoPort
Fax Viewer**	2.3.3	YES	PB Modem, Express Modem, GeoPort
Fax Cover**	2.3.3	YES	PB Modem, Express Modem, GeoPort
Font/DA Mover	4.1	NO	Unnecessary with SSW 7.5.3 rev 2
GeoPort Extension	2.3.3	YES	See Apple Telecom 2.3 above
GeoPort for Power Mac	2.3.3	YES	See Apple Telecom 2.3 above
Hardware System Update	2.0.1	NO	Obsolete-changes included in SSW 7.5.3 rev 2
HyperCard	2.3	YES	APDA Product, avail from resellers; 2.3.5 Update available online
HyperCard Player	2.3.5	YES	Ships with Display SW 1.2
HyperScan	2.0.1	YES	OneScanner
ImageWriter	7.0.1	YES	Ships with Display SW 1.2
ImageWriter GX	1.1.1	YES	Installed by Quickdraw GX 1.1.2, replaced 1.0.1
ImageWriter LQ GX	1.1.1	YES	Installed by Quickdraw GX 1.1.2, replaced 1.0.1
Installer	4.0.3	YES	Ships with SSW 7.5
Inter*Poll	1.0.1	NO	Not supported w/ SSW 7.5.3 rev 2
Internal HD Format	1.3	YES	For use with IDE Drives Only, posted online
Japanese Language Kit	1.2	YES	From Apple Order Center
LaserWriter	7.2	YES	Ships with SSW 7.5
LaserWriter 8	8.3.4	YES	Ships with SSW 7.5.3 rev 2
LaserWriter Bridge	2.1	YES	Update available online.
LaserWriter GX	1.1.2	YES	Installed by Quickdraw GX 1.1.2, replaced 1.0.1
LaserWriter IISC GX	1.1.1	YES	Installed by Quickdraw GX 1.1.2, replaced 1.0.1
LaserWriter Utility	7.7	YES	Ships with SSW 7.5
LaserWriter Select 300	1.2	NO	Use LaserWriter 300 driver
LaserWriter 300	1.2	YES	Ships with SSW 7.5

LaserWriter 300 GX	1.1.1	YES	Installed by Quickdraw GX 1.1.2, replaced 1.0.1
LaserWriter Select 360	1.1	NO	Use LaserWriter 8.3.3 driver
LaserWrtr Select 360 Fax	1.1	NO	Use LaserWriter 8.2.3f driver
Likewise	1.0.1	NO	Discontinued 12/93
LocalTalk Bridge	2.1	YES	Update available online.
LW Select 310	7.0.1	YES	Ships with SSW 7.5
MacApp	3.0.1	YES	APDA Product
MacCheck	1.0.5	NO	Discontinued
MacinTalk Pro	1.4	YES	Ships with Text-to-Speech software 1.4.1
Macintosh Basics	5.0	NO	Mac Tutorial is included in SSW 7.5.3 rev 2
Macintosh Common Lisp	3.0	YES	APDA Product
Macintosh Easy Open	1.1.2	YES	Ships with SSW 7.5.3 rev 2
Macintosh Quadra Extra	1.0	NO	Unnecessary with SSW 7.5.3 rev 2
Macintosh Visca Driver	1.2	YES	ADPA Product
MacODA	1.0	YES	
MacOSI	1.1	YES	
MacsBug	6.5.2	YES	Posted online
MacSNMP Admin	1.0.2	YES	
MacSNMP Client	1.0.2	YES	
MacTCP	2.0.6	YES	Ships with SSW 7.5.3 rev 2
MacTCP Admin	2.0.4	YES	
MacTCP Developer's Kit	N/A	YES	APDA Product
MacTCP Token Ring Ext.	2.0.4	YES	Ships with SSW 7.5.3 rev 2
MacTerminal	3.0	YES	
MacX	1.5	YES	
MacX.400	1.1	YES	
MacX25	1.3	YES	
MIDI Manager Extension	2.0.2	YES	APDA Developer's tool, posted online
Monitors & Sound	1.1	YES	Ships with SSW 7.5.3 rev 2
MountImage	1.2	NO	NOT APPLE SOFTWARE use at own risk
Mouse Basics	4.5	NO	Replaced by Macintosh Tutorial
MoviePlayer	2.1	YES	Update available online
MPW	3.3	YES	APDA Product
MPW 411	N/A	YES	APDA Product
MPW C++	3.2	YES	APDA Product
NetTrax	1.2	NO	No longer offered by APDA
Network Assistant	2.0	YES	Part of Apple Network Administrator Toolkit
Network Control Panel	3.0.3	YES	Part of System 7.5.3 rev 2
Network Launch Fix	1.0.2	NO	Unnecessary with SSW 7.5.3 rev 2
Network Software	1.5.1	NO	Obsolete-changes included Installer in SSW 7.5.3 rev 2
Network Software Selector	1.0	YES	Ships with SSW 7.5.3 rev 2
Newton Connection (Mac)	2.0.2	YES	For Macintosh
Newton Connection (Win)	2.0.3	N/A	For Windows, update online
Newton Toolkit	1.6.2	YES	
Open Transport	1.1	YES	Ships with SSW 7.5.3 rev 2
Ofoto	2.0.1	YES	Color OneScanner Support

OfotoColor	1.0	YES	System Extension
Open Doc	1.1	YES	
PANTONE Files for Color	LW 12/600	YES	Posted Online
PatchBay DA	2.0.1	NO	APDA Developer's tool, posted online
PC Exchange	2.0.5	YES	Ships with SSW 7.5.3 rev 2
PC Exchange	2.0.7	YES	Ships with DOS Compatibility 1.5 SW. It is only compatible with Mac OS computers supporting DOS and PC Comptibility Cards.
PC Net Exchange	1.0.1	YES	Ships with SSW 7.5.3 rev 2
PC Setup	1.5	YES	Ships with SSW 7.5.3 rev 2, NOT for Quadra 610 DOS Compatible
PDD Maker GX	1.1.1	YES	Ships with SSW 7.5.3 rev 2
Personal LaserWriter 300	1.2	NO	Use LaserWriter 300 driver
Personal LaserWrtr 320	1.0.1	NO	Use LaserWriter 8 driver
Personal LaserWriter NTR	2.0	NO	Use LaserWriter 8 driver
Personal LaserWriter SC	7.0.1	YES	Ships with SSW 7.5
PhotoFlash	2.0.1	YES	Fixes Enhance problem on PCI-based Macs
PlainTalk	1.4.1	YES	Bundled with Power Surge Power Macs in USA, available online.
Portable StyleWriter	1.0.1	YES	See TIL article on GX drivers
PowerBook Control Panel	7.5.3	YES	Ships with SSW 7.5.3 rev 2
PowerBook/DOS Companion		YES	See separate TIL article
PowerBook Display	7.5.2	YES	Ships with SSW 7.5.3 rev 2
PowerBook File Assistant	1.0	YES	
PowerBook Setup Ctl Pnl	7.3.1	YES	Ships with SSW 7.5.3 rev 2
PowerCD Setup	1.0.1	YES	
PowerShare	1.1	YES	Collaboration Server
PowerTalk	1.2.3	YES	Ships with SSW 7.5.3 rev 2
PowerTalk for PowerPC	1.0.2	NO	Use PowerTalk 1.1
Printer Share	1.1.3	YES	Ships with SSW 7.5.3 rev 2
Quadra 950 Color Addition	1.0	NO	Unnecessary with SSW 7.5.3 rev 2
QuickDraw GX	1.1.3	YES	Ships with SSW 7.5.3 rev 2
QuickTake (Mac)	2.0.2	YES	For Macintosh
QuickTake (Win)	1.5	N/A	For Windows
QuickTime	2.5	YES	
QuickTime (Win)	2.0.3	N/A	For Windows
QuickTime Conferencing	1.0.2	YES	Shipped on PowerMac 7500/8500
QuickTime Starter Kit	1.6.1	NO	Discontinued product
Rename Rescue	1.0	NO	Unnecessary with SSW after 7.0.1
ResEdit	2.1.3	YES	APDA Product
Responder	1.1.1	NO	Not required, built into System 7.x
SADE	1.3.2	NO	No longer offered by APDA
Scanner	3.0	YES	Color OneScanner Support
Screen	1.0.7	YES	Ships with SSW 7.5.3 rev 2
Script Editor	1.1.1	YES	Ships with SSW 7.5.3 rev 2
Scriptable Text Editor	1.1	YES	AppleScript Developer's Kit
SerialDMA	2.0.2	NO	Obsolete-changes included in SSW 7.5.3 rev 2
Serial Switch	1.2	YES	Ships with SSW 7.5.3 rev 2

Serial Tool	1.0.2	YES	Basic Connectivity Set 1.1.1
SimpleText	1.3.1	YES	Ships with SSW 7.5.3 rev 2, also supports QuickDraw 3D
SNA*ps APPC Developer's	N/A	N/A	APDA Kit
SNA*ps	N/A	N/A	Contact Wall Data, Inc.
Sound Control Panel	8.0.5	YES	Ships with SSW 7.5.3 rev 2
Sound Effects	1.0	YES	
Sound Manager	3.1	NO	Obsolete-changes included in SSW 7.5.3 rev 2
Speech Manager	1.4	YES	Ships with SSW 7.5.3 rev 2
StyleWriter 1200	2.1.1	YES	Ships with 7.5.3 rev 2
StyleWriter GX	1.1.1	YES	Installed by Quickdraw GX 1.1.2, replaced 1.0.1
StyleWriter II	1.2	YES	Ships with SSW 7.5
System Enablers* - Please see separate			Tech Info Library article: "System Enablers: Current Versions"
System Picker	1.0	NO	NOT APPLE SOFTWARE use at own risk
System Update	3.0	NO	Update for System 7.1.x
System 7.5 Update	2.0.4	YES	Update for System 7.5.3 rev 2
System 7.5.2	1.1	YES	Specific to System 7.5.2, online Printing Fix
TeachText	7.2	NO	Use SimpleText, which ships with 7.5.3 rev 2
Telephone Manager	1.1.1	YES	
Thread Manager	2.0.1	YES	Comes with PowerTalk/System 7.5
Token Ring Control Pnl	1.0.1	YES	Ships with SSW 7.5.3 rev 2
Token Ring	1.0.2	YES	Ships with SSW 7.5.3 rev 2, for the Token Ring 4/16 NB and Token Ring NB/c cards
Token Ring	2.5.2	YES	Ships with SSW 7.5.3 rev 2, for TokenTalk NB card
TokenTalk	2.5.7	YES	Ships with SSW 7.5.3 rev 2
TV Setup Cntl Panel	1.0.2	YES	System Update Disk v 3.0
Type III Battery (Ext.)	1.0	NO	To use Type III batteries on PB Duos (other than 280) running pre-System 7.5
User & Group Manager	1.0	YES	Part of Apple Network Administrator Toolkit
Video (control panel)	1.0.2	NO	Cntl pnl for AudioVision 14 Monitor
Video Monitor	1.0.1	YES	Bundled with AVs and Power Macs
VideoSync	1.0	NO	No longer offered by APDA
Virtual Monitor Switch	1.0	NO	Unnecessary with SSW 7.5.3 rev 2
Virtual User	2.0.1	YES	APDA Product
WorldScript II	7.5.1	YES	
Xmodem Tool	1.1	YES	Ships with SSW 7.5.3 rev 2

End_Table

* System Enablers provide machine specific support for new Macintosh Computers introduced beginning in October 1992. System 7.5 eliminates the need for a

machine specific enabler, on systems shipping prior to October 1994.

** All of these Express Modem files are part of the Apple Telecom 2.3.2 software package.

This article provides some information about non-Apple software products. Please contact the appropriate vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

These articles can help you locate the software updates mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
26 Nov 1996 - Updated LocalTalk Bridge and LaserWriter Bridge to v2.1.
18 Nov 1996 - Updated Newton Toolkit to 1.6.2.
17 Oct 1996 - Updated At Ease, and added Apple Network Administrator Toolkit.
09 Oct 1996 - Updated PC Exchange version information.
04 Oct 1996 - Added AppleTalk ImageWriter LQ 7.0.1.

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Tech Info Library Article Number:11094

Tech Info Library

Macintosh Quadra: Using with Practical Peripherals 9600SA

Revised: 12/14/92
Security: Everyone

Macintosh Quadra: Using with Practical Peripherals 9600SA

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Article Created: 7 December 1992

TOPIC ----------

I'm having problems getting AppleTalk Remote Access (ARA) to answer calls. I'm using a Macintosh Quadra 700 and a Practical Peripherals 9600SA modem. The modem works fine with a Macintosh PowerBook 100, Macintosh Classic, Macintosh IIci, Macintosh Plus, and Macintosh SE.

When calling the Quadra, the modem answers for several seconds, then an error message appears: "The connection has failed. An unknown error of type -5,920 has occurred."

DISCUSSION ----------

The problem you are experiencing is actually due to the command handling speed of the modem. It can be fixed with a new script. Macintosh Quadra systems issue CCL instructions too quickly for the Practical Peripherals 9600SA to respond. (Other modems may have this problem as well.)

The solution is to insert a suitable "pause" before each write command in the CCL script. Testing on a Macintosh Quadra 700 with the 'Practical Peripherals 9600SA' script indicates 'pause 1' gives 275ms delay, 'pause 2' gives 375ms, and so on. A 'pause 1' should be sufficient for any modem. One side effect is that the entire dial/connect sequence takes approximately 1 second more.

The 'Practical Peripherals 9600SA' script with the pauses included is available on AppleLink. Use this script on all Macintosh systems.

Here is the path to the script on AppleLink:

Software Sampler
Apple SW Updates

Macintosh
  Networking & Communications
    AppleTalk Remote Access
      Original CCL's
       Practical Peripherals 9600SA (updated)

Note: The ARA error -5,920 means the length of a write request exceeds the maximum allowed.

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Tech Info Library Article Number:11095

Tech Info Library

Apple CD-ROM Extension 4.0.x Versions: Differences (9/93)

Revised: 9/27/93
Security: Everyone

Apple CD-ROM Extension 4.0.x Versions: Differences (9/93)

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Article Created: 11 January 1993
Article Reviewed/Updated: 27 September 1993

TOPIC ----------

What are the differences between versions 4.0, 4.0.1, 4.0.2, and 4.0.4 of the Apple CD-ROM extension?

DISCUSSION ----------

Beginning with version 4.0 of CD-ROM Setup, the installer script installed QuickTime. If the version of QuickTime changed, the installer script for CD-ROM Setup changed to request the latest version of QuickTime.

Version 4.0

Version 4.0 of the Apple CD-ROM extension was the first version to support dual-speed operation (which supports multiple-session Photo CDs) and the AppleCD 300 series. This version had problems with certain CD-ROMs that used encryption technology to restrict access to files. When the customer was given a decryption key to gain access to a file, the file wouldn't always appear in the Finder.

Here's a list of some of the CD-ROMs that had this problem:

- Adobe Type on Call
- AgfaType Collection
- Bitstream's Type Treasury
- Image Club Graphics
- D'Pix
- Nautilus CD
- Picture Shop
- Font Shop

QuickTime 1.5 shipped with this version.

Version 4.0.1

Version 4.0.1 was produced to fix the decryption problem. This version was only tested on the Macintosh IIvx and Performa 600.

Version 4.0.2

Version 4.0.2 was tested on all Macintosh computers. A few changes were made to ensure compatibility across the Macintosh product line, but there's no functional difference between 4.0.1 and 4.0.2 versions of the Apple CD-ROM extension.

Version 4.0.4

This version has AppleCD Speed Switch revised to 1.0.3. The Macintosh CD-ROM Setup 4.0.4 Installer provides the option to install QuickTime 1.6. And it includes TeachText 7.1.

Version 4.0.5

QuickTime 1.6.1 shipped with this version.

Article Change History:
27 September 1993 - Added QuickTime information and version 4.0.5.
28 July 1993 - Added information about version 4.0.4.

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Tech Info Library Article Number:11097

Tech Info Library

MacX1.2: Tuning BackInStore

Revised: 1/15/93
Security: Everyone

MacX1.2: Tuning BackInStore

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Article Created: 23 December 1992

TOPIC ----------

We're running MacX 1.2 and wonder what you advise as far as tuning BackInStore.

DISCUSSION ----------

When a server maintains the contents of a window, the pixels saved off screen are what is known as Backing Store. BackInStore is an industry-standard way of handling virtual memory functions from within an X server application. It is a new feature of MacX 1.2.

If the Backing-stores attribute is set for a server, it indicates that the server supports backing stores for this screen, although it may be limited to the number of windows it can support at one time, due to storage limitations. Also, the Backing Store can have different attributes set:

- A Backing Store of WhenMapped advises the server that maintaining contents of obscured regions when the window is mapped would be beneficial.

- A Backing Store of Always advises the server that maintaining contents even when the window is unmapped would be beneficial.

- A Backing Store of NotUseful advises the server that maintaining contents is unnecessary, although a server might still choose to maintain contents, while the window is mapped.

A window is said to be mapped, if a map call has been performed on it. Unmapped Windows and their inferiors are never viewable or visible.

Tuning generally refers to metrics applied to sizing the BackInStore file

and is dependent on how memory is used by the MacX application, as in caching of information and swapping out the memory used for displaying idle or non-active processes.

In the case of the MacX server, the only tuning you can do is to allocate enough memory for the MacX application. Because the use of Backing Store increases the amount of memory used by MacX, you could save some memory going to the "Display Preferences" dialog and selecting the option for "Requesting Clients" instead of "All Clients". If the "Requesting Clients" button is selected, MacX provides Backing Store only to the clients that explicitly request it.

For the best performance of MacX, make sure that the screen depth of the Macintosh is set to either 1 or 8 bits. If you choose any of the other screen depths, then MacX slows significantly.

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Tech Info Library Article Number:11098

Tech Info Library

AppleTalk Remote Access and Tymnet (2/96)

Revised: 2/9/96
Security: Everyone

AppleTalk Remote Access and Tymnet (2/96)

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Article Created: 7 December 1992
Article Reviewed/Updated: 9 February 1996

TOPIC ----------

Can I use AppleTalk Remote Access (ARA) to connect to an ARA system via Tymnet? I can dial up a Tymnet modem, input a terminal type (a character "A" or "O"), input my network username and password, and then Tymnet connects me (via hard- wired connection) to a Macintosh running ARA. Is this possible with ARA?

DISCUSSION ----------

You can use the Apple Remote Access Multiport Server X.25 Extension to use ARA over an X.25 network such as Tymnet or Sprint.

See the TIL article "ARA and X.25: MultiPort Server X.25 - Description" for more information.

Article Change History:
09 Feb 1996 - Updated with X.25 Extension information.
06 Jan 1993 - To show additional information received.

Support Information Services

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Tech Info Library Article Number:11099

Tech Info Library

Apple Equipment: How to Use Apple's Global Warranty (11/94)

Revised: 11/30/94
Security: Everyone

Apple Equipment: How to Use Apple's Global Warranty (11/94)

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Article Created: 8 December 1992
Article Reviewed/Updated: 30 November 1994

TOPIC ----------

Apple hardware now includes global warranty coverage for a period of one year. If you discover a defect with your in-warranty Apple product while outside the United States, that product will be covered.

This article, derived from Apple's Limited Warranty card (030-3926-A), tells how to take advantage of this warranty.

DISCUSSION ----------

If your product fails during the warranty period while you are outside of the United States, or in U.S. territories and possessions, you may have it repaired at no charge to you (no refunds or replacements are provided).

You must deliver it during the warranty period, at your expense, to an Apple authorized reseller or service provider in the country in which the product failed. Please be aware that service providers outside the United States may not carry all repair parts for U.S. products, or may not be able to repair some models. If repair parts need to be special ordered, the repair may take longer than normal. If your model cannot be repaired in the country you are in, it may need to be sent to a different country or returned to the U.S. at your expense for service.

If you plan to travel overseas, please remember to take proof of purchase with you. In case your Apple product does fail, you'll have proof of when your product was purchased. If you have questions about this global warranty reimbursement program, please contact your local authorized Apple reseller or Apple representative.

Article Change History:

..TIL11101-Apple_Equipment-How_to_Use_Apples_Global_Warranty_11-94.pdf

30 Nov 1994 - Updated process for getting service while out of the country.

Support Information Services

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Tech Info Library Article Number:11101

DAL: No Support for Binary Large OBjects

Revised: 12/14/92
Security: Everyone

DAL: No Support for Binary Large OBjects

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Article Created: 1 December 1992

TOPIC ----------

A Library is using a system based on an Imaging system to store data in a relational database. The data stored could be anything from text to large binary images. Are Binary Large OBjects (BLOB) supported with the current release of DAL?

Will BLOB be supported in the version of DAM with the ODBC extensions?

DISCUSSION ----------

The data type Binary Large OBjects (BLOB) is not supported by DAL at present.

In reference to BLOB being supported in DAM with ODBC, please understand that ODBC is an API, and the DAL client and server will need to support this data type also in order for it to work. Certainly the drive to support ODBC will facilitate this upgrade to DAM or DAL development.

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Tech Info Library Article Number:11103

Tech Info Library

Performa 600: Explanation of Included Disks

Revised: 12/9/92
Security: Everyone

Performa 600: Explanation of Included Disks

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Article Created: 4 December 1992

TOPIC ----------

Do any floppy disks come with the Performa 600? (I heard that Apple doesn't supply any System disks with this computer.)

DISCUSSION ----------

Because System software is installed on the hard drive, no System disks are included in the box. You can purchase the System 7 disk set separately if you wish.

The Performa 600 does come with a Performa Utilities disk, which contains a backup and restore program to restore your system software in the event of a system crash or corruption.

Among the first things you should do when you get your system:

1) Purchase some blank high-density disks.

2) Use the backup software to back up your Performa 600's hard disk to floppies. This way, you will be able to restore your System software if you have a crash.

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Tech Info Library Article Number:11105

Tech Info Library

Performa 600, Macintosh IIvx, IIvi: IIci Cache Cards

Revised: 12/11/92
Security: Everyone

Performa 600, Macintosh IIvx, IIvi: IIci Cache Cards

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Article Created: 7 December 1992

TOPIC ----------

Is there a list of Macintosh IIci cache cards that are compatible with the accelerator slot on the Performa 600? Specifically, will Apple's IIci Cache Card work?

DISCUSSION ----------

Apple's IIci Cache Card is not compatible with the Performa 600, the Macintosh IIvx or the Macintosh IIvi (not sold in U.S.).

Apple has not done extensive testing with cache cards, but some cards designed for the Macintosh IIci do work. We recommend you contact the vendor of the cache card.

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Tech Info Library Article Number:11106

Tech Info Library

Performa 600, Macintosh IIvx: SCSI ID and Termination

Revised: 12/11/92
Security: Everyone

Performa 600, Macintosh IIvx: SCSI ID and Termination

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Article Created: 09 December 1992

TOPIC ----------

I have a Performa 600 with the internal AppleCD 300i and an external LaserWriter SC.

1) What is the SCSI ID setting for the internal AppleCD 300i?

2) How is the internal AppleCD 300i terminated (it already has two internal SCSI devices)?

3) What is the termination procedure for external devices? With a terminator on the LaserWriter SC, the system would not start. Without the terminator, the system worked. Does this mean that external devices are not the last SCSI devices on the chain?

DISCUSSION ----------

1) The SCSI ID of the internal AppleCD 300i in the Performa 600 and the Macintosh IIvx is "3".

2) The Performa 600 and the Macintosh IIvx provide on-board SCSI termination when no external SCSI device is connected to the DB-25 connector. Once an external SCSI device is plugged into the SCSI port, you need to add a SCSI Terminator on the last device in the external SCSI chain

   SCSI ID has nothing to do with termination or where the device is in the SCSI chain. You can have the SCSI ID set to 1 and have it be the last device on the chain -- and it will work.

3) We have seen occasional problems like this when connecting SCSI devices on the SCSI bus. SCSI termination seems at times more art than science. The basic answer is: If it works, then it's OK to leave it that way. If more

devices are added to chain, then you will more than likely need to add a terminator.

Other workarounds are:

- Start up the Macintosh before powering up any SCSI devices.
- Double-terminate the SCSI bus, using platinum terminators. CAUTION: Do not use two black (Macintosh IIfx) terminators, as this may damage the SCSI device or logic board.

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Tech Info Library Article Number:11109

Tech Info Library

Trojan Horse Warning: Hermes Optimizer 1.1

Revised: 12/11/92
Security: Everyone

Trojan Horse Warning: Hermes Optimizer 1.1

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Article Created 4 December 1992

TOPIC ----------

A Trojan Horse stack named Hermes Optimizer 1.1 has been distributed through Olympus BBS.

DISCUSSION ----------

The Help section says this stack decreases the level of fragmentation in your Hermes Shared file, but in fact RENAMES ALL FILES ON THE HARD DISK, MOVES DIRECTORIES, AND THEN DELETES THEM ALL.

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Tech Info Library Article Number:11110

Tech Info Library

Macintosh: What Causes Total Memory Fluctuations

Revised: 12/11/92
Security: Everyone

Macintosh: What Causes Total Memory Fluctuations

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Article Created: 10 December 1992

TOPIC ----------

Why does the total memory amount change back and forth every few seconds?

DISCUSSION ----------

Total memory bounces back and forth because the Process Manager makes synthetic fonts purgeable every time it does a context switch. The Font Manager creates synthetic fonts to render fonts to a bit depth that doesn't match the bit depth of the font.

After this, if the synthetic font gets purged, some memory becomes free. Then the Finder updates the total memory used. But redrawing that number forces the Font Manager to rebuild the synthetic font, which takes up more memory. So the Finder updates again, then the Process Manager makes the font purgeable. This repeating process results in Finder updates for the total memory used each time a synthetic font is created or purged.

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Tech Info Library Article Number:11111

Tech Info Library

Macintosh: Fonts and System File Memory Allocation

Revised: 12/11/92
Security: Everyone

Macintosh: Fonts and System File Memory Allocation

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Article Created: 10 December 1992

TOPIC ----------

Why doesn't deleting 600K of fonts make my system file allocate 600K less memory? When I look at "About this Macintosh" the system file has allocated only 100K less memory than before deleting the fonts.

DISCUSSION ----------

The system usually loads fonts into memory when an application uses the fonts. So even though you removed 600K of fonts, the fonts you weren't using weren't loaded into memory and have no impact on memory allocated for the system file.

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Tech Info Library Article Number:11112

Tech Info Library

Apple Ethernet NB Card: Expansion RAM Specifications (4/95)

Revised: 4/21/95
Security: Everyone

Apple Ethernet NB Card: Expansion RAM Specifications (4/95)

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Article Created: 10 December 1992
Article Reviewed/Updated: 21 April 1995

TOPIC ----------

The Apple Ethernet NB Card, M0417LL/A, has 512KB standard RAM, expandable to 1MB or 2.5MB with third-party memory expansion modules.

To help you be sure to use the correct third-party RAM, this article provides specifications for the RAM.

DISCUSSION ----------

The Apple Ethernet NB card supports 512K of surface-mounted DRAM and four auxiliary "ZIP" sockets for additional 512K or 2MB of DRAM. The standard 512KB of surface-mounted DRAM is organized as four 256K x 4 SOJ packages in the bottom quarter of the 2MB address range ($Fs000000 - $Fs1FFFFF).

A 512K upgrade, implemented with four more 256K x 4 DRAM chips slotted in the ZIP sockets, would be logically located just above the standard 512KB of DRAM. This upgrade would provide a total of 1MB of contiguous RAM in the lower half of the 2MB address range from 000000 to 0FFFFF.

A 2MB upgrade would occupy the entire lower 2MB address range and push the standard 512K up into the bottom quarter of the upper 2MB address range beginning at 200000 and ending at 27FFFF (and copied three times up through 3FFFFF).

The entire memory allocation, regardless of the configuration, is accessible to the 68000 processor, the SONIC Controller, and NuBus. When NuBus is the master, both the 68000 and the SONIC Controller are denied access to RAM. All RAM appears as a 16-bit device to the 68000 and the SONIC. The RAM appears as a full 32-bit wide device, supporting 8-bit, 16-bit, and 32-bit bus reads to the NuBus interface. NuBus accesses to RAM are performed with two 16-bit accesses by the MCP Controller and Data Path circuitry to provide the full 32 bits of

data in one NuBus access. This implementation, transparent to the application, puts the lowest addressed word in the lowest ordered bits (0 -15) and the highest addressed word in the highest ordered bits (16 - 31) of a 32-bit long word. The MMIU (Multi-Master Interface Unit) provides zero wait-state accesses with the 120ns DRAMs, using /CAS before /RAS refreshing.

The DRAM needed for any upgrade to this board must be either 256K x 4 or 1MB x 4 (120ns or faster) AND must be added in increments of 1MB (4-256K ZIP chips) or 2MB (4-1MB ZIP chips) only.

Memory for the card can be difficult to locate. However, if you want to upgrade the RAM, the following information will be helpful:

• Toshiba part No. TC514400AZ (from third-party distributors)

Article Change History:
21 Apr 1995 - Updated memory upgrade information.

Support Information Services

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Tech Info Library Article Number:11116

Tech Info Library

AppleTalk Remote Access Through a Secure ID System

Revised: 12/22/92
Security: Everyone

AppleTalk Remote Access Through a Secure ID System

==========

Article Created: 14 December 1992

TOPIC -----

I am using a "Secure ID" system for anyone trying to connect to the internal network system. This "Secure ID" system uses a "credit card" interface with uniquely assigned user passwords each time someone connects to the network. Currently this is only available for terminal emulation.

I would like to know if there is a way for remote network access with our Macintoshes using ARA through this Secure ID system? Has anyone written a CCL to access this system?

DISCUSSION -----

The only vendor that currently offers Secure ID access via ARA is Cayman Systems. The Cayman System GatorLink, 3 port ARA server offers an optional Secure ID server module which can be used with a Secure ID server. Contact Cayman Systems and Security Dynamics for more information.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11117

Tech Info Library

Performa 600: Optional Math Co-processor (6/94)

Revised: 6/16/94
Security: Everyone

Performa 600: Optional Math Co-processor (6/94)

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Article Created: 15 December 1992
Article Reviewed/Updated: 16 June 1994

TOPIC ----------

Is there an optional FPU (floating-point unit) for the Performa 600 computer?

DISCUSSION ----------

The Performa 600 computer can be upgraded with a math co-processor by merely installing a standard Motorola 68882 chip running at 32 MHz. The hardware and software will automatically recognize the chip. No further hardware or software changes are required.

The math co-processor chip is part number 922-0107 and can be purchased and installed through Apple authorized service providers. This upgrade can be also be used in Macintosh Performa 450, 460, 466, 467, 550, and 560 models.

Article Change History:
16 June 1994 - Removed information regarding M6775LL/A FPU Upgrade due its discontinuation.

Support Information Services

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Tech Info Library Article Number:11118

Tech Info Library

MS-DOS External 5.25-inch Floppy Drives: Macintosh Compatibility

Revised: 1/21/93
Security: Everyone

MS-DOS External 5.25-inch Floppy Drives: Macintosh Compatibility

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Article Created: 15 December 1992

01/21/93 - REVISED
- To include information about Macintosh MS-DOS compatible floppy drives

TOPIC ----------

Are MS/DOS external 5.25-inch floppy drives compatible with Macintosh computers?

DISCUSSION ----------

No, MS-DOS external 5.25-inch floppy drives are not compatible with Macintosh computers. An MS-DOS external 5.25-inch floppy drive is a device that attaches to a MS-DOS computer and reads 5.25-inch diskettes.

Macintosh computers must receive information on mounted disks. A key system call that gathers this information, DiskInPlace, is not supported by MS-DOS floppy drives.

Also, MS-DOS external floppy drives do not have the same pinouts as Macintosh drives.

There are Macintosh-compatible external floppy drives which DO attach to some Macintosh computers and read 5.25-inch MS-DOS diskettes. These floppy drives are designed to connect to Macintosh computers, not to MS-DOS computers. Two examples are:
- the Apple PC 5.25 Floppy Drive, made by Apple Computer
- the DaynaFile, made by Dayna Communications.

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Tech Info Library Article Number:11120

Tech Info Library

LaserWriter IIf and IIg Upgrade Kit: PPD Files Named in Reverse

Revised: 12/22/92
Security: Everyone

LaserWriter IIf and IIg Upgrade Kit: PPD Files Named in Reverse

==========

Article Created: 15 December 1992

TOPIC ----------

Are the PPD files on LaserWriter IIf/IIg ROM Upgrade disk named incorrectly?

DISCUSSION ----------

Yes, the two PPD files on the LaserWriter IIf/IIg ROM Upgrade Disk are named in reverse:

- The PPD file for the LaserWriter IIf is named "APLWIIg2.PPD".
- The PPD file for the LaserWriter IIg is named "APLWIIf2.PPD".

You can rename the files appropriately. There are no other known problems with the PPD files.

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Tech Info Library Article Number:11121

Tech Info Library

System 7 KanjiTalk: Supports JIS x0208 Character Set

Revised: 12/18/92
Security: Everyone

System 7 KanjiTalk: Supports JIS x0208 Character Set

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Article Created: 17 December 1992

TOPIC ----------

Which character sets are supported by KanjiTalk System 7: JIS X 0208-1990, JIS X 0212-190, UNICODE/ISO DIS 10646, or something else?

DISCUSSION ----------

Supported Character Set

KanjiTalk supports the JIS x0208 character set. Some of the fonts have extra characters newly created in JIS, but they don't have a number yet.

Unsupported Character Sets

JIS x0212 is the extension to JIS x0208, and it's sometimes referred to as JIS level-3 (Note: JIS x0208 defines JIS level-1 and level-2). This character set isn't supported in KanjiTalk 7.

Unicode and ISO DIS 10646 are actually two different specifications, though 16-bit encoding of ISO 10646 took the Unicode specification. KanjiTalk 7 doesn't support Unicode or ISO 10646.

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Tech Info Library Article Number:11122

Tech Info Library

Novell Network Management From a Remote Macintosh

Revised: 12/22/92
Security: Everyone

Novell Network Management From a Remote Macintosh

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Article Created: 16 December 1992

TOPIC -----

What tools are available for a Macintosh to dial in to a Novell server, and then be the network administrator? The administrator needs to be able to configure, update, and in general manage the server remotely, as if standing in front of it.

If the Novell server had the Macintosh Network Loadable Module (NLM), how much administration would be possible from a Macintosh?

DISCUSSION -----

Novell Technical Support provided this excellent input:

We do not really have any recommended method for managing a Novell Network from a remote Macintosh.

From a remote Mac, you can dial into an ARA Server (such as LAN/ROVER) or a Mac with ARA installed on the LAN or dial into a Shiva NetModem to access the LAN. You could then use the Novell NetWare Control Center Utility to administer the network; however, many NetWare administrators who come from a DOS background find this utility difficult to use. And there are some features which are NOT included in the Novell NetWare Control Center Utility which ARE available in the DOS based administrator's utilities: there is no Mac utility equivalent to PCONSOLE, PRINTCON, PRINTDEF, RCONSOLE, SALVAGE. Also, NetWare Control Center lacks the ability to setup WorkGroup Managers, User-Account Managers, and certain user account restrictions.

You may wish to use another option - dial in from a Mac to a PC (either to a Novell Access Server or using Argosy's RUNPC Remote). This will give the Macintosh user a DOS emulation window with a command line prompt [F:>] on

their Macintosh screen, and will allow them to use all of the DOS-based administrators utilities. In order to manage the server remotely "as if they were standing in front of it," the user will need to run the RCONSOLE.EXE utility so this would be the preferred method. Or another option would be to dial from a PC to a PC (once again either to a Novell Access server or to a PC running remote access software like PCAnywhere) and then run the RCONSOLE.EXE utility.

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Tech Info Library Article Number:11124

Tech Info Library

A/UX 3.0 and stropen: out of streams Message

Revised: 1/15/93
Security: Everyone

A/UX 3.0 and "stropen: out of streams" Message

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Article Created: 16 December 1992

TOPIC ----------

I have a customer running A/UX 3.0 who is frequently getting "stropen out of streams" messages on his console window. He has not been able to correlate these messages appearing to any particular activity or application program. He has already doubled the NSTREAM and NQUEUE parameters from their defaults, and is still getting these messages.

He's also getting a "fcntl: Local lock-manager not registered" message after booting showing up in the console window.

His hardware configuration is: Quadra 950 with an external Maxtor drive and an external La Cie DAT drive. The monitor is Apple 21" using built-in video. No additional cards. There's a StyleWriter on the printer port, and a Telebit QBlazer on the modem port.

Here is what kconfig -a says:

```
NBUF         =          0
NPBUF        =         20
NFILE        =       1024
NINODE       =       1024
NSPTMAP      =         75
NCALL        =        100
NMOUNT       =         10
NFLOCK       =        200
NREGION      =        300
NPROC        =        100
NCLIST       =        400
MAXUP        =         50
VHNDFRAC     =         16
MAXPMEM      = 0x00000000
NMBUFS       =       1000
```

```
NPTY         =         32
MAXCORE      = 0x00030000
MAXHEADER    = 0x00000800
NSTREAM      =         64
NQUEUE       =        512
NBLK4096     =         30
NBLK2048     =          8
NBLK1024     =         64
NBLK512      =         64
NBLK256      =         64
NBLK128      =         64
NBLK64       =         64
NBLK16       =        128
NBLK4        =        256
SBUFSIZE     =       2048
SLICE        =          5
GETPGSLOW    = 0x00000060
GETPGSHI     = 0x00000080
GETPGSMSK    = 0x00000009
VHANDR       =          2
MAXSC        = 0x00000008
MAXFC        = 0x00000064
MAXUMEM      = 0x00040000
NUMAP        =         10
MINARMEM     = 0x0000000a
MINASMEM     = 0x0000000a
FLCKREC      =        200
FLCKFIL      =         50
CDLIMIT      = 0x01000000
CMASK        = 0x00000000
ROOTDEV      = 0x0000ffff
SWAPDEV      = 0x0000ffff
PIPEDEV      = 0x0000ffff
DUMPDEV      = 0x0000ffff
SWAPLO       =          0
SWAPCNT      =          0
```

DISCUSSION ----------

The "stropen: out of streams" is a fatal error message. It indicates that there is not enough memory to set up and run streams in A/UX.

We suggest that the customer either add more physical RAM to the system, or (not recommend) reduce some kernel memory parameters like NBUF, NFILE, NINODE, NSTREAM, NQUEUE, ... etc. with 'kconfig'.

The "fcntl: Local ..." message is the result from the first message.

On a Quadra 950, 8MB of physical RAM is the minimum for a single user as long as you are not networking. 16MB to 20MB of physical RAM will allow greater functionality and generally provide the memory you need.

..TIL11128-A-UX_3-0_and_stropen-out_of_streams_Message.pdf

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Tech Info Library Article Number:11128

Tech Info Library

MacTerminal: Selecting Folder For Received Files

Revised: 1/15/93
Security: Everyone

MacTerminal: Selecting Folder For Received Files

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Article Created: 17 December 1992

TOPIC ----------

I tried to save a received file to the Desktop after receiving a file in MacTerminal 3.0 with Straight Xmodem, Standard.

It didn't put the files there, instead the files are located in MacTerminal folder as:

  File being received… 1
  File being received… 2

DISCUSSION ----------

This is how MacTerminal 3.0 was designed. When you select the Folder For Received Files, if you want to direct incoming files to the folder whose contents is currently displayed, click the Select Current folder button; otherwise, click the folder where you want to direct incoming files and then click the Select button.

You got the results you did because the MacTerminal folder was selected and then you clicked Select; had you clicked on Desktop then on Select Current folder, the files would have been saved to the desktop.

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Tech Info Library Article Number:11129

Tech Info Library

TITLE

Macintosh: Monitor and Video Chart (1 of 4)

Article ID: 11131
Created: 12/18/92
Modified: 10/6/99

TOPIC

This article provides a list of Apple Macintosh systems with the monitor and video options each can use.

Related Articles:

- **Macintosh: Monitors and Video Chart (2 of 4)**, article #15878
- **Macintosh: Monitors and Video Chart (3 of 4)**, article #15879
- **Macintosh: Monitors and Video Chart (4 of 4)**, article #15881

DISCUSSION

Monitor Specification Chart				
Specifications	**12-in Monochrome**	**12-in RGB**	**Basic Color Monitor**	**Color Plus Display**
Part Number	M0298LL/A	M0297LL/C	M9103LL/B	M2346LL/A
Resolution (pixels)	640 x 480	512 x 384	640 x 480	640 x 480
Power Frequency (Hz)	50 - 60	47 - 63	50 - 60	47 - 63
Power Voltage (VAC)	90 - 270	100 - 120	100 - 125	90 - 134
Vertical Refresh	66.7 Hz	60.15 Hz	59.94 Hz	66.7 Hz
Horizontal Refresh	35 kHz	24.48 kHz	31.5 kHz	35 kHz
Dots Per Inch (DPI)	76	64	N/A	68
Dot Pitch	N/A	0.28 mm	0.39 mm	0.29 mm

LC Family					
LC	**VRAM**	**12-in Monochrome**	**12-in RGB**	**Basic Color Monitor**	**Color Plus Display**
LC, LC II	256K 512K	16 G 256 G	256 C 32,768 C	16 C 256 C	16 C 256 C
LC III	512K 768K	256 G 256 G	32,768 C 32,768 C	256 C 32,768 C	256 C 32,768 C
LC 475	512K 1MB	256 G 256 G	32,768 C 32,768 C	256 C 32,768 C	256 C 32,768 C
LC 630	--	256 G	32,768 C	32,768 C	32,768 C
G = Number of Grays C = Number of Colors					

Performa Family					
Performa	**VRAM**	**12-in Monochrome**	**12-in RGB**	**Basic Color Monitor**	**Color Plus Display**
400,405,410, 430	256K 512K	16 G 256 G	256 C 32,768 C	16 C 256 C	16 C 256 C

450	512K 768K	256 G 256 G	32,768 C 32,768 C	256 C 32,768 C	256 C 32,768 C
460,466,467	512K 768K	256 G 256 G	32,768 C 32,768 C	256 C 32,768 C	256 C 32,768 C
475,476	512K 1MB	256 G 256 G	32,768 C 32,768 C	256 C 32,768 C	256 C 32,768 C
550,560,575,577,578	N/A	N/A	N/A	N/A	N/A
600/600CD	512K 1MB	256 G 256 G	32,768 C 32,768 C	256 C 32,768 C	256 C 32,768 C
630	--	256 G	32,768 C	32,768 C	32,768 C
6200	--	256 G	32,768 C	32,768 C	32,768 C
6300	1 MB	256 G	32,768 C	32,768 C	32,768 C
6400	1 MB	256 G	32,768 C	32,768 C	32,768 C
Mac TV	--	N/A	N/A	N/A	N/A
G = Number of Grays C = Number of Colors					

Macintosh II Family

Macintosh	VRAM	12-in Monochrome	12-in RGB	Basic Color Monitor	Color Plus Display
IIsi IIci	-- --	256 G 256 G	256 C 256 C	N/A N/A	256 C 256 C
IIvi IIvx	512K 1MB	256 G 256 G	32,768 C 32,768 C	256 C 32,768 C	256 C 32,768 C
II, IIx, IIcx, IIfx	No built-in video, require a video card.				
G = Number of Grays C = Number of Colors					

Centris/Quadra Family

Centris/Quadra	VRAM	12-in Monochrome	12-in RGB	Basic Color Monitor	Color Plus Display
605	512K 1MB	256 G 256 G	32,768 C 32,768 C	256 C 32,768 C	256 C 32,768 C
610, 650	512K 1MB	256 G 256 G	32,768 C 32,768 C	256 C 32,768 C	256 C 32,768 C
660AV (1)	1MB	256 G	32,768 C	32,768 C	32,768 C
630	--	256 G	32,768 C	32,768 C	32,768 C
700	512K 1MB 2MB	256 G 256 G 256 G	256 C 16.7M C 16.7M C	256 C 256 C 16.7M C	256 C 256 C 16.7M C
800	512K 1MB	256 G 256 G	32,768 C 32,768 C	256 C 32,768 C	256 C 32,768 C
840AV (1)	1MB 2MB	256 G 256 G	32,768 C 16.7M C	32,768 C 16.7M C	32,768 C 16.7M C
900	1MB 2MB	256 G 256 G	16.7M C 16.7M C	256 C 16.7M C	256 C 16.7M C
950	1MB 2MB	256 G 256 G	32,768 C 16.7M C	32,768 C 16.7M C	32,768 C 16.7M C
G = Number of Grays C = Number of Colors (1) For the AV computers, pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.					

Power Macintosh Family

Power Macintosh	VRAM	12-in Monochrome	12-in RGB	Basic Color Monitor	Color Plus Display
4400	1MB 2MB 4MB	N/A N/A N/A	32,768 C 16.7M C 16.7M C	32,768 C 16.7M C 16.7M C	32,768 C 16.7M C 16.7M C
5400	1MB	N/A	N/A	N/A	N/A
6100 6100AV (1)	HDI45* 2MB	256 G 256 G	32,768 C 16.7M C	32,768 C 16.7M C	32,768 C 16.7M C
6500	1MB	N/A	N/A	N/A	N/A
7100 7100AV (1)	HDI45* 1MB 2MB 2MB	256 G 256 G 256 G 256 G	32,768 C 32,768 C 16.7M C 16.7M C	32,768 C 32,768 C 16.7M C 16.7M C	32,768 C 32,768 C 16.7M C 16.7M C
7200	1MB 2MB 4MB	256 G 256 G 256 G	16.7M C 16.7M C 16.7M C	32,768 C 16.7M C 16.7M C	32,768 C 16.7M C 16.7M C
7300	2MB 4MB	N/A N/A	16.7M C 16.7M C	N/A N/A	N/A N/A
7500	2MB 4MB	256 G 256 G	16.7M C 16.7M C	16.7M C 16.7M C	16.7M C 16.7M C
7600	2MB 4MB	256 G 256 G	16.7M C 16.7M C	16.7M C 16.7M C	16.7M C 16.7M C
8100 8100AV (1)	HDI45* 2MB 4MB	256 G 256 G 256 G 256 G	32,768 C 16.7M C 16.7M C 16.7M C	32,768 C 16.7M C 16.7M C 16.7M C	32,768 C 16.7M C 16.7M C 16.7M C
8500	2MB 4MB	256 G 256 G	16.7M C 16.7M C	16.7M C 16.7M C	16.7M C 16.7M C
9500/120 (2)	2MB 4MB	256 G 256 G	N/A N/A	16.7M C 16.7M C	16.7M C 16.7M C
9600	4MB	N/A	16.7M C	N/A	N/A
G3 systems	See Tech Info Library article 30250, titled "**Power Macintosh G3 & G3 All-in-one: Video RAM Upgrade**"				

G = Number of Grays
C = Number of Colors

* = HDI-45 port makes use of 640K of internal DRAM memory

(1) For the AV computers pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

(2) The Macintosh 12-in. RGB display cannot be used with the Power Macintosh 9500 series. This monitor is incorrectly listed as compatible in the booklet included with each unit titled "Technical Information: Specifications for Power Macintosh 9500 series computers."

PowerBook Family

PowerBook	VRAM	12-in Monochrome	12-in RGB	Basic Color Monitor	Color Plus Display
160,165,165c, 180,180c	--	256 G	256 C	256 C	256 C
500 Series	--	256 G	256 C	256 C	256 C
3400 Series	--	256 G	32,768 C	--	--
G3	--	256 G	16.7M C	N/A	N/A
Duo Dock	512K 1MB	256 G 256 G	256 C 32,768 C	256 C 32,768 C	256 C 32,768 C

Duo Dock II	--	256 G	32,768 C	32,768 C	32,768 C
MiniDock	512K	256 G	256 C	256 C	256 C

G = Number of Grays
C = Number of Colors

3400 Notes:
1) The computer does not provide a display with 2 bits per pixel.

2) An SVGA monitor's display resolution will be 640 by 480 pixels. The user can switch to a higher resolution by using the Monitors control panel or the control strip. The resolution set by the user will be used the next time the computer is started up.

3) If the external monitor can display 800 by 600 pixels at 60 Hz, the PowerBook 3400 computer can display simultaneously on both the external monitor and the flat panel display. This mode of display, called Simulscan, provides the same information on both displays.

Macintosh Video Cards

Video Card	12-in Monochrome	12-in RGB	Basic Color Monitor	Color Plus Display
Macintosh II	256 G	N/A	N/A	16 C
2-Page Mono Card	N/A	N/A	N/A	N/A
Portrait	N/A	N/A	N/A	N/A
Mono	2 G	N/A	N/A	N/A
High-Res Card (1)	16 G	N/A	16 G	16 G
Ext High-Res Card	256 G	N/A	N/A	256 C
4*8 (2)	256 G	N/A	256 C	256 C
8*24	256 G	16.7M C	N/A	16.7M C
8*24GC	256 G	16.7M C	N/A	16.7M C
Display Card 24 AC	256 G	16.7M C	N/A	16.7M C

G = Number of Grays
C = Number of Colors

(1) Can be upgraded with eight (8) Mac II Video Expansion RAM chips for 256 grays/colors.

(2) The 4*8 can be upgraded to a 8*24 by adding two VRAM SIMMs.

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

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Document Information
Product Area: Monitors-Displays
Category: General Topics
Sub Category: General Topics

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Tech Info Library

Macintosh Monitor and Video Chart (1 of 4) (11/96)

Revised: 11/27/96
Security: Everyone

Macintosh Monitor and Video Chart (1 of 4) (11/96)

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Article Created: 19 July 1994
Article Reviewed/Updated: 27 November 1996

TOPIC ----------

This article provides a list of Apple Macintosh systems and the monitor and video options each can use.

DISCUSSION ----------

Begin_Table

Specifications	12-in Mono-chrome	12-in RGB	Basic Color Monitor	Color Plus Display
Part Number	M0298LL/A	M0297LL/C	M9103LL/B	M2346LL/A
Resolution (pixels)	640 x 480	512 x 384	640 x 480	640 x 480
Power Frequency (Hz)	50 - 60	47 - 63	50 - 60	47 - 63
Power Voltage (VAC)	90 - 270	100 - 120	100 - 125	90 - 134
Vertical Refresh	66.7 Hz	60.15 Hz	59.94 Hz	66.7 Hz
Horizontal Refresh	35 kHz	24.48 kHz	31.5 kHz	35 kHz
Dots Per Inch (DPI)	76	64	N/A	68

Dot Pitch	N/A	0.28 mm	0.39 mm	0.29 mm

LC Family	VRAM	12-in Mono-chrome	12-in RGB	Basic Color Monitor	Color Plus Display
LC/LC II	256K	16 G	256 C	16 C	16 C
	512K	256 G	32,768 C	256 C	256 C
LC III	512K	256 G	32,768 C	256 C	256 C
	768K	256 G	32,768 C	32,768 C	32,768 C
LC 475	512K	256 G	32,768 C	256 C	256 C
	1MB	256 G	32,768 C	32,768 C	32,768 C
LC 630		256 G	32,768 C	32,768 C	32,768 C

G = Number of Grays
C = Number of Colors

Performa Family	VRAM	12-in Mono-chrome	12-in RGB	Basic Color Monitor	Color Plus Display
400/405/ 410/430LC	256K	16 G	256 C	16 C	16 C
	512K	256 G	32,768 C	256 C	256 C
450	512K	256 G	32,768 C	256 C	256 C
	768K	256 G	32,768 C	32,768 C	32,768 C
460/466 /467	512K	256 G	32,768 C	256 C	256 C
	768K	256 G	32,768 C	32,768 C	32,768 C
475/476	512K	256 G	32,768 C	256 C	256 C
	1MB	256 G	32,768 C	32,768 C	32,768 C
550/560 /575/577 /578	N/A	N/A	N/A	N/A	N/A
600/600CD	512K	256 G	32,768 C	256 C	256 C
	1MB	256 G	32,768 C	32,768 C	32,768 C
630		256 G	32,768 C	32,768 C	32,768 C
6200		256 G	32,768 C	32,768 C	32,768 C

..TIL11131-Macintosh_Monitor_and_Video_Chart_1_of_4_11-96_(TA21560).pdf

6300	1 MB	256 G	32,768 C	32,768 C	32,768 C
6400	1 MB	256 G	32,768 C	32,768 C	32,768 C
Mac TV		N/A	N/A	N/A	N/A

G = Number of Grays
C = Number of Colors

Mac II Family		12-in Mono-chrome	12-in RGB	Basic Color Monitor	Color Plus Display
IIsi		256 G	256 C	N/A	256 C
IIci		256 G	256 C	N/A	256 C
IIvi/IIvx	512K	256 G	32,768 C	256 C	256 C
	1MB	256 G	32,768 C	32,768 C	32,768 C

II, IIx, IIcx, IIfx - No built-in video, require a video card.

G = Number of Grays
C = Number of Colors

Centris/ Quadra Family	VRAM	12-in Mono-chrome	12-in RGB	Basic Color Monitor	Color Plus Display
605	512K	256 G	32,768 C	256 C	256 C
	1MB	256 G	32,768 C	32,768 C	32,768 C
610/650	512K	256 G	32,768 C	256 C	256 C
	1MB	256 G	32,768 C	32,768 C	32,768 C
660AV	1MB	256 G	32,768 C	32,768 C	32,768 C
630		256 G	32,768 C	32,768 C	32,768 C
700	512K	256 G	256 C	256 C	256 C
	1MB	256 G	16.7M C	256 C	256 C
	2MB	256 G	16.7M C	16.7M C	16.7M C

800	512K	256 G	32,768 C	256 C	256 C
	1MB	256 G	32,768 C	32,768 C	32,768 C
840AV	1MB	256 G	32,768 C	32,768 C	32,768 C
	2MB	256 G	16.7M C	16.7M C	16.7M C
900	1MB	256 G	16.7M C	256 C	256 C
	2MB	256 G	16.7M C	16.7M C	16.7M C
950	1MB	256 G	32,768 C	32,768 C	32,768 C
	2MB	256 G	16.7M C	16.7M C	16.7M C

G = Number of Grays
C = Number of Colors

Note: For the AV computers pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

Power Macintosh Family	VRAM	12-in Mono-chrome	12-in RGB	Basic Color Monitor	Color Plus Display
5400	1MB	N/A	N/A	N/A	N/A
6100	HDI45*	256 G	32,768 C	32,768 C	32,768 C
6100AV	2MB	256 G	16.7M C	16.7M C	16.7M C
7100	HDI45*	256 G	32,768 C	32,768 C	32,768 C
	1MB	256 G	32,768 C	32,768 C	32,768 C
	2MB	256 G	16.7M C	16.7M C	16.7M C
7100AV	2MB	256 G	16.7M C	16.7M C	16.7M C
7200	1MB	256 G	16.7M C	32,768 C	32,768 C
	2MB	256 G	16.7M C	16.7M C	16.7M C
	4MB	256 G	16.7M C	16.7M C	16.7M C
7500	2MB	256 G	16.7M C	16.7M C	16.7M C
	4MB	256 G	16.7M C	16.7M C	16.7M C
7600	2MB	256 G	16.7M C	16.7M C	16.7M C
	4MB	256 G	16.7M C	16.7M C	16.7M C
8100	HDI45*	256 G	32,768 C	32,768 C	32,768 C
	2MB	256 G	16.7M C	16.7M C	16.7M C
	4MB	256 G	16.7M C	16.7M C	16.7M C
8100AV		256 G	16.7M C	16.7M C	16.7M C

8500	2MB	256 G	16.7M C	16.7M C	16.7M C
	4MB	256 G	16.7M C	16.7M C	16.7M C
9500/120	2MB	256 G	N/A**	16.7M C	16.7M C
	4MB	256 G	N/A**	16.7M C	16.7M C

* = HDI-45 port makes use of 640K of internal DRAM memory.
G = Number of Grays
C = Number of Colors

Note: For the AV computers pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

N/A** The Macintosh 12-in. RGB display cannot be used with the Power Macintosh 9500 series. NOTE: This monitor is incorrectly listed as compatible in the booklet included with each unit titled "Technical Information: Specifications for Power Macintosh 9500 series computers."

PowerBook Family	VRAM	12-in Mono-chrome	12-in RGB	Basic Color Monitor	Color Plus Display
160/165 /c/180/c		256 G	256 C	256 C	256 C
500 Series		256 G	256 C	256 C	256 C
Duo Dock	512K	256 G	256 C	256 C	256 C
	1MB	256 G	32,768 C	32,768 C	32,768 C
MiniDock	512K	256 G	256 C	256 C	256 C
Duo Dock II		256 G	32,768 C	32,768 C	32,768 C

G = Number of Grays
C = Number of Colors

Video	12-in Mono-	12-in	Basic Color	Color Plus

Card	chrome	RGB	Monitor	Display
Macintosh II	256 G	N/A	N/A	16 C
2-Page Mono Card	N/A	N/A	N/A	N/A
Portrait	N/A	N/A	N/A	N/A
Mono	2 G	N/A	N/A	N/A
High-Res Card (1)	16 G	N/A	16 C	16 C
Ext High-Res Card	256 G	N/A	N/A	256 C
4•8 (2)	256 G	N/A	256 C	256 C
8•24	256 G	16.7M C	N/A	16.7M C
8•24GC	256 G	16.7M C	N/A	16.7M C
Display Card 24 AC	256 G	16.7M C	N/A	16.7M C

G = Number of Grays
C = Number of Colors

(1) - Can be upgraded with eight (8) Mac II Video Expansion RAM chips (Service PN: 334-002) for 256 grays/colors.
(2) - The 4•8 can be upgraded to a 8•24 by adding two VRAM SIMMs (Service PN: 661-0609).

Specifications	12-in Mono-chrome	12-in RGB	Basic Color Monitor	Color Plus Display
Part Number	M0298LL/A	M0297LL/C	M9103LL/B	M2346LL/A
Resolution (pixels)	640 x 480	512 x 384	640 x 480	640 x 480
Power Frequency (Hz)	50 - 60	47 - 63	50 - 60	47 - 63
Power Voltage (VAC)	90 - 270	100 - 120	100 - 125	90 - 134
Vertical Refresh	66.7 Hz	60.15 Hz	59.94 Hz	66.7 Hz
Horizontal Refresh	35 kHz	24.48 kHz	31.5 kHz	35 kHz
Dots Per Inch (DPI)	76	64	N/A	68
Dot Pitch	N/A	0.28 mm	0.39 mm	0.29 mm

End_Table

Article Change History:
27 Nov 1996 - Added 6300 Series information.
18 Nov 1996 - Added 6400 information.
16 May 1996 - Corrected 7200 info for monochrome monitor.

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Tech Info Library Article Number:11131

Tech Info Library

DAL: Describe Tables Loses Beginning Characters (8/94)

Revised: 8/31/94
Security: Everyone

DAL: Describe Tables Loses Beginning Characters (8/94)

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Article Created: 4 January 1993
Article Reviewed/Updated: 31 August 1994

TOPIC ----------

I have DAL 1.3.5 for VTAM with DB2 2.3. When I do a Describe Tables from the DAL tester, I get the data back with incomplete table names. The characters at the beginning of the table name seem to be cut off. Also, there is a period at the beginning of every row in the Describe Tables. As far as I know, I used the correct table name.

DISCUSSION----------

Giving the table name alone is not enough. Always give BOTH the creator name and the table name when creating any view for DAL to use in the Describe Tables command.

With a license agreement between Apple Computer and ITI (Independence Technologies, Inc.), ITI will market DAL products and provide all support to DAL customers. To locate ITI's address and phone number, use ITI as a search string.

Article Change History:
31 Aug 1994 - Added ITI information.

Support Information Services

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Tech Info Library Article Number:11132

Tech Info Library

DAL for VTAM Installation: The 'APPC=' Parameter

Revised: 1/21/93
Security: Everyone

DAL for VTAM Installation: The 'APPC=' Parameter

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Article Created: 4 January 1993

TOPIC ----------

In the VTAM APPL of the VTAM server, the "APPC=NO" parameter caused trouble (see page 5 of the MVS/VTAM Server Installation and Operation Guide). My understanding of the parameter is that if I need a LU 6.2 connection with the VTAM server, I should set this parameter to "APPC=YES".

That was what the system programmer did, when he installed the server. After hours of analyzing the installation, we found out that the DAL server didn't react to a CINIT from the host's SSCP.

When we changed back to the default "APPC=NO", it worked. What is the meaning of the parameter and its two values?

DISCUSSION ----------

The "APPC=" parameter specified in the Install Guide on page 5 should be set to "NO", because this parameter refers to whether the applid will support Independent LUs. Because VTAM, at the current release, and DAL (releases 1.3 and 1.3.5) do not support Independent LUs, set this parameter to "NO".

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Tech Info Library Article Number:11133

Tech Info Library

PrintMonitor: Where=80 and Why=-50 Error Messages (2/97)

Revised: 2/6/97
Security: Everyone

PrintMonitor: Where=80 and Why=-50 Error Messages (2/97)

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Article Created: 23 December 1992
Article Reviewed/Updated: 6 February 1997

TOPIC ----------

PrintMonitor displays an error dialog box that displays: Where = 80; Why = -50. How do I interpret these error codes, and how do I fix them?

DISCUSSION ----------

The "Where" errors are internal PrintMonitor debugging strings. There is currently no published table of these codes.

You can decode PrintMonitor error messages if you have a list of Macintosh system errors. The "why" (or y=) portion is the system error number. The system generated the "Why" Macintosh error code. Error code -50 is a file system paramErr (error in user parameter list). You can usually resolve this by throwing away the PrintMonitor Documents folder, which is "Spool Folder", located in the System Folder. PrintMonitor recreates this folder the next time you print a document.

Article Change History:
06 Feb 1997 - Added actual spool folder name.

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Tech Info Library Article Number:11134

680x0: How It Transfers a 32-bit Operand Over a 16-bit Data Path

Revised: 12/23/92
Security: Everyone

680x0: How It Transfers a 32-bit Operand Over a 16-bit Data Path

==========

Article Created: 23 December 1992

TOPIC ----------

How does a Motorola microprocessor transfer a 32-bit operand over a 16-bit data path?

DISCUSSION ----------

The 68020 and its successors implement a full 32-bit architecture. The 680x0 has implemented 32-bit registers along with a 32-bit data and address buses. The processor supports a dynamic bus sizing mechanism that allows the processor to transfer operands to or from external devices while automatically determining the device path size on a cycle-by-cycle basis. The dynamic bus interface allows for a simple highly efficient access to devices of differing data path widths. In dealing with transfers, a "path" refers to the external data bus width at the slave device (memory, peripheral, etc.).

You can think of it this way: the 680x0 gives you enough room to build a four-lane highway (path) for the address bus and the data bus. It is up to the manufacturer (Apple) to decide how many lanes to build for each path. The cost (engineering time, logic board denisty, component cost, time to market, etc.) of the path goes up with each lane added. For example, Apple may decide to build a system that supports 32-bit address path and a 16-bit data path.

The processor allows operand transfers to or from 8-, 16-, and 32-bit paths by dynamically determining the path size during each bus cycle. For example, if the processor is executing an instruction that requires a 32-bit operand, it attempts to read 32 bits during the first bus cycle. If the path responds that it is 16 bits wide, the processor latches the 16 bits of valid data and runs another cycle to obtain the other 16 bits. An 8-bit path is handled similarly, but with four read cycles.

..TIL11135-680x0-How_It_Transfers_a_32-bit_Operand_Over_a_16-bit_Data_Path.pdf

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11135

Tech Info Library

Macintosh Computers: Maximum and Minimum RAM Disk Size (7/96)

Revised: 7/22/96
Security: Everyone

Macintosh Computers: Maximum and Minimum RAM Disk Size (7/96)

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Article Created: 23 December 1992
Article Reviewed/Updated: 22 July 1996

TOPIC ----------

What are the minimum and maximum RAM disk sizes for Macintosh computers?

DISCUSSION ----------

Under System 7.5.2 and later, the minimum RAM disk size is 416K. Computers using earlier versions of System 7 can have a minimum RAM disk size of 192K.

The maximum size of the RAM disk is 256 MB. So, if your computer has more than 256 MB of physical RAM installed, you cannot allocate more than 256 MB to the RAM disk. Additionally, the maximum RAM disk size is based on the amount of installed RAM minus the memory required to run the system software. This amount varies depending on system software version.

Article Change History:
22 Jul 1996 - Added additional information.

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Tech Info Library Article Number:11136

Tech Info Library

A/UX: How to Set Up the Numeric Keypad for Use with vi

Revised: 1/15/93
Security: Everyone

A/UX: How to Set Up the Numeric Keypad for Use with vi

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Article Created: 4 January 1993

TOPIC ----------

I am using the vi editor to write scripts in the A/UX 3.0 command shell. I want to use the numeric keypad to enter numbers, but the numeric keypad sends command sequences or letters to the screen, instead of the numbers.

DISCUSSION ----------

When you invoke vi, it ALWAYS sets the numeric keypad to generate "application sequences" instead of "numeric sequences." There is, however, a workaround :

1) Bring up vi before doing any numeric keypad work.

2) From the Preferences menu in the CommandShell window, select "Active Window Settings..." (or do Command-E).

3) Select the Terminal Settings... dialog box.

4) Select the Keyboard icon from the left of the window, then select Numeric Sequences from Numeric Keypad Generates.

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Tech Info Library Article Number:11137

Tech Info Library

Macintosh Educational Software Guide in HyperCard Form

Revised: 12/21/92
Security: Everyone

Macintosh Educational Software Guide in HyperCard Form

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Article Created: 21 December 1992

TOPIC ----------

Is there a database I can use to search for educational software by on subject, age, and so on?

DISCUSSION ----------

The 1992 Macintosh Educational Software Guide is now available as a HyperCard stack on an 800K disk (the Guide is no longer available in printed form). It is an electronic guide to over 1,340 kindergarten through 12th grade educational software products for the Apple Macintosh.

This new format offers some great new capabilities. You can select products by publisher name, grade level, and subject area. The stack can also generate a letter requesting more information from the manufacturer.

Each product listing includes:
- product description
- publisher name, address, and phone number
- education pricing
- grade range
- system software requirements

The files are compressed. When you install the Guide on your hard disk, it becomes a 1.6MB HyperCard stack. The Guide works on all Macintosh computers and requires either HyperCard 2.1 or HyperCard Player 2.1.

To order, write:
Apple Computer, Inc.
Promotional Support, Attn.: 1992 Mac Edu Guide
P.O. Box 4055
Cupertino, CA 95015

..TIL11138-Macintosh_Educational_Software_Guide_in_HyperCard_Form.pdf

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Tech Info Library Article Number:11138

Tech Info Library

Apple Scanners: Bundled Software Compatibility (8/96)

Revised: 8/7/96
Security: Everyone

Apple Scanners: Bundled Software Compatibility (8/96)

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Article Created: 12 December 1992
Article Reviewed/Updated: 07 August 1996

TOPIC ----------

This article discusses the compatibility of:
• the Apple Color OneScanner with output devices
• the Apple Color OneScanner with OCR software
• Ofoto 2.0 software with earlier Apple scanners

DISCUSSION ----------

ColorSync Software and Output Devices

The Apple Color OneScanner supports ColorSync, Apple's unique color matching software, providing accurate colors and tones. When used with the Macintosh Color Display and the Apple Color Printer, the Color OneScanner is part of a total color solution that assures consistent color from scanning to display and printing so that the original image looks like the printed document.

Optical Character Recognition Software

The Color OneScanner works well with third-party OCR software. OmniPage Professional's AnyPage technology dramatically enhances recognition for a wide variety of documents.

Earlier Apple Scanners

Ofoto 2.0 and the Scanner driver 3.0 are backward compatible with previous Apple scanners.

Ofoto 2.0 works with both the Apple Scanner (4-bit) and OneScanner (8-bit). Scanner driver 3.0 is compatible with previous versions.

Bundled Software Compatibility

Begin_Table

	Scanner			
Software	Apple Scanner	OneScanner	Color OneScanner	Color OneScanner 600/27
HyperScan 2.0.1	Yes	Yes	Yes	No
AppleScan 1.0.2	Yes	Yes	No	No
Ofoto 2.0.2	Yes	Yes	Yes	No
ColorSync	No	No	Yes	Yes
Scanner 3.0	No*	No*	Yes	No
Scanner 2.0	Yes	Yes	No	No
OneScanner Dispatcher SW	No	No	No	Yes

End_Table

* the Scanner 3.0 extension WILL work with the Apple Scanner and Apple OneScanner IF System 7 is being used. If System 6 is being used then you should use Scanner 2.0 with the Apple Scanner or Apple OneScanner.

AppleScan 1.0.2 and 32-Bit Addressing

The AppleScan application is not a 32-bit clean application. In order to use the Apple Scanner with any Macintosh Quadra/Centris AV or Power Macintosh Computer, you must upgrade to Ofoto 2.0.x from Light Source Inc., or use another compatible scanning application.

Article Change History:
07 Aug 1996 - Updated to include latest scanner and software.
31 May 1994 - Included all bundled software compatibility chart.

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Tech Info Library Article Number:11139

Tech Info Library

Color OneScanner: Description

Revised: 12/23/92
Security: Everyone

Color OneScanner: Description

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Article Created: 6 January 1993

TOPIC ----------

The Apple Color OneScanner is a 24-bit one-pass color flatbed scanner. It builds on the strengths of the grayscale OneScanner, while adding full color capabilities. It provides professional quality with one-button simplicity.

Software shipping with the Color OneScanner:
- Ofoto 2.0, an improved version of the scanning software from Light Source, Inc.
- ColorSync color-matching software.
- HyperScan 2.0.1, which makes it easy to scan into HyperCard.

The OneScanner accessory kit also includes a book called The Basics of Color Design.

DISCUSSION ----------

Hardware and Software

In size and shape, the Color OneScanner is almost identical to the original OneScanner, and the internal layout is similar.

The logic and mechanics, however, are all new. The Color OneScanner uses a Tri-linear CCD to capture eight bits each of red, green, and blue in one pass. A one-pass scanner samples all three colors at the same time, resulting in truer color and better registration than a scanner that makes separate passes for each primary color. It also allows image processing on the fly, resulting in faster scans and better user interaction during the scanning process.

The Apple Color OneScanner is designed from the ground up to take full

advantage of Apple's ColorSync technology. (A separate TIL article has details on color matching.)

The main logic board contains a specially designed Apple ASIC to perform color correction in hardware. The scanner's gamut (color range) closely resembles that of the Apple 14" RGB Display, making color matching easier.

The Color OneScanner can generate ColorSync profiles for printers, and Ofoto 2.0 makes full use of ColorSync to manage color -- making sure that the results match the original as closely as possible without user intervention.

Features

- Simplicity
  - One-button fast-pass scanning
  - Balloon Help
  - Powerful yet easy-to-use rotation, selection, and scaling tools

- Image quality
  - Selectable 75- to 1200-dpi scanning resolution
  - Three optical sensors precisely aligned for excellent color registration
  - Works with ColorSync for accurate, sharp colors
  - Includes Ofoto software for clear, sharp images

- Versatility
  - Scans documents up to 8.5 x 14 inches
  - User-controlled scanning or Autoscan
  - Choice of resolution: 75, 150, 300, 600, or 1,200 dpi

- Compatibility
  - Compatible with all Macintosh computers with 68020 processor or greater
  - Compatible with most Macintosh applications, including word processing, presentation, graphics, database, and page-layout programs
  - PICT, TIFF, and EPS file formats

Ordering Information

Apple Color OneScanner: Order No. BO993LL/A

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Tech Info Library Article Number:11141

Color OneScanner: Hardware Specifications

Revised: 12/23/92
Security: Everyone

Color OneScanner: Hardware Specifications

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Article Created: 6 January 1993

TOPIC ----------

This article provides the technical specifications for the Apple Color OneScanner.

DISCUSSION ----------

General

- Scanner type: flatbed
- Registration: three 300-dpi CCDs
- Color matching:
  - color-correcting ASIC
  - ColorSync software
- Maximum document size: 8.5 x 14 in.
- Scaling: unlimited
- Interface: SCSI (Small Computer Systems Interface)

Power Supply

There will be two different versions of the Color OneScanner, each with a different power supply:

- Scanners shipped to the U.S. will have a 110 V non-switchable power supply.
- Units shipped to other countries will have a switchable universal power supply.

Power Requirements

- Line voltage (U.S. and Canada): 120 V AC ± 10%
- Line voltage (universal): 100/120/200/220/240 V AC ± 10%
- Frequency (U.S. and Canada): 58 to 62 Hz

- Frequency (universal): 48 to 62 Hz
- Power (standby): 22 W maximum
- Power (scanning): 45 W maximum

Operating Environment

- Operating temperature: 50° to 104° F (10° to 40° C)
- Storage temperature: –40° to 117° F (–40° to 47° C)
- Relative humidity: 5% to 95% noncondensing
- Altitude: 0 to 10,000 ft. (0 to 3,048 m)

Dimensions and Weight

- Height: 4.3 in. (11.0 cm)
- Width: 13.4 in. (34.0 cm)
- Depth: 21.5 in. (54.5 cm)
- Weight: 23.0 lb. (10.45 kg)

System Requirements

- Macintosh System software version 7.0 or later
- HyperCard 2.0 (to use HyperScan 2.0.1)
- Appropriate SCSI cabling

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Tech Info Library Article Number:11142

Tech Info Library

Color OneScanner: Software Specifications

Revised: 12/23/92
Security: Everyone

Color OneScanner: Software Specifications

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Article Created: 6 January 1993

TOPIC ----------

This article provides specifications of the software included with the Apple Color OneScanner.

DISCUSSION ----------

Ofoto

- Version number: 2.0
- Autoscan for setting all parameters, selecting, and straightening images.
- Selection and scaling tools for enlarging and reducing an image.
- Selectable 75- to 1200-dpi scanning resolution (software interpolation used for greater than 300-dpi resolution).
- Virtual imaging system to accommodate large image files by expanding system memory with hard disk space.
- Adaptive Calibration can tune Ofoto software to the capabilities of the printer or process used.
- High-quality rotation and scaling for image manipulation without loss of quality.
- Balloon Help.
- Works with PICT, TIFF, and EPS file formats.

ColorSync

- Matches colors from scanned input to display to printed output.
- Automatic, behind-the-scenes color matching.
- Works with color-capable Macintosh computers and color input and output devices that take advantage of ColorSync.

HyperScan 2.0.1

- Variable-size scanning to match the size of HyperCard 2.0 stacks.
- Controls on palettes for easy access.
- Built-in help.

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Tech Info Library Article Number:11143

Tech Info Library

Ofoto 2.0: Description

Revised: 12/23/92
Security: Everyone

Ofoto 2.0: Description

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Article Created: 6 January 1993

TOPIC ----------

Included with the Apple Color OneScanner is Ofoto 2.0 scanning software from Light Source, Inc. Ofoto 2.0 maintains the ease of use of the original Ofoto, while adding support for color functions and more automatic image processing.

DISCUSSION ----------

Ofoto automatically takes care of many of the traditional difficulties in scanning. Ofoto automatically calibrates each scan for a given display device or printer.

New Features

To the automatic features of Ofoto 1.0 (calibration, straightening, moire reduction), Ofoto 2.0 adds:

- Automatic sharpening
- Color cast correction
- Highlight/shadow adjustment

You can turn off these automatic features from the Image menu.

Automatic sharpening is included because most scanned color photographs lose some detail when printed. Sharpening preserves some of that detail. Ofoto's automatic sharpening is printer-dependent: it sharpens only as much as necessary for your chosen output device's resolution.

Color cast correction automatically removes a uniform color cast that is usually generated by the over- or under-exposure of the original photograph.

Highlight/shadow adjustment ensures that the highlights are as bright as possible and the shadows as dark as possible. Ofoto 2.0 adjusts the highlights and shadows to match the brightness range of the chosen output device.

Other Features

Ofoto contains the highest quality rotation and scaling algorithms of any commercially available scanning software.

Ofoto 2.0 supports image compression using QuickTime.

Ofoto 2.0 is fully integrated with ColorSync. You can use Ofoto and the Color OneScanner to generate a ColorSync profile for any printer.

Ofoto 2.0 allows scanning and processing in the background so that the user can do other things with the Macintosh while the scan process goes on. Many of Ofoto 2.0's functions work even if no scanner is attached.

Ofoto 2.0 supports AppleEvent interfaces for scanning and other basic functions. It is now possible for an OCR or image processing application to use Ofoto as its high-quality scanning front-end. The application simply requests an image with certain settings, and Ofoto delivers it. You only have to place the document on the scanner.

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Tech Info Library Article Number:11144

Tech Info Library

AppleShare: Inherited Privileges Problem (2/96)

Revised: 2/8/96
Security: Everyone

AppleShare: Inherited Privileges Problem (2/96)

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Article Created: 4 January 1993
Article Reviewed/Updated: 8 February 1996

TOPIC ----------

The "Inherited Privileges" feature of AppleShare version 3.0 and 3.0.1, 4.0, 4.0.x, 4.1, and Pro does not seem to work properly. Sometimes, privileges are inherited, and sometimes they are not.

DISCUSSION ----------

If you are experiencing this problem, you should upgrade to AppleShare 4.2 and then follow the solution outlined in this article, see "The Fix" section. After following one of the procedures provided, you should no longer experience this problem.

NOTE: AppleShare 4.2 is supported only on NuBus equipped PowerPC-based Power Macintosh and Workgroup Server computers. AppleShare 4.2 will not be available as a stand-alone product, it will only be sold with Workgroup Server bundles and upgrades from AppleShare 4.x.

What is the Inherited Privileges Problem

This is a problem that affects AppleShare version 3.0 and greater, including AppleShare 4.1 and Pro.

The symptoms are: when users logged on to the server and create a new folder within an existing folder on the server, the access privileges of the new folder do not inherit the privileges of the parent folder.

The "owner" is the user that created the folder. The name in "user/group" is the same as that of the parent, but only "owner" has check marks under See Folders/See Files/Make Changes (User/Group and Everyone does not have any check marks here).

What Causes This To Happen

The most common cause is one of the following actions:

Administrator Changes The Access Privileges

The Administrator changes the access privileges to a folder in AppleShare Admin, and selects the option Change All Enclosed Folders. This feature sets all enclosed folders with the same privileges as the parent folder. After making this selection and clicking Save, a dialog box asks you to select Inherit or Explicit privileges for the enclosed folders.

It is when the Administrator selects Inherit that the problem occurs. Each enclosed folder has the Same as enclosing folder feature turned on, and each folder created within this folder does not properly inherit the privileges of the parent.

Administrator Selects "Compact Access Privileges"

The Administrator selects Compact Access Privileges for the entire volume. This is a command within the AppleShare Admin program that lets you compact your access privileges (stored in AppleShare PDS file), by seeing which folders have the same exact privileges of its parent, and setting that folder's privileges to Same as enclosing folder.

Again, the problem in AppleShare software prevents folders created within these folders to not properly inherit the privileges of the parent.

The Fix

Install AppleShare 4.2 and preform one the following procedures. If you do not have AppleShare 4.2, you can reverse the problem to some degree by doing one of the following:

Select The "Affected" Parent Folder

Select the "affected" parent folder in AppleShare Admin's Access Information Window, and again click on Change all enclosed folders. Then click Save. When prompted to change the enclosed folders to either Inherit or Explicit, select Explicit.

This returns all privileges to explicit, and any new folders created within properly inherit the privileges of the parent. Unfortunately, it also changes all enclosed folders to the privileges of the parent, which may or may not be a desired outcome.

Here are definitions for explicit and inherit access privileges:

Explicit - Retain access privileges regardless of the enclosing folder.
Inherit - Always change to reflect access privileges of enclosing folder.

From The AppleShare Admin's Access Information Window

From within AppleShare Admin's Access Information window, individually select the folders that have been set to Inherit privileges (these have the Same as enclosing folder checkbox selected). De-select the Same as Enclosing Folder option, and check the privileges. All folders created within this folder now correctly inherit these same privileges.

To Duplicate The Problem
==========

Step 1

Log on to an AppleShare 3.x server and create a folder named Level 1, with all privileges enabled for Owner and Everybody.

Step 2

Open the Level 1 folder and create two folders with the following names:

- Level 2/explicit
- Level 2/dynamic

Check the access privileges on both Level 2 folders; they should be the same as the Level 1 folder.

Step 3

Select the Level 2/dynamic folder and select the "Same as enclosing folder" option. Note that the access privileges selections become inactive (grayed out).

Step 4

Save the new privileges.

Step 5

Open the Level 2/explicit folder and create a new folder and check its access privileges. This folder has the same privileges as the Level 2/explicit and Level 1 folders.

Step 6

Open the Level 2/dynamic folder and create a new folder and check its access privileges. This folder allows all privileges to the owner but does not allow any privileges to anyone else.

..TIL11146-AppleShare-Inherited_Privileges_Problem_2-96.pdf

This article was published in the "Information Alley":
Volume II, Issue 3, Page 7

Article Change History:
08 Feb 1996 - Corrected grammatical error.
11 Jan 1996 - Added AppleShare 4.2 information and fix.
09 Jun 1995 - Added definition of explicit and inherit access privileges.

Support Information Services

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Tech Info Library Article Number:11146

Tech Info Library

Ofoto for Windows: Out of Memory Error in 16-bit Video

Revised: 12/22/92
Security: Everyone

Ofoto for Windows: Out of Memory Error in 16-bit Video

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Article Created: 22 December 1992

TOPIC ----------

Since I upgraded my 486-based PC to 16-bit video, I get an out of memory error when trying to run Ofoto for Windows. I tried to re-install Ofoto, but the installation crashes with a video driver error. When I returned to 8-bit operation, it worked OK.

DISCUSSION ----------

Ofoto for Windows runs only on systems with video displays running at 1 bit, 4 bits or 8 bits. It does not run at thousands or millions of colors.

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Tech Info Library Article Number:11147

Tech Info Library

Hard Drives: Partition Size and Missing Space Explained (2/95)

Revised: 2/20/95
Security: Everyone

Hard Drives: Partition Size and Missing Space Explained (2/95)

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Article Created: 12 January 1993
Article Reviewed/Updated: 20 February 1995

TOPIC----------

I have noticed that Apple hard drives format to a size short of rated capacity.

I examined a 120MB hard drive and found a partition with several megabytes of free space above the Apple's standard 110MB partition. Why is this?

Also, If I compare the partition size shown in HD Setup and the amount of hard disk space displayed in the Finder window , HD Setup shows about 2MB more space. Why is this?

DISCUSSION----------

Apple formats its hard drives of each size to have a standard partition size and leaves a free partition of varying size on the disk. Since Apple uses hard drive mechanisms from different vendors with varying physical sizes, the default format allocates the same amount of space for the Macintosh partition and all excess space becomes part of the free partition.

If, for example, you buy two identical systems, both show the same hard drive size instead of showing one Macintosh with a 79MB hard drive and the other showing 76MB. Apple did this to prevent different hard drive capacities on supposedly identical systems.

If you re-partition your Apple hard drive with HD Setup and you want to use a larger partition size than the standard Macintosh partition, you do not need to save any free space. (Apple does not endorse or support changing the partition size.) You may use the maximum Macintosh partition and the hard drive should operate properly.

WARNING! Re-partitioning a drive results in a complete loss of data.
Do not attempt to re-partition any drive without first doing
a complete backup of the data.

To access the unused space on an Apple hard drive, back up your drive completely, and verify that the backup was successful. Launch Apple HD SC Setup, and click Partition. If there's unused space, it will appear as gray space with the size to the left. An Apple 80 MB hard drive formatted with default partitioning has about 2 MB unused. This is done to standardize all 80 MB Apple hard disks.

To use this space, you must be willing to reformat the hard disk, so make sure you backup your drive. Follow these steps:

1) Start up using the Disk Tools disk.
2) Open Apple HD SC Setup.
3) Click Partition.
4) Select your main Macintosh volume and remove it (this wipes out all data!).
5) Click and drag from just below the driver partition all the way to the bottom.
6) Select Macintosh volume in the resulting dialog.

Once you partition and mount your hard drive, different utilities may report different drive sizes. As an example, if you use an 80MB drive formatted with HD SC Setup from Disk Tools 7.1, the default partition is approximately 76.3MB and the maximum size partition is about 80.1MB. When you look at the amount of disk space displayed in the Finder window, you see 75MB and 78.7MB free space available respectively, with about 70K used.

With a disk utility like the Norton Utilities Disk Editor, you can verify that all the hard drive space is accounted for. The directory structure for the hard drive (including the boot blocks, volume info block, extents tree header, extents b-tree, catalog tree header, catalog b-tree, and the Desktop DF and Desktop DB files) occupies about 1.3MB.

The Finder window displays only the disk space available to it (the partition size minus the directory structure) while the disk utility shows the full partition size. This accounts for the 1.3MB difference. Note that the Desktop files grow as the disk is used in order to store information such as the icons used by the new files.

Article Change History:
20 Feb 1995 - Combined another article into this one.
07 Feb 1995 - Changed distribution; added warning; added keyword.
05 Aug 1994 - Reviewed for technical accuracy, revised formatting slightly.

Support Information Services

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Tech Info Library Article Number:11148

Tech Info Library

Printing Kanji Characters (8/95)

Revised: 8/23/95
Security: Everyone

Printing Kanji Characters (8/95)

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Article Created: 23 December 1992
Article Review/Updated: 23 August 1995

TOPIC ----------

What's required for printing Kanji characters? Since the LaserWriter IINTX-J was designed specifically for KanjiTalk, is this the hardware requirement? If so, how do the LaserWriter IIf and IIg handle printing Kanji characters? Please explain how printing 2-byte character languages works with PostScript and TrueType.

DISCUSSION ----------

Two-byte character printing is very similar to printing one-byte Roman script. The main difference previously was in the printer used (LaserWriter IINTX-J) to print the extremely large character sets of the two-byte Asian languages (there are close to 7,000 Kanji characters). With the introduction of Kanji TrueType in KanjiTalk 6.2 and now KanjiTalk 7.1, the gap has narrowed since an NTX-J is no longer required for printing high quality Kanji characters.

Because of the sheer number of characters, a technology was needed to decrease the number of outlines required. Use of composite fonts became that technology, as it provided the facility to combine more than one font to create another. In the case of KanjiTalk (and similarly with the other Asian operating systems), a special printer controller board was created to handle the composite font outlines, and an external 40MB hard disk was used to store them. This set formed the LaserWriter IINTX-J printer.

The following sequence of events is exactly the same for printing one-byte fonts as two-byte fonts, except where the outlines are found, and how they are processed on the printer (as just explained with the LaserWriter IINTX-J). In rough outline form, the search is as follows:

1) Look for associated PostScript fonts in the printer ROM, font cache, or external hard disk.

2) If not found, then look for the downloadable PostScript font on the Macintosh.
3) If not found, then look for the TrueType outline font on the Macintosh.
4) Lastly, use the bitmap font on the Macintosh.

Again, the difference is that the PostScript outline fonts aren't present in the printer's ROM or the Macintosh; they're on the hard disk. If not found there, then the sequence of events continues as normal starting with step 3. When printing to a LaserWriter IIf or IIg, a Japanese font hard disk isn't available. The Kanji TrueType font gets downloaded to the printer. In the case that no corresponding outline font is found, then a bitmap of the screen font is used, resulting in fairly choppy output.

There are now a total of six Kanji TrueType fonts, two introduced initially with KanjiTalk 6.2, and four more with KanjiTalk 7.1. As with any TrueType font, printing isn't limited to laser printers, so you can print to QuickDraw printers such as the StyleWriter and ImageWriter with good results.

Article Change History:
23 Aug 1995 - Made minor corrections.

Support Information Services

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Tech Info Library Article Number:11149

Tech Info Library

System 7: Performa Versions Compared (9/95)

Revised: 9/7/95
Security: Everyone

System 7: Performa Versions Compared (9/95)

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Article Created: 14 December 1992
Article Reviewed/Updated: 7 September 1995

TOPIC ----------

This article describes the progressive changes made to system software versions 7.0.1, 7.0.1P, 7.1, 7.1P, 7.1P1, 7.1P2, 7.1P3, 7.1P5, 7.1P6, and System 7.5.

DISCUSSION ----------

SYSTEM SOFTWARE VERSION 7.0.1

Here are the features of system software version 7.0.1 that 7.0 doesn't have:

Extensions (cdevs)

- Memory - Included RAM Disk, and updated virtual memory and RAM Cache to work with new RAM disk.
- Portable - Removed screen brightness and contrast sliders, and RAM disk.
- Brightness - A simple slider to control screen brightness.
- Network - Support for on-board Sonic Ethernet for the Quadra family.
- Battery - Updated to work with PowerBook family.
- Caps Lock - Indicator panel available only on PowerBooks.
- File Sharing - Internal file sharing buffer increased from 4K to 5K.
- Cache Switch - For Quadras to disable or enable 68040 cache.
- A/ROSE and DAL - 68040 compatibility changes.
- HD SC Setup - Format-time mode select change.

System File

- Operating System
  - Keyboard patch wakes up sleeping Macintosh Apple Keyboard II (Macintosh Classic) keyboards.
  - Support for 53C96 SCSI chip in Quadras and PowerBooks 140 and 170,

and for PowerBooks 140 and 170 power manager.
  - Minor changes to LocalTalk (for 68040), Gestalt 'Iram', 'ram', and 'kbd' selectors (for RAM disk), _hwPriv CPU cache management and dispatch routines, keyboard maps (for PowerBook).
  - Startup code can inhibit 68040 cache when Cache Switch cdev is set.
  - Bitmap system fonts marked purgeable.
- ToolBox
  - SANE performance improved via backpatching.
  - Disk Initialization Package prevents RAM disks from being formatted as MFS volumes.
  - Notification Manager calls IdleUpdate when NMInstall called (on portables) to wake the system.
  - Powerdown messages on Quadra 900 and RAM disk.
  - Support for Quadra and PowerBook sound hardware.
  - Backlight driver upgraded to work with PowerBook family.
  - SetHandleSize fixed for all 32-bit memory managers.

General

- Reduction in overall size of run time system heap.
- Installer script file revisions for new systems.

SYSTEM SOFTWARE VERSION 7.0.1P

System 7.0.1P is system software for the Performa 200 and 400. It's a modification of system software version 7.0.1 that makes changes to the Macintosh, simplifying the interface for new users. A control panel extension installs the system changes. This version uses the control panel portion of the file as a pseudo-Finder enhancement, for a push-button application launcher.

Here are the modifications:

- Generalized reference to the computer
  Instead of "About this Macintosh..." the Apple menu reads "About this Computer..." The window doesn't identify the specific model. Applications can use a Gestalt selector to determine whether 7.0.1P is running.
- Push-button program launching
  When a Performa starts up, the Launcher control panel opens on the desktop (like a small version of At Ease) with an icon for each installed application. You can launch an application with a single click.
- Layer hiding
  When launching an application, the Finder layer is hidden, giving the illusion that only one application is open at a time. Clicking on the desktop won't bring the Finder to the front. You can still switch applications through the Application menu.
- Default folders
  The internal disk on a Performa is configured with an Applications folder and a Documents folder on the desktop. The standard Save As dialog box is modified to always default to saving in the Documents folder. This keeps all documents together rather than with the

application that created them.
- Color default
  On color-capable Performas, the default Monitors setting is 8-bit color.
- Changes in desktop pattern
  A modified General control panel replaces the standard desktop pattern editor with a pop-up menu containing a variety of 16x16 desktop patterns.
- Includes At Ease 1.0
  Lets adults share the computer, and makes it easy for children to launch applications.
- Backup & Restore
  This provides an easy way to create a set of backup disks, and to restore the contents of the hard disk if necessary.

SYSTEM SOFTWARE VERSION 7.1

System software version 7.1 has the system enabler that supports the Macintosh IIvx and IIvi. It has the features described for 7.0.1 (minus DAL and SANE backpatching), with the following additions:

- WorldScript software
  This simplifies language script support.
- New control panels
  These allow customizing formats for dates, times, numbers, and text behavior (for example, sort and case conversion). Here's a list of the new control panels:

  - Date & Time
  - General Controls
  - Numbers
  - Text Control
  - PowerBook

- Improvements made by System 7 Tune-Up 1.1.1
  These improvements include resolving the problem of disappearing folders and files, and installing LaserWriter driver version 7.1.1.
- The QuickTime software extension
  This provides multimedia capability.
- Font folder
  This folder within the System Folder provides a single place to store all fonts.
- System Enablers
  These provide compatibility between Macintosh CPU hardware and system software. The Install Me First disk adds a software module, and not a whole new system.

SYSTEM SOFTWARE VERSION 7.1P

System software version 7.1P was created to support the Macintosh Performa 600 (but works with all Performa models). It has the features described for 7.1 and 7.0.1P, with the following exceptions:

- Includes Macintosh PC Exchange and the Apple IIe ProDOS extension.
- Removes Apple File Exchange.

SYSTEM SOFTWARE VERSION 7.1P1

System software version 7.1P1 supports all the Macintosh Performa models, and has all the features described for 7.1, 7.0.1P, and 7.1P with the following exceptions:

- Memory control panel
  The RAM disk memory could be set too high in version 7.1P. A change in the Memory control panel prevents this.
- Installs CD-ROM 4.0.2 and StyleWriter II drivers
- Pre-configures At Ease icons
  The application buttons appear automatically and don't require manual placement.
- System enabler modification
  There have been reports that the floppy drive sometimes won't eject disks. A modification to the system enabler corrects this.
- Minor interface changes
  There are a few cosmetic changes, like moving the Mouse Basics icon to the far left side of the screen.
- Serial driver for communications

SYSTEM SOFTWARE VERSION 7.1P2

System software version 7.1P2 supports all the Macintosh Performa models, and has all the features described for 7.1, 7.0.1P, 7.1P, and 7.1P1, with the following modifications:

- Eliminates the system freeze when you click on the sea horse in Mouse Practice. This was corrected by reducing the application preferred memory size from 5000K to 2500K.
- Allows setting Monitors control panel to any number of colors or black and white selection. The 7.1P1 version reset the system to 256 colors upon restart.
- Control panels "exercised" (opened and closed) during Custom Mac process

  Many control panels normally have compressed resources. This makes it easier to fit all the necessary files on system software floppy disks. Once a control panel is opened, the resources are decompressed, and then written back to disk decompressed. This process can take quite a bit of time (minutes, on a Performa 400), and is most visible with the Monitors control panel.

  If a user shuts down their system while the decompressed resources are being written back to disk, it can lead to problems. By providing users with control panels which already have decompressed resources, it should speed things up, reducing the risk that a customer might think something is wrong and want to shut down their system improperly.
- The Read Me document now very clearly provides information about

the importance of the proper shut down procedure.

SYSTEM SOFTWARE VERSION 7.1P3

System software version 7.1P3 supports all the Macintosh Performa models, and has all the features described for 7.1, 7.0.1P, 7.1P, 7.1P1, and 7.1P2 with the following modifications:

- Includes a Shut Down desk accessory to make it easier to shut down, no matter what application is open. User studies showed that many users were confused about having to "go to the Finder" in order to shut down.
- Detects, during the startup process, if an improper shut down occurred. If it occurs (dirty bit was set), a dialog warns to always shut down properly.
- Performa control panel provides System Folder protection, preventing the user from deleting, renaming, or removing items from the System Folder. This feature is on by default, but can be turned off via the Performa control panel.
- Performa Macintosh Basics provide detailed information about the importance of the proper shut down procedure.
- System and Finder version numbers changed to 7.1P3.
- FKEY 3 saves the PICT as a SimpleText file type instead of a TeachText file.
- Apple Restore 1.3 runs only if you start up with the Utilities disk. Provides additional room for error dialogs.
- Slight change in the patterns of General Controls 7.1P3.
- Launcher 2.0P version number change. Changed the icons for the Launcher Items folder and the Launcher. Finalized the About Box.
- Balloon help added to Performa 1.0. Replaced two check boxes for the documents saving options with three radio buttons in the Performa window. Performa control panel icon changed. Performa control panel checks for System 7.x before opening; if it detects a non-supported system, it passes an error to the Finder which displays a message. Displays an alert if Performa control panel is open even though INITs aren't properly installed.
- Finder Layer hiding, an extension in the Performa control panel, modified to never bring At Ease to the front. This solves problems where user launches a desk accessory from the Finder and is switched to At Ease when the desk accessory closes. Now it always goes back to the Finder.
- SimpleText 7.1P changed the minimum and preferred memory partition size from 256K to 512K to solve some problems with Photo CD and large images.

SYSTEM SOFTWARE VERSION 7.1P5

System software version 7.1P5 supports all the Macintosh Performa models, and has all the features described for 7.1, 7.0.1P, 7.1P, 7.1P1, 7.1P2, and 7.1P3 with the following modifications:

- Mouse Basics, Mouse Practice, Performa Basics, Sharing Your Computer, Why Back Up, 800-SOS-APPL, DOS Compatibility and Helpful Tips are

compressed using Application VISE 2.1.1. This results in the fulfillment kit fitting on eight disks plus the Utilities disk versus nine disks plus Utilities.
- An alias to AppleCD Audio Player is in the Apple Menu.
- Includes the latest LaserWriter 300 and StyleWriter II drivers.
- Apple Restore 1.3
  When Restore finishes (because all software is installed or the user quit early) the last dialog has a restart button instead of asking for the Utilities disk. This forces a restart, causing a rebuild of the desktop.
- Rolled in all Apple HD SC Setup 7.2.1 fixes.
- General controls 7.1P3 desktop default pattern is second instead of third pattern.
- Performa 1.0 fixed this bug: when saving a document in an open application with the Performa control panel window open, Performa preference settings reverted to saved settings.
- Cleaned up the "not shut down correctly" dialog in the shut down check, an extension in the Performa control panel.
- The standard file patch, an extension in the Performa control panel, now resolves aliases most of the time. When aliases don't resolve, an 'X' appears over the Performa icon during startup.
- Added a file icon for the desk accessory called Shut Down 1.0P.

SYSTEM SOFTWARE VERSION 7.1P6

System software version 7.1P6 supports all the Macintosh Performa models, and has all the features described for 7.1, 7.0.1P, 7.1P, 7.1P1, 7.1P2, and 7.1P3 with the following modifications:

- Backup Partition Software-automatically detects corrupted system folders
  When a bad System Folder is detected, the user is given the option to re-load another System Folder into their system.
- CD ROM Support-supports the AppleCD 300+, an all other Apple drives
- New Instructional Products Suite-adds a searchable hypertext glossary.
  It also provides paths for electronic as well as phone-based third party support.
- HyperCard 2.2 Player-Includes a number of HyperCard stacks to provide additional functionality, and supports sales of the HyperCard 2.2 development kit.
- Improved incorrect shut-down dialog.
- Improvements to Apple Backup and Apple Restore.
- Inclusion of the '040 cache switch-provides compatibility with certain '040 cache incompatible programs, such as the current version of Prodigy.
- Optimus Support
- Bug fixes to improve reliability.

System 7.5

System 7.5 is qualified for all 680x0 based Performa computers with at least 4MB of memory (8MB for PowerTalk or QuickDraw GX), and at least 8MB for any PowerPC based Performa computer (16MB for PowerTalk or QuickDraw GX).

SOFTWARE BUNDLE

The software bundle for the Performa 550 has dozens of updates including:

- ClarisWorks 2.1-Supports PowerTalk and has bug fixes
- ClarisWorks Education Sample files-Allows us to use this bundle for the Educator Advantage Program
- Mario Teaches Typing 1.3.1

Fixes crashing Performa bug and sound manager problems

- American Heritage Dictionary Font Fix
- Quicken 4 Release 6

Fixes recalculation and other bugs

- New ClarisWorks Tour
- To receive upgrade kits from Global Village has been revised to eliminate the confusing dialog box at install time.

This 694-0261 bundle is qualified to be used for the Marts/Catalog 410 and 466, and the CE/MM 460 and 475, the Performa 550 with the CD 300+. (M1982LL/A,M1985LL/A, M2156LL/A M1904LL/A, M2147LL/B) as well as the all Performa 570 series computers.

New bundles will be built at the end of February to support the rest of the Performa line. (M2157LL/A, M2154LL/A, M1981LL/A, M2155LL/A) In addition, these other bundles will have updated copies of Mavis Beacon Typing, DateBook Pro, TouchBase Pro, and DataViz translators.

Article Change History:
07 Sep 1995 - Made minor corrections.
12 Dec 1994 - Added System 7.5.
28 Mar 1994 - Added info on 7.1P6 and made the article Performa specific.

Support Information Services

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Tech Info Library Article Number:11150

Tech Info Library

Apple Font Pack: Frequently Asked Questions (12/95)

Revised: 12/1/95
Security: Everyone

Apple Font Pack: Frequently Asked Questions (12/95)

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Apple Font Pack: Frequently Asked Questions (12/95)
Article Created: 23 December 1992
Article Reviewed/Updated: 1 December 1995

TOPIC ----------

This article presents the frequently asked questions (FAQ) on the Apple Font Pack.

DISCUSSION ----------

Question: The package says there are 43 fonts included, but I only count 35. Where are the other 8 fonts?

Answer: There aren't any missing fonts. The Apple Font Pack contains 43 TrueType fonts, even though only 35 font icons are on the Font Pack disks.

To conserve hard disk space, 8 of the fonts don't have files and icons. The system software generates these fonts using other fonts in the same family. The 8 fonts have designs that allow the system to produce them with good typographic quality results. The 8 fonts that have no font icons are:

- ITC Lubalin Graph Oblique (from ITC Lubalin Graph)
- ITC Lubalin Graph Bold Oblique (from ITC Lubalin Graph Bold)
- Helvetica Black Oblique (from Helvetica Black)
- Helvetica Compressed Oblique (from Helvetica Compressed)
- Avant Garde Italic (from Avant Garde)
- Avant Garde Bold Italic (from Avant Garde Bold)
- N Helvetica Narrow Italic (from Helvetica Narrow)
- N Helvetica Narrow Bold Italic (from Helvetica Narrow Bold)

The 35 fonts actually included are:

AGFA Division of Miles, Inc.
Delphian
Nadianne

Nadianne Bold
Oxford

Bigelow & Holmes, Inc.
Lucida Bright
Lucida Bright Bold
Lucida Bright Italic
Lucida Bright Bold Italic

Bitstream, Inc.
(all licensed to ITC)
ITC Garamond Narrow
ITC Garamond Narrow Bold
ITC Garamond Narrow Italic
ITC Garamond Narrow Bold Italic

Font Bureau, Inc.
Zeal

International Typeface Corporation
ITC Machine
ITC Lubalin Graph
ITC Lubalin Graph Bold

Linotype-Hell
Helvetica Black
Helvetica Compressed

Monotype Typography
Old English
Swing Bold
Onyx

14 From the LaserWriter Set
Avant Garde
Avant Garde Bold
Bookman
Bookman Bold
Bookman Italic
Bookman Bold Italic
N Helvetica Narrow
N Helvetica Narrow Bold
New Century Schlbk
New Century Schlbk Bold
New Century Schlbk Italic
New Century Schlbk Bold Italic
Zapf Dingbats
Zapf Chancery

Question: All I get is Courier when printing.

Answer: Turn on "Unlimited Downloadable Fonts" in the Page Setup Options

dialog.

Question: I just installed the Font Pack. Why is my printer so slow now?

Answer: Slower printing results when documents have several typefaces, and because TrueType fonts print at the highest possible resolution your printer allows.

Question: How do I make the special characters and the strike over characters with the Zeal font?

Answer: You can use the Key Caps desk accessory to view them. Or, refer to page 23 of the "Getting Started with Type" manual that came with your Font Pack.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
01 Dec 1995 - Change title and added keyword.
14 Oct 1994 - Reviewed for consistency and updated format.
11 Nov 1993 - Retitled and added other commonly asked questions.

Support Information Services

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Tech Info Library Article Number:11152

Tech Info Library

Virtual Memory: The Resulting Total RAM and Hard Disk Speed

Revised: 1/4/93
Security: Everyone

Virtual Memory: The Resulting Total RAM and Hard Disk Speed

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Article Created: 23 December 1992

TOPIC ----------

Why does total RAM always equal virtual memory? What happens to the physical RAM on board?

Since virtual memory uses the hard disk, doesn't the speed go from nanoseconds to milliseconds?

DISCUSSION ----------

Total RAM and Virtual Memory

Virtual memory extends the available amount of memory beyond the limits of physical RAM. It uses a logical address space formed from:

- Main memory (physical RAM to keep portions of programs and data currently in use), and
- Secondary storage (such as a hard disk) to hold those portions currently not in use.

If an application needs a portion of memory (or page), the operating system loads the page(s) back into main memory, and swaps out the unused page(s) from main memory into secondary storage. This process occurs transparently through the use of the PMMU (Paged Memory Management Unit), and is called demand paging.

Total RAM equals virtual memory because of this scheme. Both physical RAM and secondary storage combine to make the total amount of "virtual" memory. But in reality only the currently used pages are in main memory.

Hard Disk Speed and Performance Using Virtual Memory

The speed does drop to milliseconds when accessing the hard disk. This is true only when the needed page(s) isn't in main memory, and the system must access it from secondary storage.

It's best to limit the amount of virtual memory to twice the size of physical RAM to eliminate excessive paging activity known as thrashing. As the ratio of virtual to physical RAM increases, performance may degrade respectively, depending on the behavior of the applications running. As the ratio decreases, performance will most likely increase.

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Tech Info Library Article Number:11153

Tech Info Library

PowerBook 100 External SuperDrive: Specifications

Revised: 5/31/94
Security: Everyone

PowerBook 100 External SuperDrive: Specifications

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Article Created: 23 December 1992
Article Reviewed/Updated: 27 August 1993

TOPIC ----------

This article gives technical specifications for the Macintosh HDI-20 External 1.4MB Floppy Disk Drive (PowerBook 100 External SuperDrive).

DISCUSSION ----------

Recording Media

- Disk diameter: 3.5 inches (9.0 cm)
- Recording surfaces: 2
- Tracks per inch: 135 (5.31 per mm)
- Number of cylinders: 80

Capacity

- Formatted data:
  1.4MB (MFM)
  800K (GCR)
  720K (MFM)
- Unformatted data: 1 or 2MB

Drive Characteristics

- Seek time (track-to-track): 3 milliseconds
- Settle time: 18 milliseconds
- Drive startup time: 800 milliseconds

Head Position Accuracy

- ± 30 micrometers

Interface

- Connects directly to the Macintosh PowerBook 100 HDI-20 floppy drive port, via the drive's attached interface cable.

Environment

- Operating temperature: 50 to 122° F (10 to 50° C)
- Relative humidity: 5% to 90% noncondensing
- Storage temperature: -40 to +149° F (-40 to +65° C)

System Requirements

- Macintosh PowerBook 100

Dimensions and Weight

- Height: 1.1 inches (28 mm)
- Width: 4.5 inches (115 mm)
- Depth: 7.0 inches (174 mm) not including attached interface cable
- Weight: 1.5 lb. (.68 kg)

Article Change History:
27 August 1993 - Revised storage temperature

Support Information Services

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Tech Info Library Article Number:11154

Tech Info Library

ColorSync Software: Overview (6/95)

Revised: 6/14/95
Security: Everyone

ColorSync Software: Overview (6/95)

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Article Created: 6 January 1992
Article Reviewed/Updated: 14 June 1995

TOPIC ----------

This article provides an overview of the ColorSync software.

DISCUSSION ----------

ColorSync is an extension to QuickDraw. It facilitates color conversion from the color space (method of mathematically describing a color) of one device to the color space of another device. It does this while maintaining consistent visual representation. In simple terms, ColorSync displays and prints the same image that it scanned.

The Major Difficulties in Reproducing Color

The physics of color presents a technical barrier, since delivering colored light is very different from delivering colored ink. Colors are described in device-dependent terms:

- RGB (Red, Green, Blue) for monitors and most scanners
- CMYK (Cyan, Magenta, Yellow, and Black) for most printers

Device-dependent descriptions cause the same blend on one monitor to display a very different color on a different monitor. While it is possible to map an RGB value to a CMYK value for a given pair of devices, this is not a practical solution because changing the devices changes the mapping, and therefore the result.

Different devices (scanner, monitor, printer) have different capabilities in delivering color. A color possible on one device is not possible on another. Every device produces a different range of colors, or color gamut. The scanner, display, and printer each have a different color gamut. Colors that all three

devices can produce present no problem. But colors that only one or two devices can generate require color matching.

The perceived color given by a specific value of RGB for an individual monitor can vary. Any RGB to CMYK mapping is not accurate over time. The solution for this problem is commonly called calibration.

Colorsync Architecture

ColorSync is a system extension that provides color matching capabilities to the existing QuickDraw graphics model. It provides three important features:

System-Level Support for Color Matching

All applications and peripherals can take advantage of it. All applications and imaging peripherals use the same scheme for color matching.

Support for Existing Applications

Some existing applications get color-matched printing without waiting for revised applications. ColorSync provides some new calls that enable applications to match to the display as well. This completes the entire picture -- matched input, display, and output.

Opportunities for Third Parties to Add Value

ColorSync uses the Component Manager, which lets third-party developers add value to the color-matching system. This was developed in conjunction with QuickTime to link a series of Apple or third-party color management resources and utilities.

How Colorsync Solves Color Matching Problems

Device-Independent Color

ColorSync was developed to solve the problems related to device-dependent color such as RGB and CMYK. ColorSync attempts to consistently represent colors (visually very similar or identical) across the three color gamuts. ColorSync uses device profiles to determine what colors a device can display, print, or scan (device color gamut).

ColorSync translates the colors that the originating device created for an image into a device-independent, and human perception-based color space, CIE XYZ. From the CIE-XYZ color space, ColorSync then translates the image into the color space of the destination device.

ColorSync uses the Apple Color High-Resolution RGB monitor as the default system profile or space. If you have a different monitor, you should use the ColorSync profile for that monitor in order for ColorSync to work properly. The ColorSync

profile creates a device-independent color definition while maintaining compatibility with QuickDraw, which is RGB-based. You can select any monitor that has a profile installed.

Applications

There are three levels of ColorSync application support:

SUPPORT LEVEL	DESCRIPTION
Printing Fidelity	Making the standard Macintosh call, DrawPicture, enables matching the source image to the printer. Applications that support this call provide printing functionality without revision.
Display Fidelity	ColorSync can correct for the display if the source is a scanner or a different monitor. The ColorPicker shows two gamuts, and you can choose those available on the monitor and printer or other display.
Preview Function	ColorSync lets applications offer a preview function that indicates those colors not possible on a particular device. Users can check documents before printing.

Device Profiles and Drivers

ColorSync allows characterizations of each device in terms of the CIE XYZ color space. These characterizations are called profiles. This allows making comparisons between any pair of ColorSync devices in terms of the common space.

Color Matching with ColorSync CMMs (Color Matching Methods)

CMMs give the best possible match when the exact match is not available. ColorSync uses the device profiles to determine if a device can display or print a certain color. If a color is outside the color gamut of a device, ColorSync determines a best-match color within that device’s gamut. It uses a simple look-up table or an algorithmic calculation to do this. The table look-up method is much faster than the algorithmic method.

The algorithmic method gives better color matching, and offers four options:

OPTION	DESCRIPTION
Perceptual	This maintains perceptual differences. Colors are interpreted relative to the destination device's white point. This option is usually best for photographic scanned images.
Colorimetric	This maintains individual colors at the expense of their relative values. It is usually best for spot colors.
Saturation	This maintains the levels of color saturation. It

	sacrifices contrast to maintain color saturation. It is usually best for computer-generated graphics.
Faster Matching	This offers a good compromise between photographs and computer-generated images, and takes less time.

ColorSync attempts to provide a base level of color matching with the smallest possible memory footprint (about 70K). Some print jobs require higher quality color matching. More sophisticated color management schemes can replace ColorSync's color matching method and hook into ColorSync via the Component Manager. This process lets other color management products integrate into the system software via ColorSync.

ColorSync still translates the image's colors into the device-independent color space. However, ColorSync then calls the substituted color matching method to translate the image into the color space of the destination device.

Color Calibration

The ColorSync Color Management extensions support the calibration systems available from third-party developers (such as SuperMac, Radius, and Raster Ops). You can periodically update the profile to compensate for differences from the standard profile.

This article was published in the "Information Alley":
Volume II, Issue 4, Page 11

Article Change History:
13 Jun 1995 - Added Info Alley information; updated technical information.

Support Information Services

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Tech Info Library Article Number:11155

Tech Info Library

Apple Color Printer: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Apple Color Printer: Description (Discontinued)

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Article Created: 6 January 1993

TOPIC ----------

This article describes the Apple Color Printer.

DISCUSSION ----------

The Apple Color Printer offers high-quality print resolution, speed, and color matching on a wide range of paper sizes and types, including 11x17-inch paper.

The Apple Color Printer is integrated with ColorSync color-matching software. And at 360 dots-per-inch (dpi) print resolution, the Apple Color Printer offers 44 percent higher resolution than traditional 300-dpi printers.

The print speed of the Apple Color Printer is faster than comparable color printers. Setup, use, and maintenance are simple. There's a separate cartridge for black ink, as well as for cyan, magenta, and yellow. So you can print with high-quality black ink and replace cartridges individually. Until an environmentally safe waterfast ink is developed for the Apple Color Printer, Apple will continue to use water-resistant ink.

With the Apple Color Printer, you can print on:
- Letter-size
- Legal-size
- 11x17-inch
- A4 and A3 paper
- Envelopes
- Coated stock for highest quality
- Transparencies
- Plain paper

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The Apple Color Printer features a new print driver that gives you the ability to share printers across a network. And the Apple Color Printer comes with 64 TrueType fonts. It also supports Adobe Type 1 fonts when used in conjunction with Adobe Type Manager (ATM).

Product Features

- Print quality
  - 360 dpi
  - 65 screen lines per inch
  - Integrated with ColorSync for accurate color matching
- Ease of use
  - Fast, easy installation
  - Sealed, simple-to-replace ink cartridges
  - All print software easily installed
- Versatility
  - Allows printing on envelopes, U.S. letter, U.S. legal, 11x17-inch, A4, and A3 paper sizes
  - Landscape- and portrait-formatted documents
  - Comes with 64 fonts
  - Works with most Macintosh graphics formats, including bitmap, PICT, and TIFF
- Printer sharing
  - Can be shared by Macintosh users over a network (with password protection)

Ordering Information

- Apple Color Printer Order No. B1029LL/A includes:
  - Pre-installed ink cartridges
  - Sample paper and transparencies
  - Power cord
  - User's guide
  - Sample files
  - Limited warranty statement

- Consumables

Black ink cartridge	M6901G/A
Yellow ink cartridge	M6902G/A
Magenta ink cartridge	M6903G/A
Cyan ink cartridge	M6904G/A
Letter-size coated paper	T0546G/A
Legal-size coated paper	T0548G/A
11x17 coated paper	T0549G/A
A4 coated paper	T0545G/A
A3 coated paper	T0547G/A
Letter-size transparency	T0551G/A
A4 transparency	T0550G/A

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Tech Info Library Article Number:11156

Tech Info Library

Apple Color Printer: Specifications (Discontinued)

Revised: 6/2/94
Security: Everyone

Apple Color Printer: Specifications (Discontinued)

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Article Created: 6 January 1992
Article Reviewed/Changed: 21 March 1994

TOPIC ----------

This article gives the technical specifications for the Apple Color Printer (Order Number B1029LL/A).

DISCUSSION ----------

Print Engine

• Canon P691 Color Bubblejet

Print Quality

• 360 dpi in best mode
• 180 dpi in draft mode

Marking Engine

• Thermal ink jet

Interfaces

• 50-pin SCSI

Image Processing

• Via Macintosh CPU

Print Speed

• Up to 2 minutes per page black-and-white (actual speed varies with image

printed and computer used)
• Up to 3.5 minutes per page color (actual speed varies with image printed and computer used)

Imageable Area (Minimum Margins)

• U.S. letter: 0.34-inch left and right margins, 0.32-inch top margin, 0.26-inch bottom margin
• U.S. legal: 0.34-inch left and right margins, 0.32-inch top margin, 0.26-inch bottom margin
• Tabloid (11-inch x 17-inch): 0.20-inch left and right margins, 0.32-inch top margin, 0.26-inch bottom margin
• A4: 0.11-inch left and right margins, 0.32-inch top margin, 0.26-inch bottom margin
• A3: 0.20-inch left and right margins, 0.32-inch top margin, 0.26-inch bottom margin

Paper Sizes

• U.S. letter (8.5x11 inches)
• U.S. legal (8.5x14 inches)
• Tabloid (11x17 inches)
• #10 business envelopes (9.5x4.125 inches)
• A4 (8.3x11.7 inches)
• A3 (11.7x16.5 inches)

Print Materials

• For best results, Apple recommends coated paper for all paper sizes.
• Plain paper: 17-pound (64 g/m2) to 24-pound (90 g/m2)
• Most letterhead and colored stock
• Medium-weight photocopier labels
• #10 business envelopes (9.5x4.125 inches)
• Apple recommends Apple letter OHP and A4 OHP transparency film.

Paper Feed

• Automatic sheet feeder holds up to 100 sheets of 20-lb. (75 g/m2) paper or five envelopes.

Paper Tray

• Single tray accommodates all media

Paper Tray Capacity

• 100 sheets (letter, A4)
• 50 sheets (legal, 11x17 inches, A3)
• Five #10 business envelopes

Fonts Supported

• 64 TrueType fonts

Ink Cartridges

- Separate cartridges for cyan, magenta, yellow, and black
- 400- to 700-page life depending on percentage of page coverage
- Cartridge capacity: 30 grams

Print Head

- Approximately 100 million characters estimated print head life.

ColorSync Architecture

- Matches colors from scanned input to display to printed output
- Automatic, behind-the-scenes color matching
- Works with color-capable Macintosh computers and color input and output devices that take advantage of ColorSync

Cable

- DB-25 External SCSI Connector

System Requirements

- Any color-capable Macintosh personal computer with at least 4MB of RAM
- A hard disk drive
- System software version 7.0 or later

Power Requirements

- Line voltage: 120 VAC, RMS
- Frequency: 60 Hz
- Power: 30 W maximum

Operating Environment

- Operating temperature: 59° F to 86° F (15° C to 30° C)
- Storage temperature: –22° F to 140° F (–30° C to 60° C)
- Relative humidity: 10% to 95% noncondensing

Size and Weight

- Height (without output tray): 6.7 inches (16.9 cm)
- Width: 20.5 inches (52.0 cm)
- Depth (paper tray closed): 16 inches (41.0 cm)
- Weight: 22 lb. (10 kg)

SCSI Port Pinouts

Pin	Signal	Description
1	REQ~	Request
2	MSG~	Message

3	I/O~	Input/Output
4	RST~	SCSI Bus Reset
5	ACK~	Acknowledge
6	BSY~	Busy
7	GND	Ground
8	DB0~	Data bit 0
9	GND	Ground
10	DB3~	Data bit 3
11	DB5~	Data bit 5
12	DB6~	Data bit 6
13	DB7~	Data bit 7
14	GND	Ground
15	C/D~	Command/Data
16	GND	Ground
17	ATN~	Attention
18	GND	Ground
19	SEL~	Select
20	DBP~	Data parity
21	DB1~	Data bit 1
22	DB2~	Data bit 2
23	DB4~	Data bit 4
24	GND	Ground
25	TPWR	Terminator power

Article Change History:
21 March 1994 - Corrected the metric paper weights

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Tech Info Library Article Number:11157

Apple Color Printer: Using the LCD Menu

Revised: 1/4/93
Security: Everyone

Apple Color Printer: Using the LCD Menu

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Article Created: 6 January 1993

TOPIC ----------

When you press the Apple Color Printer ON LINE button to turn off the green indicator light, you enter Menu mode. This article tells you how to use this LCD Menu.

DISCUSSION ----------

You can move back and forth through the Menu items using the < and > keys. Here are the top level Menu choices that you'll see:

- PRINTING MODE
- CLEANING
- SET PARAMETERS
- TEST PRINT
- DUMP MODE
- INTERFACE SELECT
- COUNTRY CODE
- NVRAM INITIALIZE
- MEDIA SELECT

The USER SETTING is available when you turn the power on, but before you send a print job. If you access Menu mode after sending a print job, SET PARAMETERS isn't available, and TEST PRINT - B is available in the TEST PRINT mode.

If you press the Enter button while any of these Menu items is displayed, you see the choices you have under that item. You can move back and forth through the choices in any Menu sublevel using the < and > keys. Press the Exit button to move up a level in the menu. Be aware that the printer driver may override the Menu selections.

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Here's a diagram that shows the items available at each Menu sublevel:

- PRINTING MODE
  - MODE-A Plain paper, envelopes, or coated paper
  - MODE-B Transparency
  - MODE-C For printing blacks twice as dark
  - MODE-D To reduce bleeding on graphics with plain paper. Increase print time considerably.
  - MODE-E High speed mode for drafts
- CLEANING
  - CLEANING-A Press ENTER to start cleaning. Clears head for clogged ink nozzles (15 seconds, .15 gram)
  - CLEANING-B If CLEANING-A doesn't work after 2-3 times, try B. It uses more ink and time (90 seconds, 2.0 grams).
- SET PARAMETER
  - COLOR
    - Black (parallel default)
    - Magenta
    - Cyan
    - Blue
    - Yellow
    - Red
    - Green
  - CHR.SPACING
    - 10 CPI (parallel default)
    - 12
    - 15
    - Proportional
  - PAGE LENGTH
    - PL=11 (parallel default)
    - PL=12
  - LINE LENGTH
    - LL=8 (PARALLEL DEFAULT)
    - LL=11
  - SELECT FONT
    - Roman (parallel default)
    - Sans Serif
    - Courier
  - CHARACTER TABLE
    - Graphics Table (parallel default)
    - Italic Table
    - Download Table
  - INTERNATIONAL
    - USA (parallel default)
    - France
    - Germany
    - England
    - Denmark1
    - Sweden
    - Italy
    - Spain1
    - Japan
    - Norway
    - DenmarkII

        - SpainII
        - Latin America
        - Korea
        - Legal
    - AUTO LF
        - AUTO LF OFF (parallel default)
        - AUTO LF ON
    - DC1/DC3
        - DC 1/3 ENABLE (parallel default)
        - DC 1/3 DISABLED
    - CR CODE
        - NOT PRINT (parallel default)
        - PRINT
- TEST PRINT
    - TEST PRINT A Gives current status of print (ROM, interface, and so on) as well as color grid.
    - NOZZLE CHECK Similar to StyleWriter
- DUMP MODE (switches the standard print mode to hexadecimal and the reverse)
    - DUMP OFF
    - DUMP ON
- INTERFACE SELECT
    - SCSI
        - ID# = 0
        - ID# = 1
        - ID# = 2
        - ID# = 3
        - ID# = 4
        - ID# = 5
        - ID# = 6
        - ID# = 7
    - PARALLEL
        - BSY TIMING
            - ACK-BSY-ACK
            - BSY-ACK
            - ACK-BSY [a]normal default for parallel)
        - ACK WIDTH
            - 0.5 MICRO (normal default for parallel)
            - 1 MICRO
            - 4 MICRO
            - 8 MICRO
- COUNTRY CODE (language used in menu and TEST PRINT A status print)
    - English
    - Danish
    - Dutch
    - Finnish
    - French
    - German
    - Italian
    - Japanese
    - Norwegian
    - Portuguese
    - Spanish

    - Swedish
- NVRAM INITIALIZE (resets printer to default settings)
    - INIT.NO
    - INIT.YES
- MEDIA SELECT
    - Normal Paper
    - ENVELOPE/THICK

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Tech Info Library Article Number:11158

Tech Info Library

Apple Color Printer: Cleaning Nozzles, Printing Test Pages 4/96

Revised: 4/17/96
Security: Everyone

Apple Color Printer: Cleaning Nozzles, Printing Test Pages 4/96

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Article Created: 6 January 1993
Article Reviewed/Updated: 17 April 1996

TOPIC ----------

This article describes the Menu choices you have when you clean the nozzles and print test pages on the Apple Color Printer.

DISCUSSION ----------

Here's how to enter the Apple Color Printer's Menu:

Press the On Line button to turn off the green light. You can then move back and forth through the Menu items using the < and > keys. If you press the Enter button while any of these Menu items are displayed, you see the choices you have under that item. You can move back and forth through the choices in the Menu sublevels using the < and > keys. Press the Exit button to move up a level in the menu.

There are two different sets of cleaning choices available at each Menu sublevel, depending on whether the Apple Color Printer is in Normal or Service/Factory Mode.

These are the test print and cleaning choices available at each Menu sublevel in Normal Mode:

- TEST PRINT
  - TEST PRINT A Bubble jet head check pattern
  - TEST PRINT B Bubble jet head/main unit precision check pattern 1
    Note: Test Print B is only available after a print job is sent to the printer.
- CLEANING
  - CLEANING A Same as user CLEANING A
  - CLEANING B For checking ink passage pressure at factory

IMPORTANT:
The Service/Factory Mode Cleaning D uses large quanties of ink. Only use Cleaning D if the other cleaning methods fail to adequately clean the nozzle.

These are the cleaning choices available at each Menu sublevel in Service/Factory Mode:

- BLACK OFFSET
- CYAN OFFSET
- MAGENTA OFFSET
- YELLOW OFFSET
- DIRECTION OFFSET
- TEST PRINT
  - TEST PRINT A Bubble jet head check pattern
  - TEST PRINT B Bubble jet head/main unit precision check pattern 1
  - TEST PRINT C Printing Position check
  - TEST PRINT D Same as B, but pattern 2
  - HEAT RUN Printer mechanism check (paper feed and carriage driven without printing)
- CENTER HEAD Moves print head to center for removal You turn off the power to exit this mode.
- CLEANING
  - CLEANING A Same as user CLEANING A
  - CLEANING B For checking ink passage pressure at factory
  - CLEANING C For filling system with ink
  - CLEANING D FLUSHING raises the temperature of the print head, uses 3.5 grams of ink, and takes 4 minutes.

To enter the Service/Factory Mode, follow these steps:

1) Hold both arrow keys down and turn the power on.

2) When you see the first rectangle on the display, release the arrow keys and press the ON LINE key.

3) While holding the ON LINE key down, press the ENTER key twice and release all keys.

You will now be able to access the choices in the Service/Factory Menu.

Cleaning the Nozzles

If streaks or other unpleasant artifacts start appearing in printed documents, cleaning the nozzles may improve printing. The following control panel steps initiate the nozzle cleaning process:

1) Press the On Line button. The green light goes out.

2) Press the Menu button two times in succession to cycle through these displayed modes:

- Printing Mode
- Cleaning

3) Press the Enter button two times in succession to cycle through these displayed modes:
   - Cleaning-A
   - 08-Cleaning

   The cleaning process begins and completes in a few moments.
   When the cleaning is complete, the display shows Cleaning-A.

4) Press the On Line button. Display shows 00 Ready.

If problems persist after two or three uses of the Cleaning-A process, two other methods provide more thorough cleaning (and use a much larger quantity of ink). You can find more detailed instructions for Cleaning-B and Flushing functions in the "Apple Color Printer User's Guide."

Printing Test Pages

To print the Test Page A, follow these steps:

1) Press the On Line button. The green light goes out.

2) Press the Menu button three times to cycle through these displayed modes:
   - Printing Mode
   - Cleaning
   - Test Print

3) Press the Enter button twice to cycle through these displayed items:
   - Test Print-A
   - 01-Test Print

   The test page is printed. When the nozzle test is complete, the display shows Test Print-A.

4) Press the On Line button. Display shows 00 Ready.

To print Test Page B, follow these steps:

1) Press the On Line button. The green light goes out.

2) Press the Menu button three times to cycle through these displayed items:
   - Printing Mode
   - Cleaning
   - Test Print

3) Press the Enter button. Display shows Test Print-A.

4) Press the Menu button. Display shows Test Print B.

5) Press the Enter button. Display shows 01-Test Print.
   The test page is printed. When the page is printed, the display shows Test Print-B.

6) Press the On Line button. The display shows 00 Ready.

Note:
Test Print B is not available until a print job has been sent to the printer.

To print the Nozzle Check page, follow these steps:

1) Press the On Line button. The green light goes out.

2) Press the Menu button three times to cycle through these displayed items:
   • Printing Mode
   • Cleaning
   • Test Print

3) Press the Enter button. Display shows Test Print-A.

4) Press the Menu button twice to cycle through these displayed items:
   • Test Print B
   • Nozzle Check

5) Press the Enter button. Display shows 01-Test Print.
   The test page is printed. When the nozzle check is complete, the display shows Nozzle Check.

6) Press the On Line button. Display shows 00 Ready.

Article Change History
17 Apr 1996 - Changed article status and added caution message.
12 Apr 1993 - Revised to correct Service/Factory mode menu choices.

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Tech Info Library Article Number:11159

Apple Color Printer: Self-Maintenance Processes

Revised: 1/4/93
Security: Everyone

Apple Color Printer: Self-Maintenance Processes

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Article Created: 6 January 1993

TOPIC ----------

The Apple Color Printer implements several self-maintenance features. This article describes these processes.

DISCUSSION ----------

The Apple Color Printer uses low-ink sensors in each cartridge to warn when a cartridge has only 3 grams of ink remaining (each new cartridge contains 30 grams of ink). This warning takes the form of both a dialog from the Print Monitor and a message on the Apple Color Printer control panel. If a cartridge runs dry during a print job, you get notified and the print job continues when you install a fresh cartridge.

In addition to keeping track of cartridge ink level, the Apple Color Printer constantly protects, cleans, and tests its print nozzles. Whenever the printer is idle for at least 12 seconds, the printer caps the ink jet nozzles to prevent the ink from drying in the nozzles. Capping also prevents nozzle leakage and dust contamination.

The system cleaning function occurs after these events:
• Any time you turn on the printer.
• Whenever the printer has been on, but not used during a 24 hour period.
• Whenever you install a new cartridge.

It's also possible to manually start print head cleaning via the printer control panel. The cleaning function is controlled by the purge unit which opposes the print heads. The four step process consists of:

1) Capping
2) Pumping
3) Wiping

4) Ejecting extra ink.

During the capping function, a head cap covers the nozzles. The head cap also connects the ink passages of the print head with the purge unit. The purge unit ensures maintenance of the ink jet head unit.

The pumping function takes place when the printer draws ink from the capped bubble jet heads into the purge unit. While clearing the nozzles of impurities, the printer draws fresh ink from the ink subtank. It sends the purged ink into a waste ink absorber within the cartridge. The waste ink absorber consists of a high molecular polymer absorption sheet, and can absorb up to 30 grams of ink.

During the wiping phase of the head cleaning procedure, a head wiper wipes off the nozzle face plate. During the cleaning process, the carriage moves past the wiper (right to left) from the yellow head to the magenta head to the cyan head, and finally to the black head, cleaning away any excess ink drops and paper fiber in its path. The wiper extends 0.2 inches from the face of the purge unit. The cleaning sponge, which extends 0.12 inches out from the purge unit, completes the cleaning process, wiping away the ink impurities the head wiper missed. The cleaning sponge also clears away any excess ink collected on the nozzle faceplate after a long print. The sponge can wipe the head unit when the carriage passes by in either direction.

The printer activates the wiper and sponge at these intervals during a print job:

- Every 30 seconds during a print that lasts at least that long.
- Every time the carriage is returned.
- After printing 1,980 characters.
- As a page is ejected and just before the heads are capped.

Another periodic maintenance process fires ink from all nozzles (64 nozzles per cartridge) while they are capped. The nozzles are fired, not pumped. This process prevents both the nozzles from clogging with ink and the four print heads from mixing (for example, cyan ink slopping over onto the magenta head).

The maintenance firing takes place under the following conditions:

- Before a print job starting, if it's been less than 24 hours since the last print.
- If the internal temperature drops to 25° C or less, and it's been between 1 and 24 hours since the last print.
- When the paper is ejected after a print.
- After the head wiper wipes the head.

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Tech Info Library Article Number:11160

Tech Info Library

ColorSync: Interacting With Other Color Matching Systems

Revised: 1/4/93
Security: Everyone

ColorSync: Interacting With Other Color Matching Systems

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Article Created: 6 January 1993

TOPIC ----------

How does ColorSync interact with the other color matching systems on the market?

DISCUSSION ----------

QuickDraw GX

QuickDraw GX is Apple's imaging oriented system software platform designed to improve the baseline imaging functionality of the Macintosh. ColorSync color matching is just one part of the functionality that GX supports. GX supports the profiles, CMMs, and applications geared for ColorSync.

Adobe PostScript Level II

Apple and Adobe have worked to coordinate their color management efforts. Apple provides basic tools that are compatible with the PostScript level II color extensions. These tools are designed to facilitate color exchanges on the Macintosh platform for PostScript files. Future PostScript drivers will accommodate device profiles to support color matching. Of course, the utilities are designed so that PostScript isn't a requirement for using the new ColorSync extensions.

Pantone, Muncell, Toyo, and So On

These are device-dependent standards used in the printing world in lieu of a true color matching system. These schemes define colors based on a standard set of printed samples. It's possible for these vendors to specify their standard color samples in terms of the CIE XYZ values, thereby integrating them with ColorSync.

..TIL11161-ColorSync-Interacting_With_Other_Color_Matching_Systems.pdf

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Tech Info Library Article Number:11161

Tech Info Library

Apple Color Printer: How It Implements the CMYK Color System

Revised: 1/4/93
Security: Everyone

Apple Color Printer: How It Implements the CMYK Color System

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Article Created: 6 January 1993

TOPIC ----------

Scanners and displays typically use an RGB (red, green, blue) color system. Most printers function in the CMYK (cyan, magenta, yellow, black) color system. This article describes how the Apple Color Printer uses the CMYK color system.

DISCUSSION ----------

CMYK Compared to RGB

Light-emitting color devices generally use RGB, which is known as an additive color system. Fully combining saturated red, blue, and green achieves the absolute white point of an RGB device. Reflective media (like paper) generally use CMYK, which is known as a subtractive color system.

Fully combining saturated cyan, magenta, and yellow creates black (absorbs or subtracts all light, and reflects nothing). Saturation refers to a pure hue or a perceived pure color. A pure hue is 100% saturated. Adding white to a hue decreases the percentage of saturation.

The Apple Color Printer uses the CMYK color system to attain millions of colors. Mixing various combinations of cyan, magenta, and yellow creates any color. Mixing fully saturated cyan, magenta, and yellow creates black. To attain blacker blacks and conserve the ink supplies of the color cartridges, the Apple Color Printer uses a black ink cartridge in any situation where it needs black.

The Print Head

The Apple Color Printer uses a four-part print head with a separate set of 64 nozzles for each primary color: cyan, magenta, yellow, and black. The

nozzles are placed 1/360th of an inch apart. The separate color heads are placed 0.5 inches apart on the print head. The optimum operating temperature for the ink jet heads is about 36° C (84° F). The printer activates the nozzle heater when it detects a temperature less than 36° C. This keeps the nozzles at the optimum operating temperature. Each color operates in a manner similar to the single print head of the StyleWriter.

Ink is heated within a nozzle until a bubble forms within the nozzle. The ink within the nozzle heats enough to cause the bubble to explode, ejecting ink from the nozzle at a speed of 12 meters/second. When the ink is ejected, a vacuum is created within the nozzle. The vacuum draws ink from the head subtank to refill the nozzle (the subtank is prefilled from the cartridge).

The head prints when the carriage moves from left to right, with colors output in the order black, cyan, magenta, yellow. It creates colors other than cyan, magenta, yellow, and black by mixing colors on the paper. The inks aren't physically mixed. Because the dots are so small (1/360 inch), placing a cyan and yellow dot next to each other gives the appearance of a green dot. Colors nearby affect the appearance of another color, even when the samples are large and obvious. When the sample size is 1/360 inch, the eye sees a different color.

Generating Colors from CMYK

If the three colors were physically mixed, the printer could theoretically create 16.7 million colors. Because color differences are what the human eye perceives, it attains substantially less than 16.7 million discernibly different colors. The eye can realistically perceive about 3 million color differences when the colors are placed next to each other. Keeping the color samples apart from each other drops the number of discernible colors to about 7000.

Because it's impossible to perfectly mix the three primary colors in 1/360-inch dots, patterns or halftoning produces the effect of mixed color.

Addressing Individual Nozzles

The four logical print heads (one for each color) are physically located on the same print head. Each print head's 64 nozzles are addressed in four groups of sixteen. Heat group 1 controls every fourth nozzle on all four heads, as does Heat group 2, and so on.

There's a delay when addressing each of the heads, due to their physical separation of 0.5 inch. This same delay is necessary when addressing individual nozzles between the color heads. If it needs a magenta dot just below a cyan dot, the cyan nozzle must fire one timing cycle before the magenta head fires, to account for the 0.5 inch the print head must travel between the two actions.

A serial signal arrives at the print head for each color (that is, a specific color value for cyan). It then converts the signal to a parallel signal that addresses each of the color's 64 nozzles (actually only those nozzles that need to be fired for a certain color). That parallel signal

is then matrixed with the head heat signal, causing the proper nozzles to heat and fire.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11162

Tech Info Library

Apple Color Printer: Printer Sharing

Revised: 1/4/93
Security: Everyone

Apple Color Printer: Printer Sharing

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Article Created: 6 January 1993

TOPIC ----------

The Apple Color Printer's GrayShare driver offers printer sharing even when the Apple Color Printer isn't connected to a network. You can "publish" the printer to other network users for remote use. You can implement activity logging and password protection, which allows the host computer to both monitor and limit printer use. This article tells you how to share the Apple Color Printer.

DISCUSSION ----------

Choosing the Apple Color Printer

To print to an Apple Color Printer:

1) Select the printer via the Chooser.

2) Once the Chooser dialog box appears and you select the Apple Color Printer icon, the "Connect to:" portion of the dialog lists "<SCSI>" as the choice. If the printer is set up for sharing, it's named and that name is listed instead of "<SCSI>".

3) Select "<SCSI>" and close the Chooser dialog box to begin using the Apple Color Printer.

If you wish to share the printer, you need to perform a few more operations.

Apple Color Printer Sharing Setup

To set up printer sharing:

1) Click the "Setup" button.

2) An "Apple Color Printer Sharing Setup" dialog box allows you to check the "Share this Printer" checkbox, and then type in a name for the printer. The name entered in this dialog box will be the name that network users see when they select the Apple Color Printer icon in their Choosers.

3) You may type in the password that remote users must know in order to use the printer. If you don't wish to use password protection, leave the password area blank.

4) Check the "Keep Log of Printer Usage" checkbox if you want to keep a journal of printer use.

Printer Sharing and the Host Computer

Printer sharing is an excellent feature, but the host computer will bear the burden of the print serving. The remote station images and spools the document quickly, but the host computer handles the actual printer spooling. If many computers frequently spool documents to a shared printer, it may be advantageous to have a dedicated computer sharing that printer.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11163

Tech Info Library

ColorSync: How It Differs from Ofoto Calibration

Revised: 1/4/93
Security: Everyone

ColorSync: How It Differs from Ofoto Calibration

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Article Created: 6 January 1993

TOPIC ----------

What is the difference between Ofoto calibration and ColorSync matching?

DISCUSSION ----------

Ofoto provides a closed-loop device-to-device matching, whereas ColorSync provides device-independent matching. This means that Ofoto will work as long as the scan is printed on the intended device. ColorSync provides the best possible results no matter what the eventual device is.

ColorSync is available only for the Macintosh, and there isn't a Windows version.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11164

Tech Info Library

ColorSync: Compatibility Issues

Revised: 4/22/93
Security: Everyone

ColorSync: Compatibility Issues

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Article Created: 6 January 1993

TOPIC ----------

This article gives some compatibility information about ColorSync.

DISCUSSION ----------

System Software

ColorSync is compatible with system software version 7.0 and later.

Application Software

Most applications will print using ColorSync, assuming that the driver takes advantage of ColorSync. Those applications that generate custom PostScript will have to be revised. To take advantage of some of the new features of ColorSync (that is, view the matched image on the display, preview, or do gamut matching) will require revisions to applications. Apple has worked with software developers to ensure adoption of ColorSync as quickly as possible.

Photo CD

ColorSync works with Photo CD, but not directly. Photo CD files are based on a proprietary color space called YCC. Apple wrote a QuickTime extension that converts these to RGB. Once these images are converted, ColorSync performs the necessary matching. The process is automatic and invisible to the user.

QuickDraw

QuickDraw GX incorporates the ColorSync technology directly, which means that developer and customer investments in ColorSync are preserved with

QuickDraw GX. Because QuickDraw GX incorporates a totally new graphics model, the color spaces supported by GX exceed the ColorSync implementation under today's QuickDraw. Many of these color spaces are device-independent, and are in addition to the RGB and CIE XYZ spaces that ColorSync supports.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11165

Tech Info Library

ColorSync: RAM and Disk Space Used, Color Matching Speed

Revised: 1/4/93
Security: Everyone

ColorSync: RAM and Disk Space Used, Color Matching Speed

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Article Created: 6 January 1993

TOPIC ----------

How fast and efficient is the ColorSync Color Matching Method (CMM)?

DISCUSSION ----------

The goal for the default CMM was minimal size. The default CMM uses approximately 70K of RAM and disk space. Profiles are also small, taking less than 5K of disk space each.

The default CMM converts approximately 4K color pixels/second on a Macintosh IIci computer. This means that a 24-bit scan of a 3x5 image at 100 dpi takes about 40 seconds.

Other methods (Kodak's ColorSense and EFI's EFIColor) can use the Component Manager to provide excellent matching and good performance. But the ColorSync default CMM was designed to have a small memory footprint for mainstream users. The other matching methods are table-driven and become quite large to perform all of the functions such as preview, gamut checking, and perceptual, colorimetric, or saturation matching. Lookup tables are very fast, but require large amounts of memory for the separate tables for every device combination.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11166

ColorSync: Licensing and Distribution

Revised: 1/4/93
Security: Everyone

ColorSync: Licensing and Distribution

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Article Created: 6 January 1993

TOPIC ----------

How does Apple distribute ColorSync, and who can obtain licensing?

DISCUSSION ----------

Apple will license ColorSync to third parties for incorporation in their products. Apple will also ship ColorSync software and the appropriate profiles with Apple color systems and peripherals. The first Apple products with ColorSync included are the Color OneScanner and the Apple Color Printer.

Apple will license ColorSync to competitive peripheral developers. Because Apple believes that color matching needs to provide users with color WYSIWYG, Apple licenses ColorSync to anyone who wishes to use it, including competing companies. We feel it's critical to have one standard color matching approach on the Macintosh, no matter who provides the peripheral device.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11168

Tech Info Library

Apple Color Printer: Checking and Resetting the SCSI ID (9/95)

Revised: 9/21/95
Security: Everyone

Apple Color Printer: Checking and Resetting the SCSI ID (9/95)

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Article Created: 6 January 1993
Article Reviewed/Updated: 21 September 1995

TOPIC ----------

This article explains how to check the SCSI ID on the Apple Color Printer, and change it, if needed.

DISCUSSION ----------

Since the Apple Color Printer is a SCSI device, it must be set to a unique SCSI ID that no other SCSI devices on the SCSI chain are using. Apple ships the Apple Color Printer from the factory with the SCSI ID set to four (4). If you already have a device on the SCSI chain set to ID 4, it is probably easier to change the ID on that device.

To change the SCSI ID of the Apple Color Printer, disconnect it from the computer and leave it turned on, then follow these steps:

Step 1

Press the On Line button. The green light goes out.

Step 2

Press the Menu button 5 successive times to cycle through the modes on the display:

- Printing Mode
- Cleaning
- Test Print
- Dump Mode
- Interface Select

Step 3

While in Interface Select mode, press the Enter button two times in succession to cycle through these displayed items:

- SCSI
- ID#=4

Step 4

- Pressing the Menu button increases the SCSI ID number by 1.
- Pressing the < button decreases the SCSI ID number by 1.

Select the ID number you want to set and press the Enter button.

Step 5

Press the On Line button to cycle the display through:

- SAVE NVRAM=YES
- 00 READY

This completes the ID number resetting.

Step 6

Turn off the printer and reconnect it to the computer.

Article Change History:
21 Sep 1995 - Corrected process for changing SCSI ID.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:11169

Tech Info Library

Apple Color Printer: Software Requirements and Installation

Revised: 1/4/93
Security: Everyone

Apple Color Printer: Software Requirements and Installation

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Article Created: 6 January 1993

TOPIC ----------

This article tells you what software comes with the Apple Color Printer, and gives you tips on how to properly install it.

DISCUSSION ----------

Installation

The Apple Color Printer requires System software version 7.0 or later.

The Apple Color Printer's accessory kit contains five 800K disks, which hold the Installer, printer driver software, ColorSync, and TrueType fonts. The Installer places the driver, ColorSync, TrueType fonts, Chooser, Printer Share and the display profiles into the System Folder.

NOTE: Use the Chooser installed by the Apple Color Printer Installer.

An important piece of the Apple Color Printer software environment is a new Chooser that supports printer sharing. If you install System 7.1 or an earlier version of System 7 after installing Apple Color Printer software, it will overwrite the Apple Color Printer Chooser. It's important to reinstall the Apple Color Printer Chooser if this should occur.

Fonts

The following TrueType fonts are provided, on floppy disk, with the Apple Color Printer:

Avant Garde (4 styles)
Bookman (4 styles)
Courier (4 styles)

Helvetica (4 styles)
Helvetica Narrow (4 styles)
New Century Schoolbook (4 styles)
Palatino (4 styles)
Symbol (Symbol)
Times (4 styles)
Zapf Chancery
Zapf Dingbats
Chicago
Delphian
Garamond Narrow (4 styles)
Geneva
Helvetica Black (2 styles)
Helvetica Compressed (2 styles)
Lubalin Graph (4 styles)
Lucida Bright (4 styles)
Machine
Monaco
Nadianne (2 styles)
New York
Old English Text
Onyx
Oxford
Swing
Zeal

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Tech Info Library Article Number:11170

RAM Speed and CPU Speed: How They're Related

Revised: 1/12/93
Security: Everyone

RAM Speed and CPU Speed: How They're Related

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Article Created: 23 December 1992

TOPIC ----------

How are RAM speed and CPU speed related?

DISCUSSION ----------

RAM and CPU speed are related by cycle time and wait states.

Cycle Time

Cycle time is the minimum time it takes the processor to "turn around," or complete execution of an instruction.

On a 25 MHz CPU, the clock generates 25,000,000 pulses per second. That is to say, each pulse comes every 1/25,000,000 second (or after 25,000,000 pulses, one second has elapsed).

One divided by 25,000,000 means each pulse lasts 40 nanoseconds (4.0 x 10 EE-8). So, if the processor were running at top speed, it could write a value to RAM, change it in one cycle, and rewrite it 40 nanoseconds later. In this system, the RAM would have to be able to respond within 40ns, or 40ns RAM. However, 40ns RAM is hard to make and expensive, so someone had the idea to let the processor go fast for everything else it does, but to slow down accesses to RAM.

Wait State

Thus was born the idea of the wait state, in which the processor spins its wheels for one, two, or more cycles, to give the RAM a chance to catch up. So in our mythical 25 MHz machine described above, one wait state would mean we could use plentiful and cheap 80ns RAM. Two wait states would permit 120ns RAM, and so on.

Some designs are easy, and use a fixed number of wait states -- but not the Macintosh. Depending on what activity is being done and whatever else is going on, the Macintosh can impose a variable number of wait states.

Generally, though, if you use the calculation above with recent designs, you can assume one wait state and get the RAM speed.

(1 divided by clock speed) x 2 = ___ ns)

Wait states are not free, however. While the processor is spinning its wheels, that fast CPU and support hardware you paid for is useless. For this reason, cache RAM, which is very fast, can be used to eliminate or reduce wait states to the processor, and then the cache controller is used to write to slower main RAM. Also, though this refers to writes, the same applies to reads.

Copyright 1992, Apple Computer, Inc.

Tech Info Library Article Number:11171

Tech Info Library

PowerBook 100 External SuperDrive: Description (3/95)

Revised: 3/31/95
Security: Everyone

PowerBook 100 External SuperDrive: Description (3/95)

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Article Created: 23 December 23 1992
Article Reviewed/Updated: 31 March 1995

TOPIC -----

This article describes the optional external SuperDrive for the PowerBook 100.

DISCUSSION -----

The Macintosh PowerBook 100 uses an external low-profile 1.44MB floppy disk drive that is designed to operate from the +5 volts power output available through the computer's HDI-20 FDD port.

The face plate folds down to act as a prop for the front of the drive, and can be folded back up to cover the drive slot when the drive is not in use.

Although functionally the same as previous SuperDrives, this drive uses no motor to "pull" disks into the drive. They must be physically pushed in farther than with other drives.

The drive does feature a standard disk eject mechanism.

A separate Tech Info Library article provides technical specifications.

Article Change History:
31 Mar 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:11172

Tech Info Library

Apple Color Printer: Meanings of Messages and Indicator Lights

Revised: 1/4/93
Security: Everyone

Apple Color Printer: Meanings of Messages and Indicator Lights

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Article Created: 6 January 1993

TOPIC ----------

This article tells you what the lights and messages indicate about the Apple Color Printer.

DISCUSSION ----------

Lights

There are two lights on the Apple Color Printer control panel: Alarm, and On Line. This list describes what the lights indicate about the Apple Color Printer's status:

- Green On Line flashing: printer is printing.
- Both lights off: printer is off. Check power switch, cord outlet, and connections.
- Alarm light on steady: printer is either out of paper or paper has misfed. Check the control panel or computer display for further information on the printer's condition.

Messages

The following table shows the most common messages that you may encounter while using the Apple Color Printer:

Message	Possible Cause	Action
10 Check Paper	Printer is out of paper	Insert new paper
	Paper isn't inserted correctly	Adjust paper

12 Cover Open	Top cover is open	Close the cover
13 Check Paper	Paper jammed Printer is dirty	Clear the jam Clean the interior
14 No Ink Cart	One or more ink cartridges are incorrectly installed	Make sure ink cartridges are properly installed in the correct positions
16 No Black Ink	Black ink cartridge is empty	Replace the black ink cartridge
16 No Yellow Ink	Yellow ink cartridge is empty	Replace the yellow ink cartridge
16 No Magenta Ink	Magenta ink cartridge is empty	Replace the magenta ink cartridge
16 No Cyan Ink	Cyan ink cartridge is empty	Replace the cyan ink cartridge

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11173

Tech Info Library

Apple Color Printer: Software Compatibility

Revised: 1/4/93
Security: Everyone

Apple Color Printer: Software Compatibility

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Article Created: 6 January 1993

TOPIC ----------

This article gives information about compatibility of software with the Apple Color Printer.

DISCUSSION ----------

The Apple Color Printer requires system software version 7.0 or later. Similar to the TrueType format, with ATM installed on the Macintosh, Type 1 fonts are compatible with the Apple Color Printer.

Application Compatibility

The Apple Color Printer isn't equipped with an internal controller to drive the engine. The host Macintosh converts QuickDraw data into raster data (bitmapped) and sends it to the printer. Any application that supports the QuickDraw printing calls will be compatible with the Apple Color Printer.

Some applications, such as Adobe PhotoShop, have their own print dialogs and limited facility for color matching. The Color (or Options) button is still present and ColorSync can still be invoked for excellent color matching. But the situation is muddled by a Correct For Color Printing checkbox that produces poor results. That checkbox doesn't invoke ColorSync, and the resulting color matching is significantly different from ColorSync.

To invoke ColorSync, you must use the Color (or Options) button in the Print dialog without selecting any other application-specific color correction.

New Chooser and System 7 Installers

The Apple Color Printer needs the new Chooser to function properly.

If you install the Apple Color Printer software, and then install System 7.1 or an earlier version of System 7, the previous version of the Chooser overwrites the new Chooser that ships with the Apple Color Printer. If this occurs, drag the Apple Color Printer Chooser from the Install disk into the System Folder.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11174

Tech Info Library

StyleWriter II: Paper Handling and Adjustments (7/95)

Revised: 7/26/95
Security: Everyone

StyleWriter II: Paper Handling and Adjustments (7/95)

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Article Created: 6 January 1993
Article Reviewed/Updated: 26 July 1995

TOPIC ----------

This article discusses the StyleWriter II printer's paper handling and adjustments.

DISCUSSION ----------

Paper Handling

The StyleWriter II has an integral paper feed mechanism that provides accurate paper handling from envelope to legal size in paper weights of 16 to 24 lbs. The paper feeder tray can hold 100 (20 pound) sheets or 15 envelopes. If paper heavier than 20 lbs. is used, then the paper feeder tray supports fewer sheets. You can also print transparencies.

NOTE: No manual paper feed is provided.

Adjusting for Heavier Paper

Printing on materials that are heavier (thicker) than regular paper, including envelopes, transparencies, labels, and heavier paper, requires the two paper thickness levers be adjusted. One lever is next to the sheet feeder; the other is inside the printer, just above the ink cartridge.

• For normal paper, the paper thickness levers should be set to the "paper" setting (shown by the icon of a piece of paper with its corner turned down).

• To adjust the thickness levers for heavier paper, move both levers to the "envelope" setting (with the icon of an envelope).

Article Change History:
26 Jul 1995 - Clarified paper capacities

..TIL11175-StyleWriter_II-Paper_Handling_and_Adjustments_7-95.pdf

16 May 1995 - Reformatted; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:11175

StyleWriter II: Controls and Status Lights (4/95)

Revised: 4/7/95
Security: Everyone

StyleWriter II: Controls and Status Lights (4/95)

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Article Created: 6 January 1993
Article Reviewed/Updated: 7 April 1995

TOPIC ----------

The StyleWriter II has a power button, two paper thickness levers, and two status lights. This article discussed the StyleWriter II's controls and status lights.

DISCUSSION ----------

Power Button

The Power button is located on the top center of the printer. You can turn the printer on or off by pressing down on the Power button. To print a test page, press and hold down the Power button for several seconds until the test page starts to print. Release the Power button when the test page begins to print.

Paper Thickness Levers

The paper thickness levers are located on the right side of the printer. One lever is on the outside of the printer, next to the paper tray. This lever controls the width of the space through which the paper enters the printer. The other lever is colored blue and is located inside the printer on the top right side of the print head mechanism. This lever controls the distance the print head mechanism is from the paper. The levers have two positions:

- Normal (for up to 100 normal sheets of paper)
- Envelope (for thicker paper or up to 15 envelopes)

The normal position has a document icon next to it (a piece of paper with the corner folded over) and the envelope position has an envelope icon next to it.

Status Lights

The two status lights are located on the upper center front panel.

- The Power light is the rectangular light located over the Apple logo.
- The Error light is the small round light just to the left of the Power light.

Status Light Indications

The green Power light comes on when power is applied to the printer; it blinks when the printer is printing.

The yellow Error light comes on to indicate one or more of the following situations:

- The printer is out of paper
- There is a paper jam
- There is a carriage jam inside the printer

Article Change History:
07 Apr 1995 - Made minor technical updates; removed LED chart.
17 Feb 1995 - Added LED condition chart.

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Tech Info Library Article Number:11176

Tech Info Library

StyleWriter II: Cleaning and Purging the Ink Cartridge

Revised: 1/5/93
Security: Everyone

StyleWriter II: Cleaning and Purging the Ink Cartridge

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Article Created: 6 January 1993

TOPIC

To improve print quality, the StyleWriter II automatically cleans and purges its ink cartridge by wiping paper fibers and dried ink from the print head. This article provides details on this process.

DISCUSSION

The StyleWriter II cleans and purges its ink cartridge by wiping the surface of the ink nozzles to remove paper fibers, capping the ink cartridge with a rubber cover, then pumping a small amount of fresh ink into the cartridge's ink nozzles. The entire process takes approximately 13 seconds.

Automatic Operation

Automatic cleaning and purging occurs when:

- The StyleWriter II is first switched on after being plugged in.
- The ink cartridge is replaced.
- The printer is first switched on more than 72 hours after the last cleaning operation.
- A user chooses to clean and purge the ink cartridge (manual operation, below).

Manual Operation

To clean and purge the ink cartridge at any time:

1) Select Options in the Print dialog box.

2) Select the box labeled "Clean ink cartridge before printing".

Cleaning and purging does consume a small amount of ink (about 0.1 cc). If you repeat the process unnecessarily, you will reduce the life of the cartridge.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11177

Tech Info Library

StyleWriter II: Compatibility and Performance

Revised: 1/5/93
Security: Everyone

StyleWriter II: Compatibility and Performance

==========

Article Created: 6 January 1993

TOPIC ----------

This article discusses the StyleWriter II's compatibility.

DISCUSSION ----------

Software Compatibility

The StyleWriter II requires System 7, or System 6.0.7/6.0.8 with the TrueType INIT installed. The TrueType INIT is included with the StyleWriter II printer drivers. Color Macintosh computers must have 32-bit QuickDraw to work properly.

The StyleWriter II can use Adobe Type 1 and TrueType fonts, including fonts in a two-byte format. Adobe Type 1 fonts require the use of Adobe Type Manager

Performance

For best performance, Macintosh systems should have more than 2MB of RAM with System 6.0.7/6.0.8, or more than 4MB of RAM with System 7.

As with the StyleWriter printer, the StyleWriter II's performance is directly related to the type of Macintosh used and the complexity of the document. As a general rule, the faster the CPU and the simpler the document, the faster the StyleWriter II will print.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11178

Tech Info Library

GrayShare: Description (10/94)

Revised: 10/27/94
Security: Everyone

GrayShare: Description (10/94)

==========

Article Created: 6 January 1993
Article Reviewed/Updated: 27 October 1994

TOPIC ----------

What is GrayShare and how is it different from grayscale printing?

DISCUSSION ----------

Difference Between GrayShare and Grayscale

GrayShare is Apple's trademark for its new printer driver software that provides, among other things, networking and grayscale printing for QuickDraw–based printers.

The term grayscale refers to the range of gray tones that a monitor or printer is capable of reproducing.

Benefits of GrayShare

GrayShare printer driver software provides:

- Networking capability
- Grayscale printing
- Image scaling in 1% increments
- Support for new paper sizes
- Ink cartridge cleaning

Image scaling and paper size are user-selectable in the Page Setup dialog box, while ink cartridge cleaning (only available in the StyleWriter series printers) is selectable from Options in the Print dialog box.

GrayShare enables printers to print dithered grayscale images. With GrayShare on the StyleWriter II, for example, the printer driver provides 138 shades of gray.

Parts of GrayShare

GrayShare consists of two parts:

1) The print driver - contains the image scaling, grayscale printing, paper sizes, and ink cartridge cleaning.
2) Printer Share Extension - provides networking capability.

Chooser Versions Required

System 7.x - v7.3 or later of the chooser is required to use GrayShare printers.
System 6.0.7 or 6.0.8 - v3.7 of the chooser is requred.

A GrayShare upgrade disk is available through online services that Apple publishes software updates on. This upgrade disk enables the LaserWriter LS and original StyleWriter printer to use the GrayShare technology.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
30 June 1994 - Added what comes with GrayShare.

Support Information Services

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Tech Info Library Article Number:11179

StyleWriter II: How to Print a Test Page

Revised: 1/5/93
Security: Everyone

StyleWriter II: How to Print a Test Page

==========

Article Created: 6 January 1993

TOPIC -----

How do I print a test page on a StyleWriter II?

DISCUSSION -----

To print a test page, press and hold down the Power button for several seconds until the test page starts to print. Release the Power button when the test page begins to print.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11180

StyleWriter II: Setting Passwords

Revised: 1/5/93
Security: Everyone

StyleWriter II: Setting Passwords

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Article Created: 6 January 1993

TOPIC ----------

This article discusses the use of passwords with the GrayShare software on a StyleWriter II.

DISCUSSION ----------

Introduction

The GrayShare software allows the "owner" (the person who has attached a StyleWriter II to his or her Macintosh) to control access to a shared StyleWriter II by setting a password.

- If the owner sets a password, only those users who know the password can print to the shared StyleWriter II.

- If the owner does not set a password, anyone can print to the shared StyleWriter II.

The password remains in effect until the printer is renamed, the password is changed, or the user selects another StyleWriter II. For security purposes, the password is always displayed as five bullet characters.

To set a password:

1) Share the StyleWriter II on the network (a separate article tells how to do this).

2) Type a password in the Password field of the Sharing Setup menu.

Changing the Password

If the owner changes the password for a shared StyleWriter II and you print without entering the new password, a dialog box appears stating "The password has been changed. Use the chooser to select the printer again".

When you open the Chooser and select the StyleWriter II icon, the printer you were using is highlighted. However, no dialog appears asking you to re-enter the password until you either click the "Get Info" button, double-click the selected printer, or choose another shared StyleWriter II.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11182

Tech Info Library

Stylewriter: How to set Up as a Network Printer (12/94)

Revised: 12/12/94
Security: Everyone

Stylewriter: How to set Up as a Network Printer (12/94)

==========

Article Created: 6 January 1993
Article Reviewed/Updated: 12 December 1994

TOPIC ----------

How do I share a StyleWriter or StyleWriter II over a network? How do I print to a shared StyleWriter or StyleWriter II?

DISCUSSION ----------

Overview

Using the StyleWriter II printer driver (which includes GrayShare), you can share your StyleWriter or StyleWriter II with up to 21 additional computers over an AppleTalk network. There is no limit on how many people choose the printer in the Chooser, but only 21 people can print to the printer at a time. Anyone who wants to print to the shared printer needs to install the StyleWriter II printer driver. In order to print to a networked printer from a Macintosh using System 6, you must have System 6.0.7 or 6.0.8 installed, and use MultiFinder.

You still retain control of the printer after sharing it because the StyleWriter is connected to your computer. You can turn sharing on or off at any time. You can also use the Print Monitor program to view a list of pending print jobs and delete any jobs from that list.

Note: The Macintosh connected to the shared printer slows down when other users print to the shared printer because your computer is actually being used as a spooler. The information is sent from the remote computer to yours, then from your computer to the printer.

The StyleWriter printer can only use GrayShare if you use the StyleWriter II software instead of the original StyleWriter software. A GrayShare update disk is available through online services Apple publishes software updates on.

Sharing a Printer

To share a StyleWriter or StyleWriter II with others, follow these steps:

1) In order to share a printer, you must be connected to an AppleTalk network of some type.

   LocalTalk Connection

   The LocalTalk connector goes into the printer port. The peripheral 8 cable (serial cable) connects the printer to the Macintosh. It needs to go into the modem port.

   Ethernet or Token Ring Connection

   Since both Ethernet and Token Ring connections don't require you to use a serial port on your Macintosh, you can use either the printer or modem port to connect the printer to your Macintosh.

2) Open the Chooser and select the StyleWriter II icon.
   A list of available printers displays.

3) Click the icon of the port to which your printer is connected. If you are using the printer port to connect your Macintosh to the network, you must connect your StyleWriter or StyleWriter II to the modem port.

4) Click the Setup button to open the StyleWriter II Sharing Setup dialog box.

5) Place an X in the "Share this Printer" checkbox. You have the option of naming your printer and entering a password. If you type a password for the printer, only users who know the password can use the printer from their computers.

   If you want a record of what is printed on your printer, place an X in the "Keep Log of Printer Usage" checkbox.

6) Click "OK" to close the StyleWriter II Sharing Setup dialog box and close the Chooser window.

Your printer is now available to others on the network.

Printing to a Shared Printer

To print to a shared printer, follow these steps:

1) Open the Chooser and select the StyleWriter II icon. A list of available printers and communications ports will be displayed.

2) Click the name of the shared printer that you want to use.
   If the printer requires a password, a dialog box appears in which you must type the password.

3) Optionally, you may click the Get Info button to see whether any fonts in your system are unavailable on the shared printer. If your documents contain such fonts, printing will be slower, because the fonts must be downloaded to the printer.

4) Close the Chooser

You are now ready to print to the shared printer.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
12 Dec 1994 - Added information on System 6.
27 Oct 1994 - Added StyleWriter to the discussion.
13 Sep 1994 - Added more details on setting up AppleTalk connections.

Support Information Services

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Tech Info Library Article Number:11183

StyleWriter II: Using Overseas

Revised: 1/5/93
Security: Everyone

StyleWriter II: Using Overseas

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Article Created: 6 January 1993

TOPIC ----------

Can I take my U.S./Japan version StyleWriter overseas?

DISCUSSION ----------

The StyleWriter II power supply is built in to the printer, unlike the original StyleWriter which had an external power transformer.

Two Versions

The StyleWriter II is manufactured in two versions:

- The U.S./Japan version uses 100 to 120 volt power at 48 to 62 Hertz.
- The European version uses 220 to 240 volt power at 48 to 62 Hertz.

Using In Another Country

- To use a U.S./Japan model StyleWriter II in Europe, you must use an isolation step-down transformer to reduce the electrical voltage.
- To use a European model in the U.S. or Japan, you must use a isolation step-up transformer.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11184

Tech Info Library

StyleWriter II: Description

Revised: 1/5/93
Security: Everyone

StyleWriter II: Description

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Article Created: 6 January 1993

TOPIC ----------

This article describes the Apple StyleWriter II Printer

DISCUSSION ----------

The Apple StyleWriter II Printer provides laser-quality print at 360 dpi (dots per inch) using thermal ink-jet technology. The StyleWriter II works with any Macintosh that has at least 1MB of memory and a hard disk drive and uses System Software 6.0.7 or later.

The StyleWriter II comes with 39 TrueType fonts, including Times, Helvetica, Palatino, ITC Avant Garde Gothic, and Symbol.

The StyleWriter II has a multipurpose paper feeder that automatically feeds up to 15 envelopes or 100 sheets of paper. To handle diverse printing requirements, the StyleWriter II accommodates letterhead, labels, envelopes, and transparencies for overhead projection.

Apple's GrayShare technology gives your StyleWriter II the ability to print over 130 shades of gray and allows you to connect your StyleWriter II to a network through your Macintosh.

Print quality

- 360 dpi for laser-quality printing
- Grayscale printing for sharp graphics
- 39 scalable TrueType fonts for printing in any size and a wide range of styles

Convenience

- Small, sleek design fits on any desktop
- Multipurpose tray for effortless paper feeding
- Ideal for home use
- Fast draft-mode printing

Ease of Use

- Easy, one-click software installation
- Plug-and-play simplicity with any Macintosh computer
- 100-sheet multipurpose tray with automatic envelope feeder
- Draft, Normal, and Best print modes for versatility and productivity

Ordering Information

Apple StyleWriter II
Order No. M2046G/A

- Apple StyleWriter II printer
- Apple StyleWriter II Ink Cartridge
- Apple StyleWriter II Accessory Kit

Apple StyleWriter II Ink Cartridge
Order No. M8041G/A

Apple StyleWriter II Interface Cable
Order No. M0197

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11185

Tech Info Library

StyleWriter II: Specifications (7/95)

Revised: 7/26/95
Security: Everyone

StyleWriter II: Specifications (7/95)

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Article Created: 6 January 1993
Article Reviewed/Updated: 26 July 1995

TOPIC ----------

This article provides specifications for the Apple StyleWriter printer.

DISCUSSION ----------

Marking Engine

• Thermal ink jet

Memory

• 128K (62K used for buffer)

Speed

• Best mode: up to one page per minute
• Normal and draft: up to two pages per minute (actual speed varies depending on images printed and computer used)

Print Quality

• 360 dpi in best and normal modes
• 180 dpi in draft mode
• Grayscale printing with GrayShare software

Fonts

• 39 TrueType fonts from the following font families: ITC Avant Garde Gothic, ITC Bookman, Chicago, Courier, Geneva, Helvetica, Helvetica Narrow, Monaco, New Century Schoolbook, New York, Palatino, Symbol, Times, ITC Zapf Chancery, ITC Zapf Dingbats

Interface

• High-speed serial (RS-422)

Ink Cartridge

• User-replaceable
• Up to 500 pages at 5% page coverage

Paper Feed

• Automatic up to 100 sheets (fewer sheets if heavier paper is used) or 15 envelopes

Print materials

• Apple recommends 20-lb. (75 g/m2) cotton bond; also accepts 16-lb. (60 g/m2) to 24-lb (90 g/m2) paper
• Paper sizes: U.S. letter, U.S. legal, A4
• Most letterhead and colored stock, labels, envelopes, and transparencies
• Envelopes: #10 business, monarch, and other sizes
• Apple recommends 3M brand CG3480 transparency film

Paper capacity

• Multipurpose tray: up to 100 sheets of 20 lb. paper (fewer sheets if heavier paper is used) or 15 envelopes

Printable surface

• Maximum printable line: 8.0 in. (203.2 mm)
• Minimum margins: 0.25 in. (6.35 mm)

Size and weight

• Height: 7 in. (18 cm)
• Width: 13.6 in. (34.5 cm
• Depth with output tray closed: 7.9 in. (20 cm)
• Weight: 6.6 lb. (3 kg.)

Power requirements

• U.S. and Japan: 100 to 120 VAC, 48 to 62 Hz
• Europe and Australia: 220 to 240 VAC, 48 to 62 Hz

Power consumption

• 19.5 W maximum at 120 V
• 18 W maximum at 220 V

System requirements

• Any Apple Macintosh personal computer with at least 1MB of RAM and a hard

disk drive
- System software version 6.0.7 or later
- Recommended: 2MB or more RAM with System 6.0.7 or 6.0.8
  4MB or more RAM with System 7 or later

Article Change History:
26 Jul 1995 - Clarified paper capacity
16 May 1995 - Corrected paper capacity; reformatted.

Support Information Services

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Tech Info Library Article Number:11186

Tech Info Library

LaserWriter Pro 630: Description (5/96)

Revised: 6/4/96
Security: Everyone

LaserWriter Pro 630: Description (5/96)

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Article Created: 6 January 1993
Article Reviewed/Updated: 30 May 1996

TOPIC ----------

This article describes the Apple LaserWriter Pro 630 printer.

DISCUSSION ----------

The Apple LaserWriter Pro 630 is a compact, expandable network printer that makes use of Apple's FinePrint and PhotoGrade technology. With PhotoGrade, the LaserWriter Pro 630 can print more than 91 levels of gray, while FinePrint smooths curves and jagged text. The LaserWriter Pro 600 can also print documents at 600 dpi (dots per inch).

LocalTalk allows for plug-and-play connection to an AppleTalk network system, as well as parallel and serial ports for connection to DOS and Windows computers. You can also connect to high-speed Ethernet networks with built-in Ethernet. SCSI ports are available so you can connect an internal or external hard drive for large-capacity font storage. All ports stay active, so you can send documents to any port without having to change a single setting.

The LaserWriter Pro 630 comes with two paper trays and options that include a 500-sheet paper cassette and a 75-envelope feeder. That brings total paper capacity to 850 sheets.

LASERWRITER PRO 630 FEATURES

Print Quality

- 600 dpi resolution for high-quality text
- PhotoGrade for enhanced images at 300 dpi with FinePrint for smooth text and lines

Multiplatform Compatibility

- Simultaneous connection to Ethernet, LocalTalk, Centronics parallel, and RS-232 serial ports
- Simultaneous connection to Macintosh, MS-DOS, and Windows computing environments
- SCSI ports (internal and external) for hard drive connection and font storage
- Adobe PostScript Level 2 software and HP LaserJet IIP (PCL 4+) emulation

Convenience and flexibility

- Two paper trays included (100 and 250 sheet capacity)
- Optional envelope feeder (75-envelope capacity)
- Optional 500-sheet feeder
- Maximum capacity with options: 850 sheets

Power and speed

- 25-MHz 68030 microprocessor, plus ASICs and I/O processors
- Ethernet port for direct connection to EtherTalk networks

Memory

- 8MB of RAM, expandable to 32MB
- 2MB of ROM

Ordering Information

Apple LaserWriter Pro 630
Order No. M5858LL/A

- Apple LaserWriter Pro 630 printer
- Toner cartridge
- Installation software and font disks
- User's Guide
- Limited warranty statement

Apple LaserWriter Pro Toner Cartridge
Order No. M2473G/A (obsolete part number M6018G/A)

Apple LaserWriter Pro 500-Sheet Feeder (includes 500-sheet universal cassette)
Order No. M6550G/A

Apple HDI-30 SCSI System Cable
Order No. M2538LL/A

Apple SCSI Cable Terminator II (Black)
Order No. M5871G/A

Apple Ethernet Thin Coax Transceiver
Order No. M0329LL/A

Apple Ethernet Twisted Pair Transceiver

Order No. M0437LL/A

Apple Ethernet AUI Adapter
Order No. M0432LL/A

Article Change History:
30 May 1996 - Updated part number.

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Tech Info Library Article Number:11187

Tech Info Library

LaserWriter Pro 630: Specifications

Revised: 3/21/94
Security: Everyone

LaserWriter Pro 630: Specifications

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Article Created: 6 January 1993
Article Reviewed/Updated: 21 March 1994

TOPIC ----------

This article gives the technical specifications for the Apple LaserWriter Pro 630 printer.

DISCUSSION ----------

Marking Engine

• Canon EX laser

Controller

• 25-MHz 68030 CPU, ASICs, and I/O processors

Memory

• 8MB of RAM, expandable to 32MB
• 2MB of ROM

Speed

• Eight pages per minute maximum

Print Quality

• 300 dpi resolution enhanced with FinePrint or PhotoGrade
• 600 dpi resolution

Fonts

- Apple Font Library: 64 fonts total.
- 35 fonts in ROM from the following font families: Avant Garde, Bookman, Courier, Helvetica, Helvetica Narrow, New Century Schoolbook, Palatino, Symbol, Times, Zapf Chancery, and Zapf Dingbats.
- 29 fonts on Macintosh disk from the following font families: Chicago, Delphian, Garamond Narrow, Geneva, Helvetica Black, Helvetica Compressed, Lubalin Graph, Lucida Bright, Machine, Monaco, Nadianne, New York, Old English Text, Onyx, Oxford, Swing, and Zeal.
- Any TrueType or PostScript fonts.

Interfaces

- Simultaneous connection to Ethernet, LocalTalk, RS-232 serial, and Centronics parallel interfaces.
- Internal and external SCSI ports for hard disk font storage.

Recommended Duty Cycle

- Toner cartridge: 6,000 pages at 5% density
- Printer: minimum 450,000 pages

Print Materials

- Media: 20- to 24-lb. (75 to 90 g/m2) from cassette; up to 32-lb. (120 g/m2) with manual feed.
- Paper: U.S. letter, U.S. legal, A4, B5.
- Labels, envelopes, most textured stock, and transparencies.

Paper Capacities

- Standard
  - 100-sheet multipurpose tray (also holds up to 10 envelopes)
  - 250-sheet letter cassette
- Optional
  - 500-sheet feeder
  - envelope feeder: up to 75 envelopes

Printable Surface

- Maximum printable line: 8.1 in. (205.9 mm)
- Minimum left and right margins: 0.1379 in. (3.5 mm)
  Minimum top margin: 0.114 in. (2.9 mm)
  Minimum bottom margin 0.197 in. (5.0 mm)

Size and Weight

- Height: 12.1 in. (30.8 cm)
- Width: 16.8 in. (42.5 cm)
- Depth: 16.9 in. (42.9 cm)
- Weight: 39 lb. (17.7 kg)

Power Requirements

- U.S. and Japan: 90 to 110 VAC, 58 to 62 Hz, 103.5 to 126 VAC, 58 to 62 Hz
- Europe and Australia: 194 to 264 VAC, 48 to 52 Hz

Power Consumption

- Standby: 95 W average
- Operating:
  — 560 W maximum at 115 V
  - 530 W maximum at 220 V

Article Change History:
21 March 1994 - Corrected metric paper weights

Support Information Services

Copyright 1992-1994, Apple Computer, Inc.

Tech Info Library Article Number:11188

Tech Info Library

LaserWriter Pro: Indicator Lights (LEDs)

Revised: 1/4/93
Security: Everyone

LaserWriter Pro: Indicator Lights (LEDs)

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Article Created: 6 January 1993

TOPIC ----------

What are the functions of the indicator lights on the side of the Apple LaserWriter Pro 600 and 630 printers?

DISCUSSION ----------

The function of the LaserWriter Pro indicator lights (LEDs) is as follows:

COLOR	NAME	FUNCTION
GREEN	Ready/In Use	ON when the printer is ready to Print. FLASHES when the printer is not ready to print due to warm-up (WAIT status). FLASHES while the controller is preparing data for printing. OFF when the printer is not ready to print due to an error condition.
ORANGE	Low Toner Level	ON when printer status indicates that the toner cartridge is low. FLASHES when cartridge is not installed. OFF otherwise.
RED	Paper Out	ON when printer status indicates paper out

		in CASSETTE FEED mode. FLASHES when printer status indicates paper out in MANUAL FEED mode. OFF otherwise.
RED	Paper Jam	ON when printer status indicates paper jam. OFF otherwise.

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Tech Info Library Article Number:11189

Tech Info Library

LaserWriter Pro 630: SCSI Ports (5/95)

Revised: 5/1/95
Security: Everyone

LaserWriter Pro 630: SCSI Ports (5/95)

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Article Created: 6 January 1993
Article Reviewed/Updated: 1 May 1995

TOPIC ----------

This article describes the SCSI ports of the Apple LaserWriter Pro 630 printer.

DISCUSSION ----------

The LaserWriter Pro 630 printer has an internal and an external SCSI port so a user can attach SCSI hard disk drives for extra font storage.

The external SCSI port uses an Apple HDI-30 connector instead of the 25-pin DB-connector used on the LaserWriter II series. This SCSI connector is placed several inches from the bottom of the printer; most hard drives will require a SCSI cable extender in addition to an Apple HDI-30 SCSI System Cable (Apple Part Number M2538LL/A) to rest in their normal position.

Note that external SCSI drives that are connected to a LaserWriter Pro 630 must have an Apple SCSI Cable Terminator II (Apple Part Number (M5871G/A) at the end of the SCSI chain. This terminator is black and is the same type of terminator used with the Macintosh IIfx, LaserWriter IIf and IIg. If the wrong SCSI terminator is used, attached hard drives may not be recognized.

There is also a 40-pin internal SCSI port that accommodates an internal 2.5-inch SCSI hard drive. You do not need to attach a SCSI terminator to an internal hard disk.

Both SCSI ports are meant for media use only and can not be used for connecting the printer to a computer.

Users can attach up to seven SCSI hard disks to the LaserWriter Pro 630. The LaserWriter Pro 630 recognizes only those drives that have been formatted for use with a LaserWriter IIf, IIg, or drives that have been initialized using the LaserWriter Utility.

Article Change History:
01 May 1995 - Corrected reference to LaserWriter Pro 600.
26 Mar 1993 - Updated to give more information about the SCSI Terminator.

Support Information Services

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Tech Info Library Article Number:11191

Tech Info Library

Communications ToolBox: Basic Connectivity Set 1.1.1

Revised: 1/15/93
Security: Everyone

Communications ToolBox: Basic Connectivity Set 1.1.1

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Article Created: 4 January 1993

TOPIC ----------

This article describes the Communications ToolBox, Basic Connectivity Set 1.1.1 (released on January 4, 1993), which has a new XMODEM Tool and Serial Tool.

DISCUSSION ----------

The Communications ToolBox, Basic Connectivity Set 1.1.1 contains a revised XMODEM Tool with many important bug fixes, and a new Serial Tool. It's readily available to those needing it, as it is posted on AppleLink and internet.

Availability

The disk image is posted on AppleLink. Here's the path:

Software Sampler
  Apple SW Updates
    Macintosh
      Networking and Communications
        Communications ToolBox Tools

It's also available over the internet from, ftp.apple.com.

Users of the XMODEM tool can also contact the manufacturer of their application -- the one that provided the original XMODEM tool -- for an Update.

Officially, Apple has shipped the Communications ToolBox, Basic Connectivity Set with only one retail product -- MacTerminal 3.0 -- and through APDA.

Many third parties, for example Microsoft, Claris, Pacer, and White Pine, have

distribution licenses for the software. They are bound by contract to make the software available to their customers (but not necessarily free of charge).

Installation Instructions

If you received an image file, create an install disk. Then with the Basic Connectivity Set install disk:

- On Macintosh computers running System 7, drag the Communications ToolBox tools from the Basic Connectivity Set disk into the (closed) System Folder. When a dialog box tell you the tools need to be installed in the Extensions folder, click yes.

- On Macintosh computers running System 6, locate the Communications Folder stored in the System Folder. Drag the Communications ToolBox tools from the Basic Connectivity Set disk into this folder.

Bug Fixes and Features

Here are the features of the new software on the disk.

XMODEM Tool 1.1

XMODEM Tool 1.1 has been improved over the XMODEM Tool 1.0.2 in the following ways:

- Improved reliability. The XMODEM Tool 1.1 is less susceptible to protocol violations, line-noise, and corrupted bytes.

- Performance increase of up to 400%.

- In a few cases when transferring files with XMODEM Tool 1.0.2, the tool would not wait correctly for the receiver to acknowledge the successful receipt of a block. XMODEM Tool 1.1 fixes this problem.

- In System 7, support for creating a new folder when saving a downloaded file using Straight XMODEM or XMODEM Text transfers.

- With the XMODEM Tool 1.0.2, a dialog claiming that there wasn't enough disk space to receive a file would appear when receiving with the MacBinary method, IF the actual data received wasn't MacBinary. Now when non-MacBinary data arrives, the transfer switches to Straight XMODEM.

Serial Tool 1.0.2

When using the Serial Port Arbitrator included with AppleTalk Remote Access, a Serial Tool 1.0.1 dialog box would inform the user that the selected serial port was in use, even when no other service was using the port. The only way to override the "busy port" dialog was to hold down the Option key.

The Serial Tool 1.0.2 properly allows the access to the serial port when the Serial Port Arbitrator is installed and the serial port is not in use by another service.

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Tech Info Library Article Number:11193

DAM: Handling a Query That Returns Multiple Tables

Revised: 1/21/93
Security: Everyone

DAM: Handling a Query That Returns Multiple Tables

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Article Created: 4 January 1993

TOPIC ----------

I'm thinking of implementing a DAM (Data Access Manager) extension to manage a custom communication API. It appears that DAM supports the notion of tabular query results (for example, GetQueryResults returns a structure that describes a "table" -- the number of columns/rows returned, the datatype of each column is returned).

Can DAM handle a query that returns multiple tables? It seems that this would involve multiple GetQueryResults calls. Do applications that work with Query Documents fetch all of the tables? How would my extension's DBGetItem function indicate the end of a table?

I remember hearing talk about Sybase and EDAsql using DAM. Both of these architectures model the concept of a single query returning multiple tables.

DISCUSSION ----------

DAM is constrained by the limitations of SQL (Structured Query Language). SQL views all data in "table" format. That is, it sees everything as rows of columns that contain the actual data.

Data is kept in relational databases (the kind of databases that are accessed by SQL) in "Tables". These tables are defined as having specific, named columns. Each column contains data of a specific data type. These "real" tables are created by specific Data Definition Language (DDL) statements and are then filled with data via either batch jobs, or on-line transactions.

When you do an SQL query (regardless of how you do that query, DAM or the database's own query tool), you are requesting the DBMS to extract data from

one or more columns, from one or more tables. The result of that query will always be a single "logical table" containing none, one, or more rows of the requested columns.

There will never be more than one "logical table" returned with one query command (that is, Select statement). If you wish to have multiple "logical tables" of data returned, you must make multiple queries, retrieving and storing the returned data after EACH query.

An application should be written such that it sends a query, then retrieves the data from the results "logical table", and finally checks for end-of-data. (Chapter 8 of Inside Macintosh, Volume VI goes into detail about using DAM. The result code of the DBGetItem API call will tell you when you have reached the end of the results "logical table".)

In summary, data can be returned from relational databases in many ways and multiple times, but only one set (or "logical table") of data can ever be returned at one time from any query.

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Tech Info Library Article Number:11196

Tech Info Library

System 7: Memory Protection

Revised: 1/6/93
Security: Everyone

System 7: Memory Protection

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Article Created: 6 January 1993

TOPIC ----------

What is Apple's position on the present capability and future plans to address memory protection under System 7?

DISCUSSION ----------

There's a booklet available to the general public from Apple named "BluePrint for the Decade" that partially addresses this issue, but gives no specific timeframes. The booklet, created in October 1991, is a 26-page outline of Apple's product strategy for the coming decade. Here's some text regarding this specific issue. If you'd like a copy of the booklet, call the Apple Customer Assistance Center.

BluePrint for the Decade - An overview of Apple technology and strategies
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(From page i)

"In the 1990s, Apple will expand its role in both personal computing and enterprise computing. This will be driven by a focused product strategy that provides:

- Rapid advances in our System 7 software architecture.
- An object-oriented operating system that will revolutionize the economics of software development for enterprise computing, code-named Pink."

(From page 5: "The Future of System 7:Enhanced Operating System")

"We are at work on new operating-system services that will complement the multitasking capabilities in System 7 and give users smoother operation and

greater reliability. Services planned include preemptive multitasking, multithreaded routines, memory protection at the process and kernel level, and asynchronous and concurrent I/O."

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Tech Info Library Article Number:11200

Tech Info Library

UNIX: Running Macintosh Software (4/95)

Revised: 4/26/95
Security: Everyone

UNIX: Running Macintosh Software (4/95)

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Article Created: 5 January 1993
Article Reviewed/Updated: 26 April 1995

TOPIC ----------

I need a list of products that run the Macintosh OS (Mac OS) on UNIX machines.

DISCUSSION ----------

UNIX-based workstations from Hewlett Packard (HP) and Silicon Graphics Inc. can run Apple Macintosh applications under agreements made with Xcelerated Systems Inc. and Quorum Software Systems.

Liken

HP offers Xcelerated's Liken, emulation software that brings the Macintosh environment to a RISC workstation (Precision Architecture) running X windows.

Liken brings the whole Macintosh environment, including support for control panels and utilities, to the workstation. Users can expect about the same level of performance as the Macintosh demonstrates.

The only incompatibility Liken has with the Macintosh is that it doesn't support low-density floppy disks, because they aren't found on UNIX workstations.

Latitude

Quorum Latitude, is available on Silicon Graphics UNIX workstations. With Latitude, a user can recompile a Macintosh application to run in a native fashion on a UNIX workstation running either a Motif or an Open Look graphical user interface. In essence, Quorum works by converting Macintosh applications into UNIX applications.

The core technology behind Latitude is a portable implementation of the Macintosh application programming interface layered on top of the UNIX operating system.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
26 Apr 1995 - Made correction of typographical errors.

Support Information Services

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Tech Info Library Article Number:11202

LaserWriter Pro 600 and 630: Differences

Revised: 1/4/93
Security: Everyone

LaserWriter Pro 600 and 630: Differences

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Article Created: 6 January 1993

TOPIC ----------

This article describes the differences between the LaserWriter Pro 600 and the LaserWriter Pro 630. The printers differ only in terms of RAM and ports.

DISCUSSION ----------

Memory

- The LaserWriter Pro 600 has 4MB of built-in memory, and ships with a 4MB PhotoGrade Memory Kit which, after dealer installation, gives the printer 8MB of memory.

- The LaserWriter Pro 630 has 8MB of memory built in.

With 8MB of memory, both printers can use PhotoGrade at 300 dpi (dots per inch) and can print at 600 dpi.

Other Features

The LaserWriter Pro 630 has two extra features that the LaserWriter Pro 600 doesn't have.

- The 630 has a built-in Ethernet communications port that allows faster data transmission from the computer to the LaserWriter Pro 630 and may help documents print faster.

- The 630 also has internal and external SCSI ports that allow the user to attach SCSI hard disks for storage of additional fonts.

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..TIL11203-LaserWriter_Pro_600_and_630-Differences.pdf

Tech Info Library Article Number:11203

Tech Info Library

LaserWriter Pro 600: Description (Discontinued)

Revised: 6/5/96
Security: Everyone

LaserWriter Pro 600: Description (Discontinued)

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Article Created: 6 January 1993
Article Reviewed/Updated: 30 May 1996

TOPIC ----------

This article describes the Apple LaserWriter Pro 600 printer.

DISCUSSION ----------

The Apple LaserWriter Pro 600 is a compact, expandable network printer that makes use of Apple's FinePrint technology. With the PhotoGrade Upgrade Kit, the LaserWriter Pro 600 can use PhotoGrade to print more than 91 levels of gray and can print documents at 600 dpi (dots per inch).

LocalTalk allows for plug-and-play connection to an AppleTalk network system, as well as parallel and serial ports for connection to DOS and Windows computers. All ports stay active, so you can send documents to any port without having to change a single setting.

The LaserWriter Pro 600 comes with two paper trays and options that include a 500-sheet paper cassette and a 75-envelope feeder. That brings total paper capacity to 850 sheets.

LASERWRITER PRO 600 FEATURES

Print quality

• 300 dpi with FinePrint for smooth text

The PhotoGrade Upgrade Kit adds:
• 300 dpi printing with PhotoGrade for superior images and graphics
• 600 dpi for high-quality text

Multiplatform compatibility

- Simultaneous connection to LocalTalk, parallel, and serial ports
- Simultaneous connection to Macintosh, MS-DOS, and Windows computing environments
- Adobe PostScript Level 2 software and HP LaserJet IIP (PCL 4+) emulation

Convenience and flexibility

- Two paper trays included (100 and 250 sheet capacity)
- Optional envelope feeder (75-envelope capacity)
- Optional 500-sheet feeder
- Maximum capacity with options: 850 sheets

Power and speed

- 25-MHz 68030 microprocessor, plus ASICs and I/O processors

Memory

- 4MB of RAM, plus 4MB PhotoGrade Memory Kit, for a total of 8MB. Expandable to 32MB
- 2MB of ROM

Ordering Information

Apple LaserWriter Pro 600 with 4MB PhotoGrade Kit
Order No. B0018LL/A

- Apple LaserWriter Pro 600 printer
- 4MB PhotoGrade Memory Kit (dealer installation required)
- Toner cartridge
- Installation software and font disks
- User's Guide
- Limited warranty statement

Apple LaserWriter Pro Toner Cartridge
Order No. M2473G/A (obsolete part number M6018G/A)

Apple LaserWriter Pro 500-Sheet Feeder (includes 500-sheet universal cassette)
Order No. M6550G/A

Apple LaserWriter Pro Envelope Feeder
Order No. M6510G/A

Apple LaserWriter Pro 500-Sheet Universal Cassette (Supports A4, letter, legal, and B5 paper sizes)
Order No. M5862G/A

Apple LaserWriter Pro 250-Sheet Universal Cassette (Supports A4, letter, legal and B5 paper sizes)
Order No. M6525G/A

Apple LaserWriter Pro 630 Controller Card Upgrade
Order No. M5859G/A

Article Change History:
30 May 1996 - Updated part number.

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Tech Info Library Article Number:11204

Tech Info Library

LaserWriter Pro 600: Specifications (Discontinued 10/93)

Revised: 3/21/94
Security: Everyone

LaserWriter Pro 600: Specifications (Discontinued 10/93)

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Article Created: 6 January 1993
Article Reviewed/Updated: 21 March 1994

TOPIC ----------

This article gives the technical specifications for the Apple LaserWriter Pro 600 printer.

DISCUSSION ----------

Marking Engine

• Canon EX laser

Controller

• 25-MHz 68030 CPU, ASICs, and I/O processors

Memory

• 4MB of RAM built-in and 4MB PhotoGrade Memory Kit (dealer-installed), for a total of 8MB. Expandable to 32MB.
• 2MB of ROM

Speed

• Eight pages per minute maximum.

Print Quality

• 300 dpi resolution enhanced with FinePrint
• PhotoGrade Kit enables PhotoGrade grayscale printing or 600 dpi

Fonts

- Apple Font Library: 64 fonts total.
- 35 fonts in ROM from the following font families: Avant Garde, Bookman, Courier, Helvetica, Helvetica Narrow, New Century Schoolbook, Palatino, Symbol, Times, Zapf Chancery, and Zapf Dingbats.
- 29 fonts on Macintosh disk from the following font families: Chicago, Delphian, Garamond Narrow, Geneva, Helvetica Black, Helvetica Compressed, Lubalin Graph, Lucida Bright, Machine, Monaco, Nadianne, New York, Old English Text, Onyx, Oxford, Swing, and Zeal.
- Any TrueType or PostScript fonts.

Interfaces

- Simultaneous connection to LocalTalk, RS-232 serial, and Centronics parallel interfaces.

Recommended Duty Cycle

- Toner cartridge: 6,000 pages at 5% density
- Printer: minimum 450,000 pages

Print materials

- Media: 20- to 24-lb. (75 to 90 g/m2) from cassette; up to 32-lb. (120 g/m2) with manual feed.
- Paper: U.S. letter, U.S. legal, A4, B5.
- Labels, envelopes, most textured stock, and transparencies.

Paper Capacities

- Standard
  - 100-sheet multipurpose tray (also holds up to 10 envelopes)
  - 250-sheet letter cassette
- Optional
  - 500-sheet feeder
  - envelope feeder: up to 75 envelopes

Printable surface

- Maximum printable line: 8.1 in. (205.9 mm)
- Minimum left and right margins 0.1379 in. (3.5 mm)
  Minimum top margin 0.114 in. (2.9 mm)
  Minimum bottom margin 0.197 in. (5.0 mm)

Size and Weight

- Height: 12.1 in. (30.8 cm)
- Width: 16.8 in. (42.5 cm)
- Depth: 16.9 in. (42.9 cm)
- Weight: 39 lb. (17.7 kg)

Power Requirements

- U.S. and Japan: 90 to 110 VAC, 58 to 62 Hz, 103.5 to 126 VAC, 58 to 62 Hz

• Europe and Australia: 194 to 264 VAC, 48 to 52 Hz

Power Consumption

• Standby: 95 W average
• Operating:
  — 560 W maximum at 115 V
  - 530 W maximum at 220 V

Article Change History:
21 March 1994 - Corrected metric paper weights

Support Information Services

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Tech Info Library Article Number:11205

Tech Info Library

LaserWriter Pro: Memory Configurations (1/93)

Revised: 2/4/93
Security: Everyone

LaserWriter Pro: Memory Configurations (1/93)

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Article Created: 6 January 1993

Article Change History

1/14/93 - CORRECTED
- To show the correct memory specification

1/28/93 - REVISED
- To discuss double-sided memory SIMMs

TOPIC ----------

This article describes the memory configurations of the LaserWriter Pro 600 and LaserWriter Pro 630.

DISCUSSION ----------

The LaserWriter Pro 600 is shipped with 2MB of ROM and 4MB of built-in RAM. When the included 4MB PhotoGrade Kit is added (dealer installation is required), the LaserWriter Pro 600 has 8MB of RAM. The LaserWriter Pro 600 supports these RAM configurations: 4MB, 8MB, 16MB, 20MB, and 32MB.

The LaserWriter Pro 630 is shipped with 2MB of ROM and 8MB of RAM. It supports these RAM configurations: 8MB, 16MB, 20MB, and 32MB.

The LaserWriter Pro 600 and 630 printers use industry standard 72-pin fast mode 80ns memory SIMMs. Each printer has two banks of memory; each bank has one SIMM socket.

Memory Upgrades

When you add memory to a LaserWriter Pro, you must fill Bank A before Bank B. If you have memory SIMMs of two different memory sizes, you must put the SIMM with the greater amount of memory in Bank A.

You may use 4MB, 8MB, or 16MB RAM SIMMs in the LaserWriter Pro printers. All 8MB SIMMs currently produced are considered double-sided SIMMs, since they have memory chips on both sides.

If you have a double-sided SIMM in one memory bank, the other memory bank must be left empty. The second memory bank cannot contain a SIMM.

This is inherent in the design of the LaserWriter Pro I/O Controller board. When a double-sided SIMM is installed in one bank, each side of the SIMM is treated electrically as an individual bank. Since the LaserWriter Pro printers can only have two banks of memory, the second physical bank is unusable and you cannot insert a memory SIMM into it.

Apple manufactures many LaserWriter Pro printers with one double-sided 8MB memory SIMM. To increase memory, you must first remove the 8MB SIMM and then insert the desired memory SIMMs into the printer.

Here are the valid memory configurations for the LaserWriter Pro:

Bank A	Bank B	Total Memory
4MB	Empty	4MB
4MB	4MB	8MB
8MB	Empty	8MB
16MB	Empty	16MB
16MB	4MB	20MB
16MB	16MB	32MB

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Tech Info Library Article Number:11208

Tech Info Library

LaserWriter Pro: Software

Revised: 1/4/93
Security: Everyone

LaserWriter Pro: Software

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Article Created: 6 January 1993

TOPIC --------------------

The LaserWriter Pro 600 and LaserWriter Pro 630 include print driver software for both Macintosh and Microsoft Windows.

The following operating systems are supported:
- Macintosh System Software 7.0 and later
- Macintosh System Software 6.0.7
- Microsoft Windows 3.0
- Microsoft Windows 3.1
- MS-DOS 3.1 and later

DISCUSSION --------------------

Macintosh Software

The Macintosh LaserWriter driver has been modified to support the new features of the LaserWriter Pro 600 and 630: 600 dpi and up to four paper input sources. Another feature that has been added is the ability to print one page from one tray (for example, containing letterhead paper) and the rest of the document from a different tray (containing, for example, plain paper). This version of will ship as LaserWriter Driver version 7.2.

The Macintosh LaserWriter Pro software also includes version 7.4 of the LaserWriter Utility.

With the exception of the Installer script, all Macintosh software components are identical between the LaserWriter Pro 600 and the LaserWriter Pro 630.

Microsoft Windows Software

The Microsoft Windows 3.0 and 3.1 drivers allow you to select printer

resolution, paper handling, and grayscale options. PhotoGrade is supported by the Windows drivers.

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Tech Info Library Article Number:11209

Tech Info Library

LaserWriter Utility 7.4: New Features

Revised: 1/4/93
Security: Everyone

LaserWriter Utility 7.4: New Features

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Article Created: 6 January 1993

TOPIC ----------

The LaserWriter Pro 600 and LaserWriter Pro 630 printers ship with version 7.4 of the LaserWriter Utility. This article describes the new features of LaserWriter driver version 7.4.

DISCUSSION ----------

Tray Switching

The Tray Switching option allows you to control what happens when a multiple bin printer (such as the LaserWriter Pro 600/630 with the optional second tray installed) runs out of paper during a print job. You can set the printer to continue printing from the next available paper tray, or to stop printing and return an Out of Paper message when the tray being used runs out of paper during a print job.

With tray switching turned on, the LaserWriter Pro 600 and 630 printers can print up to 350 pages at a time using the 250-sheet cassette and the 100-sheet multipurpose tray. With the optional 500-sheet Sheet Feeder installed, tray switching works only between the 250-sheet cassette and the 500-sheet Feeder. This allows printing of up to 750 pages at one time.

The output tray holds a maximum of 250 sheets. You must empty it if you have a print run greater than 250 pages. The paper output tray can be emptied on-the-fly without stopping the printer.

Better Print Quality Settings

LaserWriter Utility 7.4 allows you to select the printer's resolution, and turn FinePrint and PhotoGrade on and off. Additionally, the screen frequency (also known as lines per inch) and angle are displayed for each PhotoGrade

setting. A screen frequency of 106, with a 45 degree angle, is the default setting for PhotoGrade.

Toner Density Control

Unlike the LaserWriter II engine, the LaserWriter Pro 600 and 630 print engine does not have a physical dial for adjusting the toner density. The LaserWriter Utility provide toner density control for the LaserWriter Pro printers.

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Tech Info Library Article Number:11210

Tech Info Library

Apple Color Printer: Paper Loading Instructions

Revised: 1/4/93
Security: Everyone

Apple Color Printer: Paper Loading Instructions

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Article Created: 6 January 1993

TOPIC ----------

This article tells you how to load the various types of paper into the Apple Color Printer.

DISCUSSION ----------

The Apple Color Printer's input paper tray holds up to 100 sheets of 20-lb. paper. If you use heavier paper, fewer sheets fit in the input feeder. The Apple Color Printer can hold and automatically feed up to five envelopes. To avoid multiple feeding problems, insert transparencies one at a time.

NOTES:

- Acceptable Paper: 20-lb. cotton bond paper is recommended when using plain paper. The Apple Color Printer can feed 16- to 24-lb. paper.

- Don't mix print material.

- Don't load transparencies, envelopes, and paper in the feeder tray.

A head position lever helps the Apple Color Printer properly feed material through the print mechanism. Leave the head position lever in position 1 when using coated or medium weight plain paper. When printing images with heavy graphics, move the head position lever to position 2. Finally, when using thick paper, envelopes, or transparencies with the Apple Color Printer, move the head position lever to position 3.

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Tech Info Library Article Number:11211

Tech Info Library

Apple Color Printer: Using Print Menus

Revised: 1/4/93
Security: Everyone

Apple Color Printer: Using Print Menus

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Article Created: 6 January 1993

TOPIC ----------

Printing with the Apple Color Printer is easy. After you install the GrayShare driver, related software, and fonts via the one-button installer and restart the Macintosh, the Apple Color Printer is ready to use. This article gives you more detail about using Apple Color Printer print menus.

DISCUSSION ----------

To print, select the Print command from the File menu. The print dialog allows you to select the print quality: best or draft.
• Best mode prints at 360 dpi and produces excellent quality output.
• Draft mode is much quicker because it prints at 180 dpi.

The print dialog also provides paper type choices of coated, transparency, or plain. Apple recommends using coated paper for best results.

The Image menu allows you to choose between Color/Grayscale and Black & White printing. Color/Grayscale mode uses GrayShare's advanced halftoning methods to create over one hundred shades of gray or millions of colors. When printing text or black and white images, using Black & White mode is much faster than Color/Grayscale.

The Notification menu allows choosing any notification (Alert or System Beep), if desired, when the print job is complete.

Finally, the Color… button causes the ColorSync dialog to appear and allows\ you to decide which level of color matching is appropriate for a document. If you don't change the color matching default via the Options dialog, it will use faster color matching.

The ColorSync dialog shows these selections:

- Faster Color Matching selection uses quick lookup tables to determine best match colors for replacement of any color that's outside the color gamut of the Apple Color Printer.

- The Best Color Matching selection allows you to influence the color matching process by indicating the type of paper and choosing the matching method (Photographic, Monitor Tint, or Solid Color).

The Printer Profile menu specifies the type of paper used. The Apple Color Printer profile is customized for Apple Color Printer coated paper. If you select Coated in the print dialog, the default printer profile is Apple Color Printer. If you select Transparency or Plain paper in the print dialog, the default printer profile is Automatic.

The Photographic matching method is best for images with many shades and colors or a neutral color (such as white borders). Use the Solid Color matching method for charts, graphs, and any images with large areas of single colors. Use Monitor Tint for images that have large areas of similar colors or shades of one color.

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Tech Info Library Article Number:11212

Tech Info Library

Macintosh IIvx: Radius Video Card and System Crashes (7/93)

Revised: 7/16/93
Security: Everyone

Macintosh IIvx: Radius Video Card and System Crashes (7/93)

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Article Created: 21 January 1993
Article Reviewed/Updated: 13 July 1993

TOPIC ----------

Is there a problem with the Macintosh IIvx (Performa 600) and the Radius Video Card?

DISCUSSION ----------

There is a known incompatibility between the installed base of Radius video cards and the Macintosh IIvx (Performa 600), which may result in system crashes.

Radius has corrected the problem and has updated all presently shipping models of their video interface cards and software. Users who desire to upgrade their video interface cards to provide IIvx compatibility may obtain a Software Upgrade Kit by contacting Radius Technical Support.

To locate a vendor's address and phone numbers, use the vendor's name as a search string.

Article Change History:
07/13/93 - Revised to include Performa 600.

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Tech Info Library Article Number:11214

Tech Info Library

Qualitas Trading Company

Revised: 4/4/97
Security: Everyone

Qualitas Trading Company

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Article Created: 05 January 1993
Article Reviewed/Updated: 4 April 1997

Qualitas Trading Company

2029 Durant Ave.
Berkeley, CA 94704

Phone: 510-848-8080

Fax: 510-848-8009

Company Profile:
Specializing in English to Japanese translation software for the Macintosh.

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Tech Info Library Article Number:11216

Tech Info Library

LaserWriter: Preventing Envelopes from Sealing

Revised: 1/15/93
Security: Everyone

LaserWriter: Preventing Envelopes from Sealing

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Article Created: 6 January 1993

TOPIC ----------

Occasionally, envelopes seal shut when they're fed through a LaserWriter. During the printing process, the envelope is heated by the fuser, causing the moisture in the envelope to turn to steam. The steam wets the adhesive on the envelope, which seals it.

This article describes one way to prevent envelopes from sealing:

DISCUSSION ----------

1) Obtain a sheet of "baking parchment." This is a treated paper product that resists heat. It's available at grocery stores or specialty cooking stores.

2) Cut a piece of baking parchment to fit inside the envelope, and place it in the envelope so that the "smooth" side of the parchment faces the gummed seal.

3) Fold the envelope flap (with the seal) inside the envelope and print. The parchment should lie between the envelope flap and the inside of the envelope.

4) After printing, remove the parchment and reuse it.

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Tech Info Library Article Number:11217

Tech Info Library

Macintosh Duo Dock: How to Replace Missing or Lost Keys (1/93)

Revised: 5/16/94
Security: Everyone

Macintosh Duo Dock: How to Replace Missing or Lost Keys (1/93)

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Article Created: 5 January 1993

TOPIC ----------

This article explains how to get replacement keys for the Macintosh Duo Dock.

DISCUSSION ----------

For security reasons, Apple does not replace individual keys.

Key Missing from Box

If the key is missing from the box of a new Duo Dock, customers should contact the Apple Customer Assistance Center (800-776-2333). The entire Lock Plug (Part Number 922-0108) on the Duo Dock must be replaced. The lock will be sent to the customer's authorized Apple service provider, who can install it.

Lost Key

If the key has been lost, the customer has three options to replace the keys:

- Contact the lock vendor to order a replacement set of keys.
  Fort Lock Corporation
  3000 N. River Road
  River Grove, IL 60171
  708-456-1100

- Have a locksmith make a replacement set of keys.

- Have an authorized Apple service provider replace the Lock Plug (see part number above).

In all cases involving lost keys, the charges for replacement will need to be paid by the customer.

Support Information Services

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Tech Info Library Article Number:11218

Tech Info Library

GPi: Some Macintosh Models Do Not Support It (5/96)

Revised: 5/9/96
Security: Everyone

GPi: Some Macintosh Models Do Not Support It (5/96)

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Article Created: 6 January 1993
Article Reviewed/Updated: 9 May 1996

TOPIC ----------

We have recently discovered that pin 7 of the serial port on a Macintosh LC II is not connected to the main logic board. This appears to be an intentional design. This causes a problem running a super-fast modem, where the handshaking that the GPi (General Purpose Input) line provides is needed. Is there a way to connect this line, and if so how?

DISCUSSION ----------

Some Macintosh models use a custom Apple chip (the Apple Combo Chip) for serial communication functions. The chip combines the functions of the 8550 (SCC) and the 53C80/53C96 (SCSI) into a single chip. This chip does not have GPi capabilities, so the computers that use it have no GPi functionality.

The Macintosh Models Affected

- Classic, Classic II, Color Classic
- Macintosh LC, LC II, LC III, LC 475, LC 520, LC 57x family
- Performa 200, 400, 405, 430, 450, 600
- Macintosh IIsi
- Macintosh IIvx, IIvi
- Quadra 605
- Macintosh 630 family
- Macintosh PowerBook family

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Article Change History:
09 May 1996 - added PowerBook family.
24 Mar 1995 - Corrected list of Macintosh models without GPi.

..TIL11219-GPi-Some_Macintosh_Models_Do_Not_Support_It_5-96.pdf

10 Feb 1995 - Added keyword; made minor technical updates.

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Tech Info Library Article Number:11219

..TIL11221-Quorum_Software_Systems.pdf

Tech Info Library

Quorum Software Systems

Revised: 4/4/97
Security: Everyone

Quorum Software Systems

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Article Created: 5 January 1993
Article Reviewed/Updated: 4 April 1997

Quorum Software Systems

4700 Bohannon Drive, Suite 125
Menlo Park, CA 94025

415-323-3111

Fax: 415-323-3113

internet: nick.sturiale@quorum.com

Company Profile:
Software, adapted applications for the Macintosh API to run natively on other computer platforms

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Tech Info Library Article Number:11221

Tech Info Library

Xcelerated Systems (4/95)

Revised: 4/26/95
Security: Everyone

Xcelerated Systems (4/95)

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Article Created: 5 January 1993
Article Reviewed/Updated: 21 July 1993

Xcelerated Systems

9245 Sky Park Court, Suite 130
San Diego, CA 92123

619-576-3080

Fax: 619-576-2504

Company Profile:
Developers of software emulation letting UNIX workstations emulate the Macintosh OS (Mac OS).

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:11222

Tech Info Library

Apple Adjustable Keyboard: Specifications (Discontinued) (5/95)

Revised: 5/16/95
Security: Everyone

Apple Adjustable Keyboard: Specifications (Discontinued) (5/95)

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Article Created: 6 January 1993
Article Reviewed/Updated: 16 May 1995

TOPIC ----------

This article gives the technical specifications of the Apple Adjustable Keyboard.

DISCUSSION ----------

Compatibility

- Plugs directly into any Apple Desktop Bus port on your Macintosh
- Requires Macintosh system software version 6.0.7 or later

General

- Total number of keys: 111 (ANSI), 112 (ISO)
- Required voltage: 5 ± 10% V DC
- Storage temperature: –40° to 116.6° F (–40° to 47° C)
- Operating temperature: 50° to 104° F (10° to 40° C)
- Operating humidity: 95% maximum, noncondensing at 77° to 104° F (25° to 40° C)
- Two cables: 3-ft. (1.0 m) coiled cord and 13.4-in. (340 mm) cable
- Total weight: 3 lb. 12 oz. (1.7 kg) keyboard and keypad with palm rests

Characteristics of Typing Keys

- Typical distance between keys: 0.75 in. (19.05 mm)
- Total key travel: 0.138 in. (3.5 mm)
- Peak tactile force: 0.69 ± 0.25 N
- Travel to peak tactile force: 0.06 + 0.008/–0.016 in. (1.5 + 0.2/–0.4 mm)
- Keyswitch minimum life: 10 million cycles

MAIN KEYBOARD

Keyboard Array

- ANSI version: 68 keys total (47 printing keys)
- ISO version: 69 keys total (48 printing keys)
- Escape key
- Power-on key
- Volume up, volume down, mute, and record keys
- Green LED indicator for Caps Lock
- Two ADB 4-pin minicircular connectors

Size and Weight

- Height (rear): 1.48 ± 0.04 in. (37.5 ± 1 mm) with flip feet closed
- Width: 15.18 in. ± 0.04 in. (385.6 ± 1 mm)
- Depth: 6. 26 in. ± 0.04 in. (159 ± 1 mm)
- Weight: 2 lb. 5 oz. (1.055 kg) without palm rests; 2 lb. 7 oz. (1.223 kg) with palm rests

Keyboard Slope

- 5° with flip feet closed; 12.5° with flip feet open

Keyboard Opening Angle

- 30° maximum, 0° minimum

Height of Home Row

- 1.77 in. (30 mm) minimum

Power Requirements

- LED off: 7 mA
- LED on: 19 mA

EXTENDED KEYPAD

Keypad Array

- 43 keys total
- 18-key numeric keypad
- 15 function keys
- Four cursor-control keys in inverted-T layout
- Six special screen-editing keys
- Two ADB 4-pin minicircular connectors

Size and Weight

- Height: 1.48 ± 0.04 in. (37.5 ± 1 mm) with flip feet closed
- Width: 9.78 ± .04 in. (248.3 ± 1 mm)
- Depth: 5.66 ± .04 in. (143.7 ± 1 mm) front to back
- Weight: 14 oz. (.405 kg) without palm rest; 1 lb. 1 oz (.481 kg) with palm rest

Power Requirements

- Maximum: 7 mA

Support Information Services

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Tech Info Library Article Number:11225

Tech Info Library

Apple Adjustable Keyboard: Description (Discontinued) (5/95)

Revised: 5/16/95
Security: Everyone

Apple Adjustable Keyboard: Description (Discontinued) (5/95)

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Article Created: 6 January 1993
Article Reviewed/Updated: 16 May 1995

TOPIC ----------

This article describes the Apple Adjustable Keyboard.

DISCUSSION ----------

The Apple Adjustable Keyboard has a new ergonomic design that helps your wrists stay in a neutral position for comfort and typing ease. Its main feature is a "split" alphanumeric keyboard that lets you adjust the left- and right-hand sections up to a 30-degree angle to find the typing position that feels right for you.

The Apple Adjustable Keyboard also includes:

- Detachable palm rests to provide a flat surface to rest your hands when you’re not typing.
- Volume up, volume down, mute, and record keys, valuable in multimedia applications.
- A separate extended keypad that includes function keys, special keys for document editing, a numeric keypad, and cursor-control keys
- Adjustable feet so you can change the slope of both the main keyboard and the extended keypad.

APPLE ADJUSTABLE KEYBOARD FEATURES

Ergonomic Design

- Split alphanumeric keyboard
- Detachable palm rests

- Slope-adjustment feet

Modularity

- Separate extended keypad can be located on either the right or left side of the keyboard
- Detachable palm rests for minimum desk space requirements

Ease of Use

- Standard ANSI layout eliminates the need to relearn the positions of the keys (ISO layout available for Europe)
- Easily accessible sound keys to modify the sound volume or record without lifting your hands from the keyboard
- Easy connection with any Macintosh through the Apple Desktop Bus port

Flexibility

- Full-featured keyboard for complete compatibility with Macintosh applications
- 111 total keys with 15 function keys and an 18-key numeric keypad

Ordering Information

Apple Adjustable Keyboard
Order No. M1242LL/A

- Main alphanumeric keyboard
- Two keyboards palm rests (left and right)
- Extended keypad
- Keypad palm rest
- Keypad template
- 3-ft. ADB coiled cable
- 1-ft. ADB jumper cable
- 3.5-in. floppy installer disk
- Instruction manual
- Software license agreement and warranty

Support Information Services

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Tech Info Library Article Number:11226

Apple Desktop Bus Mouse II: Description and Specifications

Revised: 1/6/93
Security: Everyone

Apple Desktop Bus Mouse II: Description and Specifications

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Article Created: 6 January 1993

TOPIC ----------

This article describes and gives specifications for the Apple Desktop Bus Mouse II.

DISCUSSION ----------

Description

The Apple Desktop Bus Mouse II has a sleek, rounded, ergonomic shape that makes it comfortable to grab and move objects on screen.

- The mouse button is enlarged to make clicking and dragging easier.

- The tracking ball is located in the front of the mouse, for more precise control when doing precision work.

The low-power Apple Desktop Bus Mouse II uses the ADB interface and works with all Apple II and Macintosh computers with an ADB interface.

FEATURES

Ergonomic design

- Rounded shape
- Large single-button design
- Forward ball placement for fine movements with less effort
- A complete ergonomic solution when used with the Apple Adjustable Keyboard

Flexibility

- Can be daisy-chained directly from any other ADB device or plugged directly into an ADB port on your computer
- Low power consumption for PowerBook use

Ordering Information

Apple Desktop Bus Mouse II
Order No. M2706LL/A

TECHNICAL SPECIFICATIONS

System Requirements

- Any Macintosh or Apple II computer with an Apple Desktop Bus interface

Tracking

- Mechanical

Shaft Encoding

- Optical
- 200 pulses per in. (7.87 per mm)

Power Consumption

- Maximum: 10 mA

Size and Weight

- Height: 1.3 in. (33 mm)
- Width: 2.4 in. (62 mm)
- Depth: 4.2 in. (106 mm)
- Weight: 0.29 lb. (0.13 kg)

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Tech Info Library Article Number:11227

Tech Info Library

StyleWriter and StyleWriter II: Differences

Revised: 1/13/93
Security: Everyone

StyleWriter and StyleWriter II: Differences

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Article Created: 6 January 1993

TOPIC ----------

What are the differences between a StyleWriter and a StyleWriter II?

DISCUSSION ----------

Here are the primary differences between the StyleWriter and StyleWriter II printers (the original StyleWriter cannot be upgraded to a StyleWriter II):

	StyleWriter	StyleWriter II
Memory	64K	128K
Speed:		
• Best Mode	1/2 page per minute	Up to 1 page/minute
• Faster/Draft Mode	Up to 1 page/minute	Up to 2 pages/minute
Print Quality:		
• Best Mode	360 dpi (dots per inch)	360 dpi
• Faster/Draft Mode	180 dpi (dots per inch)	180 dpi
Grayscale Printing	No	Over 130 grayscales with GrayShare software
Paper Capacity	50 sheets	100 sheets, 15 envelopes
Printer Sharing	No	Yes, with GrayShare software
Construction	Separate sheet feeder and print mechanism	Sheet feeder and print mechanism in one unit

..TIL11229-StyleWriter_and_StyleWriter_II-Differences.pdf

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Tech Info Library Article Number:11229

Tech Info Library

DAL: AS/400 and SQL/400 Runtime Libraries

Revised: 1/21/93
Security: Everyone

DAL: AS/400 and SQL/400 Runtime Libraries

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Article Created: 6 January 1993

TOPIC -----

Do I only need the SQL/400 run-time libraries to use the DAL Server on an AS/400? Do I have any limitation on using DAL -- in this case, comparing to use it with SQL/400 product (for example I couldn't delete or update the data in the base)?

DISCUSSION -----

You need the SQL/400 runtime libraries only if you wish to use the Data Access Language for the AS/400 Server in a read-only manner.

But to be able to update and delete, you need the full SQL/400 product, and the journal facility must be turned on for the table(s) in the database which you wish to update.

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Tech Info Library Article Number:11231

Tech Info Library

DAL: SQL/400 Needed for Updating AS/400 Database

Revised: 1/21/93
Security: Everyone

DAL: SQL/400 Needed for Updating AS/400 Database

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Article Created: 6 January 1993

TOPIC ----------

Concerning DAL for AS/400: will I ever need SQL/400 in addition to the DAL server installed on the target AS/400 to access the database using a DAL application?

DISCUSSION ----------

The runtime libraries that come with the OS/400 operating system for an AS/400 give you enough to be able to access data in a read-only manner. The data can have been created in SQL/400, or in flat files (created via DDS or IDDU).

If you wish to do updates, then the SQL/400 licensed product is required. In addition, journaling has to be turned on for the individual dataset within SQL/400.

Unlike all the other DAL Servers, this server can use the feature of SQL/400 that allows access to files that are created via SQL/400 (known as SQL Collections) -- as well as access to flat files created via other methods available on the AS/400, such as DDS or IDDU (files created by these methods are kept in Libraries).

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Tech Info Library Article Number:11232

Apple Logo in Menu Bar: Black, Grays, and Color

Revised: 1/7/93
Security: Everyone

Apple Logo in Menu Bar: Black, Grays, and Color

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Article Created: 7 January 1993

TOPIC --

Why does the Apple logo in the Macintosh menu bar show up in black on the PowerBook Duo 210/230 when the Monitors control panel is set to 16 grays, but in a gray-shaded Apple logo when the Monitors control panel is set to color?

DISCUSSION --

The PowerBook Duo 210/230 support both color and gray in Monitors, and up to 16 shades of gray.

- When you have Monitors set to Gray, the Apple menu icon is always completely black, no matter what gray level you set. This is because a shades-of-gray Apple logo wouldn't follow Apple's official logo guidelines.

- When you set Monitors to color, the logo is black when in four-color mode for the same reason: a four-color logo doesn't fit within the logo guidelines.

- The logo appears in color when the Monitors control panel is set to 16 colors.

When you set the software to color, it assumes that the display is color, and with the built-in QuickDraw routines, produces a shaded Apple logo on a monochrome screen.

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Tech Info Library Article Number:11234

Tech Info Library

DAL: VTAM and Teradata Database Error Messages

Revised: 1/21/93
Security: Everyone

DAL: VTAM and Teradata Database Error Messages

==========

Article Created: 7 January 1993

TOPIC ----------

I am evaluating DAL 1.3.5 for VTAM using the Teradata database. While using the DAL tester on the Macintosh, I received the following error messages:

1) Using the COUNT function. COUNT (DISTINCT column-name) works properly but does not work for COUNT (column-name). I get the error "invalid operand of count function".

2) When creating WHERE clauses with a column of data type DATE. "date = xxx" works. "date BETWEEN" or "date IN" get the error message "invalid date/time literal".

3) "Some token expected" error message returned when there is an SQL statement with the HAVING clause.

Why am I getting these error messages?

DISCUSSION ----------

We have tested against the Teradata DBMS using both its interactive facility (bteq) and DAL. We found the following:

1) Although Teradata supports the COUNT (column name) function, DB2 does not. DAL was designed with DB2 and the 1986 ANSI Level-1 standard as its standard. Therefore DAL does not support all of the functions that individual DBMSs may support in their own query tools or programs.

   DAL attempts to verify that SQL commands are valid based on the above criteria BEFORE sending a query to the DBMS. (This is because DAL has to repackage queries to be DBMS-specific.)

In summary, DAL does not support the COUNT (column name) function because DB2 does not. DB2 supports the COUNT (DISTINCT column name) function and therefore so does DAL.

2) Different DBMSs have different "standard date formats". DAL has a "standard" format also. In order to do EQUAL, BETWEEN or IN queries using a date field, you (or an application) must first set the DAL standard date format ($datefmt) to match the DBMS' standard if they are different. The DAL standard date format is MM/DD/YYYY.

   The Teradata DBMS standard is not the same as DAL; the date format would be set by the following command to match Teradata's format:

```
set $datefmt = 'yymmdd';
```

   This will allow DAL to translate the dates properly, resulting in a valid return of data.

3) "Some token expected" is almost always a clue to a typographical error or SQL command error. Since DAL handles the HAVING clause for Teradata properly, we assume that you had a typo or incorrect statement.

   The following statement was processed properly by DAL to the Teradata in both release 1.3 and 1.3.5:

```
select cust_state, sum(receivable)
  from eng.customer
 group by cust_state
having cust_state > 'IL'
 order by cust_state;
```

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11235

Tech Info Library

DAL: Accessing AS/400 Databases

Revised: 1/21/93
Security: Everyone

DAL: Accessing AS/400 Databases

==========

Article Created: 6 January 1993

TOPIC ----------

I have a database file on my AS/400. What are the needed steps to make this file available to DAL?

DISCUSSION ----------

For databases created under SQL/400, you need only add the database name to the list of available databases in the SSID= portion of the Environment file (see page 13 of the DAL AS/400 Server Installation Guide). In addition, to assure that users can access the desired tables within the database, you need to set up a view which includes such access (see page 26 of the DAL AS/400 Server Installation Guide).

Basically these same steps are required if you wish to access other files on the AS/400. The install guide addresses the accessing of both Libraries and/or SQL Collections in its detailed installation instructions.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11237

Tech Info Library

GrayShare: No Driver for ImageWriter (5/94)

Revised: 5/25/94
Security: Everyone

GrayShare: No Driver for ImageWriter (5/94)

==========

Article Created: 12 January 1993
Article Reviewed/Updated: 24 May 1994

TOPIC----------

Does the GrayShare software released with the StyleWriter II work with the ImageWriter and original StyleWriter?

DISCUSSION----------

The GrayShare software must be built into the particular print driver, as with the StyleWriter II and Apple Color Printer drivers. There is no GrayShare driver for the ImageWriter or ImageWriter II.

The original StyleWriter works with the GrayShare software. There is a GrayShare Update disk with all the necessary software available through many of the electronic online services, or you local Apple dealer.

Article Change History:
24 May 1994 - Corrected information on using GrayShare with the StyleWriter.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:11238

Tech Info Library

LaserWriter: Compatibility with Kanji Fonts

Revised: 1/15/93
Security: Everyone

LaserWriter: Compatibility with Kanji Fonts

==========

Article Created: 12 January 1993

TOPIC----------

I have the following questions about the LaserWriter IIf and IIg as well as the LaserWriter Pro 600 and LaserWriter Pro 630:

1) Since they are PostScript Level 2 printers, will they support composite fonts?

2) Can you use Kanji TrueType fonts or Kanji PostScript fonts with these printers?

DISCUSSION----------

1) Neither the LaserWriter IIf and IIg nor the LaserWriter Pro 600 and 630 support composite fonts at this time. None of these printers has a PostScript Level 2 driver and no one has yet created a hard drive with all of the KanjiTalk PostScript fonts.

2) TrueType KanjiTalk fonts can be printed to any Macintosh printer since the TrueType rasterizer can be resident on the Macintosh (in the case of a serial printer), in the printer's ROM (in the LaserWriter IIf, IIg, and LaserWriter Pro series), or in the printer's RAM (on other LaserWriter printers).

The LaserWriter IINTX-J. is the only LaserWriter that can print documents that use KanjiTalk PostScript fonts.

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Tech Info Library Article Number:11239

Tech Info Library

SNA•ps: AS/400 Serves As Gateway to Remote AS/400

Revised: 1/15/93
Security: Everyone

SNA•ps: AS/400 Serves As Gateway to Remote AS/400

==========

Article Created: 8 January 1993

TOPIC ----------

I have a SNA•ps gateway going to an AS/400 over Token Ring. The local AS/400 serves as a gateway to remote AS/400s that are on an SNA Token Ring network. I need to know how to get through the local AS/400 gateway to the remote AS/400s.

DISCUSSION ----------

The SNA•ps Config allows the entry of Network Qualifiers and Gateway Network Names. When an APPC controller is configured on the AS/400, there is a field for the Remote Control Point. Also, each AS/400 has a Local Network ID which is displayed by the "DSPNETA" OS/400 command.

When the SNA•ps connected to the local AS/400 and a client application uses Display Station Passthru calls to that machine, the SNA•ps Config for that Line/Partner/Local LU/Remote LU group is as follows:

Local Network ID of local machine goes in the Network Qualifier entry of the Partner.
&
Local Network ID of local machine goes in the Network Qualifier entry of the Local and Remote LU.
&
Remote Control Point from the AS/400 controller description of local machine goes in the Gateway Network Name of the Partner.

When you desire to connect to remote AS/400 on the Token Ring, then you have to configure another Line/Partner/Local LU/Remote LU group with the Local Network ID of the remote and use the entries in the remote AS/400 APPC Controller description. So the second Line/Partner pair is as follows:

Local Network ID of remote machine goes in the Network Qualifier entry of the Partner.
&
Local Network ID of remote machine goes in the Network Qualifier entry of the Local and Remote LU.
&
Remote Control Point from the AS/400 controller description of remote machine goes in the Gateway Network Name of the Partner.

And how does this work? The connection uses the APPN routing available with AS/400s on Token Ring. The Display Station Passthru call made to the second configured group will be routed first to the remote AS/400 and then the connection will be made.

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Tech Info Library Article Number:11240

Tech Info Library

System 7: Easy Access

Revised: 1/8/93
Security: Everyone

System 7: Easy Access

==========

Article Created: 7 January 1993

TOPIC ----------

I'm getting a whistle noise along with a "U"-shaped icon (an arrow points downward in the center of this "U") that suddenly appears to the right of the applications menu.

DISCUSSION ----------

The action that causes this is pressing the Shift key five times. The icon and whistle sound are a feature of Easy Access. It's a control panel item that provides alternative ways to move the pointer and use the keyboard. You can find more information on its features and use in the Macintosh Reference Manual, pages 353-361.

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Tech Info Library Article Number:11241

Tech Info Library

System 7.0 and 7.0.1: Print Drivers Shipped with the Software

Revised: 1/8/93
Security: Everyone

System 7.0 and 7.0.1: Print Drivers Shipped with the Software

==========

Article Created: 7 January 1993

TOPIC ----------

What version of the Personal LaserWriter LS and StyleWriter Chooser Extensions (print drivers) come with System 7.0.1?

DISCUSSION ----------

The original versions of these drivers shippped with system software versions 7.0 and 7.0.1. The version field in the Finder's Get Info command says these are the 7.0 drivers. It also says they're part of System Software 7.0.1. You can get the upgraded versions of these drivers from the usual sources.

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Tech Info Library Article Number:11243

Tech Info Library

System 7: Old Adobe Fonts and Type 1 Errors (2/95)

Revised: 2/2/95
Security: Everyone

System 7: Old Adobe Fonts and Type 1 Errors (2/95)

==========

Article Created: 7 January 1993
Article Reviewed/Updated: 02 February 1995

TOPIC ----------

I've removed every third-party extension and several Apple extensions from my System Folder, and I'm still getting Type 1 error messages.

DISCUSSION ----------

An old version of an Adobe font with an old version of the file format can cause a conflict. Update fonts to the newer versions to solve this problem.

Article Change History:
02 Feb 1995 - Changed access privileges of article.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:11246

Tech Info Library

AppleShare 2 and 3: Access Privileges for Apple II Network

Revised: 1/8/93
Security: Everyone

AppleShare 2 and 3: Access Privileges for Apple II Network

==========

Article Created: 7 January 1993

TOPIC ----------

This article tells you how to set access privileges on an Apple II network under AppleShare 2 or 3 and System 7.

DISCUSSION ----------

Follow these steps:

1) Be sure to share the entire startup volume.
   Owner, Group, and Everyone can "See Files, See Folders." Change all enclosed folders unless you have an existing server. With an existing server, don't apply changes to enclosed folders you want Apple IIGS users denied access to some of the folders.

2) Give access to the folder named System, and all folders within it.
   Owner, Group, and Everyone can "See Files, See Folders." Change all enclosed folders.

3) If using Aristotle, follow these steps:

   a) For the Users Folder:
      Owner, Group, and Everyone can "See Files, See Folders."
      Owner and Group can "Make Changes."
      Group is Teacher.
      DON'T change all enclosed folders.

   b) For the Aristotle Folder:
      Owner, Group, and Everyone can "See Files, See Folders."
      Owner and Group can "Make Changes."
      Group is Teacher.
      Change all enclosed folders.

..TIL11247-AppleShare_2_and_3-Access_Privileges_for_Apple_II_Network.pdf

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Tech Info Library Article Number:11247

Tech Info Library

System 7: MacSprint II RAM Cache Incompatible with File Sharing

Revised: 1/8/93
Security: Everyone

System 7: MacSprint II RAM Cache Incompatible with File Sharing

==========

Article Created: 7 January 1993

TOPIC ----------

Is the MacSprint II RAM Cache Card compatible with System 7?

DISCUSSION ----------

You can't transfer large files (greater than 1MB), with the MacSprint card installed and file sharing turned on. The MacSprint II RAM cache card isn't compatible.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11248

Tech Info Library

System 7: Font Downloader Utility

Revised: 1/8/93
Security: Everyone

System 7: Font Downloader Utility

==========

Article Created: 7 January 1993

TOPIC ----------

I'm using the Adobe downloader utility, and it isn't working with System 7. I need a downloader for Type 3 fonts.

DISCUSSION ----------

The downloader utility from Adobe doesn't work with System 7. We recommend that you use the Downloading utility from Apple, on your tidbits disk. It works with Type 3 fonts.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11249

Tech Info Library

System 7: ROM Compatibility

Revised: 1/8/93
Security: Everyone

System 7: ROM Compatibility

==========

Article Created: 7 January 1993

TOPIC ----------

Are rev A ROMs in the Macintosh II compatible with System 7?

DISCUSSION ----------

All Macintosh computers from the Macintosh Plus and later, with the exception of third-party upgraded Macintosh computers, are compatible with 7 regardless of ROM.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11250

Tech Info Library

WorldScript: Difficulties of Multilingual Software Development

Revised: 1/11/93
Security: Everyone

WorldScript: Difficulties of Multilingual Software Development

==========

Article Created: 6 January 1993

TOPIC ----------

This article describes the obstacles presented to users and developers of multilingual software before the introduction of WorldScript.

DISCUSSION ----------

Inconveniences to Users

For users worldwide, the situation before WorldScript created several disadvantages:

- Delayed delivery of new technology
  For users, the reengineering of the base system software into different languages meant a delay in the delivery of local applications, local system software, and hardware.

- Inconvenient or inefficient text-input methods
  Asian customers also require an easy-to-use and customizable input method. This ease of use can be achieved via in-line input, which integrates text entry and display within a document, avoiding the constant appearance of the bottom line window to enter text.

  Because in-line input is more intuitive, many developers integrate it into their products by bundling the input method with their application. However, in the past, the only way to provide the necessary seamless integration between input method and application was to develop the two together. In addition to increasing costs, this process also meant that every application had to have its own input method. Users would have to learn one input method for working with a Japanese word processing program and another for working with a Japanese spreadsheet.

- Limited product selection
  The delays and the difficulty inherent in localizing products meant that many developers simply didn't bother to enter some markets, limiting the availability of a variety of software and hardware products.

Obtstacles for Developers

For developers, the burden of developing on reengineered software bases raised some roadblocks:

- Time-consuming localization
  Even after the localized system software versions were available, developers had to spend significant amounts of time modifying the code in their application software to support other languages. They also needed to understand the code changes that were made in order to support a particular language in the system software. So, they couldn't apply the development of localized applications for one language to another language. There were almost 30 different system software versions.

- Implementation of features in different languages
  Certain features are difficult to implement in other languages. As an example, fonts for the Japanese market can occupy more than 7MB, compared with the 40K to 60K required for a typical Roman font. In order to enter, display, and print such a font with comparable performance, special modifications must be made to the base system software. In the case of TrueType for Japan, these special modifications were well integrated, but they weren't part of the base system software.

- Complicated upgrades
  Each upgrade requires an entire new cycle of translation. System upgrades or product revisions require developers to revise their in-line input method as well as their application to support more than 30 languages.

International Software Efforts at Apple

Before WorldScript, Apple faced two major international software challenges:

- Time-consuming localization
  When Apple introduced a new operating system, localization teams had to translate and adapt that system into more than 30 languages. This meant not only translating the menu names and file names, but also changing the base system software to support right-to-left text or contextual forms. Most previous system software releases required different base system software to support each language. Translations for non-Roman languages could take more than a year.

- Difficulty expanding markets
  This delay in development meant a delay in releasing both software and hardware products, and made it difficult for Apple to expand into new markets.

The Solution: WorldScript

WorldScript greatly reduces this international burden, bringing benefits to users, developers and Apple alike. With WorldScript, the same system-level support already available for Roman languages such as English, French, German, and Spanish is provided for non-Roman languages such as Japanese, Chinese, Arabic, and Thai.

All of the language support needs, including contextual formatting, two-byte support, and multidirectional text capabilities, are provided via WorldScript in a single system software version. With WorldScript, Apple can release "world-ready" operating systems that support most of the world's languages.

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Tech Info Library Article Number:11251

WorldScript: Background on Different Language Structures

Revised: 1/11/93
Security: Everyone

WorldScript: Background on Different Language Structures

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Article Created: 4 January 1993

TOPIC ----------

Many languages have structures, writing directions, or alphabetical sorting orders that differ from those of English. Also, depending upon the geographic location, things such as the calendar, date and time display, and currency conventions can also vary widely. WorldScript deals with these different language and geographic software needs.

DISCUSSION ----------

From a software standpoint, languages around the world are divided into two categories: one-byte and two-byte languages.

One-byte Languages

One-byte languages are languages that require only one byte of memory to fully represent their character set. English and Spanish are examples of one-byte Roman languages, in which A to Z and 0 to 9 are the standard characters. Arabic and Hebrew are examples of one-byte non-Roman languages. (The term non-Roman refers to their different character set.)

The characteristic shared by one-byte languages is that their character sets contain fewer than 256 characters.

Two-byte Languages

Two-byte languages are languages that require two bytes of memory to fully represent their character set. The character sets of these non-Roman languages can consist of as many as 40,000 characters, which means that they require more memory to store.

Two-byte languages are also characterized by multiple character sets. Japanese, for example, has both Kana, a phonetic language of 300 characters,

and Kanji, an ideographic language with up to 40,000 characters. A phonetic language describes pronunciation. In an ideographic language, each character has a specific meaning -— for example, a single Chinese character represents the word sun.

Specialized Text Entry and Display (Input Methods)

The Asian two-byte languages present a text-entry challenge, because they contain far more symbols than can be easily typed directly from a keyboard. The solution is to use an input method to enter text into their documents.

The input technology enables users to type the word phonetically in Kana (a relatively limited character set) and then map that to the Kanji character that they ultimately want to enter. The input method typically provides a small window at the bottom of the screen that displays the typing. An analogy might be if you were to type English by entering the pronunciation marks used in dictionaries. After typing the phonetic description of the word, this technology would return the proper English word or a range of possible words.

Multidirectional Text

Roman languages are written left to right. However, some non-Roman languages, such as Arabic, run right to left, and Asian languages, such as Japanese, run top to bottom. Languages can also require multiple text directions, for example, Japanese is written from top to bottom and right to left.

Contextual Forms

In English, certain character combinations can form what are called ligatures, or physical joins between adjacent letters. For example, in some old English text you see "ae" shown as "æ." Similarly, in Arabic and Hebrew, the appearance of a character is determined by the adjacent characters. Thai is another language that requires this type of contextual formatting.

Language Attributes

Certain languages require different formats for attributes such as their date and time or currency symbols. These needs vary from something as simple as the changing of a 12-hour clock to a 24-hour clock for French, to something as complex as changing from a Gregorian calendar to a Lunar calendar for Arabic.

The International Software Problem

System software can easily support Roman languages such as English and French, but support for non-Roman languages such as Japanese and Chinese can often require the reengineering of the base system. Previous approaches to this problem have tended not to be very user friendly. For example, some systems force users to type in English because the software won't support their language. In other cases, the software is localized to the language, but certain features simply aren't implemented. In the case of the Macintosh before WorldScript, support for non-Roman languages such as Arabic and Japanese was added through a reengineering of the Roman base.

..TIL11252-WorldScript-Background_on_Different_Language_Structures.pdf

WorldScript is a set of integrated software technologies that removes many barriers from global software development, providing a simplified platform for developers to create applications in multiple languages.

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Tech Info Library Article Number:11252

Tech Info Library

System 7.1: Script and Language Availability

Revised: 1/11/93
Security: Everyone

System 7.1: Script and Language Availability

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Article Created: 5 January 1993

TOPIC ----------

This article tells you what languages are currently available with system software sold in various parts of the world.

DISCUSSION ----------

The System 7 MultiPack Upgrade Kit contains many European based, localized versions of System 7.1. These languages are: British, Czechoslovakian, Danish, Dutch, Finnish, French, French-Canadian, German, Italian, International (also known as Z version, which is basically U.S. English with support for other countries such as date and time), Norwegian, Portuguese, Spanish, Swedish, Swiss-French, Swiss-German, Turkish, U.S. Since these are all Roman scripts, they don't need WorldScript I or II, but they have all the resources including fonts to support those languages. The Roman-based languages don't have a WorldScript piece that you drop into your System Folder, and then have the ability to switch between two languages; rather, they are fully localized versions of the system.

The documentation on the CD states that the 800 number only supports English. As of today, no localized keyboards are available from Apple in the U.S. for other languages.

None of the WorldScript I (Hebrew, Thai, and so on) or WorldScript II languages (Japanese, Chinese, and so on) appear on the MultiPack CD. As such, there's no U.S. upgrade kit to provide the WorldScript I or II extension or any supporting resources for those languages that require them (for example, Arabic, Thai, Chinese, Japanese, Korean, and so on).

WorldScript II is sold in Japan and WorldScript I for Hebrew is also being sold. They are equivalent to the PUK in the U.S. There are no multiple CDs being sold in any Pacific countries for 7.1.

..TIL11253-System_7-1-Script_and_Language_Availability.pdf

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Tech Info Library Article Number:11253

Tech Info Library

WorldScript: Not A Replacement For Unicode (2/95)

Revised: 2/15/95
Security: Everyone

WorldScript: Not A Replacement For Unicode (2/95)

==========

Article Created: 5 January 1993
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

What is Unicode and is WorldScript a replacement for it?

DISCUSSION ----------

Unicode is an international industry standard used to encode written characters. It's a double byte universal character coding scheme that supports all modern day writing systems. It's been accepted as an ISO standard.

This standard makes it possible to encode all of the characters used for written languages throughout the world in one table. The current North American encoding scheme, ASCII, encodes only the Roman alphabet, which makes support for non-Roman languages difficult. These encoding schemes assume a graphics engine that can display the characters correctly (such as contextual forms or text direction).

WorldScript isn't a replacement for Unicode, but it's the next major step toward providing a multilanguage Macintosh computer. Apple was one of the founding contributors to the Unicode consortium and is an active participant.

Apple's System 7.5 and QuickDraw GX fully support Unicode, including large character set support, linguistic processing, and the Unicode bidirectional reordering algorithm.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy.
12 Dec 1994 - Added information about System 7.5 and QuickDraw GX.
03 Sep 1993 - Added to definition of Unicode.

Support Information Services

..TIL11254-WorldScript-Not_A_Replacement_For_Unicode_2-95.pdf

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Tech Info Library Article Number:11254

WorldScript: What Is It & How Does It Work? (6/96)

Revised: 6/6/96
Security: Everyone

WorldScript: What Is It & How Does It Work? (6/96)

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Article Created: 5 January 1993
Article Reviewed/Updated: 6 June 1996

TOPIC ----------

WorldScript simplifies the way languages (or scripts) are supported in the system software. A script system determines the writing system's components:

- Character encoding
- Macintosh keyboard layout
- Fonts
- Input methods
- Sorting
- Date/time/number formats
- Script-specific access routines

For example, the script tells the system about such features as writing direction, accent placement, and special characters. This article describes WorldScript technology.

DISCUSSION ----------

Before WorldScript, all scripts were developed independently. This meant that each script installed its own modifications to the system. If more than one script system was installed, conflicting modifications often affected performance, RAM footprint, and stability.

With WorldScript, all script-specific behavior is defined by tables in system resources, and all processing is done by common routines in the WorldScript I and WorldScript II extensions. The WorldScript I extension provides the routines for one-byte languages, and the WorldScript II extension supports two-byte languages. The two extensions can coexist and provide functionality in the system at the same time. This means that the language support comes from a script bundle, which defines the language rules and behavior. WorldScript supports the language as it's defined in the rules from the script bundle.

WorldScript allows support for developing additional languages independently of system software releases. Today, Arabic, Hebrew, and Thai are examples of existing one-byte script bundles, and Japanese and Chinese are examples of existing two-byte bundles. And additional bundles can easily be developed. Developers don't have to write new code to support a new language -- only tables and language-specific resources. For example, to support another one-byte language, they develop a new language table (containing rules for date and time formats, writing direction, and so on) for the language's script bundle. This script bundle will then work transparently with the WorldScript engine to support that language.

To clarify, the WorldScript technology isn't a translation technology: It can't take input in one language and translate it into another language. What WorldScript provides is the ability to support written languages more easily in a single system software version.

WorldScript provides enhanced support for the interaction between applications and input methods. A common interaction for input methods and applications simplifies the support for in-line text entry. Bundling an input method with each product to provide in-line support is no longer necessary. Instead, users can buy their preferred input method, and it will work with any of their WorldScript-ready applications. Similarly, users have the ability to choose between multiple input methods installed in the same system.

WorldScript allows users to type and display text in almost any language, within the same document. Customers can purchase a language module or bundle of languages (for example, a Far East bundle) to use additional languages on their Macintosh.

Article Change History:
06 Jun 1996 - Changed title for clarity and Reviewed for technical accuracy.

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Tech Info Library Article Number:11255

Tech Info Library

PowerBook Duo: Internal SCSI Termination (1/93)

Revised: 5/16/94
Security: Everyone

PowerBook Duo: Internal SCSI Termination (1/93)

==========

Article Created: 12 January 1993

TOPIC ----------

Is the drive on the PowerBook Duo internally terminated? Do I need one or two terminators on an external SCSI chain when docked in a Duo Dock or Duo MiniDock?

DISCUSSION ----------

The internal SCSI bus is actively terminated. You need only one terminator at the end of an external SCSI chain when docked in a PowerBook Duo Dock or Duo MiniDock.

Support Information Services

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Tech Info Library Article Number:11259

Tech Info Library

Macintosh Easy Open Developer's Kit

Revised: 1/12/93
Security: Everyone

Macintosh Easy Open Developer's Kit

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Article Created: 12 January 1993

TOPIC ----------

Macintosh Easy Open simplifies opening files from other programs and platforms.

DISCUSSION ----------

The Macintosh Easy Open Developer's Kit is an extension to System 7 and a translation manager application programming interface (API). Developers can enhance their applications or translation systems to open and convert documents on Macintosh personal computers. They can open and convert documents even though the applications that created the files aren't available.

It's designed to simplify access to information from a variety of applications and across computing platforms. Once incorporated into third-party applications or file translation systems, Macintosh Easy Open provides options for accessing and manipulating documents quickly and easily. Applications require no modifications to take advantage of most Macintosh Easy Open features.

Macintosh Easy Open provides a number of ways to access Macintosh and non-Macintosh files. For example, when a user double-clicks on a document that normally couldn't be opened because the application that created it is unavailable, Macintosh Easy Open intercedes and searches for applications and file translation systems that are capable of opening the document, and lists them. Once you select an alternate application, Macintosh Easy Open transparently manages the conversion of the document using the application's internal translation capabilities or by using specialized translation software.

By incorporating a standard API, Macintosh Easy Open provides Apple

developers with translation-management services. These services can be integrated into their applications or translation systems to provide transparent data conversion whenever opening, copying, pasting, or publishing data from one format to another. While Macintosh Easy Open doesn't perform any data translation itself, it effectively manages access to third-party translation systems and applications, which perform the actual translation.

The Macintosh Easy Open extension also features added descriptive information about documents, including non-Macintosh files, and color icons in the Open and Save windows. This makes it easier to determine document types at the Finder level.

The Macintosh Easy Open Document Converter, which comes with Macintosh Easy Open, is a system utility that works with third-party translators to allow conversion of a document from one file format to another, without opening the document. With this feature, you can convert files easily and quickly by dragging file icons to the Document Converter icon.

Availability

The Macintosh Easy Open 1.0 Developer's Kit is available to developers from the Apple Programmers & Developers Association (APDA), Apple's mail-order service for developers.

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Tech Info Library Article Number:11260

Apple Internet Router: Description (5/94)

Revised: 5/3/94
Security: Everyone

Apple Internet Router: Description (5/94)

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Article Created: 12 January 1993
Article Reviewed/Updated: 3 May 1994

TOPIC

This article describes the Apple Internet Router.

DISCUSSION

With the Apple Internet Router, you can easily increase the size, enhance the performance, and improve the management of your organization's AppleTalk network.

The router offers you both local and wide area networking flexibility. You can connect your local workgroups over industry-standard network types, including LocalTalk, Ethernet, and Token Ring. And, as your network grows larger and more global, the Apple Internet Router lets you choose among several wide area options—you can link remote sites to your network through a dial-up connection over a standard modem, or you can add one of the Apple Internet Router Wide Area Extensions (available separately) to link your AppleTalk networks using X.25 or TCP/IP.

The Apple Internet Router features the AppleTalk Update-based Routing Protocol (AURP), a powerful wide area networking standard. AURP ensures that wide area links function efficiently, substantially reducing the traffic over wide area networks. With AURP, you can be certain that you're maximizing the use of your network resources.

Because the Apple Internet Router software runs on a broad range of Apple Macintosh computers and Workgroup Servers, you can tailor your router configurations to meet your cost/performance requirements. And, like other Macintosh computer–based software, the router is easy to use, configure, and support. Even a network novice can have the router up and running and can begin to make use of its powerful features within minutes. In addition, the router has built-in support for the Simple Network Management Protocol (SNMP), so it can be easily monitored by any SNMP-based management station.

Whether you have a small office and want to connect together a few workgroups or you're part of a multinational corporation with global internetworking needs, the Apple Internet Router provides the perfect network solution.

Apple Internet Router Features

Easy to Set Up and Use

- Offers Macintosh computer–based administration and configuration
- Operates in background, allowing other services to run concurrently

LAN and WAN Support

- Local workgroups can be connected with LocalTalk, Ethernet, or Token Ring
- Remote sites can be linked through dial-up modems, X.25, or TCP/IP

Protection from Unauthorized Access

- Administrator password option to lock out unauthorized access
- Dial-up authorization to authenticate remote sites

Network Efficiency

- Isolation of local traffic
- Update-based routing for efficient use of network resources
- Network-number clustering and remapping
- Built-in data compression for maximizing throughput

Robust Administration

- Reporting facilities to maintain network statistics
- Network management through industry-standard SNMP
- Ability to export data

Article Change History:
03 May 1994 - Updated to Internet Router 3.0.1.

Support Information Services

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Tech Info Library Article Number:11261

Tech Info Library

Apple Internet Router: Specifications (5/94)

Revised: 5/3/94
Security: Everyone

Apple Internet Router: Specifications (5/94)

==========

Article Created: 12 January 1993
Article Reviewed/Updated: 3 May 1994

TOPIC ----------

This article provides the specifications and order information for the Apple Internet Router.

DISCUSSION ----------

Operating Requirements

Basic Connectivity Package
- System software version 7.0 or later
- A Macintosh computer with at least 4 megabytes of memory, a Power Macintosh computer or a Workgroup Server
- Basic Connectivity Package must be installed
- Ethernet or Token Ring connectivity
- Dial-up connections require V.32/9,600 bps or higher-speed modem
- Works on AppleTalk Phase 2 networks only
- Power Macintosh computers and PowerPCTM microprocessor-based Workgroup Servers require Network Software Installer (NSI) 1.4.3 or later

AppleTalk/X.25 Wide Area Extension
- Basic Connectivity Package must be installed
- Apple Serial NB Card(s)
- Available for 680x0-based Macintosh computers and Workgroup Servers only

AppleTalk/IP Wide Area Extension
- Basic Connectivity Package must be installed
- Ethernet or Token Ring connectivity

Setup and Configuration

The router provides the ease of use you've come to expect with any Macintosh computer–based application. You simply select the port you wish to configure and

depending on the connection, enter a network, host, or phone number for each network you want to interconnect. The rest is automatic, because the Apple Internet Router communicates dynamically with other routers to build a table of the entire internet. And, because the router runs in the background, you can maximize your investment by running other services such as AppleShare and SNA•ps concurrently.

Network Types

The Apple Internet Router can interconnect all types of AppleTalk networks, including:

- LocalTalk
- Ethernet
- Token Ring

This offers you great flexibility in choosing network media and topologies. You can use the router for such things as connecting LaserWriter printers on LocalTalk networks to Ethernet, connecting networks with dissimilar media, isolating network segments for security and performance, and extending the network beyond physical segment limitations. Multiple Token Ring cards with Power Macintosh computers and PowerPC microprocessor-based Workgroup Servers require NSI 1.4.5 or later.

Monitoring and Control

Through the Router Manager application, you can:

- Monitor network activity and network statistics
- View an active routing table of the entire internet
- Change the router setup information
- Print and export the contents of the setup and administrative displays

In addition, the Apple Internet Router supports the Simple Network Management Protocol (SNMP), enabling you to monitor the router from any SNMP-based management station. For Power Macintosh computers and PowerPC microprocessor-based Workgroup Servers, MacSNMP 1.1 is required.

Security

The Apple Internet Router offers sophisticated security options that protect the router and your sensitive network resources from unauthorized access, including:

- Router-administration password option
- Device hiding
- Network-number hiding
- Password and callback for dial-up connections

WAN Support

With the Apple Internet Router Wide Area Extension options you can connect geographically remote workgroups using wide area telecommunications links. The Apple Internet Router Wide Area Extension products include:

- DialUp Wide Area Extension (included with Basic Connectivity Package)

The DialUp Wide Area Extension:
- Connects two or more AppleTalk networks regardless of location using standard dial-up phone lines
- Works with any Hayes-compatible 9,600-bps or higher-speed modem with the appropriate script
- Includes modem scripts for many popular modems

• AppleTalk/X.25 Wide Area Extension (available separately)
The AppleTalk/X.25 Wide Area Extension:
- Enables two or more AppleTalk networks to communicate through an X.25 communications link, extending the wide area networking capabilities of the Apple Internet Router
- Offers a wide variety of X.25 parameter settings, enabling you to implement the most effective X.25 services
- Provides a set of standard profiles for the major public packet-switched networks worldwide
- Allows you to create your own customized profiles for any public or private data network
- Is available for 680x0-based Macintosh computers and Workgroup Servers

• AppleTalk/IP Wide Area Extension (available separately)
The AppleTalk/IP Wide Area Extension:
- Enables two or more AppleTalk networks to communicate through a TCP/IP network
- "Tunnels" AppleTalk packets over TCP/IP backbone networks
- Offers configuration by IP address, host name, or "guest"
- Supports Ethernet or Token Ring

Traffic Minimization

Several features of the Apple Internet Router ensure that only information that needs to travel across your communications link does so:
• AppleTalk Update-based Routing Protocol (AURP)
• Built-in data compression
• Network-number clustering

Support of Large Networks

The Apple Internet Router lets you build large internets that can connect across the street or around the world. An AppleTalk internet can support as many as 16 million devices (nodes) distributed over a virtually unlimited number of interconnected networks. And, because the Apple Internet Router provides for a nearly limitless number of networks and zones per internet, it can grow right along with your organization.

Extensibility

Because the Basic Connectivity Package was designed with extensibility in mind, you can choose from a wide variety of internetworking options. In addition to Apple's wide area extensions, third-party offerings let you expand in the areas of:
• Local area connectivity (such as FDDI)
• Wide area communications (such as SMDS, T1, SW 56/64)

• Network management
• Multiprotocol support (such as IPX, TCP/IP)

Specifications

Router table entries 5,400 maximum
Nodes per internet 16 million
Ports per router up to 32

Ordering Information

Apple Internet Router Basic Connectivity Package 3.0.1
Order no. M0502Z/B
• Apple Internet Router software and installer
• Apple Internet Router Administrator's Guide
• DialUp Wide Area Extension
• SNMP Router Agent

Apple Internet Router AppleTalk/X.25 Wide Area Extension
Order no. M8111Z/A
(requires purchase of Basic Connectivity Package)
• Router X.25 software and installer
• Using the AppleTalk/X.25 Wide Area Extension guide
• MacX25 Administrator's Guide
• MacX25 client/server software

MacX25 Router Extension
Order no. M8068Z/A
(requires purchase of Basic Connectivity Package and MacX25 v1.2)
• Router X.25 software and installer
• Using the AppleTalk/X.25 Wide Area Extension guide

Apple Internet Router AppleTalk/IP Wide Area Extension
Order no. M8112Z/A
(requires purchase of Basic Connectivity Package)
• Router IP software and installer
• Using the AppleTalk/IP Wide Area Extension guide

Article Change History:
03 May 1994 - Updated for Internet Router 3.0.1.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:11262

Tech Info Library

DAL: Multiple Platforms, 2 Phase Commit, DRDA Compliance

Revised: 1/21/93
Security: Everyone

DAL: Multiple Platforms, 2 Phase Commit, DRDA Compliance

==========

Article Created: 12 January 1993

TOPIC ----------

Here are some questions regarding DAL and Multiple Platforms, 2 Phase Commit, and DRDA Compliance.

DISCUSSION ----------

Q. Can DAL update across multiple platforms at the same time?
A. DAL can have multiple sessions open, one client session for each server session. The application could update across these sessions but it would be the application controlling the updates, not DAL. The application would therefore have to be concerned with actual status in each environment and the application would have to do the rollbacks for every previously updated environment when one environment fails the update.

Q. Are there any multi-platform benchmarks available?
A. There are no results as of 1/12/93, but the benchmark study is in progress.

Q. Does DAL support a 2 phase commit? (With APPC connection?)
A. No, DAL does not support a two-phase commit in any environment. The application has to maintain all control that is not provided by the DBMS. Depending on the DBMS environment this can be more or less work for the application.

Q. Is DAL DRDA compliant?
A. No.

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Tech Info Library Article Number:11266

Tech Info Library

Networked PowerBook: Don't Use AutoRemounter 1.0 w/ AC Adapter

Revised: 5/16/94
Security: Everyone

Networked PowerBook: Don't Use AutoRemounter 1.0 w/ AC Adapter

==========

Article Created: 14 January 1993

TOPIC ----------

After adding PowerBooks to our network, we noticed a large increase in traffic. It seems that every few seconds an AEP "volley" is started from the PowerBooks, and the only way to disable the AEP packets is to remove the AutoRemounter control panel from the system folder and restart.

DISCUSSION ----------

If you have AutoRemounter 1.0 installed in the Control Panels folder on a PowerBook AND the PowerBook is plugged into an AC adapter, AutoRemounter will send 1-byte echo packets every 8 to 18 seconds to the broadcast address. This occurs whether you're successful or not in remounting a server volume. The problem occurs on both routed and non-routed networks.

Also a PowerBook Duo with AC adapter, or inserted into the Duo Dock networked with Token Ring, Ethernet, or LocalTalk with AutoRemounter 1.0 will send the same echo packets.

Workarounds:

- Use battery power on the networked PowerBook,
  or
- Remove AutoRemounter 1.0 from the System Folder,
  or
- Remove AutoRemounter 1.0 from your hard drive.

The amount of network traffic this problem generates depends on the number of Macintosh computers and the topology of the network. The biggest impact from traffic occurs in environments with large bridged networks and many Macintosh computers. The least impact is on LocalTalk networks or networks that are routed versus bridged.

Article Change History

02/02/93 - Revised to include PowerBook Duo and Duo Dock information.
03/18/93 - Revised to add paragraph about what kind of networks are most affected.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11268

Tech Info Library

DAL: Support from Hibert West

Revised: 1/21/93
Security: Everyone

DAL: Support from Hibert West

==========

Article Created: 12 January 1993

TOPIC ----------

What is included in DAL's annual maintenance fee? Any support?

DISCUSSION ----------

As of 1/12/93 there is no "annual maintenance fee". There is a support contract fee that is payable to the Apple Technical Assistance Center.

This support is order through Hibert West in Denver, CO. Their number is 800-950-2442. The first year's support is included with the server license fee.

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Tech Info Library Article Number:11273

Tech Info Library

Video Displays: Aperture, Pitch, and Dot Pitch (2/93)

Revised: 2/16/93
Security: Everyone

Video Displays: Aperture, Pitch, and Dot Pitch (2/93)

==========

Article Created: 10 February 1993

TOPIC ----------

What do the terms aperture, pitch, and dot pitch mean?

DISCUSSION ----------

The cathode-ray tube (CRT) inside a monitor consists of an electron gun that shoots a beam of electrons through a perforated metal grill to a phosphor coating on the inside of the tube. When the beam strikes the phosphor, the coating emits light in the form of dots, or pixels.

The term "aperture" refers to the perforations or holes in the metal grill through which the electron beams travel before they strike the phosphor coating.

Pitch -- or dot pitch -- is the measurement of the distance between pixels on a monitor. If the pixels are closely spaced, the dot pitch is small; if the pixels are widely spaced, the dot pitch is large. Monitors with smaller dot pitches appear sharper, while monitors with larger dot pitches tend to appear less sharp and may have a "grainy" appearance.

The number of holes or apertures in one horizontal row of the metal grill determines the maximum horizontal resolution available for a particular CRT.

Note that the terms aperture, pitch, and dot pitch are used interchangeably and refer to the distance between pixels.

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Tech Info Library Article Number:11276

Tech Info Library

Novell Netware: Macintosh Printer Support

Revised: 1/20/93
Security: Everyone

Novell Netware: Macintosh Printer Support

==========

Article Created: 15 January 1993

TOPIC ----------

I am constructing an internal network for our sales office using Macintosh computers and Novell. We have a few DOS systems that will also be tied to the network.

For printing, Novell supports a protocol called NASI as an NLM for the DOS-based systems. Is there a Mac emulation for NASI? Is there another solution for a Novell/Ethernet environment?

DISCUSSION ----------

Novell doesn't provide a Mac NASI emulator, and Macintosh computers cannot use the PC-oriented (PSERVER) print queues. However, Novell provides the AppleTalk Print Services (ATPS) module with Netware for Macintosh, to which both Macintosh and DOS users can spool their print jobs. Macintosh users print to ATPS print queues by selecting the queue in the Chooser and then sending a print job, and because the printer is an NBP entity advertising on the AppleTalk network, Macintosh users can also print directly to the printer. DOS users print to AppleTalk printers via the ATPS queues by using the CAPTURE or NPRINT command.

ATPS is the recommended Netware printing strategy for the Macintosh.

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Tech Info Library Article Number:11279

Tech Info Library

System 7: Rescued Items Folder Appears in the Trash 1/93

Revised: 1/19/93
Security: Everyone

System 7: Rescued Items Folder Appears in the Trash 1/93

==========

Article Created: 18 January 1993

TOPIC ----------

What is the Rescued Items Folder that appears in the Trash Can?

DISCUSSION ----------

The Rescued Items Folder is created any time a System 7 Macintosh starts up with items in the Temporary Folder. These items are then moved from the Temporary Folder to the Rescued Items Folder in the Trash so the user can inspect them.

The Temporary Folder is a folder that sits at the root level of a drive and is invisible to the user. Applications can use it for any purpose. Typically, this includes scratch files or temporary data files.

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Tech Info Library Article Number:11280

NuBus: Where to Find Information on NMRQ Signal

Revised: 1/20/93
Security: Everyone

NuBus: Where to Find Information on NMRQ Signal

==========

Article Created: 18 January 1993

TOPIC --------------------

Where can I find detailed information on the /NMRQ operation in Apple's implementation of NuBus?

DISCUSSION --------------------

Information about the /NMRQ or "Non-Master Request" NuBus signal can be found in "Designing Cards and Drivers for the Macintosh Family", Third Edition, published by Addison Wesley and available at computer bookstores and from APDA.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11281

Tech Info Library

Ofoto: Color OneScanner File Size 1/93

Revised: 1/25/93
Security: Everyone

Ofoto: Color OneScanner File Size 1/93

==========

Article Created: 20 January 1993

TOPIC ----------

How large is a 1200dpi, 24-bit, 5x7 image created using the Apple Color OneScanner, using the Ofoto software? Also, how much RAM is necessary to process it using the Ofoto software?

DISCUSSION ----------

The quick answer is VERY large. There's no way to tell exactly what the size would be; however, we can estimate approximately 200 to 400 Megabytes. Also, since Ofoto uses temporary files on disk, at least that much additional disk space needs to be free. To be safe, there should be at least 1 gigabyte of free disk space (prior to the scan) at Ofoto's disposal to scan an image at this size and resolution. Once this is scanned and taken to an application like PhotoShop, there should be approximately .5 gigabyte of disk space available for PhotoShop temporary files. Based on a no-compression scan, this is comparable to file sizes on any computer system doing the same job.

Ofoto could do this scan in its default RAM partition; however, the speed would be unacceptably slow. We recommend 8MB installed, at the very minimum, giving Ofoto as much as possible. Even with this much RAM, a scan of this nature will take a fair amount of time. For more acceptable scanning speeds, increase the amount of RAM available to Ofoto to the greatest possible.

Using QuickTime's JPEG (or other type) compression will reduce the final file size according to the amount of compression applied. However, during the scanning process, use the above numbers as a rough guideline.

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Tech Info Library Article Number:11283

Tech Info Library

StyleWriter II: No Driver for Apple IIGS

Revised: 1/21/93
Security: Everyone

StyleWriter II: No Driver for Apple IIGS

==========

Article Created: 21 January 1993

TOPIC ----------

Does an Apple IIGS using GS/OS 6.0 support the StyleWriter II Printer?

DISCUSSION ----------

No, the Apple IIGS doesn't support the StyleWriter II printer. The GS/OS 6.0 driver for the original StyleWriter will not work with the StyleWriter II and there is no new GS/OS driver for the StyleWriter II.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11284

Tech Info Library

Macintosh: Using Monitors Control Panel To Add/Change Display

Revised: 1/20/93
Security: Everyone

Macintosh: Using Monitors Control Panel To Add/Change Display

==========

Article Created: 20 January 1993

TOPIC ----------

When I added a Macintosh Portrait Display to my PowerBook, I couldn't move the mouse pointer to the new display.

DISCUSSION ----------

Open the Monitors control panel, click on the picture of the Portrait Display you see there, then close the control panel. This updates the 'scrn' resource in the System file, so when the PowerBook is starting up, it is aware of the external monitor and adds it to its "display space."

This is not specific to the Portrait Display: if you set up a PowerBook to work with a Portrait Display, then connect the PowerBook to a different display, you'll have to go through the same process again.

You can also see this on other Macintosh models if you switch between displays on a single video card installed in a Macintosh.

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Tech Info Library Article Number:11285

Tech Info Library

Macintosh Performa Series: Service and Support Offerings

Revised: 1/20/93
Security: Everyone

Macintosh Performa Series: Service and Support Offerings

==========

Article Created: 20 January 1993

TOPIC ----------

In the remote event that you have a problem with your Macintosh Performa, the following service and support information comes with the product.

DISCUSSION ----------

- One year limited warranty
- One year in-home service
- One year toll-free help line support

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11289

AppleTalk Internet Router and Text Color Change

Revised: 1/26/93
Security: Everyone

AppleTalk Internet Router and Text Color Change

==========

Article Created: 20 January 1993

TOPIC --

Why does the text color change in the network information window in AppleTalk Internet Router 2.0? I am referring to the text in the window, not just the column title text. The column titles are blue but the text in the window turns red for a few seconds and than back to black. What causes the change to happen?

DISCUSSION --

From pages 82 and 83 of the AppleTalk Internet Router Administrator's Guide:

> The routing table is a dynamic display that reflects continuous changes in routing information on the internet.
>
> The larger the internet, the more likely it is to be undergoing change, as routers update one another about alternate routes, distances, and changes in network connections.
>
> ...
>
> Note: Whenever a change is made to an entry in the routing table, that item is boldfaced for a few seconds to call your attention to the change.

The last paragraph answers the question. On a color screen, the item that is updated is boldfaced and change to red for a few seconds. When this occurs, it does not mean that something is wrong, it just means that something has been updated.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11290

Tech Info Library

DAL: Specify a Procedure Parameter For the Order By Command

Revised: 1/26/93
Security: Everyone

DAL: Specify a Procedure Parameter For the Order By Command

==========

Article Created: 20 January 1993

TOPIC ----------

I have a DAL question about how to specify a procedure parameter to do a sort using the "order by" SQL command.

Here is an example. Sorting in the following procedure should be possible on:

- Item fromdepot, which works
- Item 3 the calculated value, which does not working.

The procedure and some examples of the execution is shown below:

```
  procedure GetTotalList( xFromdate, xSortitem)
  argument Date       xFromdate ;
  argument Objname    xSortitem ;
  {
    SELECT
         A.FromDepot ,
         A.ToDepot   ,
         Sum(a.volume*a.intransitqty/a.volumeqty)
    FROM
         MLYXX.TB23Transit A
    WHERE
         A.Tickoffdate > xFromdate AND
         A.volumeqty   > 0
    GROUP BY
         A.Fromdepot ,
         A.Todepot
    ORDER BY
         :xSortitem  ;
    FOR EACH ä printf("%6sÉt%6sÉt%6.1fÉt",
                    ->FromDepot        ,
```

```
                    ->ToDepot          ,
                    ->Expr3           );
            }
    COMMIT;
  } end procedure GetTotalList;
```

The execution example below shows the procedure with error message:

```
  begin> gettotallist('1992-12-25', 3);
  more> go
  Execution begins...
  Error -206 (0)  column not found  (3)
  Message is "network", line 1 : unknown column name for any table
```

The execution example below shows the procedure when it works OK:

```
  more> gettotallist('1992-12-25', "Fromdepot");
  more> go
  Execution begins...
  BE1101  DE1101   645.2  BE1101  DE1401   460.7
```

What is wrong?

DISCUSSION ----------

To do a sort, two things are required:

- The DBMS must support the ORDER BY clause. Not all DBMS brands support this SQL feature. This clause is what actually does the sort, not DAL.

- The field to be sorted on MUST be a result column in the cursor (results table) created by the select command. In other words, it has to be a column name or a column number from the results table.

The following example has been tested with DB2 and DAL (as a procedure) and uses the demo data that is installed with DAL for consistency:

```
  procedure sorttest ()
  {
     select cust_state, sum((receivable / credit_line) * 100)
       from cl1.customer
      group by cust_state
      order by 2 ;
        for each {
                  print cust_state, ->2 ;
                }
  }
  end procedure sorttest;
```

In your procedure, you were trying to do the ORDER BY clause with some other field than what is available to the DBMS in the results table. Your only valid choices for a field to specify in the ORDER BY clause are:

- FromDepot
- ToDepot
- 3 (the column number of the SUM expression)

If you want to give the sort field as an argument that could change with each execution of the procedure, the sortkey MUST be an integer, which will translate to the column number. A DAL procedure does not allow column name to be used in a parameter of a procedure.

As long as the procedure specifies that the sort field argument is an integer, and you select a valid column number (in the results table) it works just fine. Here is an example:

```
  procedure sorttest (sortkey)
  argument integer sortkey ;
  {
     select cust_state, sum((receivable / credit_line) * 100)
       from cl1.customer
      group by cust_state
      order by :sortkey ;
        for each {
                   print cust_state, ->2 ;
                 }
  }
  end procedure sorttest;
```

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Tech Info Library Article Number:11292

Tech Info Library

System 7: Error When Copying Disk Image to RAM Disk (7/96)

Revised: 7/22/96
Security: Everyone

System 7: Error When Copying Disk Image to RAM Disk (7/96)

==========

Article Created: 21 January 1993
Article Reviewed/Updated: 22 July 1996

TOPIC ----------

I am experiencing some difficulty copying a floppy disk image to a RAM disk. If the RAM disk size is 1 MB to 2 MB, the computer attempts to erase the contents of the RAM disk volume, and then reports an error -35.

DISCUSSION ----------

This error occurs because the Finder was written under the assumption that any volume with fewer than 2 MB must be a floppy disk. However, this issue has been resolved in System 7.5.2 and later.

Article Change History:
22 Jul 1996 - Updated information.
23 Sep 1993 - Reviewed for technical accuracy.

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Tech Info Library Article Number:11294

Tech Info Library

StyleWriter & StyleWriter II: Ink Composition (2/93)

Revised: 2/16/93
Security: Everyone

StyleWriter & StyleWriter II: Ink Composition (2/93)

==========

Article Created: 10 February 1993

TOPIC ----------

What is the chemical composition of StyleWriter and StyleWriter II ink?

DISCUSSION ----------

Here is the composition of the ink.

Ingredient	Approximate Percent (by Weight)
Water	70 - 90
Glycerin	5 - 10
Water-soluble organic solvent	5 - 10
Water-soluble organic compound	5 - 10
Isopropyl alcohol	5

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Tech Info Library Article Number:11296

Tech Info Library

DAL and SQL*Net Compared

Revised: 1/21/93
Security: Everyone

DAL and SQL*Net Compared

==========

Article Created: 12 January 1993

TOPIC ----------

I need a comparison of DAL to SQL*Net from Oracle.

DISCUSSION ----------

Beyond what's in the trade press, we can't offer much information on this comparison.

Remember that SQL*Net will only access Oracle's DBMS. DAL's advantage is the presentation of a single API, which allows access to approximately thirteen DBMS/Operating System environments.

Any product that is written for a single environment will be able to make use of features, or knowledge, that is particular to that environment. A product that tries to provide homogeneous access to many environments will not be able to make use of such features. It all depends on what you want/need and how sure you are that you've fully defined your needs, now and for the future.

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Tech Info Library Article Number:11298

Tech Info Library

PowerBook Fax Sender Software: Supports 1,000 Addresses

Revised: 5/16/94
Security: Everyone

PowerBook Fax Sender Software: Supports 1,000 Addresses

==========

Article Created: 29 January 1993

TOPIC --------------------

How many addresses can the PowerBook Fax Sender software support?

DISCUSSION --------------------

It supports 1,000 addresses.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11301

Tech Info Library

System 7.x: Limit on Number of File Names in Open Dialog (3/95)

Revised: 3/16/95
Security: Everyone

System 7.x: Limit on Number of File Names in Open Dialog (3/95)

==========

Article Created: 22 January 1993
Article Reviewed/Updated: 16 March 1995

TOPIC ----------

Under System 7.x, why does the Open dialog box in an application not display all of the files in a folder?

DISCUSSION ----------

This is a real world limitation imposed by the use of List Manager in the SFGetFile dialog box used for opening files. There's nothing wrong with the directory structure, nor is there anything wrong with the application. Here's a description of what's going on:

This limitation isn't specific to System 7.0. The same limitation (with a slightly different variation) existed under System 6. The issue is that the SFGetFile call, which generates the Open dialog box in almost every application, uses the List Manager to display the files in the file list of the dialog box. The List Manager has a specific limit on the amount of data stored in a list. This limit is 32K. However, SFGetFile uses a portion of that 32K for data other than the file names. So you end up with 64 bytes per file if you have the maximum file name size of 31 characters (plus 1 byte for the length byte). We arrived at this number empirically by writing a program that created files with the names: "000abcdefghijklmnopqrstuvwxyzab" through "999abcdefghijklmnopqrstuvwxyzab".

A good approximation of how many files will display is 32767 / (file name size + 32). This results in 682 for 16 character names and 819 for 8 character names.

The bottom line beyond all of these calculations is that this is a hard limit. There's no workaround to display more data from a single folder within this dialog box. The list displays alphabetically, and the bottom of the list isn't displayed.

Also, as you increase the number of files in a folder, the performance at the

Finder level decreases pretty dramatically. Although the Finder can handle these numbers of files, you'll see slowdowns in opening and closing windows. Another concern is the total number of files you're planning to have on a volume. There are very real limits on this as well, described in other articles posted in the Tech Info Library.

While the problem remains in System 7.5, you will now be notified that there are more files in the directory than can be displayed.

Article Change History:
16 Mar 1995 - Clarified the last sentence to specify System 7.5.
15 Feb 1995 - Reviewed for technical accuracy.
13 Jan 1995 - Updated explanation of problem.

Support Information Services

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Tech Info Library Article Number:11302

Tech Info Library

DAL for AS/400: Server Installation Clarifications

Revised: 1/25/93
Security: Everyone

DAL for AS/400: Server Installation Clarifications

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Article Created: 22 January 1993

TOPIC ----------

This article contains additional information about the Data Access Language for AS/400 Server installation. These items should be noted as changes, additions, or clarifications to the "Data Access Language Server for AS/400 Installation Guide, Version 1.3.7".

DISCUSSION ----------

Informational

The following informational items are true of the server at release 1.3.7, as loaded from the distribution tape/cartridge with a volume serial number of "DAL137".

- On page 9, the restore of the distribution library (Step 3 of "Installing the server") will result in 57 Objects being restored and 114 Security or data format changes occurring.

- On page 10, the restore of the DALDEMO library (Step 5 of "Installing the server") will result in 11 Objects being restored and 22 Security or data format changes occurring.

These counts may change with future releases of the server. For that reason this information is not included in the published documentation.

Change Required

- On page 12, Step 7 of "Installing the server", the display system values command is not accurate. It should be:

    DSPSYSVAL SYSVAL(QSYSLIBL) <enter>

Instead of:
DSPSYSVAL SYSVAL(QSYSLIB) <enter>

- On page 27, the "note" has a typographical error at the end of the first sentence. It should be:

  library/DALDBV01

  Instead of:
  library/DALDBV0L

Clarification

Appendix B, "Displaying Table Lists", describes the two methods that can be used to create the list of tables that an individual user, or the entire site, will see when the DAL command "Describe Tables" is issued. This is the list of available tables that the user will see when using an application that supports the Data Access Language client.

Please note that DAL uses the SQL standard format of "Creator.Tablename" instead of the AS/400 standard of "Library/File" when displaying this table list.

In the AS/400 environment, the table list can actually be a list of:

- Libraries and Files - displayed in the Creator.Tablename format as LibraryName.FileName

- SQL Collections and Tables - displayed in the Creator.Tablename format as Collection.Tablename

- A combination of both libraries and SQL collections

It is important to note that, in the AS/400 environment, the entire environment is available for display in the table list if no "view" has been created, or if it has been created improperly. This is because DAL is reading a system-wide directory in the AS/400 environment, not just a DBMS system catalog. This search can take a long time and can cause confusion as it will probably not properly reflect what the user should actually be able to see and access.

It is also important to note that the AS/400's object authorization is the final arbitrator of what someone can access. Users may be able to see a file and/or library name in the table list, but if they don't have object authority, they will not be able to see column/field names, nor the actual data.

As installed, there is a site-level view created (specified in the environment file, see page 14) which will display only the demonstration tables shipped with the DAL for AS/400 Server. A new site-level view, or set of user-specific views, must be created to display a table list which is pertinent to the desired information for the site or user(s).

Creating an SQL View

Step 3 of Appendix B, "Create an SQL view with a statement similar to" (page 27), tells you how to create an SQL view that will result in the desired list of libraries and file names. To create this view, you need the SQL/400 licensed product, not just the SQL/400 runtime libraries.

The SQL create view statement documented in the install guide, on page 27, is incorrect.

If you are creating a view for a specific user, you must first create a library with the userID as the library name and then create the view, substituting the library name (which is the same as the userID) in place of "library" in the create view statement.

Use the STRSQL (Start SQL) function of the AS/400 while you are signed on as QSECOFR to create this view.

1) If you wish to define a view with the exclusions stated in the install guide on page 27, which are:

   - entries with null file or library names
   - source files (DBXTYP would be an 'S')
   - all libraries or collections starting with 'Q'
   - all files starting with 'QDICT'

   The following is the correct SQL/400 create view statement:

```
CREATE VIEW library/DALDBV01
AS SELECT DBXFIL, DBXLIB, DBXOWN, DBXATR, DBXNFL, DBXTYP
FROM QADBXREF
WHERE NOT DBXLIB = ''      << there is no space between the quotes! >>
  AND NOT DBXFIL = ''      << there is no space between the quotes! >>
  AND NOT DBXTYP = 'S'
  AND NOT SUBSTR(DBXLIB,1,1) = 'Q'
  AND NOT SUBSTR(DBXFIL,1,5) = 'QDICT'
```

2) If you wish to allow the user to see a list of ALL the libraries (limited as specified above) EXCEPT for a specific one, change the command to:

```
CREATE VIEW library/DALDBV01
AS SELECT DBXFIL, DBXLIB, DBXOWN, DBXATR, DBXNFL, DBXTYP
FROM QADBXREF
WHERE NOT DBXLIB = 'LibraryName'
  AND NOT DBXLIB = ''
  AND NOT DBXFIL = ''
  AND NOT DBXTYP = 'S'
  AND NOT SUBSTR(DBXLIB,1,1) = 'Q'
  AND NOT SUBSTR(DBXFIL,1,5) = 'QDICT'
```

3) To limit the user to see ONLY a specific library, change the command to:

```
CREATE VIEW library/DALDBV01
AS SELECT DBXFIL, DBXLIB, DBXOWN, DBXATR, DBXNFL, DBXTYP
FROM QADBXREF
WHERE DBXLIB = 'LibraryName'
  AND NOT DBXFIL = ''
  AND NOT DBXTYP = 'S'
  AND NOT SUBSTR(DBXFIL,1,5) = 'QDICT'
```

Multiple libraries can be chosen with the addition of:

```
  OR DBXLIB = 'LibraryName'
```

to this statement (option #3).

Similar syntax can be used to limit the display of files within a library. Refer to the AS/400 Structured Query Language/400 Reference and Programmer's Guide manuals for additional information on creating a valid SELECT statement for the CREATE VIEW statement.

Creating a View from a Logical File

If you do not have the SQL/400 licensed product, you must create a logical file rather than creating the SQL view as documented above. In Appendix B, the section "Creating a logical file" (page 27) tells you how to create a logical file that will result in the desired table list. Page 28 shows the source that must be changed, and then used as the basis for creating the individual logical file for each user.

The following choices explain the results that will be displayed by the logical file created as a result of using the source file given as an example in the appendix (#1), or the changes you can make if you wish to restrict the libraries/SQL collections that will be displayed (#2 and #3).

Please note that this source code is sensitive, by column number, to where fields are entered on the line. Please refer to the AS/400 "Data Description Specifications Reference" manual for complete instructions on modifying these source control statements.

1) To present the user with a list of ALL the libraries and files in the AS/400, you need only create the logical file without changing the source file as loaded from the tape and documented on page 28. The source file is QDDSSRC in the DALLIB library and the create logical file command is documented on page 28 in the last paragraph.

2) If you wish to allow the user to see a list of ALL the libraries EXCEPT for a specific one:

change the source to have the DBXLIB statement as:

```
     O DBXLIB             COMP (EQ 'LibraryName')
```

instead of:

```
        O DBXLIB              COMP (EQ '           ')
```

3) To limit the user to see ONLY a specific library:

change the source to have the DBXLIB statement as:

```
        O DBXLIB              COMP (NE 'LibraryName')
```

instead of:

```
        O DBXLIB              COMP (EQ '           ')
```

Both options 2 and 3 use 'negative' compare logic because the "O" preceding DBXLIB in the statement means "Omit all that pass the following COMPare". Attempts to change this logic to a positive COMPare with the use of Select instead of Omit were not successful (in our testing). So the statements documented here are the recommended logic, which has been tested. Just be careful in the compare logic!

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Tech Info Library Article Number:11304

Tech Info Library

Apple Color Printer: Recommended Paper, Transparency Film (2/93)

Revised: 2/23/93
Security: Everyone

Apple Color Printer: Recommended Paper, Transparency Film (2/93)

==========

Article Created: 15 February 1993

TOPIC ----------

What paper and transparency film for overheads are recommended for use with the Apple Color Printer?

DISCUSSION ----------

Paper

Apple recommends using coated paper with the Apple Color Printer for optimum printing quality, though the printer will accept plain copier paper. Plain paper is satisfactory for printing text, but the ink tends to bleed noticeably when printing graphics.

Apple does market coated paper for the Apple Color Printer, although you can use any coated paper which is labeled "for use with plain paper ink-jet printers."

Transparency Film

Use only transparency film that is recommended "for plain paper ink-jet printers." If normal transparency film is used, the ink will not dry on the plastic.

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Tech Info Library Article Number:11305

Tech Info Library

DAL Server for AS/400: Features

Revised: 1/25/93
Security: Everyone

DAL Server for AS/400: Features

==========

Article Created: 25 January 1993

TOPIC ----------

This article describes the features of DAL server for AS/400.

DISCUSSION ----------

The Data Access Language Server for the AS/400 is a networking software product that provides access, from an Apple Macintosh personal computer, to data on IBM AS/400 host system. The DAL server allows personal computer applications that support Data Access Language -- such as spreadsheets, query tools, and custom-developed applications -- to access AS/400 data. The AS/400 operating system, OS/400, has built-in database structures that respond to SQL query access. The most often used IBM-supplied DBMS for the AS/400 is SQL/400, which is a IBM-licensed product.

The DAL server receives requests from the personal computer application, carries them out on the AS/400 through the SQL/400 runtime facility, and sends the desired data back to the application for desktop processing. The DAL server for AS/400 works with existing SQL/400 databases and AS/400 libraries and files. It is not necessary for the AS/400 to be running SQL/400, because the runtime facilities in OS/400 support DAL access to databases.

The DAL server for AS/400 brings the powerful DAL dialect of SQL to the desktops of AS/400 users. The DAL user can access information about the databases (collection or library) belonging to the user, tables (files) belonging to the database (column) information pertaining to that table. Another important SQL extension DAL brings to the user is the ability to group DAL language statements, name them, and store them on the AS/400 host. These stored procedures can be repeatedly invoked on the AS/400 from the desktop application, reducing network traffic.

The connection path between DAL client Macintosh computers and the AS/400 uses APPC (LU6.2) communication protocols. The LU6.2 sessions are provided to the client machines via Apple's SNA•ps gateways. The physical link can be either Token Ring or SDLC using RS-232 or V.35.

The DAL AS/400 server can be purchased from Apple Computer in either 1/2 inch 1600 bpi, or 1/4 inch cartridge tape. Pricing is based on a range of connected users, with several license size offerings from 1-5 users to 150 users. The DAL AS/400 product requires the DAL client software, version 1.3.7, be purchased separately for each Macintosh. This can be done with single licenses, 10 packs, or a bulk license for 150 users.

An important part of DAL solution is making use of the diverse number of commercially available query tools and spreadsheets that support DAL clients. As of January 27, 1993, the query tools include Clear Access, Data Prism, and GQL; and the spreadsheets include EXCEL, Wingz, and Claris Resolve.

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Tech Info Library Article Number:11306

DAL Server for AS/400: Basic Features and Benefits

Revised: 1/25/93
Security: Everyone

DAL Server for AS/400: Basic Features and Benefits

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Article Created: 25 January 1993

TOPIC ----------

This article describes the basic features and benefits of the DAL server for the AS/400.

DISCUSSION ----------

There are several DAL servers that run on IBM mainframe systems and access under TSO or VTAM the DB2 DBMS. There is also a DAL server to accessing SQL/DS under VM/CMS. The DAL server for the AS/400 uses a C-Language based server patterned after the DAL UNIX server. The DAL 400 server accesses relational and flat database files that are running in the IBM-supplied SQL DBMS, referred to as SQL/400. The AS/400 operating system (OS/400) has SQL/400 executables built-in, to allow access to SQL/400 databases. DAL does not require the customer install the separate IBM-supplied SQL/400 licensed program, because it can use the OS/400 supplied executables. If a customer wishes to exercise better maintenance control over database files (update), then it is recommended the customer purchase the IBM-supplied SQL/400 licensed program.

The DAL 400 server can only access the AS/400 using SNA APPC gateways. These gateways are Apple SNA•ps gateways, which support APPC communication over SDLC or Token Ring physical links.

When the DAL server is installed on the AS/400 and the APPC SNA•ps gateway is operational, a Macintosh DAL client application will be presented with the same interface as all other DAL server connections. A desktop query of an SQL/400 database will have the same "look and feel" as accessing Rdb on a DEC VAX machine.

The benefit to AS/400 users will be especially significant if they also must access database information on other host platforms. The same client

application and DAL client software can easily access data, the same way, on different host machines, regardless of host DBMS.

The potential marketplace for the DAL AS/400 product is quite large: the installed base of AS/400s is over 150,000 at the end of 1992 -- and growing steadily. AS/400 machines are commonly found in K-12 education accounts, medium to large business, and higher education campuses.

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Tech Info Library Article Number:11307

DAL for AS/400: Sources of Additional Information

Revised: 1/25/93
Security: Everyone

DAL for AS/400: Sources of Additional Information

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Article Created: 25 January 1993

TOPIC ----------

This article describes some sources of information, from Apple, on DAL for the AS/400.

DISCUSSION ----------

The Data Sheet (p/n L0353LL/A) gives a detailed overview of the product, how to order it, and tells what support groups can assist with installation.

The Data Access Language Server of AS/400 Installation Guide, version 1.3.7 (p/n R0445LL/A) covers in detail installation of the Server application on the AS/400, setting up access to SQL/400 databases, and how to configure both the AS/400 and the SNA•ps APPC gateway.

Apple has a Network Information Line for DAL, 408-862-3385, which CUSTOMERS can call to get more information about DAL and SNA•ps gateways. If a customer wishes a 90-day evaluation of the DAL product, use the Information Line to arrange this free service.

The DAL AS/400 Server product is also backed by an initial 90-day free software support 800 number. This support service applies to the 90-day evaluation process or the initial 90 days of a purchased server. After the initial period, support contracts are available for a fee.

The Apple Serial NB Card, Apple Token Ring 4/16 NB Card, DAL servers, DAL Client for Macintosh, and SNA•ps Gateway can be ordered from any Apple sales office or network products certified dealer. For information about location of resellers, contact Apple toll-free in the United States, 1-800-538-9696. Apple NuBus cards and SNA•ps Gateway can also be ordered from the Apple Catalog in the U.S. using 1-800-795-1000.

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Tech Info Library Article Number:11308

Tech Info Library

DAL for AS/400: Connection Script

Revised: 1/25/93
Security: Everyone

DAL for AS/400: Connection Script

==========

Article Created: 25 January 1993

TOPIC ----------

This article describes the DAL for AS/400 connection script.

DISCUSSION ----------

The DAL connection script for the AS/400 Server must be included in the DAL Preferences file in the Macintosh System folder. The layout of this connection script is similar to the APPC IBM VTAM server script except for the addition of the name of the remote transaction program. This program name is named with the AS/400 Library followed by the program name. The syntax for this entry is DALLIB/DALSERVER if the default names at installation are used. Refer to Appendix C in the DAL Server for AS/400 Installation Guide for more details.

Important: Use Capital Letters

All AS/400 named entities in DAL connection scripts, such as, local LU name, remote LU name, mode, program name, User ID, and password must be entered in CAPITAL LETTERS only. This is required since the AS/400 only understands uppercase letters. All terminal emulators change any entered lowercase to uppercase before transmission to the AS/400. The DAL connection script data transfer is not sent via a terminal emulator but in SNA Bind and Program start commands. Any AppleTalk named entities, such as zone and gateway name, must match exactly because these names are case-sensitive.

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Tech Info Library Article Number:11309

Tech Info Library

DAL for AS/400: Installation Process

Revised: 1/25/93
Security: Everyone

DAL for AS/400: Installation Process

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Article Created: 25 January 1993

TOPIC ----------

This article describes the DAL for AS/400 server and SNA•ps Gateway installation process. It also provides references to the installation guide.

DISCUSSION ----------

The DAL Server installation procedure is described in detail in the Data Access Language Server for AS/400 Installation Guide. The highlights of the process include:

1) Log on as the QSECOFR or a user profile with *SECADM and *ALLOBJ authority.

2) Restore the DAL distribution library from the 1/2-inch 9-track tape or the 1/4-inch cartridge tape. The default library on the AS/400 is DALLIB. Optionally, restore the DAL demonstration database.

3) Review the README files in the DALLIB for any installation updates.

4) Prepare to run the DALINST command by verifying that the IBM-supplied library, QSYS2, is in the system part of the library list. Library QSYS2 is necessary for the proper execution of the DALINST command.

5) Run the DALINST command. A large variety of tasks are performed, which are essential to the successful operation of the DAL Server.

6) Review and modify the DAL environment file, DALENV, which is in the DALLIB. This file specifies and limits the output of the DAL SQL extension commands DESCRIBE DATABASES and DESCRIBE TABLES.

7) Review, and modify if needed, the DAL procedures file.

8) Refer to chapter 3 in the Installation Guide for the procedures to verify the installation of the DAL Server. Log on with any User ID and run Interactive DAL (IDAL400). IDAL400 is a diagnostic utility that allows for testing interactively, on a midrange terminal, the operation of the DAL Server. The testing is done by verifying access to databases, the demonstration database supplied on the DAL installation tape.

SNA•ps Gateway Configuration

DAL Server for the AS/400 uses APPC communications connections between the AS/400 and the Macintosh computers. The Macintosh connection is done through a SNA•ps APPC gateway running on a Macintosh II or Quadra class system equipped with an Apple Token Ring 4/16 NB Card or an Apple Serial NB Card supporting SDLC protocols. The details on how to configure the AS/400 and the SNA•ps gateway are explained in detail in Appendix E of the DAL Server for AS/400 Installation Guide.

Appendix E carefully leads the person performing this part of the installation through the details of the AS/400 configuration for the Line, Controller, Device, and Mode. Both Token Ring and SDLC configurations are shown. As the AS/400 configuration is progressing, the key entries made on the AS/400 screens can be entered on worksheets included in the DAL Installation Guide. The worksheets can then be used as a reference for the information required in the SNA•ps APPC gateway configuration process.

Further details on how to configure and control SNA•ps gateways is included in the SNA•ps Administrator's Guide.

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Tech Info Library Article Number:11310

Tech Info Library

DAL for AS/400: Pre-Installation Checklist

Revised: 1/25/93
Security: Everyone

DAL for AS/400: Pre-Installation Checklist

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Article Created: 25 January 1993

TOPIC ----------

This article provides a pre-installation checklist for the AS/400, Macintosh, and Network connection.

DISCUSSION ----------

For the DAL AS/400 Server to operate properly, the proper environment must exist on the AS/400, the Macintosh, and the network connection.

The AS/400

The AS/400 must be running OS/400 version 2, release 1, Modification 1 or later. SQL/400 is not required because the run-time SQL/400 libraries that are part of OS/400 are sufficient for the operation of the DAL Server.

The DAL Server takes approximately 3MB of AS/400 DASD storage.

The AS/400 must have at least one Token Ring or serial communication adapter.

For software installation only, the user must have access to the QSECOFR User ID or similarly privileged account.

Data access is limited to those functions allowed by SQL/400. To assist in problem resolution, the licensed program, SQL/400, could be installed by the customer. The customer could then test a given set of SQL statements to determine if SQL/400 will support the request.

The DAL Server provides access to SQL/400 collections and tables, and native AS/400 data structures, such as libraries and files.

If you are going to Insert, Update, or Delete you must have:
• SQL400 installed on your AS/400
• Journaling turned on for Databases and/or files.

The Macintosh

The Macintosh computer will have to be equipped with the DAL client version 1.3.7. This client can be purchased from Apple Computer. In addition, the client machine may also need one of the database access applications, such as Clear Access, Data Prism, or GQL -- or a spreadsheet product like Excel, Wingz, or Resolve.

The Network Connection

Network access from the Macintosh to the AS/400 is supported using APPC (LU6.2) communications over SDLC or Token Ring physical attachments. This requires either an Apple Token Ring 4/16 NB Card or an Apple Serial NB Card. The APPC attachment makes use of the Apple SNA•ps Gateway product, which runs on the Apple Token Ring or Serial card. The SNA•ps Gateway can distribute APPC sessions using AppleTalk protocols over LocalTalk, Ethernet, or Token Ring network cabling.

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Tech Info Library Article Number:11311

Tech Info Library

DAL for AS/400: Technical Support Issues

Revised: 1/25/93
Security: Everyone

DAL for AS/400: Technical Support Issues

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Article Created: 25 January 1993

TOPIC ----------

This article describes some technical support issues in connection with DAL for AS/400.

DISCUSSION ----------

DAL client software is not included as part of the Apple system software effective with System 7.1. The DAL client code, version 1.3.7, is required to access the DAL Server for the AS/400, and must be purchased separately from Apple Computer. This version of DAL client code is NOT available with any version of system software.

The DAL client is installed in the Macintosh using the standard Networking & Communication Products Installer. The installation process for System 7.X writes the DAL client and any DAL Network Adapters into the Extensions folder. The DAL Preferences file is stored in the Preferences folder within the System folder. There are no changes to the actual System file.

Additionally, you may wish to drag some of the installation verification tools to the hard disk of the client Macintosh. The DAL Installation Checker shows which versions of DAL client and DAL Network adapters are available. Be sure that DAL client 1.3.7 and DALnet adapter named SNApsAPPC are both available and version 1.3.7.

The DAL Tester can be used to verify the installation of DAL and interactively execute DAL commands. You can enter DAL data manipulation, program control and output statements to the Tester application and view results of these statements. The DAL Tester can be used for all DAL connections and uses the DAL client and DALnet drivers installed in the Tester Macintosh. If the DAL Tester works with the DAL Preferences and the DAL server installed on the Host system, the overall installation can

be assumed to be sound.

The DAL debuggers resemble and operate like the DAL Tester, because they run practically the same interactive application. The major difference is that the debuggers do not use the DAL driver installed on the Macintosh. Instead, the driver code is built into each debugger. There are many debuggers available, each oriented to a specific connectivity, such as SNA•ps 3270, SNA•ps APPC, ADSP, and Async to list a few. If the debugger works with the DAL Preferences file, then the Host installation and database access can be tested. The installation of Macintosh DAL drivers has not been verified.

The only way to verify the installation of the DAL Server on the AS/400 with a midrange terminal is to use the Interactive DAL or IDAL400 diagnostic utility. The midrange terminal user logs on the AS/400 and adds to the Library list, the DAL library (DALLIB is the default). The User them runs the IDAL utility by issuing a DAL specific command, IDAL400. Details on how to proceed with the DALDEMO database is outlined in Chapter 3 of the DAL Server for AS/400 Installation Guide.

SNA•ps Error Codes

The DAL Client driver attempts to access a SNA•ps APPC gateway using the directions found in the DAL Preferences file. If all entries are correct and the gateway is operational, the connection to the SQL/400 database is successful. If the connection fails, the DAL Tester and DAL debugger return to the user SNA•ps APPC Result codes. These codes are reported in a format of Major Code -X, Minor Code -Y, or just -X, -Y. Below is a partial list of the most common error codes encountered by DAL users. The complete list is in the SNA•ps APPC Programmers Reference Guide, available from APDA.

Major Code	Minor Codes	Description
1	2	Local LU ID invalid
1	11	Local LU name null
1	12	Bad open gateway type
1	30	Remote LU name null
1	31	Mode name null
1	32	Remote program name null
2	6	Session not available to allocate
2	10	Named Gateway not found on AT Net
2	11	Gateway unavailable (limits reached or PU inactive)
2	12	Specified local LU not on gateway
2	13	Local LU limits reached
5	1	Remote program not available (no retry)
5	2	Remote program not available (retry)
5	3	Conversation not supported by remote LU or program
5	8	Program name not recognized at Remote LU

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Tech Info Library Article Number:11312

Tech Info Library

DAL Server for AS/400 Support Q & A

Revised: 1/25/93
Security: Everyone

DAL Server for AS/400 Support Q & A

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Article Created: 25 January 1993

TOPIC ----------

This article answers often-asked technical support questions relating to DAL Server for AS/400.

DISCUSSION ----------

Q: On what media is the DAL Server code shipped to customers?
A: Customers can specify 1/4-inch cassettes or 1/2-inch 9-track reel tape.

Q: Who can install the DAL Server modules on the AS/400?
A: Any user with SECOFR (Security Officer) capability.

Q: How long does it take to install the DAL Server modules on the AS/400?
A: Total time to install from tape is about 10 minutes. The time to deal with the DALENV file configuration and enrolling authorized DAL users depends on the complexity of the host environment.

Q: Is there a way to verify that the DAL Server is installed on the AS/400?
A: With any midrange terminals attached to the AS/400, a user can run IDAL400 to verify access to the AS/400 databases. Since IDAL400 is a separate application, it cannot verify the normal DAL Server code. The only way to verify the DAL Server on the AS/400 is to access the server transaction program via an APPC gateway.

Q: How can the DAL Macintosh driver installation be verified?
A: First, use the DAL Installation Checker to verify that the proper revision level of drivers is installed in the Macintosh. Next, use the debugger to verify DAL Preferences and Host DAL Server connectivity. Finally, use the DAL Tester to check out all aspects of the DAL connection.

Q: What is the most common error users will encounter with the DAL Server testing?
A: Users must enter UserID and Password in uppercase (CAPITAL) letters. The DAL client driver does not convert lowercase letters to uppercase letters (like terminal emulators) and the AS/400 understands only upper-case entries.

Q: Can a user attach to the DAL AS/400 Server from LANs?
A: The DAL Client uses AppleTalk ADSP protocols to reach the SNA gateway machine. DAL calls can be passed over LocalTalk, Ethernet, and Token Ring LANs.

Q: What SNA gateway is needed to allow DAL client access to the AS/400?
A: An Apple SNA•ps APPC gateway is required. This gateway can be attached to the AS/400 either by Token Ring or Serial SDLC connections.

Q: Can any Token Ring or SDLC card run a SNA•ps gateway?
A: SNA•ps gateways run only on Apple MCP cards: either the Apple Token Ring 4/16 NB Card, or the Apple Serial NB Card.

Q: How is the DAL Server solution purchased?
A: The DAL Server, SNA•ps Gateway, and required NuBus cards can be sold by an Apple Sales office, or Apple Networking & Communications dealers. And the SNA•ps gateways and cards can be purchased through the Apple Catalog.

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Tech Info Library Article Number:11313

Tech Info Library

DAL: Basic Technology Concepts

Revised: 7/27/93
Security: Everyone

DAL: Basic Technology Concepts

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Article Created: 25 January 1993
Article Reviewed/Updated: 26 July 1993

TOPIC ----------

This article describes the basic technology concepts behind Data Access Language (DAL).

DISCUSSION ----------

Databases have become an essential part of most small and large business operations. It is in a database that information about customer payments, outstanding orders, and manufacturing information is stored, updated, and queried.

Databases follow several standard formats: hierarchical, network, and relational. Hierarchical and network databases have defined relationship paths which must be known and used to search for data. A relational database has no predefined access path, but can be queried in almost any way as defined by the user. The flexibility offered by relational databases comes about because of Database Management System (DBMS) design and industry-standard query languages, such as SQL.

Files are containers of data that are controlled by the host Operating System (OS). The most common file type is a flat file. Flat files have no defined access paths and require scanning the entire file to locate the desired data. Some DBMS can access both databases and flat files.

DBMSs that use SQL to access relational databases have appeared from many vendors in the last decade. These include Oracle, The Ask Group Ingres Products, Sybase, Informix, IBM's DB2 and SQL/DS, DEC's Rdb, Netware SQL, and Tandem's NonStop SQL. These products provide access to different database structures running on different vendor hardware using vendor supplied host operating systems. Each product uses a different "client-server" model with different application programming interfaces (APIs) for client applications

running in personal computers. The connection matrix is further complicated by the variety of connectivity options available to PC users: LAN, TCP/IP, 3270, APPC, and asynchronous to name a few.

Ease of access to database information is a major product differentiator for vendors of personal computers. The vendor who can offer a universal client-server solution which uses a common interface across a large number of hosts and desktop platforms clearly has a selling advantage in business markets.

Apple's Data Access Language (DAL) product, available since 1988, offers a solution that has been embraced by many businesses worldwide. DAL creates a complete client-server environment with both DAL client software running in personal a computer (Macintosh or DOS) and DAL server software running on the host system, where the data and the DBMS reside. The DAL environment can be partitioned into four specific areas: Client machine, physical network, host system, and the databases. The Client machine contains the DAL client, which offers a standard API to either commercially available or in-house developed client (end-user) applications. The DAL client software handles working with the underlying network drivers (APPC, 3270, TCP/IP, or ADSP) to establish connection through the physical network.

The host system issues are taken care of by the Apple-supplied DAL server. The DAL server is a program, running on the host system, which translates the DAL formulated request (sent by the client) into the specific dialect of SQL of the target DBMS. The DAL server tasks include doing the translation, communicating the request to the target DBMS, processing the results provided by the DBMS, and sending them back to the client. The databases are all accessed through the DBMS running on the host system. DAL is especially interesting to customers with multiple DBMS running on the same hosts or on different hosts in the same corporation. DAL provides the same standard interface and method of operation to the client user, no matter which DBMS is actually running on the host system.

Article Change History:
23 July 1993 - Company title updated from Ingres to The Ask Group/Ingres Products

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11314

Tech Info Library

StyleWriter II & Macintosh: Grayscale Needs Color QuickDraw 1/93

Revised: 2/23/93
Security: Everyone

StyleWriter II & Macintosh: Grayscale Needs Color QuickDraw 1/93

==========

Article Created: 26 January 1993

TOPIC ----------

I have connected a StyleWriter II to a Macintosh Plus and I am trying to print a grayscale document. I cannot select grayscale in the Print Dialog box.

DISCUSSION ----------

You can't select grayscale printing for the StyleWriter II unless your Macintosh system has Color QuickDraw support in ROM.

In most cases, the Image selection (which allows you to choose between Black and White or Grayscale) will be grayed out when you open the Print Dialog box. In some cases, you can select Grayscale or Black and White, but you will get an error message if you select Grayscale. All documents will print in black and white mode.

The following Macintosh systems do not have Color QuickDraw in ROM:
Macintosh Plus
Macintosh SE
Macintosh Portable
Macintosh Classic
Macintosh PowerBook 100

Workaround

Here's a workaround if you have a Macintosh without Color QuickDraw and you want to print grayscale documents:

Connect your StyleWriter II to a Macintosh that has Color QuickDraw in ROM, then share the StyleWriter II over a network. You can then print grayscale documents over the network from any Macintosh.

..TIL11317-StyleWriter_II_and_Macintosh-Grayscale_Needs_Color_QuickDraw_1-93.pdf

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11317

Tech Info Library

A/UX: VT102 Man Page Error

Revised: 1/26/93
Security: Everyone

A/UX: VT102 Man Page Error

==========

Article Created: 25 January 1993

TOPIC ----------

This article corrects an error in the man page for VT102 terminal tool. The error is in the man page, both on-line and in the A/UX 3.0 Programer's Reference, Section 7, VT102, page 14.

DISCUSSION ----------

Near the end (long man page) it states: When sending Escape-Left square bracket-lower case C, (esc[c), that the VT102 tool should respond with:

   Escape-Right bracket-?6c, (esc]?6c)

The wrong bracket type is specified.

The correct sequence is:

   Escape-Left bracket-?6c (esc[?6c)

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11319

Tech Info Library

DAL: Rdb V4.1 Requires Databases Format Conversion

Revised: 1/26/93
Security: Everyone

DAL: Rdb V4.1 Requires Databases Format Conversion

==========

Article Created: 25 January 1993

TOPIC ----------

We just upgraded our Rdb/VMS database to version 4.1. When we try to access the DALDEMO database from idal, we get the message:

```
Error -10207 (-1) daldemo ()
```

Message is "network", line 1: RDB-F-WRONG_ODS, the on-disk structure of database filename is not supported by version of facility being used -RDMS-F-ROOTMAJVER, database format 40.0 is not compatible with software version 41.0.

What went wrong?

DISCUSSION ----------

This is not a DAL problem. It is a compatibility problem for databases created before Rdb/VMS V4.1. You must use the Rdb/VMS Management Utility (RMU) to convert existing Rdb/VMS to a format compatible with Rdb/VMS V4.1 software.

You can convert V3.0 and higher databases using the RMU/CONVERT command. The VMS SYSPRV privilege is required to convert databases unless RMU has been installed with SYSPRV.

To convert the DALDEMO database, enter the following commands at the $ prompt:

```
$ SET DEF MSAD$SYSTEM:
$ RMU/CONVERT DALDEMO
```

RMU will confirm if you are satisfied with the backup of the database, then

go on and convert the structure level to the new format.

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Tech Info Library Article Number:11320

Tech Info Library

PowerBook: Carrying Cases and Static Electricity (1/93)

Revised: 5/16/94
Security: Everyone

PowerBook: Carrying Cases and Static Electricity (1/93)

==========

Article Created: 26 January 1993

TOPIC ----------

I feel static shock when I pull my PowerBook out of its home-made foam-lined carrying case. What should I do?

DISCUSSION ----------

You may be damaging your PowerBook. Do one of the following:

- Change to a commercial case designed especially for the PowerBook. A separate article in the Tech Info Library names several manufacturers.

- Wrap the PowerBook in an anti-static plastic bag before inserting it into the home-made case.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11323

Tech Info Library

MacX: X-Client Access For Macintosh Software (2/93)

Revised: 2/4/93
Security: Everyone

MacX: X-Client Access For Macintosh Software (2/93)

==========

Article Created: 26 January 1993

TOPIC ----------

Does MacX implement local X-Client access for Macintosh software such as MacWrite or Word? That is, can a person run MacWrite as an X-client (on a MacX Server) so that they can have access to it from another Macintosh?

Pieces involved: MacX Server with MacWrite. A Macintosh hooked up to the Server that wants to run MacX from the server.

DISCUSSION ----------

There seems to be some confusion as to what MacX allows you to do. The MacX 1.2 product is a full X Window System, Version 11, Release 4 server that is compatible with Macintosh system software version 7.1. You can also use MacX 1.2 on a Macintosh computer running system software version 6.0.5 or later.

MacX will allow xclients to display on a Macintosh, not a Macintosh application to display on another X Window server.

Please note that in the X Window System, the "Server" is the display where the windows are viewed and the "client" is the program being displayed.

To do what you want to do, you need a program that will turn a Macintosh into an X Window client. Two such programs are available:

• XGator, by Cayman Systems, Inc.

• XPort, by Perfect Products

Both products require a dedicated Macintosh for each X Window Server where you want the Macintosh Desktop Available. Both programs display the

Macintosh Desktop inside an X Window. You then have remote access to the Macintosh where the program is running as if you were sitting in front of it. (This is very similar to what the program Timbuktu does in the Macintosh environment.) Please keep in mind that the performance will be very dependent on the type of Macintosh being used to run the XPort or XGator program, the network traffic, and the X Window server where the Macintosh Desktop is being displayed.

To locate a vendor's address and phone number, use the vendor name as a search string.

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Tech Info Library Article Number:11324

Tech Info Library

PowerBook 100: Backup Battery Life

Revised: 5/16/94
Security: Everyone

PowerBook 100: Backup Battery Life

==========

Article Created: 27 January 1993

TOPIC ----------

How long do the PowerBook 100's backup batteries last under normal circumstances, when the main battery is not installed?

DISCUSSION ----------

This depends on system load, temperature, and the history of the backup battery. Remember, the only purpose of the backup battery is to supply the PowerBook 100 with enough power to preserve the data in memory during the short time it takes to change the main battery. It is not recommended for any other purpose.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11326

Macintosh LC III: Description (2/93) (Discontinued)

Revised: 6/3/94
Security: Everyone

Macintosh LC III: Description (2/93) (Discontinued)

==========

Article Created: 9 February 1993

TOPIC ----------

This article describes the features and benefits of the Macintosh LC III.

DISCUSSION ----------

The Apple Macintosh LC III is the most powerful member of the Macintosh LC line of desktop personal computers. It delivers the outstanding performance and versatility you need -- all in a slim-line, modular design and at an affordable price.

The Macintosh LC III is almost twice as fast as the Macintosh LC II. And the Macintosh LC III can support up to 36MB of RAM, so you can work with multiple applications simultaneously, choosing from more than 6,000 Macintosh applications.

To increase your display choices, the Macintosh LC III provides built-in support for a wide range of Apple and third-party displays, including the Macintosh Color Display (14"), the Macintosh Portrait Display (15"), and the Macintosh 16-inch Color Display. And with 512K of on-board video RAM (expandable to 768K), you get more colors than ever before from your monitor without having to purchase an additional video card.

Your hard drive options include 40MB, 80MB, and 160MB capacities, so you'll have plenty of storage space. For graphics-intensive applications, you can add a floating-point coprocessor. AppleTalk networking is built in, so there's no need to buy additional hardware if you want to access printers, or share files with others.

Multiple ports allow you to expand the system with peripheral devices such as high-capacity CD-ROM and hard drives, scanners, and modems. And a processor-direct slot assures fast access to expansion cards if you need

additional capabilities, such as Ethernet networking or Apple IIe emulation.

Product Features

Power and speed

- 25-MHz 68030 microprocessor; 32-bit data bus
- Almost twice as fast as the Macintosh LC II

Memory

- 4MB of RAM, expandable to 36MB

Display

- Supports up to 16-inch Apple displays
- 256 colors, expandable to 32,768 colors

Expansion

- Seven built-in ports for peripheral devices
- Processor-direct slot for additional expansion card
- Socket for optional math coprocessor

Ordering Information

Macintosh LC III 4/80

Order No. M1312LL/A

- Macintosh LC III computer with 4MB of RAM, 512K of VRAM, built-in 1.4MB Apple SuperDrive, and internal 80MB hard disk drive
- Keyboard
- Mouse
- Complete setup, learning, and reference documentation
- System software
- Training disk
- Limited warranty statement

Other Macintosh LC III configurations

- 8MB of RAM
- Internal 40MB or 160MB hard disk
- Without keyboard

Macintosh LC III expansion cards

- Apple Ethernet LC Card
- Apple IIe Card

Macintosh LC III Upgrade Kit (dealer installation recommended)

Order No. M1386LL/A

- Macintosh LC III logic board and hardware upgrade
- System software
- Complete learning and reference documentation
- Limited warranty statement

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Tech Info Library Article Number:11328

Tech Info Library

Macintosh LC III: Specifications (2/93) (Discontinued)

Revised: 6/3/94
Security: Everyone

Macintosh LC III: Specifications (2/93) (Discontinued)

==========

Article Created: 9 February 1993

TOPIC ----------

This article gives technical specifications for the Macintosh LC III computer.

DISCUSSION ----------

Microprocessor

- MC68030, 25 MHz clock speed, motherboard clock 25 MHz; 32-bit data bus
- Socket for optional floating-point unit (FPU)
- Integrated Paged Memory Management Unit (PMMU)

Memory

- Comes with 4MB of RAM on the logic board
- Expandable to 36MB by adding one SIMM to a single 72-pin slot
- Includes RAM disk software

Disk drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 40MB, 80MB, or 160MB hard disk
- Optional external AppleCD CD-ROM drive

Video display

Supports several displays, including:
- Macintosh 12-inch Monochrome Display
- Macintosh 12-inch RGB Display
- AppleColor High-Resolution RGB Display (13")
- Macintosh Color Display (14")
- Macintosh Portrait Display (15")

- Macintosh 16-inch Color Display
- Third-party monitors
- VGA monitors

Video RAM (VRAM)

- 512K standard supports:
  - 32,768 colors on the Macintosh 12-inch RGB Display
  - 256 colors on the AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16-inch Color Display
  - 256 shades of gray on the Macintosh 12-inch Monochrome Display
  - 16 shades of gray on the Macintosh Portrait Display (15")

- 768K option supports:
  - 32,768 colors on the Macintosh 12-inch RGB Display, AppleColor High-Resolution RGB Display (13"), and Macintosh Color Display (14")
  - 256 colors on the Macintosh 16-inch Color Display
  - 256 shades of gray on the Macintosh 12-inch Monochrome Display and Macintosh Portrait Display (15")

Interfaces

- Internal expansion slot for one Macintosh LC processor-direct expansion card
- SCSI interface for connecting up to six external peripheral devices
- Two serial (RS-232/RS-422) ports
- One video port for color and monochrome displays of various sizes and resolutions
- One sound-output port (monaural) for external audio amplifier or headphones
- One sound-input port for monaural sound input
- One Apple Desktop Bus (ADB) port for a keyboard, mouse, and other devices

Sound Generator

- Monophonic 8-bit digital-analog conversion using 22-kHz sample rate -— capable of driving stereo headphones or other stereo equipment through the sound jack

Keyboard and Mouse

- Several ADB keyboards with numeric keypads available
- Apple Desktop Bus Mouse II

Clock/Calendar

- Custom integrated circuit with long-life lithium battery

Disability Access

- CloseView, Easy Access, and visible-beep software are built in.
- Third-party options provide alternative input and output devices

Power Requirements

- Line voltage: 100 to 240 V AC, RMS single phase, automatically configured
- Frequency: 47 to 63 Hz
- Power: 30 W maximum, not including display power

ADB Power Requirements

- Maximum current draw for all ADB devices: 200 mA (three ADB devices maximum is recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA (varies with keyboard model used)

Size and Weight

Main unit:

- Height: 3.2 in. (8.1 cm)
- Width: 12.2 in. (31.0 cm)
- Depth: 15.0 in. (38.2 cm)
- Weight: 8.8 lbs (4.0 kg) varies with internal devices installed

Mouse:

- Height: 1.3 in. (3.3 cm)
- Width: 2.4 in. (6.2 cm)
- Depth: 4.2 in. (10.7 cm)
- Weight: 4.0 oz (0.10 kg)

Operating Environment

- Operating temperature: 50 to 104° F (10 to 40° C)
- Storage temperature: –40 to 116.6° F (–40 to 47° C)
- Relative humidity: 20% to 80% noncondensing
- Maximum altitude: 10,000 ft. (3,048 m)

System Software Requirements

Requires System 7.1 or later and the System Enabler 003.

Ordering Information

Macintosh LC III 4/80
Order No. M1312LL/A

- Macintosh LC III computer with 4MB of RAM, 512K of VRAM, built-in 1.4MB Apple SuperDrive, and internal 80MB hard disk drive
- Keyboard
- Mouse
- Complete setup, learning, and reference documentation
- System software
- Training disk
- Limited warranty statement

Other Macintosh LC III configurations
- 8MB of RAM
- Internal 40MB or 160MB hard disk
- Without keyboard

Macintosh LC III expansion cards
- Apple Ethernet LC Card
- Apple IIe Card

Macintosh LC III Upgrade Kit (Dealer installation recommended)
Order No. M1386LL/A
- Macintosh LC III logic board and hardware upgrade
- System software
- Complete learning and reference documentation
- Limited warranty statement

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Tech Info Library Article Number:11329

Tech Info Library

Perfect Products

Revised: 1/28/93
Security: Everyone

Perfect Products

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Article Created: 27 January 1993

Perfect Products, specializing in X-Windows software for the Macintosh. Their XPort product turns a Macintosh into an X Windows System Client.

Perfect Products
1015 Creighton Road
Papillion, NE 68128

Phone: 402-339-5507

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Tech Info Library Article Number:11330

Tech Info Library

Macintosh LC III: New Processor Direct Slot (2/93)

Revised: 2/4/93
Security: Everyone

Macintosh LC III: New Processor Direct Slot (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article describes the upgraded LC PDS (Processor Direct Slot) on the Macintosh LC III.

DISCUSSION ----------

The Macintosh LC III supports a new kind of LC compatible PDS slot. It is now 114 pins, allowing support for 32-bit bus master cards while also supporting most existing 96-pin cards designed for the Macintosh LC and LC II.

This is achieved by a gap in the connector allowing a 96-pin card to fit. The connector is actually a 120-pin connector with pins 96 through 114 cut out. In profile, it looks something like this:

```
xxxxxxxx       xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
x      x       x                             x
x      xxxxxxxxx                             x
x                                            x
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
120    112     106                           1
```

Some cards designed for the Macintosh LC and Macintosh LC II do not work in the Macintosh LC III because of space constraints or because they expect to be 16-bit bus masters.

Check with the manufacturer of a given card to make sure it's compatible with the Macintosh LC III.

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Tech Info Library Article Number:11331

TrueType Fonts: Use on PCs and Site License Issues (12/94)

Revised: 12/14/94
Security: Everyone

TrueType Fonts: Use on PCs and Site License Issues (12/94)

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Article Created: 27 January 1993
Article Reviewed/Updated: 14 December 1994

TOPIC ----------

With the new Imaging Products (like the Color Printer) Apple ships an expanded set of fonts called the Apple Font Library.

Do I have to purchase Apple Font Packs for each user?

Can the TrueType files be legally converted to MS-DOS TrueType format (via an available shareware package called TT Converter) for use with Windows 3.1 users who may be sharing a LaserWriter Pro, for example?

DISCUSSION ----------

The licensing agreement for the TrueType fonts that ship with the various printers covers a single user. Other users can access some of the fonts via system software, but must purchase the font pack if they want to use all the available TrueType fonts that ship with the printers.

You can't legally convert the fonts to MS-DOS TrueType format. Using a Macintosh-to-Windows font conversion application with a TrueType font isn't covered under the licensing agreement, and isn't legal at this time. We realize that this creates an awkward situation for printers installed for many users, and in mixed environments. Apple is working on a site licensing agreement.

Monotype Typography sells cross-platform TrueType font sets for the Macintosh and PC. They have identical font sets for both environments.

Article Change History:
14 Dec 1994 - Reviewed for technical accuracy.
24 Sep 1993 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:11332

Tech Info Library

Macintosh Operating System: Maximum Volume Size (10/96)

Revised: 10/31/96
Security: Everyone

Macintosh Operating System: Maximum Volume Size (10/96)

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Article Created: 26 January 1993
Article Reviewed/Updated: 31 October 1996

TOPIC ----------

We have been seeing some strange results when trying to use volumes larger than 2 GB. What is the maximum volume size supported by the Macintosh operating system?

DISCUSSION ----------

Prior to System 7.5, the Macintosh operating system did not support volume (not drive) sizes greater than 2 GB. System 7.5 increased that limit to 4 GB and System 7.5.2 (and later) increases that limit to 2 terabytes on some computers, including:

- PowerBook 190, 1400, 5300 series and Duo 2300c/100.
- Macintosh Performa 5400 and 6400 series and 6360/160
- Power Macintosh 5400, 6400, 7200, 7500, 7600, 8500, and 9500 series
- Workgroup Server 7250/120 and Workgroup Server 8550 series

With versions of the Macintosh operating system previous to System 7.5 we recommend making the volume sizes slightly less than 2 GB to ensure that you do not run into any limitations.

This means that if you have a hard disk drive with a formatted capacity larger than the 2 GB, you must partition it into multiple volumes smaller than 2 GB. Currently, we have found that a partition size at least 1 MB smaller than 2 GB seems to work acceptably.

Possible symptoms of volumes equal to, or larger than the 2 GB limit include:

• Negative file sizes

• Inability to copy files because "More space is needed" even though plenty of space is available.

- Similar symptoms on Novell (or other) servers when the volumes published over the network are larger than 2 GB.

This is a hard limitation. There are no workarounds other than partitioning the drive into multiple volumes or updating your computer and any client computers that may log on to the volume to System 7.5.x.

Article Change History:
31 Oct 1996 - Noted which computers supported 2 terabytes.
10 Oct 1995 - Reviewed for technical accuracy.
08 Sep 1995 - Added System 7.5.x information.

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Tech Info Library Article Number:11333

Tech Info Library

Three Fonts that Print Incorrectly (7/93)

Revised: 7/16/93
Security: Everyone

Three Fonts that Print Incorrectly (7/93)

==========

Article Created: 28 January 1993
Article Reviewed/Updated: 16 July 1993

TOPIC ----------

We've had problems printing Helvetica, Helvetica Narrow, and New Century SchoolBook. The fonts may appear correctly on screen, but don't print correctly. It usually becomes apparent with recent System 7.1 upgrades or after installing New Helvetica Narrow or New Century SchoolBook fonts.

DISCUSSION ----------

Symptoms

Most users will see these problems after upgrading to System 7.1 or after installing N Helvetica Narrow or New Century SchoolBook. We haven't seen these problems under System 6, but we haven't tested it either.

- Glyphs appear correctly on screen, but print incorrectly for Helvetica, Helvetica Narrow, and New Century SchoolBook. For example, a bullet (option-8) or (•) appears on screen but a yen symbol (option-y) or (¥) prints on the printer. Another example are smart quotes (option-[, shift-option-[) or (“”) appear on screen but a blank space prints on the printer.

- There's a spacing problem associated with Helvetica when N Helvetica Narrow is present, but NOT in the same suitcase. What appears on the screen in any application when Helvetica Bold is selected is N Helvetica Narrow Bold. When printing to any PostScript LaserWriter, the line length and word spacing are incorrect because the LaserWriter uses Helvetica, but the program that formatted the text uses N Helvetica Narrow in place of Helvetica even though Helvetica is selected in the Font menu.

  The appearance on the printed page shows words with spacing too large between them, and lines that are cut off on the right side of the page.

This happens because the Helvetica font characters are wider than the Narrow Helvetica characters used by a program to format word spacing and line lengths.

Using the LaserWriter 8.0 driver causes the printed page to not have cut off line endings. It seems to crunch the word and characters together on each line to make it fit the page width, but the printed page doesn't match what's on the screen.

Fonts Affected and Their Sources

These are the fonts affected:

- Helvetica
- Helvetica Narrow
- New Century SchoolBook

These fonts usually come from the LaserWriter II 5.0 disks. Also, you'll find them on disks shipping with the following three printers:

- Original StyleWriter
- LaserWriter IISC
- LaserWriter IIf or IIg

Please note that none of these are currently shipping products.

Workaround

The workaround is to reinstall an unaffected font (either bitmap or TrueType). This updates the 'FOND' resource of the affected family, and corrects the problem. You can use a bitmap font from the printer disks for Helvetica Narrow and New Century Schoolbook. You will need to find a Helvetica font from some other source such as system disks.

Article Change History:
07/16/93 - Revised with detailed sections on symptoms, fonts involved, and one workaround.
06/29/93 - Updated to include another symptom
06/04/93 - Updated to show which LaserWriters are affected
04/22/93 - Updated to include sources for replacement fonts

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Tech Info Library Article Number:11335

Tech Info Library

LaserWriter Pro: Printing from Windows Over a Network (1/93)

Revised: 2/4/93
Security: Everyone

LaserWriter Pro: Printing from Windows Over a Network (1/93)

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Article Created: 28 January 1993

TOPIC ----------

Will the Microsoft Windows and MS/DOS drivers included with the LaserWriter Pro printers print over a network (such as Ethernet), or will they only allow printing to the LaserWriter Pro's serial or parallel ports?

DISCUSSION ----------

The print drivers included in the LaserWriter Pro Windows diskette alone do not provide the capability of network access (Ethernet, for example) from a PC. These drivers will provide PostScript output from a PC connected through serial or parallel cabling.

To gain direct network access using these drivers, customers need additional network access software. An example of this software is Farallon's PhoneNetPC 3.0, which is part of the PhoneNetTalk PC card.

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Tech Info Library Article Number:11336

Tech Info Library

Macintosh LC, LC II, and LC III Compared (3/94)

Revised: 3/31/94
Security: Everyone

Macintosh LC, LC II, and LC III Compared (3/94)

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Article Created: 5 February 1993
Article Reviewed/Updated: 31 March 1994

TOPIC

This article compares primary differences within the LC family.

DISCUSSION

	LC	LC II	LC III
PROCESSOR:	16 MHz 68020	16 MHz 68030	25 MHz 68030
RAM:	2 MB expandable to 10 MB	4 MB expandable to 10 MB	4 MB expandable to 36 MB
DATA PATH:	16 - bit	16 - bit	32 - bit
VIDEO:	1 - 16 bits/pixel	1 - 16 bits/pixel	1 - 16 bits/pixel
PDS:	One 96 - pin PDS	One 96 - pin PDS	One 114 - pin PDS
FPU:	Third Party	Third Party	Socket for optional FPU
MONITOR:	12" Mono, 12" RGB, 13" RGB, 14" RGB, VGA	12" Mono, 12" RGB, 13" RGB, 14" RGB, VGA	12" Mono,12" RBG, 13" RGB 14" RGB, 15" RBG, 16" RGB VGA

HARD DISK:	40 MB, 80 MB	40 MB, 80 MB	40 MB, 80 MB, 160 MB

NOTE: Performa 400,405, and 430 are basically the same as the Macintosh LC II.
The Performa 450 is basically the same as the Macintosh LC III.

Article Change History
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31 March 1994 - Removed necessity to review at product intro.
19 July 1993 - Revised for technical accuracy
12 July 1993 - Revised to add a note about Performa computers.

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Tech Info Library Article Number:11338

Tech Info Library

Quadra 800 and Quadra 950 Compared (2/93)

Revised: 2/4/93
Security: Everyone

Quadra 800 and Quadra 950 Compared (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

What are the differences between the Macintosh Quadra 800 and the Macintosh Quadra 950?

DISCUSSION ----------

The Quadra 800 runs more than 30 percent faster than a Quadra 700, which it replaces -- and at a more affordable price. (The Quadra 950 remains on the price list.)

Although the Quadra 800 and Quadra 950 have the same 68040 processor, both operating at 33 megahertz, the 950 has greater expansion options than the Quadra 800. For example, you can expand the DRAM in the 950 to 256MB, compared to 136MB in the Quadra 800. The Quadra 950 has two additional NuBus expansion slots as well.

The Quadra 800 may run 5 to 10 percent faster than a Quadra 950 in certain applications, largely due to memory and video management improvements via custom integrated circuits (ICs). However, because it has greater memory and expansion capabilities, a fully configured Quadra 950 may outperform the Quadra 800 in certain applications.

At-a-glance comparison: Quadra 800 and 950

	Quadra 800	Quadra 950
Processor	33 MHz 68040	33 MHz 68040
RAM	Up to 136MB interleaved	Up to 256MB
VRAM	2 - 16 bits/pixel	2 - 32 bits/pixel

NuBus	3 slots, 1 PDS	5 slots, 1 PDS
Internal Storage Devices	1 3.5", 1 5.25" (removable)	Up to 4 5.25" devices
Ethernet	Standard	Standard
Hard Disk	230MB, 500MB, 1GB	230MB, 500MB, 1GB
Sound	Mono In, Stereo Out, 44.1 KHz internal CD sound play through.	Mono In, Stereo Out, 44.1 KHz internal CD sound play through.
System Software	System 7.1 w/ Enabler	System 7.1

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Tech Info Library Article Number:11339

Tech Info Library

Macintosh 800,840av, 8100,8500: Internal SCSI Devices (11/95)

Revised: 11/27/95
Security: Everyone

Macintosh 800,840av, 8100,8500: Internal SCSI Devices (11/95)

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Article Created: 9 February 1993
Article Reviewed/Updated: 27 November 1995

TOPIC ----------

How many internal SCSI devices can be installed in the Macintosh Quadra 800, 840av and Power Macintosh 8100 and 8500 series computers?

DISCUSSION ----------

Because of space limitations, up to three internal SCSI devices can be placed into these computers. The primary variables are the type and capacity of drives you want.

- One 3.5-inch hard disk.
- One half-height 5.25-inch device such as an internal CD-ROM player.
- One full- height 3.5-inch device such as a removable cartridge drive, DAT drive, or another SCSI hard disk.

IMPORTANT: Modification of the internal components of your computer may void your warranty. Contact an Apple-authorized service provider for installation assistance.

Article Change History:
27 Nov 1995 - Added additional computers.

Support Information Services

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Tech Info Library Article Number:11340

Tech Info Library

Quadra 800: Monitor Support (3/94)

Revised: 3/11/94
Security: Everyone

Quadra 800: Monitor Support (3/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 11 March 1994

TOPIC ----------
What monitors does the Macintosh Quadra 800 support, and at what bit depth?

DISCUSSION ----------

The baseline VRAM configuration of the Quadra 800 is 512K. The maximum amount of installable VRAM is 1MB. The Quadra 800 supports up to two banks of VRAM, the same 128K by 16 VRAM SIMM used in previous Quadra models. Unlike the Quadra 950, the Quadra 800 dos not support video convolution.

The baseline configuration of 512K VRAM supports:

- 16 bits per pixel on the Macintosh 12" RGB Display
- 8 bits per pixel on the Macintosh 12" Monochrome Display, the AppleColor 13" RGB Display, Apple Color Display (14" display), and the Apple 16" Color Display.
- 8 bits per pixel on 640 x 480 NTSC, 768 x 576 PAL, and 800 x 600 SVGA monitors.
- 4 bits per pixel on the Apple Macintosh Portrait Display and Macintosh 21" Color Display.

The 1MB VRAM configuration adds support for:

- 8 bits per pixel on the Macintosh 21" Color Display.
- 16 bits per pixel on the Apple Color Display (14") and the Apple 16" Color Display.
- 16 bits per pixel on 640 x 480 NTSC, 768 x 576 PAL, and 800 x 600 SVGA

monitors.

Article Change History:
11 March 1994 - Corrected pixel depth of 21" Color Display with base and expanded VRAM.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:11341

Tech Info Library

Quadra 800: Description (Discontinued 3/94)

Revised: 3/14/94
Security: Everyone

Quadra 800: Description (Discontinued 3/94)

==========

Article Created: 9 February 1993
Article Reviewed/Updated: 14 March 1994

TOPIC ----------

This article describes the Macintosh Quadra 800 which Apple discontinued on 14 March 1994.

DISCUSSION ----------

The Macintosh Quadra 800 features a 33 MHz Motorola microprocessor, accelerated graphics architecture, and improved SCSI and NuBus capabilities.

The key features of the Quadra 800 are:

- Motorola 68040, 33 MHz
- 8MB DRAM standard, expandable to 136MB DRAM, using 32MB SIMMs
- Supports up to 16 bits per pixel (bpp) on all Apple displays
- Improved I/O with a clock frequency of 33 MHz
- Up to three internal SCSI devices, including the AppleCD 300i or third-party internal CD-ROM drive
- Three NuBus slots
- Built-in Ethernet
- Mini tower design
- System Software 7.1 and System Enabler 040
- System configurations of 230MB, 500MB, and 500MB/CD available at introduction

Form Factor

The Macintosh Quadra 800 computer has a new form factor, called a mini-tower, which can be either desk or floor standing. The Quadra 800 can support up to three internal SCSI devices.

The Macintosh Quadra 800 can have:

- One internal 3.5 device (hard disk)
- One internal 5.25 removable device (can be CD-ROM or Syquest drive)
- One internal 3.5 removable device (3.5 removable media, tape drive, or another hard disk)

Motorola MC68040 Microprocessor

Central to the Quadra 800 is the processor chip from Motorola, the 68040 (040) running at 33 MHz. This is the same processor included in the Quadra 950.

The 68040 is mounted to the logic board with a socket, and a heat sink is clipped onto the socket rather than glued to the 040. This allows easier servicing if required. It's important to close the case when the Quadra 800 is running to assure proper cooling of the 040.

DRAM Support

The Quadra 800 uses the industry-standard 60ns 72-pin SIMMs. Current Apple SIMMs won't work in the Quadra 800. The Quadra 800 supports memory interleaving. Any SIMM can go into any of the four SIMM slots in any order. It doesn't support 1MB, 2MB, or 64MB 72-pin SIMMs.

Integrated Circuit Improvements

The ten custom integrated circuits (ICs) in the Quadra 700 have been reduced to three major ICs in the Quadra 800. The KIWI IC controls NuBus; the IOSB IC integrates the I/O controller, SWIM II, VIAs, Sound and the I/O Bus; and the DJMEMC IC integrates the memory controller, frame controller, and bus arbitration. The result is improved video and memory management, improved input/output of all ports and drives, and faster NuBus throughput.

Configurations and What's in the Box

At introduction, there are three Macintosh Quadra 800 configurations:

- 8/230MB
- 8/500MB
- 8/500MB/CD

Each unit includes a power cord, keyboard cable, mouse, microphone, and system software.

System software includes System 7.1, System Enabler 040, Color Macintosh Basics, QuickTime 1.5, and HyperCard Runtime.

Those units that include an AppleCD 300i will receive all system software on a bootable CD-ROM, which can double as a rescue disk. A CD Sampler pack is also included (the number and titles of the pack will vary).

The documentation includes:

- Getting Started with your Macintosh Quadra 800
- Macintosh User's Guide
- Compatibility list

Upgrades

No upgrade path for Macintosh Quadra 700 owners is offered.

Article Change History:
14 March 1994 - Added Discontinued information to title and topic lines.
9 March 1993 - REVISED, To remove a statement that any SIMM (4MB and higher) can go into any of the four SIMM slots in any order. It doesn't support 1MB, 2MB, or 64MB 72-pin SIMMs.

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Tech Info Library Article Number:11342

Tech Info Library

Macintosh Quadra 800: Specifications (Discontinued)

Revised: 10/21/94
Security: Everyone

Macintosh Quadra 800: Specifications (Discontinued)

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Article Created: 9 February 1993
Article Reviewed/Updated: 21 October 1994

TOPIC ----------

This article gives the technical specifications for the Macintosh Quadra 800 computer, which was discontinued on 14 March 1994.

DISCUSSION ----------

Microprocessor

- Motorola 68040, 32-bit architecture, 33 MHz clock speed; main logic board clock 33 MHz
- Integral Paged Memory Management Unit (PMMU), Floating Point Unit (FPU), and 8-kilobyte cache architecture

I/O Speed

- 25 MHz

Memory

- Comes with 8MB of RAM standard and four memory expansion slots for 60ns 72-pin SIMMs. Current Apple SIMMs don't work in the Quadra 800. It doesn't support 1MB, 2MB, or 64MB 72-pin SIMMs.
- Expandable to 136MB of RAM by installing 32MB SIMMs in each of the four SIMM slots.

Disk Drives

- Built-in Apple SuperDrive 1.4MB floppy disk drive
- 230MB or 500MB internal Apple SCSI hard disk drive (optional)
- Support for two internal SCSI devices, such as a CD-ROM or DAT drive, or SCSI hard disk drive (several capacities available)

Video Display

- Up to 16 bits per pixel (bpp) video support for all Apple monitors standard (Macintosh Color Display (14-inch) Macintosh 16" Color Display and require 1MB VRAM.)

- Supports all Apple monochrome and color monitors, including:
  - Macintosh 12" RGB Display
  - Macintosh 12" Monochrome Display
  - AppleColor High-Resolution RGB Monitor
  - Macintosh Color Display (14" display)
  - Apple Macintosh Portrait Display
  - Macintosh 16" Color Display
  - Macintosh Two-Page Monochrome Monitor
  - Macintosh 21" Color Display

- Supports some other non-Apple monitors, including VGA, SVGA, NTSC and PAL 19" monitors.

Video RAM

- 512K VRAM, upgradable to 1MB for display of more colors or shades of gray.

Interfaces

- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices daisy-chained through a synchronous serial bus.
- Two serial (RS-232/RS-422) ports, 230.4 kilobits per second maximum (up to 0.920 megabits per second if clocked externally)
- SCSI bus interface
- Video port to support RGB and monochrome monitors of various sizes and resolutions
- Three internal NuBus expansion slots.
- One 68040 PDS (processor-direct slot) provides access to the CPU for highest possible performance.
- Stereo sound output port capable of delivering sound to both channels of a stereo device
- Sound input port for monaural sound input.
- Two audio line input ports (stereo input is mixed to a monophonic signal)
- AUI-15 Ethernet connector

Keyboard

- Supports all ADB (Apple Desktop Bus) keyboards.

Mouse

- Apple Desktop Bus Mouse II; mechanical tracking, optical shaft, or contact encoding.

Sound Generator

- Custom sound chip drives stereo miniature phone jack headphones or stereo equipment.

Clock/Calendar

- Custom chip with long-life lithium battery.

Microphone

- Electret, omnidirectional; output voltage is 4 millivolts, peak-to-peak, at normal volume.

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These built-in features and third-party options provide alternative input and output tools for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 volts AC
- Frequency: 50 to 60 Hz, single phase
- Power: 200 watts maximum, not including monitor power

ADB Power Requirements

- Maximum current draw for all ADB devices: 200 milliamps
- Mouse draws 80 milliamps.
- Keyboard draws 25 to 80 milliamps, depending on the keyboard model used.

Operating Environment

- Operating temperature: 50 to 104° F (10 to 40° C)
- Storage temperature: -40 to 116.6° F (-40 to 47° C)
- Relative humidity: 5% to 95 noncondensing
- Maximum altitude: 10,000 ft. (3,048m)

Size and Weight

- Main unit
  - Height 14.25 inches (46.2 cm)
  - Width 8.9 inches (22.5 cm)
  - Depth 16 inches (40.5 cm)
  - Weight 24 lb. (16.7 kg) varies with disk drive options installed

- Mouse
  - Height 1.1 inches (2.8 cm)
  - Width 2.1 inches (5.3 cm)
  - Depth 3.8 inches (9.7 cm)
  - Weight 6 oz. (.17 kg)

Noise Level

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  < 40 db (floor standing position) measured from the seated operator
  position.

Article Change History:
21 Oct 1994 - Corrected dimension specs.
18 Mar 1994 - Added "Macintosh" to title.
14 Mar 1994 - Added discontinued information announced 14 March 1994.

Support Information Services

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Tech Info Library Article Number:11343
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Centris & Quadra Families: Bootable CD-ROM (7/94)

Revised: 7/13/94
Security: Everyone

Centris & Quadra Families: Bootable CD-ROM (7/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 13 July 1994

TOPIC ----------

The Macintosh Centris and Quadra models that ship with a factory-installed internal CD-ROM drive are bundled with a bootable CD-ROM. This article describes that bootable CD-ROM.

DISCUSSION ----------

The CD-ROM includes the current versions of System Software, HyperCard Player, QuickTime, CD Setup, At Ease, and Color Macintosh Basics.

This approach has several advantages:

- It offers the customer one source for all system software resources, including System Software with the System Enabler, QuickTime, Macintosh Basics, and CD Setup.

- You can install software directly from the CD, or make a set of backup floppies from the CD. The CD uses an At Ease interface to simplify these tasks.

However, the CD is not meant to be a permanent startup disk, but used as a backup and archive of system software.

There are two ways to start up from the Install Me First CD once it has been inserted into the CD-ROM drive:

- Select the CD-ROM as the startup device in the Startup Disk control panel and restart.

- Bypass the internal hard disk by starting up with the Command-Option-Shift-Delete key combination held down.

NOTE:
Another reference for installation is the System Software Installation & Backup guide that ships with Macintoshe computers containing CD-ROM drives. Make sure to use the disc that ships with your system as different discs contain different System Enablers.

Article Change History:
13 Jul 1994 - Reviewed for technical accuracy.
23 Sep 1993 - Included how to boot from the Install Me First CD
29 Jul 1993 - Modified article to include all Centris and Quadra models.

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Tech Info Library Article Number:11344

Tech Info Library

Centris and Quadra Computers: Internal CD-ROMs (1/95)

Revised: 1/4/95
Security: Everyone

Centris and Quadra Computers: Internal CD-ROMs (1/95)

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Article Created: 9 February 1993
Article Reviewed/Updated: 4 January 1995

TOPIC ----------

Can you install an internal CD-ROM drive in a Macintosh Centris or Macintosh Quadra computer?

DISCUSSION ----------

All Macintosh Quadra and Centris computers, except Quadra 605 and Quadra 700 computers, have space for an internal CD-ROM drive or other 5.25-inch full-height device.

Although various configurations of Centris and Quadra computers are available with the AppleCD 300i factory-installed, Apple offers several AppleCD 300i upgrade kits:

Product Number:	Description:
B1332LL/A	AppleCD 300i Drive Kit, Centris 610 & 660AV
B1329LL/A	AppleCD 300i Drive Kit, Centris 650
B1328LL/A	AppleCD 300i Drive Kit, Quadra 900 & 950
B1330LL/A	AppleCD 300i Drive Kit, Quadra 800 & 840AV

Article Change History:
04 Jan 1995 - Added, except Quadra 605 and 700 computers.
18 Aug 1993 - Revised and retitled to include all Centris and Quadra computers and accompanying AppleCD 300i kit information.

Support Information Services

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Tech Info Library Article Number:11345

Tech Info Library

Centris 610 & 650, Quadra 800: Memory Interleaving & DRAM (7/94)

Revised: 7/28/94
Security: Everyone

Centris 610 & 650, Quadra 800: Memory Interleaving & DRAM (7/94)

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Article Created: 5 February 1993
Article Reviewed/Updated: 28 July 1994

TOPIC -----

The Macintosh Centris 650 and Quadra 800 support memory interleaving. What is memory interleaving, and what DRAM can I use?

In this document, the Centris 650 and Quadra 650 can be used interchangably.

DISCUSSION -----

Memory Interleaving occurs on the Centris 650 and Quadra 800 computers when same-size SIMM pairs are used: for example, two 8MB SIMMs. This allows the memory subsystem to perform certain operations faster. Basically, it allows the memory subsystem to write to the same memory address in different banks of memory before incrementing the address. Depending on how memory intensive the application, this can improve performance 5 to 10%. A system in the interleaved configuration will perform at its highest level.

The Centris 610, Centris 650, and Quadra 800 use 72-pin DRAM SIMMs, which are widely available in the Intel market and offer a full "bank" of DRAM on one SIMM.

The Centris 610 and 650 use 80ns SIMMs, and the Quadra 800 uses 60ns SIMMs. They are available in single- and double-sided formats, and are offered in many different sizes:

- 4MB (single sided, offered by Apple)
- 8MB (double sided, offered by Apple)
- 16MB (single sided)
- 32MB (double sided)

Here are the 72-pin SIMMs that these computers DON'T support:

- 1MB

- 2MB
- 64MB

Note: All of these systems -- Centris 610, Centris 650, and Quadra 800 -- have flexible memory systems. Any supported SIMM size can go into any SIMM socket in any order.

Do NOT use composite memory with any 610, 650 or 800 Macintosh.

Article Change History
28 Jul 1994 - Revised formatting, added Quadra name to document.
09 Mar 1993 - Removed statement that any size SIMM (4MB or greater) can go into any SIMM socket in any order, because 1MB, 2MB, and 64MB SIMMs aren't supported.

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Tech Info Library Article Number:11346

Tech Info Library

Centris 610 & 650, Quadra 800: NuBus Information (7/94)

Revised: 7/28/94
Security: Everyone

Centris 610 & 650, Quadra 800: NuBus Information (7/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 28 July 1994

TOPIC ----------

What are the changes in the NuBus implementation in the Macintosh Centris 610, Centris 650, and Quadra 800? How does each system support it?

The information in this article relative to the Centris 610 and Centris 650 is also relevant to the Quadra 610 and Quadra 650.

DISCUSSION ----------

NuBus Implementation

The NuBus implementation in the Centris 610, Centris 650, and Quadra 800 utilizes the same signals used in previous Quadra computers. These NuBus slots utilize many of the features specified in the NuBus90 standard.

NuBus '90 is the 1990 proposal for revision of the IEEE standard for the NuBus (IEEE STD R1196-R-1990). Apple has a representative on the panel designing the new standards, and has had since its inception. The specifications for NuBus '90 are incomplete and still under development, but Apple has implemented the portion of the specifications that are completed, and will be updating the implementation as the specs expand and stabilize. The NuBus slots in the Centris 610, Centris 650, and Quadra 800 provide the following new features described in that proposal:

- Low current at +5 V is available on the new STDBYPWR pin when main power is off and the AC cord is plugged in.

- New signals /TM2, /CLK2X, and /CLK2XEN support block transfers at double the standard rate (20 MHz). Double-rate block transfers are supported between NuBus cards, but does not transfer to or from the main memory (this remains at 10 MHz).

- NuBus '90 defines new signals SB0 and SB1 for a serial bus on the formerly reserved pins A2 and C2. The serial bus signals are bused and terminated, but the main circuit board does not drive them.

- NuBus '90 defines new signals /CM0, /CM1, /CM2, and /CBUSY to support a cache coherency protocol. Pins on the NuBus connector are assigned to those signals, but the current systems do not support them.

The following table lists the new signals described in the proposal for NuBus 90.

NuBus '90 signals on the NuBus connector

Pin #	Signal name	Function
A2	SB0 !	High-speed serial bus, defined in P1394 proposal.
C2	SB1 !	High-speed serial bus, defined in P1394 proposal.
B8	/TM2	New transfer mode: requests double-speed transfer.
B9	/CM0 !	For cache-coherency operations.
B10	/CM1 !	For cache-coherency operations.
B11	/CM2 !	For cache-coherency operations.
B24	/CLK2X	Synchronizes double-speed block transfers.
B25	STDBYPWR	Small current at +5 V when main power is off; enables the card to turn main power on by asserting /PFW signal.
B26	/CLK2XEN	If not connected to other NuBus ’90 signals, this line enables /CLK2X driver.
B27	/CBUSY	Used with cache-coherency operations.

! - These signals are not driven or monitored.

CPU NuBus Support

The Centris 610 has one expansion slot, which can be used by a PDS adapter or by a NuBus adapter similar to the one used in the Macintosh IIsi. This expansion slot is a 140-pin dual position edge connector. The NuBus adapter contains the NuBus interface circuitry and has a single NuBus connector.
NuBus cards must follow the small-size NuBus standard: a maximum of seven inches long and use a maximum 10W of power. NuBus cards that follow the seven-inch standard can be used in any NuBus-equipped Macintosh.

The Centris 650 and Quadra 800 each support three NuBus slots, one more than the Quadra 700, that may draw up to 15W each. These NuBus slots are addressed as $C, $D, and $E. The PDS slot lines up with slot $E, either the PDS slot or slot $E may be used -- but not both.

A single chip, the KIWI ASIC, provides the interface between the system bus and NuBus.

For Further Information

For further details on the KIWI ASIC, see the related Tech Info Library article "Macintosh Centris 610, Centris 650, Quadra 800: Custom ICs".

For complete specifications and a discussion of NuBus, refer to Developing Cards and Drivers for the Macintosh Family, third edition.

Article Change History:
28 Jul 1994 - Added Quadra name to document.

Support Information Services

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Tech Info Library Article Number:11347

Tech Info Library

Centris 610 & 650, Quadra 800: SCSI Termination (7/94)

Revised: 7/28/94
Security: Everyone

Centris 610 & 650, Quadra 800: SCSI Termination (7/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 28 July 1994

TOPIC -----

This article describes the new SCSI termination scheme on the Macintosh Centris 610, Centris 650, and Quadra 800.

The information in this article relative to the Centris 610 and Centris 650 is also relevant to the Quadra 610 and Quadra 650.

DISCUSSION -----

The Macintosh Centris 610, Centris 650, and the Quadra 800 incorporate a new active SCSI termination scheme that is automatically enabled depending on the state of the SCSI bus termination.

Because the Centris 610 and 650 and Quadra 800 can have multiple internal SCSI drives, the length of the internal SCSI bus (PCB traces + cable) requires that both ends of the SCSI bus be terminated.

When a terminated external SCSI chain is plugged into the external SCSI port, the logic board termination near that external port must be disabled. The new termination automatically senses at reset whether the external and internal ports are terminated. If either port is not terminated, then the active termination is enabled. If both ports are already terminated, then the active termination is disabled.

Article Change History
28 Jul 1994 - Added reference to Quadra 610 and 650 to aid in searching.
01 Apr 1993 - Revised to eliminate a confusing description.

Support Information Services

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Tech Info Library Article Number:11348

Tech Info Library

Centris 610 & 650, Quadra 800: A/UX Support 7/94)

Revised: 7/28/94
Security: Everyone

Centris 610 & 650, Quadra 800: A/UX Support 7/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 28 July 1994

TOPIC ----------

Do the Macintosh Centris 610, Centris 650, and Quadra 800 support A/UX?

The information in this article relative to the Centris 610 and Centris 650 is also relevant to the Quadra 610 and Quadra 650.

DISCUSSION ----------

With the release of A/UX 3.0.1 the Centris 650 (with optional FPU) and Quadra 800 support A/UX. Because the Centris 610 lacks an FPU it, therefore, cannot run A/UX (unless there is a FPU upgrade solution from a third party).

Article Change History:
28 Jul 1994 - Added reference to Quadra 610 and 650 to aid in searching.
03 Aug 1993 - Updated to include A/UX 3.0.1

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Tech Info Library Article Number:11349

Tech Info Library

Centris 610 & 650, Quadra 800: Port Pinouts (7/94)

Revised: 7/28/94
Security: Everyone

Centris 610 & 650, Quadra 800: Port Pinouts (7/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 28 July 1994

TOPIC ----------

What are the port pinouts on the Macintosh Centris 610, Macintosh Centris 650, and Macintosh Quadra 800?

The information in this article relative to the Centris 610 and Centris 650 is also relevant to the Quadra 610 and Quadra 650.

DISCUSSION ----------

The ports supplied with the Centris 610, Centris 650, and Quadra 800 are similar to those supplied with previous Macintosh models. (Note that Ethernet is an option on the Centris 610 and Centris 650.

Video out port Pinouts

1	Red Video Ground
2	Red Video
3	Composite Sync.
4	Monitor ID, Bit 1
5	Green Video
6	Green Video Ground
7	Monitor ID, Bit 2
8	No Connection
9	Blue Video
10	Monitor ID, Bit 3
11	CSYNC and VSYNC Ground
12	Vertical Sync.
13	Blue Ground
14	HSYNC Ground
15	Horizontal Sync.
Shell	Chassis Ground

Serial ports (printer and modem)

1	Handshake Output DTR
2	Handshake Input CTS
3	Transmit Data (inverted)
4	Ground
5	Receive Data (inverted)
6	Transmit Data
7	No Connection
8	Receive Data

External SCSI port

1	Request
2	Message
3	Input/Output
4	SCSI bus reset
5	Acknowledge
6	Busy
7	Ground
8	Data bit 0
9	Ground
10	Data bit 3
11	Data bit 5
12	Data bit 6
13	Data bit 7
14	Ground
15	Command/Data
16	Ground
17	Attention
18	Ground
19	Select
20	Data parity
21	Data bit 1
22	Data bit 2
23	Data bit 4
24	Ground
25	Terminator power

ADB ports

1	ADB Data
2	No Connection – reserved
3	+5 volts
4	Ground

Ethernet port (Standard on Quadra 800, optional on Centris 610 & Centris 650.)

1	No Connection

2	Data Rcv A (RD-A)
3	Data Rcv B (RD-B)
4	Voltage Return (RTN)*
5	Control In A (CI-A)
6	Control In B (CI-B)
7	+5V @ ≤375 mA*
8	+5V @ ≤375 mA*
9	Transmit Data A (TD-A)
10	Transmit Data B (TD-B)
11	Voltage Return (RTN)*
12	Reserved (RSV)
13	Reserved (RSV)
14	No Connection
Shld	Shield Ground (GND)

Sound out port

- Sleeve Ground
- Ring Right .75 volt peak-to-peak audio signal right channel
- Ring Left .75 volt peak-to-peak audio signal left channel

Microphone port

- Sleeve Ground
- Ring +8 volts
- Tip Input

Article Change History:
28 Jul 1994 - Added reference to Quadra 610 and 650 to aid in searching.

Support Information Services

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Tech Info Library Article Number:11350

Tech Info Library

Centris 610 & 650, Quadra 800: Custom ICs (7/94)

Revised: 7/28/94
Security: Everyone

Centris 610 & 650, Quadra 800: Custom ICs (7/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 28 July 1994

TOPIC -----

There are three new custom ICs introduced with the Centris 610, Centris 650, and Quadra 800:

- DJMEMC: Dale & Jay's Most Excellent Memory Controller
- IOSB: Input/Output Subsystem Buffer
- KIWI: NuBus Controller

These three ICs integrate functions provided by the ten custom ICs found on the Quadra 700 logic board. This article describes each of these ICs in detail.

The information in this article relative to the Centris 610 and Centris 650 is also relevant to the Quadra 610 and Quadra 650.

DISCUSSION -----

Note: The Centris 610, Centris 650, and Quadra 800 also include a number of ICs developed for previous Macintosh models. Although not described in this article, they are:

- DFAC: Sound - Input and File
- MC68040: Microprocessor
- AC843: CLUT/DAC
- Antelope: Low cost CLUT/DAC
- MCCS142235: Active SCSI Terminator
- DP8534: Video timing generator
- SONIC: Ethernet controller
- 53C96: SCSI controller

DJMEMC (Dale and Jay's Most Excellent Memory Controller)

DJMEMC is a very large-scale IC that combines functions performed by multiple devices in previous Macintosh designs. DJMEMC attaches to the system bus and provides the control and timing signals for the RAM, ROM, and VRAM. It also controls the logic that controls the system bus arbitrations that provide the video timing and control signals. In summary, key functions provided by the DJMEMC are:

- Address decode
- Bus arbitrator
- Configuration register
- DRAM/ROM controller
- System bus interface
- Video timing
- VRAM controller

DJMEMC also includes a complete video frame buffer controller for a VRAM-based frame buffer which supports high performance graphics. Essentially, all of the DAFB frame buffer controller used in the Quadra 700, 900, and 950 have been incorporated into DJMEMC. Therefore DJMEMC is capable of supporting all of the display options and configurations supported by the Quadra 700, 900, and 950. This frame buffer also makes use of two new devices: the National DP8534 clock generator, and the Antelope CLUT/DAC. The 8534 (not compatible with the DP8531 used by the earlier Quadra computers) generates all video clock frequencies needed, up to and including 100 MHz. Antelope is a significantly cost-reduced version of the AAC, and does not include support for 24 bpp or Apple convolution. Antelope is pin- and software-compatible with the AAC used by the Quadra 950.

IOSB (I/O Subsystem Buffer)

IOSB performs some of the functionality found in the JDB/Relayer two-chip set used in the Quadra 700, 900, and 950 -- and also integrates a number of the discreet components which were located on the Quadra 700, 900, and 950 I/O bus.

The key functions of the IOSB ASIC are:
- Byte steering
- Bus sizing
- Alternate I/O bus masters
- Device decode logic
- CPU ID register
- Sound
- VIAs
- SWIM2
- Power on circuit
- System watchdog timeout
- Interrupts

Byte Steering: The 68040 does not support data steering. However, the 68030 allows 8-bit and 16-bit slaves to attach to a given byte lane and indicate their port size during cycle acknowledge. Hardware in the 68030 bus interface did the appropriate byte steering. This allows S/W to do byte accesses to consecutive bytes in 8-bit devices like the SCC without any external logic. In order to maintain compatibility with existing software, the IOSB ASIC does byte steering

for 68040 accesses to I/O bus peripherals.

Bus Sizing: The 68040 does not support dynamic bus sizing; it expects accesses to 8-bit and 16-bit ports to be of the appropriate size, that is access.B for 8-bit ports and access.W for 16-bit ports. However, the 68030 allows 8-bit and 16-bit slaves to attach to a given byte lane and indicate their port size during cycle acknowledge. The hardware inside the 68030 does the appropriate number and type of bus cycles to fulfill the request. This allows long word accesses to 8-bit devices, like the SCC. To maintain compatibility with existing software, IOSB does dynamic bus sizing for 68040 accesses to I/O bus peripherals.

Alternate I/O Bus Masters: IOSB allows the SONIC Ethernet controller to be a bus master on the System bus. SONIC drives the System bus snoop control bits (SC1 and SC0) directly, while IOSB drives the TT control lines. The status of these bits is determined by a register within SONIC, and should be initially configured not to snoop.

IOSB does not support true burst transfers to the I/O bus. If a System bus master attempts to burst data to or from an I/O bus slave, IOSB will invoke a 68040 fake burst. This allows use of the MOVE16 instruction for I/O bus data. IOSB itself does not initiate burst cycles on the System bus.

Device Decode Logic: IOSB provides device selects according to the memory maps shown earlier. It provides chip select for all I/O bus devices (that is, Ethernet PROM, patch ROM, SCC, SCSI, and SONIC) and internal IOSB cells (that is, VIAs, SWIM2, sound, and ADB). Note that DJMEMC and KIWI provide their own chip selects.

Sound: IOSB provides a variation of the sound controller used in the Sonora ASIC (used on the Macintosh LC III). However, instead of using DRAM or VRAM for sound I/O buffers, IOSB will internally provide 3K of internal static RAM.

Separate 1-Kbyte buffers are provided for left sound output, right sound output, and mono sound input. Since a sound output buffer is not reused for sound input, IOSB will be capable of providing simultaneous stereo sound output while recording from the sound input port. Sound buffers internal to IOSB are required for maximum software compatibility with Apple and third-party sound drivers.

VIAS:IOSB includes two VIAs, similar to the original Macintosh II. The VIA clock is generated within IOSB. VIA1 is the same VIA cell used in VISA, V8, Sonora, and PSC. It has full Macintosh VIA capabilities. VIA2 is a variation of the cell used in VISA, V8, etc.... This is not a complete VIA, but performs all the functions required from VIA2 (mostly interrupt support and some read/write port bits).

SWIM2:IOSB contains the SWIM2 floppy disk controller. It has full Macintosh SWIM2 capabilities, and is capable of supporting a 2.88MB floppy format.

Power-On Circuit: The Centris 610, Centris 650, and Quadra 800 use the same power-on logic as the Macintosh IIci. However, the portions of the power-on circuitry that do not run off the +5V trickle supply have been moved into the

IOSB ASIC to reduce component count on the motherboard.

System Watchdog Timeout: IOSB includes timeout logic that monitors system bus activity and terminates faulty cycles with a bus error indication. This timer does not run when an access is made to a NuBus device; it assumes that the NuBus controller will include a timer which handles the (longer) NuBus timeout period (25.6 µsec).

IOSB also maintains a watchdog timer for the entire system, including NuBus. This timeout has a longer period than previous timers, and prevents "hanging" while waiting for a response from a damaged or non-existent device. For instance, this timer would catch PDS cards that do not respond to all accesses to NuBus slot E space (see YANCC description for more information on PDS decoding).

Interrupts: IOSB will terminate all 68040 interrupt acknowledge cycles with autovector indication. Like the Quadra 700, 900, and 950, the Centris 610, Centris 650, and Quadra 800 allow separate mappings for different operating systems.

IOSB also provides for multiple modes of operation to support the use of IOSB in future CPUs, and to provide a failsafe mechanism in case of problems during development. These options include:

- Internal/external sound (allows use of the EADSC for higher quality sound output)
- Internal/external SWIM

KIWI

The KIWI ASIC provides the interface between the System bus and NuBus. It combines the functions that were provided by the YANCC ASIC, two bus transceivers, and several discrete driver chips. KIWI provides a complete 68040 bus interface on one side and a complete NuBus interface on the other.

Key functions provided by the KIWI ASIC are:
- Support for all types of single transfers
- One longword deep buffer
- Support for block move transfers for NuBus masters accessing memory on the motherboard
- Pseudo-block transfers from the 68040 to NuBus slaves
- Several of the new functions being defined by NuBus 90 spec

Article Change History:
28 Jul 1994 - Added reference to Quadra 610 and 650 to aid in searching.

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Tech Info Library

DAL: National Characters Localization in TSO and VTAM (1/93)

Revised: 2/16/93
Security: Everyone

DAL: National Characters Localization in TSO and VTAM (1/93)

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Article Created: 28 January 1993

TOPIC ----------

I have a question about National Characters. DAL Tech Note #4 states that version 1.3.6 of DAL supports national characters: is this true? I am currently using both VTAM and TSO; on the DAL VTAM 1.3.5 tape there is a "DALLOCAL" macro which I have customized, but on the DAL TSO 1.3.5 tape I haven't been able to locate the same macro.

DISCUSSION ----------

As for the localization of the code tables, the DAL Tech Note #4 was not quite accurate in the following ways:

- It was actually available for TSO, VTAM and VM as of the 1.3.5 release of the servers. However, it was not quite correct on the tape, hence the note specifying release 1.3.6 which does not exist for TSO, VTAM, or VM. We are including the corrected DALLOCAL member which you should use.

- For the TSO server, the code table and its JCL is located in the DALLOCAL member in the DAL.CLIST library. Do not use the one that came on the tape, use the one included here instead.

We will have the Tech Note updated to clarify the location for the TSO server.

Below is the JCL you should use. Please note the comments/information at the beginning of the JCL. It is very important for TSO servers. The JCL as-is is for VTAM servers.

```
//DALLOCAL JOB ONE,'DAL',MSGCLASS=X                              00000100
```

```
//*************************************************************** 00000200
//*                                                             00000300
//* JOB: DALLOCAL                                               00000400
//*      THIS JOB WILL ALLOW CUSTOMIZATION OF THE TRANSLATE TABLES 00000500
//*      USED FOR ASCII TO EBCDIC AND HOST EBCDIC TO ASCII       00000600
//*      TRANSLATION TO ALLOW FOR NON-US CHARACTER SETS          00000700
//*                                                             00000800
//*      THIS JCL SHOULD BE CUSTOMIZED BY THE INSTALLATION       00000900
//*      BY SETTING THE LOCAL VARIABLE (LANG) TO THE LANGUAGE    00001000
//*      REQUIRED - REMOVE THE COMMENT FROM THE DESIRED LANGUAGE 00001100
//*      CARD:                                                   00001101
//*               *&LANG      SETC  'FRENCH'                     00001102
//*      (SEE NEXT PAGE).                                        00001103
//*                                                             00001200
//*      IF THIS CUSTOMIZATION IS PERFORMED, THE OUTPUT OF THIS  00001300
//*      JOB SHOULD BE USED AS THE VTAM SERVER LOAD MODULE.      00001400
//*                                                             00001401
//*      FOR TSO, THE ENTRY POINT NEEDS TO BE CHANGED TO REFERENCE 00001402
//*      'CL1HEAD' AND THE LOAD MODULE NAME MUST BE CHANGED TO   00001403
//*      'DALSVR' IN THE SYSLMOD AND INCLUDE SYSLIB STATEMENTS   00001404
//*      (SEE 00203100 BELOW).                                   00001404
//*                                                             00001500
//*************************************************************** 00001600
//*                                                             00001700
//ASM     EXEC PGM=IEV90,PARM='TEST,DECK,NOOBJECT,XREF,NOALOGIC' 00040005
//SYSLIB    DD DISP=SHR,DSN=SYS1.MACLIB                         00080005
//SYSUT1    DD DSN=&&SYSUT1,UNIT=VIO,SPACE=(1700,(1000,500))    00090005
//SYSUT2    DD DSN=&&SYSUT2,UNIT=VIO,SPACE=(1700,(1000,500))    00100005
//SYSUT3    DD DSN=&&SYSUT3,UNIT=VIO,SPACE=(1700,(1000,500))    00110005
//SYSPRINT  DD SYSOUT=*                                         00120005
//SYSPUNCH  DD DSN=&&DALLOCAL,                                  00160005
//             DISP=(NEW,PASS,DELETE),                          00160006
//             UNIT=SYSDA,                                      00160007
//             SPACE=(TRK,(5,1))                                00160008
//SYSIN     DD *                                                00170005
*********************************************************************
*          DAL MVS/VTAM CHARACTER TRANSLATE TABLES                  *
*          COPYRIGHT 1992, APPLE COMPUTER, INC.                     *
*********************************************************************
          TITLE 'DALLOCAL'
          LCLC  &LANG
*********************************************************************
*          SELECT ONE OF THE FOLLOWING LANGUAGES BY UNCOMMENTING    *
*          THE APPROPRIATE STATEMENT                                *
*********************************************************************
*&LANG      SETC  'FRENCH'
*&LANG      SETC  'GERMAN'
*&LANG      SETC  'SWEDISH'
*&LANG      SETC  'DEFAULT'
UASC2EBC  EQU   *
          ENTRY UASC2EBC
          AIF   ('&LANG' EQ 'FRENCH').FRENCH
          AIF   ('&LANG' EQ 'GERMAN').GERMAN
```

```
          AIF   ('&LANG' EQ 'SWEDISH').SWEDISH
*
.DEFAULT  ANOP
*
*  ASCII TO EBCDIC TRANSLATION TABLE USA/CANADA 0037/1            *
*  PC TO HOST                                                     *
*
*  NOTE: THE USA TABLE IS IDENTICAL TO THE DEFAULT INTERNAL TABLE *
*  IN THE SERVER AND IS PROVIDED SHOULD OTHER CUSTOMIZATION       *
*  BE DESIRED.                                                    *
*
 DC XL1'00',XL1'01',XL1'02',XL1'03',XL1'37',XL1'2D',XL1'2E',XL1'2F'
 DC XL1'16',XL1'05',XL1'25',XL1'0B',XL1'0C',XL1'0D',XL1'0E',XL1'0F'
 DC XL1'10',XL1'11',XL1'12',XL1'13',XL1'3C',XL1'3D',XL1'32',XL1'26'
 DC XL1'18',XL1'19',XL1'3F',XL1'27',XL1'1C',XL1'1D',XL1'1E',XL1'1F'
 DC XL1'40',XL1'5A',XL1'7F',XL1'7B',XL1'5B',XL1'6C',XL1'50',XL1'7D'
 DC XL1'4D',XL1'5D',XL1'5C',XL1'4E',XL1'6B',XL1'60',XL1'4B',XL1'61'
 DC XL1'F0',XL1'F1',XL1'F2',XL1'F3',XL1'F4',XL1'F5',XL1'F6',XL1'F7'
 DC XL1'F8',XL1'F9',XL1'7A',XL1'5E',XL1'4C',XL1'7E',XL1'6E',XL1'6F'
 DC XL1'7C',XL1'C1',XL1'C2',XL1'C3',XL1'C4',XL1'C5',XL1'C6',XL1'C7'
 DC XL1'C8',XL1'C9',XL1'D1',XL1'D2',XL1'D3',XL1'D4',XL1'D5',XL1'D6'
 DC XL1'D7',XL1'D8',XL1'D9',XL1'E2',XL1'E3',XL1'E4',XL1'E5',XL1'E6'
 DC XL1'E7',XL1'E8',XL1'E9',XL1'BA',XL1'E0',XL1'BB',XL1'B0',XL1'6D'
 DC XL1'79',XL1'81',XL1'82',XL1'83',XL1'84',XL1'85',XL1'86',XL1'87'
 DC XL1'88',XL1'89',XL1'91',XL1'92',XL1'93',XL1'94',XL1'95',XL1'96'
 DC XL1'97',XL1'98',XL1'99',XL1'A2',XL1'A3',XL1'A4',XL1'A5',XL1'A6'
 DC XL1'A7',XL1'A8',XL1'A9',XL1'C0',XL1'4F',XL1'D0',XL1'A1',XL1'07'
 DC XL1'68',XL1'DC',XL1'51',XL1'42',XL1'43',XL1'44',XL1'47',XL1'48'
 DC XL1'52',XL1'53',XL1'54',XL1'57',XL1'56',XL1'58',XL1'63',XL1'67'
 DC XL1'71',XL1'9C',XL1'9E',XL1'CB',XL1'CC',XL1'CD',XL1'DB',XL1'DD'
 DC XL1'DF',XL1'EC',XL1'FC',XL1'70',XL1'B1',XL1'80',XL1'BF',XL1'04'
 DC XL1'45',XL1'55',XL1'CE',XL1'DE',XL1'49',XL1'69',XL1'9A',XL1'9B'
 DC XL1'AB',XL1'AF',XL1'5F',XL1'B8',XL1'B7',XL1'AA',XL1'8A',XL1'8B'
 DC XL1'20',XL1'21',XL1'22',XL1'23',XL1'24',XL1'65',XL1'62',XL1'64'
 DC XL1'B4',XL1'28',XL1'29',XL1'2A',XL1'2B',XL1'4A',XL1'B2',XL1'2C'
 DC XL1'0A',XL1'14',XL1'15',XL1'17',XL1'1A',XL1'1B',XL1'46',XL1'66'
 DC XL1'30',XL1'31',XL1'33',XL1'34',XL1'35',XL1'36',XL1'38',XL1'9F'
 DC XL1'8C',XL1'AC',XL1'72',XL1'73',XL1'74',XL1'08',XL1'75',XL1'76'
 DC XL1'77',XL1'39',XL1'3A',XL1'3B',XL1'3E',XL1'6A',XL1'78',XL1'41'
 DC XL1'EE',XL1'59',XL1'EB',XL1'ED',XL1'CF',XL1'EF',XL1'A0',XL1'8E'
 DC XL1'AE',XL1'FE',XL1'FB',XL1'FD',XL1'8D',XL1'AD',XL1'09',XL1'BE'
 DC XL1'BC',XL1'8F',XL1'06',XL1'B9',XL1'B6',XL1'B5',XL1'E1',XL1'9D'
 DC XL1'90',XL1'BD',XL1'B3',XL1'DA',XL1'FA',XL1'EA',XL1'CA',XL1'FF'
          AGO   .DEFAUL1
.FRENCH   ANOP
*
*  ASCII TO EBCDIC TRANSLATION TABLE FRANCE 00297/1               *
*  PC TO HOST                                                     *
*
 DC XL1'00',XL1'01',XL1'02',XL1'03',XL1'37',XL1'2D',XL1'2E',XL1'2F'
 DC XL1'16',XL1'05',XL1'25',XL1'0B',XL1'0C',XL1'0D',XL1'0E',XL1'0F'
 DC XL1'10',XL1'11',XL1'12',XL1'13',XL1'3C',XL1'3D',XL1'32',XL1'26'
 DC XL1'18',XL1'19',XL1'3F',XL1'27',XL1'1C',XL1'1D',XL1'1E',XL1'1F'
```

```
 DC XL1'40',XL1'4F',XL1'7F',XL1'B1',XL1'5B',XL1'6C',XL1'50',XL1'7D'
 DC XL1'4D',XL1'5D',XL1'5C',XL1'4E',XL1'6B',XL1'60',XL1'4B',XL1'61'
 DC XL1'F0',XL1'F1',XL1'F2',XL1'F3',XL1'F4',XL1'F5',XL1'F6',XL1'F7'
 DC XL1'F8',XL1'F9',XL1'7A',XL1'5E',XL1'4C',XL1'7E',XL1'6E',XL1'6F'
 DC XL1'44',XL1'C1',XL1'C2',XL1'C3',XL1'C4',XL1'C5',XL1'C6',XL1'C7'
 DC XL1'C8',XL1'C9',XL1'D1',XL1'D2',XL1'D3',XL1'D4',XL1'D5',XL1'D6'
 DC XL1'D7',XL1'D8',XL1'D9',XL1'E2',XL1'E3',XL1'E4',XL1'E5',XL1'E6'
 DC XL1'E7',XL1'E8',XL1'E9',XL1'90',XL1'48',XL1'B5',XL1'5F',XL1'6D'
 DC XL1'A0',XL1'81',XL1'82',XL1'83',XL1'84',XL1'85',XL1'86',XL1'87'
 DC XL1'88',XL1'89',XL1'91',XL1'92',XL1'93',XL1'94',XL1'95',XL1'96'
 DC XL1'97',XL1'98',XL1'99',XL1'A2',XL1'A3',XL1'A4',XL1'A5',XL1'A6'
 DC XL1'A7',XL1'A8',XL1'A9',XL1'51',XL1'BB',XL1'54',XL1'BD',XL1'07'
 DC XL1'68',XL1'DC',XL1'C0',XL1'42',XL1'43',XL1'7C',XL1'47',XL1'E0'
 DC XL1'52',XL1'53',XL1'D0',XL1'57',XL1'56',XL1'58',XL1'63',XL1'67'
 DC XL1'71',XL1'9C',XL1'9E',XL1'CB',XL1'CC',XL1'CD',XL1'DB',XL1'6A'
 DC XL1'DF',XL1'EC',XL1'FC',XL1'70',XL1'7B',XL1'80',XL1'BF',XL1'04'
 DC XL1'45',XL1'55',XL1'CE',XL1'DE',XL1'49',XL1'69',XL1'9A',XL1'9B'
 DC XL1'AB',XL1'AF',XL1'BA',XL1'B8',XL1'B7',XL1'AA',XL1'8A',XL1'8B'
 DC XL1'20',XL1'21',XL1'22',XL1'23',XL1'24',XL1'65',XL1'62',XL1'64'
 DC XL1'B4',XL1'28',XL1'29',XL1'2A',XL1'2B',XL1'B0',XL1'B2',XL1'2C'
 DC XL1'0A',XL1'14',XL1'15',XL1'17',XL1'1A',XL1'1B',XL1'46',XL1'66'
 DC XL1'30',XL1'31',XL1'33',XL1'34',XL1'35',XL1'36',XL1'38',XL1'9F'
 DC XL1'8C',XL1'AC',XL1'72',XL1'73',XL1'74',XL1'08',XL1'75',XL1'76'
 DC XL1'77',XL1'39',XL1'3A',XL1'3B',XL1'3E',XL1'DD',XL1'78',XL1'41'
 DC XL1'EE',XL1'59',XL1'EB',XL1'ED',XL1'CF',XL1'EF',XL1'79',XL1'8E'
 DC XL1'AE',XL1'FE',XL1'FB',XL1'FD',XL1'8D',XL1'AD',XL1'09',XL1'BE'
 DC XL1'BC',XL1'8F',XL1'06',XL1'B9',XL1'B6',XL1'5A',XL1'E1',XL1'9D'
 DC XL1'4A',XL1'A1',XL1'B3',XL1'DA',XL1'FA',XL1'EA',XL1'CA',XL1'FF'
          AGO   .FRENCH1
.GERMAN   ANOP
*
*  ASCII TO EBCDIC TRANSLATION TABLE GERMANY/AUSTRIA 00273/1      *
*  PC TO HOST                                                     *
*
 DC XL1'00',XL1'01',XL1'02',XL1'03',XL1'37',XL1'2D',XL1'2E',XL1'2F'
 DC XL1'16',XL1'05',XL1'25',XL1'0B',XL1'0C',XL1'0D',XL1'0E',XL1'0F'
 DC XL1'10',XL1'11',XL1'12',XL1'13',XL1'3C',XL1'3D',XL1'32',XL1'26'
 DC XL1'18',XL1'19',XL1'3F',XL1'27',XL1'1C',XL1'1D',XL1'1E',XL1'1F'
 DC XL1'40',XL1'4F',XL1'7F',XL1'7B',XL1'5B',XL1'6C',XL1'50',XL1'7D'
 DC XL1'4D',XL1'5D',XL1'5C',XL1'4E',XL1'6B',XL1'60',XL1'4B',XL1'61'
 DC XL1'F0',XL1'F1',XL1'F2',XL1'F3',XL1'F4',XL1'F5',XL1'F6',XL1'F7'
 DC XL1'F8',XL1'F9',XL1'7A',XL1'5E',XL1'4C',XL1'7E',XL1'6E',XL1'6F'
 DC XL1'B5',XL1'C1',XL1'C2',XL1'C3',XL1'C4',XL1'C5',XL1'C6',XL1'C7'
 DC XL1'C8',XL1'C9',XL1'D1',XL1'D2',XL1'D3',XL1'D4',XL1'D5',XL1'D6'
 DC XL1'D7',XL1'D8',XL1'D9',XL1'E2',XL1'E3',XL1'E4',XL1'E5',XL1'E6'
 DC XL1'E7',XL1'E8',XL1'E9',XL1'63',XL1'EC',XL1'FC',XL1'5F',XL1'6D'
 DC XL1'79',XL1'81',XL1'82',XL1'83',XL1'84',XL1'85',XL1'86',XL1'87'
 DC XL1'88',XL1'89',XL1'91',XL1'92',XL1'93',XL1'94',XL1'95',XL1'96'
 DC XL1'97',XL1'98',XL1'99',XL1'A2',XL1'A3',XL1'A4',XL1'A5',XL1'A6'
 DC XL1'A7',XL1'A8',XL1'A9',XL1'43',XL1'BB',XL1'DC',XL1'59',XL1'07'
 DC XL1'68',XL1'D0',XL1'51',XL1'42',XL1'C0',XL1'44',XL1'47',XL1'48'
 DC XL1'52',XL1'53',XL1'54',XL1'57',XL1'56',XL1'58',XL1'4A',XL1'67'
 DC XL1'71',XL1'9C',XL1'9E',XL1'CB',XL1'6A',XL1'CD',XL1'DB',XL1'DD'
```

```
 DC XL1'DF',XL1'E0',XL1'5A',XL1'70',XL1'B1',XL1'80',XL1'BF',XL1'04'
 DC XL1'45',XL1'55',XL1'CE',XL1'DE',XL1'49',XL1'69',XL1'9A',XL1'9B'
 DC XL1'AB',XL1'AF',XL1'BA',XL1'B8',XL1'B7',XL1'AA',XL1'8A',XL1'8B'
 DC XL1'20',XL1'21',XL1'22',XL1'23',XL1'24',XL1'65',XL1'62',XL1'64'
 DC XL1'B4',XL1'28',XL1'29',XL1'2A',XL1'2B',XL1'B0',XL1'B2',XL1'2C'
 DC XL1'0A',XL1'14',XL1'15',XL1'17',XL1'1A',XL1'1B',XL1'46',XL1'66'
 DC XL1'30',XL1'31',XL1'33',XL1'34',XL1'35',XL1'36',XL1'38',XL1'9F'
 DC XL1'8C',XL1'AC',XL1'72',XL1'73',XL1'74',XL1'08',XL1'75',XL1'76'
 DC XL1'77',XL1'39',XL1'3A',XL1'3B',XL1'3E',XL1'CC',XL1'78',XL1'41'
 DC XL1'EE',XL1'A1',XL1'EB',XL1'ED',XL1'CF',XL1'EF',XL1'A0',XL1'8E'
 DC XL1'AE',XL1'FE',XL1'FB',XL1'FD',XL1'8D',XL1'AD',XL1'09',XL1'BE'
 DC XL1'BC',XL1'8F',XL1'06',XL1'B9',XL1'B6',XL1'7C',XL1'E1',XL1'9D'
 DC XL1'90',XL1'BD',XL1'B3',XL1'DA',XL1'FA',XL1'EA',XL1'CA',XL1'FF'
          AGO   .GERMAN1
.SWEDISH   ANOP
*
*  ASCII TO EBCDIC TRANSLATION TABLE FINLAND/SWEDEN 00278/1       *
*  PC TO HOST                                                     *
*
 DC XL1'00',XL1'01',XL1'02',XL1'03',XL1'37',XL1'2D',XL1'2E',XL1'2F'
 DC XL1'16',XL1'05',XL1'25',XL1'0B',XL1'0C',XL1'0D',XL1'0E',XL1'0F'
 DC XL1'10',XL1'11',XL1'12',XL1'13',XL1'3C',XL1'3D',XL1'32',XL1'26'
 DC XL1'18',XL1'19',XL1'3F',XL1'27',XL1'1C',XL1'1D',XL1'1E',XL1'1F'
 DC XL1'40',XL1'4F',XL1'7F',XL1'63',XL1'67',XL1'6C',XL1'50',XL1'7D'
 DC XL1'4D',XL1'5D',XL1'5C',XL1'4E',XL1'6B',XL1'60',XL1'4B',XL1'61'
 DC XL1'F0',XL1'F1',XL1'F2',XL1'F3',XL1'F4',XL1'F5',XL1'F6',XL1'F7'
 DC XL1'F8',XL1'F9',XL1'7A',XL1'5E',XL1'4C',XL1'7E',XL1'6E',XL1'6F'
 DC XL1'EC',XL1'C1',XL1'C2',XL1'C3',XL1'C4',XL1'C5',XL1'C6',XL1'C7'
 DC XL1'C8',XL1'C9',XL1'D1',XL1'D2',XL1'D3',XL1'D4',XL1'D5',XL1'D6'
 DC XL1'D7',XL1'D8',XL1'D9',XL1'E2',XL1'E3',XL1'E4',XL1'E5',XL1'E6'
 DC XL1'E7',XL1'E8',XL1'E9',XL1'B5',XL1'71',XL1'9F',XL1'5F',XL1'6D'
 DC XL1'51',XL1'81',XL1'82',XL1'83',XL1'84',XL1'85',XL1'86',XL1'87'
 DC XL1'88',XL1'89',XL1'91',XL1'92',XL1'93',XL1'94',XL1'95',XL1'96'
 DC XL1'97',XL1'98',XL1'99',XL1'A2',XL1'A3',XL1'A4',XL1'A5',XL1'A6'
 DC XL1'A7',XL1'A8',XL1'A9',XL1'43',XL1'BB',XL1'47',XL1'DC',XL1'07'
 DC XL1'68',XL1'A1',XL1'79',XL1'42',XL1'C0',XL1'44',XL1'D0',XL1'48'
 DC XL1'52',XL1'53',XL1'54',XL1'57',XL1'56',XL1'58',XL1'7B',XL1'5B'
 DC XL1'E0',XL1'9C',XL1'9E',XL1'CB',XL1'6A',XL1'CD',XL1'DB',XL1'DD'
 DC XL1'DF',XL1'7C',XL1'FC',XL1'70',XL1'B1',XL1'80',XL1'BF',XL1'04'
 DC XL1'45',XL1'55',XL1'CE',XL1'DE',XL1'49',XL1'69',XL1'9A',XL1'9B'
 DC XL1'AB',XL1'AF',XL1'BA',XL1'B8',XL1'B7',XL1'AA',XL1'8A',XL1'8B'
 DC XL1'20',XL1'21',XL1'22',XL1'23',XL1'24',XL1'65',XL1'62',XL1'64'
 DC XL1'B4',XL1'28',XL1'29',XL1'2A',XL1'2B',XL1'B0',XL1'B2',XL1'2C'
 DC XL1'0A',XL1'14',XL1'15',XL1'17',XL1'1A',XL1'1B',XL1'46',XL1'66'
 DC XL1'30',XL1'31',XL1'33',XL1'34',XL1'35',XL1'36',XL1'38',XL1'5A'
 DC XL1'8C',XL1'AC',XL1'72',XL1'73',XL1'74',XL1'08',XL1'75',XL1'76'
 DC XL1'77',XL1'39',XL1'3A',XL1'3B',XL1'3E',XL1'CC',XL1'78',XL1'41'
 DC XL1'EE',XL1'59',XL1'EB',XL1'ED',XL1'CF',XL1'EF',XL1'A0',XL1'8E'
 DC XL1'AE',XL1'FE',XL1'FB',XL1'FD',XL1'8D',XL1'AD',XL1'09',XL1'BE'
 DC XL1'BC',XL1'8F',XL1'06',XL1'B9',XL1'B6',XL1'4A',XL1'E1',XL1'9D'
 DC XL1'90',XL1'BD',XL1'B3',XL1'DA',XL1'FA',XL1'EA',XL1'CA',XL1'FF'
          AGO   .SWEDIS1
.DEFAUL1   ANOP
```

```
*
UEBC2ASC   EQU   *
           ENTRY UEBC2ASC
*
*  EBCDIC TO ASCII TRANSLATION TABLE USA/CANADA 0037/1            *
*  HOST TO PC                                                     *
*
*  NOTE: THE USA TABLE IS IDENTICAL TO THE DEFAULT INTERNAL TABLE *
*  IN THE SERVER AND IS PROVIDED SHOULD OTHER CUSTOMIZATION       *
*  BE DESIRED.                                                    *
*
 DC XL1'00',XL1'01',XL1'02',XL1'03',XL1'9F',XL1'09',XL1'F2',XL1'7F'
 DC XL1'D5',XL1'EE',XL1'C0',XL1'0B',XL1'0C',XL1'0D',XL1'0E',XL1'0F'
 DC XL1'10',XL1'11',XL1'12',XL1'13',XL1'C1',XL1'C2',XL1'08',XL1'C3'
 DC XL1'18',XL1'19',XL1'C4',XL1'C5',XL1'1C',XL1'1D',XL1'1E',XL1'1F'
 DC XL1'B0',XL1'B1',XL1'B2',XL1'B3',XL1'B4',XL1'0A',XL1'17',XL1'1B'
 DC XL1'B9',XL1'BA',XL1'BB',XL1'BC',XL1'BF',XL1'05',XL1'06',XL1'07'
 DC XL1'C8',XL1'C9',XL1'16',XL1'CA',XL1'CB',XL1'CC',XL1'CD',XL1'04'
 DC XL1'CE',XL1'D9',XL1'DA',XL1'DB',XL1'14',XL1'15',XL1'DC',XL1'1A'
 DC XL1'20',XL1'DF',XL1'83',XL1'84',XL1'85',XL1'A0',XL1'C6',XL1'86'
 DC XL1'87',XL1'A4',XL1'BD',XL1'2E',XL1'3C',XL1'28',XL1'2B',XL1'7C'
 DC XL1'26',XL1'82',XL1'88',XL1'89',XL1'8A',XL1'A1',XL1'8C',XL1'8B'
 DC XL1'8D',XL1'E1',XL1'21',XL1'24',XL1'2A',XL1'29',XL1'3B',XL1'AA'
 DC XL1'2D',XL1'2F',XL1'B6',XL1'8E',XL1'B7',XL1'B5',XL1'C7',XL1'8F'
 DC XL1'80',XL1'A5',XL1'DD',XL1'2C',XL1'25',XL1'5F',XL1'3E',XL1'3F'
 DC XL1'9B',XL1'90',XL1'D2',XL1'D3',XL1'D4',XL1'D6',XL1'D7',XL1'D8'
 DC XL1'DE',XL1'60',XL1'3A',XL1'23',XL1'40',XL1'27',XL1'3D',XL1'22'
 DC XL1'9D',XL1'61',XL1'62',XL1'63',XL1'64',XL1'65',XL1'66',XL1'67'
 DC XL1'68',XL1'69',XL1'AE',XL1'AF',XL1'D0',XL1'EC',XL1'E7',XL1'F1'
 DC XL1'F8',XL1'6A',XL1'6B',XL1'6C',XL1'6D',XL1'6E',XL1'6F',XL1'70'
 DC XL1'71',XL1'72',XL1'A6',XL1'A7',XL1'91',XL1'F7',XL1'92',XL1'CF'
 DC XL1'E6',XL1'7E',XL1'73',XL1'74',XL1'75',XL1'76',XL1'77',XL1'78'
 DC XL1'79',XL1'7A',XL1'AD',XL1'A8',XL1'D1',XL1'ED',XL1'E8',XL1'A9'
 DC XL1'5E',XL1'9C',XL1'BE',XL1'FA',XL1'B8',XL1'F5',XL1'F4',XL1'AC'
 DC XL1'AB',XL1'F3',XL1'5B',XL1'5D',XL1'F0',XL1'F9',XL1'EF',XL1'9E'
 DC XL1'7B',XL1'41',XL1'42',XL1'43',XL1'44',XL1'45',XL1'46',XL1'47'
 DC XL1'48',XL1'49',XL1'FE',XL1'93',XL1'94',XL1'95',XL1'A2',XL1'E4'
 DC XL1'7D',XL1'4A',XL1'4B',XL1'4C',XL1'4D',XL1'4E',XL1'4F',XL1'50'
 DC XL1'51',XL1'52',XL1'FB',XL1'96',XL1'81',XL1'97',XL1'A3',XL1'98'
 DC XL1'5C',XL1'F6',XL1'53',XL1'54',XL1'55',XL1'56',XL1'57',XL1'58'
 DC XL1'59',XL1'5A',XL1'FD',XL1'E2',XL1'99',XL1'E3',XL1'E0',XL1'E5'
 DC XL1'30',XL1'31',XL1'32',XL1'33',XL1'34',XL1'35',XL1'36',XL1'37'
 DC XL1'38',XL1'39',XL1'FC',XL1'EA',XL1'9A',XL1'EB',XL1'E9',XL1'FF'
*
         AGO   .FINISH
.FRENCH1   ANOP
*
UEBC2ASC   EQU   *
           ENTRY UEBC2ASC
*
*  EBCDIC TO ASCII TRANSLATION TABLE FRANCE 00297/1               *
*  HOST TO PC                                                     *
*
```

```
 DC XL1'00',XL1'01',XL1'02',XL1'03',XL1'9F',XL1'09',XL1'F2',XL1'7F'
 DC XL1'D5',XL1'EE',XL1'C0',XL1'0B',XL1'0C',XL1'0D',XL1'0E',XL1'0F'
 DC XL1'10',XL1'11',XL1'12',XL1'13',XL1'C1',XL1'C2',XL1'08',XL1'C3'
 DC XL1'18',XL1'19',XL1'C4',XL1'C5',XL1'1C',XL1'1D',XL1'1E',XL1'1F'
 DC XL1'B0',XL1'B1',XL1'B2',XL1'B3',XL1'B4',XL1'0A',XL1'17',XL1'1B'
 DC XL1'B9',XL1'BA',XL1'BB',XL1'BC',XL1'BF',XL1'05',XL1'06',XL1'07'
 DC XL1'C8',XL1'C9',XL1'16',XL1'CA',XL1'CB',XL1'CC',XL1'CD',XL1'04'
 DC XL1'CE',XL1'D9',XL1'DA',XL1'DB',XL1'14',XL1'15',XL1'DC',XL1'1A'
 DC XL1'20',XL1'DF',XL1'83',XL1'84',XL1'40',XL1'A0',XL1'C6',XL1'86'
 DC XL1'5C',XL1'A4',XL1'F8',XL1'2E',XL1'3C',XL1'28',XL1'2B',XL1'21'
 DC XL1'26',XL1'7B',XL1'88',XL1'89',XL1'7D',XL1'A1',XL1'8C',XL1'8B'
 DC XL1'8D',XL1'E1',XL1'F5',XL1'24',XL1'2A',XL1'29',XL1'3B',XL1'5E'
 DC XL1'2D',XL1'2F',XL1'B6',XL1'8E',XL1'B7',XL1'B5',XL1'C7',XL1'8F'
 DC XL1'80',XL1'A5',XL1'97',XL1'2C',XL1'25',XL1'5F',XL1'3E',XL1'3F'
 DC XL1'9B',XL1'90',XL1'D2',XL1'D3',XL1'D4',XL1'D6',XL1'D7',XL1'D8'
 DC XL1'DE',XL1'E6',XL1'3A',XL1'9C',XL1'85',XL1'27',XL1'3D',XL1'22'
 DC XL1'9D',XL1'61',XL1'62',XL1'63',XL1'64',XL1'65',XL1'66',XL1'67'
 DC XL1'68',XL1'69',XL1'AE',XL1'AF',XL1'D0',XL1'EC',XL1'E7',XL1'F1'
 DC XL1'5B',XL1'6A',XL1'6B',XL1'6C',XL1'6D',XL1'6E',XL1'6F',XL1'70'
 DC XL1'71',XL1'72',XL1'A6',XL1'A7',XL1'91',XL1'F7',XL1'92',XL1'CF'
 DC XL1'60',XL1'F9',XL1'73',XL1'74',XL1'75',XL1'76',XL1'77',XL1'78'
 DC XL1'79',XL1'7A',XL1'AD',XL1'A8',XL1'D1',XL1'ED',XL1'E8',XL1'A9'
 DC XL1'BD',XL1'23',XL1'BE',XL1'FA',XL1'B8',XL1'5D',XL1'F4',XL1'AC'
 DC XL1'AB',XL1'F3',XL1'AA',XL1'7C',XL1'F0',XL1'7E',XL1'EF',XL1'9E'
 DC XL1'82',XL1'41',XL1'42',XL1'43',XL1'44',XL1'45',XL1'46',XL1'47'
 DC XL1'48',XL1'49',XL1'FE',XL1'93',XL1'94',XL1'95',XL1'A2',XL1'E4'
 DC XL1'8A',XL1'4A',XL1'4B',XL1'4C',XL1'4D',XL1'4E',XL1'4F',XL1'50'
 DC XL1'51',XL1'52',XL1'FB',XL1'96',XL1'81',XL1'DD',XL1'A3',XL1'98'
 DC XL1'87',XL1'F6',XL1'53',XL1'54',XL1'55',XL1'56',XL1'57',XL1'58'
 DC XL1'59',XL1'5A',XL1'FD',XL1'E2',XL1'99',XL1'E3',XL1'E0',XL1'E5'
 DC XL1'30',XL1'31',XL1'32',XL1'33',XL1'34',XL1'35',XL1'36',XL1'37'
 DC XL1'38',XL1'39',XL1'FC',XL1'EA',XL1'9A',XL1'EB',XL1'E9',XL1'FF'
*
         AGO   .FINISH
.GERMAN1   ANOP
*
UEBC2ASC   EQU   *
           ENTRY UEBC2ASC
*
*  EBCDIC TO ASCII TRANSLATION TABLE GERMANY/AUSTRIA 00273/1      *
*  HOST TO PC                                                    *
*
 DC XL1'00',XL1'01',XL1'02',XL1'03',XL1'9F',XL1'09',XL1'F2',XL1'7F'
 DC XL1'D5',XL1'EE',XL1'C0',XL1'0B',XL1'0C',XL1'0D',XL1'0E',XL1'0F'
 DC XL1'10',XL1'11',XL1'12',XL1'13',XL1'C1',XL1'C2',XL1'08',XL1'C3'
 DC XL1'18',XL1'19',XL1'C4',XL1'C5',XL1'1C',XL1'1D',XL1'1E',XL1'1F'
 DC XL1'B0',XL1'B1',XL1'B2',XL1'B3',XL1'B4',XL1'0A',XL1'17',XL1'1B'
 DC XL1'B9',XL1'BA',XL1'BB',XL1'BC',XL1'BF',XL1'05',XL1'06',XL1'07'
 DC XL1'C8',XL1'C9',XL1'16',XL1'CA',XL1'CB',XL1'CC',XL1'CD',XL1'04'
 DC XL1'CE',XL1'D9',XL1'DA',XL1'DB',XL1'14',XL1'15',XL1'DC',XL1'1A'
 DC XL1'20',XL1'DF',XL1'83',XL1'7B',XL1'85',XL1'A0',XL1'C6',XL1'86'
 DC XL1'87',XL1'A4',XL1'8E',XL1'2E',XL1'3C',XL1'28',XL1'2B',XL1'21'
 DC XL1'26',XL1'82',XL1'88',XL1'89',XL1'8A',XL1'A1',XL1'8C',XL1'8B'
```

```
 DC XL1'8D',XL1'7E',XL1'9A',XL1'24',XL1'2A',XL1'29',XL1'3B',XL1'5E'
 DC XL1'2D',XL1'2F',XL1'B6',XL1'5B',XL1'B7',XL1'B5',XL1'C7',XL1'8F'
 DC XL1'80',XL1'A5',XL1'94',XL1'2C',XL1'25',XL1'5F',XL1'3E',XL1'3F'
 DC XL1'9B',XL1'90',XL1'D2',XL1'D3',XL1'D4',XL1'D6',XL1'D7',XL1'D8'
 DC XL1'DE',XL1'60',XL1'3A',XL1'23',XL1'F5',XL1'27',XL1'3D',XL1'22'
 DC XL1'9D',XL1'61',XL1'62',XL1'63',XL1'64',XL1'65',XL1'66',XL1'67'
 DC XL1'68',XL1'69',XL1'AE',XL1'AF',XL1'D0',XL1'EC',XL1'E7',XL1'F1'
 DC XL1'F8',XL1'6A',XL1'6B',XL1'6C',XL1'6D',XL1'6E',XL1'6F',XL1'70'
 DC XL1'71',XL1'72',XL1'A6',XL1'A7',XL1'91',XL1'F7',XL1'92',XL1'CF'
 DC XL1'E6',XL1'E1',XL1'73',XL1'74',XL1'75',XL1'76',XL1'77',XL1'78'
 DC XL1'79',XL1'7A',XL1'AD',XL1'A8',XL1'D1',XL1'ED',XL1'E8',XL1'A9'
 DC XL1'BD',XL1'9C',XL1'BE',XL1'FA',XL1'B8',XL1'40',XL1'F4',XL1'AC'
 DC XL1'AB',XL1'F3',XL1'AA',XL1'7C',XL1'F0',XL1'F9',XL1'EF',XL1'9E'
 DC XL1'84',XL1'41',XL1'42',XL1'43',XL1'44',XL1'45',XL1'46',XL1'47'
 DC XL1'48',XL1'49',XL1'FE',XL1'93',XL1'DD',XL1'95',XL1'A2',XL1'E4'
 DC XL1'81',XL1'4A',XL1'4B',XL1'4C',XL1'4D',XL1'4E',XL1'4F',XL1'50'
 DC XL1'51',XL1'52',XL1'FB',XL1'96',XL1'7D',XL1'97',XL1'A3',XL1'98'
 DC XL1'99',XL1'F6',XL1'53',XL1'54',XL1'55',XL1'56',XL1'57',XL1'58'
 DC XL1'59',XL1'5A',XL1'FD',XL1'E2',XL1'5C',XL1'E3',XL1'E0',XL1'E5'
 DC XL1'30',XL1'31',XL1'32',XL1'33',XL1'34',XL1'35',XL1'36',XL1'37'
 DC XL1'38',XL1'39',XL1'FC',XL1'EA',XL1'5D',XL1'EB',XL1'E9',XL1'FF'
*
         AGO   .FINISH
.SWEDIS1   ANOP
*
UEBC2ASC   EQU   *
           ENTRY UEBC2ASC
*
*  EBCDIC TO ASCII TRANSLATION TABLE FINLAND/SWEDEN 00278/1       *
*  HOST TO PC                                                    *
*
 DC XL1'00',XL1'01',XL1'02',XL1'03',XL1'9F',XL1'09',XL1'F2',XL1'7F'
 DC XL1'D5',XL1'EE',XL1'C0',XL1'0B',XL1'0C',XL1'0D',XL1'0E',XL1'0F'
 DC XL1'10',XL1'11',XL1'12',XL1'13',XL1'C1',XL1'C2',XL1'08',XL1'C3'
 DC XL1'18',XL1'19',XL1'C4',XL1'C5',XL1'1C',XL1'1D',XL1'1E',XL1'1F'
 DC XL1'B0',XL1'B1',XL1'B2',XL1'B3',XL1'B4',XL1'0A',XL1'17',XL1'1B'
 DC XL1'B9',XL1'BA',XL1'BB',XL1'BC',XL1'BF',XL1'05',XL1'06',XL1'07'
 DC XL1'C8',XL1'C9',XL1'16',XL1'CA',XL1'CB',XL1'CC',XL1'CD',XL1'04'
 DC XL1'CE',XL1'D9',XL1'DA',XL1'DB',XL1'14',XL1'15',XL1'DC',XL1'1A'
 DC XL1'20',XL1'DF',XL1'83',XL1'7B',XL1'85',XL1'A0',XL1'C6',XL1'7D'
 DC XL1'87',XL1'A4',XL1'F5',XL1'2E',XL1'3C',XL1'28',XL1'2B',XL1'21'
 DC XL1'26',XL1'60',XL1'88',XL1'89',XL1'8A',XL1'A1',XL1'8C',XL1'8B'
 DC XL1'8D',XL1'E1',XL1'CF',XL1'8F',XL1'2A',XL1'29',XL1'3B',XL1'5E'
 DC XL1'2D',XL1'2F',XL1'B6',XL1'23',XL1'B7',XL1'B5',XL1'C7',XL1'24'
 DC XL1'80',XL1'A5',XL1'94',XL1'2C',XL1'25',XL1'5F',XL1'3E',XL1'3F'
 DC XL1'9B',XL1'5C',XL1'D2',XL1'D3',XL1'D4',XL1'D6',XL1'D7',XL1'D8'
 DC XL1'DE',XL1'82',XL1'3A',XL1'8E',XL1'99',XL1'27',XL1'3D',XL1'22'
 DC XL1'9D',XL1'61',XL1'62',XL1'63',XL1'64',XL1'65',XL1'66',XL1'67'
 DC XL1'68',XL1'69',XL1'AE',XL1'AF',XL1'D0',XL1'EC',XL1'E7',XL1'F1'
 DC XL1'F8',XL1'6A',XL1'6B',XL1'6C',XL1'6D',XL1'6E',XL1'6F',XL1'70'
 DC XL1'71',XL1'72',XL1'A6',XL1'A7',XL1'91',XL1'F7',XL1'92',XL1'5D'
 DC XL1'E6',XL1'81',XL1'73',XL1'74',XL1'75',XL1'76',XL1'77',XL1'78'
 DC XL1'79',XL1'7A',XL1'AD',XL1'A8',XL1'D1',XL1'ED',XL1'E8',XL1'A9'
```

```
 DC XL1'BD',XL1'9C',XL1'BE',XL1'FA',XL1'B8',XL1'5B',XL1'F4',XL1'AC'
 DC XL1'AB',XL1'F3',XL1'AA',XL1'7C',XL1'F0',XL1'F9',XL1'EF',XL1'9E'
 DC XL1'84',XL1'41',XL1'42',XL1'43',XL1'44',XL1'45',XL1'46',XL1'47'
 DC XL1'48',XL1'49',XL1'FE',XL1'93',XL1'DD',XL1'95',XL1'A2',XL1'E4'
 DC XL1'86',XL1'4A',XL1'4B',XL1'4C',XL1'4D',XL1'4E',XL1'4F',XL1'50'
 DC XL1'51',XL1'52',XL1'FB',XL1'96',XL1'7E',XL1'97',XL1'A3',XL1'98'
 DC XL1'90',XL1'F6',XL1'53',XL1'54',XL1'55',XL1'56',XL1'57',XL1'58'
 DC XL1'59',XL1'5A',XL1'FD',XL1'E2',XL1'40',XL1'E3',XL1'E0',XL1'E5'
 DC XL1'30',XL1'31',XL1'32',XL1'33',XL1'34',XL1'35',XL1'36',XL1'37'
 DC XL1'38',XL1'39',XL1'FC',XL1'EA',XL1'9A',XL1'EB',XL1'E9',XL1'FF'
*
.FINISH  ANOP
         END
/*                                                                    00202000
//*                                                                   00202200
//LINK    EXEC PGM=LINKEDIT,PARM='LET,TERM',COND=(4,LT)               00202300
//SYSLIB    DD DSN=DAL.LINKLIB,DISP=SHR                               00202400
//OBJECT    DD DSN=&&DALLOCAL,DISP=(OLD,DELETE,DELETE)                00202500
//SYSUT1    DD UNIT=VIO,SPACE=(TRK,(15,15))                           00202600
//SYSPRINT  DD SYSOUT=*                                               00202700
//SYSTERM   DD SYSOUT=*                                               00202800
//SYSERR    DD SYSOUT=*                                               00202900
//SYSUDUMP  DD SYSOUT=*                                               00203000
//SYSLMOD   DD DISP=SHR,DSN=DAL.LINKLIB(DALSERVE)                     00203100
//SYSLIN    DD  *                                                     00203200
  ENTRY   STARTUP                                                     00203300
  INCLUDE SYSLIB(DALSERVE)                                            00203400
  INCLUDE OBJECT                                                      00203500
  SETCODE AC(1)                                                       00203600
/*                                                                    00203700
```

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Tech Info Library Article Number:11354

Tech Info Library

System 7.1 Multipack: Missing Foreign Operating Systems 2/93

Revised: 2/3/93
Security: Everyone

System 7.1 Multipack: Missing Foreign Operating Systems 2/93

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Article Created: 3 February 1993

TOPIC -----

Why is Polska, Bulgarian, Dutch, Romanian, and Magyar system software missing from the System 7.1 Multipack CD-ROM?

DISCUSSION -----

The system software for these countries wasn't ready by the submission deadline. So, the Multipack kit CD was shipped without system software for those countries.

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Tech Info Library Article Number:11355

Tech Info Library

System 6.0.7: Incompatible with PrintMonitor 7.1 2/93

Revised: 2/4/93
Security: Everyone

System 6.0.7: Incompatible with PrintMonitor 7.1 2/93

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Article Created: 3 February 1993

TOPIC ----------

I just installed the PrintMonitor 7.1 on a 6.0.7 system. Upon clicking "Set Print Time," the system crashed.

DISCUSSION ----------

PrintMonitor 7.1 went out with the bug you described for users running System 6. The problem won't occur with System 7.

For the time being, we recommend that system 6.x users install PrintMonitor 7.0.1 or 7.0. You can obtain a copy from your dealer. You can also find PrintMonitor 7.0.1 posted on AppleLink. The path is:

Software Sampler
  Apple SW updates
    Macintosh
      Printing Software

You should be aware that when installing with the LaserWriter Pro Series disks, they will always install PrintMonitor 7.1 over the older version. Remember to save a copy of the old PrintMonitor before beginning the installation.

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Tech Info Library Article Number:11357

Tech Info Library

Macintosh LC III: Control Chips (2/93)

Revised: 2/4/93
Security: Everyone

Macintosh LC III: Control Chips (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

This article describes the Macintosh LC III control chips.

DISCUSSION ----------

SONORA

This ASIC performs timing video generation, sound, peripheral decodes, interrupt, DRAM, VRAM, and miscellaneous glue logic functions. Sonora integrates the functions of many separate chips from the LC II into one package, which helps lower cost and improve reliability.

EGRET

A single chip microcontroller (Motorola 68HC05EG) that performs keyboard scanning, real time clock, ADB interface, and parameter RAM storage. The Macintosh LC III can be reset via the keyboard by holding down the Control and Command keys then hitting the power key. An interrupt is generated by holding just the Command key and pressing the power key.

COMBO

The SCSI and serial interfaces are handled by the 85C80 Combo chip as in previous Macintosh models.

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Tech Info Library Article Number:11360

Tech Info Library

Centris 610 & 650, Quadra 800: Accelerated Graphics (7/94)

Revised: 7/28/94
Security: Everyone

Centris 610 & 650, Quadra 800: Accelerated Graphics (7/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 28 July 1994

TOPIC -----

The Macintosh Centris 610, Centris 650, and Quadra 800 are marketed as having "accelerated graphics" support. What is accelerated graphics?

The information in this article relative to the Centris 610 and Centris 650 is also relevant to the Quadra 610 and Quadra 650.

DISCUSSION -----

The Centris 610, Centris 650, and Quadra 800 have a video RAM (VRAM) based, processor direct, accelerated video display architecture. This architecture radically improves the redraw speed of text and graphics on the screen. This architecture is similar to that found on earlier Quadra models. It is called accelerated graphics because of four key architectural features:

- Local bus
- VRAM based
- 68040-specific QuickDraw routines
- Video controller circuitry improvements by using the DJMEMC (Memory Controller)

Local Bus

The entire graphics subsystem is on the 68040 bus located on the logic board. Thus, the memory controller and the video controller can communicate at very high speeds over a 32-bit data path.

VRAM Based

The video sub-system uses separate VRAM for its screen buffer, which is accessed directly by the processor. The VRAM is dedicated to the task of displaying video information and the more VRAM added, the more colors or the larger display

that can be supported.

68040 Specific QuickDraw Routines

The 68040 memory instruction (MOVE16) is used to accelerate certain QuickDraw routines. This causes routines such as vertical scrolling and solid fills to execute up to three times faster. With 1MB of VRAM installed, up to 16 bits per pixel -- or 32,768 colors -- are supported.

Video Controller Circuitry Improvements

The Centris 650 and Quadra 800 utilize 80ns VRAM instead of the 100ns SIMMs used in the Centris 610. The video controller in the Centris 650 and Quadra 800 has been programmed to take advantage of the faster VRAM, which speeds performance up to 20% compared to the Quadra 700.

Article Change History:
28 Jul 1994 - Added reference to Quadra 610 and 650 to aid in searching.

Support Information Services

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Tech Info Library Article Number:11361

Tech Info Library

Apple IIe Card: A/ROSE Causing Error Running IIe Startup (1/95)

Revised: 1/5/95
Security: Everyone

Apple IIe Card: A/ROSE Causing Error Running IIe Startup (1/95)

==========

Article Created: 9 February 1993
Article Reviewed/Updated: 5 January 1995

TOPIC ----------

Some customers launching the IIe Startup application are getting dialog to the effect "This card is defective." They may also be experiencing their IIe software "freezing" either while in use or after sitting idle. This can happen on any Macintosh computer that supports the Apple IIe Card.

This can also happen if you install an Apple Ethernet Card in certain Macintosh computers, and then later remove it and install in its place an Apple IIe Card. You may also encounter occasional crashes after approximately 30 minutes of idle time.

DISCUSSION ----------

To correct this problem, delete the A/Rose and IIe Prefs files then restart. A/Rose is located in the Extensions Folder and IIe Prefs is located in the same folder as the IIe Startup application.

Article Change History:
04 Jan 1995 - Rewrote article to better explain the problem.
12 Oct 1994 - Combined two articles and generalized the information.
07 Dec 1993 - Added Perfoma information.

Support Information Services

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Tech Info Library Article Number:11362

Tech Info Library

PowerBook Fax/Data & Express Modem: Third-Party Software (8/93)

Revised: 5/16/94
Security: Everyone

PowerBook Fax/Data & Express Modem: Third-Party Software (8/93)

==========

Article Created: 29 January 1993
Article Reviewed/Updated: 3 August 1993

TOPIC ----------

Does any third-party fax software support the PowerBook Fax/Data Modem or PowerBook Express Modem?

DISCUSSION ----------

GlobalFax Duo, a new version of the GlobalFax software from Global Village Communication, Inc., is available for customers using Apple's PowerBook Duo systems with Apple Express Modems.

GlobalFax Duo offers capabilities such as the ability to customize address books, send to group addresses and envelope several documents in a single fax transaction.

At this time, no third-party fax software supports the Apple PowerBook Fax/Data Modem.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
3 August 1993 - Added information about GlobalFax Duo.

Support Information Services

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Tech Info Library Article Number:11363

Tech Info Library

DAL: Informix and LIKE Function SQL Queries (2/93)

Revised: 2/4/93
Security: Everyone

DAL: Informix and LIKE Function SQL Queries (2/93)

==========

Article Created: 29 January 1993

TOPIC ----------

I am running DAL on a Sun server, using the Pacer technology. I am trying to query the database, but I'm having difficulty translating the SQL queries for an Informix database into a DAL-compatible SQL query.

The query is:

```
SELECT <whatever> from <table> where acctkey[4,6]="680"
```

For example - check the 3 characters in the acct code from position 4 to 6 and see if they match 680. How would I do this in DAL?

DISCUSSION ----------

The way to do this query in DAL is the same as the DB2 ANSI-standard query using the LIKE function. DAL follows the ANSI-standard, and when there is no standard defined it follows DB2's format.

For this query the LIKE function is the appropriate command. The LIKE function allows you to substitute either:

- An underscore character ("_") for EACH position in which you will accept any character before your desired string

- A single percent sign ("%") for a string of ANY LENGTH that you will accept before and/or after your desired string

In the case of your example (We spaced between the underscore characters to make the point about the number of positions before your desired character string compare):

```
     select <whatever> from <table> where acctkey like '_ _ _ 680%';
```

This means: select when the value of positions 4, 5 & 6 of the account key = 680, and I don't care what follows position 6. In reality the command would look like:

```
     select <whatever> from <table> where acctkey like '___680%';
```

If you wanted to search for "680" in any position the command would be:

```
     select <whatever> from <table> where acctkey like '%680%';
```

DAL will translate this "standard format" query into the appropriate format for the individual DBMS. So this should work for Informix since it supports the positioned query (where acctkey[4,6] ="680").

We don't have access to an Informix database at this time, so we can't verify it against Informix, but we feel confident that the LIKE function will be translated properly. We did test with both Sybase and Rdb and it worked fine.

Be aware that you should put the "%" behind the desired compare string in the LIKE clause unless you are searching for the last positions in the field. If the compare doesn't work for you without the "%", add it and try the SQL statement again.

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Tech Info Library Article Number:11364

Tech Info Library

DAL: Accessing Multiple Oracle SIDs In a Unix Environment (1/93)

Revised: 2/16/93
Security: Everyone

DAL: Accessing Multiple Oracle SIDs In a Unix Environment (1/93)

==========

Article Created: 29 January 1993

TOPIC ----------

I have a site running DAL for SUN OS using Oracle6.

My Question is how can I tell DAL to use another Instance of Oracle? I have tried changing the Oracle SID in the .LOCAL & .CSHRC file for the username without any change. SQLplus recognizes the change in SID, but DAL continues to use the old SID.

DISCUSSION ----------

Check the .PROFILE for the user on the second Oracle to verify that you have the correct paths. This is the file used by interactive processes, which SQLPlus is not. The .PROFILE has to be changed to point to the desired installation of the Oracle SID.

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Tech Info Library Article Number:11367

Tech Info Library

Personal Sharing: File Sharing Can't be Enabled Message (5/95)

Revised: 5/17/95
Security: Everyone

Personal Sharing: File Sharing Can't be Enabled Message (5/95)

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Article Created: 1 February 1993
Article Reviewed/Updated: 17 May 1995

TOPIC ----------

I get the message, "File sharing cannot be enabled", even though I have file sharing turned on. What do I have to do to enable personal file sharing?

DISCUSSION ----------

Try these steps in the order presented. If a step fails to restart file sharing, proceed to the next one.

Third-Party File Sharing Software

Find out if TOPS (a third party sharing application) or other file sharing software was previously run on your system. Third-party software that performs this function can modify the System file, disabling System 7 File Sharing. If so, do a clean installation of System Software.

Adequate Volume Space

Look for adequate space on the volumes being shared on your computer. System 7.x creates a few support files for file sharing, and if there is insufficient space on ANY attached disk or partition, file sharing is not enabled. File sharing requires at least 360K of disk space available on each connected disk or partition. More space may be required when there are many Users and Groups. If any volume has less than 360K available, File Sharing reports "File Sharing Cannot Be Enabled."

The only exception to this requirement concerns locked volumes, like CD-ROMs. The information required for sharing a locked volume is stored on the startup disk instead.

Adequate RAM

File sharing requires about 268K of RAM (Random Access Memory) to operate. Applications may not launch, if your Macintosh has less memory than the application requires. Either remove unnecessary extensions to a folder outside the System Folder, or acquire additional RAM for your computer.

Reset Parameter RAM

Zap (reset) the PRAM (Parameter RAM) by pressing the key sequence Command-Option-P-R while starting your System 7.x-equipped computer. This resets the serial ports, so you may need to reactivate AppleTalk on some Macintosh computers.

Conflicting Extensions

Check for conflicting extensions by using the Extensions Manager control panel to turn off all extensions that do not come with system software. Restart, if file sharing now works, find the conflicting extension by turning the extensions on one at a time.

Delete Users & Groups Data File

If you are sharing only the startup volume, and the startup volume is the only volume attached to the computer, try the following steps. However, if you have more than one volume, skip this section.

Step 1
Turn file sharing off using the Sharing Setup control panel.

Step 2
Move (do not delete) the Users & Groups data file, in the Preferences folder, to another folder outside the System folder.

Step 3
Restart the computer.

Step 4
Open the Sharing Setup control panel, and enter a new Owner Name, Owner Password, and Macintosh Name, replacing any previous data. Be sure to use new or different names.

Step 5
Turn File Sharing on.

If this does not resolve the problem, move the Users & Groups data file back into the Preferences folder.

Delete the File Sharing Folder

Step 1
Delete the File Sharing folder from the Preferences folder within the System Folder.

Step 2

Restart the computer.

Step 3
Turn File Sharing on.

Third-Party Formatting Software

If you format any media with a third-party utility, check with the vendor for compatibility with File Sharing and replace the driver if necessary.

Recreate the AppleShare PDS File

You can delete an invisible file called AppleShare PDS on the top level of all connected volumes when sharing. The AppleShare PDS file may need to be deleted on each volume on multiple drive systems, or drives with multiple partitions.

To help troubleshoot in multiple drive situations, start the computer with just the startup volume on. If file sharing works in this configuration, add another drive to the chain and test file sharing each time until you find the drive that prevents file sharing from starting. You can then concentrate on the drive that fails and remove its PDS file.

IMPORTANT: Deleting the PDS file removes all access privileges assigned to folders. You need to reassign access privileges to the folders.

Step 1
Delete the PDS file with ResEdit or a third-party utility that lets you view invisible files. Use the utility to unlock the file and make it visible on the desktop so you can drag it to the Trash.

If you do not have a utility, try to replace the Owner Name and Macintosh Name in the Sharing Setup control panel with different text. You can change them back to their original values later. When you start File Sharing, the system creates a new AppleShare PDS file on the startup volume.

Step 2
Restart the computer.

Step 3
Turn File Sharing on. New AppleShare PDS files are created.

Re-install Software

Before reformatting the hard disk, try re-installing the system software or File-Sharing software and restart the computer.

Reformat

Back up the data and reformat the media. A bad block may be causing the problem.

IMPORTANT: Be sure to back up your data before reformatting. The formatting process erases all data from the volume.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
17 May 1995 - Added conflicting extensions solution.
23 Mar 1995 - Made additional minor updates.
17 Mar 1995 - Made minor corrections.

Support Information Services

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Tech Info Library Article Number:11368

Tech Info Library

Macintosh System Software 6.0.8: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Macintosh System Software 6.0.8: Description (Discontinued)

==========

Article Created: 1 February 1993

TOPIC ----------

This article describes Macintosh system software version 6.0.8.

DISCUSSION ----------

System software version 6.0.8 includes printer drivers that are also compatible with System 7. This makes it possible for Macintosh computers running System 6 to share printers on a network with computers running System 7. Be sure to install the drivers with the Installer to ensure the Print Monitor will work. Please note that you can't install 6.0.8 with a network install.

The System 7 TrueType extension is fully compatible with version 6.0.8. Version 6.0.8 is also compatible with LaserWriter Driver versions 6.0.2 and 7.1.1.

System 6.0.8 shipped with Finder 6.1.8, LaserWriter/LaserWriter Prep 7.0, and MultiFinder 6.0.8.

Version 6.0.8 was tested with the Apple IIe Card v2.0, and SNA•ps 1.1 Gateway.

You can use 6.0.8 on the following Macintosh computers:

- Macintosh Plus
- Macintosh Classic
- Macintosh SE
- Macintosh SE/30
- Macintosh II
- Macintosh LC
- Macintosh LC II

- Macintosh IIx
- Macintosh IIsi
- Macintosh IIcx
- Macintosh IIci
- Macintosh IIfx
- Macintosh Portable

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Tech Info Library Article Number:11369

Tech Info Library

68040 and 68LC040: Description (2/93)

Revised: 2/5/93
Security: Everyone

68040 and 68LC040: Description (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article describes the Motorola 68040 and 68LC040 microprocessor.

DISCUSSION ----------

Overview

As the fourth member of Motorola's 68000 processor family, the 68040 can deliver 35 MIPS (million instructions per second) when running at 40 megahertz. The 68040 is a fast, highly-integrated, 32-bit microprocessor that combines RISC-like integer performance with floating-point unit power beyond that of a standard processor. The 68040 provides many of the benefits of the fastest RISC microprocessors while also providing the software compatibility that complex instruction set computing (CISC) microprocessors are known for.

Benchmark test results show that the 68040 can meet or exceed the performance of 486-class microprocessors running at higher clock speeds.

The 68040 is a smooth continuation of the 68000 family, with many new features that contribute to its increased processing power:

- An integer unit
- A floating-point unit (FPU)
- Built-in instruction and data caches (4KB each)
- Two memory-management units (MMUs)
- A bus interface unit

Each unit is highly intelligent and can function independently of the others, giving the 68040 an unprecedented degree of parallelism. The main internal units work at twice the clock speed of the bus interface unit. For instance, when processing most instructions internally, a 68040 clocked at

33 MHz effectively runs at 66 MHz. A cost-reduced version of the 68040, called the 68LC040, has the power of a regular 68040 but without the integrated FPU.

In summary, the 68040's powerful instruction set allows excellent compatibility with existing applications while providing unmatched performance in graphics and CPU intensive applications.

Pipelining for Greater Throughput

One important way to speed up computing is to design processors that use a common RISC technique called pipelining, which overlaps the processing of several instructions in different stages of execution. For example, the 486-class processor can work on as many as four instructions at a time. The 68040 goes further, handling six instructions simultaneously because of the six-stage pipeline in its integer unit. As confirmed in independent research, this difference translates into superior real-world performance when compared with the 486-class chip.

Integrated Caches for Faster Memory Access

Because a processor can move at top speed only if it has a steady supply of program instructions and data from memory, most high-performance systems feature cache memories. Caches are intermediate memories, composed of fast static RAM, and are situated between the processor and the main memory. The 68040 has two separate 4KB caches right on the chip, giving the execution unit rapid access to the information it needs. Having two caches means the 68040 can fetch both data and instructions simultaneously. More than 90 percent of the time, the processor can find the information it needs in the caches. The data cache supports both a writethrough model and a copyback model. Copyback allows the 68040 to hold modified data in the cache until the line needs to be replaced, at which time the data is written to memory. In addition, the 68040 bus interface unit supports a unique "burst mode," which can refill an entire cache line (128 bits) in just five clock cycles, significantly faster than the leading competitive technology.

Shadow Branching for Pre-loading New Instructions

Computers do not usually step through their instructions consecutively. About 75 percent of the time they must skip or branch to another location in their program, and in such cases the processing pipeline must be cleared and loaded with a new sequence of instructions. The 68040 has specialized circuitry that begins filling up with new instructions in advance of the program branch. If the branch is taken, the processor has a head start on the new instruction stream and minimizes the penalty of reloading.

Graphics Support for Faster Screen Re-draw

Parts of the 68040 instruction set are especially valuable for graphics-intensive applications such as multimedia, and for advanced graphical user interfaces. Graphics processing requires the rapid manipulation of large arrays of data bits representing the thousands of pixels (picture elements) on the computer screen. The ability to quickly

handle individual bits, as opposed to bytes and larger data structures, is a must. The 68040, therefore, provides a number of special bit-manipulation instructions. These instructions are lacking on most other microprocessors.

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Tech Info Library Article Number:11370

Tech Info Library

68040 and 68LC040 Microprocessor: Specifications (2/93)

Revised: 2/5/93
Security: Everyone

68040 and 68LC040 Microprocessor: Specifications (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

This article provides technical specifications of the 68040 and 68LC040 microprocessor.

DISCUSSION ----------

Performance

68040
- 22 MIPS and 3.5 MFLOPS at 25 MHz
- 29 MIPS and 4.6 MFLOPS at 33 MHz
- 35 MIPS and 5.6 MFLOPS at 40 MHz
- 1.3 clock cycles per instruction

68LC040
- 17.6 MIPS at 20 MHz
- 22 MIPS at 25 MHz
- 29 MIPS at 33 MHz
- 1.3 clock cycles per instruction

Manufacturing Technology

- 0.65 µm HCMOS
- 1.2 million transistors

System Components

- 4KB instruction cache
- 4KB data cache
- Instruction memory management unit

- Data memory management unit
- 6-stage pipeline integer unit
- 32-bit data bus
- Floating-point unit (except 68LC040)

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Tech Info Library Article Number:11371

Tech Info Library

Centris 610 & 650: Optional Ethernet (3/94)

Revised: 3/31/94
Security: Everyone

Centris 610 & 650: Optional Ethernet (3/94)

==========

Article Created: 9 February 1993
Article Reviewed/Updated: 31 March 1994

TOPIC -----

The Macintosh Centris 610 and 650 computers have optional Ethernet. What does this mean?

DISCUSSION -----

Apple offers models of the Centris 610 and 650 both with and without Ethernet. The "Ethernet Optional" models include additional components on the logic board which allows those users who need Ethernet to get a fully-integrated solution, without giving up an expansion slot.

Those who choose not to buy an Ethernet configuration can add it later by installing an Apple Ethernet NB Card. Logic boards cannot be upgraded to the "Ethernet Optional" version.

Note: The Macintosh Centris 610 also requires the Macintosh Centris 610 NuBus Adapter Card.

The "Ethernet Optional" models of the Macintosh Centris 610 and 650 use the AAUI connector, which is flexible enough to allow you to choose the right connector for your network. This connection is achieved via an Ethernet media adapter, which is available in Thick (AUI), Thin (coax), and Twisted pair (10BaseT).

Please refer to the Apple Suggested Retail Price List for the listing of Centris configurations with and without the "Optional Ethernet".

Article Change History:
31 March 1994 - Removed need to review at product intro.
07/12/93 - Revised to clarify Ethernet expansion.

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..TIL11372-Centris_610_and_650-Optional_Ethernet_3-94.pdf

Tech Info Library Article Number:11372

Tech Info Library

Macintosh IIsi, Centris 610 & 660AV: NuBus Adapters (6/95)

Revised: 6/5/95
Security: Everyone

Macintosh IIsi, Centris 610 & 660AV: NuBus Adapters (6/95)

==========

Article Created: 9 February 1993
Article Reviewed/Updated: 5 June 1995

TOPIC ----------

Can you use the same NuBus adapter for the Macintosh IIsi, Centris 610 and Centris 660AV?

DISCUSSION ----------

No, each Macintosh model listed above has its own NuBus adapter card that fits into the Expansion Slot. The part numbers are:

- M0481LL/A: Macintosh IIsi NuBus Adapter Card
- M1402LL/A: Macintosh Centris 610 NuBus Adapter Card
- M9049LL/A: Macintosh Centris 660AV NuBus Adapter Card (discontinued)

Article Change History:
05 Jun 1995 - Revised to show discontinued card.
29 Jul 1993 - Revised and retitled to include the Centris 660AV.

Support Information Services

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Tech Info Library Article Number:11373

Tech Info Library

Quadra 610, 660AV: Require 7-Inch NuBus Cards (12/93)

Revised: 7/18/94
Security: Everyone

Quadra 610, 660AV: Require 7-Inch NuBus Cards (12/93)

==========

Article Created: 9 February 1993
Article Reviewed/Updated: 6 December 1993

TOPIC ----------

The following explains the 7-inch NuBus requirement for the Macintosh Centris 610, 660AV and the Quadra 610 and 660AV.

DISCUSSION ----------

While the NuBus standard does include a specification for a 7-inch NuBus card, many currently available NuBus cards do not work. Apple has worked with third parties to make sure that developers are aware of the specification and will be designing cards that fit. A variety of third-party video and networking cards do work. In addition, Apple's Ethernet NB card meets with 7-inch standard.

When using a NuBus card with the Quadra 610, 660AV or Centris 610, 660AV, make sure it consumes no more than 10 watts of power.

Article Change History:
06 Dec 1993 - Added the Quadra and Centris 660AV & reclassified.
02 Nov 1993 - Added Quadra 610
16 Nov 1993 - Deleted Quadra 605 (has no NuBus slot)

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Tech Info Library Article Number:11374

Tech Info Library

Centris 610: Description (Discontinued 10/93)

Revised: 1/26/94
Security: Everyone

Centris 610: Description (Discontinued 10/93)

==========

Article Created: 10 February 1993
Article Revised/Updated: 26 January 1994

TOPIC ----------

This article describes the Macintosh Centris 610 computer system, which was replaced by the Quadra 610 computer in October, 1993.

DISCUSSION ----------

Overview

The Macintosh Centris 610 is up to two times as fast as the Macintosh IIvx and IIci. It can handle sophisticated graphics and multimedia applications as well as mainstream business programs. And the Macintosh Centris 610 supports up to 68MB of RAM, so you can work with multiple applications simultaneously.

For your convenience, the Centris 610 provides built-in support for all Apple displays. Almost any commonly available display -- monochrome or color, portrait or landscape, 12-inch or 21-inch, RGB or VGA -- works with the Macintosh Centris 610. What's more, the Macintosh Centris 610 is equipped with 512K of on-board video RAM (expandable to 1,024K), so you get more colors than ever from your display without having to purchase an additional video card.

The Macintosh Centris 610 gives you flexibility and choice: you can choose an internal hard disk with storage capacity from 80- to 230MB, opt for on-board Ethernet networking, add an internal CD-ROM drive, install a NuBus or processor-direct card, and even connect two displays. A high-speed SCSI interface lets you add additional peripherals, such as scanners or high-volume storage devices. And AppleTalk networking is built in.

This computer's form factor is designed for horizontal use only.

The Macintosh Centris 610 comes with System Software 7.1 and the System

Enabler 040.

Power and Speed

- 20-MHz 68040 microprocessor
- 32-bit data bus
- Up to two times as fast as the Macintosh IIvx and IIci

Memory

- 4MB of RAM, expandable to 68MB

Display

- Works with all Apple displays
- 256 colors, expandable to 32,768 colors

Expansion

- Eight built-in ports for peripheral devices
- Slot for additional expansion card (for use with PDS or 7-inch NuBus card and requires adaptor)
- Optional on-board Ethernet
- Optional internal CD-ROM drive (such as AppleCD 300i)

System software

- System 7 with multitasking, file sharing, QuickTime, Balloon Help, TrueType, and more

Networking

- Built-in AppleTalk networking
- File sharing without a dedicated server

Compatibility

- Reads Macintosh, MS-DOS, OS/2, and ProDOS floppy disk formats

ORDERING INFORMATION

- M1345LL/A Macintosh Centris 610 4MB Hard Disk 80 CPU (without Ethernet)
- M1392LL/A Macintosh Centris 610 4MB Hard Disk 80 CPU
- M1397LL/A Macintosh Centris 610 8MB (1MB VRAM) Hard Disk 230 CPU
- M1398LL/A Macintosh Centris 610 8MB (1MB VRAM) Hard Disk 230 CPU w/CD-ROM

- M1402LL/A Macintosh Centris 610 NuBus Adaptor

Article Change History:
26 January 1994 - Added discontinued information to title & article
11 February 93 - Revised to include all configurations in the "Ordering Information" section.

..TIL11375-Centris_610-Description_Discontinued_10-93.pdf

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Tech Info Library Article Number:11375

Tech Info Library

Centris 610: Specifications-Discontinued (8/94)

Revised: 8/31/94
Security: Everyone

Centris 610: Specifications-Discontinued (8/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 31 August 1994

TOPIC ----------

This article provides technical specifications for the Macintosh Centris 610 computer.

DISCUSSION ----------

Microprocessor

- MC68LC040, 20-MHz clock speed, main logic board clock 20 MHz; 32-bit data bus; no floating point unit (FPU)
- Integral Paged Memory Management Unit (PMMU) and 8K-cache architecture

Memory

- Comes with 4MB of RAM on the logic board
- Expandable to 68MB of RAM by adding Single Inline Memory Modules (SIMMs) to two 72-pin slots. (Doesn't support 1MB, 2MB, or 64MB 72-pin SIMMs.)
- Includes RAM disk software

ROM

- 1MB

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 80MB, 230MB, or 500MB hard disk (500MB configuration not available in the U.S.)
- Accommodates one 5.25-inch half-height device, such as the AppleCD 300i internal CD-ROM drive

Video Display

- Supports all Apple displays
- Works with a wide range of third-party displays, including some 19-in., VGA, SVGA, NTSC, and PAL monitors

Video RAM (VRAM)

512K Standard Supports:

- 32,768 colors on the Macintosh 12-inch RGB Display
- 256 colors on the AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16-inch Color Display
- 256 shades of gray on the Macintosh 12-inch Monochrome Display
- 16 shades of gray on the Macintosh Portrait Display (15")
- 16 colors on the Macintosh 21-inch Color Display

1,024K Option Supports:

- 32,768 colors on the Macintosh 12-inch RGB Display, AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16-inch Color Display
- 256 shades of gray on the Macintosh 12-inch Monochrome Display and Macintosh Portrait Display (15")
- 256 colors on the Macintosh 21-inch Color Display

Interfaces

- Internal expansion slot for one processor-direct or 7-inch NuBus expansion card (requires adaptor)
- SCSI interface for connecting up to six external peripheral devices
- AAUI-15 Ethernet connector (optional)
- Two serial (RS-232/RS-422) ports
- One video port for color and monochrome displays of various sizes and resolutions
- One sound-output port (stereo) for external amplifier or headphones, and CD playthrough
- One sound-input port for monaural sound input
- Two Apple Desktop Bus (ADB) ports for a keyboard, mouse, and other devices

Sound Generator

- Custom integrated circuit that drives a stereo miniature headphone jack (22 kHz sample rate)

Keyboard and Mouse

- Several ADB keyboards with numeric keypads available
- Apple Desktop Bus Mouse II

Clock/Calendar

- Custom integrated circuit with long-life lithium battery

Disability Access

CloseView, Easy Access, and visible-beep software are built in. These and third-party options provide alternative input and output devices

Power Requirements

- Line voltage: 100 to 240 V AC, RMS single phase, automatically configured
- Frequency: 47 to 63 Hz
- Power: 86 W maximum, not including display power

ADB power Requirements

- Maximum current draw for all ADB devices: 500 mA
  (three ADB devices maximum recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA (depending on the model used)

Size and Weight

Main Unit:

- Height: 3.4 in. (8.5 cm)
- Width: 16.3 in. (41.5 cm)
- Depth: 15.6 in. (39.7 cm)
- Weight: 14.0 lbs (6.4 kg) Weight varies depending internal devices installed.

Mouse:

- Height: 1.3 in. (3.3 cm)
- Width: 2.4 in. (6.2 cm)
- Depth: 4.2 in. (10.7 cm)
- Weight: 4.0 oz. (0.10 kg)

Operating Environment

- Operating temperature: 50 to 104° F (10 to 40° C)
- Storage temperature: –40 to 116.6° F (–40 to 47 °C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 ft. (3,048 m)

Article Change History:
31 Aug 1994 - Corrected processor to be 68LC040.
11 Aug 1993 - 500MB drive is not available in the U.S.

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Tech Info Library Article Number:11376

..TIL11377-Centris_and_Quadra_610_660AV-Powering_Up_12-93.pdf

Tech Info Library

Centris & Quadra 610, 660AV: Powering Up (12/93)

Revised: 12/7/93
Security: Everyone

Centris & Quadra 610, 660AV: Powering Up (12/93)

==========

Article Created: 9 February 1993
Article Reviewed/Updated: 7 December 1993

TOPIC ----------

The following describes the methods for starting the Macintosh Centris 610, 660AV and the Quadra 610, 660AV computers.

DISCUSSION ----------

The Macintosh Centris 610, 660AV and the Quadra 610, 660AV cannot be powered on from the keyboard power key. Instead, the power switch is located conveniently on the front of the computer just below the floppy disk drive.

Article Change History:
7 December 1993 - Added Centris 660AV, Quadra 610, and 660AV models and edited discussion for clarity.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11377

Tech Info Library

Centris 610, 650 & 660AV: Differences (7/95)

Revised: 7/20/95
Security: Everyone

Centris 610, 650 & 660AV: Differences (7/95)

==========

Article Created: 9 February 1993
Article Reviewed/Updated: 19 July 1995

TOPIC ----------

What are the major differences between the Macintosh Centris 610, the Centris 650 and the Centris 660AV?

The information in this article relative to the Centris 610 and Centris 650 is also relevant to the Quadra 610 and Quadra 650.

DISCUSSION ----------

The major differences between the Centris models are:

Feature:	Centris 610:	Centris 650:	Centris 660AV:
Processor	MC68040 @20 MHz	MC68040 @25 MHz	MC68040 @25 MHz
DRAM Expansion	4 MB to 68 MB	4 MB to 132 MB	8 MB to 68 MB
DRAM Slots	2 slots	4 slots	2 slots
DRAM Speed	80 ns(nanoseconds)	80 ns	70 ns
DRAM SIMM Sizes#	4,8,16 & 32 MB	4,8,16 & 32 MB	4,8,16 & 32 MB
DRAM SIMM Type	72-pin	72-pin	72-pin
Ethernet	Optional	Optional	Standard
FPU	None	Optional	Standard
ROM Size	1 MB	1 MB	2 MB
Maximum VRAM	1 MB (512K stnd)	1 MB (512K stnd)	1 MB (I MB stnd)
VRAM Slots	1 slot	1 slot	1 slot
VRAM Speed	80 ns(nanoseconds)	80 ns	80 ns
NuBus Slots	1!	3	1*
PDS Slot%	Yes	Yes	Yes

Notes:
Composite SIMMs are not supported.
! With optional Centris 610 NuBus Adapter Card installed.
* With optional Centris 660AV NuBus Adapter Card installed.

% On the Centris 610 and 660AV models, the PDS Slot is the Expansion Slot - it can either be used as PDS slot or as a NuBus slot with the appropriate NuBus Adapter Card installed.

The Macintosh Centris 610 and 660AV share the same type of enclosure (form factor) which is a flat, rectangular "pizza" box. The Macintosh Centris 650 uses a Macintosh IIvx style desktop box.

Additionally, the Macintosh Centris 660AV boasts a number of additional features not found in the Centris 610 & 650 including:

- An on-board DSP (Digital Signal Processor) Chip
- GeoPort Communications Architecture
- Composite and S-Video input and output ports
- Sound input and output ports

For further information on the Macintosh Centris 660AV specifications, please consult the Tech Info Library article: "Macintosh Centris 660AV: Specifications"

Article Change History:
19 Jul 1995 - Corrected memory speed info for Quadra 610 and 650.
28 Jul 1994 - Added reference to Quadra 610 and 650 to aid in searching.
29 Jul 1993 - Article revised and retitled to include the Centris 660AV.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:11378

Tech Info Library

Centris 650: Description (8/93) (Discontinued)

Revised: 6/2/94
Security: Everyone

Centris 650: Description (8/93) (Discontinued)

==========

Article Created: 9 February 1993
Article Reviewed/Updated: 11 August 1993

TOPIC ----------

This article describes the Macintosh Centris 650.

DISCUSSION ----------

Overview

Designed for performance and flexibility, the Apple Macintosh Centris 650 is the most expandable Macintosh Centris computer. Like all Macintosh Centris models, the Macintosh Centris 650 is ideal for mainstream business and professional users. The Centris 650 offers the speed and power you need to get the job done in the most demanding environments, and the flexibility to grow as your needs change.

Based on the fast 25-megahertz Motorola 68040 microprocessor, the Macintosh Centris 650 provides affordable high performance. The Centris 650 comes with 4MB of RAM soldered to the main logic board, and a built-in 8K cache for speed up to 2.5 times that of the Macintosh IIci and IIvx. (Configurations that include Ethernet or AppleCD 300i have 8MB soldered to the main logic board.) For increased performance, you can expand memory up to 132MB. All configurations except the 4MB configuration include an FPU (an FPU upgrade for the 4MB configuration is not available due to the lack of a socket for a separate Math Coprocessor on the 68LC040 CPU).

For performance and convenience, the Macintosh Centris 650 works with all Apple displays. The standard Macintosh Centris 650 can display 256 crisp colors on the Macintosh 16-inch display. For photographic-quality images, a video upgrade lets you show 32,768 colors on the same display.

You can use the Macintosh Centris 650's expandablity to set up a system that meets your exact needs, or to increase your computing power as your needs grow. Customize your system by adding NuBus expansion cards in the

three expansion slots provided, or with an on-board networking capability add an Ethernet option. The Macintosh Centris 650 comes standard with an internal hard drive, and its high-speed SCSI interface lets you add additional high-volume storage devices, such as the AppleCD 300i internal CD-ROM drive, so you can run CD-ROM applications in brilliant color.

This computer's form factor is designed for horizontal use only.

The Macintosh Centris 650 comes with System Software 7.1 and the System Enabler 040.

Power and Speed

- 25-MHz 68040 processor
- 32-bit data bus

Memory

- 4MB of RAM (8MB with Ethernet or AppleCD 300i), expandable to 132MB

Display

- Works with all Apple displays
- 256 colors, expandable to 32,768 colors

Expansion

- Optional internal CD-ROM drive (such as AppleCD 300i)
- Eight built-in ports for peripherals
- Three NuBus expansion slots
- One inline 68040 processor-direct slot
- Optional on-board Ethernet

System software

- System 7 with multitasking, file sharing, QuickTime, Balloon Help, TrueType, and more

Networking

- Built-in AppleTalk networking
- File sharing without a dedicated server

Compatibility

- Reads Macintosh, MS-DOS, OS/2, and ProDOS floppy disk formats

ORDERING INFORMATION

M1276LL/A Macintosh Centris 650 4MB Hard Disk 80 CPU (without Ethernet or FPU)
M1613LL/A Macintosh Centris 650 8MB Hard Disk 80 CPU
M1337LL/A Macintosh Centris 650 8MB Hard Disk 230 CPU

..TIL11379-Centris_650-Description_8-93_Discontinued.pdf

M1279LL/A Macintosh Centris 650 8MB (1MB VRAM) Hard Disk 230 CPU w/CD-ROM
M1209LL/A Macintosh Centris 650 8MB (1MB VRAM) Hard Disk 500 CPU

Article Change History:
11 August 1993 - Corrected to indicate that an FPU upgrade for the 4MB configuration is not available.

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Tech Info Library Article Number:11379

Tech Info Library

Centris 650: Specifications (Discontinued 10/93)

Revised: 10/21/93
Security: Everyone

Centris 650: Specifications (Discontinued 10/93)

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Article Created: 9 February 1993

TOPIC ----------

This article provides technical specifications for the Macintosh Centris 650 computer.

DISCUSSION ----------

Microprocessor

- MC68040, running at 25-MHz clock speed, main logic board clock 25 MHz; 32-bit data bus
- Optional, integrated 25-MHz math coprocessor (FPU). All configurations except the 4MB configuration include an FPU.
- Integral Paged Memory Management Unit (PMMU), and 8K-cache architecture

Memory

- Comes with 4MB of RAM on the logic board (8MB with Ethernet or AppleCD 300i)
- Expandable to 132MB of RAM by adding SIMMs to four 72-pin slots. (Doesn't support 1MB, 2MB, or 64MB 72-pin SIMMs.)
- Includes RAM disk software

ROM

- 1MB

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 80MB, 230MB, or 500MB hard disk
- Accommodates one 5.25-in., half-height device, such as the AppleCD 300i internal CD-ROM drive

Video Display

- Supports all Apple displays
- Works with a wide range of third-party displays including some 19-in., VGA, SVGA, NTSC, and PAL monitors

Video RAM (VRAM)

512K standard supports:

- 32,768 colors on the Macintosh 12-inch RGB Display
- 256 colors on the AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16-inch Color Display
- 256 shades of gray on the Macintosh 12-inch Monochrome Display
- 16 shades of gray on the Macintosh Portrait Display (15")
- 16 colors on the Macintosh 21-inch Color Display

1,024K option supports:

- 32,768 colors on the Macintosh 12-inch RGB Display, AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16-inch Color Display
- 256 shades of gray on the Macintosh 12-inch Monochrome Display and Macintosh Portrait Display (15")
- 256 colors on the Macintosh 21-inch Color Display

Interfaces

- Three internal NuBus expansion slots
- One 68040 processor-direct slot
- SCSI interface for connecting up to six external devices
- AAUI-15 Ethernet connector (optional)
- Two serial (RS-232/RS-422) ports
- One video port for color and monochrome displays of various sizes and resolutions
- One sound-output port for stereo playback from CDs and stereo playback of Macintosh sound
- One monaural sound-input port
- Two Apple Desktop Bus (ADB) ports for a keyboard, mouse, and other devices

Sound generator

- Custom integrated circuit that drives a stereo miniature headphone jack (22 kHz sample rate)

Keyboard and mouse

- Works with several ADB keyboards
- Apple Desktop Bus Mouse II

Clock/Calendar

- Custom integrated circuit with long-life lithium battery

Disability Access

• CloseView, Easy Access, and visible-beep soft-ware are built in. These and third-party options provide alternative input and output devices.

Power Requirements

• Line voltage: 100 to 240 V AC, RMS, automatically configured
• Frequency: 50 to 60 Hz
• Power: 112 W maximum, not including display power

ADB power requirements

• Maximum current draw for all ADB devices: 500 mA (three ADB devices maximum recommended)
• Mouse draws 10 mA
• Keyboard draws 25 to 80 mA, depending on the model used

Size and weight

Main unit:
• Height: 6.0 in. (15.2 cm)
• Width: 13.0 in. (33.0 cm)
• Depth: 16.5 in. (41.9 cm)
• Weight: 25 lb. (11.3 kg) Varies depending on internal devices installed.

Mouse:
• Height: 1.3 in. (3.3 cm)
• Width: 2.4 in. (6.2 cm)
• Depth: 4.2 in. (10.7 cm)
• Weight: 4.0 oz. (0.10 kg)

Operating environment

• Operating temperature: 50 to 104° F (10 to 40° C)
• Storage temperature: –40 to 116.6° F (–40 to 47° C)
• Relative humidity: 5% to 95% noncondensing
• Maximum altitude: 10,000 ft. (3,048 m)

Article Change History:

03/02/93 - Revised to mention 8MB RAM with Ethernet or AppleCD 300i, clarify FPU situation.
03/09/93 - Revised to add a note that it doesn't support 1MB, 2MB, or 64MB 72-pin SIMMs.

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Tech Info Library Article Number:11380

Centris 610 and 650: Floating-Point Unit Upgrades (7/94)

Revised: 7/28/94
Security: Everyone

Centris 610 and 650: Floating-Point Unit Upgrades (7/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 28 July 1994

TOPIC ----------

Neither the Macintosh Centris 610 nor the Centris 650 4/80 configuration come with an FPU. Can I upgrade these Centris models with an FPU? Are there any compatibility problems if my Centris doesn't have an FPU?

Some configurations of the Quadra 650 have an FPU standard, those that do not can be upgraded as per below. The Quadra 610 is the same as the Centris 610.

DISCUSSION ----------

FPU Upgrades

You can upgrade the Macintosh Centris 610 or 650 with an FPU, but Apple doesn't provide or support such an upgrade. You must rely on third-party companies who can remove the 68LC040 from its socket and replace it with a 68RC040. Since Apple doesn't intend to offer an upgrade, we can't guarantee that the processor will remain a socketed component.

Compatibility without an FPU

There aren't very many compatibility problems with non-FPU systems. While the addition of an FPU allows certain types of applications to execute faster, these applications tend to be more technical in nature. Business applications -- such as spreadsheets, databases and word processors -- don't require an FPU to run.

Most applications check to see if there's an FPU present. If one doesn't exist, they emulate the floating point instructions in software. There are a few applications that expect or require an FPU. These applications will present problems and we anticipate most software developers will revise these products.

Article Change History:
28 Jul 1994 - Added Quadra 610 to aid in searching.

12 Aug 1993 - Clarified which model configurations do not have an FPU.

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Tech Info Library Article Number:11381

Tech Info Library

Centris 650: Difference from Macintosh IIvx (2/93)

Revised: 7/28/94
Security: Everyone

Centris 650: Difference from Macintosh IIvx (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

What is the difference between the Macintosh IIvx and the Macintosh Centris 650?

DISCUSSION ----------

The Macintosh Centris 650 offers over two and a half times the performance of the Macintosh IIvx, the ability to add any Apple display, double the maximum DRAM expansion, and optional on-board Ethernet.

Support Information Services

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Tech Info Library Article Number:11383

Tech Info Library

Centris 610 & 650, Quadra 800: Logic Board Design (7/94)

Revised: 7/28/94
Security: Everyone

Centris 610 & 650, Quadra 800: Logic Board Design (7/94)

==========

Article Created: 9 February 1993
Article Reviewed/Updated: 28 July 1994

TOPIC

This article describes the Macintosh Centris 610, Macintosh Centris 650, and Macintosh Quadra 800 logic board.

The information in this article relative to the Centris 610 and Centris 650 is also relevant to the Quadra 610 and Quadra 650.

DISCUSSION

The logic board used in the Centris 650 and Quadra 800 are physically the same size as the Quadra 700 motherboard, but contains fewer components.

The Centris 610 logic board is a new design that supports a smaller footprint.

The architecture includes two internal buses: the system bus, and the I/O bus, plus the NuBus.

The system bus is connected directly and runs at the same clock rate as the 68040. This high-performance bus attaches directly to the DJMEMC memory/frame buffer controller for maximum performance.

The I/O bus is partially buffered from the system bus and is synchronous to the system bus. The data portion of the I/O bus is 16 bits wide, and includes features such as byte-steering and dynamic bus sizing, which are necessary to maximize compatibility with software and I/O devices also used on the MC68030.

The NuBus allows industry-standard third-party boards to be easily attached.

Article Change History:
28 Jul 1994 - Added reference to Quadra 610 and 650 to aid in searching.

Support Information Services

..TIL11384-Centris_610_and_650_Quadra_800-Logic_Board_Design_7-94.pdf

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:11384

Tech Info Library

Macintosh: Installer Error Codes 2231 and 2232 (2/93)

Revised: 2/4/93
Security: Everyone

Macintosh: Installer Error Codes 2231 and 2232 (2/93)

==========

Article Created: 1 February 1993

TOPIC ----------

On a Macintosh IIci with 33.7MB of free hard disk space, I did a custom installation of:

  PATHWORKS Programmer
  MacTerminal for System 7
  MacTerminal Manual
  MacX

Not long after the installation begins determining which files will be needed, it shows a 'Stop' dialog box saying:

  There's a problem with the Disk "Ten Forward". No installation can take place. (Error #2231).

Using the Installer's numbers, the total disk requirements of my selections is about 11MB, so a disk space problem is unlikely.

What is error number 2231?

DISCUSSION ----------

A catchall error alert occurs during an indeterminate phase of the installation which the Installer cannot sort out. The two common error numbers are 2231 and 2232.

• Error 2231 indicates that some resource file could not be found.

• Error 2232 indicates that a specific resource could not be found.

Both errors have been found to occur as a result of incompatible startup

documents or INITs. The Installer makes frequent checks of ResError and may encounter a spurious error set by some background process which gets interpreted as an unresolved Installer failure.

The error has been found to occur with INITs that patch GetNextEvent in order to process specific system events. If this alert occurs, users should restart their system with the shift key held down under System 7.0, or to manually remove any suspect INITs or other startup documents under System 6.0.x and earlier.

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Tech Info Library Article Number:11385

Tech Info Library

ARA: Tolerance of Ring Delay (2/93)

Revised: 2/16/93
Security: Everyone

ARA: Tolerance of Ring Delay (2/93)

==========

Article Created: 2 February 1993

TOPIC ----------

I have edited my AppleTalk Remote Access (ARA) modem script to answer after nine rings. This is on my office machine, sharing the voice line during the day. I want to be able to answer voice calls during the day and leave answer calls enabled all the time.

When I go home at night and try to connect, AppleTalk Remote Access tells me that the other modem is not responding: for example, it doesn't answer in the expected period of time.

Is there something I can do to fix this, like:

- Reduce the ring count in my modem script
- Use ResEdit to change the appropriate value in the application to allow for the long delay needed with nine rings

What is the maximum value that can be set for ATSx, where x is answer after x rings, that Remote Access can tolerate?

DISCUSSION ----------

You will also need to increase the value of register S7, which determines the modem's time delay -- in seconds -- to wait for carrier after dialing. S7 needs to be set to a value greater than the length of time it takes for the modem to dial and listen to nine rings. Setting S7=100, within the modem script, should do the trick.

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Tech Info Library Article Number:11425

Tech Info Library

Disk First Aid 7.1: Run Before Installing System Software

Revised: 2/4/93
Security: Everyone

Disk First Aid 7.1: Run Before Installing System Software

==========

Article Created: 4 February 1993

TOPIC ----------

I'm concerned about a letter that appeared in the 1/11/93 MacWeek about the possibility of losing files if I upgrade from 7.0 to 7.1 without first going through the Tune Up and Disk First Aid procedures. Is it indeed a problem?

DISCUSSION ----------

This is an issue that has been twisted somewhat. All of this stems from the original disappearing files and folders problem found under System 7.0. This problem is prevented by System 7 TuneUp 1.1.1 and also System 7.1. However, if your Macintosh has already run into this problem, but you aren't yet aware of it, installing the Tune Up or System 7.1 won't remove the existing problem.

This means that you might lose data because your directory has become corrupted, not because you installed 7.1 (or Tune Up). Therefore, we recommend that every System 7.1 (or System 7.0) user run Disk First Aid 7.1 to ensure that their directory hasn't become corrupted. Once you've done this, then System 7.1 or Tune Up 1.1.1 will prevent that particular problem from happening again.

You don't need to install Tune Up before installing 7.1, but you do need to take the Disk First Aid step.

As a final note, if you've already installed 7.1, you can still run Disk First Aid 7.1 to verify that you don't have this problem. The reason for running Disk First Aid prior to an install of System 7.1 is to prevent installing more files on a previously corrupted directory.

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..TIL11427-Disk_First_Aid_7-1-Run_Before_Installing_System_Software.pdf

Tech Info Library Article Number:11427

Tech Info Library

Apple Basic Color Monitor: Description (Discontinued)

Revised: 6/20/94
Security: Everyone

Apple Basic Color Monitor: Description (Discontinued)

==========

Article Created: 1 February 1993
Article Reviewed/Updated: 5 May 1994

TOPIC ----------

This article describes the Apple Basic Color Monitor.

DISCUSSION ----------

With .39-millimeter dot pitch and 640- by 480-pixel resolution, the Basic Color Monitor gives you the image quality you need for text documents and graphic images. A built-in, tilt-and-swivel base makes it simple to position the display to the angle you find most comfortable. The brightness, contrast, and on/off controls are conveniently located on the front panel.

The Basic Color Monitor is compatible with the Macintosh LC line, the Macintosh Centris line, the Macintosh Quadra line, and many Macintosh PowerBook computers. It attaches directly to your computer's monitor port with the provided adapter (part number 922-1104). And the Basic Color Display meets low-frequency ELF and VLF requirements for magnetic and electric emissions.

The Apple Basic Color Monitor is the most economical member of the Macintosh half-page display family, which also includes the Macintosh Color Display, a 14-inch monitor. The flat, high-contrast screen of the Macintosh Color Display eliminates distortions and delivers clear resolution over the entire area of the screen -- even in your most finely detailed drawings.

In short, the Basic Color Monitor is a good choice for Macintosh users who want the impact and appeal of a color monitor at the most affordable price. And for even brighter color and exceptional resolution, the Macintosh Color Display is an outstanding alternative.

Features

Display quality
• 14-inch screen, 640 horizontal by 480 vertical pixels

- .39 mm dot pitch
- Tilt-and-swivel base for adjustment to comfortable viewing angle
- 60-Hz refresh rate
- Meets strict SWEDAC MPR-2 requirements for low-frequency (ELF and VLF) magnetic and electric emissions
- Plug-and-play with any Macintosh LC, Macintosh Centris, Macintosh Quadra, or Macintosh PowerBook computer
- Easy access to brightness, contrast, and on/off controls

Order Number

Apple Basic Color Monitor
- M9103LL/A

Article Change History:
5 May 1994 - Added adapter and part number for adapter.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11428

Tech Info Library

Apple Basic Color Monitor: Technical Specs (Discontinued 10/93)

Revised: 10/27/93
Security: Everyone

Apple Basic Color Monitor: Technical Specs (Discontinued 10/93)

==========

Article Created: 1 February 1993
Article Reviewed/Updated: 27 October 1993

TOPIC ----------

This article gives the technical specifications for the Basic Color Monitor. These specifications are for the VGA monitor sold in the U.S.

DISCUSSION ----------

Order Number

• M9103LL/A

Picture Tube

• Shadow Mask
• 14-inch diagonal, 13-inch viewable CRT
• 0.29 mm dot pitch

Input Signals

• Video: RGB all positive analogue
• Sync: 31.5 KHz horizontal frequency, - horizontal sync.
  60 Hz vertical frequency, - vertical sync.

Video

• Resolution: 640 horizontal by 480 vertical pixels
• Active display area: Adjusted at the factory to produce an active video area described by an ideal rectangle of 9.3 x 6.9 inches (235 x 176 mm).

Controls

• Brightness

- Contrast
- Power on/off

Physical Measurements

- Weight: 25.3 lbs (11.5 Kg)
- Height: 12.9 inches (32.8 cm)
- Width: 14.5 inches (36.8 cm)
- Depth: 15.2 inches (38.5 cm)

Power Supply

- Input voltage: AC 100-125V
- Input frequency: 50-60Hz
- Input current: 1.2A max. (at 120VAC)
- Consumption: 70W

Environmental Requirements

- Operating ambient temperature: 5° C to 35° C
- Humidity: 10% to 80% (non-condensing)
- Altitude: to 7,000 feet
- Storage temperature: -40° C to 65° C

Safety

- Meets strict SWEDAC MPR-2 requirements for low-frequency (ELF and VLF) magnetic and electric emissions.

System Requirements

- Compatible with all Macintosh LC, Macintosh Centris, Macintosh Quadra, and many Macintosh PowerBook computers

Signal Connector

- 15-pin D shell connector

Pin	Function
1	Red signal
2	Green signal
3	Blue signal
4	Jumper to pin 10
5	Self test
6	Red return
7	Green return
8	Blue return
9	No pin
10	Digital ground
11	Jumper to pin 10
12	No pin
13	Horizontal sync.

14	Vertical sync.
15	No pin

Article Change History:
27 October 1993 - Corrected dot pitch

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11429

Tech Info Library

Advanced Matrix Technology Inc.

Revised: 7/2/93
Security: Everyone

Advanced Matrix Technology Inc.

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Article Created: 02/03/93
Article Reviewed: 07/02/93
Article Updated: 07/02/93

Advanced Matrix Technology Inc.
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765 Flynn Road
Camarillo, CA 93012

805-388-5799

805-484-5282 Fax

Company Profile:
Manufacturer of Dot Matrix Printers that include drivers emulate ImageWriter II and the ImageWriter LQ. They provide both 85 (8.5") and 136 (13.6") column printers that will handle multipart forms.

FormsWriter-240
FormsWriter-290

Article Change History: 07/02/93 Address correction

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Tech Info Library Article Number:11430

Tech Info Library

Color Classic: Compared to Macintosh Classic II (2/93)

Revised: 2/11/93
Security: Everyone

Color Classic: Compared to Macintosh Classic II (2/93)

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Article Created: 9 February 1993

Article Change History

02/11/93 - REVISED
• To correct error in Classic II description.

TOPIC ----------

The table below briefly compares the Macintosh Color Classic to the Macintosh Classic II.

DISCUSSION ----------

	Classic II	Color Classic
Processor	16 MHz 68030	16 MHz 68030
RAM	Up to 10MB	Up to 10MB
Video	1 bit/pixel grayscale	1 to 16 bits/pixel color
Expansion	1 FPU/ROM slot	1 LC PDS slot

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Tech Info Library Article Number:11431

Tech Info Library

Color Classic: Programmer's Key (2/93)

Revised: 2/4/93
Security: Everyone

Color Classic: Programmer's Key (2/93)

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Article Created: 9 February 1993

TOPIC --------------------

I've installed the Programmer's Key on my Macintosh Color Classic, and strange things started happening.

DISCUSSION --------------------

We've found some incompatibilities with the Programmer's Key and suggest that you remove it. You don't need the Programmer's Key with the Color Classic, because many of its features are integrated.

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Tech Info Library Article Number:11434

Tech Info Library

Color Classic: Fits in Any Classic Carrying Case (2/93)

Revised: 2/4/93
Security: Everyone

Color Classic: Fits in Any Classic Carrying Case (2/93)

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Article Created: 9 February 1993

TOPIC ----------

Is there a carrying case specifically for the Macintosh Color Classic?

DISCUSSION ----------

You don't need a carrying bag designed specifically for the Color Classic. The bags designed for carrying the Macintosh Plus or Macintosh Classic also carry the Macintosh Color Classic.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11435

Tech Info Library

Color Classic: After Removing Logic Board, Reset Clock (2/93)

Revised: 2/4/93
Security: Everyone

Color Classic: After Removing Logic Board, Reset Clock (2/93)

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Article Created: 9 February 1993

TOPIC --------------------

Why does my Color Classic ask me to reset the clock after I've removed -- and replaced -- the main logic board?

DISCUSSION --------------------

The system clock is part of the main logic board. When the logic board is removed, it's disconnected from all power, which resets the system clock.

The main system ASIC (custom integrated circuit) keeps track of whether the logic board has been disconnected, and when it's reconnected system software is reminded to ask you to reset the clock to the appropriate time.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11436

Tech Info Library

Color Classic: Description (2/93) (Discontinued)

Revised: 6/2/94
Security: Everyone

Color Classic: Description (2/93) (Discontinued)

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Article Created: 9 February 1993

TOPIC ----------

This article describes the Macintosh Color Classic computer system.

DISCUSSION ----------

Overview

The Macintosh Color Classic has the power and color of a Macintosh LC, with the compact Classic form factor. It's designed for customers who need a compact Macintosh with more power, expandability, and RAM expansion than previously available -- and who want color.

The Color Classic features the Motorola 68030 microprocessor running at 16 megahertz, with an optional 16 MHz 68882 Floating Point Unit. DRAM is expandable from 4 megabytes to 10 megabytes.

The color display is a 10-inch Trinitron tube. Support for 256 colors is built-in and is expandable to thousands of colors. It has one processor-direct slot, compatible with the PDS slot in the Macintosh LC. The modified Classic form offers ergonomic enhancements and easy access to the logic board for memory upgrade and system expansion.

Better/Easier Expansion

Customers can easily add memory and expansion cards. A user-accessible door on the rear panel allows easy removal of the logic board. The logic board slides in and out and features a single, card-edge connector for all internal connections.

NOTE: Some expansion cards designed for the Macintosh LC may not fit within the space constraints of the Macintosh Color Classic. Check with the card's

manufacturer before you buy.

Higher Performance

The 16-MHz 68030 processor is directly attached to all other subsystems to minimize latency times and increase performance.

Color Graphics

The internal monitor is controlled by 256K of video RAM, which provides up to 8 bits-per-pixel. VRAM is upgradable to 512K, giving users more than 32,000 colors on the 10-inch monitor.

Power-saving Features

The Color Classic is the first Classic-style computer to feature a new power-saving cycle, similar to the Sleep mode in a PowerBook. This shuts down the screen and the hard disk drive, reducing power by about 50% when the computer has been idle for a user-definable period. Any key press or mouse move reactivates the full-power mode.

Soft and Hard Power Switches

Like the Macintosh II series, the Macintosh Color Classic allows users to turn the computer on, and shut it down, using the keyboard power key. While the power rocker switch on the rear of the computer is in the on position, the power key on the keyboard is active.

Easy-access Push Button Controls

Pushbuttons on the front panel of the Color Classic let the user adjust audio volume, and video brightness/contrast. The volume button activates a beep sound at the appropriate level, and the brightness and contrast are combined in a single up/down button.

Copyright 1993-1994, Apple Computer, Inc.

Tech Info Library Article Number:11437

Tech Info Library

Color Classic: Energy-Saving Features (2/93)

Revised: 2/11/93
Security: Everyone

Color Classic: Energy-Saving Features (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

Why is the Macintosh Color Classic being called an "energy-saving computer? I've left my computer on overnight, and nothing special happens.

DISCUSSION ----------

The Color Classic has a special power-saver feature that automatically turns off the display and disk drive when the computer has been idle for a certain interval (the user specifies what that interval is). Then, if the user moves the mouse or presses a key on the keyboard, the display and disk drive come to life again.

Because the screen takes several seconds to re-power, a system beep sounds to let the user know the system is ON and is coming out of the power-saver mode.

To turn on the energy-saving feature:

1) Open the Screen control panel.

2) Turn the feature on, and choose the time interval.

In its active state, the Color Classic uses 58 watts. When powered down using the Power Saver feature, the computer uses just under 25 watts.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11438

Tech Info Library

Color Classic: Expanding RAM Beyond 4MB (2/93)

Revised: 2/4/93
Security: Everyone

Color Classic: Expanding RAM Beyond 4MB (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article provides details on expanding the RAM in a Macintosh Color Classic beyond the 4MB that's soldered on its main logic board.

DISCUSSION ----------

- You install DRAM in the Dual SIMM slot.
- Although you can physically install up to 12MB memory, the Color Classic can address only 10MB.
- The Color Classic requires 30-pin DRAM SIMMs with speed of 100ns or faster. Slower SIMMs, such as 120ns, do not work in the Color Classic.
- You can install two DRAM SIMMs, but they must both have the same amount of memory (both 1MB SIMMs, or both 4MB SIMMs, for example).
- Macintosh 2MB Memory Expansion Kit (two 1MB SIMMs) is order number M0219.
- The DRAM SIMMs in the Macintosh 4MB Expansion Kit (M5952LL/A) also work in the Color Classic. The 4MB kit contains four 1MB SIMMs, so it may not be appropriate for individual buyers because the Color Classic can accept only two SIMMs.

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Tech Info Library Article Number:11439

Tech Info Library

Color Classic: Installing Expansion Cards (2/93)

Revised: 2/4/93
Security: Everyone

Color Classic: Installing Expansion Cards (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

How do I install an expansion card in my Macintosh Color Classic?

DISCUSSION ----------

Very important: Before installing anything, make sure the back power switch is in the off position. Shutting down your system from the keyboard is not sufficient.

The instructions are in your Getting Started Guide.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11440

Color Classic: Front Panel Controls (2/93)

Revised: 2/5/93
Security: Everyone

Color Classic: Front Panel Controls (2/93)

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Article Created: 9 February 1993

TOPIC --

What do the buttons on the front of my Macintosh Color Classic do?

DISCUSSION ---

The Color Classic has two functional buttons on the front bezel:

- The control to the far right adjusts both the brightness and contrast of the display.

- The control to the far left adjusts the system's sound volume.

The changes you make with these controls are reflected in the Screen and Monitor control panels.

The plastic button labeled "Color Classic" (or, in Europe, "Colour Classic") is only a nameplate, not a functional button.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11441

Tech Info Library

Color Classic: Use Small Screws to Secure the Back Panel (2/93)

Revised: 2/5/93
Security: Everyone

Color Classic: Use Small Screws to Secure the Back Panel (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

I received two small screws with my Macintosh Color Classic. What are they for?

DISCUSSION ----------

Apple provides these two screws in case you want to secure the back panel. Some customers want to prevent their children from opening the computer and tampering with the components inside.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11443

Tech Info Library

Color Classic: Built-in Microphone (2/93)

Revised: 2/4/93
Security: Everyone

Color Classic: Built-in Microphone (2/93)

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Article Created: 9 February 1993

TOPIC ----------

1) What can I record with the Macintosh Color Classic's integrated microphone?

2) I have a microphone from another Macintosh computer and it doesn't fit into the Macintosh Color Classic's sound input jack on the back of the computer. Why is that?

DISCUSSION ----------

1) Using third-party software, you can record just about anything. Without additional software, you can record system beeps. Use the Sound Control Panel. Detailed instructions are in your Getting Started Manual.

2) The Color Classic's integrated microphone is the same quality as the external one we previously packaged with other Macintosh computers.

   We expect that customers will want to use an external microphone (instead of the integrated microphone) only if they need an exceptionally high quality microphone, which is likely to be one with with a four-pin connector. Thus, the sound input jack on the back of the Color Classic requires a microphone with a four-pin connector. The microphones that Apple ships with other Macintosh models don't have four-pin connectors.

   The sound port can physically accommodate a microphone with a 3-pin connector, but the computer won't recognize it as a microphone. Instead, the Color Classic assumes that anything with a 3-pin connector is a standard line-in (from a stereo, for example).

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..TIL11444-Color_Classic-Built-in_Microphone_2-93.pdf

Tech Info Library Article Number:11444

Tech Info Library

Color Classic: How To Get More than 256 Colors (2/93)

Revised: 3/31/93
Security: Everyone

Color Classic: How To Get More than 256 Colors (2/93)

==========

Article Created: 9 February 1993

Article Change History

03/31/93 - UPDATED
- To clarify that adding a 512K VRAM SIMM is ineffective and unsupported.

TOPIC ----------

How do I get more than 256 colors for my Color Classic?

DISCUSSION ----------

You need to expand your computer's VRAM: install one 256K VRAM SIMM in the open VRAM slot (VRAM kit order number M1310LL/A contains one 256K VRAM SIMM).

The Macintosh Color Classic requires standard VRAM SIMMs. The VRAM Expansion Kit (M5953LL/A) also works in the Color Classic. This kit contains two 256K VRAM SIMMs, but the Color Classic needs only one of them.

The built-in screen will reach maximum bit depth with a 256K VRAM SIMM. Even though a 512K VRAM SIMM will fit on the Color Classic Logic Board, that configuration is unsupported.

After expanding the VRAM, use the Monitors control panel to select "thousands of colors".

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11445

Tech Info Library

Color Classic: Screen Resolution (2/93)

Revised: 2/4/93
Security: Everyone

Color Classic: Screen Resolution (2/93)

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Article Created: 9 February 1993

TOPIC ----------

Can I switch the display to show other pixel resolutions, like 640 x 480?

DISCUSSION ----------

No. The Macintosh Color Classic can show only 512 x 384, which is the same resolution as Apple's 12" Color Display.

When you use the Apple IIe card, the Macintosh Color Classic will automatically switch to Apple IIe resolution.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11446

Tech Info Library

Color Classic, LC 520: Power Switches (8/93)

Revised: 8/2/93
Security: Everyone

Color Classic, LC 520: Power Switches (8/93)

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Article Created: 9 February 1993
Article Reviewed/Updated: 2 August 1993

TOPIC ----------

1) I just pulled my new Color Classic out of the box, plugged it in, and turned it on. But it didn't come to life. Why?

2) Can I shut off the dialog box that comes up once I hit the Power key on the keyboard?

DISCUSSION ----------

1) When the Color Classic and the LC 520 first come out of the box and the power switch on the rear is turned on, the computer doesn't start up. To turn on the computer, just press the power key on the keyboard. Most power-on and -off operations should be done from the keyboard.

   You need to use the power switch in the back of the Color Classic and the LC 520 only to prepare them for:

   • Long-term storage

   • Removal of the logic board. (If you forget to turn this switch off before removing the logic board, there is a danger of shorting something out, because power will still be active on the board.)

   To shut down the Color Classic or the LC 520, press the power key on the keyboard.

2) No. For data security reasons, we thought it was best that the dialog appear each time the keyboard button is pressed. You can't disable it.

Article Change History:
2 August 1993 - Updated with references to LC 520 as well.

..TIL11447-Color_Classic_LC_520-Power_Switches_8-93_(TA28915).pdf

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11447

Tech Info Library

Color Classic: Specifications (3/93) (Discontinued)

Revised: 6/2/94
Security: Everyone

Color Classic: Specifications (3/93) (Discontinued)

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Article Created: 9 February 1993

Article Change History

03/12/93 - REVISED
- To clarify the on-board RAM configuration.

TOPIC

This article provides the specifications for the Macintosh Color Classic computer system.

DISCUSSION

Microprocessor

- Motorola 68030, clock speed 16 MHz, 16-bit data bus
- Integral PMMU (Paged Memory Management Unit)
- Socket for optional math coprocessor: 16 MHz floating point unit (FPU)
  The Macintosh Math Co-processor kit is order number M6775LL/A

Memory

- 4MB of RAM on the logic board and two memory expansion slots for SIMMs
- RAM expansion to as much as 10MB
- RAM disk software included

Storage

- One built-in Apple SuperDrive 1.4MB floppy-disk drive that reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks
- One built-in 80MB SCSI hard-disk drive (Other capacities may be offered in the future.)

• Optional external AppleCD CD-ROM drive

Display

• Built-in 10-inch (diagonal) color Trinitron CRT
• 512 x 384 pixels (12% more viewing area than Classic and Classic II)
• 76 dpi, .26-stripe pitch
• 256 colors, upgradeable to thousands of colors (see VRAM)

VRAM (Video RAM)

• 256K allows 256 colors
• 512K allows 32,768 colors

Interfaces

• AppleTalk built-in
• Internal expansion slot for one Macintosh-LC PDS (processor-direct slot) card
• SCSI interface for up to six external SCSI peripheral devices
• Two serial (RS-232/RS-422) ports
• Two ADB (Apple Desktop Bus) ports for mouse, keyboard, and so on

Sound

Monophonic 8-bit digital-analog conversion, with 22-kHz sample rate -- capable of driving stereo headphones or other stereo equipment through the sound jack.
• Built-in omnidirectional electret microphone
• One mono sound-out port for external audio amplifier or headphones
• One sound-in port for 8-bit mono sound, sampled at 22 or 11 kHz

Keyboard and Mouse

• Apple ADB Mouse II
• ADB Keyboard with numeric keypad and two-level tilt adjustment

Clock and Calendar

• Custom integrated circuit with long-life lithium battery

Fan

• 9-12 cubic feet/min. axial; operational flow
• Negative pressure cooling

Disability Access

• CloseView, Easy Access, and visible beep built in
• Third parties provide alternative input/output devices

Power Requirements

- Line voltage: 90 to 240 VAC, RMS single phase automatically configured
- Frequency: 47 to 63 Hz
- Power: 100 W maximum

ADB Power Requirements

- Mouse draws 10 mA
- Keyboard draws 25 mA
- Maximum current draw for all ADB devices: 500 mA
  (maximum of three ADB devices recommended)

Size and Weight

	Main Unit	Mouse	Keyboard
Height	14.5 in. (37.0 cm)	1.3 in. (3.3 cm)	1.3 in. (3.25 cm)
Width	9.9 in. (25.2 cm)	2.4 in. (6.17 cm)	16.0 in. (40.53 cm)
Depth	12.6 in. (32.15 cm)	4.2 in. (10.73 cm)	5.9 in. (15.06 cm)
Weight	22.5 - 23.2 lb. (10.2 - 10.5 kg)	4.0 oz. (0.10 kg)	1.96 lb. (0.89 kg)

Environment

- Meets SWEDAC MPR-2 requirements for low emissions
- Built-in energy-saving feature
- Operating temperature: 50 to 104° F (10 to 40° C)
- Storage temperature: -40 to 116.6° F (-40 to 47° C)
- Relative humidity: 20% to 95% noncondensing
- Altitude: 15,000 feet (4,722 m) maximum

Ordering Information

M1602LL/A Macintosh Color Classic 4MB RAM, 80MB Hard Drive

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Tech Info Library Article Number:11448

Tech Info Library

Macintosh Classic Series: Tilt/Swivel, Security Device (2/93)

Revised: 2/4/93
Security: Everyone

Macintosh Classic Series: Tilt/Swivel, Security Device (2/93)

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Article Created: 9 February 1993

TOPIC ----------

I'd like to tilt my Color Classic so I can see the display better. Can I do that? And is there a product that lets me secure my computer to a table?

DISCUSSION ----------

A company called Kensington Ltd. sells a Tilt/Swivel stand that works with the Macintosh Classic, Classic II, and Color Classic. Kensington also has a security kit that works with those models.

To locate a vendor's address and phone numbers, use the vendor's name as a search string.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11449

Color Classic: Using It While Travelling (2/93)

Revised: 2/4/93
Security: Everyone

Color Classic: Using It While Travelling (2/93)

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Article Created: 9 February 1993

TOPIC --------------------

I want to travel with my North American Macintosh Color Classic. Can I use it in other countries?

Is there a problem if I take it to the southern hemisphere?

DISCUSSION --------------------

The Macintosh Color Classic has a universal power supply, which means you can use it outside the U.S. However, you'll different power cords, which are available where you're traveling.

Your computer's display has been optimized for the northern hemisphere. If you take it to the southern hemisphere, your display will not be adjusted properly. Take it to an authorized service provider for adjustment.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11450

Color Classic: No Upgrade from Classic or Classic II (2/93)

Revised: 2/4/93
Security: Everyone

Color Classic: No Upgrade from Classic or Classic II (2/93)

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Article Created: 9 February 1993

TOPIC ----------

I have a Macintosh Classic. Can I upgrade it to a Macintosh Color Classic?

DISCUSSION ----------

No. The Color Classic's new color display and expansion slot would not fit into the case of a Macintosh Classic or Classic II. Even if the components would fit, such an upgrade would involve replacing virtually every component of your Classic computer, and wouldn't be cost-effective.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11451

Tech Info Library

Color Classic: Apple IIe, Macintosh LC, & Ethernet Cards (2/93)

Revised: 2/4/93
Security: Everyone

Color Classic: Apple IIe, Macintosh LC, & Ethernet Cards (2/93)

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Article Created: 9 February 1993

TOPIC ----------

1) Is the Color Classic compatible with software and hardware designed for the Macintosh LC?

2) Can my Macintosh Color Classic run Apple IIe software?

3) Can I add Ethernet networking to my Color Classic?

DISCUSSION ----------

1) Yes, the Macintosh Color Classic is fully compatible with the Macintosh LC line.

2) Yes, if Apple's Apple IIe Card is installed in the expansion slot inside the Color Classic, you can run Apple IIe software. The Apple IIe Card for Macintosh LC (v2.2) is order number M0444LL/C; it works in the Color Classic as well as in the Macintosh LC.

3) Yes, you can install Apple's Ethernet card in the expansion slot. The Apple Ethernet LC Card is order number M0443LL/B. You need a transceiver in addition to the Ethernet card itself.

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Tech Info Library Article Number:11452

Tech Info Library

Macintosh: Why Some Models Have Two Keyboard Ports (2/93)

Revised: 2/3/93
Security: Everyone

Macintosh: Why Some Models Have Two Keyboard Ports (2/93)

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Article Created: 9 February 1993

TOPIC --------------------

Why does my Macintosh have two, rather than just one, socket for the keyboard cable?

DISCUSSION --------------------

Some Macintosh models have two ADB (Apple Desktop Bus) ports, so you can either:

- Plug the keyboard and the mouse directly into the computer, or
- Plug the mouse into the keyboard and then the keyboard into the computer. (You can plug the keyboard into either port.)

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Tech Info Library Article Number:11453

Tech Info Library

PowerBook 160, 165c, 180, 180c: Power Button Improvements (6/93)

Revised: 5/16/94
Security: Everyone

PowerBook 160, 165c, 180, 180c: Power Button Improvements (6/93)

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Article Created: 9 February 1993

TOPIC ----------

The function of the power button (the power button on the back of the unit) has been changed on the PowerBook 160, 165c, 180, and 180c, compared to earlier PowerBook models.

DISCUSSION ----------

Earlier Models

A PowerBook 140, 145, or 170 powers down if the button is pressed while the system is on. This sometimes causes users to lose data that had not been saved.

Improvements

On the PowerBook 160, 165c, 180, and 180c, pressing the power button is like selecting Shut Down from the Finder's Special menu: before applications quit, they ask the user whether to save unsaved files in memory before powering down.

If the power button is held in for more than 5 seconds, the system powers down without saving data. This allows users to shut down the system if the system is frozen.

Support Information Services

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Tech Info Library Article Number:11455

Tech Info Library

PowerBook 165c: Significance of Its Name (2/93)

Revised: 5/16/94
Security: Everyone

PowerBook 165c: Significance of Its Name (2/93)

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Article Created: 9 February 1993

TOPIC ----------

Does the name 165c have any particular significance?

DISCUSSION ----------

Just as the name PowerBook 145 suggests a performance improvement compared to the PowerBook 140, the name PowerBook 165 suggests a performance improvement compared to the PowerBook 160.

The letter c denotes color.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11456

Tech Info Library

PowerBook 165c: Description (6/94)

Revised: 6/30/94
Security: Everyone

PowerBook 165c: Description (6/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 30 June 1994

TOPIC ----------

This article describes the PowerBook 165c, the first color PowerBook.

DISCUSSION ----------

Overview

The PowerBook 165c has PowerBook 180 power, with a bright, vivid color display. It features the Motorola 68030 microprocessor running at 33 megahertz, and includes the 68882 floating point unit.

The built-in FSTN/passive matrix LCD gives an 8-bit (256 color) resolution at 640 x 400 pixels. Video-out comes standard and supports most Macintosh monitors, including the Portrait and 16-inch RGB monitors.

The PowerBook 165c also supports many VGA and SVGA monitors (with the proper adapter cable).

The standard pseudostatic RAM configuration is 4MB, expandable to 14MB.

Hard drive options include 80MB and 120MB capacities.

The PowerBook 165c has one processor-direct slot, and features a connector for an internal modem.

PowerBook 165c offers greater performance than the PowerBook 160. Upon introduction, the PowerBook 165c will be added to the existing PowerBook line -- between the PowerBook 160 and the PowerBook 180.

Full, Truer Color with New Color LCD Display

Unlike competitive passive-matrix display products that offer 16 dithered colors, the PowerBook 165c provides a full 256-color display. It also supports 256 colors/grays to most Apple monitors -- including the 16-inch RGB Display -- as well as providing VGA and SVGA output.

A new screen technology, including a brightness enhancement filter and twin backlight tubes, provides a brighter display with less washout and cursor "submarining" than before. The new screen also offers a wider viewing angle, wide enough for three adults to sit side by side and still see all of the screen.

QuickTime and ColorSync Support

The PowerBook 165c supports QuickDraw, ColorSync, and QuickTime. You can create presentations with full color, and QuickTime movies, as on other color Macintosh computers. (Because of the nature of the passive-matrix display, QuickTime movies are displayed at their best on an external monitor.)

PowerBook 180 Performance

The PowerBook 165c features the same 68030 processor, running at 33 MHz, as the PowerBook 180. It also features the 68882 floating point co-processor.

New Battery and Power Adapter

The PowerBook 165c has a new 2.9 amp-hour NiCad battery that provides 1.5 to 2 hours of continuous battery use from a full charge. It has the same charging characteristics as the battery in the PowerBook 160 and 180, taking from 3 to 4 hours to charge to 80%, and an additional 3 to 4 hours to fully charge.

The power supply for the PowerBook 165c provides 24 watts of power, compared to the 17-watt supply used in the PowerBook 160 and PowerBook 180.

What's in the Box

Inside the accessory kit:

- Hardware Components
- Printed Documentation
- System software installed on hard drive

Article Change History:
30 Jun 1994 - Reviewed for technical accuracy.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:11458

Tech Info Library

PowerBook 165c Display: Technical Details (2/93)

Revised: 5/16/94
Security: Everyone

PowerBook 165c Display: Technical Details (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article provides technical details about the new color display in the Macintosh PowerBook 165c.

DISCUSSION ----------

Overview

Apple has worked hard to provide the best quality color passive-matrix display in the industry. The PowerBook 165c uses a passive-matrix 256-color flat panel display (FPD) with good color saturation, high contrast, and a quick response time. Ghosting and shimmering, which are often found on passive-matrix displays, has been reduced on the PowerBook 165c screen.

To make the best passive-matrix display required a number of changes over the existing PowerBook displays. We now have two Cold Cathode Fluorescent Lamps (CCFL), to increase the brightness of the screen for the color display, mounted at the top and bottom of the screen. Because of the addition of color pigment and higher quality polarizers on the display glass, additional light is needed to create a bright, vivid display. This display will distinguish the PowerBook 165c from the passive-matrix competition in a side-by-side comparison. The displays used on other passive-matrix color systems support only 16 colors, but the PowerBook 165c can support 256 different colors on the screen.

Some other color displays suffer from washout: that is, uneven brightness and color across the screen. To reduce washout, the PowerBook 165c display uses a new type of liquid crystal material. The reflector and light pipe on the back of the screen have been optimized to provide even light distribution across the entire display. This means that colors will appear more vivid and true.

The sharper contrast or color quality and the increased viewing angle are

improved over the competition, thanks to a new polarizer that increases the contrast ratio.

PowerBook Display and Dimming

When the backlight is off, the screen turns black. The additional filter and color pigments used in the display don't allow enough light to enter the display for the user to see the image on the screen without the backlight. This is different from the grayscale displays on the PowerBook 160 and 180, which still allow the user to read the display with the backlight off. This is a problem because the machine will look like it is in sleep state and the user may accidentally turn the unit off or just close the lid and carry it away (draining the battery in the process).

Liquid Crystal Displays

Liquid crystal displays are nonemissive, in that they do not create their own light, but pass or block light. The display in the PowerBook 165c uses a backlight to send the image to the user. The display consists of a reflector, light pipe, rear polarizer, back glass, liquid crystal material, front glass, and front polarizer.

The liquid crystal material is a liquid with rod-shaped molecules inside. These modules can form a twisting helix (staircase) pattern that "bends" light entering the display. The two polarizers are shifted and will only allow light that is bent by the liquid crystal material to be seen by the user. When a current is applied, the rods straighten out and no longer bend the light.

Each pixel in a color display contains three subpixels: one for red, one for green, and one for blue. A red, green, and blue color pigment is applied to the glass at each subpixel of the display. These color pigments line up with the electrodes that run down the glass and the liquid crystal material inside the display. The display can twist each subpixel up to 64 times per cycle. This controls the amount of red, green, and blue that is seen by the user. The display controller twists the blue and green liquid crystals 64 times, and the red liquid crystal 0 times, to get the brightest red possible. To get a darker red, it starts to twist the red liquid crystal.

Passive Matrix

In a passive-matrix display, the top glass contains very fine thin wires, or electrodes, that are aligned vertically down the screen. The bottom glass contains wires that cross the display horizontally. When a current is passed from the top glass electrode to the bottom glass electrode, the liquid crystal rod stops twisting. Because the light is not bent, the polarizer stops the user from seeing the light passed from the back of the display. Because all the pixels in a given row or column use the same wire, you can have crosstalk on the display. If a large number of pixels in a row are on (as in a menu bar), the other pixels in that row may twist. This is seen as a slight line that passes across the screen. Crosstalk has been reduced on the PowerBook 165c display and should be less of a problem compared to the PowerBook 160 display.

Active Matrix

An active-matrix display has a transistor at each pixel to activate the liquid crystal material. The top or bottom layer of glass contains the transistors, and wires that provide individual control over each subpixel. This individual control over each pixel allows the display to provide higher contrast, larger viewing angle, faster response, and a brighter display. The problem with this type of display is its production cost. The screen is like a 9-inch memory chip with 768,000 transistors. If any of the wires leading to the transistor are bad, or the transistor etched into the glass fails, the pixel does not work. This causes a large number of displays to be rejected because too many pixels do not work -- and this increases the cost of this type of display.

Support Information Services

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Tech Info Library Article Number:11459

Tech Info Library

Macintosh Duo Dock with 230MB Hard Drive, FPU, VRAM (1/96)

Revised: 1/3/96
Security: Everyone

Macintosh Duo Dock with 230MB Hard Drive, FPU, VRAM (1/96)

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Article Created: 9 February 1993
Article Reviewed/Updated: 3 January 1996

TOPIC ----------

This article describes a new configuration of the Macintosh Duo Dock, with 230MB hard drive, FPU, and VRAM.

DISCUSSION ----------

This new product adds a richly configured new docking system for PowerBook Duo System users.

The new configuration includes an internal 230MB hard disk drive, a math coprocessor, and an additional 512K of VRAM (for a total of 1MB). The 1MB total VRAM will support up to 32,000 colors (16-bit color) on up to a 16-inch monitor.

The new Duo Dock configuration also includes a file reconciliation software package: PowerMerge from Leader Technologies. File reconciliation software, such as PowerMerge, allows a user to reconcile files between the PowerBook Duo notebook and the hard drive in the Duo Dock or on another Macintosh system.

In addition, the software supplied includes a pre-configured file that backs up the contents of the PowerBook Duo hard drive to a folder on the Duo Dock hard drive. When installed, the software will automatically update this backup set every time the PowerBook Duo returns to the docking station. Other uses of the software include automatic updating of files on the notebook with files on network servers, so for example a salesperson could always be sure of having the latest price list and current version of a sales presentation.

PowerMerge software is a product of, and is supported by, Leader Technologies. To locate a vendor's address and phone numbers, use the vendor's name as a search string.

..TIL11460-Macintosh_Duo_Dock_with_230MB_Hard_Drive_FPU_VRAM_1-96.pdf

Support Information Services

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Tech Info Library Article Number:11460

Tech Info Library

PowerBook 165c: No Upgrade from Monochrome Models (2/93)

Revised: 5/31/94
Security: Everyone

PowerBook 165c: No Upgrade from Monochrome Models (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

Can I upgrade to a PowerBook 165c from earlier PowerBook models?

DISCUSSION ----------

There will not be an upgrade to the PowerBook 165c. There were changes to all major components in the system. The addition of the cousin card, new battery, new power adapter, new inverter, display, display housing, interconnect card, and plastics make such an upgrade too complex and costly.

Support Information Services

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Tech Info Library Article Number:11461

Tech Info Library

PowerBook 165c: Battery and Power Adapter (5/94)

Revised: 5/6/94
Security: Everyone

PowerBook 165c: Battery and Power Adapter (5/94)

==========

Article Created: 9 February 1993
Article Reviewed/Updated: 6 May 1994

TOPIC ----------

This article describes the PowerBook 165c's battery and power adapter.

DISCUSSION ----------

The PowerBook 165c has a 2.9 AHr NiCad battery, which provides 1.5 to 2 hours of battery use from a full charge. The battery has the same charging characteristics as the existing PowerBook computers, taking about 3 to 4 hours to charge the battery to 80%, and 3 or 4 more hours for a full charge.

Here's a comparison of the PowerBook 165c batteries with those in other PowerBook models:

	PowerBook 140/145/170	PowerBook 145B	PowerBook 165c
Battery Capacity	2.5 AHr	2.8 AHr	2.9 AHr
Battery Life	2 to 3 hours	2 to 3 hours	1.5 to 2 hours

Because of the additional power demands of the color display, the PowerBook 165c's power adapter has been increased to 24 watts from the 19 watt supply used with the PowerBook 160 and 180. Older power adapters will work with the PowerBook 165c -- but charging time will be increased. Use of the older adapter with this system may drain the battery, even though it's plugged in. The power adapter resembles the existing power adapter, but has "24W" embossed on the plug end for identification purposes. The new adapter can be used on existing systems, and with the battery charger, without any problems.

Article Change History:
6 May 1994 - Updated ampere-hour specification for PowerBook 140/145/170

and clarified information in article.

Support Information Services

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Tech Info Library Article Number:11464

Tech Info Library

PowerBook 165c: RAM Expansion (2/93)

Revised: 5/31/94
Security: Everyone

PowerBook 165c: RAM Expansion (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

The PowerBook 165c can be expanded to 14MB of RAM. This article provides details.

DISCUSSION ----------

The PowerBook 165c can be expanded to 14MB of RAM. There is 4MB of memory on the logic board, and one memory slot. The slot is similar to the PowerBook 100, 140, 145, and 170 memory connector -- but uses an unused pin to determine the speed of the RAM chips installed. If existing RAM cards (100ns) are used, an extra wait state will be included when the system accesses that memory.

The PowerBook 165c runs faster if 85ns chips are used. The M4664 4MB card should be used with the PowerBook 165c. The slower 100ns card (M1033) will be phased out when inventory is exhausted.

PowerBook 165c RAM Speed and Wait States:
• 85ns (recommended) with two wait states
• 100ns with three wait states

Third-party memory cards designed for the PowerBook 160 and PowerBook 180 may not fit the PowerBook 165c.

Support Information Services

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Tech Info Library Article Number:11467

Tech Info Library

PowerBook 165c: Specifications (7/95)

Revised: 7/20/95
Security: Everyone

PowerBook 165c: Specifications (7/95)

==========

Article Created: 9 February 1993
Article Reviewed/Updated: 20 July 1995

TOPIC ----------

This article provides the specifications for the Macintosh PowerBook 165c computer system.

DISCUSSION ----------

Microprocessor

- Motorola 68030, clock speed 33 MHz
- 68882 math coprocessor, 33 MHz

System Software

- Requires System 7.1 or later
- PowerBook control panel for setting battery conservation options
- PowerBook Display control panel for activating video mirroring and display dimming
- AutoRemounter control panel lets system sleep when connected remote file servers
- A System Enabler specifically for the PowerBook 165c

Memory and Storage

- 4MB pseudostatic RAM, expandable to 14MB maximum
- RAM contents preserved in sleep mode; RAM is lost at shutdown
- One built-in Apple SuperDrive 1.4MB floppy-disk drive that reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks
- One built-in 80MB or 120MB SCSI hard-disk drive

Display

- 9-inch (22.6 cm) diagonal backlit passive-matrix liquid-crystal

- Built-in support for 256 colors from a palette of 4,096 colors
- Two video-out modes:
  - Video mirroring for simultaneous display of the same image on two screens
  - Dual display for full use of both screens
- External Display Options:
  - Macintosh 12-inch Monochrome Display
  - Macintosh 12-inch RGB Display
  - AppleColor High-Resolution RGB Display
  - Macintosh Color Display (14")
  - Macintosh 16-inch Color Display
  - Macintosh Portrait Display (15")
  - Some VGA and SVGA displays

Interfaces

- One power adapter port
- One HDI-30 SCSI port for external SCSI peripheral devices
- Two RS-422 serial ports, one of which is disabled if internal modem is installed
- One ADB (Apple Desktop Bus) port for mouse, keyboard, and so on
- One slot for optional modem
- One video-out port supporting 8-bit density and 256 colors
- Security slot for use with third-party anti-theft and related products

Modems

- Optional internal PowerBook Express Modem:
  - 14,400 bps (bits per second) data
  - fax send and receive at 9600 baud
  - Includes Express Fax software
- Optional internal 2400-bps modem:
  - fax send at 9600 baud
  - Includes Fax send software

Sound

- Apple Sound Chip provides 8-bit sound -- capable of driving stereo headphones or other stereo equipment through the sound port
- Built-in omnidirectional microphone: output voltage 4 mV, peak-to-peak, at normal volume
- One stereo sound-out port for external audio amplifier
- One mono sound-in port, 8-bit sound sampled at 11 or 22 kHz

Keyboard and Trackball

- 63 keys (U.S.) or 64 keys (ISO), standard Macintosh layout, 3.0 mm travel
- Two-level tilt adjustment
- Software indicates Caps Lock on screen
- Built-in 30mm trackball: the two buttons are electrically connected

Clock and Calendar

• CMOS custom chip with long-life lithium battery

Disability Access

• CloseView, Easy Access, and visible beep built in
• Third parties provide alternative input/output devices

Power

• 2.9 AHr NiCad battery (1.5 to 2 hours of battery life)
• Line voltage: 100 to 240 volts (Note: an early product specification sheet for this model erroneously states that its line voltage is 110 to 120 V.)
• Frequency: 50 to 60 Hz
• Maximum current draw for all ADB devices: 200 mA (maximum of three ADB devices recommended)

Size and Weight

Height	2.29 in. (5.8 cm)
Width	11.25 in. (28.6 cm)
Depth	9.3 in. (23.6 cm)
Weight	7.0 lb. (3.2 kg)

Environment

• Operating temperature: 50 to 104° F (10 to 40° C)
• Storage Temperature: -40 to 65° C (-40 to 148° F)
• Relative humidity: 20% to 80% noncondensing
• Maximum altitude: 15,000 feet (4,722 m)
• Maximum operating altitude: 10,000 feet (3,048 m)

Ordering Information

M4900LL/A	PowerBook 165c 4/80
M4920LL/A	PowerBook 165c 4/120

Article Change History
20 Jul 1995 - Corrected AutoRemounter misspelling; reformatted and reviewed.
05 Apr 1993 - Revised to correct voltage specification.
19 Mar 1993 - Corrected line voltage and math coprocessor name (68882).

Support Information Services

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Tech Info Library Article Number:11468

Tech Info Library

PowerBook 165c: System Software and Control Panels (2/93)

Revised: 5/31/94
Security: Everyone

PowerBook 165c: System Software and Control Panels (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

This article describes the System software and special control panels associated with the new Macintosh PowerBook 165c notebook computer.

DISCUSSION ----------

Macintosh System 7.1 is the first world-ready reference release of Macintosh system software. Release 7.1 was designed with the global community in mind.

Support for all scripts (alphabets, or writing systems) has been consolidated into the base system, and the extensions (WorldScript I and II). Localization has been made easier, and adding multiple scripts to the base has been greatly simplified.

- System Enabler # 121 is specifically for the PowerBook 165c.

- A new color Macintosh Basics disk ships with the PowerBook 165c.

New Control Panels

All PowerBook control panels have been modified to support all PowerBook computers.

- The Portable control panel is now called PowerBook.

- There are two new control panels: Auto Remounter and PowerBook Display. Auto Remounter mounts file servers when the system comes out of sleep. PowerBook Display controls screen dimming, and a new feature called mirroring.

PowerBook Control Panel

This control panel has been modified and no longer includes separate controls for system and hard drive sleep. Like the PowerBook 100, the PowerBook 160, 165c, and 180 support SCSI Disk Mode. The SCSI ID number for SCSI Disk Mode is set from this control panel. The Options button allows the user to keep the system awake when plugged in and set the processor speed. The Reduced speed button reduces the clock speed by half, adding 10-15 minutes to battery life.

The Options dialog will be reduced on the PowerBook 160, 165c, and 180 to make sure the user doesn't turn off power cycling (system rest). To get the full dialog, hold down the Option key when clicking the Options button. When power cycling is turned off and a 16" monitor is used with full hard drive access, the system will not be able to charge the battery; to eliminate this problem, the Option key solution was selected to make sure the user would read the manual to understand the consequences of turning off power cycling.

PowerBook Display Control Panel

This control panel allows the user to set the amount of time the unit takes before the backlight and external monitor turn off to save power. The display dims and turns off only after a period of no keyboard or mouse activity. This is one of the most effective ways to increase battery life.

Video Mirroring

The video mirroring feature displays the same image on the internal display and on the external display. Mirroring sets the screen size to 640 by 400. This allows the presenter to look at the PowerBook built-in display and see exactly what is on the external display or projection device. Video mirroring uses QuickDraw to catch the calls to the screen.

Auto Remounter Control Panel

The Auto Remounter control panel reconnects file servers when the system wakes up from sleep or -- if selected -- from shut down. When Auto Remounter is turned on, the user doesn't see the message stating network services will be lost when Sleep is selected.

SCSI Disk Mode

Like the PowerBook 100, the PowerBook 160, 165c, and 180 support SCSI Disk Mode. With the special SCSI Disk adapter, a user can turn the PowerBook's internal drive into an external drive for another Macintosh computer. Use the PowerBook control panel to set the SCSI id number for the PowerBook drive when used in SCSI Disk Mode.

Support Information Services

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Tech Info Library Article Number:11469

Tech Info Library

PowerBook 165c and PowerBook 180 Compared (2/93)

Revised: 5/31/94
Security: Everyone

PowerBook 165c and PowerBook 180 Compared (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article provides an "at-a-glance" comparison of the PowerBook 165c and PowerBook 180 notebook computers.

DISCUSSION ----------

	PowerBook 165c	PowerBook 180
Processor	33 MHz 68030/68882	33 MHz 68030/68882
RAM	4MB to 14MB	4MB to 14MB
Display	640 x 400, 256 colors	640 x 400, 16 grays
VRAM	1 to 8 bits/pixel	1 to 4 bits/pixel
Battery	2.9 amp hour	2.8 amp-hour
Power	24-watt adapter	17-watt adapter

Support Information Services

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Tech Info Library Article Number:11470

Tech Info Library

Apple Internet Router: Half-Routing & Configuring a Port (2/93)

Revised: 2/4/93
Security: Everyone

Apple Internet Router: Half-Routing & Configuring a Port (2/93)

==========

Article Created: 3 February 1993

TOPIC ----------

This article describes half-routing and configuring a half-routing port.

DISCUSSION ----------

Half-routing is similar to tunneling in that it involves sending AppleTalk protocols across a non-AppleTalk network. What distinguishes half-routing from tunneling is that half-routing uses modems to establish asynchronous connections between two routers.

Apple Internet Router half-routing uses AppleTalk Remote Access-compatible modem scripts and, like ARA, it uses V.42bis data compression and MNP packetization and error correction. It supports the use of modems at 9600 bps or faster through the Printer or Modem port.

Configuring a Half-Routing Port

Double-clicking the DialUp access method under either the Modem port or the printer port brings up the DialUp Port Info window. You can configure a half-routing port to call, answer, or answer and call back.

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Tech Info Library Article Number:11474

Tech Info Library

LaserWriter Driver 7.2: Upgrade Info for Systems 6 and 7 (9/93)

Revised: 9/20/93
Security: Everyone

LaserWriter Driver 7.2: Upgrade Info for Systems 6 and 7 (9/93)

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Article Created: 5 February 1993
Article Reviewed/Updated: 14 September 1993

TOPIC ----------

What's different in LaserWriter driver 7.2 over the previous version, 7.1.2?

Is LaserWriter driver 7.2 compatible with System 6?

Can I use PrintMonitor 7.0 with LaserWriter driver 7.2?

Can I upgrade to LaserWriter driver 7.2 by just replacing the driver, rather than using the Installer?

DISCUSSION ----------

LaserWriter driver 7.2 added support for the LaserWriter Pro series. LaserWriter driver 7.2 also offers a benefit for LaserWriters IIf and IIg. You can turn FinePrint or PhotoGrade off or on from the driver's option window.

A bug with PrintMonitor 7.1 and System 6 was found too late in the LaserWriter Pro series development to correct it before shipping. PrintMonitor's "Set Print Time" option will crash on systems prior to 7.0. PrintMonitor 7.1 was shipped with the LaserWriter Pro series, and will automatically install over the previous version.

LaserWriter driver 7.2 is compatible with PrintMonitor 7.0. However, there's a new version of PrintMonitor 7.1 that's installed when using the installation disks provided with the LaserWriter Pro printers. The Installer checks to see what version of system software (System 6 or System 7) is installed so that it places all the resources in their proper places.

System 7 users can upgrade their systems by dragging the driver to the

System Folder. System 6 users can upgrade by dragging the LaserWriter driver, PrintMonitor, and Backgrounder, to their System Folder. The AppleShare 2.0 Printer server also requires the Laser Prep file. However, we recommend that all users let Installer do the installation.

Article Change History:
14 September 1993 - Added information about when Laser Prep is required.
26 March 1993 - Edited for clarity.

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Tech Info Library Article Number:11476

Tech Info Library

PATHWORKS for Macintosh v1.1a and System Software 7.1 (2/93)

Revised: 2/16/93
Security: Everyone

PATHWORKS for Macintosh v1.1a and System Software 7.1 (2/93)

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Article Created: 3 February 1993

TOPIC ----------

This article contains extracts from release notes, and a recent memo, concerning v1.1a of PATHWORKS for Macintosh. DEC has been working with Apple to resolve the problem with UAMs mentioned in these release notes, and is working on the DECnet problem noted.

DISCUSSION ----------

What is PATHWORKS for Macintosh V1.1a?

PATHWORKS for Macintosh V1.1a is a maintenance release that will be distributed to customers who have purchased MDDS for the PATHWORKS for Macintosh client. Distribution to these customers will begin in mid-January.

PATHWORKS for Macintosh V1.1a was developed to specifically support Apple's System 7.1 and includes:

- MacX 1.2
- MacTCP 1.1.1
- Mail for Macintosh V1.1b
- Online release notes

PATHWORKS for Macintosh Client Release Notes

December 1992

Revision/Update Information: This is an extract from a revised manual.

Software Version:

- PATHWORKS for Macintosh Client,Version V1.1a
- Macintosh System Software V7.1

Digital Equipment Corporation
Maynard, Massachusetts

First Published, December 1992

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Introduction

This PATHWORKS V1.1a kit was developed to support PATHWORKS for Macintosh administrators upgrading to Apple's new System 7.1 Software. Users running System 7.0.1 and earlier do not need to replace the components contained herein.

The following components have been modified to work with System 7.1:

- Mail for Macintosh has been updated to version 1.1b

- MacTCP control panel has been upgraded to version 1.1.1

- AdminTCP control panel has been upgraded to version 1.1.1.

- MacTCP tool has been upgraded to version 1.2

- MacX has been upgraded to version 1.2

Consult the separate Read Me files from Apple Computer, Inc. on "PATHWORKS

for Mac V1.1a 1/3" if you are installing MacX software.

Copying the Upgrade Software to a VAXshare Volume

[deleted]

ATTENTION:

Before upgrading PATHWORKS for Macintosh users to V1.1a software, please be aware of a problem with newer AppleShare Workstation software and UAMs on 68000-based Macintoshes.

The AppleShare Workstation software that ships both with AppleShare 3.0 and 3.0.1 and with System 7.1, crashes when used with the VMS password UAM (or any external UAM) on 68000-based Macintoshes.

The affected models are:

• Mac Plus, SE, Classic, Portable, and PowerBook 100.

NOTE that 68020, 68030, and 68040 based machines have no such restriction, and work properly.

If you upgrade one of these systems running PATHWORKS for Macintosh to run System 7.1, you should remove the VMS UAM file from your AppleShare folder in the System Folder. Removing the VMS UAM avoids crashes when accessing AppleShare volumes.

Similarly, if you install PATHWORKS on a Macintosh running System 7.1, you should choose Customize in the PATHWORKS Installer, and do not install the VMS UAM.

In the case of pre-system 7.1 Macintoshes that are clients of AppleShare 3.0 or 3.0.1, you will have to choose between the AppleShare 3.0 or 3.0.1 workstation software and the VMS UAM. The older AppleShare 2.x client, distributed on the Apple System Software disks, works with AppleShare 3.0 or 3.0.1, but does not enable all of the features.

If you do not have the VMS UAM installed, you are restricted to using the Apple UAM which is built-in to the AppleShare client. Note that this UAM has a limit of 8 characters for a password. If longer passwords are required, then you must not install the AppleShare 3.0 or 3.0.1 workstation software on 68000-based Macintoshes, and do not upgrade them to System 7.1.

The PATHWORKS for Macintosh engineering team is working with Apple Computer, Inc., to remove this restriction in a future release.

How to Upgrade PATHWORKS for Macintosh Users to V1.1a Software

[deleted]

Known Problem with DECnet for Macintosh V1.1

There is a problem with DECnet for Macintosh v1.1 and System 7.1. The icons in the NetCopy scrolling windows appear as little boxes and are indistinguishable as folder, file, and disk icons.

The workaround for this problem is to select the file, choose Get Info from the File Menu (Command-I) which shows whether a file or folder is selected.

MEMO Extract: How to get PATHWORKS for Macintosh 1.1a?

A few weeks ago Digital announced that PATHWORKS for Macintosh V1.1a would ship to currently paid MDDS (Media Documentation Distribution Service) customers ONLY.

Since last Friday, when 1.1a shipped, DEC has received numerous calls from customers who said they would gladly pay a small fee for the update. Therefore, starting immediatly, IF you have a valid DEC access number, and IF you have Pathworks for Macintosh, and IF you are willing to pay $100, you may call the CSC at 800-354-9000 and DEC will sell it to you. This is a deviation from DEC's usual policy on MUPs (Manditory UPdates) and is being done on a trial basis. This is of course only for customers who do not have MDDS service (as those that do will be getting it any day now).

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Tech Info Library Article Number:11477

Tech Info Library

Apple Internet Router: Files Written During Installation (2/93)

Revised: 2/4/93
Security: Everyone

Apple Internet Router: Files Written During Installation (2/93)

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Article Created: 3 February 1993

TOPIC ----------

This article describes the files written to the target hard disk during Apple Internet Router (AIR) installation.

DISCUSSION ----------

Apple Internet Router requires System 7, at least 4MB of RAM, and a hard disk. Like most other networking products, it uses the Installer, but it will be distributed on its own installation diskettes, rather than using the Network Software Installer disk.

The Installer writes the following files to the target hard disk:

- The Router file (a document in the Extensions folder)
- The Router Admin 3.0 application
- Three ADEVs: DialUp, LocalTalk (Built-in), and LocalTalk (Modem)
- MNPLink Tool and AppleTalk Remote Access modem scripts
- AppleTalk 58
- A/ROSE
- Network Control Panel
- Responder
- Network resources and Remote Access resources

- SNMP management software, consisting of the LibraryManager file and the associated documents SNMPRouterAgent, SNMPLibrary, SNMPMacAgent, and SNMPAtkTransport, all of which go into the Extensions folder, plus SLM resources.

- TokenTalk 2.5 and/or EtherTalk 2.5, where appropriate. These are necessary to support the hierarchical port setup structure.

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Tech Info Library Article Number:11478

Tech Info Library

Macintosh LC III: Use 72-pin RAM SIMMs (2/93)

Revised: 2/5/93
Security: Everyone

Macintosh LC III: Use 72-pin RAM SIMMs (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article describes the 72-pin PC-style SIMM used in the Macintosh LC III.

DISCUSSION ----------

Unlike the Macintosh LC II, the LC III comes with a single 72-pin PC-style SIMM socket.

Apple chose to implement the single 72-pin RAM SIMM socket because of space considerations on the Macintosh LC III logic board, and the greater availability of these SIMMs. SIMMs used in earlier Macintosh models do not work in the Macintosh LC III.

The Macintosh LC III has been tested with 1MB, 2MB, and 4MB RAM SIMMs. It does notsupport 256K SIMMs.

Possible RAM configurations include 4MB, 5MB, 6MB, 8MB, 12MB, 20MB, and 36MB.

When purchasing SIMMs, be sure you get 72-pin fast-paged mode with 80ns access time or faster.

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Tech Info Library Article Number:11479

Apple Internet Router 3.0: Overview and Packaging (2/93)

Revised: 2/4/93
Security: Everyone

Apple Internet Router 3.0: Overview and Packaging (2/93)

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Article Created: 3 February 1993

TOPIC ----------

This article gives an introductory overview and packaging information of the Apple Internet Router 3.0.

DISCUSSION ----------

Introduction

The Apple Internet Router is designed to be a cost-effective, scalable workgroup router. Because it doesn't require a dedicated machine, it will run concurrently with other applications or services, such as file servers and mail servers.

Apple has two major reasons for creating the Apple Internet Router:

- To add scalability and flexibility to AppleTalk networks.
- To provide a platform for validating Apple's and third parties' implementations of the AppleTalk Update-Based Routing Protocol (AURP).

Product Overview

Apple Internet Router is an AppleTalk Phase 2 router, so it can coexist on AppleTalk networks with current Phase 2 routers, including AppleTalk Internet Router 2.0. The only protocol additions or changes are those protocols used for private communications between cooperating AURP routers.

Apple Internet Router improves on version 2.0 in several areas. The most significant of these are:

- It's a System 7 compatible application (rather than a desk accessory like

version 2.0). The administrator can start up, shut down, or reconfigure the router without having to restart the Macintosh.

- It supports wide area network connectivity in the forms of tunneling across non-AppleTalk network systems and half-routing between modems.

- It supports internets of up to 65,279 networks (the architectural maximum of AppleTalk).

- It supports SNMP network management.

Packaging

Apple Internet Router consists of three separate products, allowing each customer to pick only those that are appropriate for a particular installation. These products are:

- The Basic Connectivity package, which contains the router application, the half-routing extension, the SNMP Router Agent, and all functionality necessary to support other extensions.

- The AURP-TCP/IP WAN extension, which enables TCP/IP tunneling. This package includes MacTCP and the IPTunnel ADEV. The Basic Connectivity package must also be installed.

- The AURP-X.25 WAN extension, which enables X.25 tunneling. The Basic Connectivity package must also be installed.

There also will be a toolkit for developers, which will contain the AURP specification, API specifications for the router, and various test tools including an AURP simulator.

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Tech Info Library Article Number:11480

Tech Info Library

Macintosh LC III: Using with a VGA Monitor (2/93)

Revised: 2/4/93
Security: Everyone

Macintosh LC III: Using with a VGA Monitor (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

This article describes how to connect a VGA monitor to a Macintosh LC III.

DISCUSSION ----------

To connect a VGA monitor to the Macintosh LC III video port, a cable with the following configuration is required.

```
Macintosh LC III
DB-15                                          VGA Connector
-------------                                  --------------

  2  ------------------- Red Video ------------  1
  1  ------------------- Red Ground -----------  6
  9  ------------------- Blue Video -----------  3
 13  ------------------- Blue Ground ----------  8
  5  ------------------- Green Video ----------  2
  6  ------------------- Green Ground ---------  7
 15  ------------------- Hsync ---------------- 13
 12  ------------------- Vsync ---------------- 14
 14  ------------------- Sync Ground ---------- 10
 10  ---------------- |
  7  ---------------- |Connect 7 & 10 so the sense pin ID will equal VGA
```

A few issues to remember when connecting VGA monitors to the Macintosh LC III:

- VGA monitors may have variances when purchased from different VGA monitor vendors. Test a particular monitor for compatibility with the Macintosh LC III before buying.

- VGA monitors from different vendors have different image quality specifications. There may be significant differences between Apple-brand monitors and VGA monitors. Look at the monitors side-by-side before buying.

- When a VGA monitor is connected as described above, the resolution is 640 x 480.

- The bit depth supported depends on the amount of VRAM installed. The Macintosh LC III ships with 512K of VRAM in one VRAM SIMM socket and is expandable to 768K.

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Tech Info Library Article Number:11481

Tech Info Library

Apple Internet Router: Router Management (2/93)

Revised: 2/4/93
Security: Everyone

Apple Internet Router: Router Management (2/93)

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Article Created: 3 February 1993

TOPIC ----------

This article describes Apple Internet Router management.

DISCUSSION ----------

Startup Options

The "Set Startup..." dialog is accessed from the Control menu. This dialog is available only when the router is not running.

You can choose whether or not to automatically bring up the router when the Macintosh starts up. This would be useful, for example, in a case where the Macintosh running the router is unattended. You can also choose whether or not to cancel starting up the router in case of error.

Apple Internet Router lets you save any number of different configuration documents (unlike AppleTalk Internet Router 2.0, which saved only one, always under the name "Router"). In the Set Startup... dialog, you select one of these saved documents to be the one that is used when the router starts up. Once a startup document is specified, it, rather than the Untitled document, gets opened when the application gets launched.

In large internets, set "Routing Table Entries" to reflect the number of networks on the internet and "Zone table entries" to reflect the number of zones. In each case, you should also allow room for reasonable growth of the network over time.

Security

Apple Internet Router allows the administrator to password-protect access to the Admin application. This option is accessed under the Control menu.

Monitoring

The Network Information window lists routing-table information for each destination network and zone on the internet. This display can be sorted by network range, zone name, distance, or forwarding port, and each display is available in detailed or summary mode, decimal or hexadecimal notation, and ascending or descending order.

The Router Log window displays a list of router activity, with the most recent activity shown at the top of the list.

Statistics

Apple Internet Router allows the administrator to view operating statistics relating to either the router or to particular ports. You can reset all statistics to zero through the Control menu. This menu item is available only when the router is running. All statistics are also initialized when the router is started up.

Router Statistics

Apple Internet Router's Router Statistics window displays a graphical summary of the network activity and error statistics. This is available in two forms: a bar graph, which is used for short intervals (up to 5 minutes), and a line graph, which is used for longer periods (up to 24 hours).

Port Statistics

The Port Statistics window displays various statistics for each configured port, and gives the totals for the router.

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Tech Info Library Article Number:11482

Tech Info Library

AIR: Configuring AppleTalk Port, Device Hiding (2/93)

Revised: 2/4/93
Security: Everyone

AIR: Configuring AppleTalk Port, Device Hiding (2/93)

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Article Created: 3 February 1993

TOPIC ----------

This article describes setting up the Apple Internet Router, and LAN support in configuring an AppleTalk port and Device Hiding.

DISCUSSION ----------

The Untitled default document, which you see when you first launch the router's Admin application, displays icons representing the available physical ports.

Double-clicking one of the physical ports or clicking the arrow next to it expands the port to display the available access methods or sub-ports. (A sub-port would be, for example, a card that supports more than one physical port.)

Apple Internet Router supports three "families" of access methods: AppleTalk, half-routing, and tunneling. Each family may include more than one specific access method. For example, LocalTalk, EtherTalk, and TokenTalk are all AppleTalk access methods. In addition to AppleTalk, the serial ports also support half-routing (DialUp), while Ethernet and Token Ring ports also support tunneling (IP Tunnel). Double-clicking an access method brings up the corresponding Port Info window, containing information specific to that access method.

Configuring an AppleTalk Port

Configuring an AppleTalk port is fairly straightforward. First, determine whether the port is to be a seed or nonseed port. A seed port is one that determines and propagates the network number range and zone list for the physical network it is attached to (or, in the case of a LocalTalk network, the network number and zone name). A nonseed port obtains network number

and zone information from a seed router on the same network.

Each AppleTalk network on an internet must have at least one seed router attached to it. It is permissible, even desirable in many cases, to have more than one seed router attached to a network, but they must all agree about that network's number range and zone list.

If the port is a nonseed port, then the only configuration option is to define hidden devices, if any. If the port is a seed port, then the administrator specifies the network number range and zone list. You can use "Get Zones..." to select zone names from the Macintosh's current AppleTalk connection. The administrator must take care that the network number and zone specifications agree with any other seed routers on the same network.

Device Hiding

One of the more interesting features of Apple Internet Router is device hiding, which lets you select any device or devices on your local network to be hidden from users on other networks. Device hiding is configured in the "Hide Devices..." dialog, which is accessed by clicking the "Hide..." button in the Port Info window.

You can elect to hide no devices, all devices, only a specific list of devices, or all devices except a specific list. You can hide your selection from all other ports or from a specific other port.

The administrator must use good judgment when setting up the list of hidden devices (or the list of not hidden devices). If the list contains more than a few devices, it will adversely affect performance.

In order for device hiding to be effective in a loop environment, all routers on a given network must hide the same devices. Otherwise, a "hidden" device would be accessible through another router that isn't hiding it.

Device hiding is not foolproof. Users could obtain a hidden device's AppleTalk address through some means other than looking for it on their network, such as running Inter•Poll on a portion of the internet that does have access to the device. Armed with that information, a user could access the device programmatically, even though the device is theoretically hidden.

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Tech Info Library Article Number:11483

Macintosh LC III: Video Modes (7/93)

Revised: 7/19/93
Security: Everyone

Macintosh LC III: Video Modes (7/93)

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Article Created: 9 February 1993
Article Reviewed/Updated: 19 July 1993

TOPIC ----------

The table below relates display resolution and bits per pixel, for the Macintosh LC III.

DISCUSSION ----------

	BITS PER PIXEL					
DISPLAY RESOLUTION	1	2	4	8	16	32
512 x 384 (12" landscape)	X	X	X	X	X	no
640 x 480 (13" landscape & VGA)	X	X	X	X	*	no
640 x 480 (14" Apple display)	X	X	X	X	*	no
832 x 624 (16" landscape)	X	X	X	X	no	no
640 x 870 (15" portrait)	X	X	X	*	no	no
1024 x 768 (19" landscape)	no	no	no	no	no	no
1152 x 870 (21" landscape)	no	no	no	no	no	no

LEGEND

X - Standard 512K

* - Expanded 768K

no - Not Supported

NTSC & PAL

NTSC & PAL solutions require a third-party video card.

Article Change History:
19 July 1993 - Revised for technical accuracy - Removed SVGA information.

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Tech Info Library Article Number:11484

Tech Info Library

AIR: Comparing TCP/IP Tunneling with DECnet Tunneling

Revised: 2/4/93
Security: Everyone

AIR: Comparing TCP/IP Tunneling with DECnet Tunneling

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Article Created: 3 February 1993

TOPIC ----------

This article compares Apple Internet Router TCP/IP tunneling with DECnet Tunneling.

DISCUSSION ----------

Although DECnet tunneling and TCP/IP tunneling are similar, there are some important configuration differences between them.

Since MacTCP supports only one TCP/IP port at a time, only one TCP/IP tunneling port will be supported per router. However, Apple Internet Router supports multipoint tunneling, in which each tunneling port may have any number of tunneling partners.

In contrast to Apple Internet Router, DECnet tunneling uses point-to-point tunneling. In other words, there is only one partner for each tunnel, and each tunnel is specified separately. Each VAX acting as an AppleTalk router may have any number of tunnels active on the same physical port, each one constituting a logical AppleTalk port. A separate tunnel is used to get to any individual partner, even if they are all on the same DECnet.

Another difference between TCP/IP tunneling and DECnet tunneling is that because a VAX can be a DECnet router as well as an AppleTalk router, it can route AppleTalk between two or more separate DECnet networks. Because MacTCP cannot be configured as a TCP/IP router, Apple Internet Router cannot route AppleTalk between two separate TCP/IP networks. That would have to be done by separate TCP/IP routers.

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Tech Info Library Article Number:11485

Tech Info Library

AIR: TCP/IP Tunneling, Tunnel Port Configuration (2/93)

Revised: 2/4/93
Security: Everyone

AIR: TCP/IP Tunneling, Tunnel Port Configuration (2/93)

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Article Created: 3 February 1993

TOPIC ----------

This article describes the Apple Internet Router (AIR) TCP/IP tunneling and TCP/IP tunnel port configuring.

DISCUSSION ----------

Installing the software for TCP/IP tunneling is separate from the installation of the Basic Connectivity package of Apple Internet Router. The WAN Extensions installation writes the following files to the target hard disk:

- MacTCP and AdminTCP
- The IPTunnel ADEV
- SNMPTCPTransport
- MacTCP Token Ring Extension (where applicable)

Apple Internet Router uses MacTCP to implement TCP/IP tunneling. Each exterior router is configured as an AppleTalk node and as an IP end node. The exterior routers encapsulate AppleTalk packets in TCP/IP packets and forward them across the TCP/IP network to other exterior AppleTalk routers, which decapsulate them onto their own AppleTalk internets.

From AppleTalk's perspective, TCP/IP is used solely to provide connectivity between exterior AppleTalk routers. Apple Internet Router is not a TCP/IP router or gateway.

TCP/IP tunneling is supported on Ethernet and Token Ring ports. Note that each of these ports can support both AppleTalk routing and TCP/IP tunneling simultaneously.

Configuring a TCP/IP Tunnel Port

To configure a TCP/IP tunneling port, double-click the IP Tunnel access method under the Ethernet or Token Ring port.

In the IP Tunnel Port Info dialog, you may enter the TCP/IP addresses of all other known exterior Apple Internet Router routers on the TCP/IP network, or a subset of those if you want to limit this router's tunneling partners. These addresses can either be entered as 4-byte quantities in the standard TCP/IP address format, or as TCP/IP names. When entered as names, the TCP/IP Domain Name Service is used to determine the associated TCP/IP address.

Optionally, the administrator can allow any other Apple Internet Router which has been explicitly configured with this router's address to be routed to, without explicitly having that router's address in the list. Tunneling to non-explicitly entered routers is enabled by unchecking the "Use only the host IDs listed" check box.

Note that where the AppleTalk Port Info window had a "Hide..." button, this Port Info window (and the one for DialUp) have an "Options..." button. For more information about the Options... button, search the Tech Info Library for an article titled "Apple Internet Router: WAN Network Options."

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Tech Info Library Article Number:11487

Tech Info Library

Apple Internet Router: WAN Network Options (2/93)

Revised: 2/4/93
Security: Everyone

Apple Internet Router: WAN Network Options (2/93)

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Article Created: 3 February 1993

TOPIC

This article describes additional Wide Area Network WAN network options found in the DialUp, and IP Tunnel Setup Port Info windows. These options include Network Hiding, Network Number Remapping, Clustering, Hop Count Reduction, Hop Count Weighting, and Backup Paths.

DISCUSSION

Half-routing and tunneling ports both support a variety of options that are not applicable to AppleTalk ports. These options are selected in the Options… dialog box.

Network Hiding

It may be desirable, for security reasons, that certain networks in an internet not be made visible to other internets connected to the tunnel. This is accomplished simply by not providing information about these "hidden" networks to other exterior routers during the routing information exchange. You can choose to hide no networks, a specific list of networks, or all networks except a specific list.

Network hiding has advantages and disadvantages.

Some advantages are:

- Security
- The amount of routing information passed into the tunnel (and hence into all the remotely-connected internets) can be greatly reduced.

Some disadvantages are:

- Lack of selectivity – there is no access through the tunnel to any nodes on hidden networks.

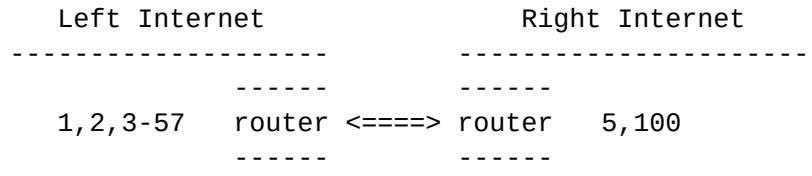
- A node on a hidden net will see all of the AppleTalk zones exported by all of the exterior routers on the tunnel, but will not be able to see any devices in these zones since those devices cannot respond to the node's NBP lookups.

Network Number Remapping

With AppleTalk WANs becoming larger and larger, we cannot safely assume that there will be no network number conflicts when connecting two or more WANs together. In fact, the large size of many WANs makes it more likely that there will be conflicts in such a case.

Network number remapping is a technique used to resolve network number conflicts between two networks without requiring reconfiguration of either one. Remapping is allowed on tunneling and half-routing ports only, not on AppleTalk ports.

As an example of the use of network number remapping, assume that one internet contains networks 1,2, and 3-57. If this internet is connected to another internet that contains network numbers 5 and 100, then a conflict would ordinarily result because network 5 exists in both internets.



With network number remapping, the Left router can be configured to remap network 5 into network 58 (or any other nonconflicting number). This allows the Left internet to see the Right internet's network numbers as 58,100.

At the same time, the Right router can be configured to remap networks 3-57 into networks 103-157. This allows the Right internet to see the Left internet's network numbers as 1,2,103-157.

Loop configurations are not allowed when remapping is active. Looking at the previous example again, see what would happen if there were a loop configuration here. Remapped network numbers would loop back to the router that performed the remapping in the first place. This time, they would be viewed as new networks, and could be remapped again, causing an infinite loop of remapping, broken only by hop count limitation.

Apple Internet Router attempts to detect such loops at startup, and will not activate a remapping port if it would create such a loop. If a loop is detected later, the remapping port will be brought down.

Network number remapping is enabled through the Options dialog. Here, you specify a network range to remap remote network numbers into.

In a WAN with more than one tunnel or half-routing link, network numbers may be repeatedly remapped as they travel across the WAN. This does not

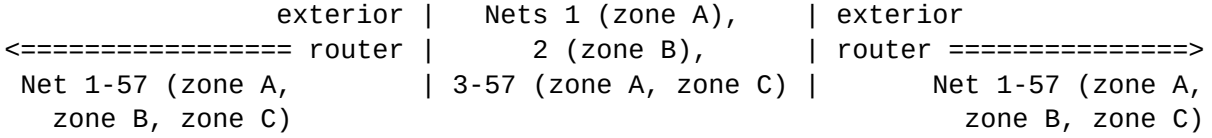
present a problem, since all the remapping information is handled locally, and it is transparent to the user.

For network number remapping to work, all network number references in each packet traveling between the two networks must be remapped before the packet enters the new network. This includes source and destination network numbers in the DDP header, network numbers carried in NBP and RTMP packets, and network numbers in ZIP query and response packets.

Note that this also includes network numbers obtained by clients of these protocols and carried as part of the DDP data field. It is impossible for routers to be aware of all such instances of network numbers in data, so remapping will not always work in these cases. For this reason, Apple advises against doing network management across remapped links, because network management data often contains network numbers. Instead, manage each internet separately.

Clustering

Clustering is a way of representing a portion of the internet as a single, multi-zone extended network. Clustering is available only on tunneling and half-routing ports, and then only when remapping is active. Like remapping, clustering is applied by an exterior router to network information it receives from other exterior routers. The clustering exterior router represents the remote internets to its own local internet as single, multi-zone extended networks.



For example, the internet shown in the center of the above diagram consists of three separate networks: two that each have a single network number and zone name (1, Zone A and 2, Zone B) and one that has a network number range and a zone list (3-57, Zone A, Zone C). With clustering active, this internet would be represented to other internets as a single extended network with network numbers 1-57 and the zone list Zone A, Zone B, Zone C.

Clustering imposes some limitations on network design. All the networks in a cluster must appear, from an RTMP point of view, to be the same number of hops away.

A more serious limitation is that representing a portion of the internet this way amounts to taking a snapshot of that portion and passing it to the rest of the internet. If the picture changes, the snapshots are generally not updated.

There are two possible cases where this can happen. First, if a new network comes up in the clustered portion, and its network number range is outside the cluster range, that network must be represented individually to the rest of the internet because the cluster range cannot easily be grown to include the new network.

Second, if a new network comes up within the cluster and its network number range is within the cluster range, then it automatically becomes part of the cluster. However, if its zone list contains a zone name not in the cluster's original zone list, that zone name will not appear in the cluster's zone list until the clustering routers are restarted.

Hop Count Reduction

When two internets are connected through a half-router or a tunnel, it is easy to see that the maximum distance across the resulting internet could easily exceed 15 hops. For this reason, Apple Internet Router tunneling and half-router ports allow you to turn on the hop count reduction feature, which appears in the Options dialog as "Allow more than 15 hops".

Hop count reduction is available only on tunneling and half-routing ports, and only when remapping is active. Remapping is a requirement because, for hop count reduction to be safe, there must be no loops across the hop count reduced link, and Apple Internet Router prevents loops in a remapped environment. If loops were allowed, a reduced hop count packet could travel forever on the network.

When hop count reduction is active on a port, all networks that are accessible out that port appear to be one hop away. This makes the remote networks accessible by all the networks in the local internet, regardless of their actual distance in hops.

Hop Count Weighting

When multiple paths are available between two networks, the network administrator may wish to direct traffic to a preferred path. This is especially important when one path includes a slow link or tunnel. Current AppleTalk protocols will choose the path with the fewest hops, without regard to the speed of the link. If two paths are equal hops, traffic will alternate between them at ten-second intervals.

Hop count weighting allows you to artificially increase the hop count for a half-routing port or tunnel by a number from 1 to 14. By weighting a link as a large number of hops, you can cause traffic to take an alternate route if one is available. This feature also allows you to implement a more accurate modeling of the internet when slow links are involved, by weighting links according to their speed (higher hop counts for slower links).

Hop count weighting may be used whether or not network number remapping is on. However, it may not be meaningful if remapping is on because there will be no loops or redundant paths in that case.

Backup Paths

Tunneling and half-routing ports can be designated as "backup paths" only when remapping is not on (since redundant paths are not allowed with remapping). If a port is designated as a backup path, then it will not be

used for data forwarding if an alternate route between the half-routers or tunneling routers is available.

The link will be used only for the exchange of routing information between the two half-routers. This exchange is necessary to determine when the backup path needs to be made active. Once a backup link becomes active, that link may continue to be used for some amount of data forwarding, even if the primary link comes back up. The link won't fully return to backup status until the router is restarted.

If a half-routing or tunneling port is designated as a backup port, a hop count weight may also be assigned for use if the port becomes active.

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Tech Info Library Article Number:11488

Apple Internet Router: Tunneling Definitions and Concepts (2/93)

Revised: 2/4/93
Security: Everyone

Apple Internet Router: Tunneling Definitions and Concepts (2/93)

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Article Created: 3 February 1993

TOPIC ----------

This article describes Wide Area Network support through tunneling. Tunneling definitions and concepts are presented.

DISCUSSION ----------

Apple Internet Router supports wide area networks through tunneling and half-routing ports. These two types of ports, unlike AppleTalk routing ports, use AppleTalk Update-Based Routing Protocol (AURP) as a replacement for Routing Table Maintenance Protocol (RTMP) in order to reduce network overhead.

The important point to keep in mind is that Apple Internet Router can safely assume that any routers it sees through tunneling or half-routing ports are other Apple Internet Routers or Apple Internet Router-compatible routers. Therefore, it is safe to use AURP on these ports, since it is known that the other router is also using it.

Tunneling

In AppleTalk terminology, tunneling means connecting two or more AppleTalk networks by using a "foreign" network system as a conduit between them. Tunneling uses "exterior" AppleTalk routers to connect the AppleTalk internets with the foreign data link. Each exterior router is configured as a node on both the AppleTalk network and on the foreign network. The AppleTalk packets are encapsulated in the protocol of the foreign network as they travel across it.

Tunneling does not imply any connectivity between the AppleTalk nodes and the nodes on the foreign network. The foreign network is simply passing the AppleTalk packets, as data, between nodes. In other words, a tunneling

router is not a router for, or a gateway to, the foreign network system, although other programs providing these functions could run simultaneously.

Each exterior router must know specifically what other exterior routers are its tunneling partners. This is accomplished either by configuring each router with a specific list of partners, or by allowing a router to tunnel with partners that have been configured to know about it.

There are two types of tunnels:

- Point-to-point, in which each tunnel connects only two exterior routers. If you wish to tunnel to more than one exterior router, then you set up a separate tunnel to each one.

- Multipoint, in which each exterior router can tunnel to more than one partner. This way, there is no need to have more than one tunnel on any exterior router.

Multiple, independent tunnels can exist on the same foreign network system. When properly configured, such tunnels can be invisible to, and secure from, each other. They simply happen to share the same data link as a media for their respective tunnels.

The first implementation of tunneling for AppleTalk was DECnet tunneling, which has been supported in AppleTalk for VMS and Digital's PATHWORKS for Macintosh for several years. Apple Internet Router and its extensions will add TCP/IP and X.25 to the list of networks that can tunnel AppleTalk. It is also expected that there will be third-party extensions for tunneling across such foreign network systems as T1, Frame Relay, SMDS, and others.

A fully-connected tunnel is one in which all exterior AppleTalk routers know about all the other exterior routers. A tunnel is partially-connected if some exterior routers on the tunnel do not know about every other exterior router on the tunnel.

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Tech Info Library Article Number:11489

AURP: History, Architectural Model, and Events (2/93)

Revised: 2/4/93
Security: Everyone

AURP: History, Architectural Model, and Events (2/93)

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Article Created: 4 February 1993

TOPIC ----------

This article describes AppleTalk Update-Based Routing Protocol (AURP) history, architectural model, and AURP events.

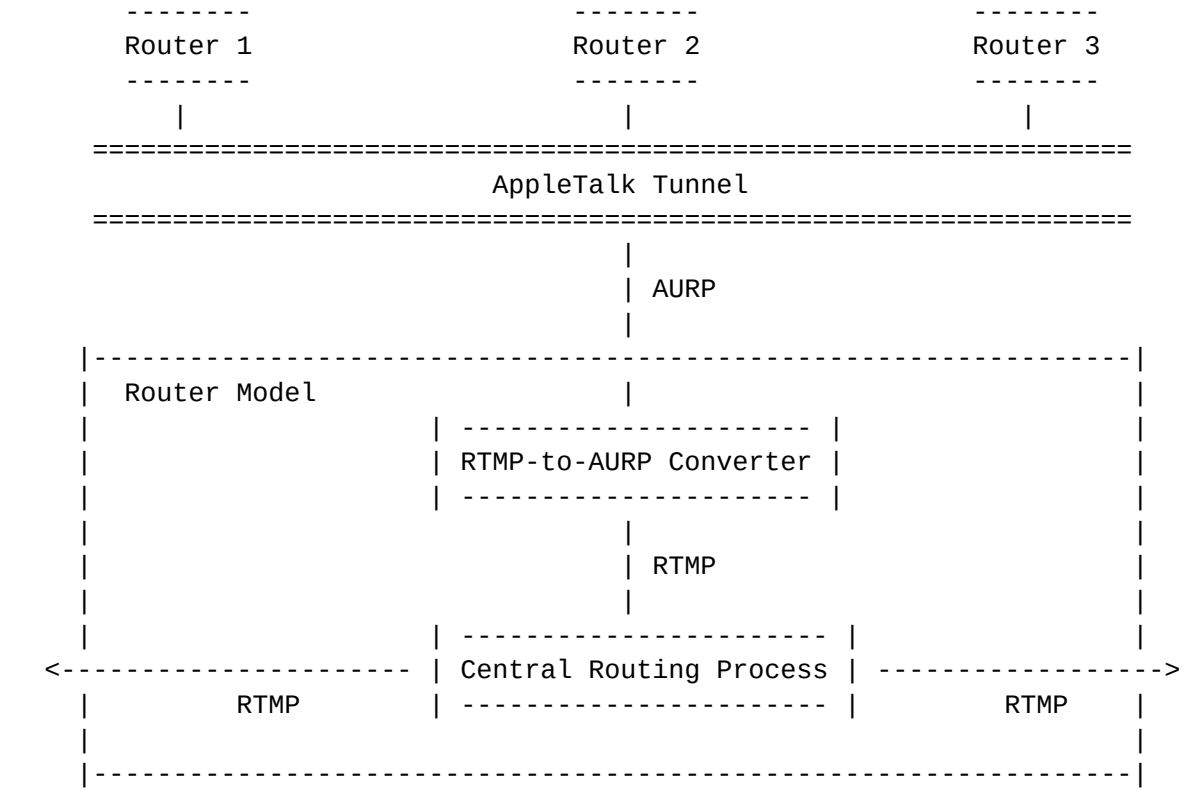
DISCUSSION ----------

Routing Table Maintenance Protocol (RTMP) works by having the router tables broadcast to other routers every 10 seconds. This transportation of data can reduce network bandwidth as well as incur traffic costs on lines that are per/packet charged. Originally this implementation worked fine because networks existed primarily in LAN configurations, and in LAN environments the overhead incurred by RTMP was not significant. The development of AURP has been going on for quite some time. AURP has been under development for over 2 years in concert with the Internet Engineering Task Force (IETF). This group works on networking issues and in the case of AURP has helped to define the standard for AURP.

As networks branch out in terms of connectivity there is a need to support solutions such as half-routing and network tunneling. Half-routing, is good in that it is inexpensive, but it doesn’t have high bandwidth. LocalTalk is 230 kbps and the router requires a minimum of 9600 bps modems for half-routing. It is not difficult to see that the through-put will be less in the half-routing environment. The problem is that while LocalTalk can afford the overhead of RTMP traffic it become problematic on lower capacity links. With the ability to tunnel and interconnect large internets, if the RTMP model was still being used there would be significant bandwidth reduction as a result of propagating the routing information between tunneled networks.

The AURP Architectural Model

The goal of AURP is to provide all the functionality of RTMP and Zone Information Protocol (ZIP) with almost none of the traffic overhead currently associated with these AppleTalk routing protocols. AURP only exports information about networks in its local AppleTalk internet. This is known as split-horizon data reduction. That is, AURP never exports information about networks accessible out the tunnel. In the simple case it would be like we are having a conversation and I tell you that by the way I can talk to you. This wouldn't be very useful to know since we are already talking. In the following figure we see how an exterior router supports both RTMP and AURP.



AURP Architectural model

Routers will speak AURP out the tunnel via an RTMP to AURP converter. This allows the new router to extend the network while maintaining compatibility with the internet that it will be connected to.

AURP Events

It is important to remember that a router will notify other connected routers of certain events that take place. The following is a list of the type of events that will be sent to routers that have requested notification if these updates occur:

- The addition of a new, exported network, that is visible to the receiving router.

- A change in the path to an exported network—which causes the exterior router to access that network through its local internet, rather than

through a tunneling port.

- The removal of an exported network from the exterior router’s routing table.
- A change in the path to an exported network—which causes the exterior router to access that network through a tunneling port, rather than through its local internet.
- A change in the distance to an exported network.
- A change to a zone name in the zone list of an exported network—an event not currently supported by ZIP.
- The exterior router goes down or is shut down.

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Tech Info Library Article Number:11490

Tech Info Library

System Enablers: Current Versions & Change History (2/97)

Revised: 2/24/97
Security: Everyone

System Enablers: Current Versions & Change History (2/97)

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Article Created: 4 February 1993
Article Reviewed/Updated: 24 February 1997

TOPIC ----------

This article lists the current versions of the Macintosh System Enablers, and change history information.

DISCUSSION ----------

In the past, when Apple has come out with new computers, Apple has also revised the system software so it knows how to start up these new computers. Revising the whole system software, however, is a very time-consuming process, and Apple has been releasing new computers much more rapidly than it did in the past.

The solution to this dilemma is the System Enabler file. A System Enabler contains everything that is needed to boot (start up) a new computer (or computers). All of the computers that have come out since system software 7.1 (September 1992) require a System Enabler to start up.

With System 7.5, a universal enabler which supports all computers introduced up to the introduction of System 7.5, has been developed. Future computers will have an enhanced enabler shipped with them.

With the release of system 7.5.3 or later, the listed computers in this article do not require a System Enabler.

Current Macintosh System Enablers

NOTE: The Plus, SE, SE/30, Classic, Classic II, LC, LC II, LC 580, Mac II, IIx, IIcx, IIsi, IIci, IIfx, PB 100/140/145/170, Quadra 700, 900, and 950 do NOT need a System Enabler. Also, the Performa 200, 400, 405, 430, and 410 do NOT require a System Enabler.

Begin_Table

Macintosh	System Enabler Used	Current Version	Note
Macintosh Centris 610	System Enabler 040	1.1	D
Macintosh Centris 650	System Enabler 040	1.1	D
Macintosh Centris 660AV	System Enabler 088	1.2	D
Macintosh Color Classic	System Enabler 401	1.0.5	D
Macintosh IIvi	System Enabler 001	1.0.1	D
Macintosh IIvx	System Enabler 001	1.0.1	D
Macintosh LC III	System Enabler 003	1.1	D
Macintosh LC 475	System Enabler 065	1.2	D
Macintosh LC 520	System Enabler 403	1.0.2	D
Macintosh LC 550	System Enabler 403	1.0.2	D
Macintosh LC 575	System Enabler 065	1.2	D
Macintosh LC 630	System Enabler 405	1.0	D
Macintosh PowerBook 150	PowerBook 150 Enabler	1.1	D
Macintosh PowerBook 160	System Enabler 131	1.0.3	A
Macintosh PowerBook 165	System Enabler 131	1.0.3	A
Macintosh PowerBook 165c	System Enabler 131	1.0.3	A
Macintosh PowerBook 180	System Enabler 131	1.0.3	A
Macintosh PowerBook 180c	System Enabler 131	1.0.3	A
Macintosh PowerBook 190	PowerBook 5300/2300/190 Enabler	1.2.4	F
Macintosh PowerBook 520	PBook 500 Series Enabler	1.0.2	D
Macintosh PowerBook 520c	PBook 500 Series Enabler	1.0.2	D
Macintosh PowerBook 540	PBook 500 Series Enabler	1.0.2	D
Macintosh PowerBook 540c	PBook 500 Series Enabler	1.0.2	D
Macintosh PowerBook 5300	PowerBook 5300/2300/190 Enabler	1.2.4	F
Macintosh PowerBook Duo 210	PowerBook Duo Enabler	1.0	B
Macintosh PowerBook Duo 230	PowerBook Duo Enabler	1.0	B
Macintosh PowerBook Duo 250	PowerBook Duo Enabler	1.0	B
Macintosh PowerBook Duo 270c	PowerBook Duo Enabler	1.0	D
Macintosh PowerBook Duo 280	PowerBook Duo Enabler	2.0	C
Macintosh PowerBook Duo 280c	PowerBook Duo Enabler	2.0	C
Macintosh PowerBook Duo 2300	PowerBook 5300/2300/190 Enabler	1.2.4	F
Macintosh Quadra 605	System Enabler 065	1.2	D
Macintosh Quadra 610	System Enabler 040	1.1	D
Macintosh Quadra 630	System Enabler 405	1.0	D
Macintosh Quadra 650	System Enabler 040	1.1	D
Macintosh Quadra 660AV	System Enabler 088	1.2	D
Macintosh Quadra 800	System Enabler 040	1.1	D
Macintosh Quadra 840AV	System Enabler 088	1.2	D
Macintosh TV	System Enabler 404	1.0	D
Performa 600	System Enabler 304	1.0.1	D
Performa 450,460,466/7	System Enabler 308	1.0	D
Performa 475,476,575,577/8	System Enabler 364	1.1	D
Performa 550, 560	System Enabler 332	1.1	D
Performa 630, 635CD	System Enabler 405	1.0	D
Performa 611x	Requires System 7.5		D
Performa 5200 series	System Enabler 406	1.0	G

Performa 5300 series	System Enabler 406	1.0	G
Performa 6200 series	System Enabler 406	1.0	G
Performa 6300 series	System Enabler 406	1.0	G
Performa 6400	System Enabler 410	1.1	H
Power Macintosh 4400/200	System Enabler 827		J
Power Macintosh 5200/75 LC	System Enabler 406	1.0	G
Power Macintosh 5300/100 LC	System Enabler 406	1.0	G
Power Macintosh 5400 Series	System Enabler 410	1.1	H
Power Macintosh 5500/225	System Enabler 411		I
Power Macintosh 6500/225	System Enabler 411		I
Power Macintosh 6500/250	System Enabler 411		I
Power Macintosh 6100/60	PowerPC Enabler	1.0.2	D
Power Macintosh 7100/66	PowerPC Enabler	1.0.2	D
Power Macintosh 8100/80	PowerPC Enabler	1.0.2	D
Power Macintosh 8100/110	PowerPC Enabler	1.1.1	E,G
Power Macintosh 6100/66	PowerPC Enabler	1.1.1	E,G
Power Macintosh 7100/80	PowerPC Enabler	1.1.1	E,G
Power Macintosh 8100/100	PowerPC Enabler	1.1.1	E,G
Power Macintosh Upgrade	PowerPC Upgrade Cd Enabler	1.0.1	D
Power Macintosh 9500/120	System Enabler 701	1.1	F,G
Power Macintosh 9500/132	System Enabler 701	1.1	F,G
Power Macintosh 7200/75	System Enabler 701	1.1	F,G
Power Macintosh 7200/90	System Enabler 701	1.1	F,G
Power Macintosh 7500/100	System Enabler 701	1.2	F,G
Power Macintosh 8500/120	System Enabler 701	1.2	F,G
Power Macintosh 7300/180	System Enabler 702		I
Power Macintosh 7300/200	System Enabler 702		I
Power Macintosh 8600/200	System Enabler 702		I
Power Macintosh 9600/200	System Enabler 702		I
Power Macintosh 9600/200MP	System Enabler 702		I
Power Macintosh 9600/233	System Enabler 702		I

End_Table

NOTES:

A - System Enabler 131 replaces System Enabler 111 and System Enabler 121.

B - Express Modem users should also install the Duo Battery Patch (Extension).

C - Requires System Software version 7.1.1 or later. System Software 7.1.1 and PowerBook Duo Enabler 2.0 ship with the PowerBook Duo 280 and 280c.

D - No System Enabler is required for this Macintosh under System 7.5 or later.

E - Power Macintosh 6100/66, 7100/80, 8100/100, and 8100/110 require System 7.5 and Finder 7.5.1 or later.

F - Requires System Software version 7.5.2 or later.

G - No System Enabler is required for this Macintosh under System 7.5.3 or later.

H - No System Enabler is required for this Macintosh under System 7.5.5 or later.

I - These computers shipped with 7.5.5 and require the enabler with it. These do not support Mac OS 7.6. Will suppor Mac OS 7.6.1 when it ships.

J - The Power Macintosh 4400/200 shipped with 7.5.3 and requires the enabler

with it. It does not support Mac OS 7.6. Will support Mac OS 7.6.1 when it ships.

Enabler Change History

PowerBook 150 Enabler

1.1	First release.

PowerBook 500 Series Enabler

1.0.2	First release.

PowerBook 5300/2300/190 Enabler

1.0.2	First release.
1.0.8	Added support for NiMH batteries.
1.1	Reference release for 5300 and 190 builds.
1.2	Reference release for 2300 builds.
1.2.1	Fixed several issues on PowerBook 5300/2300/190 computers.
1.2.4	System software enhancements improving reliability and performance

PowerBook Duo Enabler

1.0	First release. Replaced System Enabler 201.
2.0	Includes support for type III batteries, better support for dual monitors, and multiple resolution support for color displays. Added support for PowerBook Duo 280 and 280c.

PowerPC Enabler

1.0	First release.
1.0.1	Fixes some video and serial communications problems.
1.0.2	Improved Energy Star compatibility for certain monitors connected to the built-in video port.
1.1	Manufacturing release only.
1.1.1	Added support for speed bumped Power Macintosh. Requires Finder 7.1.5.

PowerPC Upgrade Card Enabler

1.0	First release.
1.0.1	Includes Communications Toolbox 1.1

System Enabler 001

1.0	First release.
1.0.1	Improved support for high speed serial communications and improved accuracy of the system clock. Also addressed a rare problem where floppies may not be ejected properly at shutdown.

System Enabler 003

1.0 First release.
1.1 Updated in System Update 3.0. Minor bug fix for compatibility.

System Enabler 040

1.0 First release.
1.1 Added support for Quadra 610 and Quadra 650.

System Enabler 065

1.0 First release for Macintosh LC 475 and Macintosh Quadra 605.
1.1 Added support for Macintosh LC 575.
1.2 Minor bug fix for compatibility.

System Enabler 088

1.0 First release.
1.0.1 Required for System 7 Pro 7.1.1 support.
1.1 Added support for Quadra 660AV.
1.2 Corrects problems with serial port, involving printing to LaserWriter 310 Select and crashing in certain instances when receiving a fax and network traffic is high.

System Enabler 131

1.0 First release to support the PowerBook 180c. Replaced System Enabler 121 (supporting 165c) as well as System Enabler 111 (supporting 160 & 180).
1.0.2 Corrected a problem involving the serial driver. If a user has the serial driver open, but is not transmitting, and then puts the PowerBook to sleep, any attempt to transmit on waking, would cause the system to hang.
1.0.3 Added support for the PowerBook 165.

System Enabler 401

1.0.4 First release.
1.0.5 Fixed a problem involving erratic mouse movement with Apple II mouse-based applications running on the Apple IIe card installed in the PDS.

System Enabler 403

1.0 First release for Macintosh LC 520.
1.0.1 Manufacturing release only.
1.0.2 Added support for Macintosh LC 550.

System Enabler 404

1.0 First release.

System Enabler 405

1.0 First release.

System Enabler 406

1.0 First Release.

System Enabler 701

1.0 First release for Power Macintosh 9500, requires System software 7.5.2.
1.1 New enabler for Power Macintosh 9500 and Power Macintosh 7200 only, requires System software 7.5.2.
1.2 New enabler for Power Macintosh 7500 and Power Macintosh 8500 only, requires System software 7.5.2.

Where to Find System Enablers

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
24 Feb 1997 - Added latest computers.
07 Nov 1996 - Added G,H notes and info for 6200, 6300, and 5400
18 Oct 1996 - Added System 7.5.3 and later information.

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Tech Info Library Article Number:11491

Tech Info Library

Centris 610 & 650, Quadra 800: Sound System Overview (7/94)

Revised: 7/28/94
Security: Everyone

Centris 610 & 650, Quadra 800: Sound System Overview (7/94)

==========

Article Created: 9 February 1993
Article Reviewed/Updated: 28 July 1994

TOPIC ----------

This article describes the sound system in the Macintosh Centris 610, Centris 650, and Quadra 800.

The information in this article relative to the Centris 610 and Centris 650 is also relevant to the Quadra 610 and Quadra 650.

DISCUSSION ----------

The sound system used by the Centris 610, Centris 650, and Quadra 800 lets you play back 8-bit stereo sound, and record single-channel (mono) 8-bit sound input from a microphone or line inputs.

As in the Quadra 700 and 900, the DFAC chip is used to support sound input.

Unlike the Quadra 700, the sound playback path uses discrete PWM converters similar to those used in the PowerBook 170 for sound output.

Separate headphone and speaker amplifiers are used, which allows playback of CD-ROM audio through the sound system. CD-ROM audio may be digitized by the sound input circuitry.

Article Change History:
28 Jul 1994 - Added reference to Quadra 610 and 650 to aid in searching.

Support Information Services

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Tech Info Library Article Number:11493

Tech Info Library

StyleWriter: Using with the StyleWriter II software (10/94)

Revised: 10/27/94
Security: Everyone

StyleWriter: Using with the StyleWriter II software (10/94)

==========

Article Created: 18 February 1993
Article Reviewed/Updated: 27 October 1994

TOPIC ----------

Can I use the StyleWriter II printer software on the original StyleWriter? Will the head cleaning option in the StyleWriter II driver damage the original StyleWriter printer?

DISCUSSION ----------

The StyleWriter II driver and the head cleaning option will not harm the original StyleWriter printer.

The only combination that may cause damage is using an original StyleWriter cartridge in a StyleWriter II.

When you use the StyleWriter II printing software with the original StyleWriter printer, you can print in grayscale and share the printer over a network with the GrayShare software.

A GrayShare software upgrade disk is available through online services Apple publishes software updates on.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
27 Oct 1994 - Added Grayshare discussion and changed title of article.

..TIL11494-StyleWriter-Using_with_the_StyleWriter_II_software_10-94.pdf

Support Information Services

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Tech Info Library Article Number:11494

Tech Info Library

Video Displays: Brightness and Color Uniformity (2/93)

Revised: 2/16/93
Security: Everyone

Video Displays: Brightness and Color Uniformity (2/93)

==========

Article Created: 10 February 1993

TOPIC ----------

This article discusses brightness and color uniformity in large-screen monitors.

DISCUSSION ----------

Color and brightness uniformity is a specification that measures the overall distribution of color purity and brightness on a monitor when viewing an all-white raster.

The specification for color uniformity is quite complex and must be tested under laboratory conditions with specialized equipment. Color uniformity imperfections appear as hazy colored areas on an otherwise all-white raster. These color "patches" may appear in different locations on each CRT, but they usually appear around the edges of the monitor and are more likely to occur on large-screen monitors.

Environmental conditions may also contribute to color purity imperfections. Both the earth's magnetic field as well as other stray magnetic fields can affect monitor performance. This is true even for monitors with automatic degaussing circuits, such as Apple's 21-inch RGB monitor.

Brightness uniformity imperfections are similar to those of color uniformity. The only difference is that when viewing an all-white screen, brightness uniformity imperfections appear as grayish cloud-like patches.

While it may be objectionable to some customers, it is normal for CRTs to exhibit some color uniformity and/or brightness uniformity imperfection somewhere on the display screen. No 21-inch RGB monitor from any manufacturer will present a pure white screen when viewing an all-white raster.

Therefore, CRT replacement is not the solution to color and brightness uniformity imperfections. It is important that customers understand the limitations that exist in the design of large-screen CRTs.

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Tech Info Library Article Number:11496

TITLE

Apple Color Monitors: Cause of Thin Horizontal Line(s)

Article ID: 11497
Created: 2/5/93
Modified: 1/11/00

TOPIC

Why do some Apple color monitors have a thin line or lines across the screen?

DISCUSSION

The thin light gray horizontal line across the entire width of the display image when you display a white or light background is called a grid stabilization wire. The wire stabilizes the grid of fine vertical wires that define the tron-style display.

The CRT has a specially constructed aperture grill that improves its convergence and produces a sharp and clear image. The aperture grill is a grid of vertical wires located just behind the CRT screen. These CRTs require a horizontal stabilizing wire or wires to help support the aperture grill. The supporting wires, which are thinner than a human hair, stabilize the aperture grill against shocks.

Typically, displays with a viewing area of 15 inches or less have a single horizontal grid wire approximately one third from the bottom of the display image. Displays larger than 15 inches typically have two wires, each about one-quarter to one-third of the way from the top and bottom of the display image.

The lines are common to all tron-style displays, and are not screen defects. Their presence cannot be adjusted out or eliminated by repairing or replacing modules in the display.

These Apple products include a tron-style CRT:

- 13-inch High Resolution RGB Monitor
- 14-inch Macintosh Color Display
- Multiple Scan 17 and 20 Displays
- AppleVision 1710 and AppleVision 1710AV Displays
- Macintosh 16-inch Color Display
- Macintosh Color Classic
- AudioVision 14 Display
- Macintosh TV
- Macintosh LC 520, 550, 575
- Performa 550, 560, 575, 577, 578
- ColorSync 17-inch Display
- ColorSync 20-inch Display
- AppleVision 750 Display
- AppleVision 750 AV Display
- AppleVision 850 Display
- AppleVision 850 AV Display
- Apple Studio Display 17 (16 inch viewable image size)
- Apple Studio Display 21-inch (19.8-inch viewable image size)

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

Document Information
Product Area: Monitors-Displays
Category: General Topics
Sub Category: General Topics

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Tech Info Library

Apple Color Monitors: Cause of Visible Line(s) (10/96)

Revised: 10/25/96
Security: Everyone

Apple Color Monitors: Cause of Visible Line(s) (10/96)

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Article Created: 18 February 1993
Article Reviewed/Updated: 25 October 1996

TOPIC ----------

Why do some Apple color monitors have a thin line or lines across the screen?

DISCUSSION ----------

When you display a white or light background on some Apple color displays, you may notice a thin gray horizontal line or lines across the screen. These thin lines are supporting or stabilizing wires inside the CRT and are part of Sony’s Trinitron CRT technology. These Apple displays include a Sony Trinitron CRT:

- 13-inch High Resolution RGB Monitor
- 14-inch Macintosh Color Display
- Multiple Scan 17 and 20 Displays
- AppleVision 1710 and AppleVision 1710AV Displays
- Macintosh 16-inch Color Display
- Macintosh Color Classic
- AudioVision 14 Display
- Macintosh TV
- Macintosh LC 520, 550, 575
- Performa 550, 560, 575, 577, 578

Sony Trinitron CRTs have a specially constructed aperture grill which improves the CRT’s convergence and produces a sharp and clear image. The aperture grill is a grid of vertical wires located just behind the CRT screen. These CRTs require a horizontal stabilizing wire or wires to help support the aperture grill. The supporting wires, which are thinner than a human hair, stabilize the aperture grill against shocks.

The Macintosh 13-inch Hi-Res RGB Monitor and 14-inch Macintosh Color Display have a single support wire across the bottom third of the display. The Macintosh 16-inch Color Display and the Multiple Scan 17 and 20 Displays have two support wires visible across the top and bottom thirds of the screen.

Note that these are not screen defects. Their presence cannot be adjusted out or eliminated by repairing or replacing modules in the display.

Article Change History:
25 Oct 1996 - Added AppleVision 1710 & AppleVision 1710AV.
10 Oct 1994 - Added keyword; made minor updates.
27 Sep 1994 - Added LC 575, Performa 575/577/578.

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Tech Info Library Article Number:11497

Tech Info Library

A/UX 3.0 Supports New Version of nawk (2/93)

Revised: 2/16/93
Security: Everyone

A/UX 3.0 Supports New Version of nawk (2/93)

==========

Article Created: 4 February 1993

TOPIC ----------

Where can I get nawk for A/UX 3.0?

DISCUSSION ----------

The version of 'awk' that comes with A/UX 3.0 was based on the new version of awk (nawk) from AT&T ToolChest 1988-1989.

Actually the 'nawk' has been in A/UX since A/UX 2.0.1 release. A/UX, however, still uses the name of 'awk' instead of 'nawk'.

To verify that we are using the new version of 'awk', search for the built-in gsub from 'man awk' or 'strings /bin/awk', if it exists, it is nawk. The old awk does not support the gsub function.

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Tech Info Library Article Number:11500

Tech Info Library

LaserWriter Select 300: Description (2/93)

Revised: 5/25/93
Security: Everyone

LaserWriter Select 300: Description (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article describes the LaserWriter Select 300.

DISCUSSION ----------

Overview

The Apple LaserWriter Select 300 provides high-quality laser printing, PostScript expansion, printer sharing from multiple Macintosh computers, and extensive paper-handling capabilities.

Designed for individual use, the LaserWriter Select 300 printer has 39 scalable TrueType fonts, including such popular font families as Times, Helvetica, and Palatino. The LaserWriter Select 300 also comes with Apple's FinePrint technology to smooth out lines and curves in your text.

You can add Apple's PhotoGrade technology to print documents containing graphics or images -- with over 90 levels of gray. Adobe Level I PostScript compatibility is available through the PostScript Option.

Apple's GrayShare software also lets you share your LaserWriter Select 300 with other users over a network.

The LaserWriter Select 300 features a standard cassette tray that holds 250 sheets of paper, and a manual paper feed tray. You can add an optional 250- or 500-sheet paper feeder, a 250-sheet legal cassette, an envelope cassette, and a multipurpose tray for paper or envelopes.

Print quality

- 300 dpi with FinePrint for high-quality text
- Grayscale printing for sharp graphics
- 39 scalable TrueType fonts for printing a wide range of styles and sizes
- PhotoGrade capable

Expandability

- Adobe PostScript option
- PhotoGrade Upgrade Kit for printing high-quality scanned images, illustrations, and graphics
- User-installable paper handling options

Versatility

- 250-sheet automatic tray and manual feed tray included
- Optional paper-handling capabilities for up to 800 sheets of paper (includes different media)
- Compact design fits any desktop
- Printer sharing with GrayShare

Ordering Information

Apple LaserWriter Select 300
Order No. M2051LL/A

- Apple LaserWriter Select 300 printer
- Toner cartridge
- Installation software and fonts disks
- User's Guide
- Limited warranty statement

PhotoGrade Upgrade
Order No. M2078G/A

1MB Memory Upgrade
Order No. M2077G/A

Apple LaserWriter Select 300 PostScript Option
(includes Adobe PostScript with 13 fonts)
Order No. M2028G/A

Apple LaserWriter Select 250-Sheet Feeder/Cassette
(supports A4, U.S. letter, B5, and executive paper sizes)
Order No. M2041G/A

Apple LaserWriter Select 500-Sheet Feeder/Cassette
(supports A4 and U.S. letter paper sizes)
Order No. M2042G/A

Apple LaserWriter Select Multipurpose Tray

(50 sheets or five envelopes)
Order No. M2037G/A

Apple LaserWriter Select 250-Sheet Letter Cassette
Order No. M2034G/A

Apple LaserWriter Select Envelope Cassette (30 envelopes)
Order No. M2031G/A

Apple LaserWriter Select Legal Cassette (250 sheets)
Order No. M2032G/A

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Tech Info Library Article Number:11503

Tech Info Library

LaserWriter Select 300: Technical Specifications (4/94)

Revised: 4/12/94
Security: Everyone

LaserWriter Select 300: Technical Specifications (4/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 12 April 1994

TOPIC ----------

This article provides technical specifications for the LaserWriter Select 300 printer.

DISCUSSION ----------

Marking Engine and Controller

- Fuji Xerox laser
- Application-Specific Integrated Circuit (ASIC)

Print Quality

- 300 dpi, enhanced with FinePrint
- Grayscale printing with GrayShare software
- Optional PhotoGrade for high-quality scanned images
- Adobe PostScript option

Memory

- Standard 512K of RAM with compression
- Optional 1MB and 4MB upgrades

Speed

- Five pages-per-minute maximum (actual speed varies depending on images printed and computer used)

Interface

- High-speed (909K) RS-422 serial interface

System Requirements

- Any Apple Macintosh personal computer with at least 1MB of RAM and a hard disk drive
- System software version 6.0.7 or later
- Recommended with System 7 or later: 4MB or more of RAM

Fonts

- 39 fonts from the following font families: Avant Garde, Bookman, Chicago, Courier, Geneva, Helvetica, Helvetica Narrow, Monaco, New Century Schoolbook, New York, Palatino, Symbol, Times, Zapf Chancery, and Zapf Dingbats

Recommended Duty Cycle

- Minimum life expectancy: 150,000 pages
- Toner cartridge: 4,000 pages at 5% density

Paper Capacities

- Standard
  - Manual feed tray
  - 250-sheet feeder
- Optional
  - 250- or 500-sheet feeder
  - 50-sheet multipurpose tray (also holds up to five envelopes)

Printable Area

- Maximum printable line: 8.0 in (203.2 mm)
- Minimum top, bottom, left, and right margins: 0.25 in. (6.35 mm)

Print Materials

- 16- to 36-lb. (60 to 135 g/m2) bond via manual feed
- Paper: U.S. letter, U.S. legal, A4, executive
- Most letterhead and colored stock, labels, and envelopes
- Medium-weight photocopier transparencies

Size and Weight

- Height: 8 in. (25.3 cm)
- Width: 15 in. (38 cm)
- Depth: 18.3 in. (45 cm)
- Weight: 26 lb. (12 kg)

Operating Environment

- Temperature: 50 to 90° F (10 to 32° C)
- Humidity: 20% to 80% noncondensing
- Toner cartridge transit environment: –4 to 104° F (–20 to 40° C)

Power Requirements

• U.S./Japan: 100 to 115 V, 50 to 60 Hz
• Europe/Australia: 220 to 240 V, 50 Hz

Power Consumption

• 450 W maximum at 115 V or 220 V

Article Change History:
12 April 1994 - Updated maximum paper weight.
21 March 1994 - Corrected the metric paper weights

Support Information Services

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Tech Info Library Article Number:11504

Tech Info Library

LaserWriter Select 300: Grayscale Needs Color QuickDraw (2/93)

Revised: 2/8/93
Security: Everyone

LaserWriter Select 300: Grayscale Needs Color QuickDraw (2/93)

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Article Created: 9 February 1993

TOPIC ----------

Can the LaserWriter Select 300 print documents in grayscale mode from Macintosh systems that do not have Color QuickDraw in ROM?

DISCUSSION ----------

The LaserWriter Select 300 cannot print documents in grayscale mode when directly connected to a Macintosh computer that does not have Color QuickDraw in ROM. It can print documents only in black and white. This due to the GrayShare driver, which requires Color QuickDraw in order to image grayscale documents.

If you are sharing a LaserWriter Select 300 printer and want to print documents in grayscale mode, the Macintosh system that the printer is directly connected to must have Color QuickDraw in ROM.

The following Macintosh computers are compatible with the LaserWriter Select 300 although they do not have Color QuickDraw in ROM:

- Macintosh Plus
- Macintosh SE
- Macintosh Portable
- Macintosh Classic

The only workaround is to connect your LaserWriter Select 300 to a Macintosh with Color QuickDraw in ROM and share it over a network. You can then print in grayscale mode to the shared printer from a Macintosh without Color QuickDraw in ROM.

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Tech Info Library Article Number:11505

Tech Info Library

LaserWriter Select 300: Connectivity (12/94)

Revised: 12/12/94
Security: Everyone

LaserWriter Select 300: Connectivity (12/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 12 December 1994

TOPIC ----------

This article describes the connectivity features of the LaserWriter Select 300 printer.

DISCUSSION ----------

The LaserWriter Select 300 printer contains one communications port: a high-speed serial port for Macintosh connectivity. This printer has no LocalTalk port; it can, however, be shared over a network with the included GrayShare printer driver software.

The LaserWriter Select 300 is a QuickDraw printer and does not support any other type of printer control language. This printer is designed for use only with the Macintosh computer.

Serial Port

The serial port on the LaserWriter Select 300 is a special externally clocked high-speed serial port supporting baud rates up to 909 kbps. There are no switches or jumpers for configuring the serial port baud rate.

Article Change History:
12 Dec 1994 - Corrected Serial port information.

Support Information Services

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Tech Info Library Article Number:11507

Tech Info Library

LaserWriter Select 300: Grayscale Printing (2/93)

Revised: 2/8/93
Security: Everyone

LaserWriter Select 300: Grayscale Printing (2/93)

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Article Created: 9 February 1993

TOPIC ----------

The LaserWriter Select 300 can print grayscale images in two ways:

- It can use the standard GrayShare driver.
- With a memory upgrade, the LaserWriter Select 300 can use PhotoGrade technology.

DISCUSSION ----------

GrayShare Printing

The standard GrayShare printer software enables the LaserWriter Select 300 to print dithered grayscale printing. The LaserWriter Select 300 with the GrayShare driver can print up to 33 shades of gray. The GrayShare printer software also provides networking capability and provides image scaling in 1% increments.

To print documents using the standard grayscale mode on the LaserWriter Select 300, simply select the "Grayscale" option from the "Image" setting in the Print Dialog Box.

PhotoGrade Printing

PhotoGrade software allows you to use the printer sharing and image scaling attributes of the GrayShare driver while providing documents which are near photographic quality. The LaserWriter Select 300 with the PhotoGrade driver can print over 90 shades of gray.

PhotoGrade uses complex halftoning algorithms and outputs two to four times as much information as the GrayShare driver, so it requires extra printer

memory. To enable PhotoGrade on the LaserWriter Select 300, you must add a 4MB memory module. Documents take longer to print when PhotoGrade is used.

To print documents using PhotoGrade on the LaserWriter Select 300, simply select the "PhotoGrade" option from the "Image" setting in the Print Dialog Box.

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Tech Info Library Article Number:11508

Tech Info Library

LaserWriter Select 300: System Requirements (2/93)

Revised: 2/8/93
Security: Everyone

LaserWriter Select 300: System Requirements (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article discusses the system requirements of the LaserWriter Select 300.

DISCUSSION ----------

Compatibility

The LaserWriter Select 300 requires a Macintosh computer with 1MB of RAM, a hard disk, System 6.0.7 or later, and the TrueType INIT (startup program). For best performance, Apple recommends at least 2MB of RAM for System 6.07 and 6.08 users, or 4MB RAM for System 7 users.

The LaserWriter Select 300 can use Adobe Type 1 and TrueType fonts, including fonts in a two-byte format. Adobe Type 1 fonts require the presence of Adobe Type Manager.

Performance

The LaserWriter Select 300 does not have a central processor on its logic board and is dependent on the host Macintosh for page processing. Its performance is directly related to the type of Macintosh used and the complexity of the document. As a general rule, the faster the CPU (microprocessor) and the simpler the document, the faster the LaserWriter Select 300 will print.

To get the best performance from your LaserWriter Select 300, Apple recommends you use a 68020-based Macintosh or faster.

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Tech Info Library Article Number:11509

LaserWriter Select 300: Features of Printer Drivers (2/93)

Revised: 2/8/93
Security: Everyone

LaserWriter Select 300: Features of Printer Drivers (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article describes the features of the LaserWriter Select 300's printer drivers.

DISCUSSION ----------

The LaserWriter Select 300 supports the following operating systems:
• Macintosh System Software 6.0.7 and 6.0.8
• Macintosh System Software 7.0 and later

The LaserWriter Select 300 driver supports these special features: background printing, multiple paper sources, grayscaling, and print density control.

You can select background printing in the Chooser. Note that background printing uses your computer's processing power and may cause your computer to briefly slow down as your document prints.

With an option in the Print Dialog Box, you can select which bin to print from. You can also print the first page of a document from one tray and the rest of the document from a different tray (for example, to print the first page on letterhead paper, and all subsequent pages on plain paper).

The Image setting in the Print Dialog Box allows you to choose between black and white, grayscale, and PhotoGrade printing. (Note that you must add a 4MB memory upgrade to your printer before you can use PhotoGrade.) Documents print faster in black and white than in PhotoGrade or grayscale mode.

The Options selection in the Print Dialog Box contains the Print Density

control. The LaserWriter Select 300's print density can be controlled only by software; it has no hardware print density control.

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Tech Info Library Article Number:11510

Tech Info Library

LaserWriter Select: Indicator Lights (2/93)

Revised: 2/8/93
Security: Everyone

LaserWriter Select: Indicator Lights (2/93)

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Article Created: 9 February 1993

TOPIC

This article describes the function of the indicator lights on the LaserWriter Select 300 and LaserWriter Select 310 .

DISCUSSION

The LaserWriter Select 300 and 310 have three indicator lights that indicate printer status. Each light has an icon below it to describe its function.

- On the left is the Ready/In Use indicator. Its icon is a circle.
- In the middle is the Paper Out indicator. Its icon is a horizontal rectangle with the top right corner turned down.
- On the right is the Paper Jam indicator. Its icon is two rollers with a jagged line between them.

The table below adds further details.

Indicator Color	Name	Function
GREEN	Ready/In Use	ON when the printer is ready to print. FLASHES when the printer is not ready to print due to warm-up (WAIT status). FLASHES while the controller is preparing data for printing.

		OFF when the printer is not ready to print due to an error condition.
AMBER	Paper Out	ON when printer status indicates paper out in CASSETTE FEED mode or MULTI-PURPOSE TRAY mode. OFF otherwise.
AMBER	Paper Jam	ON when printer status indicates paper jam. OFF otherwise.

If both the Paper Out and Paper Jam lights flash continuously, contact an Authorized Apple Service Provider.

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Tech Info Library Article Number:11511

Tech Info Library

LaserWriter Select 300: Memory Configurations

Revised: 2/8/93
Security: Everyone

LaserWriter Select 300: Memory Configurations

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Article Created: 9 February 1993

TOPIC ----------

This article discusses memory configuration and expansion for the LaserWriter Select 300 printer.

DISCUSSION ----------

The LaserWriter Select 300 is shipped with 512K of built-in memory. Because the LaserWriter Select 300's innovative design includes compression and decompression of the page to be printed, additional memory isn't required for most applications.

With a 1MB memory SIMM, the LaserWriter Select 300 can be expanded to 1.5MB of memory. This is needed only for printing complex documents.

To add PhotoGrade capabilities to your LaserWriter Select 300, add a 4MB memory SIMM and expand your printer to its maximum 4.5MB of memory.

The LaserWriter Select 300 has one memory expansion slot, which uses the same 80ns fast-page mode 30-pin memory SIMMs as the Macintosh IIci and IIsi memory SIMMs. The LaserWriter Select 300 only uses 1 x 8 - 1MB and 4 x 8 - 4MB memory SIMMs.

LaserWriter Select 300 memory is NOT interchangeable with the LaserWriter Select 310, because their memory SIMMs are different size.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11512

Tech Info Library

LaserWriter Select 300: PostScript Option (2/93)

Revised: 2/8/93
Security: Everyone

LaserWriter Select 300: PostScript Option (2/93)

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Article Created: 9 February 1993

TOPIC ----------

How do I add PostScript to a LaserWriter Select 300? What abilities do I gain or lose if I add PostScript?

DISCUSSION ----------

Adding PostScript

You can add PostScript to your LaserWriter Select 300 by installing the Apple LaserWriter Select 300 PostScript Option. This is a logic board exchange that effectively changes your printer to a LaserWriter Select 310.

Because some disassembly is required, this expansion kit must be installed by an authorized Apple dealer. If you want to keep both logic boards, and switch between them, you must have a dealer perform the logic board switch each time.

What You Gain, What You Lose

When you add the PostScript Option to a LaserWriter Select 300, you add the ability to print PostScript Level I documents, but you lose the FinePrint and PhotoGrade image enhancement technologies, as well as printer sharing.

Also, you cannot use memory from the original LaserWriter Select 300 logic board on the logic board contained in the PostScript Option, because the SIMMs are different sizes. If you wish to add printer memory when installing the PostScript Option, you must use the 1MB or 4MB 72-pin SIMMs for the LaserWriter Select 310.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11513

Tech Info Library

LaserWriter Select 310: Grayscale Printing (2/93)

Revised: 2/8/93
Security: Everyone

LaserWriter Select 310: Grayscale Printing (2/93)

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Article Created: 9 February 1993

TOPIC ----------

How do I print grayscale images on the LaserWriter Select 310?

DISCUSSION ----------

The LaserWriter Select 310 prints dithered grayscale images using its PostScript Level I printer driver. The LaserWriter Select 310 with the PostScript driver can print up to 33 shades of gray.

To print documents in grayscale mode on the LaserWriter Select 310:

1) Open the Print dialog box and click on the Options button. This opens the Print Options dialog box.

2) Select the "Color/Grayscale" button under the "Print" setting.

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Tech Info Library Article Number:11515

Tech Info Library

LaserWriter Select 300 and 310: Differences (2/93)

Revised: 2/8/93
Security: Everyone

LaserWriter Select 300 and 310: Differences (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article outlines the differences between the LaserWriter Select 300 and the LaserWriter Select 310:

DISCUSSION ----------

Feature	LaserWriter Select 300	LaserWriter Select 310
Controller	Uses computer's microprocessor	Has own AMD 29200 RISC processor
Memory	512K RAM Expandable to 4.5MB	1.5MB RAM Expandable to 5.5MB
Memory size	30-pin SIMMs	72-pin SIMMs
FinePrint	Enabled	Not Available
PhotoGrade	Enabled at 4.5MB memory	Not Available
Gray Levels	33 standard (91 with PhotoGrade)	33 standard
Compatibility	Macintosh	Macintosh & Windows
Printer Language	QuickDraw	PostScript Level I
Fonts Included	39 TrueType	13 PostScript

Print Driver	GrayShare	PostScript
Printer Sharing	with GrayShare	Not Available

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11516

Tech Info Library

LaserWriter Select 310: Connectivity (2/93)

Revised: 2/8/93
Security: Everyone

LaserWriter Select 310: Connectivity (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article describes the connectivity features of the LaserWriter Select 310.

DISCUSSION ----------

Overview

The LaserWriter Select 310 printer contains two communications ports:
• A serial port for Macintosh connectivity
• A Centronics parallel port for connection to MS/DOS and Windows computers.

Each of these ports is described below.

The printer has no LocalTalk port, and there is no support for AppleTalk.

Because the LaserWriter Select 310 supports only the PostScript printer description language, it does not support Hewlett Packard's Printer Control Language (PCL) and does not support automatic emulation switching.

The LaserWriter Select 310 is designed for use as a personal printer, so communications port switching is not supported and you cannot print to both ports at the same time. Both ports are active when the printer is powered up. The first port that receives a printing command from a connected computer becomes the active port. The other communications port is then inactive until the printer is restarted.

Serial Port

The LaserWriter Select 310's serial port is RS-232 compatible, runs at 57,600 bps with a DTR/DTS (hardware handshaking) protocol, and is designed

to be connected to a high speed Macintosh serial port. The serial port uses a mini-DIN 8 connector.

Centronics Parallel Port

The LaserWriter Select 310's Centronics parallel port is intended to be connected to a MS-DOS computer. The parallel port uses a 36-pin standard Centronics connector.

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Tech Info Library Article Number:11517

Tech Info Library

LaserWriter Select 310: Printer Drivers (2/95)

Revised: 2/20/95
Security: Everyone

LaserWriter Select 310: Printer Drivers (2/95)

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Article Created: 9 February 1993
Article Reviewed/Updated: 20 February 1995

TOPIC ----------

This article describes the printer drivers and operating-system compatibility of the LaserWriter Select 310.

DISCUSSION ----------

Operating System Support

The LaserWriter Select 310 includes both Macintosh and Microsoft Windows printer driver software.

The following operating systems are supported:
- Macintosh System Software 6.0.7 and 6.0.8
- Macintosh System Software 7.0 and later
- Microsoft Windows 3.0
- Microsoft Windows 3.1

Macintosh Software

The Macintosh LaserWriter driver has been modified to support the features of the LaserWriter Select 310: background printing, multiple paper sources, and the Print Density control. The modified printer driver is the LaserWriter Select 310 printer driver.

You can select background printing in the Chooser. Note that background printing uses your computer's processing power and may cause your computer to briefly slow down as your document prints.

With an option in the Print Dialog Box, you can now select which bin to print from. You can also print the first page of a document from one tray (for example, containing letterhead paper) and the rest of the document from a different tray (for example, containing plain paper).

The Options selection in the Print Dialog Box contains the Print Density control. The LaserWriter Select 310's print density can only be controlled by software; it has no hardware print density control.

Microsoft Windows

The Windows 3.0 and 3.1 drivers allow you to select printer resolution, paper handling and grayscaling options.

Article Change History:
20 Feb 1995 - Added additional information on printer driver.

Support Information Services

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Tech Info Library Article Number:11518

Tech Info Library

LaserWriter Select 310: Memory Requirements (3/95)

Revised: 3/20/95
Security: Everyone

LaserWriter Select 310: Memory Requirements (3/95)

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Article Created: 9 February 1993
Article Reviewed/Updated: 20 March 1995

TOPIC

This article discusses the memory requirements and configurations of the LaserWriter Select 310.

DISCUSSION

Letter-Size Pages

The LaserWriter Select 310 ships with 1MB of ROM and 1.5MB RAM on the logic board. With this amount of memory, you can print letter-size pages and download up to three PostScript typefaces to the printer.

Legal-Size Pages

If you want to print legal-size documents, download additional Postscript fonts, or print documents with complex graphics then you must install either the 1MB or 4MB memory upgrade. If you print a legal-size page from the multi-purpose tray without upgrading the memory, your page prints on the legal paper, however on in a letter-size page area (8.5x11).

Possible Memory Configurations

Built-in	Expansion	Total Memory
1.5MB	0	1.5MB
1.5MB	1MB	2.5MB (required for legal-size paper)
1.5MB	4MB	5.5MB (maximum amount)

The LaserWriter Select 310 has one memory expansion DRAM SIMM slot that uses industry-standard fast page mode 100ns 72-pin memory SIMMs. Only 1MB and 4MB SIMMs are supported in the LaserWriter Select 310.

The LaserWriter Select 310 memory is NOT interchangeable with the LaserWriter Select 300, because their SIMMs are different sizes.

Article Change History:
20 Mar 1995 - Clarified legal-size paper information.
30 Nov 1993 - Clarified information on memory

Support Information Services

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Tech Info Library Article Number:11519

Tech Info Library

LaserWriter Select 310: Pinouts (2/93)

Revised: 2/8/93
Security: Everyone

LaserWriter Select 310: Pinouts (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article provides the pinouts for the LaserWriter Select 310's communications ports.

DISCUSSION ----------

Mini DIN-8 RS-232 Serial Communications Ports

Pin	Signal	Description
1	DTR	Data Terminal Ready (output)
2	DSR	Data Set Ready (input)
3	TxD-	Transmitted Data
4	SG	Signal Ground
5	RxD-	Received Data
6	SG	Single Ground
7	NC	No Connection
8	NC	No Connection
Shield	PG	Protective Ground

Centronics Parallel Communications Port

Pin	Signal	Pin	Signal
1	Data Strobe	19	Ground
2	Data 0	20	Ground
3	Data 1	21	Ground
4	Data 2	22	Ground
5	Data 3	23	Ground
6	Data 4	24	Ground
7	Data 5	25	Ground

8	Data 6	26	Ground
9	Data 7	27	Ground
10	Acknowledge	28	Ground
11	Busy	29	Ground
12	Paper Out	30	Ground
13	(Select Printer)	31	No Connection
14	No Connection	32	(Printer error)
15	No Connection	33	No Connection
16	No Connection	34	No Connection
17	Signal Ground	35	No Connection
18	No Connection	36	No Connection

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Tech Info Library Article Number:11520

LaserWriter Select 300: Printing Process (2/93)

Revised: 2/8/93
Security: Everyone

LaserWriter Select 300: Printing Process (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article describes the printing process used by the LaserWriter Select 300.

DISCUSSION ----------

While other Apple laser printers image document pages directly into the printer's internal memory, the LaserWriter Select 300 performs most of its printing process in the host computer's printer driver.

The LaserWriter Select 300 print process begins when a page is converted into two files: the object file and the index file. The object file contains descriptions of all the objects on the page, and the index file contains information on where each of the objects belong on the page.

The printer driver then allocates memory inside the Macintosh to hold a portion, or band, of the page that is being printed. This memory is called a band buffer. (The size of the band buffer depends on how much memory is available; it can be as small as 4KB for a portrait page, or 9KB for a landscape page.) The objects are then imaged into the band buffer one scan line at a time until the buffer is full.

Any objects that extend beyond the number of scan lines that the band buffer can hold are clipped. When the buffer is full, the driver compresses the data in the buffer with an Apple proprietary compression scheme and sends the band to the printer. This compression scheme processes data with no loss of information and is tuned for high-resolution images.

The printer places the compressed data into its internal buffer and then waits for the next band. When all the bands for a page have been sent to the LaserWriter Select 300, the driver instructs the LaserWriter Select 300

to begin printing the page. The printer then begins decompressing the data and imaging the scan lines to the print engine.

Because much of the printer intelligence is located in custom ASICs and the LaserWriter Select 300 driver, the LaserWriter Select 300 logic board is much simpler and smaller than that of the LaserWriter Select 310. The LaserWriter Select 300 also needs less on-board RAM (only 512KB) due to the data compression techniques employed by the driver.

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Tech Info Library Article Number:11521

Tech Info Library

LaserWriter Select 310: Description (1/94)

Revised: 1/11/94
Security: Everyone

LaserWriter Select 310: Description (1/94)

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Article Created: 9 February 1993
Article Reviewed/Updated: 10 January 1994

TOPIC ----------

This article describes the LaserWriter Select 310.

DISCUSSION ----------

Overview

The LaserWriter Select 310 is the most affordable PostScript laser printer ever to come from Apple, and is designed for personal use by both Macintosh and Windows computer users.

13 scalable Postscript fonts are provided, including such popular standards as Times, Helvetica, and Courier.

Background printing is included for both Macintosh and Windows computers.

The LaserWriter Select 310 features a standard cassette tray that holds 250 sheets of paper, and a manual paper feed tray. You can add an optional 250- or 500-sheet paper feeder, a 250-sheet legal cassette, an envelope cassette, and a multipurpose tray for paper or envelopes.

Serial and parallel connections are included so there's no need to purchase any additional interface cards or software drivers.

Print quality

• 300 dots-per-inch (dpi) resolution for high-quality text and graphics
• 13 scalable fonts for printing a wide range of styles and sizes
• Adobe PostScript printing

Compatibility

- Perfect for Macintosh or Windows computing environments
- Adobe PostScript

Versatility

- 250-sheet automatic tray and manual feed tray included
- Optional paper-handling capabilities for up to 800 sheets of paper (includes different media)
- Compact design fits any desktop

Ordering Information

Apple LaserWriter Select 310
Order No. M2048LL/A
- Apple LaserWriter Select 310 printer
- Toner cartridge
- Installation software and fonts disks
- User's Guide
- Limited warranty statement

1MB Memory Upgrade
Order No. M2093G/A

4MB Memory Upgrade
Order No. M2094G/A

Apple LaserWriter Select 250-Sheet Feeder/Cassette
(supports A4, U.S. letter, B5, and executive paper sizes)
Order No. M2041G/A

Apple LaserWriter Select 500-Sheet Feeder/Cassette
(supports A4 and U.S. letter paper sizes)
Order No. M2042G/A

Apple LaserWriter Select Multipurpose Tray
(50 sheets or five envelopes)
Order No. M2037G/A

Apple LaserWriter Select 250-Sheet Letter Cassette
Order No. M2034G/A

Apple LaserWriter Select Envelope Cassette (30 envelopes)
Order No. M2031G/A

Apple LaserWriter Select Legal Cassette (250 sheets)
Printer memory upgrade recommended
Order No. M2032G/A

Article Change History:
10 January 1994 - Part number B1027LL/B has been removed from the Apple Products List. This consists of the LaserWriter Select 310

w/Toner cartridge and cable

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Tech Info Library Article Number:11522

LaserWriter Select 310: Technical Specifications (3/95)

Revised: 3/20/95
Security: Everyone

LaserWriter Select 310: Technical Specifications (3/95)

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Article Created: 9 February 1993
Article Reviewed/Updated: 20 March 1995

TOPIC ----------

This article provides technical specifications for the LaserWriter Select 310.

DISCUSSION ----------

Marking Engine

- Fuji Xerox laser

Print Quality

- 300 dpi for text and graphics

Controller

- AMD Am29205 RISC processor

Memory

- 1.5MB of RAM, expandable to 5.5MB
- Optional 1MB and 4MB upgrades

Speed

- Five pages-per-minute maximum (actual speed varies depending on images printed and computer used)

Interfaces

- Serial 8-pin DIN port
- Parallel port

System Requirements

- Any Macintosh running System 6.0.7 (with TrueType INIT) or later, or any version of System 7
- Any personal computer running Windows
- DOS applications with a PostScript driver

Fonts

- 13 fonts from the following families: Courier, Helvetica, Times, and Symbol
- Any PostScript font

Recommended Duty Cycle

- Minimum life expectancy: 150,000 pages
- Toner cartridge: 4,000 pages at 5% density

Paper Capacities

Standard
  — Manual feed tray
  — 250-sheet feeder
Optional
  — 250- or 500-sheet feeder
  — 50-sheet multipurpose tray (also holds up to five envelopes)

Paper Sizes

Width:	Minimum - 97mm	(3.82 in)	Maximum - 216mm	(8.5 in)
Length:	Minimum - 148mm	(5.83 in)	Maximum - 356mm	(14.0 in)

Printable Area

- Maximum printable line: 8.0 in (203.2 mm)
- Minimum top, bottom, left, and right margins: 0.25 in. (6.35 mm)

Print Materials

- 16lb to 36lb. (60 to 135 g/m2) bond via manual feed
- Paper: U.S. letter, U.S. legal, A4, executive and legal
- Most letterhead and colored stock, labels, and envelopes
- Medium-weight photocopier transparencies

Size and Weight

- Height: 8 in. (25.3 cm)
- Width: 15 in. (38 cm)
- Depth: 18.3 in. (45 cm)
- Weight: 26 lb. (12 kg)

Operating Environment

- Temperature: 50 to 90° F (10 to 32° C)
- Humidity: 20% to 80% noncondensing
- Toner cartridge transit environment: –4 to 104° F (–20 to 40° C)

Power Requirements

- U.S./Japan: 100 to 115 V, 50 to 60 Hz
- Europe/Australia: 220 to 240 V, 50 Hz

Power Consumption

- 450 W maximum at 115 V or 220 V

Article Change History:
20 Mar 1995 - Added paper sizes
12 Apr 1994 - Revised maximum paper weights
21 Mar 1994 - Correct metric paper weights

Support Information Services

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Tech Info Library Article Number:11523

Tech Info Library

PowerBook Duo 230 with Express Modem (2/93)

Revised: 5/31/94
Security: Everyone

PowerBook Duo 230 with Express Modem (2/93)

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Article Created: 9 February 1993

TOPIC ----------

This article describes a new PowerBook Duo 230 configuration with built-in Express Modem.

DISCUSSION ----------

This new product adds a high-end configuration to the line of PowerBook Duo notebook computers. It includes 4MB of RAM (expandable to 24MB), a 120MB hard drive, and the Express Modem.

The internal PowerBook Express Modem provides:
- 14,400bps data send/receive
- 9,600 fax send/receive
- support for V.42bis data compression, which results in an effective data throughput of up to 57,600bps.

Note: bps = bits per second, or Baud.

Support Information Services

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Tech Info Library Article Number:11524

Tech Info Library

QuickDraw LaserWriters: Printer Sharing (6/96)

Revised: 6/24/96
Security: Everyone

QuickDraw LaserWriters: Printer Sharing (6/96)

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Article Created: 9 February 1993
Article Reviewed/Updated: 24 June 1996

TOPIC ----------

This discussion focuses on sharing the LaserWriter Select 300, Personal LaserWriter 300, or the LaserWriter LS printers over a network. To share one of these printers, you must use the LaserWriter 300 printer software.

DISCUSSION ----------

You must use the LaserWriter 300 printer driver (which includes GrayShare), to share your LaserWriter printer with up to 21 additional computers over an AppleTalk network. There is no limit on how many people choose the printer in the Chooser, but only 21 people can simultaneously print to the printer. Anyone who wants to print to the shared printer needs to install the LaserWriter Select 300 printer driver. To print to a networked printer from a Macintosh using System 6, you must have System 6.0.7 or 6.0.8 installed, and use MultiFinder.

You still retain control of the printer after sharing it because the LaserWriter is connected to your computer. You can turn sharing on or off at any time. You can also use the Print Monitor program to view a list of pending print jobs and delete any jobs from that list.

Your Macintosh connected to the shared LaserWriter slows down when other users print to the shared printer because the computer is actually being used as a spooler. The information is sent from the remote computer to yours, then from your computer to the printer.

Sharing a Printer

To share a LaserWriter Select 300, Personal LaserWriter 300, or LaserWriter LS with other users, follow these steps:

Step 1:
To share a printer, you must be connected to an AppleTalk network of some type.

LocalTalk Connection

The LocalTalk connector goes into the printer port. The peripheral 8 cable (serial cable) connects the printer to the Macintosh. It needs to go into the modem port.

Ethernet or Token Ring Connection

Since both Ethernet and Token Ring connections do not require you to use a serial port. You can use either the printer or modem port to connect the printer to your Macintosh.

Step 2:
Open the Chooser and select the LaserWriter icon. A list of available printers is displayed.

Step 3:
Click the icon of the port to which your printer is connected. (If you are using the printer port to connect your Macintosh to the network, you must connect your LaserWriter to the modem port.)

Step 4:
Make sure Background Printing is On.

Step 5:
Click the Setup button to open the LaserWriter Sharing Setup dialog box.

Step 6:
Place an X in the Share this Printer checkbox. You may choose to name your printer and to enter a password.

If you type a password for the printer, only users who know the password can use the printer from their computers.

If you want a record of what is printed on your printer, place an X in the Keep Log of Printer Usage checkbox.

Step 7:
Click OK to close the LaserWriter Sharing Setup dialog box and close the Chooser window.

Your LaserWriter is now available to other users on the network.

Printing to a Shared Printer
==========

To print to a shared LaserWriter Select 300, Personal LaserWriter 300, or LaserWriter LS follow these steps:

Step 1:
Open the Chooser and select the LaserWriter 300 icon. A list of available communications ports and printers is displayed.

Step 2:
Click the name of the shared LaserWriter you want to use. If the printer requires a password, a dialog box appears; type in the password.

Step 3:
You may click the Get Info button to see whether any fonts in your system are unavailable on the shared printer. If your documents use such fonts, printing is slower, because the fonts must be downloaded to the printer.

Step 4:
Close the Chooser.

You are now ready to print to the shared LaserWriter Select 300.

Article Change History:
24 Jun 1996 - Added turn Background Printing on.
21 Feb 1995 - Added keyword; made several technical updates.
12 Dec 1994 - Added System 6 information.

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Tech Info Library Article Number:11526

Tech Info Library

LaserWriter Select: Paper Handling (2/93)

Revised: 4/13/93
Security: Everyone

LaserWriter Select: Paper Handling (2/93)

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Article Created: 9 February 1993

Article Change History

04/13/93 - UPDATED
• To clarify the LaserWriter Select's envelope capacity

TOPIC ----------

This article describes the paper handling features of the LaserWriter Select 300 and 310.

DISCUSSION ----------

The LaserWriter Select 300 and 310 printers include, as standard equipment, a 250-page paper cassette and manual paper feed tray to provide flexible paper handling.

Other paper handling options are:
• 50-sheet multipurpose tray (with 5 envelope capacity)
• 250-sheet legal cassette
• 250-sheet and 500-sheet feeders
• Envelope cassette (with 30 envelope capacity)

A LaserWriter Select 300 or 310 equipped with both a 500-page sheet feeder and a 50-sheet multipurpose tray, as well as its standard 250-sheet cassette, can contain up to 800 sheets of paper at one time.

Note that the LaserWriter Select 300 and 310's output tray holds only 150 sheets. If a large print job is sent to the printer, the output tray will need to be emptied more frequently than the input trays need to be filled.

Avoid feeding transparencies or envelopes into your LaserWriter Select 300 or 310 from regular paper cassettes, because they may jam in the printer. You should feed transparencies from the multipurpose or manual feed trays.

Use the envelope cassette and multipurpose or manual feed trays to feed envelopes.

Media Sizes

The LaserWriter Select printers can accommodate Letter, A4, B5, Legal, and Envelope size media. The table below shows what size of media is handled by the various feeders.

Feeder	Media Size
Standard paper cassette (built-in)	Letter, A4, B5, Executive
Manual feed tray (built-in)	Letter, A4, B5, Executive, Legal, Envelope
Multipurpose tray	Letter, A4, B5, Executive, Legal, Envelope
250-sheet legal cassette	Letter, A4, B5, Legal
250-sheet cassette feeder	Letter, A4, B5
500-sheet cassette feeder	Letter, A4, B5
Envelope cassette	Envelope Width 100 - 162 mm (3.94- 6.38 in.) Envelope Length 148 - 241.3 mm (5.83 - 9.5 in.)

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Tech Info Library Article Number:11527

Tech Info Library

LaserWriter Select 300: Setting and Changing the Password (2/93)

Revised: 2/8/93
Security: Everyone

LaserWriter Select 300: Setting and Changing the Password (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

This article describes the use of passwords on a LaserWriter Select 300 equipped with GrayShare software.

DISCUSSION ----------

Overview

In the context of sharing a LaserWriter Select 300 on a network, the "owner" of the LaserWriter Select 300 is the person who has attached a LaserWriter Select 300 to his or her Macintosh.

GrayShare software lets the owner of a LaserWriter Select 300 "share" the printer over a network, and allows the owner to control access to the shared LaserWriter Select 300 by setting a password. If the owner sets a password, only those users who know the password can print to the shared LaserWriter Select 300. If the owner does not set a password, anyone can print to the shared LaserWriter Select 300.

The password remains in effect until the printer is renamed, the password is changed, or the user selects another LaserWriter Select 300. For security purposes, the password is always displayed as five bullet characters (•••••).

To set a password, share the LaserWriter Select 300 on the network, then type a password in the Password field of the Sharing Setup menu.

Changing the Password

If the owner changes the password for a shared LaserWriter Select 300, and you print without entering the new password, a dialog box appears stating

"The password has been changed. Use the Chooser to select the printer again".

When you open the Chooser and select the LaserWriter Select 300 icon, the printer you were using is highlighted. However, no dialog appears asking you to re-enter the password until you either click the "Get Info" button, double click the selected printer or choose another shared LaserWriter Select 300.

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Tech Info Library Article Number:11528

Tech Info Library

A/UX 3.0: libPW.a and Missing Error Symbol (2/93)

Revised: 2/16/93
Security: Everyone

A/UX 3.0: libPW.a and Missing Error Symbol (2/93)

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Article Created: 5 February 1993

TOPIC ----------

I am trying to compile a C application that is using a standard library, included in A/UX 3.0, called libPW.a. I can't find in the library the symbol called Error. Is it missing?

If the Error symbol isn't missing, where is it? Any ideas to compile my application correctly?

DISCUSSION ----------

We have searched in the libPW.a library: the 'Error' symbol is referenced by the modules xcreat.o, xlink.o, xmsg.o, and xopen.o that are defined in the libPW.a archived library. Try 'nm /lib/libPW.a | more'. You'll find where the 'Error' is located.

In order to call any function included in the libPW.a library, besides including the -lPW option to the compiler, make sure that the header file called macros.h in /usr/include is included in the user's program (with the line of #include <macros.h>). The external Error symbol is declared in macros.h.

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Tech Info Library Article Number:11532

TrueType: Fonts Incompatible with MacWrite II 1.1v4 and Earlier

Revised: 2/8/93
Security: Everyone

TrueType: Fonts Incompatible with MacWrite II 1.1v4 and Earlier

==========

Article Created: 8 February 1993

TOPIC ----------

Claris sent this list of fonts that can cause problems with MacWrite II 1.1v4 and earlier versions.

DISCUSSION ----------

Apple Font Pack Problems - "Font not Installed" Message

We have confirmed a problem with MacWrite II 1.1v4 and earlier, combined with System 7.0.1 or 7.1 and the Apple TrueType Font Pack:

If you use System 6 (with TrueType installed), 7.0.1 or 7.1, and have any of the following fonts installed, you may receive the "this document uses a font that is not installed, possibly XXX" message. The fonts that we have identified are as follows:

- Garamond Narrow
- Helvetica Black
- Helvetica Compressed
- Lubalin Graph
- Nadianne
- Swing

After the message appears, the document will open in the Chicago font.

Correcting the Problem

You have a variety of options:

- Remove the fonts from the Font Folder.
- Use Find/Change on Attributes to change the font from Chicago to the

desired font.

You will continue to get this message until you remove the fonts.

NOTE: MacWrite II 1.1v4 was an in-line revision only. MacWrite Pro doesn't have this problem .

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Tech Info Library Article Number:11533

Tech Info Library

Macintosh LC III and Macintosh IIvx: No Support for A/UX (2/93)

Revised: 2/8/93
Security: Everyone

Macintosh LC III and Macintosh IIvx: No Support for A/UX (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

Does A/UX run on the Macintosh LC III or Macintosh IIvx?

DISCUSSION ----------

No, currently Apple does not support A/UX on the Macintosh LC III or Macintosh IIvx.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11534

Tech Info Library

LaserWriter Select 310: System Requirements (11/95)

Revised: 11/7/95
Security: Everyone

LaserWriter Select 310: System Requirements (11/95)

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Article Created: 9 February 1993
Article Reviewed/Updated: 7 November 1995

TOPIC ----------

This article describes system requirements of the LaserWriter Select 310.

DISCUSSION ----------

System Requirements
==========
The LaserWriter Select 310 requires either:

Macintosh

A Macintosh computer with 1MB of memory, a hard disk, and System 7.0 or greater.

- System 7.5 users may need to do a custom install of the software.

- System 7.5.2 users will need to downloaded the LaserWriter Select 310 v7.0.1 driver from Apple Software Updates.

- Macintosh Centris 660AV, Quadra 660AV, Qudra 840AV users should use Enabler 088 v1.2, available in Software Update 3.0, or upgrade to System 7.5 or 7.5.1.

Windows

An Intel-standard personal computer with Microsoft Windows 3.0 or later.

Fonts
=====
The LaserWriter Select 310 can use Adobe Type 1 or bitmap fonts. TrueType fonts will either be printed as bitmaps (if no Type 1 equivalent exists in the

printer's ROMs) or as an unhinted Type 1 equivalent.

Article Change History:
7 Nov 1995 - Added additional system requirements.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:11535

Tech Info Library

PowerBook 165c: No 160MB Hard Drive at Introduction (2/93)

Revised: 5/31/94
Security: Everyone

PowerBook 165c: No 160MB Hard Drive at Introduction (2/93)

==========

Article Created: 9 February 1993

TOPIC -----

I thought Apple was planning to offer a 160MB hard drive on the PowerBook 165c. That's what the datasheet says.

DISCUSSION -----

The datasheet is incorrect. In the future, Apple may offer a 160MB hard drive option in the PowerBook 165c, but at the time of the new model's introduction, the largest-capacity available hard drive is 120MB.

Article Change History
02/18/93 - Revised for clarity and wider readership

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11536

Tech Info Library

Macintosh: Mapping Russian Cyrillic Letters from PC (3/93)

Revised: 3/3/93
Security: Everyone

Macintosh: Mapping Russian Cyrillic Letters from PC (3/93)

==========

Article Created: 3 March 1993

TOPIC ----------

I run a BBS on FIDO NET at school, and one of the primary uses is to communicate with Russia via E-Mail. All of the systems in Russia are running on IBMs or compatibles. In order to transmit messages in Russian, they have used the High Bit ASCII code and put the Cyrillic alphabet there. I have a clone connecting to Russia, and from it I can read, write, and send messages in Russian.

Most of our students access the BBS from Macintosh computers in our computer center or from home; the Macintosh computers can neither read nor write messages in Russian. That which is High ASCII Russian on the clone, is High ASCII garbage on the Macintosh. Surely there must be a way to access the High Bit code on the Macintosh, place Cyrillic letters there, and then have a simple toggle to switch to and from High ASCII.

DISCUSSION ----------

By "High Bit code," we are assuming that the Cyrillic characters are placed in locations 128 to 255 in the ASCII range on the PC. Well, the limiting factor here is really character mapping -- how to get the specific character mapping on the PC translated into a special character mapping on the Macintosh.

One possible solution would be to get the exact character map used on the PC, and then create or modify an existing Macintosh font to have the same characters and mapping. You'd have to verify how those characters map to the keyboard on the Macintosh to write Russian back. (Note: the Option key will most likely be used in conjunction with another key in order to access most of the "High Bit" ASCII characters). Making this all work wouldn't be very easy, and would require use of tools like Fontographer and ResEdit to modify the FONT and KCHR resources.

..TIL11538-Macintosh-Mapping_Russian_Cyrillic_Letters_from_PC_3-93.pdf

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Tech Info Library Article Number:11538

Tech Info Library

LaserWriter: How to Print 21 cpi When Using PCL (3/93)

Revised: 3/24/93
Security: Everyone

LaserWriter: How to Print 21 cpi When Using PCL (3/93)

==========

Article Created: 15 February 1993

TOPIC ----------

How can I print 21 characters per inch (cpi) to my Apple LaserWriter while using HP's Printer Control Language (PCL)?

DISCUSSION ----------

You must first put your PCL-compatible LaserWriter into PCL emulation mode and then send your LaserWriter the appropriate control code. The LaserWriter IIf and IIg, LaserWriter Pro 600 and 630, and Personal LaserWriter NTR are PCL-compatible.

There are two ways of putting your LaserWriter into PCL emulation mode:
• Set your printer to PCL emulation mode.
• Invoke the PCL emulator from PostScript.

Set Your Printer to PCL Emulation Mode

To set your LaserWriter to PCL emulation mode, put the rotary thumbwheel switch on the printer to the position for HP LaserJet Plus emulation. This position varies among the different LaserWriter printers. Until your LaserWriter is switched to a different setting, all input will be treated as PCL input. You must also choose a printer driver in your software that is configured for a HP LaserJet IIP (this driver is often shipped with MS-DOS, Windows, or the PCL-compatible application).

Invoke the PCL Emulator from PostScript

Invoking the PCL emulator within a PostScript program makes it easier to switch between PostScript files and other printer language emulators. You invoke a particular printer emulation inside a PostScript language program with

a 'statusdict' procedure called 'emulate'. The PostScript command string to invoke PCL is:

```
statusdict begin currentfile /hpcl emulate
```

The control code for the pitch or characters per inch (cpi) selection is:

```
ESC(s#H
```

where the # is the pitch or cpi. Note that the pitch setting doesn't apply to proportional fonts, since the number of characters printed in an inch of proportional type varies, depending on which letters are printed.

The control code for 21 cpi printing is:

```
ESC(s21H
```

If you are already in PCL emulation mode, you can simply send this control code to the printer through your application program.

If you want to invoke PCL emulation mode from PostScript and start 21 cpi printing, type this command string

```
statusdict begin currentfile /hpcl emulate ESC(s21H
```

into a text editor and save it as a text file. Then, launch the LaserWriter Utility and select the 'Download PostScript file' option from the Utilities menu. Download the text file you have saved and your LaserWriter will be able to print 21 cpi in PCL emulation mode.

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Tech Info Library Article Number:11539

Tech Info Library

Macintosh PC Exchange: Manual Correction (2/93)

Revised: 2/16/93
Security: Everyone

Macintosh PC Exchange: Manual Correction (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

Page 14 of the Macintosh PC Exchange manual states that you can create a mapping for a DOS file with "no suffix". However, if you try to do this, you get the message "To complete the assignment, the DOS suffix must be specified". Is the manual incorrect?

DISCUSSION ----------

The Macintosh PC Exchange manual is incorrect: it is not possible to create a mapping for a DOS file without the three-character extension, referred to in the Macintosh PC Exchange manual as a "suffix".

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Tech Info Library Article Number:11544

Tech Info Library

Apple Internet Router: AURP Q&A (2/93)

Revised: 2/16/93
Security: Everyone

Apple Internet Router: AURP Q&A (2/93)

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Article Created: 8 February 1993

TOPIC ----------

This article answers questions that relate to Apple Internet Router and AURP.

DISCUSSION ----------

Q: What exactly is AURP?
A: AURP (AppleTalk Update-based Routing Protocol) specifies a standard way of connecting AppleTalk networks over point-to-point lines such as dialup modems and T-1 lines and of tunneling AppleTalk through foreign network systems, such as TCP/IP, X.25, OSI and DECnet. It was designed to improve AppleTalk for use on wide-area networks, including telecommunication links and campus-like backbone networks. It is an enhancement to the AppleTalk architecture that improves the efficiency and scalability of large AppleTalk internets, allowing users to easily interconnect remote Macintosh and PC workgroups.

Q: How does AURP reduce network traffic?
A: AURP provides for efficient routing over point-to-point lines or multipoint connections. As its name implies, AURP updates routing tables only when a change occurs in the network and does so by transmitting only the changed information, thereby greatly reducing traffic.

Q: Are AURP specifications publicly available?
A: Yes. Specifications have been distributed publicly at the Interop Trade shows and will be available through APDA (Apple's source for developer tools), and through the internet as an information RFC (Request for Comment).

Q: Are there other products available that implement AURP?
A: Various third parties have demonstrated functioning versions of AURP at

Interop in 1992. We cannot discuss unannounced products by any of the third parties.

Q: Was AURP developed as a replacement routing protocol for RTMP?
A: No. AURP was developed to complement the AppleTalk RTMP (Routing Table Maintenance Protocol). RTMP was primarily designed for LANs, while AURP was specifically designed to complement RTMP by providing wide-area capabilities.

Q: Why didn't Apple wait for the standards groups to set an AURP standard?
A: Our customers clearly indicated the need for an AURP-type solution as soon as possible. While Apple fully supports working with standards groups, such as the IETF, doing so greatly delays a product's time to market, often by several years. In order to supply customers with a timely solution, we choose to implement AURP in the Apple Internet Router product family.

Q: What is Apple doing to get AURP adopted as an industry standard?
A: Apple is presently evangelizing AURP, touting its performance and flexibility to customers, third party vendors and standards groups, such as the AppleTalk Network Forum (ANF) and the IETF.

Q: Are you working with the IETF?
A: Yes. We continue to work with the IETF on many issues, such as network management and AppleTalk over PPP (Point-to-Point protocol). We will also be publishing the AURP specification as an informational RFC (Request for Comment).

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Tech Info Library Article Number:11545

Tech Info Library

Apple Internet Router: General Q&A (2/93)

Revised: 2/16/93
Security: Everyone

Apple Internet Router: General Q&A (2/93)

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Article Created: 8 February 1993

TOPIC ----------

This article contains Apple Internet Router product related Questions and Answers.

DISCUSSION ----------

Q: What did Apple introduce at Networld in Boston this January?
A: Apple introduced the Apple Internet Router product family. The new product line allows local and remote Macintosh computers or PC workgroups to easily interconnect. The new router software allows organizations to increase the size, performance, and manageability of their AppleTalk networks. It is also Apple's first implementation of the AppleTalk Update-based Routing Protocol (AURP), a new technology that significantly reduces network traffic over an internet.

Q: What is a router?
A: Routers are devices that can connect multiple networks, providing for two or more connections. Routers operate at Level 3 (network) of the ISO OSI model and are protocol sensitive, allowing a router to send data packets along alternate paths and "intelligently" decide how to best route data packets. Routers send data along the best available path based on traffic levels, availability, and the general status of wide-area connections.

Q: What are the products that make up this family?
A: Apple is introducing three Apple Internet Router products: a base routing software kit and two extension kits. The Basic Connectivity Package provides the core routing software and technology. Apple's two extension packages—the AppleTalk/IP Wide Area Extension and the AppleTalk/X.25 Wide Area Extension—provide wide area AppleTalk routing over TCP/IP and X.25 networks, respectively. The extension kits are

sold separately.

Q: Why is the AppleTalk/X25 Wide Area Extension product so much more expensive than the other router family products?
A: The AppleTalk/X25 Wide Area Extension product includes Router X.25 software and installer in addition to Apple's MacX25 server software. The price is derived from the combined cost of the router X.25 software and the MacX25 sever software.

Q: Do you need to purchase the Basic Connectivity Package in order to use Apple's X.25 or TCP/IP extension packages as well as other third-party extension products?
A: Yes. The Basic Connectivity Package provides the core routing software and technology on which the extension products build.

Q: How can I get more information or place an order?
A: These products will be available worldwide from Apple authorized resellers and in the United States: call The Apple Catalog at 1-800-795-1000.

Q: How does the new internet router product family differ from Apple's current internet router -- the AppleTalk Internet Router 2.0?
A: The new router is a completely redesigned product with many capabilities beyond the 2.0 router, while still providing all the functionality of the 2.0 router. The new router provides both wide-area and local-area networking. Superior WAN connectivity is made possible by implementing a new technology -- called the AppleTalk Update-based Routing Protocol (AURP) -- which significantly reduces network traffic. It also provides support for the Simple Network Management Protocol (SNMP). The new router software also provides enhanced LAN support, routing data between industry standard LocalTalk, Ethernet, Token-Ring, and other network types.

Q: Will the AppleTalk Internet Router 2.0 still be available after the new router products begin shipping?
A: No. The new Apple Internet Router product family replaces Apple's current router, the AppleTalk Internet Router 2.0.

Q: Is Apple providing upgrades for AppleTalk Internet Router 2.0 users?
A: Yes. Apple will provide software upgrades until June 12, 1993, with proof of purchase.

Q: What network types does the Apple Internet Router work on?
A: The Basic Connectivity package ships with support for AppleTalk over LocalTalk, Ethernet, and Token Ring networks, and (using AURP) over dial-up modems. The AppleTalk/IP extension ships with support for AppleTalk "tunneling" through TCP/IP (using AURP) over either Ethernet or Token Ring, and the AppleTalk/X.25 extensions supports X.25 over Apple's Serial/NB card. Third parties will be adding support for many other network types, such as FDDI and SMDS.

Q: Who are the third parties building extensions for the new router product family?

A: There are a variety of third-party companies building extensions for the Apple Internet Router product family, including Asante, Farallon Computing, Insignia, MultiAccess Computing, Neon Software, and Cabletron. There are also many companies that have not yet announced support for AURP, but are expected to do so in the near future. For detailed information of current solutions, see the Apple Internet Router Solutions Guide.

Q: What security features does it have?
A: The new router includes security options to protect networks from unauthorized use, including a router setup password, half-routing password/callback, and the device hiding and network number hiding features of AURP.

Q: What monitor and control features does it offer?
A: The new router has built-in SNMP (Simple Network Management Protocol) support which enables the router to be monitored from any SNMP-based network management console. It also provides a router log and reports network statistics.

Q: What is the significance of providing built-in support for SNMP?
A: SNMP is a widely-adopted industry standard for network management, which Apple has adopted as the core part of its network management strategy. Through SNMP, the setup and operation of the router can be monitored through any number of currently available third-party SNMP consoles. Use of SNMP also demonstrates Apple's continued commitment to standards.

Q: How do the new router products enhance local area connectivity?
A: The Apple Internet router can interconnect all types of AppleTalk networks, including LocalTalk, Ethernet, and Token Ring. This offers greater flexibility in choosing network media and topologies.

Q: What are the operating requirements of the software?
A: The Apple Internet Router software operates on all Macintosh computers with at least 4MB of memory, and System 7.0 or later. The software was designed for AppleTalk Phase 2 networks only.

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Tech Info Library Article Number:11546

Apple Internet Router: Strategy Q&A (2/93)

Revised: 2/16/93
Security: Everyone

Apple Internet Router: Strategy Q&A (2/93)

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Article Created: 8 February 1993

TOPIC ----------

This article answers questions about the router strategy surrounding Apple Internet Router.

DISCUSSION ----------

Q: Who are the companies that Apple competes with in the router market?
A: Apple's key competitors are Cisco Systems, Novell, Shiva, and Cayman Systems.

Q: How is Apple's router product family differentiated from the competition?
A: The Apple Internet Router Product Family is clearly the easiest to use solution for connecting small and medium AppleTalk workgroups, via either a LAN or a WAN, over diverse media types. Also, the Apple Internet Router is currently the only one that supports AURP and its many features such as network number remapping and hop count reduction.

Q: Why hasn't Apple provided multiprotocol routing with its newest router?
A: Our customers clearly indicated the need for an AURP-type solution. While Apple understands the value of multiprotocol support in its router, such development would have taken much longer to bring to market. Our priority was to meet our customers' needs as quickly as possible.

Q: Will Apple provide additional Internet extension products in the future?
A: It is Apple's policy to not discuss future product directions due to the competitive nature of the technology marketplace. However, Apple is always evaluating new technologies and new solutions that may one day make life even easier for our customers.

Q: Why is Apple providing a new family of internet router products?
A: Apple's original router solution—the AppleTalk Internet Router 2.0—was best suited as a solution for interconnecting LANs. The Apple Internet Router provides a good solution for interconnecting both local and remote workgroups.

Q: Does Apple intend to introduce router hardware products in the future?
A: It is Apple's policy to not discuss future product directions due to the competitive nature of the technology marketplace.

Q: What is the installed base of AppleTalk Internet Router 2.0 users?
A: IDC estimates an installed base of approximately 20,000 AppleTalk Internet Routers.

Q: What market share does the outgoing AppleTalk Internet Router 2.0 currently have?
A: IDC estimates Apple's 1992 share of the router market to be about 18 percent.

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Tech Info Library Article Number:11547

Tech Info Library

Apple Internet Router: Technical Q&A (2/93)

Revised: 2/16/93
Security: Everyone

Apple Internet Router: Technical Q&A (2/93)

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Article Created: 8 February 1993

TOPIC ----------

This article answers technical questions about Apple Internet Router.

DISCUSSION ----------

Q: Does the Macintosh running the Apple Internet Router software have to be dedicated to routing only?
A: No. The Apple Internet Router operates in the background and allows the Macintosh to be used for other foreground applications. Though the router can be run in the background of a user's workstation, it creates the potential to disrupt the integrity of the internet if the user crashes an application or turns off the Macintosh. A more secure internet can be created by running the router in the background of other Apple server products such as the AppleShare Server and Apple SNA•ps Gateway software. The Apple Internet Router should be run by itself for optimum performance on large internets.

Q: How many physical ports available can be interconnected with a single Apple Internet Router?
A: Up to 32 physical ports are available on the Apple Internet Router.

Q: Does the Apple Internet Router support remote administration?
A: The Apple Internet Router supports network management through the industry-standard Simple Network Management Protocol (SNMP). By using the Timbuktu product form Farallon, which is detailed in the Apple Internet Router Solutions Guide, users can remotely administer the Apple Internet Router.

Q: How many virtual circuits can the AppleTalk/X25 Wide Area Extension support?
A: The X25 can support eight virtual circuits per Apple Serial NB Card for a

total of up to 32 virtual circuits.

Q: Can the AppleTalk/IP Wide Area Extension run over Ethernet and Token Ring?
A: Yes.

Q: Does the SNMP router agent in the Apple Internet Router support SNMP sets?
A: Currently the SNMP agent only supports GETS, which allows any SNMP-based management console to manage the router. However, the IETF is in the process of defining SNMP sets and Apple will support these specifications when they are finalized.

Q: What kind of performance can we expect to see with the Apple Internet Router?
A: Apple does not discuss performance ratings of its products because such figures are often misleading.

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Tech Info Library Article Number:11548

Tech Info Library

PowerBook/DOS Companion: Specifications

Revised: 2/12/93
Security: Everyone

PowerBook/DOS Companion: Specifications

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Article Created: 9 February 1993

TOPIC ----------

This article describes the products that make up the PowerBook/DOS Companion.

DISCUSSION ----------

MacLinkPlus/PC from DataViz

- Handles file translations and transfers from DOS and Windows to Macintosh
- Works with more than 700 of the most popular word processing, graphics, spreadsheet, and database programs
- Includes direct connect cable
- MacLinkPlus/PC will translate between these Macintosh word processing file formats:

  FrameMaker
  MacWrite
  MacWrite II
  Word
  WordPerfect
  Works WP (Mac and Apple II)
  WriteNow

- MacLinkPlus/PC will translate between these DOS and Windows program file formats:

  Ami Pro
  DCA-RFT

FrameMaker
MultiMate
OfficeWriter
Professional Write
RTF
Text
Word PC
Word for Windows
WordPerfect
WordStar
XYWrite

- MacLinkPlus/PC will translate between these spreadsheet file formats:

  Comma Values
  dBase
  Excel
  Lotus 123
  Symphony
  Multiplan
  SYLK
  Tab Text
  Tab Values
  Works DB and SS (Mac and Apple II)

- MacLinkPlus/PC translates between these graphics file formats:

  PICT
  AutoCAD (DXF)
  Harvard Graphics (CGM)
  Lotus Freelance (CGM)
  Lotus (PIC)
  PC PaintBrush (PCX)
  Ventura Publisher (IMG and GEM)
  Windows Bitmap (BMP)
  WordPerfect (WPG)

- MacLink/PC can transfer the following file formats from one platform to another:

  EPS
  PageMaker
  TIFF
  Binary

Macintosh PC Exchange software from Apple

- Recognizes MS-DOS, Windows, and OS/2 disks

MacVGA Video Adapter from James Engineering

- Video Cable

- Supports most VGA and SVGA monitors to display work in 256 colors

- Works with PowerBook 160 and 180, and with PowerBook Duo 210 and 230 connected to a Macintosh Duo MiniDock

- VGA and SVGA monitors supported:

  Aamazing 8431x, 8429 SE, 8489 GX
  CTX CM3436, CVT5488NI
  Compaq (except original)
  Dukane 28A-800 projection panel
  Goldstar 1430, 1450, 1480, 3031
  Hyundai HCM-421E, HCM423E
  IBM (except 8513)
  Leading Technology 500V, 1441V
  Matsushita ViewSonic 4, 5
  Nanao FlexScan 9070U
  NEC MultiSync 2A, 3D, 4D, 5D, GS-2A (grey)
  Northman MultiVGA 3D
  nView ViewImage II+2 projection panel
  Packard Bell PB8509 V, PB8528 SVG
  Panasonic Pansync 1381
  Power II CM1414E
  Qume 835
  Relisys RE-9513
  Samtron SC428V, SC428VS
  Seiko CM1440, CM1445, CM1450
  Sony CDP-1302, 1304, 1320
  Telex Magnabyte LCD projection panel
  Wang 1414
  Win Technologies SVGA
  Wyse Technologies WY-655
  Zenith CM1492

- Monitors not supported:

  AT&T CRD339D
  Compaq (original)
  Cordata CMC1412A
  Hyundai 402C
  IBM 8513
  Mag Computronic PMV14VC Plus
  Magnavox Professional Series
  Matsushita ViewPerfect 2v
  Packard Bell 8541 VGG
  Power II 3E
  Princeton UltraSync
  ProImage 7033
  Quadrant QC-1578
  Samsung Multisync (SVGA) 3E

PowerPrint from GDT Softworks

- Supports print drivers for more than 1000 printers

- Includes serial-to-parallel cable

- Supports any printer compatible with the following Hewlett-Packard printers:

  HP DeskJet
  HP DeskJet 500
  HP ThinkJet
  HP LaserJet
  HP LaserJet Plus
  HP LaserJet II, IIP, and III

- Supports any printer compatible with:

  Epson LQ
  Epson FX
  Canon BJ-330
  Canon LBP
  Canon BJ-10ex
  Canon BJ-1130

- Supports any printer compatible with Toshiba printers.

- Supports any printer compatible with the NEC Pinwriter

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Tech Info Library Article Number:11549

DAL: Using CL/1 XCMDS (2/93)

Revised: 2/16/93
Security: Everyone

DAL: Using CL/1 XCMDS (2/93)

==========

Article Created: 9 February 1993

TOPIC ----------

I'm using the CL1-etc. XCMDs/XFCNs for DAL and was wondering if anyone else has been able to open links into more than one remote database server at a time. It seems that some method should be available to swap in a new set of values into the global variables (cl1_id, etc.), and provide a means of management of multiple database links. I can't figure it out from the DAL manuals.

DISCUSSION ----------

It is possible with DAL (Data Access Language, formerly known as CL/1) to maintain multiple network sessions and/or multiple DMBS/Database connections.

The choices are:

- A single server connection with multiple DBMSes and Databases. VMS supports the most DBMS/Database combinations.

  Exceptions are:

  1) The VM server has only one DBMS and does not support more than one Database being open in one network connection.

  2) The TSO and VTAM servers will support both DBMSes (DB2 and Teradata) being open, but will only support one Database being open in DB2. (We're not sure about the number of open databases Teradata will support, because we don't have logon access to more than one database.)

- Multiple network connections to multiple servers, each with a separate

Network, DBMS and Database. To support multiple network connections would require multiple Userids.

In either case, the application must maintain control of the Database and DBMS that is being accessed.

The CL1Init XCMD automatically returns the session id in the cl1_id global. This session id can then be saved and used to control which connection is being used.

The DAL Interactive stack, which ships with the Data Access Language Developer's Toolkit, supports multiple connections and its scripts can be referenced for further information.

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Tech Info Library Article Number:11551

Tech Info Library

AppleShare Print Server: Can't Use Bin Info to Print (9/95)

Revised: 9/20/95
Security: Everyone

AppleShare Print Server: Can't Use Bin Info to Print (9/95)

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Article Created: 15 February 1993
Article Reviewed/Updated: 20 September 1995

TOPIC ----------

I print from a Macintosh computer with LaserWriter driver version 7.2, to a LaserWriter Pro 600. This all works fine, including selecting the bins for output. When I use the AppleShare Print Server with the latest drivers installed on the server, it cannot pass the bin information along.

DISCUSSION ----------

The solution is on the client side. You should bring up the Chooser and select the print spooler. You must then do a manual set up by holding down the Option key and clicking Setup in the Chooser dialog box. This will display a list of printers and options associated with those printers.

Once the setup is complete, you will have the ability to select different bins.

Article Change History:
20 Sep 1995 - Reformatted to meet current standards.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:11552

LaserWriter Pro: Emulation Switching with a Bridgeport (2/93)

Revised: 2/23/93
Security: Everyone

LaserWriter Pro: Emulation Switching with a Bridgeport (2/93)

==========

Article Created: 15 February 1993

TOPIC --

There is a device called a Bridgeport (made by Extended Systems) which determines if a file being sent to the printer is PCL or PostScript. It then sends a code to the printer to cause it to switch to the appropriate emulation.

Does the LaserWriter Pro use the same emulation switching codes as the LaserWriter IIf and LaserWriter IIg?

Also, how do I configure my LaserWriter Pro 630 when connected to the Bridgeport?

DISCUSSION --

The LaserWriter Pro 600 and 630, and the LaserWriter IIf and IIg, support the same PostScript and HP LaserJet emulation (PCL 4+) modes, so the BridgePort should work with both printers.

To configure your LaserWriter Pro for the BridgePort, you must set the thumbwheel rotary switch to one of the programmable settings between 6 to 9.

The BridgePort documentation outlines some additional settings. We suggest following the BridgePort instructions for the LaserWriter IIf and IIg.

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Tech Info Library Article Number:11553

Tech Info Library

LaserWriter Pro & MS-DOS, Windows: Setting Print Density (3/93)

Revised: 3/24/93
Security: Everyone

LaserWriter Pro & MS-DOS, Windows: Setting Print Density (3/93)

==========

Article Created: 16 February 1993

TOPIC ----------

How do I control a LaserWriter Pro's print density from MS-DOS or Windows?

DISCUSSION ----------

The only way to control the LaserWriter Pro's print density from MS-DOS or Windows is to download PostScript code directly to the printer. You can find the parameters in the LaserWriter Pro Developer's Notes (available from APDA) and then send the PostScript code to the printer with the LaserWriter Utility.

Note that you will see very little difference when you change the LaserWriter Pro's print density. The difference is small, and is about the same as the print density setting on the LaserWriter II printers.

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Tech Info Library Article Number:11554

Tech Info Library

LaserWriter 600: Minimum Margins (2/93)

Revised: 2/18/93
Security: Everyone

LaserWriter 600: Minimum Margins (2/93)

==========

Article Created: 15 February 1993

TOPIC ----------

The margins on the LaserWriter 600 are listed as being less than 1/4 inch. On some software packages, like ClarisWorks and MacWrite II, I can't set the margins less than 1/2 inch. The program informs me that the margins are set too small for the selected printer, and some data will be cropped. Why is this happening? This problem is also occurring on the HP LaserJet 4 printer.

DISCUSSION ----------

To be exact, the minimum margins for the LaserWriter Pro series are as follows:

	Inches
Minimum Left Margin:	.138
Minimum Right Margin:	.138
Minimum Top Margin:	.114
Minimum Bottom Margin:	.197

These values are what the print engine can accommodate. Margins, however, are also controlled at the application level. So these minimum margins may not be attainable from just any application. It really depends on what the application sets as its default limits. Applications that use PPD files (which provide printer-specific details such as imageable area) are more likely to be able to achieve the minimum margins.

In your case, it's the application-specific margin limits that prevent use of the minimum margins. You might select Larger Print Area in the Page Setup Options dialog. This should increase the printable area somewhat. If you really need to use the minimum margins, then we suggest using an application that uses PPD files.

..TIL11555-LaserWriter_600-Minimum_Margins_2-93.pdf

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11555

Tech Info Library

Macintosh Operating System: Open File Limitations (2/93)

Revised: 2/18/93
Security: Everyone

Macintosh Operating System: Open File Limitations (2/93)

==========

Article Created: 15 February 1993

TOPIC ----------

Under the Macintosh operating system, there's a default limitation of 40 open files at any given time. I need to increase this number, and I understand utilities like SilverLining can modify the boot blocks to effect this. Please answer these questions for me:

1) What are the tradeoffs of increasing the number of open files possible?

2) How much additional memory is required by each open file?

3) How many open files does AppleShare 3.0 support?

4) Are there any limitations when the volume is a CD (HFS format)?

DISCUSSION ----------

Depending on what version of system software you're running, you may not need to modify the boot blocks. Starting with System 7, the number of open files possible became dynamic. System 7 now automatically increases the number of open files possible as needs dictate. Thus, modifying the boot blocks on a System 7 computer has no real effect.

Here are the answers to your questions. NOTE: Please keep in mind that modifying the boot blocks to increase the number of open files possible only makes sense in a System 6 environment. By the way, the value in the boot blocks is multiplied by 4; default is $0A hex (10 decimal) -- 10 x 4 = 40.

1) As you increase the number of open files possible, you increase the amount of memory taken (if the files are actually opened). This leaves less room for the operating system and applications, and could cause

potential problems if memory becomes too scarce. The amount of room taken by the actual FCBs (File Control Blocks) is minor: approximately 94 bytes in System 7, approximately 30 bytes in systems prior to System 7.

2) The amount of memory taken by each open file depends on the size and type of file it is.

3) Since AppleShare 3.0 runs on top of System 7, the number of open files possible is again dynamic. As far as a maximum number, it's the HFS limit -- 342.

4) No. The limitation is imposed by the operating system regardless of the size or type of volume(s).

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Tech Info Library Article Number:11558

Tech Info Library

LaserWriter Pro 630: Files on the Windows Disk (2/93)

Revised: 2/18/93
Security: Everyone

LaserWriter Pro 630: Files on the Windows Disk (2/93)

==========

Article Created: 15 February 1993

TOPIC ----------

With the LaserWriter Pro 630, Apple ships Windows 3.0 and 3.1 drivers that support PhotoGrade. Will these drivers also work with the LaserWriter IIg? If so, what are the ramifications or legal limitations of distributing these drivers to existing LaserWriter IIg DOS or Windows users?

DISCUSSION ----------

The LaserWriter Pro Windows disk actually doesn't contain any Windows drivers, but "configuration" files for the generic PostScript driver included with Windows. These files are used to supply printer-specific information to the Windows PostScript driver. They are analogous to Macintosh PPD (PostScript Printer Definition) files, and provide information such as printer resolution, fonts in the printer's ROM, imageable area, trays supported, and so on. Thus, you wouldn't use these files on a LaserWriter IIf or IIg, because they provide LaserWriter Pro information only.

In terms of support for PhotoGrade (and FinePrint for that matter), there are some additional files on the LaserWriter Pro Windows disk that in essence provide similar functionality to the LaserWriter Utility (such as, PhotoGrade and FinePrint enabling and disabling). You can try setting up these files for use with the LaserWriter IIg to see if PhotoGrade can be enabled or disabled, but this has never been tested. There are some instructions included in the disk's README file; you can find the full set of instructions in the LaserWriter Pro manual.

We have verified with Apple Product Marketing that you are free to distribute the files on the LaserWriter Pro Windows disk, as this is baseline functionality for the printers (that is, PhotoGrade capability on a LaserWriter IIf or IIg).

..TIL11561-LaserWriter_Pro_630-Files_on_the_Windows_Disk_2-93.pdf

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Tech Info Library Article Number:11561

Tech Info Library

Paper and Envelopes: Standard Dimensions

Revised: 3/8/93
Security: Everyone

Paper and Envelopes: Standard Dimensions

==========

Article Created: 22 February 1993

TOPIC

This article lists the dimensions of the most common standard paper and envelope sizes.

Consult your printer manual to determine which paper sizes and weights your printer supports.

DISCUSSION

	ENGLISH		METRIC	
PAPER TYPE	WIDTH	HEIGHT	WIDTH	HEIGHT
US Paper				
US Letter	8.5"	11"	215.9mm	279.4mm
ANSI A	8.5"	11"	215.9mm	279.4mm
US Legal	8.5"	14"	215.9mm	355.6mm
Tabloid	11"	17"	279.4mm	431.8mm
ANSI B	11"	17"	279.4mm	431.8mm
ANSI C	17"	22"	431.8mm	558.8mm
ANSI D	22"	34"	558.8mm	863.6mm
ANSI E	34"	44"	863.6mm	117.6mm
Metric Paper				
A4 (letter)	8.27"	11.69"	210.0mm	297.0mm
A3 (tabloid)	11.69"	16.54"	297.0mm	420.0mm
A2	16.54"	23.39"	420.0mm	594.0mm
A1	23.39"	33.11"	594.0mm	841.0mm
A0	33.11"	46.81"	841.0mm	1189.0mm
Envelopes				

#10	9.50"	4.10"	241.0mm	105.0mm
#7 3/4	7.50"	3.90"	121.0mm	98.0mm
DL	8.60"	4.30"	220.0mm	110.0mm
C5	9.10"	6.40"	229.0mm	162.0mm
B5	9.90"	6.40"	250.0mm	176.0mm

Architectural

Arch. A	9.00"	12.00"	228.6mm	304.8mm
Arch. B	12.00"	18.00"	304.8mm	457.2mm
Arch. C	18.00"	24.00"	457.2mm	609.6mm
Arch. D	24.00"	36.00"	609.6mm	914.4mm
Arch. E	36.00"	48.00"	914.0mm	1219.2mm
30x42	30.00"	42.00"	762.0mm	1066.8mm

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Tech Info Library Article Number:11564

Tech Info Library

MacWrite II 1.1v3 and Earlier: Font Error Messages (9/94)

Revised: 9/15/94
Security: Everyone

MacWrite II 1.1v3 and Earlier: Font Error Messages (9/94)

==========

Article Created: 15 February 1993
Article Reviewed/Updated: 15 September 1994

TOPIC ----------

I often run into documents that have many fonts, and upon opening the document I receive error messages saying that the font isn't present in my Fonts folder. However, the fonts requested are present in the Fonts folder.

I removed some fonts from the Fonts folder, and it seems like some have conflicts with others. For instance, N. Helvetica Narrow, that ships with the new Apple Font Pack, seems to cause printing problems with documents using regular Helvetica in MacWrite II 1.1v3. When I remove N. Helvetica Narrow, the problem goes away.

DISCUSSION ----------

The problem has nothing to do with the particular fonts installed. It has to do with the way MacWrite II 1.1v3 looks for the fonts specified in a document. MacWrite looks for fonts based on FONT IDs instead of by name, as recommended. FONT resource IDs are routinely renumbered when installed, if there's any conflict with an existing FONT resource. Therefore there's no guarantee what ID any particular resource will have. This problem became more pronounced with the introduction of the Apple Font Pack, since customers started installing additional fonts.

MacWrite II 1.1v5 fixes this problem. Contact Claris Corp. for update information.

Article Change History:
15 Sep 1994 - Removed binary file.
22 Mar 1993 - REVISED to expand the TOPIC explaining the problem in more generalized terms. Retitled.

..TIL11567-MacWrite_II_1-1v3_and_Earlier-Font_Error_Messages_9-94.pdf

Support Information Services

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Tech Info Library Article Number:11567

Tech Info Library

VT220 in VersaTerm or MacTerminal: Special Characters (2/93)

Revised: 2/19/93
Security: Everyone

VT220 in VersaTerm or MacTerminal: Special Characters (2/93)

==========

Article Created: 16 February 1993

TOPIC ----------

My department is connected to an IBM 286BBS. On all the IBMs, the correct special characters show up when typed. As an example, the key sequence for ó is alt 162 on the IBM. Whenever this character is typed, it will show correctly on any IBM display.

However, on the Macintosh, those characters don't show correctly. The ó will show as an o in quotations. Other special characters that have a problem are the ç, é, ñ. Is there any way to generate these special characters using VT220 emulation in VersaTerm or MacTerminal? The Macintosh computers are running VersaTerm and MacTerminal VT220.

DISCUSSION ----------

The information that I have states that VersaTerm has VT220 emulation that is supported by the Telnet tool which uses TCP/IP.

MacTerminal v3.0 doesn't have a VT220 tool, but it does have a VT320 tool, as well as the VT102 tool. These tools allow you to choose the language used in the emulator by selecting both the "National Replacement Set" and the "Active Character Sets" in the Terminal Settings of the Settings menu.

You may have to set it multiple times for different languages (French, Spanish, and so on) if the one chosen doesn't support all the characters you need. Be aware that these character sets only contain 128 characters.

Here's some information from VersaTerm:

• VersaTerm isn't localized "as shipped".

• VersaTerm is localizable. Refer to the "ReadMe" in the Fonts folder

on the disk for instructions on how to localize.

- VersaTerm supports Digital's "multi-national language support" on the mainframe. If this feature is turned on in the host, there's no need to localize the Macintosh software.

- The above statements are true for both VersaTerm and VersaTerm Pro. These statements have been true for prior releases of both these products. The current release of VersaTerm is 4.6 and the current release of VersaTerm Pro is 3.6. For System 7 the current release levels are suggested, but they aren't mandatory to afford the language localization support.

Synergy Software supports VersaTerm. To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:11568

ISO 9660: Translator Difficulties Accessing DOS CD-ROMs (1/94)

Revised: 1/4/94
Security: Everyone

ISO 9660: Translator Difficulties Accessing DOS CD-ROMs (1/94)

==========

Article Created: 18 February 1993
Article Reviewed/Updated: 4 January 1994

TOPIC ----------

I've been trying to use DOS CD-ROMs with the Macintosh and have come across some anomalies. One solution I investigated was making CD-ROMs available to a network, using File Sharing or AppleShare. Then the network Macintosh could mount the CD and access it using SoftPC AT.

In trying this, I discovered that ISO 9660-formated CD file extension names became garbled when accessing the network-mounted CD with SoftPC. The same software works fine when mounting the CD locally, and file names appeared normal.

Insignia told me that there's a problem with the ISO 9660 translator that comes with Apple's CD-ROM software and that it causes garbling of the file name extensions.

DISCUSSION ----------

In summary, the version information defined in the ISO 9660 specification, isn't required and isn't widely used. Apple's ISO 9660 driver does pass the version information along when doing the conversion. The problem with appending the version suffix (;1) to every filename has been fixed. CD-ROM Setup 5.0 fixes the problem and no longer adds the version suffix. The software is available on AppleLink in the Apple Software Updates bulletin board.

Detailed Explanation

The ISO 9660 specification defines a file specification consisting of five parts:

• A file name, of alphanumerics plus underscore

- a period (".")
- A file extension, of alphanumerics plus underscore
- a semicolon (";")
- A file version number, of numerics between 1 and 32768

Either the file name or file extension may be optional. All the other parts exist.

Nomenclature

There are four basic ways in which implementations of ISO 9660 seem to differ.

You can encode these as [Pp], [Uu], [Vv], and [Xx]:

P/p	Show/hide trailing periods
U/u	Display alphabetic characters in UPPER/lower case
V/v	Show/hide version numbers (;1)
X/x	Files are/aren't executable

Here's a summary of what some vendors are doing about U, V, and X:

0	uvx	Irix, Linux
1	uvX	386BSD, BSD/386, SunOS
2	uVx	[none known]
3	uVX	AIX, IS/IX
4	Uvx	MS-DOS? Windows?
5	UvX	HP-UX MS-DOS? Windows?
6	UVx	MachTen, Ultrix, Macintosh OS (by default)
7	UVX	Macintosh OS (if Apple Extensions to ISO 9660 are used for executable files)

The question marks after the DOS and Windows entries are there because DOS and presumably Windows rely on extension naming conventions to establish executability.

Holes in the Standard

The hole in the standard is that the last section of it, "Requirements for systems," describes a very incomplete implementation.

In the ISO 9660 standard, Section 3 (Requirements for systems) Part 12, Requirements for an originating system, it says "The implementation shall allow the data preparer to supply the information that is to be recorded in each of the descriptor fields listed below, and shall supply the information for a field if the data preparer does not supply it." The list DOES include "File Version Number of a File Identifier."

However, the following section, Part 13, Requirements for a receiving system, it says "The implementation shall make available to the user the information that is recorded in each of the descriptor fields listed below" and the list that follows DOESN'T include "File Version number."

The ISO 9660 file system translator written for the Macintosh follows Part 12 instead of Part 13 when deciding to pass version numbers to the Macintosh operating system. In retrospect, that wasn't the best way, primarily because MS-DOS's MSCDEX doesn't handle version numbers. This makes Macintosh-to-DOS file name translation difficult.

Two Possible Solutions

- Rewrite the "ISO 9660 File Access" file system translator so that it can optionally pass the ";1" or truncate it.

- Convince the third-party company (in this case, Insignia) to have an option in their software that allows them to truncate file names ending in ";1".

Article Change History:
4 January 1994 - Added "fix" information for the ";1" problem. CD-ROM Setup 5.0 fixes the problem.

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Tech Info Library Article Number:11570

Font Pack: Some Fonts Give Double Image in Bold (2/93)

Revised: 2/22/93
Security: Everyone

Font Pack: Some Fonts Give Double Image in Bold (2/93)

==========

Article Created: 19 February 1993

TOPIC ----------

Some fonts in the Apple Font Pack print out a double image when in the bold style. The fonts we've seen with this problem don't have an explicit "bold" version. Two examples we have verified are Onyx and Oxford. The double exposure is easier to see at larger point sizes.

The workaround is not to use bold styles for these fonts, since there isn't a bold version defined for them.

DISCUSSION ----------

When font developers consider creating a separate glyph set for bold and italic, they base their decision on aesthetics. If a particular font (for example, Symbol, Oynx, Oxford, Chicago...) doesn't look pleasing to the eye when in bold or italics, the developer doesn't create a separate TrueType font face.

When there's no collection of glyphs in a particular typeface and style, QuickDraw must add any additional stylistic variations needed. The default bolding function works very well on many fonts. However, this function doesn't produce an aesthetically pleasing look (that is, the edges aren't mitered) on ornate fonts. The look is very apparent when the text is produced at larger sizes or when sent to high resolution raster output devices.

Because Apple doesn't want to limit the user's choices, the user isn't prevented from using the bold style by a grayed out menu selection. Therefore, the user can decide whether the look of the bold font is appropriate.

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..TIL11571-Font_Pack-Some_Fonts_Give_Double_Image_in_Bold_2-93_(TA29001).pdf

Tech Info Library Article Number:11571

Macintosh 16-inch Color Display: Pinouts (2/93)

Revised: 3/8/93
Security: Everyone

Macintosh 16-inch Color Display: Pinouts (2/93)

==========

Article Created: 22 February 1993

TOPIC ----------

What are the pinouts for the Macintosh 16-inch Color Display?

DISCUSSION ----------

Here are the Macintosh 16-inch Color Display pinouts for the CPU end of the video cable:

Pin	Signal
1	Red video ground
2	Red video
3	Composite sync (not used)
4	ID Bit 1
5	Green video
6	Green video ground
7	ID Bit 2 (not used)
8	not used
9	Blue video
10	ID Bit 3
11	VSYNC ground
12	VSYNC
13	Blue video ground
14	HSYNC ground
15	HSYNC
Shell	Shield ground

Connect pins 4 and 10 at the monitor end of the video cable to make the Macintosh 16-inch Color Display sense line connection.

..TIL11573-Macintosh_16-inch_Color_Display-Pinouts_2-93.pdf

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Tech Info Library Article Number:11573

System 7: Limitations of the Finder (6/95)

Revised: 6/9/95
Security: Everyone

System 7: Limitations of the Finder (6/95)

==========

Article Created: 5 February 1993
Article Reviewed/Updated: 9 June 1995

TOPIC ----------

This article gives the limitations of the System 7 Finder and the HFS limits.

DISCUSSION ----------

Finder Limits

- Number of open files: 346
- Number of Apple Menu Items: 52 (more items can added, but only 52 appear when clicking on the Apple Menu icon)
- Number of files supported by the Desktop: Unlimited (limited to the available disk space -- see HFS limit)
- Number of applications in memory: The Finder does not limit the number of applications, but the amount of available RAM does.
- Number of volumes available on the Desktop: 32
- Number of items in a folder by list view: Up to 32,000 depending on the computer and RAM. (See the note at the bottom of this article.)
- Number of resources in the System File: 32,767 or 16 Megabytes
- Number of System Extensions or Control Panels that can be loaded into memory: The Finder does not limit these, but hard disk space and RAM can limit them.
- RAM allocated to an application with Finder = 99,999K
- The Finder supports 24-bit color, BUT icons are only 8-bit.
- QuickDraw supports 48-bit color, but the current operating system maximum is 32-bit color.
- Disk cache: 320 KB per megabyte of installed RAM

HFS Limits

- 64K items or 65,536 items per volume
- The maximum length of a pathname under the Finder--including the Volume

and Folder--is 255 characters, including colons. For example:

InternalHD:Folder1:Folder2:Filename = 35 characters

"Inside Macintosh, Volume IV" states that there is no limit to the number of levels of subdirectories. Because of pathname limitations, it is not always possible to specify a file using its full pathname.

This limitation has nothing to do with the Finder; it is a limitation of the file system.

Note: Attempting to view large numbers of files in one window, something in the range of 500 - 1500 files creates very slow opening times and drop-out viewing problems. The specific number depends on RAM and CPU.

Article Change History:
09 Jun 1995 - Made grammatical correction.
11 Jan 1995 - Incorporated information from article 5188.
21 Sep 1994 - Changed spec for Disk Cache.

Support Information Services

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Tech Info Library Article Number:11574

Tech Info Library

LC III & LC 575: Use Latest ROMs in Ethernet LC Card (12/94)

Revised: 12/16/94
Security: Everyone

LC III & LC 575: Use Latest ROMs in Ethernet LC Card (12/94)

==========

Article Created: 16 February 1993
Article Reviewed/Updated: 16 December 1994

TOPIC ----------

Are there any problems with the Apple Ethernet LC Card (the one requiring the Thin Coax Transceiver) in a Macintosh LC III or LC 575? We're getting a, could not switch to EtherTalk due to an error and that built-in LocalTalk will be used instead, error whenever we switch to Ethernet in the Network Control Panel.

DISCUSSION ----------

Be sure your Ethernet LC Card (M0443LL/C or part number 661-0621) has the new ROMs. There was a ROM upgrade for the card, which updated the drivers. Here are the part numbers:

New Apple Ethernet LC Card	Old Apple Ethernet LC Card
Finished Goods (Assembly)	Finished Goods (Assembly)
P/N: 670-2008	P/N: 670-4443
ROM P/N: 341-0470	ROM P/N: 341-0842

Also, make sure to install the EtherTalk software from the System 7.1 or later disks.

Article Change History:
16 Dec 1994 - Added better description of the Apple Ethernet LC Card.
08 Sep 1994 - Added Macintosh LC 575.

Support Information Services

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Tech Info Library Article Number:11577

Tech Info Library

LaserWriter Driver Compatibility: System 7.0x, 7.1 (9/95)

Revised: 9/20/95
Security: Everyone

LaserWriter Driver Compatibility: System 7.0x, 7.1 (9/95)

==========

Article Created: 19 February 1993
Article Reviewed/Updated: 20 September 1995

TOPIC ----------

In the "MacWorld", March 1993 issue, page 95 under Bug Reports, there is the following report: "System 7.0x and System 7.1 Laser printer drivers for the two systems are incompatible, so printers fail when switching between documents sent by 7.0 and 7.1 users unless the printer is first reinitialized."

Is this report true?

DISCUSSION ----------

Apple is not aware of the compatibility problems mentioned in this issue of "MacWorld". Nor have we had any reports or reproducible cases that would substantiate the "MacWorld" article. Basically, any LaserWriter driver version 6.1 or later resolved the issue of "Laser Wars" because the LaserWriter Prep file is incorporated in these printer drivers, and is downloaded with each print job. This prevents the printer from having to reinitialize itself.

Article Change History:
20 Sep 1995 - Reformatted to meet current standards.

Support Information Services

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Tech Info Library Article Number:11579

Tech Info Library

Color Classic: CIE Coordinates (2/93)

Revised: 2/23/93
Security: Everyone

Color Classic: CIE Coordinates (2/93)

==========

Article Created: 19 February 1993

TOPIC -----

What are the CIE coordinates for the Macintosh Color Classic display?

DISCUSSION -----

Red	x = .625(+-.020)	y = .340(+-.020)
Green	x = .280(+-.020)	y = .595(+-.020)
Blue	x = .015(+-.015)	y = .070(+-.015)

Shipping brightness is 35 Foot-Lamberts

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Tech Info Library Article Number:11584

Tech Info Library

FDDI Connection For Macintosh (2/93)

Revised: 2/18/93
Security: Everyone

FDDI Connection For Macintosh (2/93)

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Article Created: 16 February 1993

TOPIC ----------

Do you know of any FDDI NuBus cards for Macintosh to connect to a FDDI network?

DISCUSSION ----------

To locate a vendor's address and phone number, use the vendor name as a search string.

Two vendors announced FDDI NuBus cards at MacWorld in San Francisco in January 1993. Briefly some background on each solution:

• Codenoll Technology Corporation

Products: CodeNet 9550, 9553 and 9750 NuBus FDDI for Single Attached Station (SAS), Dual Attached Station (DAS) and Shielded Twisted pair over FDDI (SDDI) network adapters for Apple Macintosh II and Quadra systems. CodeNet adapters ship with support for Apple's MacTCP, A/UX, AppleShare and other FDDITalk compatible network environments. FDDITalk Network software is shipped with the cards. According to Codenoll, support for FDDITalk is part of AppleTalk version 58.0 and all AppleTalk transactions can be supported over the 100Mbps FDDI network. Codenoll also indicated that they support TCP/IP connections using MacTCP and can send messages to the SNMP console supporting the Apple MIBs if AppleTalk version 58.0 is installed. Available Feb 1,1993.

• Impulse Technology

Products: Spectra NB is a FDDI compatible NB card for Macintosh II and Quadra machines. Hardware comes with FDDITalk so support for all AppleTalk

protocol products in the Macintosh is ensured, including the Apple Internet Router. AppleTalk version 58.0 is required. Impulse also ships a file transfer utility called Ditto which according to the vendor, can transfer data between Macintosh computers at 1Mbps. This is due to the larger FDDI packet size of 4500 bytes and background operation combined with the higher speed network. There is also an evaluation kit available, called Spectra EK for first time buyers which includes two Spectra NB cards and a 10 meter duplex cable to connect the two cards. Available Jan 1,1993. Support for MacTCP is expected in mid 1993.

All vendors strongly recommend upgrading or accelerating the Macintosh II to a 68040 machine with either 25 or 33 Mhz speed with FPU for better performance.

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Tech Info Library Article Number:11585

Tech Info Library

SNA•ps Gateway and TCP/IP to IBM Host (2/93)

Revised: 2/18/93
Security: Everyone

SNA•ps Gateway and TCP/IP to IBM Host (2/93)

==========

Article Created: 16 February 1993

TOPIC ----------

I am interested in connecting my Macintosh computers into my host IBM mainframe. My network is currently Ethernet running TCP/IP into the channel on the host. Can the SNA•ps Gateway connect into the host using TCP/IP transport?

DISCUSSION ----------

SNA•ps does not support TCP/IP transport. It supports SNA over SDLC and Token Ring. There is no planned support for gateways using TCP/IP over Token Ring or Ethernet. The reason for this is TCP/IP connections do not need a gateway. There are products from vendors which implement TN3270, which is a 3270 emulator running on top of MacTCP directly to the TCP/IP host. We have successfully used Avatar's MacMainFrame 3270 product with TCP/IP support.

We have TN5250 to AS/400s for the same reason. No gateway is needed, just access to the TCP/IP utilities in the AS/400.

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Tech Info Library Article Number:11586

Tech Info Library

SNA•ps Gateway Security and Starting an SDLC Connection (2/93)

Revised: 2/23/93
Security: Everyone

SNA•ps Gateway Security and Starting an SDLC Connection (2/93)

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Article Created: 9 February 1993

TOPIC ----------

I am looking for a higher level of security between a SNA•ps Gateway 1.1 and the SNA•ps Admin application. I like the ability to lock the gateway so others can't stop the gateway; however I want the same password protection applied to starting locked gateways. Anyone can start a stopped gateway on an AppleTalk network if they have a copy of the SNA•ps Admin program. I use an expensive SDLC connection; is there a way to lock users out from a stopped SNA•ps gateway?

DISCUSSION ----------

You are correct about the way SNA•ps gateway works, which is also according to the original design plan. The reason that starting gateways has not required password is because the Settings in the gateway allow for automatic startup at boot and user startup as well. These "user friendly" gateway startup requests should not have a password attached. The idea was to allow unattended gateways to be started if machines were powered down by power failure and power returned or a user wanted to come into an unstarted gateway. The User start feature is used a great deal.

If you do not have SNA•ps ADMIN, you cannot start a stopped gateway that does not enable User Start. No user can stop a started gateway without SNA•ps ADMIN and a password, if one is entered into the Gateway settings.

Now it appears that you have autodialing SDLC gateways, which incur an expense if they are used. So the situation is someone at your site wants to use the SNA•ps Gateway, it needs to be started and it has to make an expensive connection (dial), and this is a problem. We have to conclude that the SNA•ps Gateway administrator desires to start and stop this gateway and block users from doing that process.

Solution

The gateway is configured with the Line set for "Not Automatically Activate" -- that is, do not select the check box to the left of the option. Apply password security to the gateway for stopping and do not select user startup in the gateway settings. It is OK to select automatic startup in the gateway settings this will download the gateway code and config to the MCP card when the Macintosh boots.

With this setup, the line is not going to be allowed to make a dial SDLC connection until SNA•ps ADMIN is used to display the gateway status, the line name is highlighted, and the resource is activated under the resource menu. With a password protected gateway, the line resource CANNOT be activated, in SNA•ps ADMIN, without the PASSWORD. We think this is what you want. The gateway is started but the line cannot be activated without the password, hence no SDLC connection.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11588

Tech Info Library

GrayShare Printer Driver: Number of Simultaneous Users (3/93)

Revised: 3/24/93
Security: Everyone

GrayShare Printer Driver: Number of Simultaneous Users (3/93)

==========

Article Created: 18 March 1993

TOPIC ----------

How many users can a printer using a GrayShare printer driver have at one time?

DISCUSSION ----------

Printers that use the GrayShare printer driver can only have 21 users with open connections to the printer at any one time. Only 21 sockets, or logical connections to the network, are allocated by the GrayShare software for printing.

However, any number of users may choose a printer which uses a GrayShare printer driver as their selected printer.

These printers use the GrayShare printer driver:
- Apple Color Printer
- LaserWriter Select 300
- StyleWriter II

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11589

Tech Info Library

Photo CD Access: QuickTime and CD-ROM Players (8/96)

Revised: 8/19/96
Security: Everyone

Photo CD Access: QuickTime and CD-ROM Players (8/96)

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Article Created: 19 February 1993
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

How does the Photo CD Access extension file work with QuickTime 1.5? Does it tie directly to QuickTime, or is it dependent on the CD-ROM manufacturer as well? How is the Photo YCC translation accomplished?

I have a third-party CD-ROM player, and I want to read Photo CD discs. Does the CD-ROM player manufacturer have to provide the Photo CD extension, or can I use Apple's Photo CD Access?

DISCUSSION ----------

Photo CD Access and QuickTime 1.5

It's correct that QuickTime and Apple Photo Access extensions can perform functions independently, without the presence of the other. HOWEVER, to actually open a Photo CD image from within an application, you need BOTH QuickTime 1.5 (or later) and Apple Photo Access.

Apple Photo Access provides the ability to mount, on the desktop, a foreign file system as a native Macintosh HFS file system. Photo CDs are definitely a foreign file system. The main point here is -- if the Photo Access extension is alone (that is, no QuickTime 1.5), mounting the Photo CD as a native volume is all that can take place. Photo Access permits the Macintosh HFS file system to recognize the CD as a Macintosh volume which has Macintosh resources. For example, if you use ResEdit to open one of the image files, it will display icon resources which are associated with that image file. It will also have a PICT resource that states that QuickTime is needed to display the Photo CD image file.

On a more general note, if Foreign File Access (FFA) extension isn't installed, the Photo CD won't be recognized and you can eject it. If FFA is installed, yet Apple Photo Access isn't, the Photo CD mounts as a

generic ISO 9660 disc. You'll see "generic" icons, and the Slide Show and Slide Show Viewer won't appear in the volume's window.

If you want to do more than simply mount the Photo CD on the desktop as a Macintosh volume, you will absolutely need BOTH extensions.

Photo YCC Translation

QuickTime 1.5 allows you to use Photo CD images on the Macintosh. This step translates the Photo CD Image Pacs from the Kodak YCC format to the standard Macintosh PICT format. If the Apple Photo Access extension isn't present, QuickTime can't access the images on the Photo CD. And, in turn, can't translate or decompress the images on the Photo CD. For example, without Apple Photo Access, Photoshop doesn't offer any of the image files in the standard Open… dialog box.

In other words, Apple Photo Access "makes" the Photo CD into a Macintosh volume; and QuickTime (1.5 and later) "makes" the Photo CD image files into PICT image files. Both Apple Photo Access and QuickTime must be present to have useful access to Photo CDs.

Third-Party CD Players

As for compatibility of third-party CD players, there are elements that must be present in the basic drive -- the primary one is the ability to handle CD-XA. Then there's the issue of single session versus multisession access. These two issues are based on the drive mechanism.

A CD-ROM drive mechanism that doesn't have CD-XA ability can't be corrected by software. A CD-ROM mechanism that is single session can't be made to have multisession ability with software. These must be addressed within the drive mechanism. Without CD-XA ability, Apple software won't correct the situation. Once a drive is CD-XA capable, the drive may be single session or double session. Our software won't change this hardware limitation.

The general compatibility rule is: a well-written CD driver should be written to use Apple's Foreign File Access software. If it can use Apple's FFA, then it can use Apple Photo Access. This is because Photo Access is a File System Translator (FST), which is a FFA module. So technically, it should be no problem to use Photo Access with a correctly written CD driver from a third party.

This brings up the question of what is legitimate distribution for Apple's FFA and FSTs. The standard mode of operation is for the third-party hardware company to contact Apple Software Licensing for a distribution license agreement.

Article Change History:
19 Aug 1996 - Corrected misspelling.

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Tech Info Library Article Number:11591

Tech Info Library

Impulse Technology

Revised: 8/5/93
Security: Everyone

Impulse Technology

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Article Created: 17 February 1993

Impulse Technology
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210 Dahlonega Street, Suite 204
Cumming, GA 30130

404-889-8294

404-781-8738 FAX

company Profile:
Specializing in cache memory management system for Macintosh Quadra 700, 900, and 950 with a product called Animals. They provide 68040 CPU accelerator for Macintosh II, IIx, IIcx, IIci, IIsi, and IIfx computers with a product called Performance/040. They also provide FDDI capabilities with Spectra NB a NuBus card for Macintosh II and Quadra computers.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11592

Tech Info Library

DAL For AS/400: SSID or Tables Described In The View (9/94)

Revised: 9/1/94
Security: Everyone

DAL For AS/400: SSID or Tables Described In The View (9/94)

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Article Created: 17 February 1993
Article Reviewed/Updated: 1 September 1994

TOPIC ----------

What is the point of using SSID in the Environment file to declare databases on an AS/400? In my opinion, we have a filter on the tables with the DALDBVO1 file (the view) in the library of the same name as that of the user.

If you declare two databases in SSID, users can choose which ever they want, and will see only the tables described in the DALDBVO1 file (I have used DataPrism for this test).

DISCUSSION ----------

We agree that there isn't much point in worrying about the values of the SSID= field for the DAL AS/400 Server.

If you listed multiple SSIDs in the Environment file, you would find that only the tables listed in the user's view (DALDBV01) really mattered. Choosing a different database makes no difference to the table list -- it will always be as defined in the view.

This occurs because the AS/400 operating system, and the SQL/400 product, are quite different from other operating systems and Database Management Systems (DBMS).

Since DAL attempts to remain homogeneous across many platforms, some items make more sense in certain environments rather than in all of them. So... just create a meaningful "database name" and then just go with the flow knowing that the view definition will be the most meaningful constraint on access.

With a license agreement between Apple Computer and ITI (Independence Technologies, Inc.), ITI will market DAL products and provide all support to DAL customers. To locate ITI's address and phone number, use ITI as a search string.

Article Change History:
01 Sep 1994 - Added information on ITI.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:11593

DAL Server for AS/400: Error, Majorcode=5, Minorcode=6 (2/93)

Revised: 3/8/93
Security: Everyone

DAL Server for AS/400: Error, Majorcode=5, Minorcode=6 (2/93)

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Article Created: 17 February 1993

TOPIC ----------

I am evaluating Apple software and hardware and third-party software solutions for Macintosh to AS/400 integration. The Apple software is SNA•ps and DAL Server for AS/400 (1.3.7). I am having problems with DAL.

The DAL Server is working on the AS/400; that is, the testing with IDAL is fine. The SNA•ps Gateway is working; that is, sessions are available and I can open a session. With DAL Tester (debugger enabled) I almost get the complete connection until the following error occurs: APPCrawrcu, status=-1, ioresult=-1, majorcode=5, minorcode=6, convState=7 Error -10632. The AS/400 indicates that the UserID is not valid, but I'm logging in as QSECOFR. What could be wrong?

DISCUSSION ----------

We have tested with some possible errors, and we believe the problem is you forgot to type the Password in uppercase.

If the UserID is not entered in uppercase, the error is a major code 2 and a minor code 6. When the UserID is entered properly, in uppercase, but the Password is entered in lowercase, then the error of a major code 5 and minor code 6 is returned.

Terminal emulators automatically translate lowercase characters to uppercase. The DAL client driver does not convert lowercase to uppercase and the AS/400 understands uppercase entries only. In addition, if you used the DAL Tester application, the "open Database XXXX" command requires the database name (XXXX) to be entered in uppercase.

We will notify Publications of the need to document "that the UserID, Password and Database Name MUST be entered in uppercase" as the DAL Client,

and SNA•ps APPC network adapter, do not do that translation for the user.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11594

Tech Info Library

Centris 610 & 650, Quadra 800: Use Compatibility Checker 2.0

Revised: 2/18/93
Security: Everyone

Centris 610 & 650, Quadra 800: Use Compatibility Checker 2.0

==========

Article Created: 18 February 1993

TOPIC ----------

Is there a compatibility document for the 68040-based Macintosh systems introduced in February 1993?

DISCUSSION ----------

There is no such document available for the Centris 610 and 650 or the Quadra 800.

The basis for compatibility should be the Compatibility Checker 2.0 (for System 7.1 compatibility), and the Quadra 700/900/950 Compatibility List.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11595

Tech Info Library

Color Printer: Remove Tape Before Replacing Print Head (10/95)

Revised: 10/19/95
Security: Everyone

Color Printer: Remove Tape Before Replacing Print Head (10/95)

==========

Article Created: 22 February 1993
Article Reviewed/Updated: 19 October 1995

TOPIC ----------

After I replaced the Bubblejet Head Unit in an Apple Color Printer, the printer would not print. What causes this?

DISCUSSION ----------

The Apple Color Printer's Bubblejet Head Unit (Service Part Number 661-1685) is shipped with orange tape over the nozzles and small gray cap. These prevent contamination or leakage during shipping.

You must remove this tape before replacing the Bubble Jet Head Unit.

Article Change History:
19 Oct 1995 - Changed distribution status.
18 Mar 1993 - Revised to show additional parts.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11600

Tech Info Library

StyleWriter II: 1 MB RAM and Minimum System Config. (8/95)

Revised: 8/7/95
Security: Everyone

StyleWriter II: 1 MB RAM and Minimum System Config. (8/95)

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Article Created: 19 February 1993
Article Reviewed/Updated: 7 August 1995

TOPIC ----------

I cannot print to a StyleWriter II from a Macintosh that has 1 MB of RAM and System Software 6.0.7. The StyleWriter II product specification sheet says that this configuration should work.

DISCUSSION ----------

A Macintosh with 1 MB RAM works with the StyleWriter II with this configuration only:

- Minimum installation script in the installer.
- StyleWriter II Print Driver (only).
- TrueType INIT only (no other INITs, control panels or other system additions).
- Minimum fonts.
- MultiFinder turned off.
- RAM cache off.
- Print color or grayscale images in black-and-white mode.

For optimum performance, Apple recommends a minimum of 2MB RAM.

Article Change History:
07 Aug 1995 - Reviewed, reformatted, made minor corrections.

Support Information Services

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Tech Info Library Article Number:11604

Tech Info Library

StyleWriter II: How to Use With a Low-Memory Macintosh (2/93)

Revised: 2/23/93
Security: Everyone

StyleWriter II: How to Use With a Low-Memory Macintosh (2/93)

==========

Article Created: 19 February 1993

TOPIC ----------

This article describes how to optimize a StyleWriter II printer with a low-memory Macintosh configuration.

DISCUSSION ----------

If you have a Macintosh with 2MB RAM and System 7, or 1MB RAM and System 6 -- and you are printing to a StyleWriter II, you may occasionally run short of memory.

You know you are low on memory when:
- Some documents do not print.
- Some fonts may be displayed and printed in the Geneva font.
- The printed document looks jagged on the edges rather than smooth.
- You may get an "out of memory" message on your screen.

Workarounds

Here are some ways to make more memory available:

- Open only one application at a time.

- Print color or grayscale images in black-and-white mode.

- Make sure the RAM cache is turned off or set as low as possible. To adjust the RAM cache, use the Memory Control Panel in System 7 or the Control Panel in System 6.

- If you are using System 6, make sure MultiFinder is turned off. To turn MultiFinder off, choose Set Startup from the Special menu. In the dialog box that appears, choose Finder. The next time you start up or restart

your Macintosh, MultiFinder will be turned off.

- If you are using System 7, try printing with background printing turned off.
- INIT files in the system folder usually use up some of your Macintosh's RAM. Remove INIT files to free up some memory.
- If you get "not enough memory" errors while printing to a shared StyleWriter II, then turn background printing off.
- If you have only 2MB of RAM with System 7, or 1MB of RAM with System 6, you may want to add more memory to make your Macintosh work more effectively.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11605

Tech Info Library

Quadra 950, A/UX 3.0: Serial Switch Setting for System V Spooler

Revised: 2/19/93
Security: Everyone

Quadra 950, A/UX 3.0: Serial Switch Setting for System V Spooler

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Article Created: 19 February 1993

TOPIC ----------

It appears that Quadra 950s running A/UX 3.0 using the System V spooler (lp) and serial ports have the same problem that the IIfx had running A/UX 2.0 with System V spooler (lp) and serial ports.

DISCUSSION ----------

Symptoms: Spool some jobs using lp to a serial port on a Quadra 950. Cancel a spool job. The port locks up (and sometimes the Quadra as well).

Solution: The Quadra 950 needs the Serial Switch (1.1) set to compatible mode to successfully use the System V spooler.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11606

Tech Info Library

PB Duo: Why Battery DA Fluctuates When Connected to AC (4/95)

Revised: 4/21/95
Security: Everyone

PB Duo: Why Battery DA Fluctuates When Connected to AC (4/95)

==========

Article Created: 19 February 1993
Article Reviewed/Updated: 21 April 1995

TOPIC ----------

When using the Battery Desk Accessory (DA), on a Macintosh PowerBook computer, I have noticed that when I connect or disconnect the AC Adapter, the battery level indicators fluctuate slightly. Is this normal?

DISCUSSION ----------

The charge indicated on the Battery DA fluctuates slightly when AC power is applied or removed. This is related to the load placed on the battery.

When AC power is avalialbe, the load of the charging battery and the PowerBook itslef is transferred to the power adapter, thus the Battery DA indicates a slightly higher battery level.

Once the AC adapter is removed and the full load of the PowerBook is transferred to the battery, the level drops slightly to indicate this increased load.

This article was published in the "Information Alley":
Volume I, Issue 25, Page 13

Article Change History:
21 Apr 1995 - Added keyword; made minor technical updates.
03 Apr 1995 - Clarified why indicated battery level will fluctuate.

Support Information Services

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Tech Info Library Article Number:11608

Tech Info Library

Macintosh: ROM Size for Various Models (2/97)

Revised: 2/13/97
Security: Everyone

Macintosh: ROM Size for Various Models (2/97)

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Article Created: 19 February 1993
Article Reviewed/Updated: 13 February 1997

TOPIC ----------

This article lists the ROM size for various Macintosh models. (Most Macintosh models can accommodate higher capacity ROMs, as well, if they become available.)

DISCUSSION ----------

Macintosh Models	ROM Size
Macintosh 128	64K
Macintosh 512K	64K
Macintosh 512Ke	128K
Macintosh Plus	128K
Macintosh SE (both 800K & FDHD)	256K
Macintosh Classic (4-chip and 2-chip)	512K
Macintosh SE/30	256K
Macintosh Classic II	512K
Macintosh Color Classic	1024K
Macintosh II Models	
Macintosh II	256K
Macintosh IIx	256K
Macintosh IIcx	256K
Macintosh IIci	512K
Macintosh IIfx	512K
Macintosh IIsi	512K
Macintosh IIvi/IIvx	1024K
Macintosh LC Models	
Macintosh LC	

Macintosh LC II	512K
Macintosh LC III	1024K
Macintosh LC 475	1024K
Macintosh LC 520/550	1024K
Macintosh LC 575	1024K
Macintosh LC 580	1024K
Macintosh LC 630	1024K
Macintosh TV	1024K

Macintosh Performa Models

Macintosh Performa 200	512K
Macintosh Performa 400/405/410/430	512K
Macintosh Performa 450/460/466/467	1024K
Macintosh Performa 475/476	1024K
Macintosh Performa 550/560	1024K
Macintosh Performa 575/577/578	1024K
Macintosh Performa 580	1024K
Macintosh Performa 600	1024K
Macintosh Performa 630/631/635/636/637/638/640	1024K
Macintosh Performa 5200/5210/5215/5220	4096K
Macintosh Performa 5260	4096K
Macintosh Performa 5300	4096K
Macintosh Performa 6110/6112/6115/6116/6117/6118	4096K
Macintosh Performa 6200/6205/6214/6216/6218/6220/6230	4096K
Macintosh Performa 6290	4096K
Macintosh Performa 6300	4096K
Macintosh Performa 6320	4096K
Macintosh Performa 6400 series	4096K
Macintosh Performa 6360	4096K

Macintosh Quadra Models

Macintosh Quadra 605	1024K
Macintosh Centris/Quadra 610	1024K
Macintosh Quadra 630	1024K
Macintosh Centris/Quadra 650	1024K
Macintosh Quadra 700	1024K
Macintosh Quadra 800	1024K
Macintosh Quadra 900	1024K
Macintosh Quadra 950	1024K
Macintosh Centris/Quadra 660AV	1024K
Macintosh Quadra 840AV	2048K

Apple Workgroup Servers

Apple Workgroup Server 60	1024K
Apple Workgroup Server 80	1024K
Apple Workgroup Server 90	1024K
Apple Workgroup Server 95	1024K
Apple Workgroup Server 6150	4096K
Apple Workgroup Server 8150	4096K
Apple Workgroup Server 9150	4096K

Apple Workgroup Server 7250	4096K
Apple Workgroup Server 8550	4096K

Power Macintosh Models

Power Macintosh 4400 series	4096K
Power Macintosh 5200/75 LC	4096K
Power Macintosh 5260/100	4096K
Power Macintosh 5300/100 LC	4096K
Power Macintosh 5400 series	4096K
Power Macintosh 5500 series	4096K
Power Macintosh 6400 series	4096K
Power Macintosh 6500 series	4096K
Power Macintosh 6100 series	4096K
Power Macintosh 7100 series	4096K
Power Macintosh 7200 series	4096K
Power Macintosh 7300 series	4096K
Power Macintosh 7500/100	4096K
Power Macintosh 7600 series	4096K
Power Macintosh 8100 series	4096K
Power Macintosh 8500 series	4096K
Power Macintosh 8600 series	4096K
Power Macintosh 9500 series	4096K
Power Macintosh 9600 series	4096K

Macintosh PowerBook Models

Macintosh Portable	256K
Macintosh Backlit Portable	256K
PowerBook 100	256K
PowerBook 140	1024K
PowerBook 145	1024K
PowerBook 150	1024K
PowerBook 160	1024K
PowerBook 165c	1024K
PowerBook 170	1024K
PowerBook 180/180c	1024K
PowerBook Duo 210	1024K
PowerBook Duo 230	1024K
PowerBook Duo 250	1024K
PowerBook Duo 270c	1024K
PowerBook Duo 280/280c	1024K
PowerBook 520/520c	2048K
PowerBook 540/540c	2048K
PowerBook Duo 2300 series	4096K
PowerBook Duo 5300 series	4096K

Article Change History:
13 Feb 1997 - Added 4400,5500,6500,7300,8600,9600
15 Nov 1996 - Added 6360.
22 Oct 1996 - Added 6400.

..TIL11609-Macintosh-ROM_Size_for_Various_Models_2-97_(TA29027).pdf

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Tech Info Library Article Number:11609

Tech Info Library

System 7.1 & Shared Code Manager: Problem & Cure (2/93)

Revised: 2/23/93
Security: Everyone

System 7.1 & Shared Code Manager: Problem & Cure (2/93)

==========

Article Created: 23 February 1993

TOPIC ----------

We have repeatedly experienced system hangs using PowerPoint 3.0 on a PowerBook 180 in 32-bit mode. Nothing else is running except the Finder, and all extensions have been turned off.

DISCUSSION ----------

The Problem

Microsoft Technical Support verifies that the problem is not in PowerPoint 3.0, but in the Shared Code Manager extension -- an additional component of some Microsoft applications that provides OLE (Object Linking Embedding) capability.

With this extension installed, any Macintosh running System 7.1, and that also uses a System Enabler, may experience a system crash. Macintosh systems running System 7.1, and that do not require a System Enabler, do not have this problem.

Solutions

Microsoft has a patch to resolve this issue, and customers are advised to call Microsoft at 800-426-9400.

For an immediate workaround, customers can simply remove the Shared Code Manager extension from the System Folder, and PowerPoint will work fine -- except for the loss of OLE.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11610

LaserWriter IIf, IIg, and Pro: Changing AppleTalk Type (3/93)

Revised: 3/24/93
Security: Everyone

LaserWriter IIf, IIg, and Pro: Changing AppleTalk Type (3/93)

==========

Article Created: 9 March 1993

TOPIC ----------

How do I change the "type" of my LaserWriter IIg from "LaserWriter" to "LW Spooler" to prevent the LaserWriter from appearing in the Chooser?

I've been able to do this with PostScript Level 1 LaserWriters. When I change the "type" of PostScript Level 2 LaserWriters, the change isn't permanent and I lose the setting when I restart.

DISCUSSION ----------

To change the LaserWriter IIg's AppleTalk type so the printer will keep this setting after the power is cycled, the printer's push-button switch must be at position 6, 7, 8, or 9. These are the switch positions that allow access to the non-volatile parameters such as "EtherTalkType". This is true for any ROM revision.

With the LaserWriter IIg's push-button switch at position 6, 7, 8, or 9, download this PostScript Level 2 program to change the AppleTalk type on the EtherTalk port:

```
(%EtherTalk_NV%) <</EtherTalkType (LW Spooler)>> setdevparams
```

With the LaserWriter IIg's push-button switch at position 6, 7, 8, or 9, download this PostScript Level 2 program to change the AppleTalk type on the LocalTalk port:

```
(%LocalTalk_NV%) <</LocalTalkType (LW Spooler)>> setdevparams
```

In either case, the printer will immediately change its AppleTalk type. Please note that if the printer switch is set to position 0, 1, 2, 3, 4, or 5 and restarted, the AppleTalk type will revert to "LaserWriter". Going back to

switch position 6, 7, 8, or 9 and restarting will cause the AppleTalk type become "LW Spooler" again.

This information is also applicable to the LaserWriter IIf and LaserWriter Pro family.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11611

Tech Info Library

E-Machines DoubleColor SX Graphics Card: Support (3/94)

Revised: 3/17/94
Security: Everyone

E-Machines DoubleColor SX Graphics Card: Support (3/94)

==========

Article Created: 1 March 1993
Article Reviewed/Updated: 17 March 1994

TOPIC ----------

How do I get support for the E-Machines DoubleColor SX Graphics Card that was bundled with my Macintosh 16" Color display?

DISCUSSION ----------

Customers may receive support for the DoubleColor SX Graphics Card by calling E-Machines' technical support line at 800-541-4787.

Article Change History:
17 March 1994 - Updated phone number.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:11613

Tech Info Library

StyleWriter II: Compatibility with Apple IIe Card (3/93)

Revised: 5/23/95
Security: Everyone

StyleWriter II: Compatibility with Apple IIe Card (3/93)

==========

Article Created: 18 March 1993

TOPIC ----------

Is the StyleWriter II compatible with the Apple IIe Card?

DISCUSSION ----------

Yes, when using version 2.0 or later of the Apple IIe Card software, the StyleWriter II is compatible with the Apple IIe Card.

With version 2.0 or later of the IIe Card software, all printing requested from the Apple IIe Card environment is sent from the "printer slot" to the Macintosh Print Manager. Any printer, therefore, that is compatible with the Macintosh Chooser is compatible with the Apple IIe Card.

To check which printer the Apple IIe Card will print to, follow these steps:

1) From the Apple IIe environment, bring up the IIe Option Panel by pressing the Control, Command, and Escape keys at the same time. You will see icons representing the configurable parts of the IIe environment.

2) Double-click the Printer Card icon on the left side of the Option Panel. This will produce a screen which will display (among other things) which printer the IIe Card will print to.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11614

Tech Info Library

QuickTime for Windows: Compression Algorithms (2/93)

Revised: 2/25/93
Security: Everyone

QuickTime for Windows: Compression Algorithms (2/93)

==========

Article Created: 24 February 1993

TOPIC ----------

What compression does QuickTime for Windows use? I'm particularly interested in Video for Windows compression technique and whether QuickTime uses or supports it.

DISCUSSION ----------

QuickTime uses five proprietary compression algorithms (Apple Video, Apple Compact Video, Apple Animation, Apple Graphics, and Apple Raw), and one JPEG international standard algorithm (Apple Photo Compressor). Each of the algorithms is best suited for a different type of image:

- The Apple Video Compressor is best suited to digitized video content that needs to be displayed at interactive speeds.

- The Apple Compact Video Compressor is best suited to compressing 16-bit and 24-bit video sequences. It typically obtains higher compression ratios, better image quality, and faster playback speeds than the Apple Video Compressor. However, it takes significantly longer to compress images than the Apple Video Compressor.

- The Apple Animation Compressor is best suited to animation and computer-generated video content. Images captured from videotape generally have considerable visual noise, which can degrade the compression effectiveness.

- The Apple Graphics Compressor is a better choice than the Animation Compressor whenever performance is less important than compression ratio. Generally, the Graphics Compressor generates a compressed file that is half the size of the same image compressed by the Animation Compressor. However, the decompress speed of the Graphics Compressor is half that of

the Animation Compressor.

- The Apple Raw Compressor is useful for reducing image storage requirements by converting an image from one pixel depth to another. Resulting compression ratios are identical to the change in pixel depth ratio, that is, 32 bit to 16 bit gives 2:1 compression and 32 bit to 24 bit gives 4:3 compression.

- The Apple Photo Compressor implements the Joint Photographic Experts Group (JPEG) algorithm. It's most suited for still image compression.

Video for Windows offers only two proprietary compression algorithms, Intel Indeo and Microsoft Video1. Intel Indeo is used for performance playback of digitized video and Microsoft Video1 offers better compression than Indeo but slower playback.

At this time, QuickTime and Microsoft's Video for Windows are competing to become the Video standard for PCs. QuickTime doesn't currently use or support Video for Windows compression techniques.

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Tech Info Library Article Number:11616

Tech Info Library

Macintosh 32-Bit System Enabler:Requirements & Installation 4/97

Revised: 4/28/97
Security: Everyone

Macintosh 32-Bit System Enabler:Requirements & Installation 4/97

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Article Created: 26 February 1993
Article Reviewed/Updated: 9 April 1997

TOPIC ----------

The Macintosh 32-Bit System Enabler is a system software extension that provides access to the memory addressing features of system software 7.1. This is the MODE32 replacement product.

DISCUSSION ----------

System Requirements
==========
The 32-Bit System Enabler requires a Macintosh II, IIx, IIcx, or SE/30 with system software version 7.1 installed, 4 megabytes (MB) of RAM or more, an Apple FDHD SuperDrive, and a Paged Memory Management Unit (PMMU).

What the Enabler Does
==========
The 32-Bit System Enabler provides unrestricted use of the system software's memory expansion features. Without these capabilities, these systems do not have the internal capabilities to take advantage of 32-bit addressing.

Macintosh 32-bit addressing allows use of more than 8 MB of RAM. The Macintosh II can access up to 68 MB of RAM when the extension is installed. The Macintosh IIx, IIcx, and SE/30 can access up to 128 MB of physical RAM. Only users running System 7.1 (or higher) with these systems should install this enabler.

Besides the additional RAM, the system software extension can also access virtual memory. A paged memory management unit (PMMU) is necessary to access virtual memory using a Macintosh II.

Installation

To install the 32-Bit System Enabler, follow these steps:

Step 1
Drag the 32-Bit System Enabler icon to the System Folder icon on the start-up disk.

Step 2
Restart the Macintosh.

How To Turn On 32-bit Addressing

Step 1
Choose Control Panels from the Apple menu.

Step 2
Open the Memory control panel.

Step 3
In the section for 32-Bit Addressing, click On.

Step 4
Restart the Macintosh.

After Installation

Turn off Balloon Help When Using the Color Wheel

Turn off Balloon Help when you use the color wheel dialog box. (The color wheel dialog box appears when you choose a color in many programs and control panels.)

Upgrade SuperClock to v3.9.1

If you use SuperClock version 3.9 or earlier, you need to upgrade to version 3.9.1 (available on many public bulletin boards).

Availability

The Macintosh 32-Bit System Enabler is licensed to users free of charge through various on-line services, including America- Online and CompuServe. The enabler will also be available through Macintosh user groups in the United States.

These articles can help you locate the software update mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates.

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
09 Apr 1997 - Removed out dated on line references.
21 Feb 1995 - Revised article to be more specific about system requirements.

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Tech Info Library Article Number:11617

Tech Info Library

Macintosh Hardware System Update 1.0: Description (10/93)

Revised: 10/20/93
Security: Everyone

Macintosh Hardware System Update 1.0: Description (10/93)

==========

Article Created: 26 February 1993
Article Reviewed/Updated: 19 October 1993

TOPIC ----------

The Macintosh Hardware System Update version 1.0 contains a set of software enhancements that address specific problems a small number of Macintosh computer users encounter. This update requires system software version 7.1. Only customers experiencing the problems described in this article should install the update. Do not install this update on a Macintosh Performa.

The Hardware System Update 1.0 is provided on a high density floppy disk. It isn't provided on an 800K disk because the fixes it contains apply only to Macintosh models with SuperDrives.

DISCUSSION ----------

What the Update Does

The Update provides system-level improvements that fine-tune the system clock and make high-speed modem communications more reliable for users of Macintosh LC, LC II, IIsi, IIvx, IIvi, Classic II, Quadra 900, and 950 systems.

In addition, the Update addresses a possible floppy drive problem for some users of the Macintosh IIsi, IIci, IIvx, IIvi, Quadra 700 and 950. The update eliminates possible problems encountered when ejecting disks during system shut-down.

It updates the Memory control panel to version 7.1.1 to improve performance in certain low memory conditions. This affects the Macintosh IIvx and IIvi, all PowerBook models, and all Macintosh Quadra models.

Future versions of System 7 will include these enhancements.

Features

- Includes Apple HD SC Setup version 7.2, which gives you more flexibility to format large Apple hard disks between 1 and 2 gigabytes. (Note: We recommend that you update your hard disk drivers and also update the version of this utility that is on your System 7.1 Disk Tools disk. See "Updating Apple Utilities" and "Updating Apple Drivers" below.)

- Includes Apple Disk First Aid 7.2, a utility that repairs damaged disks. This version contains a brand-new (differing greatly from the last, 7.1.1, release of Disk First Aid) user interface. (Note: We recommend that you update the version of this utility that is on your System 7.1 Disk Tools disk. See "Updating Apple Utilities" and "Updating Apple Drivers" below.)

- Includes MacCheck 1.0.3, a support utility that has previously only been placed on Performa and LC 520 computers at the factory. MacCheck creates a profile of your Macintosh computer, including:

  - The processor, memory, expansion cards, SCSI drives, keyboard, monitor, and so on.
  - The installed applications and system software on your startup drive.

  MacCheck also provides:

  - A general logic board test
  - A checker for corrupted directories and System files
  - A checker for duplicate System files

  (Note: We recommend that you update the version of this utility that is on your hard disk -- if you already have it. See "Updating MacCheck Utility" below.)

- Improves the reliability of high-speed modems and similar devices. This feature prevents infrequent system crashes and makes serial communications (for high-speed modems and similar devices) more reliable. Macintosh models affected: Macintosh LC, LC II, IIsi, IIvx, IIvi, Macintosh Classic II, Macintosh Quadra 900, and Macintosh Quadra 950.

- Improves the accuracy of the system's clock. This feature keeps the tick count accurate on the system clock. Macintosh models affected: Macintosh LC, LC II, IIsi, IIvx, IIvi, Macintosh Classic II, Macintosh Quadra 900, and Macintosh Quadra 950.

- Corrects problems ejecting floppy disks when the computer is shut down. This feature prevents disks from getting stuck in the floppy disk drive when the computer is shut down. (This feature adds a one second delay to the shutdown process to give the floppy disk drive enough time to eject the disk before the power supply shuts down.)

Macintosh models affected: Macintosh IIsi, IIci, IIvx, IIvi, Macintosh Quadra 700, and Macintosh Quadra 950.

- Corrects sound input problems after using Macintosh File Exchange on the Macintosh Color Classic. This feature restores sound input capability after you quit Apple File Exchange. Macintosh models affected: Macintosh Color Classic.

- Corrects problems you may have with SCSI devices. This feature prevents random failures reading information from SCSI (Small Computer Systems Interface) devices. Most users will be unaffected by this change. Macintosh models affected: Macintosh IIvx, vi, and LC III. (This correction only affects those computers with the new Zilog chip and some rare devices which use the slow one-byte read SCSI mode.)

- Updates the Memory Control Panel to version 7.1.1, which improves performance in certain low memory conditions. This feature fixes possible memory problems that occur while using large RAM disks with System 7.1. Users can restart their computers when RAM disks are set to 100% of memory. Macintosh models affected: Macintosh IIvx, IIvi, LC III, Macintosh Quadra 700, Quadra 900, Quadra 950, and all Macintosh PowerBook computers.

Installation

The Installer automatically determines what software the computer needs, if any. Follow these steps:

1) Open the Installer icon.
2) Click the Install button.
3) When you see a message that installation is complete, click the Restart or Quit button.

Updating MacCheck Utility

The MacCheck ƒ folder on the Software Utility Update 1.0 disk contains the latest version of the MacCheck application. This update is intended to permanently replace the copies of MacCheck that you may already have on your Macintosh hard drive.

Follow these steps to complete the updates:

1) Put the Software Utility Update 1.0 disk into your floppy disk drive.

2) Choose a folder on your hard drive to place MacCheck. If you're replacing MacCheck, please choose the folder where it currently resides. MacCheck is placed in the Applications folder on Macintosh Performa systems and in the Utilities folder on Macintosh LC 520 systems. If you are unsure whether you already have MacCheck, click on your hard drive icon, and then use the Find menu item in the File menu to search for "MacCheck".

3) Click on the MacCheck ƒ window to make it active, and then choose Select All from the Edit menu.

4) Click either icon in the MacCheck ƒ window and drag it on top of the icon of the folder on your hard drive that you wish to copy to, then release the mouse button. (Note: Both the MacCheck and the MacCheck dataFile icons should have moved to the selected folder. If only one icon moved, you can try to repeat steps 3 and 4, or drag the icon that didn't move from the MacCheck ƒ folder to the selected folder.)

5) If your Macintosh warns you that the files in your selected folder have the same names as the items that you are moving, click OK.

Updating Apple Utilities

The Utilities ƒ folder on the Software Utility Update 1.0 disk contains the latest versions of the Apple HD SC Setup and Apple Disk First Aid applications. These updates are intended to permanently replace the copies of Apple HD SC Setup and Apple Disk First Aid that come on your System 7.1 Disk Tools disk. Follow these steps to complete the updates:

1) Put the Software Utility Update 1.0 disk into your floppy disk drive. Then choose Eject Disk from the Special menu.

2) Put the System 7.1 Disk Tools disk into your floppy disk drive.

3) Click the Utilities ƒ window to make it active, and then choose Select All from the Edit menu.

4) Click either icon in the Utilities ƒ window and drag it on top of the icon for the Disk Tools disk, then release the mouse button. (Note: Both the HD SC Setup and the Disk First Aid icons should have moved to the Disk Tools disk. If only one icon moved, you can try to repeat steps 3 and 4, or drag the icon that didn't move from the Utilities ƒ folder to the Disk Tools disk.)

5) Your Macintosh warns you that the files on your Disk Tools disk have the same names as the items that you are moving. Click OK.

6) You will be asked to insert specific disks until the files are fully copied.

Updating Apple Drivers

The Macintosh Software Utility Update also contains a driver update for Apple hard disk drives. You should install the driver update on each Apple hard disk drive you own by following these steps:

1) With your computer off, insert the updated System 7.1 Disk Tools disk into your floppy disk drive. Now turn your computer on.

(Note: The Disk Tools disk should already be modified according to the six steps listed in "Updating Apple Utilities" above.)

2) Double-click the Disk Tools icon to open the disk.

3) Double-click the Apple HD SC Setup icon in the Disk Tools window.

4) Click the Drive button until the name of the hard disk you want to update appears as the volume name.

5) Click the Update button.

6) Repeat steps 4 and 5 for any other Apple hard disk drives you own.

7) Click the Quit button.

Article Change History:
27 May 1993 - Revised to explain that update only offered on high-density disks.
19 October 1993 - Added Features, Updating MacCheck, Apple Utilities and Apple Drivers sections.

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Tech Info Library Article Number:11618

Tech Info Library

System Enabler 111 (1.0.2) Problem (2/93)

Revised: 2/24/93
Security: Everyone

System Enabler 111 (1.0.2) Problem (2/93)

==========

Article Created: 22 February 1993

TOPIC -----

PowerBook 160/180 owners using System Enabler 111 (1.0.2) downloaded from Apple SW Updates on AppleLink, before 02-23-93, experience a crash upon restart if AutoRemounter was installed. The problem was due to the fact that the enabler was corrupted during the posting process.

DISCUSSION -----

Persons who installed System Enabler 111 (1.0.2) from the Express Modem Disk (1.0.1) don't experience the problem.

Solution: The 02-23-93 posting of System Enabler 111 (1.0.2) is OK.

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Tech Info Library Article Number:11619

Tech Info Library

StyleWriter II: PrinterShare & Not Enough Memory Message (11/94)

Revised: 11/11/94
Security: Everyone

StyleWriter II: PrinterShare & Not Enough Memory Message (11/94)

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Article Created: 9 March 1993
Article Reviewed/Updated: 11 November 1994

TOPIC ----------

I have a StyleWriter II and a Macintosh Centris 610. When I share the StyleWriter (using the GrayShare driver), I sometimes get a dialog box that says I do not have enough memory to share the printer. This problem always occurs if I shut down the Centris 610 after the printer is shared.

Also, after I shut down, the "Share this printer" checkbox becomes unchecked.

DISCUSSION ----------

This is a known bug in the PrinterShare v1.0 extension, and has been fixed in PrinterShare v1.0.1 and later. It occurs most frequently on 68040 systems (including the Macintosh Centris 610 & 650, and Quadra 800) because of the use of the CPU cache. However, this can also occur on other models given the right circumstances.

We suggest that any customer using the print sharing option on a StyleWriter II, upgrade the PrinterShare software to version 1.0.1 or later. In addition to upgrading the PrinterShare file, you should throw away the "Shared Prefs" file located inside the System Folder:

```
System Folder
   Preferences
      Printing Preferences
```

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple

support information, and a subset of the Apple Tech. Info. Library

Article Change History:
11 Nov 1994 - Reviewed for technical accuracy.
16 May 1994 - Removed references to v1.0.1 being the latest version of PrinterShare.

Support Information Services

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Tech Info Library Article Number:11623

Tech Info Library

LaserWriter Pro & Windows: Printing to Legal Size Paper (3/93)

Revised: 3/24/93
Security: Everyone

LaserWriter Pro & Windows: Printing to Legal Size Paper (3/93)

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Article Created: 9 March 1993

TOPIC ----------

When I print legal-size documents to LaserWriter Pro 630 with Windows 3.1, it will not print the top three inches of the page. What causes this?

DISCUSSION ----------

Unless you insert a Universal 500-sheet cassette tray (set for legal paper) into a LaserWriter Pro, the printer assumes that any paper in the multipurpose/manual feed tray is letter size. When a document is printed, it is cropped to letter size and omits three inches of the document.

In the Macintosh environment, you can easily change the default paper size for the multipurpose tray with the LaserWriter Utility's "Paper Handling ..." menu item.

In the Windows environment, PostScript code has to be downloaded to the printer to change the default value. Below are the PostScript code segments to configure the multipurpose tray for letter, legal, A4 and B5 paper sizes. Once downloaded to the printer, this code will remain in effect even after the power is cycled.

The specific code segment to be used should be saved as a text file, and then downloaded using the COPY command:

COPY B:\TEXTFILENAME LPT1: [Enter]

where B is the drive name where the text file is located and where TEXTFILENAME is the name of the text file.

==========

```
MULTIPURPOSE TRAY DEFAULT: LETTER
----------------------------------------

%!PS-Adobe-3.0
%%Creator: Apple Computer, Inc.
%%Copyright 1992 Apple Computer, Inc.

% Set multi-purpose tray default paper size to Letter
serverdict begin 0 exitserver
<</InputAttributes
  << 1
    << /PageSize [612 792]
    >>
  >>
>> setpagedevice


========================================
MULTIPURPOSE TRAY DEFAULT: LEGAL
----------------------------------------

%!PS-Adobe-3.0
%%Creator: Apple Computer, Inc.
%%Copyright 1992 Apple Computer, Inc.

% Set multi-purpose tray default paper size to Legal
serverdict begin 0 exitserver
<</InputAttributes
  << 1
    << /PageSize [612 1008]
    >>
  >>
>> setpagedevice


========================================
MULTIPURPOSE TRAY DEFAULT: A4
----------------------------------------

%!PS-Adobe-3.0
%%Creator: Apple Computer, Inc.
%%Copyright 1992 Apple Computer, Inc.

% Set multi-purpose tray default paper size to A4
serverdict begin 0 exitserver
<</InputAttributes
  << 1
    << /PageSize [595 842]
    >>
  >>
>> setpagedevice
```

```
=======================================
MULTIPURPOSE TRAY DEFAULT: B5
---------------------------------------

%!PS-Adobe-3.0
%%Creator: Apple Computer, Inc.
%%Copyright 1992 Apple Computer, Inc.

% Set multi-purpose tray default paper size to B5
serverdict begin 0 exitserver
<</InputAttributes
  << 1
    << /PageSize [516 729]
    >>
  >>
>> setpagedevice

=====================================
```

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Tech Info Library Article Number:11624

ABS Tech Note: DAL00 About DAL Tech Notes (11/93)

Revised: 12/3/93
Security: Everyone

ABS Tech Note: DAL00 About DAL Tech Notes (11/93)

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Article Created: 30 November 1993

TOPIC ----------

This document accompanies each release of Apple Business Systems Technical Notes.

DISCUSSION ----------

We want Technical Notes to be distributed as widely as possible, so they are sent to all Partners and Associates at no charge; they are also posted on AppleLink in the Developer Services Bulletin Board and Tech Info Library.

We place no restriction on copying Technical Notes, with the exception that you cannot resell them, so read, enjoy and share. We hope Apple Business Systems Technical Notes will provide you with lots of valuable information.

Technical notes are a 'living' complement to product documentation, be it Inside Macintosh or other documentation. This means that they are updated on a regular basis, so as to be accurate and up to date. New Notes are added as required.

This technical note is an index of all technical notes related to the Data Access Language and related products. It also documents all changes to the technical notes since the previous release.

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DAL33	IN Clause Limitations	Sep, 1993
DAL34	SHARED READONLY SELECT coredump	Sep, 1993
DAL35	DAL for A/UX technical overview	Nov, 1993

Changes since last release:

New Technical notes: DAL35

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Tech Info Library Article Number:11627

ABS Tech Note: DAL01 VTAM Tuning (4/93)

Revised: 9/3/93
Security: Everyone

ABS Tech Note: DAL01 VTAM Tuning (4/93)

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Article Created: 26 April 1993

TOPIC ----------

The following information can be used to help you obtain the best results for the DAL server for MVS/VTAM, Version 1.3.5.

DISCUSSION ----------

Calculating Storage Requirements (Region Size)

The DAL server for MVS/VTAM requires 892K of storage with no sessions connected. Each concurrent session requires a minimum of 260K when no work is being performed by the client. To calculate the region size to support the desired number of concurrent sessions for your environment, use the above figures and add twenty five percent for overhead. Example: ten concurrent sessions will require a region size (REGION= on job step) of 4365K. See below on the maximum number of sessions connected to a single server.

31-Bit Addressing and Maximum Number of Sessions

The DAL server for MVS/VTAM does not currently support 31-bit addressing. This means that the server cannot operate in a region size larger than 16M (i.e., “above the line”). Do not code a value greater than 16M on the “REGION=” parameter for the job step. Using the storage estimation procedure given above, the theoretical maximum number of sessions simultaneously connected to the server in a 16M region is 45. However, large queries will significantly reduce response time; it is better to limit the number of concurrent users to under 25, even for large region sizes. In addition, attempts to login more than several sessions simultaneously will require large amounts of memory for a short period of time; to avoid problems, it is best to ‘stagger’ the logins.

Multiple DAL server for MVS/VTAM on the Same CPU

More than one DAL server for MVS/VTAM can be run at the same time on a single CPU (given the limits of your environment). Using more than one server will allow for a greater number of concurrent sessions. If multiple servers are used, the client scripts (hosts.cl1 prior to System 7.0 and DAL Preferences under System 7.0) must reference the appropriate APPLID(s). To accomplish this, each server must have a unique VTAM APPLID assigned to it. You will not need to perform a complete installation for each APPLID (and its associated server) as the LOADLIB, AUTOEXEC, and Environment files may be shared between multiple servers. Refer to the “Data Access Language server for MVS/VTAM Installation and Operation Guide”, as well as to the appropriate IBM publications, for more information on VTAM APPLIDs and server files. Refer to the “Data Access Language server for the Macintosh Installation and User’s Guide” for more information on the hosts.cl1 (DAL Preferences) file.

Security

The DAL server for MVS/VTAM must be an authorized task on the host system in order to implement security (password) verification. Authorization procedures are explained in the “Data Access Language for MVS/VTAM Installation and Operation Guide” as well as the appropriate IBM publications. Use of third-party programs to bypass the normal authorization procedure (i.e., reference to the load module in a SYS1.PARMLIB member) is not supported by Apple, and results may be unpredictable.

Use of DB2 Threads

The DAL server for MVS/VTAM reuses the available threads within the host DB2 subsystem. Each concurrent session requires one thread, which is released upon completion of the database transaction (e.g., SELECT, COMMIT). The number of available DB2 threads is specified during installation of the DB2 subsystem. It is important to note that the Server uses ‘BATCH’ threads, as opposed to ‘FOREGROUND’ threads; verify that the number of batch threads will be sufficient to support the maximum number of concurrent users. Refer to the appropriate IBM publications for more information.

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Tech Info Library Article Number:11628

ABS Tech Note: DAL02 VTAM Memory (6/92)

Revised: 9/3/93
Security: Everyone

ABS Tech Note: DAL02 VTAM Memory (6/92)

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Article Created: 30 June 1992

TOPIC ----------

The following information can be used to help you to plan and manage storage (memory) requirements for the DAL server for MVS/VTAM, Version 1.3.5.

DISCUSSION ----------

Limitations

The DAL MVS/VTAM Server does not currently support 31-bit addressing and thus cannot run above the 16M “line” on MVS. Therefore, when coding the REGION parameter in the server run JCL, a size no larger than 16M can be utilized. The actual amount of real memory available to the server (as an MVS address space) will depend on the host system tuning parameters and workload.

Server Component Memory Requirements

The base server requires 892K with no sessions connected. Each connected session utilizes a minimum of 260K. Actual session usage is dependent upon the number and size of the queries executed. For any given region size, a larger number of concurrent sessions will be possible when the query sizes are smaller. Conversely, large queries will limit the number of concurrent sessions. Therefore, the number of maximum concurrent sessions can vary for any given region size.

Avoiding Out-of-Memory Conditions

Beginning with Version 1.3.5 of the DAL MVS/VTAM Server, a memory verification is made before allowing a new session to connect. The server will check if a minimum of 300K is available for the new session. If a minimum of 300K is available, the session will be established. If less than 300K is available, an error message (F000000116) will be generated by

the host and the session will not be established. In addition, an error code of -10628(116) will be returned to the client. However, this verification does not prevent out-of-memory conditions for every situation. For example, several sessions may attempt to execute large queries at the same time, resulting in more than the available memory being requested.

Out-of-Memory Errors

If the server is unable to obtain memory when required by large queries and/or numerous concurrent sessions (as described above), the symptoms can be manifested by appearance of one or more of the following:

- Error message(s) logged as a result of a GETMAIN macro failure.
- The server abnormally terminates with MVS system code 0C4.
- Following one or more 0C4 abends, a 0C1 abend can occur if a third-party system dump analysis tool is installed.

Using the Trace Facilities

The trace facilities should not be enabled under normal circumstances. Severe degradation in server response time, as well as a decrease in available memory, will be observed if these facilities are in use. Comment out or remove the DD statement for DSNTRACE (if it is present) to ensure that tracing is not enabled. Using the “DD DUMMY” method of removing reference to this dataset will not be effective; it must be commented out or removed. For more information on the trace facilities, refer to Appendix A in the “Data Access Language Server for MVS/VTAM Installation and Operation Guide”.

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Tech Info Library Article Number:11629

Tech Info Library

ABS Tech Note: DAL03 VTAM Install Issues (6/92)

Revised: 9/3/93
Security: Everyone

ABS Tech Note: DAL03 VTAM Install Issues (6/92)

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Article Created: 30 June 1992

TOPIC ----------

This document should be used as a preinstallation tool whenever a final or evaluation copy of the DAL MVS/VTAM Server, Version 1.3.5 (or greater) will be installed. It will help you to verify release levels of key host software components, identify "traps" that can delay proper functioning of the server after initial loading and installation, and assist in identifying key support personnel.

DISCUSSION ----------

Required Host Support Personnel

The following host support personnel should be identified and included in the planning and installation of the server. In some cases, an individual can have responsibility for more than one of these functions.

- Systems Programmer
  This individual is generally responsible for the installation and maintenance of the base operating system (that is, MVS) as well as other IBM and third-party applications.

- Security Administrator
  He/she is responsible for all security-based activities on the host. This includes RACF or ACF2 administration, USERID maintenance, and so forth.

- Network Analyst
  This person is generally responsible for all network definitions including VTAM, NCP, LOGMODEs, and so forth.

- Database Administrator
  He/she is responsible for setting up and maintaining the host database subsystems (that is, DB2 or Teradata). Sometimes, the Database

Administrator needs to work with the Security Administrator when access to the database is being defined.

- Client Expert
  For the Macintosh, you should have at least one person who is familiar with Macintosh concepts, as well as experienced with installation of new applications. He/she will need to modify the preferences file ("host.cl1" for System 6, "DAL Preferences" under System 7) as well. For the MS/DOS PCs, someone familiar with the concepts and operation of DOS should be included in the installation and verification of the client-based software.

Key Components and Concepts

The DAL MVS/VTAM Server is designed to be used in conjunction with DAL for the Macintosh client to query, extract, and/or update DB2 or Teradata-based subsystems. The server does not replace these two subsystems or their utilities (such as SPUFI). DAL makes use of the existing security definitions set up in RACF (or ACF2) as well as those within DB2 or Teradata. Any changes to the security or database environments are made as before; DAL has no specific or unusual requirements.

The DAL MVS/VTAM Server and Security

Security on an MVS host with DB2 or Teradata is usually provided on two levels. The Systems Programmer usually manages system-wide resources (such as TSO, NetView, datasets, and so forth) using a security package such as RACF or ACF2. In addition, there is controlled access to data within the database subsystem itself; this is maintained by the Database Administrator. As user verification is performed during the logon sequence, the load module for the DAL Server must be installed in an authorized library on the host. Once installed, the server is then able to perform the system calls (RACINIT, RACROUTE) necessary to verify a USERID and password combination. The server only needs to perform these system calls during the logon sequence; no other supervisor calls are done by the server. In the event that the host system does not utilize RACF or ACF2, a sample exit is included with the product should customization be desired. This exit appears as member 'DALAUTH' with the RUN.JCL supplied on the product tape. Note that the sample only specifies the entry point and JCL necessary to relink the server's load module. Coding and logic for the exit can be designed and implemented by the customer to suit their individual shop requirements.

Host System Software Release Levels

Following are the recommended minimum release levels for installation of the DAL MVS/VTAM Server, Version 1.3.5. Although older versions of host software may be compatible with DAL, Apple has only tested using the following releases:

- VTAM: 3.2.0
- NCP: any release (with the necessary PTFs) that supports the installed level of VTAM

- MVS/XA: 2.2.0
- MVS/ESA: 4.2.0
- DB2: 1.3.0
- RACF, if applicable: 1.8.0
- ACF2, if applicable: 5.2
- CICS, if applicable: 1.7
- Teradata, if applicable: 4.1

Macintosh Software Release Levels

Following are the recommended minimum release levels for installation of the DAL Client, Version 1.3.5. Although older versions may be compatible, both Apple and the appropriate third parties have tested with the following releases:

- SNA•ps, using 3270 or APPC: 1.1. 3270 access requires version 1.1; version 1.0.1 may be used for APPC access only
- Avatar's MacMainframe: version 4.0.1
- DCA's MacIrma: DCA requires that MacIrma SNA, version 2.1.0 is used with its associated MacIrma DAL Driver, version 1.2.1
- DCA's HLLAPI version of MacIrma: DCA requires that MacIrma SNA, version 2.1.0 is used with its associated MacIrma API, version 1.4.0
- Tri-Data's Mac Netway 3270: Version 8.2 with Tri-Data API also at version 8.2
- Tri-Data's Mac Netway 3270 Advanced: Version 1.0.3 with Tri-Data API also at version 1.0.3 Miscellaneous Hint and Tips
- Use of third-party programs to bypass the normal authorization procedure (that is, reference to the load module in a SYS1.PARMLIB member) is not supported by Apple, and results may be unpredictable.
- If any of the user-supplied exits are utilized, the load module must be relinked and properly referenced in the run JCL. This includes support for National Languages, SMF processing, custom security, and so forth.
- If secondary AUTHIDs are used on the host system with DB2, verify that any user-coded exits are designed to work in a multiple subtask environment.
- Be sure to code and activate the VTAM APPL (ACB) for the server prior to attempting any connection from the client. The SRBEXIT parameter must be equal to 'NO' for use with DAL. Verify your system defaults to ensure that SRBEXIT=NO, or code it explicitly in the APPL major node.
- ACF2 installations must authorize the DAL MVS/VTAM Server as a multi-use task (MUSSAS). The SAF Rule should point to the module 'CL1HEAD'.

Preinstallation Software Version Checklist

The following checklist should be used to accurately verify the host system software release levels prior to installation, as well as identify key host support personnel. Questions or concerns should be forwarded to the appropriate support group within Apple before proceeding. This will ensure a quick and trouble-free installation.

	Release Level	Release Level

MVS/XA or MVS/ESA _____ VTAM _____

RACF or ACF2 _____ DB2 _____

NCP _____ CICS _____

Teradata _____

If there are any custom exits installed in the host system, they may affect the operation of DAL. Verify this information before proceeding with the installation of the MVS/VTAM Server:

Are there any custom exits installed for security? Y / N

Are there any custom exits installed for the database subsystem? Y / N

Name of Systems Programmer: _____

Name of Security Administrator: _____

Name of Network Analyst: _____

Name of Database Administrator: _____

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Tech Info Library Article Number:11630

ABS Tech Note: DAL04 Character Translation Tables (2/93)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL04 Character Translation Tables (2/93)

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Article Created: 26 February 1993

TOPIC

This document provides a technical description and overview of the character translation mechanism used (in the IBM environment) by Apple's Data Access Language Clients and Servers.

DISCUSSION

Purpose

Character translation is necessary whenever devices utilizing ASCII character representation will be communicating with devices that use EBCDIC character representation. Generally speaking, only the larger IBM hosts have operating systems that utilize EBCDIC, or where the character sets are interpreted differently between host and client. All others, including DOS-based PCs, represent characters in ASCII. The reasons why these code sets have developed in parallel will not be addressed within the scope of this document. It can simply be stated that some form of translation must occur if one device is to "understand" the other. Additionally, there are no requirements for where (that is, a physical location) this translation should take place.

DAL Internal Data Format and Host Translation

DAL uses an internal data format for communication between servers and clients. Use of this internal format allows DAL Clients to communicate with a variety of servers. The format is based upon IBM Code Page 850, an ASCII representation that is commonly used for PC to mainframe communications. (A 'Code Page' is the IBM term for a table that is used by applications and/or system software for some form of character translation.) Data to and from the Server is in ASCII and therefore requires translation to EBCDIC prior to being forwarded to the database

subsystem (for example, DB2). There are two internal tables to perform this task: one from ASCII to EBCDIC (inbound to the host) and one from EBCDIC to ASCII (outbound from the host). The two tables are mirror images of each other to ensure that data that is sent to the host and stored will be the same when it is retrieved at a later time by the client.

User Translate Tables

Two User Translate Tables are provided should any custom translation be desired. They have the same name in all DAL Servers for the IBM environment. For ASCII to EBCDIC, the table is named "UASC2EBC"; for EBCDIC to ASCII it is named "UEBC2ASC". Each table consists of 256 (from X'0' to X'255') storage constants in IBM 370 Assembler format. The Server utilizes these two user tables for translation in place of the default internal tables if they are present at linkedit time. Read "National Language Support" later in this document for more information on using these tables.

Macintosh Character Set

The character set on the Macintosh is ASCII-based. Apple uses the same internal representation for all Roman languages (as opposed to the Host Code Pages on IBM EBCDIC-based machines). Like the server, the client translates the Macintosh ASCII into DAL internal format prior to transmission towards the server. These client-based translation tables do not require any modifications when communicating to the IBM environment.

National Language Support

Starting with Version 1.3.8 of the DAL IBM Servers, Apple provides a macro that supports National Language characters. This macro is named 'DALLOCAL' and is stored as member 'DALLOCAL' in the RUN.JCL supplied with the product tape for the VTAM and TSO Servers. For the VM Server, this macro is stored in a file named 'DALLOCAL' with a filetype of 'ASSEMBLE'. This macro must be assembled and linked with the server load module; the output from the linkedit will be the new load module for the server. Sample JCL is included with the VTAM and TSO versions. For VM, use the standard assembler and add an 'INCLUDE DALLOCAL' statement in the linkedit control file (this control file is named 'LNKDAL' with a filetype of 'EXEC'). To support one of the languages included with 'DALLOCAL', remove the comment character and perform the assembly. Copies of the default (internal) tables are also included for reference or other desired customizations. If you wish to create your own tables, you will need a copy of Code Page 850 as well as the Host Code Page for your environment. Contact your authorized IBM representative for more information on Code Pages. Languages not present in the 'DALLOCAL' macro may be supported in a future release.

Please note that the entry point and included 'SYSLIB' module specified on the linkedit control cards are different for TSO and VTAM:

- For TSO, specify 'ENTRY CL1HEAD' and 'INCLUDE SYSLIB(DALSVR)'

- For VTAM, specify 'ENTRY STARTUP' and 'INCLUDE SYSLIB(DALSERVE)'

If you have changed the load module name of the server to something other than the default as shipped, you will need to reflect this change in the 'INCLUDE' card(s).

Internal Conversion of Characters by DB2 and SQL/DS

Some characters received by DB2 and SQL/DS will be converted to spaces (EBCDIC X'40') when stored on the host. These will be subsequently translated and received as spaces by the client. This is because the database subsystems will not store 'unprintable' characters such as those between X'00' and X'3F' in EBCDIC. If you encounter this situation, verify that you are sending the proper characters from the client.

National Language Support Considerations

Support of National Languages can be handled in the IBM environment on several levels. It is installation dependent as to whether any or all of the following modifications have been performed to support a National Language. Check first with the systems programmer responsible for the installation and maintenance of the host operating system before enabling National Language support within the DAL Servers; results may be unpredictable if there are any discrepancies.

Specific things to note:

- If a 3X74 Cluster Controller (for 3270-style terminals) is being used, a language support feature may have been generated within the cluster.

- Code Pages for the host operating system (for example, as MVS) may be installed.

- Localized versions of the host software (for example, TSO or CMS) may be installed.

For example, a Macintosh may have a French version of the system software installed; the DAL MVS/VTAM Server may have been relinked to support the French Code Page. However, if the Code Page on the host is not French, there will be some characters that do not display properly if viewed using a host-based utility (such as SPUFI under DB2). Characters sent from the Macintosh, stored on the host, and later retrieved for display on the Macintosh, will still display correctly due to the "mirror-image" feature of DAL's translation tables.

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Tech Info Library Article Number:11631

Tech Info Library

ABS Tech Note: DAL05 VTAM F-Messages (6/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL05 VTAM F-Messages (6/92)

==========

Article Created: 30 June 1992

TOPIC ----------

This document provides a description and reference list of the F-messages generated under certain error conditions when using Apple's Data Access Language Clients and the DAL MVS/VTAM Server, V1.3.5.

DISCUSSION ----------

Overview

During operation of the DAL MVS/VTAM Server, some conditions can occur that will generate an 'F-message'. These messages are related specifically to the operation of the server's subtasks or are used as a mechanism to pass back return codes from the system-level activities, such as the host security software (for example, RACF) during password authorization. F-messages are not issued for any errors that occur within the database subsystems, as each subsystem has its own suite of error codes.

F-Messages Generated by the Server

Each F-message that is generated by the server falls into one of the categories listed below. The majority of the F-messages are related to system security processing (such as password verification during logon). The other categories are:

- Errors received in 3270 datastream (3270 connections only). This means that an invalid or unexpected string was sent to the server while connected using 3270 protocols.

- Subtask abends. If the server detects an abend in the user subtask, an F-message will be generated to indicate that some unusual situation has occurred. Examine the host system logs for further information. These

can also be generated if the server itself is shutdown while sessions are still active.

- Memory allocation problems. If sufficient storage (memory) does not exist on the host for a new session to be started, one of these F-messages will be generated.

F-Messages Received by the Client

When an F-message is generated on the host, the numeric portion of the F-message will be returned to the client as a secondary error code. As an example, an APPC DAL session that uses "SNA•ps APPC" under System 7 and supplies an invalid password during logon receives an 'invalid password' return code from the system security package (for example, RACF). As a result, an F-message, 'F000000008 INVALID OR MISSING PASSWORD' is generated on the host. On the client, the error of '-10909 (8) SNApsAPPC (DAL Preferences)' is generated. The '(8)' portion of the error code relates to the 'F000000008' error message on the host.

Message Numbers and Text:

- Errors received in 3270 datastream (3270 connections only):
  F000000001 TERMINAL I/O ERROR

- Security-related errors:
  F000000004 UNAUTHORIZED OR MISSING USERID
  F000000008 INVALID OR MISSING PASSWORD
  F000000012 PASSWORD HAS EXPIRED
  F000000016 NEW PASSWORD IS INVALID
  F000000020 USER NOT DEFINED TO GROUP
  F000000024 RACINIT FAILED
  F000000028 ACCESS HAS BEEN REVOKED
  F000000032 RACF NOT ACTIVE
  F000000036 GROUP ACCESS REVOKED
  F000000040 OIDCARD REQUIRED
  F000000044 OID CARD INVALID
  F000000048 USER NOT AUTHORIZED FOR TERMINAL
  F000000052 USER NOT AUTHORIZED FOR APPLICATION
  F000000100 USERID IN USE

- Subtask abends:
  F000000104 SERVER TERMINATED ABNORMALLY
  F000000108 SERVER TERMINATED BY CANCEL
  F000000112 SERVER TERMINATED BY CLOSEDOWN

- Memory allocation problems:
  F000000116 INSUFFICIENT STORAGE FOR EXECUTION

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Tech Info Library Article Number:11632

ABS Tech Note: DAL06 Informix Host DB Location Specs (6/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL06 Informix Host DB Location Specs (6/92)

==========

Article Created: 30 June 1992

TOPIC ----------

This article is a Technical Note discussing Informix hose database location specifications.

DISCUSSION ----------

When using the "IN LOCATION" statement with some versions of Informix for VMS, the database location must contain a directory name enclosed in brackets [ ]. Using a logical that does not contain brackets will result in an error. This restriction does not apply to the 'USE LOCATION' statement, which allows the use of logicals without brackets.

```
open database 'daldemo' in location 'msad$system:';         -->  error

open database 'daldemo' in location 'sys$sysroot:[msad]';   -->  OK

use location 'msad$system';
open informix dbms;                                         -->  OK
open database 'daldemo';
```

With some versions of Informix for VMS, the Informix DBMS software is only able to open databases located in the current default directory. For these versions of Informix, the USE LOCATION method above must be used; the IN LOCATION method will produce an error message.

The first method is preferable, but if using the USE LOCATION statement, follow these guidelines to insure that the dbms will use the directory specified.

• Use the statement only once per session.

- Issue the statement before any "open dbms" or "open database" statement.

Note: Informix support in DAL has been discontinued in release 1.3.6, so this tech note is valid only for releases 1.3.5 and before.

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Tech Info Library Article Number:11633

ABS Tech Note: DAL07 NULL Values in GROUP BY (6/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL07 NULL Values in GROUP BY (6/92)

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Article Created: 30 June 1992

TOPIC ----------

This technical note describes differences in the way various DBMS brands handle NULL values when GROUP BY is specified in a query.

DISCUSSION ----------

The GROUP BY clause groups together rows that have identical values in a grouping column (or columns) and produces a summary row of query results for each row group. When NULL values occur in the grouping column, the results of the query may differ from one DBMS brand to another. Some DBMS brands, such as ORACLE, consider two NULL values to be identical for GROUP BY purposes and collect all rows with a NULL grouping column value into a single row group. Other DBMS brands, such as Informix, treat two NULL values as different values for GROUP BY purposes (in the same way that two NULL values are not considered identical when compared in the WHERE clause). These DBMS brands generate a separate row group for each row with a NULL grouping column value.

DAL accepts the query results as returned by the DBMS, so these differences between the DBMS brands are visible through DAL. If your application uses a query with GROUP BY and the grouping columns can contain NULL values, you should experiment with your particular DBMS brand to see how it will group the rows containing the NULL values.

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Tech Info Library Article Number:11634

ABS Tech Note: DAL08 DAL Size Limitations (10/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL08 DAL Size Limitations (10/92)

==========

Article Created: 30 October 1992

TOPIC ----------

This technical note describes certain size limitations inherent to DAL.

DISCUSSION ----------

DAL is designed so that it has no limits on the number of rows returned. DAL does have a limit of 255 on the number of columns in a rowset. With the current implementation of DAL (1.3) there are some limits on the transmission of data values to the client and fetching data from the DBMS. A single row fetch'ed or print'ed should not be greater than 2000 characters, and a single value fetched or printed should not be greater than 255 characters. DAL should not be used to fetch data from DBMS columns defined as VARCHAR or CHAR larger than 255.

As an example, you can have a table named offices with 200 columns, 20,000 rows and send the statement:

```
select * from offices;
printall;
```

All the data will be returned to your client as long as any single data value is not greater than 255 characters, and any single row has not more than 2000 characters (in this example with 200 columns the average column size for each row would have to be less than 10 characters; 200 columns * 10 characters = 2000 the limit). In actual use DAL may print data values and rows that exceed these limits; however, these limits should not be exceeded and you should not depend on them in your program.

Other limitations

Developers have periodically asked questions concerning the maximum size of

variables, transactions, and query results that DAL can handle. Below are the questions with answers:

Q: How many DAL statements can I send to the DAL Server at one time?
A: There is no limit to the number of DAL statements that can be passed to the DAL Server.

Q: How big can a single DAL statement be?
A: There is no limit to the size of a single DAL statement. There are certain limitations, however, the size of an Execute statement which passes its argument directly through to the DBMS's.

Q: How large can the command string be in an EXECUTE statement?
A: The command string can be as long as than 1000 characters, although this limit is system-dependent.

Q: How big can DAL query results be?
A:
- DAL does not support print'ing or fetch'ing VARCHAR or CHAR data values larger than 255 characters or bytes.
- DAL does not support more than 254 columns in a query result. Consequently, DAL commands such as SELECT cannot have more than 254 columns in a query.
- The maximum size for any row fetch'ed or print'ed 2000 bytes.

Q: Are there limitations on datatype conversions in DAL?
A: Yes, among the limitations you might run into are:
- You cannot convert INT to SMINT. The code:
  integer int1 = 100; smint smi1= smint int1;
  will return an error.
- You cannot convert a timestamp into a float or smfloat. The code:
  timestamp ts1=varchar dt1+" "+varchar tm1; smfloat smf1=smfloat ts1;
  will return an error.

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Tech Info Library Article Number:11635

ABS Tech Note: DAL09 Disk Space Usage on VAX/VMS (6/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL09 Disk Space Usage on VAX/VMS (6/92)

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Article Created: 30 June 1992

TOPIC ----------

This technical note describes user disk space considerations for DAL VAX/VMS Servers.

DISCUSSION ----------

DAL client users must have some disk space on the host server machine to run the DAL Server. When the user's host account has zero available blocks on the account's default physical disk, a DAL error message is generated during any data exchange request. The error message reads: "Error Creating Object."

If DAL user accounts are set up without default disk space, the system administrator can specify an alternative location for the DAL server to find (and use) free disk by defining the VMS logical CL1TEMPDIR.

This variable should be defined to the name of a directory, such as USER:[TEMP].

The DAL user must have read/write and delete permission for the directory.

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Tech Info Library Article Number:11636

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ABS Tech Note: DAL10 DAL and Rdb (6/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL10 DAL and Rdb (6/92)

==========

Article Created: 30 June 1992

TOPIC ----------

This technical note discusses restrictions and limitations with DAL and Rdb.

DISCUSSION ----------

The Rdb DBMS adapter for the DAL Server is best viewed as a VAX/VMS C application which uses Rdb's Dynamic SQL interface to access Rdb databases. Accordingly, any DAL user who intends to access Rdb databases should ensure that his or her account is set up with the proper VMS privileges and quotas required by Rdb. DAL users should also note that any current restrictions or problems in Digital's Rdb and Dynamic SQL will also affect the DAL Rdb DBMS adapter.

For example, when Rdb performs arithmetic operations on floating point data types such as the SQL aggregate function AVG(), Rdb rounds any decimal result to a whole number. Consequently, DAL client queries containing aggregate functions on decimal or float datatypes will return rounded numbers when executed in Rdb.

Problem #1

Referring to multiple databases by dbaliasname (AuthID)

To support multiple Rdb databases, the DAL Server Rdb Database Adapter uses the DECLARE SCHEMA statement in Rdb's Dynamic SQL for each database opened. In Rdb, each database or schema is referenced by an "authorization identifier" or AuthID. DAL uses the dbaliasname specified in an OPEN DATABASE statement as the AuthID, or when a dbaliasname is not specified, the database name is used as the alias and AuthID by default. For example:

```
                                                dbaliasname    AuthID
  open database "sample";                          sample      sample
  open database "reservations" alias "test";        test        test
```

Normally, the DAL Server keeps track of the AuthID for you. However, if you mix normal DAL statements with Rdb statements (via the DAL EXECUTE IMMEDIATE statement), you may need to use the AuthID when referring to tables, views, and indexes or when using the Rdb SET TRANSACTION statement. When referring to tables by the dbaliasname in DAL, the correct syntax is:

```
               dbaliasname!table_name        sample!offices
```

Rdb uses a period (.) instead of an exclamation point "!" when referencing a table by the schema's AuthID:

```
               AuthID.table_name             sample.offices
```

(Note: DAL uses the period (.) to prepend an owner name to a table. For example, sample!mark.offices in DAL indicates the table offices owned by mark in the database whose dbaliasname is "sample".)

So, when using DAL's EXECUTE IMMEDIATE statement to set a transaction mode for a database or to reference a table, be sure to use the database's dbaliasname as the AuthID.

For example:

```
  open rdb dbms;
  open rdb database "daldemo" alias  test  in location "msad$system";
  execute immediate "create table small (text char(20))";
  commit;
  insert into test!small values ("xyz");
  execute immediate "update small set text = 'small fails'
          where text = 'xyz' ";
  rollback;
  insert into test!small values ("xyz");
  execute immediate "update test.small set text = 'test.small works'
          where text =   'xyz' ";
  commit;
```

Problem #2

Attempting to query directly against the Rdb System Relations occasionally fails. For example, the following query fails:

```
  SELECT RDB$RELATION_NAME FROM RDB$RELATIONS;
```

Explanation: When DAL is asked to do a query, it checks the syntax and content of the query statement to ensure that the columns and tables asked for exist in the database and to determine the data types of the results. Certain system relations contain columns with a "SEGMENTED STRING" data

type (seg_str). This data type is not supported in SQL interface for Rdb 3.xxx (but will be supported in Rdb 4.0). Even though the column queried is not of the type seg_str, DAL looks at the entire structure (column names, data types, and lengths) to check for correct syntax and content. In doing so, Rdb generates the following error code when it encounters a column with a seg_str: SQL-F-INVSSCONV, Invalid conversion for segmented string column RDB$VIEW_BLR.

WORKAROUND:
Use the execute statement to create a view that specifies the non-seg_str columns desired. Then use DAL to query the view. This way, the DAL server's table look-up won't stumble on columns with the data type seg_str. The following example does this:

```
  Execute immediate "create view temp as
          select rdb$relation_name from rdb$relations";
  commit ;                                    /* don't forget to commit */
  Select rdb$relation_name from temp;
```

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Tech Info Library Article Number:11637

ABS Tech Note: DAL11 Oracle 6.0 Workaround (6/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL11 Oracle 6.0 Workaround (6/92)

==========

Article Created: 30 June 1992

TOPIC ----------

This article describes a workaround for Oracle 6.0 with DAL.

DISCUSSION ----------

There is a problem in Oracle 6.0 which will not allow you to re-open an Oracle database in one DAL session. In other words, you cannot open, close, and then open the database again.

For example, the following sequence leads to an error from Oracle 6.0:

```
begin> open database 'daldemo' user 'scott' password 'tiger';
more> close database;
more> go
Execution begins...
Execution Completed Successfully

begin> open database 'daldemo' user 'scott' password 'tiger';
more>  go
Execution begins...
Error -10207 (-6203)  daldemo  ()
Message is "network", line 1 : Error during Connect - 6203
```

The problem will also occur after an unsuccessful attempt to open a database. For example, if you try to open a database with an invalid userid or password, subsequent attempts to open the database will fail.

The work-around to this problem is to end the current DAL session and begin a new one. The bug only occurs in Oracle 6.0 prior to release 6.0.34, not in version 5.1.

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Tech Info Library Article Number:11638

Tech Info Library

ABS Tech Note: DAL12 No Multiple Cursors, Teradata/Sybase (6/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL12 No Multiple Cursors, Teradata/Sybase (6/92)

==========

Article Created: 30 June 1992

TOPIC ----------

This article describes a feature of DAL that is not supported by Teradata and Sybase.

DISCUSSION ----------

There is one feature of Data Access Language that is not supported by Teradata and Sybase, which is the ability to have multiple cursors open at the same time. Since Teradata and Sybase do not support this feature, applications which utilize the multiple cursor feature will have to be aware of this constraint when accessing data from a Teradata or Sybase database.

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Tech Info Library Article Number:11639

ABS Tech Note: DAL13 DB2 and SQL/DS Views (9/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL13 DB2 and SQL/DS Views (9/92)

==========

Article Created: 30 September 1992

TOPIC ----------

This article describes the creation of a view within DB2 or SQL/DS that will return different table listings.

DISCUSSION ----------

It is possible to create a view within DB2 or SQL/DS that will return different table listings (for example, when using the 'Describe Tables' command within DAL) based upon authority GRANTed to a particular user ID.

To implement this, change the value of 'DESTAB=' in the DAL Environment file to equal 'CREATOR.VIEWNAME'. Then, have the database adminstrator create the following view using the standard SQL utilities (for example, SPUFI).

The following is an example for DB2:

```
create view CREATOR.VIEWNAME (tcreator, ttname)
     as select distinct creator, name
          from sysibm.systabauth a, sysibm.systables b
               where a.tcreator = b.creator
                    and a.ttname = b.name
                    and a.granteetype =  ' '
                    and a.grantee = user
```

For SQL/DS, replace 'sysibm' with 'system' in the above example.

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Tech Info Library

ABS Tech Note: DAL14 Modems and DAL (10/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL14 Modems and DAL (10/92)

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Article Created: 31 October 1992

TOPIC ----------

This technical note discusses some limitations in using modems with the Asynchronous Network Adaptor on DAL and a workaround that can be used to remove those limitations.

DISCUSSION ----------

DAL's Asynchronous driver makes assumptions about the type of modem attached that causes it to work incorrectly with some modems. DAL can not be made to work with Telebit and other high speed modems because during the initialization it sends an "ATZ" and then immediately starts sending other initialization strings while the modem is still processing the reset (on a Telebit, it can take over a second for the "ATZ" to finish and the modem to start listening again).

It is possible to work around this limitation, however. The trick is to use DAL's log-on scripting capability to do the modem dialing. What you need to do is tell the Asynchronous network adapter that the system is hardwired, and then dial the modem as part of the log-on script, as though it were an extended log-on sequence.

This is an example of how to dial a modem manually. It should be used as a starting point, because different brands of modems have subtle operating differences that might require modification. This sequence has been tested on a Telebit T1600.

```
rem:: First ignore the modem definition in the async definition
anymodem:async:com1:2400:Noparity:8databits:2stopbits:Boxonxoff:128:NoModem
rem:: Now dial the number, first the start sequence, if this fails
rem::  try to Hang up the modem with the recover sequence.
rem::  After the recovery sequence, execute the connect sequence.
```

```
rem:: this is one line in the DAL Preferences file
anymodem:login:3tries:+++\mOK\sATH:600:2000:\s+++\w2\sATH\r\sAT\r\MOK:\sAT
V1\r\MOK:\sATDT2573813\r\w5\mCONNECT\r\Mgin\w2\u\r\P\Mword\p\r\P\m$
```

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Tech Info Library Article Number:11641

Tech Info Library

ABS Tech Note: DAL16 Running in Sys 6 Finder Environment (6/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL16 Running in Sys 6 Finder Environment (6/92)

==========

Article Created: 30 June 1992

TOPIC ----------

Under some circumstances, when using DAL under the Finder with System 6.0.X, DAL will not be able to allocate enough memory to operate properly.

DISCUSSION ----------

DAL is a Macintosh system driver that is installed by an INIT into the System Heap. As such, it has to compete for space with all other drivers. At installation time only a minimum amount of space is allocated to load the driver and its required storage. Space for a DAL session is allocated at CL1Init time. Since the size of the system Heap cannot be changed once the Macintosh is fully booted, there are times when there is not enough space in the System Heap to allocate another DAL session. This problem is not specifically a DAL problem. It is a problem that is common to all drivers that reside in the System Heap.

Possible solutions:

- The best solution to this problem is to run MultiFinder. Under MultiFinder each driver indicates how much space it requires in the "System Heap" and MultiFinder grows the System Heap accordingly.

- If is not possible to run under MultiFinder, then the next best option is to remove an unnecessary INIT from your System Folder. By removing the INIT the driver or other system extension will not get loaded at boot time and thus free up some space in the System Heap.

- There is a file on the DAL Install Disk called "DAL Finder Setup". It is in the "DAL Files" folder. Put this file into your System Folder and reboot. This INIT increases the size of the System Heap by the same amount that MultiFinder would for DAL.

- If none of the previous solutions are possible then as a last resort the "Boot Blocks" can be edited (with 3rd party tools) to allow for more space to be allocated for the System Heap.

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Tech Info Library Article Number:11643

ABS Tech Note: DAL17 INGRES Locking Issues (6/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL17 INGRES Locking Issues (6/92)

==========

Article Created: 30 June 1992

TOPIC ----------

This technical note describes special locking considerations when using DAL with INGRES.

DISCUSSION ----------

By default, INGRES provides "repeatable read" transactions. This means that during a single transaction, your application can repeat a DAL query two or more times and is guaranteed that the query results will be identical. Thus, no database changes made by other users during your transactions will be visible to your program. INGRES provides this high level of transaction integrity by locking the sections of the database that your query has accessed until your transaction ends with a COMMIT or ROLLBACK statement. During your transaction, no other user may update the locked portions of the database.

This default INGRES locking can reduce the amount of concurrent access to an INGRES database, especially when a transaction includes "think time" during which your program is waiting for user input. To increase concurrency, INGRES provides several locking parameters which can be set programmatically through the INGRES SET LOCKMODE statement. These excerpts from the INGRES SQL reference manual, pages 2-56 and 2-57, describe these parameters.

Description of lock modes:

SET LOCKMODE provides four different parameters to govern the nature of locking in an INGRES session:

- Level: This refers to the level of granularity desired when the table is accessed. You can specify any of the following locking levels:

page	Specifies locking at the level of the data page (subject to escalation criteria; see below)
table	Specifies table-level locking in the database
session	Specifies the current default for your INGRES session
system	Specifies that INGRES will start with page-level locking, unless it estimates that more than Maxlocks pages will be referenced, in which case table-level locking will be used.

- Readlock: This refers to locking in situations where table access is required for reading data only (as opposed to updating data). You can specify any of the following Readlock modes:

nolock	Specifies no locking when reading data
shared	Specifies the default mode of locking when reading data
exclusive	Specifies exclusive locking when reading data (useful in "select-for-update" processing within a multi-statement transaction)
system	Specifies the general Readlock default for the INGRES system

- Maxlocks: This refers to an escalation factor, or number of locks on data pages, at which locking escalates from page-level to table-level. The number of locks available to you is dependent upon your system configuration. You can specify the following Maxlocks escalation factors:

n	A specific (integer) number of page locks to allow before escalating to table-level locking. The default "n" is 10, and "n" must be greater than 0.
session	Specifies the current Maxlocks default for your INGRES session
system	Specifies the general Maxlocks default for the INGRES system

  Note: If you specify page-level locking, and the number of locks granted during a query exceeds the system-wide lock limit, or if the operating system's locking resources are depleted, locking escalates to table-level. This escalation occurs automatically and is independent of the user.

- Timeout: This refers to a time limit, expressed in seconds, for which a lock request should remain pending. If INGRES cannot grant the lock request within the specified time, then the query that requested the lock aborts. You can specify the following timeout characteristics:

n	A specific (integer) number of seconds to wait for a lock (setting "n" to 0 requires INGRES to wait indefinitely for the lock)
session	Specifies the current timeout default for your INGRES session (which is also the INGRES default)
system	Specifies the general timeout default for the INGRES system

Against the backdrop of these SET LOCKMODE parameters and options are the INGRES system defaults for each of the parameters:

```
  Level          dynamically determined by INGRES
  Readlock       shared
  Maxlocks       10
  Timeout        0 (no timeout)
```

If you select the system option for any of the SET LOCKMODE parameters, the values above are automatically supplied. When you begin your INGRES session, the INGRES system defaults are in effect. If you override them with other values using the SET LOCKMODE command, you can revert to the system defaults easily.

Similarly, if you set session parameters (such as locking behavior for all user tables accessed by queries in your INGRES session), you can further set parameters for individual tables on an ad hoc basis. After setting the ad hoc locking behavior, you can return it to either the session defaults or to the INGRES system defaults.

INGRES tries to place a lock on every page it touches in a transaction. Depending on the Lockmode, this will lead to an exclusive, shared, or no lock condition on the page. INGRES also escalates locks (as with more than "Maxlocks," the whole table will be locked to prevent deadlocks). The default Lockmode in INGRES is shared. This means that several users can share the same page for "selects," but updates or inserts cannot take place until the page is held only by the updating user. If a user performs a "select * from xxx" type of query, then every physical page in the table is marked and the locks are not removed until the transaction is finished. This prevents other users from making updates to the same table. Concurrency will therefore be reduced.

However, concurrency is only an issue when there are write operations performed on the database on-line (as with updates or inserts). If no updates are going to take place in your application, you should use the "nolock" mode.

If you know in advance that your application will not be updating data in a transaction, it can use the "nolock" mode to eliminate the need for INGRES to lock parts of the database accessed by a query. Here is an example of a DAL sequence that uses this technique:

```
  /* Open INGRES for "select" and non-updating operations only: */
  open INGRES dbms;
  open INGRES database "cl1demo";
  execute in INGRES "set lockmode session where readlock = nolock";
  select * from offices;
  [continue with session]
```

If you do not want to turn off locking, you can still improve concurrency in a query-only application by making sure that a COMMIT statement is executed as soon as you have finished processing each set of query results. Do not perform two or more queries in sequence without an intervening COMMIT statement unless your application absolutely depends on there being no changes to the database between the queries.

Finally, if your application must update the database, it should avoid "think" periods during a transaction that locks the database whenever possible. For example, this statement sequence will work correctly when the lockmode is shared or exclusive, but may lock large parts of the database during the "think time:"

```
  select (my_columns) where bool_expr;
  /* think and make changes */
  update (my_columns) where bool_expr;
  commit;
```

An alternative approach that will improve concurrency is:

```
  /* Do the query the first time without locking */
  execute in INGRES "set lockmode session where level = system,
          readlock = nolock";
  select (my_columns) where bool_expr;
  printall;
  /* application puts data in buffer #1 */
  /* think and make changes and store updates in a buffer #3 */

  /* Turn on locking and do the query a second time */
  execute in INGRES "set lockmode session where level = page,
          readlock = exclusive";
  select (my_columns) where unique_id;
  printall;
  /* application puts data in buffer #2 */

  /* If data remains unchanged from first query, do the update */
  if buffer2 == buffer1 {
      update (my_columns)  where unique_id;    /* using contents of buffer
  #3 */
     commit;
  }
  else
  {
      /* warn the user that the data has changed since last select */
  }

  /* Turn locking back off again */
  execute in INGRES "set lockmode session where level = system, readlock =
  nolock";
```

The "unique_id" can be, for example, the employee number or another identifier that uniquely identifies the rows to be updated. The objective in an update process is to "touch" as few pages as possible, since all touched pages will be locked until the transaction commits. The reason for going through this lengthy process is to avoid having a page locked up for a long time.

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Tech Info Library Article Number:11644

ABS Tech Note: DAL18 Rdb Locking Issues (6/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL18 Rdb Locking Issues (6/92)

==========

Article Created: 30 June 1992

TOPIC ----------

This technical note discusses issues involving DAL performance that are specific to the Rdb database on VAX/VMS.

DISCUSSION ----------

DAL provides a model for specifying the type of "protection" or "locking" desired when using a database or specific table. Both the OPEN DATABASE and OPEN TABLE statements allow for update modes (READONLY/UPDATE) and sharing modes (SHARED/PROTECTED/EXCLUSIVE). The default mode is UPDATE and PROTECTED. Typically this would mean that the user has a "READ/WRITE" lock on the particular table or database. The sharing and update modes are advisory and are passed on to the DBMS only WHEN APPROPRIATE.

Rdb provides a some what different model for specifying protections that does not map well with the DAL model. Rdb uses an extension to SQL transactions — the SET TRANSACTION statement — to signal the type of locking mechanism desired for that transaction. SET TRANSACTION modes are not persistent across subsequent transactions; they must be specified at the beginning of each new transaction or the default mode of "READ WRITE" and "SHARED" will be used.

DAL update and shared modes are not transaction based; that is, in the DAL model, update and shared modes are "global" session modes and are independent of beginning and committing sessions. Consequently, when a DAL user opens a Rdb database or table, specifying a particular update or shared mode, the Rdb transaction modes are not changed. The DAL Server does not alter the Rdb transaction modes because they can not be changed in the middle of a Rdb transaction. One would have to commit the current transaction and begin a new transaction, setting the transaction modes as desired.

There are two possible problems:

Problem: Lock Conflicts caused by inserts and updates while using the Rdb default transaction modes.
Solution: Commit as early and often as possible. Generic DAL applications should commit often to free any locks against tables and indexes accessed. Otherwise, other users might be locked out of one or more tables.

Problem: User wants to specify READ ONLY to prevent locking.
Solution: Applications tailored to Rdb can explicitly begin new transactions with the desired locking and update modes by using the Rdb SET TRANSACTION statement via the DAL EXECUTE IMMEDIATE statement. Below are examples:

```
open rdb dbms;
open rdb database "daldemo";
execute immediate "SET TRANSACTION READ ONLY;" in Rdb;
...queries....
commit;               /* ends this transaction with READ ONLY */
insert into ....
commit;
```

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Tech Info Library Article Number:11645

ABS Tech Note: DAL19 CL1Init XCMD (6/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL19 CL1Init XCMD (6/92)

==========

Article Created: 30 June 1992

TOPIC ----------

This technical note describes clarifies the "Data Access Language Programmer's Reference" for CL1Init XCMD.

DISCUSSION ----------

The documentation in the "Data Access Language Programmer's Reference" indicates that the CL1Init XCMD "parallels" the CL1Init API. This is true except during error processing. If an error is encountered by the CL1Init XCMD, the XCMD will call CLGetErr and CLEnd before returning to HyperCard. The error information that the XCMD gets from CLGetErr is returned to HyperCard in the CL1 globals as defined in the "Data Access Language Programmer's Reference."

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Tech Info Library Article Number:11646

ABS Tech Note: DAL20 DAL, System 7 And The A5 World (6/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL20 DAL, System 7 And The A5 World (6/92)

==========

Article Created: 30 June 1992

TOPIC ----------

This technical note describes how the A5 world and the GrafPort have to be set up before calling DAL in the System 7 environment.

DISCUSSION ----------

The A5 world (an applications global data area) and the GrafPort have to be set up before calling DAL in the System 7 environment. In most cases (that is, when writing an application) this is a standard part of the initialization sequence; but there are environments where this is not true. An example of one such environment is an MPW tool. MPW sets up A5 but does not initialize the GrafPort, so the tool itself has to set up the GrafPort by calling InitGraf.

The following is an example of how to initialize the GrafPort under MPW:

```
  ...
  #define grafSize  206
  #include <quickdraw.h>

      char QD[grafSize];
    int sesnum;        /* this app's current session # */
    long sessid;        /* the current DAL session id */
    char hostname [80],
           username [80],
           password [80],
           connectionInfo [80];
    int status;


  Routine ()
  {
```

```
  ...
     InitGraf(QD);       /* Set up the GrafPort. */
  ...
     status = CLInit (&sessid, hostname, username, password,
  connectionInfo);
  ...

  }
```

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Tech Info Library Article Number:11647

ABS Tech Note: DAL22 DAL Under VM/XA and VM/ESA (9/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL22 DAL Under VM/XA and VM/ESA (9/92)

==========

Article Created: 30 September 1992

TOPIC

This technical note describes special actions necessary when installing the DAL Server in a VM/XA or VM/ESA environment.

DISCUSSION

Certain actions are necessary when installing the V1.3.5 of the DAL Server in a VM/XA or VM/ESA environment. This is because these versions of IBM's VM Operating System do not support the SQL/DS 'attach to database' command. In order to use DAL in these environments, perform the following actions:

- Update the 'ENV DAL' file to specify '@SQL' in the 'SSID=' statement. This will facilitate the use of commercial applications with DAL in a VM/XA or VM/ESA environment.

- If you are entering DAL commands directly (that is, via IDAL) or creating your own application, open the database by issuing the DAL statement 'open database;'. Do not specify a database name.

Note that VM/XA and VM/ESA are not supported by DAL 1.2 or earlier.

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Tech Info Library Article Number:11648

Tech Info Library

ABS Tech Note: DAL23 SELECT FOR EXTRACT Shadow Files (12/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL23 SELECT FOR EXTRACT Shadow Files (12/92)

==========

Article Created: 23 December 1992

TOPIC

This technical note describes using the SELECT FOR EXTRACT construction under DAL.

DISCUSSION

When using the SELECT FOR EXTRACT construct under DAL, DAL stores the data for the cursor in a temporary file on the host. If the permissions to the directory where this is stored are incorrect, it's possible for DAL to return an error (for instance, "-10101 can't open object").

The location these files are stored in can be determined using the following information.

- Under A/UX, the shadow filename is constructed as follows:

    DALTEMPDIR/dal%d%d.out

  where the first %d counts up from 1 and the second %d is the process id.

  DALTEMPDIR is set in /etc/dalrc and is usually /tmp, although the user may change it.

- Under VAX/VMS, the filename generated is:

    DALTEMPDIR:mpx%dXXXXXX.out

  where %d counts up from 1 as above, and XXXXXX is replaced by a number generated by the mktemp() vax system call, and the directory is determined by the DALTEMPDIR logical.

- Under MVS, the shadow filename is constructed as follows:

  ```
  userid.HOSTDAL.OUT.DT%d%t.F%n
  ```

  where %d = two digits for the date (01-31 inclusive), %t = four digits for the time (0000-2359 inclusive) and %n = three digits for the file sequence number (beginning with 001 and incrementing one for each additional file produced per job or task). The userid will be one of the following, depending on how the DAL Server was accessed: (a) the TSO USERID when using the DAL TSO product, (b) the USERID that logged on to the DAL VTAM Server when the VTAM Server is run as a started task (STC), or (c) the USERID of the submitter when the VTAM Server is run as a batch job.

- Under VM, the shadow filename is constructed as follows:

  ```
  DAL%n TEMPFILE *
  ```

  where %n = five digits for the file sequence number (beginning with 00001 and incrementing one for each additional file produced per session). TEMPFILE is the CMS filetype and * indicates that the file will be created on the user's 'A' disk.

- On the AS/400, temporary files are created in the user's temporary library "QTEMP" with the filename "DALTPxxx" where xxx is an ascending integer.

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Tech Info Library Article Number:11649

Tech Info Library

ABS Tech Note: DAL24 WRITE Failures After Client Reboot (12/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL24 WRITE Failures After Client Reboot (12/92)

==========

Article Created: 23 December 1992

TOPIC ----------

This technical note describes using the DALNET MacTCP network adaptor to talk to an A/UX DAL server, and what happens and workaround if the client system crashes.

DISCUSSION ----------

When using the DALNET MacTCP network adaptor to talk to an A/UX DAL server, if the client system crashes it is possible for the host to not recognize the closing of the session. If this happens, pending transactions are not committed and locks that have been created are not cleared.

This problem will show up with the following symptoms: after reboot, a client can connect to the server and do reads of the database but attempts to write will fail, and attempts to delete records will hang indefinitely.

The only workaround at this time is to manually log onto the A/UX server, locate the processes of the original connection and terminate them. This problem will be resolved permanently in a future release.

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Tech Info Library Article Number:11650

ABS Tech Note: DAL25 DB2 and Secondary AUTHIDs (12/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL25 DB2 and Secondary AUTHIDs (12/92)

==========

Article Created: 23 December 1992

TOPIC

This Tech Note explains what actions are necessary to implement DAL using secondary AUTHIDs, a facility of DB2. Secondary AUTHIDs are utilized in conjunction with a system resource security package (for example, RACF) to simplify access to tables under DB2.

DISCUSSION

Information on DB2 modifications necessary to support secondary AUTHIDs should be obtained from the relevant IBM publications. Similarly, more information on security procedures and strategies (such as GROUP definitions with RACF) can be found in the related IBM or third-party publications.

Why secondary AUTHIDs might be used

Secondary AUTHIDs are generally implemented in large IS environments where there are many users that require access to multiple tables in DB2. Although a GRANT could be done for each user/table combination, it is easier to assign users to different groups within the security software and then GRANT table access to the groups, as opposed to the users. For example, there might be fifteen users who all work in the accounting department that require identical access to a DB2 table. All fifteen users can be 'connected' to a group named 'ACTG' within RACF and then the necessary access can be GRANTed (using SPUFI or other DB2 utilities) to 'ACTG'. This way, if more people are added to the accounting department, they only have to be 'connected' to the group within RACF; no other GRANT would be necessary.

How DAL implements secondary AUTHIDs

Since DAL is not used for GRANTing access to tables or performing any system security functions, it can only take advantage of those accesses that are already in place. To do so, the database open must be performed with the 'as user <username>' option. This should be done right after opening the DBMS. An example is shown on the next page.

The DBMS and database are opened without usage of secondary AUTHIDs. The USERID that was utilized to logon to the DAL MVS/VTAM Server is 'RJOHNSO'.

```
DAL> open DB2 DBMS;
DAL> open database 'DB2T' ;
```

A selection is performed against a nonexistent table. The error generated indicates that the USERID was prepended to the query.

```
DAL> select * from foo;
••••Remote DAL Error••••
•Error:
undefined table name in database (-10204) table not found in database
"network", line 1 :
DSNT408I SQLCODE = -204, ERROR:  RJOHNSO.FOO IS AN UNDEFINED NAME
DSNT415I SQLERRP = DSNXOCA SQL PROCEDURE DETECTING ERROR
DSNT416I SQLERRD = 500  0  0  1  0  0 SQL DIAGNOSTIC INFORMATION
```

The database is closed and reopened using a secondary AUTHID that either does not exist or of which 'RJOHNSO' is not a member.

```
DAL> close database;
DAL> open database 'DB2T' as user 'DALPROD' ;
••••Remote DAL Error••••
•Error:
database not opened (-923) DB2T
"network", line 1 :
DSNT408I SQLCODE = -553, ERROR:  DALPROD SPECIFIED IS NOT ONE OF THE
VALID AUTHORIZATION IDS
DSNT415I SQLERRP = DSNXRST SQL PROCEDURE DETECTING ERROR
```

The database is now opened using a valid secondary AUTHID, and a selection is again performed against a nonexistent table. This time, however, the error message indicates that the secondary AUTHID is now prepended to all queries.

```
DAL> open database 'DB2T' as user 'DALTEST' ;
DAL> select * from foo;
••••Remote DAL Error••••
•Error: undefined table name in database (-10204) table not found in
database
"network", line 1 :
DSNT408I SQLCODE = -204, ERROR:  DALTEST.FOO IS AN UNDEFINED NAME
DSNT415I SQLERRP = DSNXOCA SQL PROCEDURE DETECTING ERROR
DSNT416I SQLERRD = 500  0  0  1  0  0 SQL DIAGNOSTIC INFORMATION
```

If the table 'DALTEST.FOO' actually existed, a query would have been

performed against it even though the USERID that logged on to the server is 'RJOHNSO'.

Verifying DB2 service levels

If V2.2.0 of DB2 is being used, it is important to verify the application of a PTF from IBM. This PTF, number UN23430, is specifically related to the use of secondary AUTHIDs with DB2. Contact your authorized IBM service representative for more information.

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Tech Info Library Article Number:11651

Tech Info Library

DAL Message H000020IPa (2/93)

Revised: 3/8/93
Security: Everyone

DAL Message H000020IPa (2/93)

==========

Article Created: 24 February 1993

TOPIC ----------

I am using Blythe client Omnis 7 1.1 to connect to a DAL VTAM Server 1.3.5.

I issue DALSVR PKT3270 user pswrd and get the proper response:
H00415dbx 1760

Then, anything else I type: (begin, open dbms) gets message:
H000020IPa

DISCUSSION ----------

The "dalsvr pkt3270 user password" command was documented in the installation guide to allow people to verify the VTAM server installation without having to rely on making a valid DAL Preferences script and connection from a Macintosh.

However, immediately following the detail on how to enter that command (and what you should see as a response) is the statement "Press PF3 to exit the server and return to the VTAM splash screen."

That final statement is there because it is impossible to communicate to the server directly. You can fake it into accepting the session, but you cannot actually "speak" to it as it thinks that it is talking to the DAL client and they converse in ASCII and a "DAL code".

In essence, when you tried to say "open dbms..." to the server it said: "I don't know what you're talking about -- I'm terminating this session!!"

So you can't do anything more than is documented in the install guide. You will have to use an application (Omnis) or the DAL Tester to actually access the DBMS and obtain data.

..TIL11653-DAL_Message_H000020IPa_2-93.pdf

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Tech Info Library Article Number:11653

Tech Info Library

Centris: Performance Questions (5/93)

Revised: 5/17/93
Security: Everyone

Centris: Performance Questions (5/93)

==========

Article Created: 12 May 1993

TOPIC ----------

Is there any known or measured performance difference in using Excel or other math intensive applications on a Macintosh IIci and on a Centris 610? Is there any compatibility issues with the Centris 610, since it does not have a floating point unit (FPU)?

Can you provide me with some sort of a benchmark or comparison chart that compares the Macintosh IIci, Macintosh Centris 610 & 650, and Quadra 700 & 800? The product introduction materials only show overall system performance.

DISCUSSION ----------

Product Marketing sent me with the following information. The testing for these comparisons was done as "application-level benchmarks":

    Centris 610 is up to 2 times faster than a Macintosh IIvx/IIci
    Centris 650 is up to 3 times faster than a Macintosh IIvx/IIci
    Centris 650 is 30% faster than a Centris 610
    Quadra 800 is 25% faster than a Centris 650

When asked specifically about the possibility of upgrading the 68LC040 (no FPU) to a 68RC040 (includes FPU), they responded that, "This is neither endorsed nor recommended by Apple, and will not be an Apple offering." They speculate that some enterprising third party might offer such an upgrade kit in the future, but they do not know of one now.

Since it has no FPU, the Centris 610 would require applications that are not dependent on the presence of an FPU for compatibility reasons.

While performance could be expected to be slow on the Centris 610 for a

very math intensive application it is expected that the Centris 610 would still be somewhat faster than the Macintosh IIci.

If your customer wants specifics about performance, Speedometer is a public domain tool which provides performance comparisons. On America OnLine is an article that gives a detailed comparison of a number of CPUs including the Centris 610/650 and Quadra 700/800/950. That comparison table is included here in the hope that it will answer your customer's need.

---------- Article from America OnLine ----------

Here are Speedometer 3.11 numbers for some new machines. Also included are performance numbers for the Macintosh IIvx, Quadra 700 & 950 for comparison purposes. The Apple 1 gigabyte hard disk was used for all machines. The LC III had an FPU installed, the Centris 650 had a 68040, not a 68LC040 (that is, it had a hardware FPU), and the Centris 610 used a 68LC040 (in other words, no FPU). An Apple 14-inch color display was used on all machines. The disk cache was set to 256K on all machines.

Test	LC III	IIvx	C610	C650	Q700	Q800	Q950
CPU	6.89	7.03	13.01	16.32	16.17	21.62	21.62
Graf	7.91	8.31	17.08	21.26	20.19	27.38	25.62
Disk	3.40	2.93	4.94	4.99	5.14	5.09	5.24
Math	23.87	23.52	24.58	95.95	95.87	128.07	127.97
P.R.	8.20	8.24	13.77	23.50	23.14	30.69	30.18
KWhet	47.51	46.70	31.73	195.69	155.08	256.85	205.48
Dhry	5.85	5.72	15.71	19.74	19.74	26.32	26.32
Towers	5.83	5.29	15.22	18.91	18.91	26.00	24.96
QuickSrt	6.52	7.15	14.31	17.76	17.76	23.41	23.41
Bub. Srt	7.71	8.18	14.46	18.00	18.00	24.55	24.55
Queens	7.90	7.39	14.77	19.08	19.08	24.10	25.44
Puzzle	8.95	10.27	17.91	22.46	22.84	30.11	30.11
Permute	6.92	5.13	16.38	20.25	20.63	27.85	27.17
FFT	25.86	24.82	21.35	123.59	123.59	163.07	165.37
F.P. Mtrx	25.54	25.24	22.68	124.75	122.40	170.71	166.33
Int Mtrx	7.36	8.73	19.25	23.53	24.20	32.58	31.37
Sieve	8.61	8.06	16.69	20.54	19.07	27.09	25.26
Bench Ave.	13.71	13.56	18.37	52.03	48.44	69.39	64.65
FPU FFT	1.95	2.00	N/A	5.60	5.60	7.64	7.64
FPU KWhet	2.10	2.69	N/A	11.31	11.02	15.36	14.83
FPU Matrix	2.12	2.73	N/A	11.50	10.73	14.64	13.42
FPU Ave.	2.06	2.47	N/A	9.47	9.12	12.54	11.96
Color Graphics							
Mono	2.03	2.14	4.16	5.08	4.83	6.46	6.08
2 Bit	2.17	2.24	4.43	5.42	5.17	6.91	6.53

4 Bit	2.31	2.28	4.58	5.60	5.26	7.16	6.69
8 Bit	2.33	2.17	4.64	5.72	5.36	7.33	6.79
Color Ave.	2.21	2.21	4.45	5.45	5.15	6.97	6.52

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Tech Info Library Article Number:11654

Tech Info Library

Apple II: Information Sources (2/97)

Revised: 2/18/97
Security: Everyone

Apple II: Information Sources (2/97)

==========

Article Created: 25 February 1993
Article Reviewed/Updated: 17 February 1997

TOPIC ----------

This article describes some information sources for the Apple II products.

DISCUSSION ----------

GS+

An Apple IIGS magazine published bimonthly by EGO Systems.

EGO Systems
P.O. Box 15366
Chattanooga, TN 37415-0366

A+/InCider

An Apple II and Macintosh magazine published monthly by IDG.

IDG Communications/Peterborough, InCider
P.O. Box 50358
Boulder, CO 80321-0358

A2-Central

Publishes a number of newsletters that are devoted to the Apple II only.
Here's the current list:

A2-Central

Published monthly since January, 1985 and provides technical information on the Apple II.

A2-Central on Disk has been published monthly since February, 1989. Each 800K

3.5-inch disk contains the full text of that month's paper issue, plus text-talking software for blind subscribers. In addition, specific issues contain Apple system software, technical note updates, public domain and shareware software.

Studio-City

Published every other month since February, 1990. Each issue consists of two 800K 3.5-inch disks and includes a HyperStudio stack containing editor Terry Baker's tips, tricks, and letters from readers.

TimeOut-Central

Published every other month since September, 1990. Each issue consists of one 800K 3.5-inch disk and includes a column by the editor, letters from readers, as well as public domain and shareware AppleWorks and TimeOut files.

Script-Central

Published bimonthly and is all about Apple's HyperCard IIGS and HyperTalk, its scripting language.

A2-Central
P.O. Box 11250
Overland Park, KS 66207

The Road Apple

An Apple II "End Users" Underground Newsletter published six times a year.

Al Martin
1121 NE 177th, Suite B
Portland, OR 97230.

Scarlett

A monthly newsletter published by:

Big Red Computer Club
423 Norfolk Avenue
Norfolk, NE 68701.

AppleWorks Forum

A monthly newsletter published by:

The National AppleWorks User Group
Box 87453
Canton, MI 48187

HyperStudio Network

A quarterly newsletter about HyperStudio. They publish an annual 'Best of HyperStudio' disk of stacks, and have discounts on HyperStudio accessories. They also have some teacher-oriented materials.

HyperStudio Network
Box 103,
Blawenburg, NJ 08504

Softdisk and Softdisk GS

Monthly disk magazines containing a variety of software (public domain, shareware, clip art, reviews, etc.). Softdisk is available on 5.25- or 3.5-inch disks. Softdisk GS is available only on 3.5-inch disks.

Softdisk Publishing
P.O. Box 30008
Shreveport, LA 71130-0008
AOL: zak Internet: zak@aol.com

USUS

An international non-profit organization dedicated to promoting and influencing software standards to aid in the development of portable software. They have a large software library including a lot of source code (for almost every language or computer).

USUS Inc.
P.O. Box 1148
La Jolla, CA 92038

Article Change History:
17 Feb 1997 - Reviewed for technical accuracy, revised formatting.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:11656

Tech Info Library

PowerBook Duo: Not Retaining Network Selections (1/97)

Revised: 1/29/97
Security: Everyone

PowerBook Duo: Not Retaining Network Selections (1/97)

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Article Created: 19 January 1993
Article Reviewed/Updated: 29 January 1997

TOPIC ----------

I find that my PowerBook Duo is not retaining its network connection information when it is ejected from the Duo Dock, used, and reinserted back into the Duo Dock. I have an Ethernet connection to the Duo Dock, but the PowerBook Duo defaults back to LocalTalk connection when reinserted into the Duo Dock.

Shouldn't the Duo remember the network selection when it is reinserted into the Dock?

DISCUSSION ----------

A PowerBook Duo may not retain its network connection information when it is ejected from the Duo Dock, used, and reinserted back into the Duo Dock. The problem is related to the version of the Network control panel currently installed.

When the Network Software Installer (NSI) is used to install network software, the Network control panel is replaced. The NSI 1.2.3 disk installs Network CDEV version 2.3.3, which remembers the network setting. The NSI 1.3 disk installs Network CDEV version 3.0, which does not remember the network selection. The Network CDEV version 3.0.2 (from System 7.5, or NSI 1.4.4 and later) remembers the network connection of the Duo Dock when the Duo is re-inserted.

The problem can be worked around by drag copying the 2.3.3, or the 3.0.2 version of the Network CDEV to the Control Panels folder on the Duo.

You can obtain versions of the Network Control Panel which retain the network settings from the following locations:

Network Control Panel v.2.3.3

- System 7.1

- Network Software Installer 1.2.3
- Online services

Network Control Panel v.3.0.2

- System 7.5
- Network Software Installer 1.4.4
- Online services

This problem has been corrected in System 7.5, and the Network Software Installer v1.4.4 and later.

If you are using System 7.5.2, there are no known workarounds to this problem at this time. If you are using System 7.5.3 (System 7.5 Update 2.0), this problem may behave differently depending on whether you're using Open Transport or Classic AppleTalk:

*If Classic AppleTalk is the selected networking, there is no way around the problem at this time.

*If Open Transport is the selected networking, the problem occurs if the PowerBook is put to sleep while it is outside of the dock. The problem also occurs with saved configuration settings. That is, a configuration setting with the Printer Port selected for AppleTalk will revert to Modem Port when the Duo is re-docked. There may be other instances when network settings change.

Apple is currently investigating this problem and hopes to have it fixed in a future system update.

This article was published in the "Information Alley":
Volume II, Issue 11, Page 10

Article Change History:
29 Jan 1997 - Updated with additional Open Transport information.
16 May 1996 - Updated for Open Transport and System 7.5 Update 2.0.
29 Sep 1995 - Added Info Alley information; updated article.

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Tech Info Library Article Number:11658

Tech Info Library

PowerBook Duo, Duo Dock, Token Ring and NSI 1.3 (8/93)

Revised: 5/31/94
Security: Everyone

PowerBook Duo, Duo Dock, Token Ring and NSI 1.3 (8/93)

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Article Created: 26 February 1993
Article Reviewed/Updated: 23 August 1993

TOPIC -----

I am evaluating the PowerBook Duo and Duo Dock to purchase, but I won't make a purchase decision until I'm assured that the Apple Token Ring 4/16 NB card will work in them.

DISCUSSION -----

We can assure you that the Duo and Due Dock work properly with the Token Ring 4/16 NB card. We have run TokenTalk and SNA•ps clients over them without problem, When installing TokenTalk drivers be sure to use Network Software Installer (NSI) 1.3.3 or higher which resolves some problems with earlier versions of NSI.

If you are using an earlier version of NSI, there are some VERY IMPORTANT CAUTIONS to guarantee proper operation. Below is a list:

- Install TokenTalk drivers from the System 7.1 disks included with the Duo.

- Keep the Network Control Panel that comes with System 7.1 disks. With this version of the Network CDEV, the Duo will remember its Token Ring connection in the Dock when it's returned after being started up outside the Dock.

- DO NOT EVER use NSI 1.3 with the Duo and Duo Dock. It's not supported on this machine because it alters the Network Control Panel to version 3.0, which forgets network attachments, and it confuses the Duo AppleTalk version.

- DO NOT EVER use NSI 1.2.1, which comes in the box with the Token Ring 4/16 NB card. We've had issues with the Duo, Dock, and Token Ring 4/16 NB card when using NSI 1.2.1. The root cause was the System file being

corrupted while installing Token Ring drivers from NSI 1.2.1. There was also an issue of having older versions of third-party INITs installed as well.

- Install the Token Ring 4/16 NB card in the Dock slot which is farthest from the metal case, or the slot located more in the center of the Dock (there are two slots). The Token Ring 4/16 NB card is quite high with the IBM Token Ring chip set installed, and if the card is placed in the lower slot, the chip set touches the metal chassis thus potentially grounding out parts of it.

- Do not recommend installing other cards with the Token Ring 4/16 NB card. The slots are very tight and the Token Ring 4/16 NB card is very wide. We had trouble getting an Apple Ethernet NB card in the Dock with the Token Ring 4/16 NB card.

- The Token Ring adapter cable may have to be tightened to the card with a slight amount of plastic from the Dock. Basically, the slot openings are not wide enough to accommodate the larger Token Ring DB-9 connectors, and it may be necessary to tighten the connector over some plastic. It works OK, just be sure to tighten the connector to the card fully.

- Be sure you have a manual on the Dock showing how to get it open. It is not obvious and a bit tricky.

So the bottom line; Token Ring 4/16 NB cards in Duo Docks work fine, use the Token Ring drivers which come with System 7.1 disks, place the card in the most inside of the two slots, and tighten the cable fully.

Article Change History:
23 Aug 1993 - Updated for NSI 1.3.3.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11659

Tech Info Library

DAL Server For Novell Networks and HP9000 (2/93)

Revised: 3/8/93
Security: Everyone

DAL Server For Novell Networks and HP9000 (2/93)

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Article Created: 25 February 1993

TOPIC ----------

Has anyone worked with the Netware SQL Development Kit? I understand this incorporates a DAL Server for Novell's Btrieve DBMS. Where can I get the DAL Command set for embedding into a C program running on my Macintosh, and to then access Btrieve information from the Novell server? (I would think this would be part of the Netware SQL Development Kit but it's not.) What else would I need on the Macintosh to support DAL?

I would also appreciate a confirmation of a DAL server existing for Oracle on an HP9000 UNIX host. Does one exist?

DISCUSSION ----------

Yes, the DAL Server from Novell is supposed to support access to data stored by Btrieve.

The information that you desire about how to code the DAL API commands in a C program is in the "Data Access Language Developer's Toolkit" from APDA. The DAL Developer's Toolkit includes the "Programmer's Guide" and "Application Developer's Guide", which should tell you all you need to know to develop your own DAL applications.

With System 7.0 and 7.0.1, minimal DAL Client software shipped as part of the system software. This client included only AppleTalk, AppleTalk via the Comm Toolbox ADSP Tool and Async connection support. If additional connectivity was desired, then the client (as part of the Developer's Toolkit) would need to be purchased separately.

As of System 7.1, none of the DAL Client is shipped with the system software. Therefore, the Developer's Toolkit, or the new "Data Access Language Client for Macintosh" product, which does not contain the

developer libraries and documentation, would be required via a separate purchase from APDA.

You also have the option of using commercially developed products which support DAL access such as: ClearAccess, GQL, DataPrism, and so on, to access the data on their Novell DAL Server.

Pacer Software has confirmed that they are shipping a DAL Server for the HP9000 with support for Oracle as the DBMS.

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Tech Info Library Article Number:11660

Tech Info Library

FPU (Floating-Point Unit): Benefits

Revised: 3/1/93
Security: Everyone

FPU (Floating-Point Unit): Benefits

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Article Created: 1 March 1993

TOPIC ----------

This article describes the benefits of Floating-point Units, also known as FPUs or math coprocessors.

DISCUSSION ----------

What Kind of Applications Benefit Most

Floating-point Units (FPUs or math coprocessors), such as the 68881/68882, offer the greatest benefit in applications that tend to be very floating-point (arithmetic) intensive. The specific types of applications that benefit most from an FPU are those that process large amounts of floating-point instructions for precision, and will utilize an FPU extensively. Examples are CAD/CAM, 3-D modeling, scientific applications, and financial applications.

To realize the full potential of an FPU, applications must access the FPU directly by using MC68881/MC68882 assembly language instructions, or by using the MC68881/MC68882 compiler option when programs are created. Programs thus achieve a speed gain anywhere from 40 to 700 times in processing floating-point instructions.

Applications that do not access the FPU directly can still realize a significant gain in calculation speed if they use SANE (Standard Apple Numerics Environment). SANE automatically calls on an FPU, if one is present, yielding a speed increase from 5 to 50 times.

Applications That Benefit Less

With desktop publishing (DTP) applications, the use of floating-point arithmetic is limited, and the overall gain from an FPU will be minimal.

In applications such as video, QuickTime, or pre-press color, most of the calculations involved are on large amounts of integer data, and speed gain from an FPU will be minimal, if any.

How To Tell the Difference

In most cases, to determine the use of an FPU or SANE by an application, you need contact the software developer. Some applications are more explicit: they check for an FPU and inform the user. For example, Excel states in its "About..." box whether a math coprocessor is present.

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Tech Info Library Article Number:11662

Centris 650: No FPU Upgrade from Apple (7/94)

Revised: 7/28/94
Security: Everyone

Centris 650: No FPU Upgrade from Apple (7/94)

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Article Created: 1 March 1993
Article Reviewed/Updated: 28 July 1994

TOPIC ----------

Has Apple announced an FPU upgrade for the Centris 650?

The information in this article relative to the Centris 650 is also relevant to the Quadra 650.

DISCUSSION ----------

A Centris 650 can be ordered with an FPU at the time of purchase, but Apple is offering no post-sale upgrade.

All configurations, except for the 4/80 configuration (M1276), ship with the 68RC040, which has the FPU on-board. Customers who purchase the 4/80 configuration (M1276), then decide to upgrade, must rely on other vendors for an FPU upgrade.

Article Change History:
28 Jul 1994 - Added reference to Quadra 650 to aid in searching.
12 Aug 1993 - Clarified which model configuration this applies to.

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Tech Info Library Article Number:11663

Tech Info Library

A/UX: AcuCOBOL-85 Compatibility (2/93)

Revised: 3/9/93
Security: Everyone

A/UX: AcuCOBOL-85 Compatibility (2/93)

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Article Created: 25 February 1993

TOPIC ----------

I have recently transferred my information from a Wang system to a Macintosh. The one application that remains is my lawyer's billing system. I found that this system is available on UNIX running under AcuCOBOL. Will AcuCOBOL run under A/UX?

DISCUSSION ----------

According to A/UX Solution Guide on page 182, AcuCOBOL-85 from AcuCOBOL, Inc. is compatible with A/UX.

AcuCOBOL Technical Support indicated the following:

- AcuCOBOL-85 version 1.5.5 or v 2.0.4 is for Macintosh II computers under A/UX 2.0.1

- AcuCOBOL-85 version 2.0.4 For Quadra is for Quadra computers under A/UX 3.0

For more details, contact AcuCOBOL, Inc. directly. To locate a vendor's address and phone number, use the vendor name as a search string.

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Tech Info Library Article Number:11664

Tech Info Library

Apple Internet Router, Serial Ports, and Switched 56 (2/93)

Revised: 3/9/93
Security: Everyone

Apple Internet Router, Serial Ports, and Switched 56 (2/93)

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Article Created: 26 February 1993

TOPIC ----------

Can I place a third-party Comm ToolBox compliant NB Serial card into a Macintosh running Apple Internet Router 3.0, and can I use the card to perform async half routing? I want to create a dedicated router which routes one TokenTalk, one LocalTalk, and one or two 56Kb serial links.

I have my own switch 56 lines, DSU/CSU's, all via async capability. The desire is to add a Hurtler card and drive the line at a 57.6 Kb rate from the router. The card has its own processor to maintain router performance.

Questions:

- Does the Internet Router 3.0 use Comm ToolBox compliant ports like ARA does?
- Is this a reasonable configuration, or is there a better AppleTalk only router for Token Ring to SW56? LocalTalk would be nice as well.
- If the Hurtler card can be seen by the router, will it assist performance over a Macintosh built-in serial port?

DISCUSSION ----------

The Apple Internet Router will not support any devices other than the built-in serial ports for dial-up routing. But all is not lost, MultiAccess Computing builds a Switched 56 card for the Macintosh, and provides an ADEV that allows you to use it as a standard interface for routing AppleTalk over the SW56 link.

Contact MultiAccess Computing for more information on their card. To locate a vendor's address and phone number, use the vendor name as a search

string.

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Tech Info Library Article Number:11667

DAL Temporary Datasets and ACF2 Violations (2/93)

Revised: 3/8/93
Security: Everyone

DAL Temporary Datasets and ACF2 Violations (2/93)

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Article Created: 26 February 1993

TOPIC ----------

My DAL server was recently abnormally terminated by ACF2. I found that ACF2 terminated DAL since there were too many ACF2 violations. Apparently a temporary dataset named "userid.hostdal.out.dt231323.f001" was being created by DAL, but DAL did not have create authorization. I have worked around this problem by creating a ACF2 rule that allows DAL to create and write to this dataset.

I'm wondering what other datasets DAL creates that might need ACF2 authorization. I would like to create a generic, or at least less specific, ACF2 rule that will allow DAL to create the datasets it needs.

DISCUSSION ----------

The temporary dataset being created with the dataset name of:

    userid.hostdal.out.dt999999.f001

occurs whenever:

- There is a large query done whose return dataset will not fit in internal storage.
- A query is done for either extract or scroll.

The more generic ACF2 rule to set up would be:

    userid.hostdal.out

as the next field, date/time (dt999999), will change all the time.

The only other datasets that would be created by DAL, and they would NOT be temporary ones, would be the result of requesting logging in the environment file -- which hopefully they DO NOT do.

- If the Environment file contains the statement:

      DALSESLOG=TRUE

  the dataset name will be created as:

      userid.dalses.log

- If the Environment file contains the statement:

      DALLOGGING=TRUE

  the dataset name will be created as:

      userid.hostdal.log.dt999999.f001

In summary, create the more general ACF2 rule which allows all datasets created with the name beginning as:

    userid.hostdal.out

and not specify the date/time portion.

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Tech Info Library Article Number:11669

ABS Tech Note: SNA•ps00 About SNA•ps Tech Notes (5/93)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: SNA•ps00 About SNA•ps Tech Notes (5/93)

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Article Created: 24 May 1993

TOPIC ----------

This document accompanies each release of Enterprise Technical Notes.

DISCUSSION ----------

We want Technical Notes to be distributed as widely as possible, so they are sent to all Partners and Associates at no charge; they are also posted on AppleLink in the Developer Services Bulletin Board.

We place no restriction on copying Technical Notes, with the exception that you cannot resell them, so read, enjoy and share. We hope Enterprise Technical Notes will provide you with lots of valuable information.

Technical notes are a ‘living’ complement to product documentation, be it Inside Macintosh or other documentation. This means that they are updated on a regular basis, so as to be accurate and up to date. New Notes are added as required.

This technical note is an index of all technical notes related to the SNA•ps and related products. It also documents all changes to the technical notes since the previous release.

Index

Technical Note	Subject	Last Revision
SNA•ps00	About SNA•ps Technical Notes	May, 1993
SNA•ps01	Version Compatibility	May, 1992
SNA•ps02	Gateway Memory issues	May, 1992
SNA•ps03	MCP Memory	May, 1992
SNA•ps04	Bullets	May, 1992
SNA•ps05	3287 Tips	Apr, 1993

SNA•ps06	Modem Configurations	Oct, 1992
SNA•ps07	Finding Gateways	May, 1992
SNA•ps08	3270 API	Apr, 1993
SNA•ps09	Gateway Performance Tuning	May, 1992
SNA•ps10	Access/3270 Internals	Apr, 1993
SNA•ps11	Q&A	Apr, 1993
SNA•ps12	APPC Samples for AS/400	Oct, 1992
SNA•ps13	Admin Trace V1.1.1	Apr, 1993
SNA•ps14	APPC Security	Feb, 1993
SNA•ps15	APPC Return Codes	Feb, 1993
SNA•ps16	Independent LU Configuration	Feb, 1993
SNA•ps17	Downstream Configuration	Feb, 1993
SNA•ps18	V25bis Autodialing	Apr, 1993
SNA•ps19	System Heap Fragmentation	May, 1993
SNA•ps21	Serial NB cards and Duo Docks	May, 1993

Changes since last release:

New: SNA•ps19, SNA•ps21

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Tech Info Library Article Number:11681

Tech Info Library

SNA•ps 3270 1.1.1 Release Notes (2/93)

Revised: 3/8/93
Security: Everyone

SNA•ps 3270 1.1.1 Release Notes (2/93)

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Article Created: 19 February 1993

TOPIC ----------

This article describes the release notes for SNA•ps 3270 1.1.1.

DISCUSSION ----------

Fixed in Previous Release (v1.1)

- A read buffer problem was fixed. This bug caused bad data to be sent to the host when requesting color attributes. If this data was then sent back to SNA•ps 3270 by the host, SNA•ps 3270 would give a negative response.

- ASCII translation tables were being released before text file transfer completed when multiple file transfers were taking place at the same time. This caused garbage data to appear in the file that finished the transfer last.

Fixed in This Release (v1.1.1)

- An alert was added to handle a new gateway error received when too many clients are connected to a gateway.

- A simple security mechanism was added. If the security resource is removed from the application file, then the user cannot change the default connection or select a new connection for a document. An administrator must supply a preferences file with a default connection or a document with the appropriate connection already selected.

- A problem with an improper positive response to a bind was fixed.

- Resources were added for new Norsi keyboard.

- The ability to type-ahead was added. After an AID key is entered, SNA•ps 3270 will still accept keystrokes even if input is inhibited.

- Keystroke handling in numeric fields was changed to accept comma and dup keys.

- A pop-up menu in the connection dialog now allows model type selection for SNA•ps Gateway connections. This feature only works if the dynamic log mode feature of VTAM is turned on (this feature first binds, then queries the terminal for desired screen size, then unbinds and rebinds with the desired screen size). If it is not turned on, selecting a specific model has no effect.

- Printing speed was improved for system 7.0. When printing, SNA•ps 3270 first checks to see if the Noiro font is installed. If it is, that font is used for printed output. An initial bug with this new printing feature caused printed text to be improperly clipped in some font sizes. This has been fixed in this release.

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Tech Info Library Article Number:11683

Tech Info Library

SNA•ps 3287 1.1.1 Release Notes (2/93)

Revised: 3/8/93
Security: Everyone

SNA•ps 3287 1.1.1 Release Notes (2/93)

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Article Created: 19 February 1993

TOPIC ----------

This article describes the release notes of SNA•ps 3287 1.1.1.

DISCUSSION ----------

Fixed in This Release (v1.1.1)

- Text file output now properly converts unwanted control codes in the data stream into characters that are handled properly by text editors.

- A problem handling end-of-bracket markers during output to text file was fixed. The original symptom was a failure to append subsequent data to the text file.

- A typo in the OpenSession code that prevented use of translation tables other than US English was fixed.

- The interface to the Macintosh Printing Manager was reworked to look more like a "normal" Macintosh application: the entire print job is now printed modally, with background printer spoolers such as PrintMonitor providing optimal response time. Previously, the connection to the Printing Manager was established as soon as the session had data to print, and not closed until the print job timed out (a potentially long interval); during this interval the user could muck around with the machine except on direct-connect printers: mucking around is OK on the current LaserWriter driver and is deadly on the current ImageWriter driver. The change in 1.1.1 is to wait until the job times out, and then open the Printing Manager connection, print the entire job, and close the connection. This eliminates the ability to muck around (which may not be safe on future or other network-connected printer drivers) and eliminates the long interval during which the Printing Manager connection was kept

open on direct-connect printers even if they supported print spooling.

- Because of the changed interface to the Printing Manager, the default timeout setting was changed to include a 200-page timeout limit. This is because at the default memory size of 512K, we can guarantee having enough memory to accumulate and then print 200 pages without running out of memory, and the changed Printing Manager interface means that we accumulate data until an entire job has arrived (as opposed to printing each page as it arrives). Otherwise, if print jobs arrive without the default timeout gap of 30 seconds, we would eventually run out of memory and stop receiving -— and thus never print the job until the user intervened and customized the timeout settings. The new default setting simply guarantees that SNA•ps 3287 can be installed and used without fine-tuning the timeout settings even if print jobs arrive continuously.

Known Problem Areas

- Printing on the LaserWriter driver with background printing turned off (and therefore under System 6.x with MultiFinder turned off) does not work.

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Tech Info Library Article Number:11684

SNA•ps Access/3270 1.1.1 Release Notes (6/96)

Revised: 6/28/96
Security: Everyone

SNA•ps Access/3270 1.1.1 Release Notes (6/96)

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Article Created: 19 February 1993
Article Reviewed/Updated: 28 June 1996

TOPIC ----------

This article describes the release notes of SNA•ps Access/3270 1.1.1.

DISCUSSION ----------

Notes

This is a bug fix release of only SNA•ps Access/3270. These files must be placed in the System Folder for System 6.x, or in the Extensions Folder for System 7.x, and the Macintosh must be restarted.

SNA•ps Access/3270 Bugs Fixed Since 1.1

• A new SNA•ps Access/3270 specific error code has been added and may be returned by OpenHostConns: kCapyTooManyUsers (-8527) which indicates that the maximum number of gateway clients has been exceeded.

• Double-byte support for LU1 and LU3 printers has been added, but is not fully tested.

• QR DDM: SNA•ps Access 3270 uses 0x2000 as the value for MAX DDM In and MAX DDM Out. This is a resource item and may be changed in SNA•ps Access/3270. It has currently been reduced to 0x07D0 in the shipped version as a customer has reported problems with host applications at the higher value.

• The default language is now used in OpenSession when EITHER a nil hostLangDef pointer was passed OR when a count of zero languages was passed. In the 1.1 version the default language was used only when a count of zero languages was passed. Starting with 1.1.1B1, the default language was used only when a nil hostLangDef pointer was passed.

• The cursor width returned in GetUpdate, GetCursorPos, and SetCursorPos is now

returned as kDoubleWidth when the cursor is positioned under an SI character, even though the width reported in the DAB for the SI is single width (Elex feature).

• When writing a character on SO/SI or SI/SO pairs (two bugs fixed):

1) SO Ca/Cb Cc/Cd SI SO Ce/Cf Cg/Ch SI: When you position the cursor under SI, select the double byte character set, and enter a DOUBLE BYTE CHARACTER, Ci/Cj, then the buffer now becomes 'SO Ca/Cb Cc/Cd Ci/Cj Ce/Cf Cg/Ch SI', the cursor goes under Ce/Cf, and SI is be deleted.

2) SO Ca/Cb Cc/Cd SI SO Ce/Cf Cg/Ch SI: When you position the cursor under SI, select the single byte character set, and enter a SINGLE BYTE CHARACTER, C1, then the buffer now becomes 'SO Ca/Cb Cc/Cd SI C1 sp SO Cg/Ch SI' and the cursor goes under the space with single width.

• The sysz resource in SNA•ps Access/3270 has been increased by 15K to make loading at boot time more reliable.

• SNA•ps Access/3270 no longer crashes when loading at boot time on a Mac Plus. This was caused by indirectly calling the _HWPriv trap which is not implemented on a Mac Plus.

• DBCS: Double byte characters are now allowed in a numeric field.

• DBCS: If you overwrite an SO while inserting a DB, it now may do an automatic delete.

• DBCS: If on an attribute, then it can't be 1st or second-byte of DBCS.

• DBCS: Several other changes for DBCS handling.

• We now reset the reply mode to Field Reply Mode when the WCC has the WCCRESET bit if the write command is an Erase/Write or an Erase/Write Alternate. If the write command is "Write" the reply mode remains unchanged.

• Opening a "kept" session no longer crashes sometimes.

• File Transfer: when file transfer was initiated with the CRLF set to true, then when a CRLF pair is found, we no longer add another LF.

• Field outlining will now only report the outlining for the current character, not the entire field. Previously, the outlining for the entire field was reported for each character. If the outlining was left, right, over, and under, then the application would have to determine the start and end of the field in order to avoid drawing a box around each character. Now, for middle characters in a field, the left and right sides for outlining are not reported. For the first character of a field, the right side is not reported on. For the last character of a field, the left side is not reported on.

• DBCS: If the operator attempted to enter a single byte at the end of a DBCS

subfield which was also at the end of the current field, an error was reported. SNA•ps Access/3270 thought it needed 4 characters, but in this case, it only needs 3 character positions in order to enter the single byte.

• DBCS: If the operator tries to extend an existing DBCS subfield in a field that has SO/SI creation disabled, SNA•ps Access/3270 was reporting an error. The operator may now extend a subfield created by the host application.

• Numeric Lock: The comma is now an allowed character in a numeric field, when numeric lock is enabled.

• Query Reply Summary: SNA•ps Access/3270 was incorrectly calculating the length of the QR Summary. It now no longer sends one extra byte with the value 0.

• QR DDM: SNA•ps Access 3270 uses 0x3000 as the value for MAX DDM In and MAX DDM Out. These values were gotten from an OS/2 machine. It speeds up file transfer to use this larger block size. This is a resource item and may be changed in SNA•ps Access/3270. It has currently been reduced to 0x2000 in the shipped version as a customer has reported problems with back-level host applications at the higher value.

• When specifying a default background color of zero in OpenSession or SetSessionParams, the Background Color self defining parameter is no longer sent in addition to the main part of the Color Query Reply. In the past, a zero value was taken to be the default and the background color was changed to 0xF0 and the self defining parameter was always sent. Now, the self defining parameter is sent only if the background color passed in OpenSession or SetSessionParams is non-zero.

• When DBCS is active, if a field attribute specifies DBCS, but the previous character was not a double-byte character, then the DBCS field is now correctly reported as being single-byte.

• INSERT now leaves the cursor under the SPACE, if a single byte character is inserted into a DBCS field. It previously left it under the SO.

• The error kAPIKeyCodeErr was incorrectly returned when copying nulls to the presentation space. The CopyToPS, CopyToField, and TranslateNative requests have been modified so that if a null byte is passed by the application, and it is translated into a null, then an error is no longer returned. If any character other than a null byte is translated into a null, then the request still returns kAPIKeyCodeErr.

• If more than one language was specified in OpenSession or SetSessionParams, then when those language tables were freed, the Macintosh would crash. The code was modified so that more than one table can safely be specified in these requests.

• The SA order no longer occasionally sends invalid values inbound.

• When performing CUT mode file transfer (through the PS) with a binary file, the correct translation table is now used.

• The StartSend and StartReceive requests no longer ignore the CRLF parameter with binary files.

• The StartSend request no longer sets the RECFM parameter when the recordType is kUndefined and the hostEnviron is kVMHost.

• Show3270API now allows repeated output of the list of host languages without quitting and restarting program.

3270 Prep Bugs Fixed Since 2.0

• '3270 Prep' now also allows searches files of type APPL for access methods (in the Control Panels, Extensions, and System Folder folders as before).

• The '3270 Prep' function which loads and frees translation tables now accepts a keyboard ID of zero. In this case, only the language ID is used to select the appropriate table. If more than one keyboard ID is used for a given language ID, the first table in the list is returned (or freed). It is assumed that all tables with the same keyboard ID are equal. This is the case for non CUT implementations.

• 3270 Prep no longer crashes when loading at boot time on a Mac Plus. This was caused by indirectly calling the _HWPriv trap which is not implemented on a Mac Plus.

Article Change History:
28 Jun 1996 - Corrected wording in article.

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Tech Info Library Article Number:11685

SNA•ps Gateway 1.1.1 Release Notes (2/93)

Revised: 3/8/93
Security: Everyone

SNA•ps Gateway 1.1.1 Release Notes (2/93)

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Article Created: 19 February 1993

TOPIC ----------

This article describes the release notes of the SNA•ps Gateway 1.1.1.

DISCUSSION ----------

This release of SNA•ps Gateway contains changes since version 1.1:

- Problem Starting Token Ring 4/16 NB Cards.
  Restarting the Token Ring 4/16 NB Card from SNA•ps Admin or 3270 Manager sometimes failed because the IBM Chip-set sub-assembly had not been properly reset.

- SNA•ps Admin/Gateway Message Log problem.
  An error in the length field of some Log Messages caused SNA•ps Admin to fail to display the Message Log correctly.

- BIND rejection problem.
  The SNA•ps Gateway will now accept a BIND requests with LFSID 0200 (ODAI 0 or 1) for an Independent LU.

- Coax SNA/DFT problem.
  This SNA•ps Gateway release fixes a problem with the Coax RESET command (CUT & NLCA is not affected). The problem only occurred when using the SNA•ps Gateway to connect to a NIU-78 controller (Ungermann Bass).

- Line Trace problem.
  The decoding of Coax (SNA/DFT) specific trace data has been improved. Line trace performance has also been improved in SNA•ps 1.1.1.

- Missing UNBIND response.
  The SNA•ps Gateway will no longer withhold UNBIND responses to UNBIND

Type 0xA (SSCP Gone).

- A/Rose Forwarder usage.
  SNA•ps no longer makes use of the A/Rose Forwarder (FWD) extension. The SNA•ps 1.1.1 Installer will not remove old copies of the FWD extension when installed on a system where FWD is installed. If FWD is not being used by other applications on the system, removing it will reduce memory usage.

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Tech Info Library Article Number:11686

ABS Tech Note: SNA•ps01 Version Compatibility (5/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: SNA•ps01 Version Compatibility (5/92)

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Article Created: 31 May 1992

TOPIC

This technical note describes the compatibility between the 1.0 and 1.1 releases of SNA•ps.

DISCUSSION

Introduction

Improvements in SNA•ps 1.1 have forced some incompatibilities with SNA•ps 1.0. The result is that when the client machine and the gateway machine are running different versions of SNA•ps (1.0 vs. 1.1), the client machine will not be able to access certain resources on the gateway machine.

Which Versions of Which Files?

In order for SNA•ps clients to access gateway services (that is, connecting, displaying, starting/stopping gateways, and so on), the SNA•ps Access extension on the client machine and the SNA•ps Gateway extension on the gateway machine must be the same version. If the SNA•ps Access extension on the client machine and the SNA•ps Gateway extension on the gateway machine have different versions, these gateway services are not accessible.

There have been three versions of SNA•ps 3270 to date: 1.0.1 (first release), 1.0.2 (maintenance release), and 1.1 (released with SNA•ps 1.1). However, from a compatibility viewpoint, what is important is not the version of SNA•ps 3270, but rather the version of the SNA•ps Access extension (which is installed with the SNA•ps 3270 application). The version of SNA•ps Access must match the version of the SNA•ps Gateway for the connection to be successful.

Similarly, SNA•ps Admin will not be able to start, stop, or display a gateway if the SNA•ps Access on the client machine is a different version from the gateway.

The following paragraphs and figures detail what happens from the client application's perspective under different version scenarios.

SNA•ps Admin Details

There are basically four scenarios:

- 1.0 client and 1.0 gateway
- 1.0 client and 1.1 gateway
- 1.1 client and 1.0 gateway
- 1.1 client and 1.1 gateway.

In the two scenarios where the versions match, everything works correctly.

In the scenario where the client machine is SNA•ps Admin 1.0 and SNA•ps Access 1.0 but the gateway machine is a SNA•ps Gateway 1.1, the following occurs. The 1.1 gateway is visible in the Network Gateway Status window, and can even be started and stopped. However, if you attempt to display a 1.1 gateway's resources, an alert is displayed informing you that the version of the SNA•ps Access extension is lower than that of the gateway.

In the scenario where the client machine is SNA•ps Admin 1.1 and SNA•ps Access 1.1 but the gateway machine is a SNA•ps Gateway 1.0, the 1.0 gateway is grayed out in the Network Gateway Status window, thereby preventing you from starting, stopping, or displaying resources on the back-level gateway.

Figure 1 shows the compatibility matrix for SNA•ps Admin and the SNA•ps Gateway.

		SNA•ps Gateway Version	
		1.0	1.1
SNA•ps Admin and SNA•ps Access Version	1.0	OK to start, stop, and display 1.0 gateways	OK to start and stop 1.1 gateways.Alert if attempt to display 1.1 gateways
	1.1	1.0 gateways grayed out in status window	OK to start, stop, and display 1.1 gateways

Figure 1. Compatibility Matrix for SNA•ps Admin and SNA•ps Gateway

SNA•ps 3270 Details

Again, there are basically four scenarios:

- 1.0 client and 1.0 gateway
- 1.0 client and 1.1 gateway
- 1.1 client and 1.0 gateway
- 1.1 client and 1.1 gateway

As mentioned in the introduction, it is the version of SNA•ps Access on the client machine, not SNA•ps 3270, that mainly determines the behavior here.

In the two scenarios where the version match, everything works correctly.

In the scenario where the client machine is SNA•ps 3270 1.0.x and SNA•ps Access 1.0 but the gateway machine is a SNA•ps Gateway 1.1, the gateway is visible in SNA•ps 3270's connection dialog, but the Pools and Sessions associated with the gateway will not be visible. SNA•ps 3270 will be able to start the gateway if it is stopped, but the Pools and Sessions will still not be visible. In SNA•ps 3270 1.0.1 the list of Pools or Session is simply empty; in 1.0.2 and later an alert is first displayed informing you that the versions are different.

In the scenario where the client machine is SNA•ps 3270 1.1 and SNA•ps Access 1.1 but the gateway machine is a SNA•ps Gateway 1.0, when you select the gateway in the connection dialog an alert is displayed informing you that the gateway is of a back-level version.

Figure 2 shows the compatibility matrix for SNA•ps 3270 and the SNA•ps Gateway.

SNA•ps 3270 and SNA•ps Access Version	SNA•ps Gateway Version 1.0	SNA•ps Gateway Version 1.1
1.0	OK to connect to and start 1.0 gateways	OK to start a 1.1 gateway, but Pools and Sessions not shown
1.1	Alert displayed if attempt to select a 1.0 gateway	OK to connect to and start a 1.1 gateway

Figure 2. Compatibility Matrix for SNA•ps 3270 and SNA•ps Gateway

Third-party APPC Clients

For the case of third-party APPC client software it is required that the version of SNA•ps Access running on the client machine and the version of the SNA•ps Gateway running on the server machine MUST be the same (that is, both 1.0 or both 1.1). Any applications that worked with SNA•ps 1.0 will continue to work with SNA•ps 1.1 as long as the client machine and the gateway machine are both running the same version of SNA•ps.

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Tech Info Library Article Number:11687

ABS Tech Note: SNA•ps02 Gateway Memory Issues (5/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: SNA•ps02 Gateway Memory Issues (5/92)

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Article Created: 31 May 1992

TOPIC

This technical note describes the memory usage of the SNA•ps Gateway 1.1 on NuBus communications boards. It will help users configuring and running the SNA•ps Gateway product to accurately predict workable memory configurations for a particular NuBus card.

DISCUSSION

Introduction

SNA•ps 1.1 includes support for the new Apple Token Ring 4/16 card. When running a SNA•ps Gateway on the Apple Token Ring 4/16 card it is recommended that the card contain a minimum of 1Mb of memory. A minimum of 2.5Mb of memory is recommended on the Apple 4/16 Token Ring NB card to run the 64 LU gateway package.

The Apple Serial NB ("SDLC") card can now run both MacX25 Version 1.1 and the SNA•ps Gateway simultaneously; the only requirement is that the SNA•ps Gateway must be running before MacX25 is loaded.

Token Ring Card Details

For the two Apple Token Ring cards (the original Apple TokenTalk NB and the new Apple Token Ring 4/16), the number of sessions that can be supported depends on whether TokenTalk is concurrently running on the card, and how much memory is installed on the card.

TokenTalk 2.2 uses 12,000 bytes on the card. Running TokenTalk 2.2 on a TokenTalk NB card leaves 43,000 bytes available for use by the SNA•ps Gateway. This is enough memory to run the 8 LU SNA•ps Gateway package.

TokenTalk 2.4, which is required for the Token Ring 4/16 card, uses 54,000 bytes on the card. Therefore, in order to run a SNA•ps Gateway on the Apple Token Ring 4/16 card it is recommended that the card contain a minimum of 1Mb of memory. To run the 64 LU SNA•ps Gateway package, a minimum of 2.5MB of memory on the card is recommended.

Apple Serial NB Card Details

When a SNA•ps Gateway is loaded onto a 1/2 megabyte SDLC card with no other applications running on it, 54,000 bytes are available for the gateway.

SDLC cards can run MacX25 in addition to the SNA•ps Gateway. However, the SNA•ps Gateway must be loaded and started before MacX25 is loaded. The SNA•ps Gateway limits the amount of memory it reserves to twice the minimum amount, as calculated below. The remainder is available for use by MacX25 or other applications.

Coax/Twinax NB Card Details

Since the SNA•ps Gateway doesn't allow you to change the configuration of a coax gateway to more than 5 LUs, memory usage is not an issue. Configurations will always fit on an Apple Coax/Twinax NB card.

Minimum Memory Usage Computation

To run a gateway, you must first configure objects on that gateway. The description given below is of the procedure that is used by SNA•ps to compute the amount of memory required for a given gateway configuration.

The total amount of memory that is used by the various configurable objects is given in the table below. Use this table to calculate the amount of memory used by your configuration.

Bytes Used	Resource
7490	Gateway Overhead (always required)
250	Line
1160	Host Partner
690	Peer Partner
270	6.2 LU (Local LU)
1930	3270 LU
270	Local LU User or Profile
190	Transaction Program
190	Transaction Program User
1100	Remote LU with parallel sessions enabled
120	Remote LU without parallel session enabled
200	Mode
1600	Each 6.2 Peer Session
2100	Each 6.2 Host Session

In addition to the memory amounts listed above, there is a factor for the allocation of data buffers which must be made based on the largest BTU (I-frame) that has been configured. The following table indicates the

multiplier. Multiply the number obtained by adding up all the individual requirements above by the multiplier given below.

Max BTU Size	Multiplier
0 - 265	1.43
266 - 521	2.00
522 - 1033	2.50
1034 - 2057	3.33
2058 or larger	5.00

After this computation is complete, the memory required for the link buffers must be added. If there are any Local LUs (6.2 LUs) in the configuration, add 8 times the size of the largest BTU that has been configured to the total. Additionally, if this is a Token Ring configuration, add 160 to the total, and also add 8 times the size of the largest BTU to the total. The result is the final amount of memory required.

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Tech Info Library Article Number:11688

ABS Tech Note: SNA•ps03 MCP Memory Installation (12/94)

Revised: 12/14/94
Security: Everyone

ABS Tech Note: SNA•ps03 MCP Memory Installation (12/94)

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Article Created: 31 May 1992
Article Reviewed/Updated: 14 December 1994

TOPIC

This technical note discusses installation of memory onto Apple Serial and Apple Token Ring 4/16 MCP NuBus cards.

DISCUSSION

Introduction

The Apple MCP (Macintosh Coprocessor Platform) cards are smart busmaster cards that contain an on-board 68000 processor and 512 KB of RAM (minimum configuration) soldered onto the card, with 4 sockets available for expansion memory. This document details adding memory, using those expansion sockets, to the Apple Serial NB and Apple Token Ring 4/16 NB cards; there is no reason to add memory to an Apple Coax/Twinax NB card, since the DFT terminal it emulates only allows 5 sessions; the original Apple TokenTalk NB card (4 megabit speed only) has 512 KB soldered RAM and no expansion slots.

The Memory Expansion Kit

The Apple Macintosh Coprocessor Platform Memory Expansion Kit (M0145LL/A) provides 4 memory chips for those 4 sockets that allows you to add another 512 KB RAM to the board, for a total of 1 MB. This is large enough for most uses of the SNA•ps Gateway. It is possible to purchase a higher density memory chip from third party memory vendors that will create a total of 2.5 MB; this amount of memory is desirable for 64-session gateways with large I-frame sizes. All four chips must be of the same density, so the possible memory configurations are 0.5 MB (no expansion), 1 MB (using Apple's expansion kit), and 2.5 MB (using higher density third party chips).

The memory chips themselves are quite fragile and should be handled carefully. Use a grounding strap, and check that the pins are straight. Try to get the orientation correct on the first try so that they won't have to be handled more

than necessary. Insert by pushing down with a straight, steady motion. If a pin bends on insertion, try using a small screwdriver to push it into the socket, rather than pull the chip out and try again. To remove the chip, use a gentle rocking motion with a steady upward pull. Tools designed for inserting or pulling these chips have not been found.

Some chips are missing a pin. This is normal.

Orientation

Pin one is marked with a recessed dot on the lower part of the chip (lower left corner of the side with writing); this is also the end with the beveled corner. On the Apple Serial NB card, there is a corresponding dot on the circuit board. By holding the card with the NuBus connector facing you, the side of the memory chip with writing will be facing you. On the Apple Token Ring 4/16 NB card, there is a marking on the circuit board that represents the beveled edge; the resulting orientation will cause the blank side of the memory chip to be facing you.

The Apple Token Ring 4/16 NB card has 2 diagnostic lights. After power-up diagnostics, the green light should be on and the red LED should be off. If the red light stays on, there is a problem, and it is possible that the memory was not installed correctly.

Memory Specifications

When buying memory chips, the following specifications must be met:

- Type: Dynamic RAM
- Size: 256K x 4, or 1MB x 4 (depending on amount of memory desired)
- Configuration: 4 bits wide
- Package: ZIP
- Speed: 120 nS or faster (for example, 100 nS or 80 nS)

To expand memory to 1 MB:

- (4) 256K x 4 bit DRAM chips, 120 nS or faster, ZIP package
- Mitsubishi part number M5M44C256L-12
- Hitachi part number HM514256ZP-12
- Apple part number M0145LL/A, "Macintosh Coprocessor Platform Memory Expansion Kit"

To expand memory to 2.5 MB:

- (4) 1M x 4 bit DRAM chips, 120 nS or faster, ZIP package
- Toshiba part number TC514400Z-10
- Motorola part number MCM54400AZ80
- TI part TMS44400-12SD

NOTE: The Toshiba TC514400AZ-80 is 1M x 4 bit (4Mbit) ZIP module. You need 4 of these 4Mbit ZIP modules to get 2MB or RAM added to the Token Ring 4/16 NB Card to get a total 2.5MB of RAM. The TC514400AZ-60 and TC514400AZ-70 will work as well. The "-80", "-70", and "-60" indicate the speed in nanoseconds of the ZIP

module. As long as the TC514400AZ module is 120ns or faster it will work correctly.

Article Change History:
14 Dec 1994 - Corrected abbreviations and clarified for accuracy.

Support Information Services

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Tech Info Library Article Number:11689

Tech Info Library

ABS Tech Note: SNA•ps04 Bullets in Admin (5/92)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: SNA•ps04 Bullets in Admin (5/92)

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Article Created: 29 May 1992

TOPIC

This technical note explains the meaning of the bullets that show up in the SNA•ps Admin status display.

DISCUSSION

Introduction

The small black circles that appear in the gateway status display in SNA•ps Admin are intended to give a general indication of the state of the particular resource in the gateway. Detailed state information can be found by opening the resource. The exact meaning of the status indicators is given here.

For all resources except for 3270 LUs:

- A bullet (" • ") displayed indicates that the resource is in the active state.
- A small open circle (" ° ") displayed indicates that the resource is always activated.
- No symbol displayed indicates that the resource is not in the active state.

For 3270 LUs:

- A bullet displayed indicates that the LU is in use by an application program such as the SNA•ps 3270 terminal emulator.
- A question mark ("?") displayed indicates that this is an LU with an ID

of zero. This will occur when a coax gateway is not in contact with the IBM 3174 controller, or if the 3174 controller has not been configured properly.

- No symbol displayed indicates that the LU is not in use by any client application. If it is a coax line, then the gateway is in contact with the 3174 controller, and the LU has been configured at the controller.

For APPC Modes:

- A bullet displayed indicates that the session limits for the mode have been initialized and are greater than 0.

- No symbol displayed indicates that the mode has not yet had its limits initialized.

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Tech Info Library Article Number:11690

ABS Tech Note: SNA•ps05 3287 Performance Tips (4/93)

Revised: 9/7/93
Security: Everyone

ABS Tech Note: SNA•ps05 3287 Performance Tips (4/93)

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Article Created: 26 April 1993

TOPIC ----------

This technical note discusses several tips to optimize the performance of SNA•ps 3287.

DISCUSSION ----------

Introduction

The SNA•ps 3287 printer emulator can be configured and used in a variety of ways, depending on the behavior of your host system and applications, and your Macintosh setup This tech note discusses several methods to help you use it as desired.

Preview Window

SNA•ps 3287 has a feature called the Preview Window that shows what the printed page will look like before it prints. However, drawing the preview window requires CPU cycles. If you don’t need to preview the printer data, close the preview window and your print job will print faster.

Timeouts

Each session can have its own timeout settings, which are set via the Timeouts command on the Session menu. The default timeout setting is 30 seconds. If the host application sends an End Of Bracket signal at the end of each print job, turn on the End Of Bracket timeout, and SNA•ps 3287 won’t have to wait 30 seconds to print. Some host applications are known to send an End Of Bracket after each line of data, however, which causes SNA•ps 3287 to put each line on a separate page if End Of Bracket timeout is turned on. In this case, lower the default timeout value to 10 or 15 seconds.

Memory Usage

There is a memory overhead for accumulated unprinted data becuase the session document keeps a small amount of information in memory for each page of data that is accumulated on disk. When available memory becomes exhausted, SNA•ps 3287 simply stops receiving data until some memory is freed by pages being printed. In order to prevent running out of memory, increase SNA•ps 3287's memory partition size by using the Finder's Get Info command on the SNA•ps 3287 icon.

Each unprinted page takes up 512 bytes in memory (i.e. 100 pages takes approximately 50 KBtyes of memory). Each connected session uses about 50 KBytes. The application itself uses 400KBytes.

Here is a formula for the amount of memory SNA•ps 3287 uses:

```
Available memory = 400K + (50 KByte * number of sessions)
                        + (1 KByte * number of accumulated pages)
```

SNA•ps 3287 Font Usage

The SNA•ps 3287 application disk includes a font suitcase containing the Noiro font (pronounced nwah-ro). It contains a TrueType version and several bitmap sizes. Drag it to the System Folder under System 7, or use the Font/DA Mover under System 6. Noiro, the font that SNA•ps 3287 uses by default, is monospaced, i.e. characters will line up correctly from row to row. However, unlike other monospaced fonts such as Courier and Monaco, its boldface characters are the same width as its plain characters, so that characters will still line up even if some of them are boldface.

Another benefit of Noiro is that all of its characters have correct character widths, unlike some fonts that have uneven widths for some characters, and can give overlapping characters. Noiro contains all of the characters defined in the Apple 3270 API Character Set, so any IBM CECP EBCDIC character sent from the host will be drawn correctly.

Viewing the Entire Page

To avoid experimenting with Page Setup in an attempt to fit everything on a LaserWriter page, here are some settings that have been found to work well. When using the Noiro 9-point font, a Landscape (sideways) 76% reduction will fit all 132 columns and all 66 lines on a page.

To see the entire page at once on a 640x480 monitor such as the AppleColor 13" RGB monitor, try a Landscape 150% reduction, but set the font to 6-point Noiro (150% means that the on-screen page will be blown up by 150% when printed, so it is important to use a font size that when blown up 150%, will print as 9-point). The whole page will be visible.

Viewing Text File Output

When outputting to a text file, make sure not to open the text file (from another application) while SNA•ps 3287 is still using it. Otherwise the other application may give an error message about the file being locked or

in use, or may not display the data correctly. To open the text file from another application, make sure SNA•ps 3287 doesn't have the file open. Do this by either closing the SNA•ps 3287 session that was using the text file, or changing the session so that it outputs to a different text file, to the printer, or to the preview window only.

Background Printing and Direct-Connect Printers

Because SNA•ps 3287 is a printer emulator, it doesn't print the same way as a typical Macintosh application. As mentioned in the "Timeouts" section above, it opens a connection to the printer for the duration of a print job. To prevent the user from doing anything while printing to a "foreground" printer like the ImageWriter, SNA•ps 3287 puts up a "Press command-period to cancel printing" dialog for the duration of a print job. This prevents using the Chooser or other applications that might cause problems during printing.

There is no way for SNA•ps 3287 to determine whether the chosen printer is performing foreground printing like the ImageWriter. What can legitimately be determined is whether the chosen printer's driver is for a networked printer or a direct-connect printer. Therefore, SNA•ps 3287 looks at the printer driver's file type. Unfortunately, with the LaserWriter LS, which is a direct-connect printer but supports background printing, the dialog appears even though it's not necessary.

SNA•ps v1.1.1 Changes

The interface to the Macintosh Printing Manager was modified so that the entire print job is now printed modally, with background printer spoolers such as PrintMonitor providing optimal response time. Previously, the connection to the Printing Manager was established as soon as the session had data to print, and not closed until the print job timed out (a potentially long interval); The change in 1.1.1 is to wait until the job times out, and then open the Printing Manager connection, print the entire job, and close the connection. This eliminates the long interval during which the Printing Manager connection was kept open on direct-connect printers even if they supported print spooling.

The default timeout setting was changed to include a 200 page timeout limit. At the default memory size of 512K, SNA•ps 3287 can guarantee having enough memory to accumulate and then print 200 pages without running out of memory. The changed Printing Manager interface means that SNA•ps 3287 can accumulate data until an entire job has arrived (as opposed to printing each page as it arrives). The new default setting simply guarantees that SNA•ps 3287 can be installed and used without fine-tuning the timeout settings even if print jobs arrive continuously.

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ABS Tech Note: SNA•ps06 Modem Configurations (10/92)

Revised: 9/7/93
Security: Everyone

ABS Tech Note: SNA•ps06 Modem Configurations (10/92)

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Article Created: 30 October 1992

TOPIC ----------

This technical note discusses configuring modems for use with SNA•ps Gateways.

DISCUSSION ----------

Introduction

SNA•ps works with synchronous modems that support either the V25bis or SADL autodial protocols. The Codex 2264, which is a 9600 baud synchronous modem, supports V25bis autodial protocols and has been tested and found to work fine. Other modems, primarily used for asynchronous applications, can be used synchronously if configured correctly. This technical note describes setting up the Hayes SmartModem 9600, Digicom DSI 9624L, and Codex 2264 for use with SNA•ps Gateways.

Configuring Modems for use with SNA•ps Gateways

The Hayes SmartModem 9600 and Digicom DSI 9624L modems can be configured for synchronous serial connections. The procedure is to set the modem to work synchronously and automatically dial a pre-entered phone number when SNA•ps line and partner are both activated.

The following describes how to set up these modems for use with SNA•ps:

- Attach a serial cable to the Modem and connect it to the serial port on the Macintosh.
- Install any terminal emulation program on the Macintosh. (ex. MacTerminal)
- Start the terminal emulation program on the Macintosh. Connect to a terminal session.
- Power on the Hayes Modem.
- While connecting asynchronously (9600 baud, 8 bits, no parity), type the

following commands:

(The information below is for the DSI 9624LE, with notes on where the Hayes differs.)

```
AT&F        -  reset to factory settings
AT*O (DSI)  -  show current settings
AT&S  (DSI) -  show dialing directory  (Hayes: AT&V shows both current
               settings and dialing directory)
AT&Zphone#  -  store phone number in first location (Hayes: AT&Z0=phone
               number)
AT&M2       -  on DTR high, auto dial phone number stored in first
               location  and enter synchronous mode
AT&R1       -  CTS goes on when the modem is ready to receive
AT&B1       -  modem turns on DSR when DTR from attached DCE goes on.
AT&W        -  save configuration
```

- Remove the Serial cable from the Hayes Modem
- Connect the modem to the Apple Serial NB hydra cable.

The line description in the SNA•ps configuration must specify the port the cable is attached to. The SNA•ps Config line settings should be half duplex, NRZ, manual dial, and switched. The phone number in the partner description is ignored, as the phone number stored in the modem is dialed.

When the SNA•ps Gateway is started and the line and partner are activated (either manually or automatically), the modem will dial the stored number.

Using the SNA•ps Gateway Auto-dial Feature

To configure the Codex 2264 modem for auto-dial usage with SNA•ps Gateways, set up the modem as follows:

For answer:

- Choose option set 2
- Change Modify Terminal: DTR: to high

For dialout:

- Make sure that all dip switches in the back of the modem are up
- Choose option set 3
- Modify V.25 BIS:
  - Char set = ASCII -> EBCDIC
  - ACU idle = Char -> Mark
- AUXILIARY, AUX DIALING:
  - tone (vs. pulse)

The line description in your SNA•ps configuration should be half duplex, NRZ, V25bis dialer, and switched. The phone number in the SNA•ps Config partner description will be dialed when the gateway is started and the SNA•ps line and partner are activated.

Configuring the Apple Serial NB Card for use with SNA•ps

The Serial NB card is shipped with ports 1A and 1B configured for V35/RS422 signals. If you plan to use these ports in RS232 mode, remove the two resistor packs in the upper right-hand corner of the board. This is described in the Apple Serial NB Card Installation Guide. SNA•ps can run these ports at 56 K BPS line speeds since the data link control (DLC) task implements DMA on these ports. Channels 2A and 2B, are limited to a maximum of 9600 Baud. All four SDLC ports can be in use simultaneously.

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Tech Info Library

ABS Tech Note: SNA•ps07 Finding Gateways (5/92)

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ABS Tech Note: SNA•ps07 Finding Gateways (5/92)

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Article Created: 29 May 1992

TOPIC ----------

This technical note discusses two methods that application programs can use to find SNA•ps gateways.

DISCUSSION ----------

Introduction

The routine GetGatewayList() is used in both the sample programs filecreq.c and filecsrv.c, to find the available gateways in an AppleTalk Zone. The type field specified for the NBPLookup is "SNAGatewayAgent", it should be "SNAGateway" to return the names and addresses for only those SNA•ps Gateways which have previously been started.

Finding Running Gateways

PLookupName() is used to do an NBPLookup for gateways that are available on the network. The entityPtr parameter to PLookupName() specifies what type of network entity is to be looked up.

The type for a running SNA•ps Gateway is "SNAGateway". The type "SNAGatewayAgent" will return the names and addresses for the running SNA•ps Gateways also, but in addition will return the names and addresses of gateways that are configured, but are not currently running. Attempting to establish a connection to one of these gateways will result in an error.

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ABS Tech Note: SNA•ps08 3270 API (9/94)

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Article Reviewed/Updated: 27 September 1994

TOPIC ----------

This technical note discusses Host-based File Transfer support as implemented in the Apple 3270 API 2.0.

DISCUSSION ----------

Introduction

The Apple 3270 API 2.0 supports file-transfers that allow Macintosh applications to store and retrieve data from files located on an IBM host computer. This support allows an application to perform file transfer without regard to the underlying host connection or subsytem.

This Technical Note describes the use of these file transfer requests for SNA•ps Access/3270, Apple's implementation of the Apple 3270 API 2.0. The transfer of files takes place via the 3270 Data Stream and a family of host-based File Transfer programs collectively known as IND$FILE.

SNA•ps Access/3270

The Apple 3270 API 2.0 is a defined programming language interface between the 3270 data stream and Macintosh client applications. SNA•ps Access/3270 is Apple's implementation of the 3270 API, allowing connectivity to IBM hosts via the SNA•ps line of gateway products.

Host-Based File Transfer

The File Transfer between an IBM host and a Macintosh using SNA•ps Access/3270 is controlled by the host application. This application (IND$FILE) is initiated by SNA•ps Access/3270 sending a command to the host to start the file transfer. SNA•ps Access/3270 sends this command in response to a StartSend/StartReceive request from the Macintosh

application. After the file transfer begins, IND$FILE issues requests to SNA•ps Access/3270, and waits for the response. SNA•ps Access/3270 may issue a message to cancel a file transfer operation, but it is up to IND$FILE as to whether/when the cancel takes effect.

Host Environments and Transport mechanisms

IND$FILE operates in three (3) major Host environments—TSO, CICS/VS, and VM/CMS. Each of these environments has a specific implementation of IND$FILE installed to support Host-based file transfer.

There are two mechanisms used to implement the transfer of file information using the 3270 Data Stream.

- PS-based File Transfer (CUT): The Presentation Space (PS) is used to transfer the file data to/from the Host. The PS has several specific formats which differ depending upon the direction of the file transfer. These are:
  - UPLOAD format - used when sending a file to the Host
  - DOWNLOAD format - used when retrieving a file from the Host
  - CONTROL format - used to pass control information to the Macintosh from the Host.

These formats are defined in the section "PS Screen Formats" as 'C' language structures.

- SF File Transfer (DFT): This mechanism uses Structured Fields (SF) to transfer the file to/from the host. The SFs used are part of the Distributed Data Management (DDM) architecture, and are known colloquially as D0(D-ZERO) SFs. Only a small set of the D0 SFs are used; this subset is defined in the section "D0 Structured Fields Subset".

Since there are three (3) possible host environments, and two (2) possible transport mechanisms for each host environment, there are a total of six (6) possible ways to do file transfer.

SNA•ps Access/3270 Requests for File Transfer

SNA•ps Access/3270 simplifies Host-based file transfer by providing a single set of file transfer requests which are independent of the transport protocol used. These requests are:

- StartSend () - allows an application to initiate file transfer to the Host.

- StartReceive () - allows an application to initiate file transfer from the Host.

- DoSend () - allows an application to send data to the Host, signal the end of data to be transferred (i.e., End of File), and abort the file transfer.

- DoReceive () - allows an application to receive data from the Host,

receive messages from the Host (i.e. End of File), and indicate that the application wishes to abort the file transfer.

SNA•ps Access/3270 File Transfer Requests Validation

SNA•ps Access/3270 will validate the parameters to the File Transfer requests and return an error code without performing the operation, if there is an error. If parameter validation fails, the following error codes may be returned:

StartSend

Return Code	Reason
kAPIFTTypeParm	TransferType not equal to kINDFILE.
kAPIFTFileNameParm	hostFileName not specified.
kAPIFTHostEnvirParm	verifyName is true and hostEnviron is not specified
kAPIFTFileTypeParm	fileType is not kTestFile or kBinaryFile
kAPIFTBadFEParam	fileExists is not kNewHostFile, kAppendHostFile, or kReplaceHostFile
kAPIFTRTParam	recordType is not kFixed, kVariable, or kUndefined
kAPIFTNotAvailable	There is not a session with the host.
kAPINotDisplaySession	The session is not a display session.
kAPIFTRecLenParm	The recordLength specified is zero(VM/CMS).
kAPIFTInProgress	There is already a File Transfer in progress.
kCapyResErr	An error occured trying to load a required resource.
kAPIInputInhibit	The 3270 keyboard is locked.
kAPIKeyCodeErr	There is an invalid character in the command line built by SNA•ps Access/3270. (If there is not a translation value for a character in the current character set, this error would be returned.)

StartReceive

Return Code	Reason
kAPIFTTypeParm	fileTransferType not equal kINDFILE.
kAPIFTFileNameParm	hostFileName not specified.
kAPIFTHostEnvirParm	verifyName is true and hostEnviron is not specified. (Check the list below for errors that may be returned when the access method verifies the host file name.)
kAPIFTFileTypeParm	fileType is not kTestFile or kBinaryFile.
kAPIFTNotAvailable	There is not a session with the host.
kAPINotDisplaySession	The session is not a display session.
kAPIFTInProgress	There is already a File Transfer in progress.
kCapyResErr	An error occurred trying to load a required resource.
kAPIInputInhibit	The 3270 keyboard is locked.
kAPIKeyCodeErr	There is an invalid character in the command line built by SNA•ps Access/3270. (If there is not a translation value for a character in the current character set, this error would be returned.)

DoSend

Return Code	Reason
kAPIFTNotAvailable	There is not a session with the host.
kAPINotDisplaySession	The session is not a display session.
kAPIFTNotInProgress	There is not a File Transfer in progress.
kAPIFTRespParm	The appResponse field is not set to kContinueFT or kCancelFT.
kAPISendBufParm	The sendBufPtr is zero, and the sendBufLen is not zero.
kAPIFTNoSendInRcv	The File Transfer in progress is a receive.
kAPIFTCancelBad	The appResponse was kCancelFT, and an error occurred while trying to issue the cancel.
kAPIFTNotRdyToSend	There wasn't a kDoSendEvent generated. If the File Transfer is being made via the PS, then errors associated with CopyToPS may also be encountered. (kAPIScrnSizeChng, kAPIInputInhibit, kAPIByteCountParm, kAPISrcBufParm, kAPIKeyCodeErr, kAPIEndOfPS, kAPIWriteProtFldErr, or kAPIWriteAttrErr.)

DoReceive

Return Code	Reason
kAPIFTNotAvailable	There is not a session with the host.
kAPINotDisplaySession	The session is not a display session.
kAPIFTRespParm	The appResponse field is not set to kContinueFT or kCancelFT.
kAPIReceiveBufParm	The receiveBufPtr is zero, and the numBytesToReceive is not equal to zero, and the appResponse is kContinueFT.
kAPIFTNotInProgress	There is not a File Transfer in progress.
kAPIFTNoDataToRecv	There is no data to be received.

For both StartSend and StartReceive requests you can specify that the Access Method should verify that the host name being passed is a valid name for the specified system. To do this, in the StartSendBlk set verifyName to True and set hostEnviron to the value matching the host environment being used. Name validation may return the following errors:

TSO

Return Code	Reason
kAPIFTBadFirst	Error with resource file or bad first character of hostFileName.
kAPIFTTSOLong	Data Set Name is too long.
kAPIFTQualLon	Qualifier too long.
kAPIFTNoQuoteMemb	Quote around member, but no parenthesis.
kAPIFTBadChar	Invalid character found in the name.
kAPIFTMemberChar	A period or quote was found in a member name.
kAPIFTMisParen	Matching parenthesis is missing.
kAPIFTTSOSpace	A space character was found in the hostFileName.

kAPIFTMemberLong	Member name is too long.
kAPIFTMemberBad	Missing quote or parenthesis.
kAPIFTMisplacedQte	Missing/misplaced quote.
kAPIFTMismatchedQte	Quotes not placed correctly.

VM/CMS

Return Code	Reason
kAPIFTBadFirst	Error with resource file or bad first character of hostFileName.
kAPIFTCMSDot	A period appeared in the hostFileName.
kAPIFTBadChar	An invalid character appeared in hostFileName.
kAPIFTNoType	No "Type" appeared in the hostFileName.
kAPIFTCMSLong	The "Name" field is too long.
kAPIFTCMSTLong	The "type" field is too long.
kAPIFTCMSMLong	The "mode(format)" field is too long.
kAPIFTCMSExtra	An extra field appeared in hostFileName.

CICS/VS

Return Code	Reason
kAPIFTBadFirst	Error with resource file or bad first character of hostFileName.
kAPIFTCICSTLong	hostFileName is too long.
kAPIFTCICSDot	A period appeared in the hostFileName.
kAPIFTCICSSpace	A Space appeared in the hostFileName.
kAPIFTBadChar	An invalid character appeard in hostFileName.

SNA•ps Access/3270 File Transfer Requests Usage

The SNA•ps Access/3270 File Transfer Requests may be used to send/receive a file to/from the Host. It is assumed in the following paragraphs that the Macintosh application/User has logged onto one of the supported host environments (TSO, CICS, VM/CMS).

To Send a file to the Host:

- Issue the StartSend request. If an error occurs, correct the error, and resubmit the request.
- Issue PollSessions.
- If the event returned was a kDoSendEvent, send one block of data to the host using DoSend. Note that SNA•ps Access/3270 will automatically segment this block if it exceeds the transport mechanism's maximum size.
- If the event returned was a kDoReceiveEvent, the file transfer is not successful, and the DoReceive request will likely return an error message that was received from the Host. Issue a DoReceive request.
- If the event returned was a kPSUpdateEvent, the host application has written a message into the PS, which may be displayed to the user. For example, this will occur in TSO if you exceed the disk space allocated for the file. Issue GetUpdate() to allow the file transfer to continue. OIA updates, which also occur in this manner, will be a fairly constant event during the course of the file transfer.
- Repeat the above sequence (starting at PollSessions) until the end of the file, then issue the DoSend request with a zero-length for the data and a

null send buffer pointer.
- Note that at any time the host application may cancel the file transfer. Be prepared to receive kDoReceiveEvents from the PollSessions call.
- Note that if a "Cancel" is issued, the host application may or may not return a message (as a kDoReceiveEvent) indicating the file transfer was canceled. You must receive these events or subsequent StartSend and StartReceive requests will fail with the error kAPIFTInProgress.

To receive a file from the Host:
- Issue the StartReceive. If an error occurs, correct the error and resubmit the request.
- Issue PollSessions.
- If the event returned was a kDoReceiveEvent, issue a DoReceive request. This request may contain an error message from the host (file not found, for example) or the first block of data.
- If the event returned was a kPSUpdateEvent, the host application has written a message into the PS, which may be displayed to the user. For example, this will occur in TSO if you exceed the disk space allocated for the file. Issue GetUpdate() to allow the file transfer to continue. OIA updates, which also occur in this manner, will be a fairly constant event during the course of the file transfer.
- Repeat the above sequence (starting at PollSessions) processing the kDoReceiveEvents until the host application sends a block with the host Reply field set to kMsgContent. The host normally sends only one (1) message after the end of the file. If an error occurs during the file transfer, the host application may send an error message.
- If a DoReceive request is issued specifying Cancel, SNA•ps Access/3270 will return kAPINoErr after sending the appropriate cancel command to the host application. The host application may then send a kClose event and a message, or it may simply send an error message. You must receive these events or subsequent StartSend and StartReceive requests will fail with the error kAPIFTInProgress.

See the section "Sample File Transfer Flowchart for an Apple 3270 API 2.0 User Program" for a more complete description.

File Transfer Request Formats

The next two sections detail the format of the requests/responses which flow between SNA•ps Access/3270 and the host application. These sections are provided for your use while attempting to decode a line trace of a file transfer request which may be failing.

PS Screen Formats

CUT-based file transfer uses three types of screens to communicate data from the host to the Mac. Each screen may be distinguished by the first character.

```
// character          Meaning
//   'A'  -    This is a Download format screen
//   'B'  -    This is an Upload format Screen
//   'C'  -    This is a Control format screen
```

```
     #define kMAX_PSFT_DOWN   1909   // Max Data from Host
     #define kMAX_PSFT_UP     1912   // Max Data to Host
     // Types of control frames
     #define   FT_Ack         'a'    // Acknowledgement
     #define   FT_Info        'i'    // Information (Message)
     #define   FT_Mesg        'm'
     #define   FT_Quit        'q'    // Quit/Abort/Quiesce
```

Control Screen Format

```
---------------------
Definition of the Control Format of the PS:
typedef struct psft_ctlscreen{
     unsigned char  psftc_control; // Screen Format indicator
     unsigned char  psftc_attr1;   // Unprotected Attr.
     unsigned char  psftc_code1;   // Code 'a'
     unsigned char  psftc_code2;   // Code 'a', 'q', 'i', 'm'
     unsigned char  psftc_code3;   // Code 'R', ' ', '\0'
} PSFT_CTLSCRN;
```

UPLOAD Format

```
-------------
Definition of the Upload Format of the PS
typedef struct psft_upscreen{
     unsigned char  psftu_control;          // Screen format indicator
     unsigned char  psftu_attr1;            // Unprotected attr.
     unsigned char  psftu_code;             // Data Code 'A'
     unsigned char  psftu_sequence;         // Block Sequence
     unsigned char  psftu_chksum;           // Checksum of screen
     unsigned char  psftu_len1;             // Length of data MSB
     unsigned char  psftu_len2;             // Length of screen LSB
     unsigned char  psftu_data[kMAX_PSFT_UP];   // Data being uploaded
     unsigned char  psftu_attr2;            // Protected Attr.
} PSFT_UPSCRN;
```

DOWNLOAD Format

```
---------------
Definition of the Download Format of the PS :
typedef struct psft_dwnscreen{
     unsigned char  psftd_control;          // Screen format indicator
     unsigned char  psftd_sequence;         // Block Sequence
     unsigned char  psftd_chksum;           // Checksum of screen
     unsigned char  psftd_len1;             // Length of data MSB
     unsigned char  psftd_len2;             // Length of screen LSB
     unsigned char  psftd_data[kMAX_PSFT_DOWN];   // Data being downloaded
     unsigned char  psftd_attr1;            // Unprotected Attr.
     unsigned char  psftd_resp[4];          // Area for PC to respond in
     unsigned char  psftd_attr2;            // Protected attr.
} PSFT_DWNSCRN;
```

D0 Structured Fields Subset

```
---------------------------
DFT-based File Transfer uses a subset of the D0 structured fields defined
as part of DDM.  These D0 structured fields flow as a Write Structured
```

Field (WSF) from the host (and with inbound AID of 0x88 to the host). A structured field has the following format:

```
struct SF {
   unsigned short length;        /* Length of SF */
   unsigned char   sf_id1;       /* First/only ID byte */
   unsigned char   sf_id2;       /* Second byte of ID or */
                                 /* first  byte of SF info */
   unsigned char   sf_data[1]    /* Contents determined by SF type */
};
```

The following D0 structured fields are used by the DFT-based File Transfer mechanism:

- 0xD000 - Open
  The Open function is used to make a logical connection between the file transfer and a specific file. The following is the format of the Open SF:

```
   00 23                          // Length of this field
   D0 00                          // SF Type (Open)
   12 01 06 01 01 04 03 0a 0a 00  // Fixed Information
   00 00 00 11 01 01 00 50 05 52  // Fixed Information
   03                             // Fixed Information
   F0                             // No Compression
   03 09                          // Fixed Information
   C'FT:DATA' or C'FT:MSG'        // Dummy file name
```

  Only two (2) file names are used in the Open request. 'FT:DATA' is used to generically represent the file to be up/down-loaded. The actual name of the file was communicated on the command line. 'FT:MSG' is used by the host application as the name of the file that messages from the host application are to be stored into. These messages come your application as 'kMsgContent' DoReceive events with SNA•ps Access/3270.

- 0xD041 - Close
  This request terminates the logical connection established between the local file and the remote (host) file. It is not always sent by all implementations of IND$FILE. The format of the Close request is:

```
   00 05     // Length
   D0 41     // SF ID (Close)
   12        // Fixed Information
```

- 0xD045 - Set Cursor
  This request is used by the host application to place the 'cursor' to the beginning of the next block to be sent. It is used for file uploads only. The format of the Set Cursor request is as follows:

```
   00 0F                          // Length
   D0 45                          // SF ID
   11 01 05 00 06 00 09 05 01 03  // Fixed Information
   00                             // Fixed Information
```

  The Set Cursor request is followed immediately by the Get request.

- 0xD046 - Get
  The Get request flows in both directions for file uploads. In the Outbound (from the host) direction, it flows immediately after the Set Cursor request. SNA•ps Access/3270 will send the next block of data from the 'file' using a Get request (which is really a response at this point). SNA•ps Access/3270 will check an internal queue for data to be sent. If no data is presently queued, a kDoSendEvent will be returned to the next PollSessions request issued which requests kDoSendEvents. The format of Get request is as follows:

```
From host application:
----------------------
00 09           // Length
D0 46           // SF ID (Get)
11 01 04 00 80  // Fixed Information

From SNA•ps Access/3270:
------------------------
XX XX     // Length (Depends on amount of data sent and segment size)
D0 46     // SF ID
NN NN NN NN    // Sequence number of this block
C0        // Fixed Information
80        // Data not compressed
DD DD     // Length of data that follows
DATA      // Data from DoSend command, possibly segmented
```

- 0xD047 - Insert
  This command is used by the host during file transfer to the Macintosh. It inserts the next block of data into the file. The block is always inserted at end of file. This always flows as two (2) Insert requests. The first is of fixed size and information. It informs SNA•ps Access/3270 that the insert is to be a sequential insert. The format of the Insert request is:

```
Fixed Insert:
-------------
00 0A           // Length
D0 47           // SF ID
01 05 00 80 00  // Fixed Information

Variable Insert:
----------------
XX XX     // Length
D0 47     // SF ID
C0        // Fixed Information
80        // Data not compressed
61        // Fixed Information
YY YY     // Length of data
DATA      // Data to be stored as next block of file
```

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Support Information Services

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ABS Tech Note: SNA•ps09 Gateway Performance Tuning (5/92)

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ABS Tech Note: SNA•ps09 Gateway Performance Tuning (5/92)

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TOPIC ----------

This Technical Note details which parameters to modify when connecting a SNA•ps gateway to either an IBM mainframe or an AS/400 computer or to another personal computer running OS/2 Communications Manager. Dramatic improvements in SNA•ps throughput can be made by following these simple steps.

DISCUSSION ----------

Introduction

The application "SNA•ps Config", included with the SNA•ps Gateway package, allows changes to be made to SNA•ps gateway configuration files. Changes related to performance are those most commonly made using SNA•ps Config. Corresponding changes must also be made to the IBM partner for the modifications to be effective. The following suggestions allow for the optimum possible performance using SNA•ps. Note that SNA•ps "3270 Manager" can not be used to make performance related changes.

Large I-frame Sizes

The SNA•ps Token Ring default I-frame setting, located in the Line Description, is 265 (256 +9) bytes. Increasing this value can dramatically improve performance. The Apple Token Ring 4/16 NB card is required for this since a minimum of 1 Mb of memory is required on the card. Table 1 lists Token Ring line parameters that need to be modified for SNA•ps, PS/2, AS/400, or host configurations.

SNA•ps: Max I-field: length (Token Ring line definition)
PS/2: Receive: Buffer Size – IEEE 802.2 TR Profile
AS/400: MAXFRAME: Maximum Frame size (Token Ring line description)
(Controller desc: Maxframe size = *LINKTYPE)
Host: MAXDATA: Maximum number of bytes physical unit can receive (PU

definition)

Table 1: Token Ring Line Description Performance Tuning Parameters

The value of 2057 (2048 +9) bytes is recommended; however any value greater than 265 will improve performance.

The nine byte overhead, included with both the Apple Serial NB and Token Ring values, is used by SNA•ps for the transmission header (TH) and request header (RH) in the request unit (RU) segments.

The SNA•ps SDLC default I-frame setting, located in the Line Description, is 265 bytes. Increasing this to 521 (512 +9) bytes will provide similar improvements for SDLC communication. A minimum of 1 Mb of memory is required on the Apple Serial NB card. Table 2 lists the SDLC line parameters that need to be modified for SNA•ps, PS/2, AS/400, or host configurations.

SNA•ps: Maximum BTU (SDLC line definition)
PS/2: Maximum RU Size SDLC (DLC) adapter profile
AS/400: MAXFRAME (SDLC line description)
Host: MAXDATA: Maximum number of bytes physical unit can receive (PU definition)

Table 2: SDLC Line Description Performance Tuning Parameters

Force Segmenting (APPC only)

In order to achieve optimal performance, the RU size should be larger than the I-frame size. This forces the RU messages to be broken into multiple frames (that is segmented) boosting throughput. More specifically, the RU should be an even multiple of the I-frame size (that is 2x, 4x, and so on) minus the 9 byte overhead included in the SNA•ps I-frame value. Therefore, to improve APPC performance, increase the Maximum RU Upper value in the APPC Mode definition to 4096. Table 3 lists the parameters that need to be modified for the APPC Mode definitions for SNA•ps, PS/2, AS/400, or host configurations. Note that the OS/2 Communications Manager's "Verify" command will not allow the Maximum RU size on the "Transmission Service Mode Profile" to exceed the Maximum RU size on the "Data Link Control (DLC) profile."

APPC Programming Considerations

The largest possible amount of data should be sent in each "MC Send Data" and received in each "MC Receive and Wait" to ensure the best data transfer rates. The maximum record length supported by SNA•ps APPC is 32763 bytes. Therefore, 32763 should be used as the send length in each "MC Send Data", the receive length in each "MC Receive and Wait" and the map buffer length in "MC Allocate". "MC Receive Immediate" should not be used, since "MC Receive and Wait" has been optimized for performance. A buffer size equal to (or larger than) 18 K bytes should be used in the "Open Gateway Connection" connection request. See "Appendix K" in the SNA•ps APPC Programmers Reference for more details regarding gateway buffer sizes.

SNA•ps: Maximum RU Upper APPC Mode definition
PS/2: Maximum RU size Transmission Service Mode profile (should equal Max RU size in the DLC profile)
AS/400: MAXLENRU: Maximum length request unit (Mode description)
Host: RUSIZE S: Maximum RU Size (MODEENG definition)

Table 3: APPC Mode Description Tuning Parameters

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Tech Info Library Article Number:11696

ABS Tech Note: SNA•ps10 Access/3270 Internals (4/93)

Revised: 9/7/93
Security: Everyone

ABS Tech Note: SNA•ps10 Access/3270 Internals (4/93)

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Article Created: 26 April 1993

TOPIC --

This technical note discusses the SNA•ps implementation of the Apple 3270 API. This includes general architectural issues, values returned by requests and localization issues. Also included are error codes returned by SNA•ps Access/3270 which are not listed in the Apple 3270 API Programmer's Manual.

DISCUSSION --

Introduction

SNA•ps Access/3270 is a full featured implementation of the Apple 3270 API over the SNA•ps gateway. All of the defined API requests are implemented providing LU1, LU2, and LU3 communication with the host.

Apple 3270 API clients should not generally need to know the details of the particular implementation of the API. This is because all implementations should fully adhere to the API specifications. This is true of the SNA•ps implementation, which was developed by the same team that designed the Apple 3270 API.

The API definition, however, does allow considerable variance in the form of returned values from API requests. The purpose of this technical note is to detail those returned values for the SNA•ps Access/3270 implementation of the Apple 3270 API. This knowledge is of value to 3270 API developers writing code to specifically handle the SNA•ps implementation of the API.

Overview

The SNA•ps Access/3270 file contains the access method code, the host connection code, the INIT code, (which loads the host connection) and a number of miscellaneous resources including icons and strings. The file is

located in the Extensions folder under System 7 and in the System Folder under System 6. Whereas the access method code is a code resource managed by 3270 Prep, the host connection code is implemented as a Macintosh device driver. The access method communicates with the host connection using the device manager's Control routine.

Access Method

The access method contains the following resources:

- 3270 - Contains information about the access method returned in the FindAccessMethods request:

```
methodName    - SNA•ps Gateway    // Access method name
hcPrompt      - Gateways:         // Prompt for host connection dialog
appMem        - 8000              // Amount of application heap required
version       - 0x200             // Encoded API version number
connType      - kAppleTalkEntity  // Connection type (zone name
                                  // required)
hostLangHndl  - 0                 // Place holder for handle to list of
                                  // host languages.
theICNLID     - 150               // ICN# Resource ID
theicl4ID     - 150               // icl4 Resource ID
theicl8ID     - 150               // icl8 Resource ID
theicsLID     - 150               // ics# Resource ID
theics4ID     - 150               // ics4 Resource ID
theics8ID     - 150               // ics8 Resource ID
lcrsID        - 128               // LCRS Resource ID
trtpID        - 128               // TRTP Resource ID
hlidID        - 128               // HLID Resource ID
```

- HLID - the CGCSGID and keyboard ID for the language always supported by the host connection. While the host language and keyboard ID below refer to the base English language, note that these are subject to localization:

```
hostLangID    - 0x00650025      // The CGCSGID for the host language
keyboardID    - 1               // The keyboard ID for the host language
```

- Icons - ICN#, icl4, icl8, ics#, ics4, and ics8 all with ID 150 are the icons used to represent
the SNA•ps Gateway and are returned by FindAccessMethods.

- LCRS - the access method code resource.

- STR# - three strings lists are defined:

```
ID 2000 - contains error strings for the SNA•ps specific error codes in
          the -8500 to -8999 range.
ID 2001 - is a place holder for error strings for the general error codes
          in the -8000 to -8499 range.
ID 2002 - contains string(s) used by the access method.  Currently this
          includes only the driver name.   If you change this string, you
```

must change the driver name in the DRVR resource to match it.

- TRTP - a resource which describes which translation resources are required for a language to be considered valid. For this implementation, a given language is considered valid if its resources are from files with any creator ('????') and there are resources of type AtoE, EtoA, PtoE, and EtoP for a given language. AtoE and EtoA stand for ASCII to EBCDIC and EBCDIC to ASCII respectively. These API defined tables translate between Apple 3270 API ASCII and the EBCDIC code page for the given language. PtoE and EtoP stand for PC ASCII to EBCDIC and EBCDIC to PC ASCII respectively. These two table implementation defined resource types are used by the file transfer requests.

Each of these request does the following:

- OpenAccessMethod - Opens the driver in the SNA•ps Access/3270 file and allocates a small block of memory for access method storage. It then passes the request to the driver for processing.

- CloseAccessMethod - reverses the action of OpenAccessMethod. The request is given to the driver for processing, and then memory is freed.

- PollSessions - this request is not passed to the driver for processing. Instead, the driver and the access method have a locked shared PollSessions request block. The driver issues PollSessions requests on behalf of every API user during its periodic processing. Any events that have occurred are indicated in this shared request block. When an application issues PollSessions, the access method code looks at the shared PollSessions request block and copies any events returned into the passed PollSessions request block. This saves the overhead of the device manager calls for this time critical and frequently called request .

- GetErrorString - Returns error strings for all errors if they are included. Currently only SNA•ps specific errors are returned.

Host Connection

The SNA•ps Access/3270 implements the host connection as a device driver loaded by an INIT at boot time. This host connection code is a linked Macintosh application (called DrvrApp) with a device driver shell. The device driver code interfaces to the device manager with DrvrApp. The INIT loads all of DrvrApp's code resources into the system heap and builds the application jump table and global area. When a request is issued by an API client, the access method issues a call to the device driver's Control procedure. This routine sets up the application environment before passing the request to DrvrApp for processing. The combination of code and memory used by the driver is approximately 180K. DrvrApp handles all of the requests not handled by the access method.

The following lists information about the SNA•ps implementation of selected requests:

- FindHostConns - The passed parameter, zoneStr, is required by this (SNA•ps Gateway) implementation. If set to nil or *, the local zone name

is used. The following describes interesting parameters returned in the HostConnInfo structure:

```
hcName           - the AppleTalk entity object field for a SNA•ps
                   Gateway.
strangerName     - not used in this implementation.  Always set to zero
                   length string.
defaultLang      - set to the base English code page.  This is the same
                   value that is contained in the HLID resource.
hcStatus         - kStranger is never returned.
sessTypes        - is always set to the bitwise OR of kLU1Mask, kLU3Mask,
                   and DisplayMask.  This reflects the fact that a SNA•ps
                   gateway always supports LU1, LU2, and LU3 session
                   types regardless of how it's configured.
structuredFields - always set to true indicating that the host connection
                   has code to support structured fields even if a
                   particular session may not carry structured fields.
ftSupported      - always set to true indicating file transfer support.
                   IND$FILE is the one file transfer type supported.
dbcsSupported    - always set to true indicating that the host connection
                   has code to support DBCS data even  if a particular
                   session may not carry DBCS data.
```

- OpenHostConn - The passed parameter, zoneStr, is required by this (SNA•ps Gateway) implementation. If set to nil or *, the local zone name is used. If you try to activate an already active gateway, an error will be returned. When trying to activate or get the status (in FindHostConns or OpenHostConn) of a gateway, the following errors can be returned:

```
kCapyPermission      -8520   // Not authorized to download gateway
kCapyBadConfigVers   -8521   // Not a proper configuration
kCapyMSizeError      -8522   // Configuration too big
kCapyTooManyLUs      -8523   // Too many LUs for your gateway package
kCapyNotEnoughSysMem -8524   // Ran out of system heap in DynamicDownload
kCapyMCPLoadNoFWD    -8525   // Couldn't find the Forwarder
kCapyMCPLoadNoMem    -8526   // Gateway failed to get memory
kCapyToManyUsers     -8527   // Maximum of number of gateway clients
                             // exceeded
```

- FindSessions - The following describes interesting parameters returned in the HostConnInfo structure:

```
keyPrompt     - is returned as "Enter password:" but should not be used
                since a session key is not required.
sessTypes     - if the particular session type is known (i.e. the session
                is bound) then a specific value will be returned here:
                kLU1Mask for an LU1 session, kDisplayMask for am LU2
                session, and kLU3Mask for an LU3 session. If the
                particular session type is not known, then the configured
                device type is used: if the device type is printer then
                kLU1Mask ORed with kLU3Mask is returned.  If the device
                type is display, then kDisplayMask is returned.
modelRequired - is always set to false.  The screenEmul field in
```

```
                OpenSession is not  required to specify a specific model
                type.
  keyRequired   - is always set to false.  The sessionKey field in
                OpenSession is not used.
```

- OpenSession - you can define a DAB containing the kFieldValidation attribute, but those DAB values will always be returned as zeros. The sessionKey field is not used. On rare occasions, OpenSession will incorrectly return a kAPISessNotFound error. This happens when more than 30 seconds have passed without a response from the gateway since the gateway was sent the verb to allocated the indicated LU. This is an unusual situation which only happens if there is extreme network load or if the gateway machine is unresponsive.The default language is used in OpenSession when either a nil hostLangDef pointer is passed or when a count of zero langauges is passed (SNA•ps v1.1.1).

- PollSessions - when an API client issues this request, the access method only returns an event that had been previously posted for that client. The actual scanning of sessions and posting of events happens in the driver during periodic time. For display sessions, events are returned in this order of priority: kSessionStatusEvent, kPSUpdateEvent, kDoSendEvent or kDoReceiveEvent, and kPassThruDataEvent. For LU1 sessions, events are returned in this order of priority: kSessionStatusEvent, kLU1DataEvent, and kPassThruDataEvent. For LU3 sessions, events are returned in this order of priority: kSessionStatusEvent, kLU3DataEvent, and kPassThruDataEvent.

- SendKeys - the following control keys are not supported and will result in an error being returned from the SendKeys request: kCKTrigger, kCKExtSelect, kCKTest, kCKTextOnOff, kCKFISymSet, kCKCursPos, kCKCursBlink, kCKAltCurs, kCKMultLogicalTerm, kCKEADocOn, kCKEADocOff, kCKEAChangeFormat, kCKEAWordDelete, kCKEAWrap.

- CopyOIA - of the defined group indicator bits, the following are NOT returned: kSetupMode, kTestMode, kSubsystemReady, kExtendedSelect, kAPL, kKana, kAlpha, kText, kUpperShift, kPSSOperSelect, kPSSFieldInherit, kNonResetMachineChk, kSecurityKey, kMachineCheck, kRetry, kDevNotWorking, kDevVeryBusy, kDeviceBusy, kMinusSymbol, kNotEnoughEntered, kWrongNumber, kNumericField, kOperUnauth, kInvalidDeadKey, kMessagePending, kPartitionWait, kHardwareMismatch, kLogTermNotConfAtCU, kAutoKeyInhibit, kAppProgHasOpInpInh, kPSSSelected, kRspTimeMonitor, kPrintCodeNotCust, kPrinterMalfunction, kPrinterPrinting, kAssignPrinter, kWhatPrinter, kPrinterAssignment, kPlay, kRecord, kRecordingOverflow, kPause, and kWindowIsEnlarged.

- StartSend - the only file transfer type supported is IFIL. All other types will result in an error. kOtherHost is an unsupported value for the hostEviron field.

- StartReceive - the only file transfer type supported is IFIL. All other types will result in an error. kOtherHost is an unsupported value for the hostEviron field.

- QuerySession - returns Structured Field and Query Reply information as listed below. Returns IFIL as the only supported file transfer type. The transportType field is always returned as kDFTSNATransport. The LU type is returned as kUnknownLU before a session is bound. The replyMode field is set to kUnknownReplyMode if a session is not bound or if it's a bound LU1 session. The sfSupport support field remains at kSFSupportUnknown until a BIND has arrived at which time it is either kSFSupported or kSFNotSupported.

Structured fields processed:
  Read Partition
  Erase/Reset
  Set Reply Mode
  Destination/Origin
  Outbound 3270DS
  D0 Structured Fields (if file transfer active)
  SCS Data (for LU1 sessions)

Query Replys issued:
  Null
  Usable Area
  Character Sets
  Implicit Partition
  Color
  Highlighting
  Reply Modes
  DDM
  Field Outlining
  Paper Feed Techniques
  Settable Printer Characteristics
  3270 IPDS
  DBCS(Asia) - if DBCS supported.

Error codes

The following error codes are specific to the SNA•ps Access/3270 API implementation:

kCapy2ndOpenAM	- Second OpenAccessMethod call in access method. Impossible condition.
kCapyADSPErr	- ADSP error while communicating with the gateway or gateway agent
kCapyAMPError	- AMP protocol error while communicating with the gateway agent.
kCapyAbortReqLogic	- Internal logic error in AbortRequest
kCapyAddUserErr	- Internal error opening access method (aka adding a user).
kCapyBadSessName	- Illegal LU name (session name).
kCapyCAMLogic1	- Internal logic error #1. Invalid reserved field.
kCapyCAMLogic2	- Internal logic error #2. Invalid reqID field.
kCapyCallDrvrErr	- Internal logic error. Nil DrvrApp entry point.
kCapyCantFindAM	- Internal logic error. Returned in debug version only.

```
  kCapyFHCLogicErr1    - Internal logic error.  PLookupName call failed.
  kCapyFHCLogicErr2    - Internal logic error.  NBPExtract call failed.
  kCapyFTIntrnlErr     - Internal file transfer logic error.
  kCapyGWayCommyErr    - Error communicating with the gateway.
  kCapyGWayConnErr     - Can't establish a gateway connection.
  kCapyGWayErr         - Error communicating with the gateway.
  kCapyInvGlobs        - Internal logic error.  Access method reserved
                         field invalid.
  kCapyNoIPCQueue      - Internal logic error.  Returned in debug version
                         only.
  kCapyOpenDriverErr   - Error opening the SNA•ps Access/3270 driver.
  kCapyResErr          - Error loading resources.
  kCapyPermission      - Not authorized to download gateway
  kCapyBadConfigVers   - Configuration isn't correct
  kCapyMSizeError      - Configuration too big
  kCapyTooManyLUs      - Too many LUs for your gateway package (invalid
                         configuration)
  kCapyNotEnoughSysMem - Ran out of system heap in DynamicDownload
  kCapyMCPLoadNoFWD    - Couldn't Find The Forwarder
  kCapyMCPLoadNoMem    - Gateway failed to get memory
  kCapyToManyUsers     - Maximum of number of gateway clients exceeded
```

Localization

There are two aspects to localization of the SNA•ps implementation of Apple's 3270 API. The first, user visible strings, are contained in STR, STR#, and 3270 resources. The second is the default host language provided if the Host Translation Tables folder either doesn't exist or doesn't contain the default language resources. To change the default language from base English, you must change the HLID resource to contain the new CGCSGID and keyboard ID values, and then replace the AtoE and EtoA tables in SNA•ps Access/3270 to contain the new language tables.

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Tech Info Library

ABS Tech Note: SNA•ps11 SNA•ps Q&A (4/93)

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ABS Tech Note: SNA•ps11 SNA•ps Q&A (4/93)

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Article Reviewed/Updated: 26 July 1993

TOPIC

This technical note lists the most frequently asked questions regarding SNA•ps. The questions are sorted among three categories: SNA•ps 3270, 3287 and 3270 API, Installation and Gateway.

DISCUSSION

SNA•ps 3270, 3287, and 3270 API

SNA•ps 3287 Foreground/Background Printing Modes

Q: Why does SNA•ps 3287 print in the foreground on the LaserWriter LS (and other direct-connect printers that have background capabilities, such as the StyleWriter, HP PaintJet, and HP Deskwriter/C)?

A: This limitation arises because there isn't a way to determine whether background printing is supported by a given printer driver. Also, SNA•ps 3287 needs to prevent the user from doing anything while printing to a direct-connect ImageWriter. The combination of these two factors forces SNA•ps 3287 to handle the situation as you describe. See Technical Note: "SNA•ps05 3287 Tips," for detailed information and a possible workaround.

SNA•ps 3287 Memory Requirements

Q: I get warnings about low memory while running SNA•ps 3287.

A: Increase SNA•ps 3287's memory size using the Finder's Get Info command. SNA•ps 3287 has a default partition of 450K. Each additional page of unprinted accumulated data requires one half K of RAM, therefore, to hold 200 pages of unprinted accumulated data, you need 550K. If you run out of memory by accumulating too many unprinted pages, SNA•ps 3287 will warn you and stop receiving data from the host until some memory is freed by pages being printed and deleted. See Technical Note: "SNA•ps05 3287 Tips," for detailed information about SNA•ps 3287 memory usage.

Note: SNA•ps 3287 v1.1.1 changed the default timeout setting to include a 200 page timeout limit. At the default memory size of 512K, SNA•ps 3287 can guarantee having enough memory to accumulate and then print 200 pages without running out of memory. The new default setting simply guarantees that SNA•ps 3287 can be installed and used without fine-tuning the timeout settings even if print jobs arrive continuously.

Does SNA•ps 3270 use the Apple 3270 API?
Q: Does Apple's 3270 API support both SNA•ps 3270 GC and SNA•ps 3270 direct?
A: Apple's 3270 API is a programming interface which is used to give host access via a variety of connection methods (both Apple and third party). SNA•ps 3270 GC and SNA•ps 3270 are separate products which currently are not written to the 3270 API interface.

Apple 3270 API - What files are necessary?
Q: Which files are necessary to run applications written to the Apple 3270 API?
A: The following files must be located on the 3270 API client machine in order to allow the client to access SNA•ps Gateways:
ADSP 1.5.1 (only required with system 6.0.x)
3270 Prep 2.0.1
SNA•ps Access 1.1.1
Apple's 3270 API implementation is written specifically to support the SNA•ps Gateway. The necessary file for 3270 API connectivity via SNA•ps is SNA•ps Access/3270. This file contains Apple's implementation of the API. As long as these files are on a client machine, applications written to the API will work properly via a SNA•ps Gateway.

SNA•ps Installation

SNA•ps v1.1.1 and v1.0 Compatibility
Q: Can I freely mix v1.0 and v1.1 clients and gateways?
A: The SNA•ps 1.1.1 and 1.0 Gateway packages are not compatible - always use a SNA•ps Access and a SNA•ps Gateway of the same version. Applications such as SNA•ps 3270 will run over either version of SNA•ps Access (SNA•ps 3287 requires SNA•ps Access v1.1.1 and a v1.1.1 Gateway). See tech note "SNA•ps01 Version Compatibility" for more details.
Note: SNA•ps versions 1.1 and 1.1.1 are completely compatible.

SNA•ps - System Software requirements
Q: What version of the system software is required for a SNA•ps Gateway?
A: SNA•ps 1.1.1 uses A/Rose 1.1.8, which will not run on system 6.0.5. You MUST upgrade to system 6.0.7, 6.0.8, or 7.0.x in order to run the 1.1.1 Gateway.

SNA•ps Gateway won't initialize because machine isn't named
Q: I loaded a SNA•ps Gateway on a machine on which System 7.0 was recently installed, and the SNA•ps Gateway won't initialize because I haven't named my machine.
A: If you are using System 7.0, SNA•ps requires that the owner and name of the machine in the sharing setup control panel must be provided. It is

advisable to set this before installing the SNA•ps Gateway.

System Files required for SNA•ps Client Access

Q: We're upgrading our SNA•ps servers and clients from version 1.0 to 1.1.1. We use the Installer application to upgrade the Gateways, and we'd like to use our own automated upgrade utility to upgrade the client machines. Can we distribute only the SNA•ps Access without the other system files and without using the Installer? If we need to distribute the other system files, which versions do we need for System 6.0.5? Are the system files distributed with the SNA•ps software compatible with 6.0.5?

A: The Installer isn't required for upgrading your client machines. The only system files required on client machines are ADSP and SNA•ps Access. You'll need ADSP 1.5.1 for System 6.0.x machines (ADSP hasn't changed since SNA•ps 1.0.1 was released). However, Apple doesn't support System 6.0.5 when using SNA•ps 1.1.1. System 6.0.7 is the earliest system software version tested for compatibility with SNA•ps 1.1.1.

What does the SNA•ps install do?

Q: When running the Installer to install a SNA•ps 1.1.1 workstation, does the SNA•ps software only copy files, or does it install resources in the system?

A: The SNA•ps installer software only copies files.

SNA•ps - System 7.0 memory requirements

Q: I'm having memory problems when running SNA•ps client software on an Macintosh LC with 2 Meg of memory and System 7.0

A: Please see the release notes for information regarding running in this configuration. Generally, 2.5 Meg of RAM is recommended when running SNA•ps with System 7.0.

SNA•ps Gateway

SNA•ps Independent/Dependent LU Support

Q: The SNA•ps Gateway will not let us define a mix of dependent and independent LUs. We need to support parallel conversations over LU 6.2 and also provide 3270 sessions. Is there any way to do this?

A: The limitation is that the gateway does not support dependent and independent LUs on the same line/partner (PU). There are several workarounds for this. If you are using SDLC, you can define a multi-drop configuration, (see the sample multi-drop config). This will allow you to run both Dep and Indep on the same SDLC line. If you are using Token Ring, then you will need to define two lines and two partners in a single configuration, the partners should have different SAP addresses to the same TIC. Then you define Dep and Indep LUs separately on the two line/partner combinations (one partner is type 2.1 the other is type 5). Alternatively, you can have two partners with different XIDs to the same TIC (one PU Dep the other Indep). Either approach will provide the functionality you need.

SNA•ps - Token Ring 4/16 Support

Q: Version 1.0.1 of the SNA•ps Gateway will not run on an Apple 4/16 TokenTalk NB Card. (We can make it work on Apple's previous Token Ring

card but not on the current product). Does version 1.1.1 fix this? If so, how fast can we get version 1.1.1?

A: Yes, version 1.1.1 is needed. This is currently shipping. You should send in for a free upgrade. All customers who purchased MacDFT or SNA•ps version 1.0 products are eligible for a free upgrade to the respective SNA•ps version 1.1.1. product. To receive a free SNA•ps 3270 version 1.1.1, SNA•ps 3270 GC, SNA•ps Gateway/8, SNA•ps Gateway/32 or SNA•ps Gateway/64 upgrade kit, send (1) proof-of-purchase such as an original SNA•ps 1.0 disk, MacDFT disk, or invoice and (2) your name, company name, address (no P.O. boxes, please), and telephone number to

Apple Computer, Inc.
Promotional Support
Attention SNA•ps 1.1.1 Upgrade
P.O. Box 4055
Cupertino, CA 95015

Please allow 3 to 5 weeks for processing and delivery. For non-U.S. customers allow an additional 3 to 5 weeks.

Defining Transaction Program Names

Q: We can't find a way to use dynamically defined Transaction Program Names (TPNs). They must be pre-configured in the Gateway. What's the trick?

A: Yes, TP names are defined statically. However, you can use the wildcard "*" to match any TP name.

Defining LU Names - AS/400 Connection

Q: We have a problem with LU 6.2 sessions, using our Apple 4/16 Token Ring adapter card with OS/400 2.1.1 on the AS/400. The Token ring line, Controller, and Device all show status of ACTIVE. The virtual controller QPACTL01 has been created and is showing status of ACTIVE. The virtual devices for this controller are showing status of VARY ON PENDING. We're getting an SNA negative response with sense code of 0806, which indicates a request reject, resource unknown. Why we are having problems with this mode?

A: In the SNA•ps configuration under Remote LU 6.2's Characteristics you want the "Network LU Name" to be set to DVIAS400. In the trace you sent us the AS/400 is sending that as its local name and the SNA•ps Gateway is rejecting it because it doesn't know about the name DVIAS400. The name field in the Remote LUs 6.2 is for local use by SNA•ps transaction programs, and is not the network name field used to BIND with the AS/400. The Network LU Name is the name you should be using.

How Do Modes Get Activated?

Q: We're experiencing difficulties with SNA•ps modes getting disabled when we restart it from SNA•Admin. Our configuration file has the "Automatically activate" checkbox set for every mode. Most modes are activated when our gateway starts up, but some are not. When we try to use connections with disabled modes, we get communications errors. Should the modes be enabled automatically when the gateway restarts? Can some other event cause them to be disabled? If external events can cause a mode to be disabled, is there any way for us to tell when this happens?

A: There are a number of reasons for sessions not coming active. Please check that you have selected the "minimum prebound" setting if you wish

sessions to automatically come active. If this is selected, then you'll need to check the line trace to determine why the binds are being rejected. There are numerous reasons for this, such as configuration mismatch or resource shortages. The sense code information associated with the bind rejects will give a clue to the cause. These types of messages will be logged in the SNA•ps log facility. All binds and session establishment problems are routinely logged. But again, a line trace may be necessary for more exact information regarding the reasons for the failure. See Tech Note "SNA•ps04 Bullets" for more information.

Support for Third-Party Token Ring Cards

Q: I have a question about a configuration for using the SNA•ps Gateway over a token ring connection. If I have several Macintosh systems with DCA (formerly Avatar) 4/16 token ring cards in them (and that's their only connection to each other; no LocalTalk connections), can I put one Apple TokenRing card in one of the Macintosh systems and put the SNA•ps Gateway software on that Mac and use that one as the gateway for all the other Macs? In other words, can the Macs that contain only Avatar token ring cards somehow communicate through the one Macintosh that has the Apple token ring card and the SNA•ps Gateway?

A: This will work fine. If you don't have an DCA (formerly Avatar) card in the machine running the SNA•ps gateway, you'll still need to run TokenTalk on that machine. For the Apple Token Ring 4/16 card use TokenTalk 2.4; for the TokenTalk 512K board use TokenTalk 2.2

Problems Starting Gateways

Q: When we try to start our SNA•ps Gateway, we get a message similar to the following: "Couldn't open gateway connection to server. Please make sure gateway machine is running." Since this is the gateway machine, I'm pretty sure it is running. Any suggestions or ideas?

A: This message indicates some problem with ADSP or A/ROSE. Make sure the card is secure in the slot, or try moving the card to another slot or replacing the card. You can use nprm to diagnose the problem. Nprm is a utility which allows status messages from the gateway, running on the NuBus card to be displayed on the Macintosh screen. You can obtain Nprm through the normal Apple Support Channels.

SNA•ps Connection to an AS/400 - Autoconfigure Option

Q: Is there some setting that would hinder the AS/400 from autoconfiguring devices and modes? Even though the autoconfig parameter is set to *YES, it doesn't always create devices and modes, particularly when the SNA•ps Gateway is set to host mode.

A: You need to two autoconfig parameters: With WRKSYSVAL, there's a parameter QAUTOCFG that says whether to autoconfigure devices (default=yes). In the line description, there's a parameter that says whether to autoconfigure controllers (default=no).

SNASVCMG Mode - What is it?

Q: What is mode SNASVCMG?

A: SNASVCMG stands for SNA Service Manager, and is used by SNA•ps for managing parallel sessions.

Article Change History:
26 July 1993 - Company title changed from Avatar to DCA (Digital Communication Associates).

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Tech Info Library Article Number:11698

Tech Info Library

ABS Tech Note: SNA•ps12 APPC Samples (10/92)

Revised: 9/7/93
Security: Everyone

ABS Tech Note: SNA•ps12 APPC Samples (10/92)

==========

Article Created: 28 October 1992

TOPIC ----------

This tech note contains information regarding the SNA•ps APPC Developers Kit sample applications. Information on the following subjects is presented (examples are specific to the AS/400):

- Security issues
- Improvements to APDA samples
- General performance tips

DISCUSSION ----------

Security issues - AS/400 Example

The APDA APPC sample applications can easily be modified to pass userID/password security. Change the MC Allocate request setting security = kProgSec and fill in the userID and password parameters. This may be necessary if you are having problems passing userID/password security on the Allocate conversation request. Prior to OS/400 v1r3, the default user for programs invoked via APPC was QUSER (a low privilege user) and the APPC sample application programs worked successfully. Starting with OS/400 v1r3, the security was tightened so that AS/400 APPC transaction programs cannot be started without a valid userID/password combination. A symptom of the problem is a "Program Start Request rejected" message on the QSYSOPR message queue of the AS/400.

Improvements to The Sample Applications

The APPC sample applications as they are currently distributed contain a slight mismatch. The AS/400 thinks it is dealing with a record size of 4096 bytes, but the Macintosh is really sending 4092 bytes. This is due to the way mapped conversations work. The Mac does a MC Send Data with length set to 4096 bytes, but the first 4 bytes are reserved, so the AS/400 receives only 4092 bytes of data. This can be corrected by changing the AS/400

source code and ICF file to do reads/writes of 4092 bytes and changing the record length of the AS/400 physical file to 4092. Alternatively, changing the Macintosh TP to perform a MC Send Data with the length parameter set to 4100 will correct the mismatch.

Performance

Substantially improved performance (reduces the time by 50%) can be obtained by specifying "binary" in the AS/400 open statement:

```
fopen(as400name, "rb type=record")
```

Further improvements can be obtained in the case where multiple file transfers occur. If the AS/400 application is re-written to remain active (that is handling multiple file transfer requests) until the Mac application deallocates, the overhead of allocating a conversation for each file transfer is eliminated.

Prestart Jobs - AS/400

Performance improvements can be obtained by prestarting the job on the AS/400. This increases performance since there is no startup time when the program is invoked. Creating a new subsystem or modifying the job's priority can also yield increased performance. Use the following commands to set-up the prestart option:

End Subsystem: ENDSBS QCMN
Create a class for QCMN (QSYS/QCMN)
Work With Class: WRKCLS - change the job run priority from 50 to 30
Add Prestart Job Entry: ADDPJE - add Prestart job entry for example MYLIB/FILECSVR (it is possible to designate a class to give your application a different priority than other prestart jobs in the same subsystem).
Start Subsytem: STRSBS QCMN

SNA•ps Tuning

Modify the I-frame size in the SNA•ps line description, the maximum RU size in the SNA•ps mode, and the buffer size used by the APPC sample application TP. A combination of I-frame size=4105, max RU=4096, and application record size=4092 has been found to work fine.

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Tech Info Library Article Number:11699

ABS Tech Note: SNA•ps13 Admin Trace v1.1.1 (4/93)

Revised: 9/3/93
Security: Everyone

ABS Tech Note: SNA•ps13 Admin Trace v1.1.1 (4/93)

==========

Article Created: 26 April 1993

TOPIC

This technical note discusses the fixes and outstanding feature limitations of SNA•ps Admin v1.1.1 Trace facility. It also provides some hints on how to get the most out of the tracing facility.

DISCUSSION

Introduction

The SNA•ps Admin v1.1.1 Trace facility addresses two of the problems in the previous version: BIND type Decoding and the Coax Trace Decoding. In addition, the Trace facility is now faster.

Problems fixed

- BIND type Decoding: The BIND responses were sometimes displayed with the wrong LU type. This problem has been fixed and the BIND response now displays the correct LU type.

- Coax Trace Decoding: On a coax gateway, the DVINFO message was improperly decoded as if it had a TH and RH SNA header on the data. The DVINFO message is now decoded correctly.

Outstanding problems

- Truncated Data: The Trace data is truncated at 256 bytes. This is a problem when you are running in an environment that has larger BTU sizes and you are interested in the data near the end of the frame.

- Lost Frames: Because of the limit on buffer space available on the gateway machine, trace data can be lost. This occurs when data is arriving at the gateway faster than SNA•ps Admin can display it on the screen or store it in a file. The gateway can only buffer 32K bytes of

trace data before losing data.

- V25bis Info: Some V25bis autodial commands will not appear in the line trace.

How to make the trace work better for you: "Helpful Hints from Steve"

The trace loses frames because SNA•ps Admin can't copy the trace data from the gateway as fast as it arrives on the line. The gateway has a limited capacity to buffer the data. The faster SNA•ps Admin can copy the data from the gateway, the less data will be lost.

There are several things that you can do to speed up SNA•ps Admin:

- Run SNA•ps Admin on the Gateway machine: Running SNA•ps Admin on the same machine as the gateway improves performance because the data does not need to traverse the AppleTalk network.

- Close Windows: When running the trace, you should close the SNA•ps Admin Network Gateway Status window, and the Gateway Status window. Keeping these windows open and up to date reduces the amount of time SNA•ps Admin can devote to copying the trace data.

- Shut down other Applications on the machine: Having any other application open on the machine will slow down SNA•ps Admin.

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Tech Info Library Article Number:11700

Tech Info Library

DAL: DB2 Host Date/Time For Time Stamp (3/93)

Revised: 3/8/93
Security: Everyone

DAL: DB2 Host Date/Time For Time Stamp (3/93)

==========

Article Created: 1 March 1993

TOPIC ----------

I want to use the date and time as data in a DB2 database in a client/server environment. I can not use the date and time of the Macintosh, because it is not necessarily the same among Macintosh client stations.

Is it possible to obtain and use the date and time of the DAL server as data for our DB2 database? (The data will be use as an historical events registry and the date and time is essential). How can I do this?

I currently use DAL-VTAM to communicate with DB2. The client is a 4D application using 4D-DAL.

DISCUSSION ----------

DB2 supports access to two system-level data items called:
• Current date
• Current time

DAL does not support the use of these "reserved words", or special data items, at this time.

In the meantime, we can think of only one "work-around" if you are willing to do the following:

1) Create a table with two fields:
Create table datetime (datefield date, timefield time);

2) Grant all access to this table to public.

3) In your application do the following set of DAL statements. (What we're doing here is having you request the system date & time, update

the one-record table with that information, and use that information for a timestamp in whatever way you need.) This may not be the best solution, but it is the best we can offer at this time:

3.1 Execute in DB2:
"delete * from date_table";

3.2 Execute in DB2:
"insert into date_table values (current date, current time)";

3.3 In your application:
select datefield, timefield from datetime;

3.4 Use these values as you need.

We haven't been able to test this solution completely - our DB2 won't allow any new tables because the disk (VTOC) is full - but we feel pretty sure that this is close to the correct SQL, and you should be able to work it out yourself if there are any minor errors.

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Tech Info Library Article Number:11703

Tech Info Library

LaserWriter Pro: Test Print Shows All Drives as External (3/93)

Revised: 3/16/93
Security: Everyone

LaserWriter Pro: Test Print Shows All Drives as External (3/93)

==========

Article Created: 9 March 1993

TOPIC ----------

The LaserWriter Pro 630 user test print doesn't indicate that an internal SCSI hard drive is installed. Instead, the test print denotes the internal hard drive as an external SCSI device. Is this normal?

DISCUSSION ----------

The LaserWriter Pro 630 does not differentiate between an internally or externally connected SCSI device. Therefore, whether the hard drive is internally or externally connected, the user test print will always indicate that the hard drive is an external device.

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Tech Info Library Article Number:11705

Tech Info Library

Multiple Drives: Long Periods of Disk Activity During Startup

Revised: 3/2/93
Security: Everyone

Multiple Drives: Long Periods of Disk Activity During Startup

==========

Article Created: 2 March 1993

TOPIC ----------

I have a Macintosh running System 7, and four disk drives attached. The disks are accessed at startup for long periods of time. Is something writing to all the drives, like a virus? I can't restart or shut down while the disk activity is going on.

DISCUSSION ----------

When starting up the Macintosh with four disk drives under System 7, disk access is constant and moves from drive to drive during the first few minutes after seeing the desktop. If you choose Shut Down or Restart from the Special menu, nothing happens until the disk activity stops.

The Macintosh is configured with File Sharing ON. At startup, File Sharing reactivates, and this may take some time depending on the number of drives. While File Sharing is starting up, you can select Restart and Shut Down but they won't take effect until File Sharing is ON.

You can monitor the state of File Sharing via the Sharing Setup control panel (it will say either OFF, starting up, or ON). Restart and Shut Down commands can't complete while File Sharing is starting up. The Finder doesn't notify the user of this and will perform the shutdown or restart after File Sharing is ON.

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Tech Info Library Article Number:11706

Tech Info Library

PowerBook Duo: Video Setting Default (3/93)

Revised: 5/31/94
Security: Everyone

PowerBook Duo: Video Setting Default (3/93)

==========

Article Created: 3 March 1993

TOPIC ----------

My PowerBook Duo 230 is connected to the Macintosh Duo Dock, with an E-Machines ColorLink Video card and Apple monitor. If the Duo is removed from the Dock, and then returned to the Dock, it doesn't "remember" the previous setting and starts up in monochrome. Why is this?

DISCUSSION ----------

The System software's Start Manager expects to see the specified card installed, and when the Duo is not docked it defaults to the first available video resource, which is the Duo's built-in monochrome display.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11709

Tech Info Library

DAL: Canceled Query Hangs (3/93)

Revised: 3/8/93
Security: Everyone

DAL: Canceled Query Hangs (3/93)

==========

Article Created: 2 March 1993

TOPIC ----------

I'm having a problem whenever a user cancels a query from GQL. I get an error message "Can't access the host". Here is the information about my DAL environment.

DAL Environment

DB2 maint level : 9206 release 2.3
MVS maint level : 9006
VTAM main level : 9006
Using Jes2
System ESA but VTAM is XA version 3.3
Network connection: SNA•ps APPC
SNA•ps APPC version: 1.1b3.
DAL VTAM Server : 1.3.5
DAL Client : 1.3.7
Using GQL. This is where the cancel problems are occurring.
Also using Dataprism.

DISCUSSION ----------

You should purchase the 1.1.1 release of SNA•ps.

We've checked with two engineers, one for the SNA•ps APPC network adapter and one for the Client driver.

There is no way for an APPC connection to issue the break command to the server. This is a limitation of the protocol. Therefore, attempting to use the break function on an APPC session can cause confusion and some messiness.

You might think the server is in a loop, but it's not; it's just continuing to process the DBMS command which was given to it previously. It will not see the client as gone, and the network connection will remain open. This means that the LU will be tied up in an active session in the gateway, and the userid will be "in use" to the server.

In the testing we did (with GQL 3.0) we were able to determine two methods of dealing with the problem. One way is probably what a Macintosh user would do and the other is what he should do.

What a Macintosh User Probably Will Do
---

1) Issue the break command.

2) May not wait until GQL finishes processing the break, or the break may "hang".

3) Force quit the GQL application.

4) MUST restart the Macintosh to clear the DAL Client driver -- if not the Macintosh can get really hung when DAL is next accessed.

5) Attempt to re-use GQL/DAL.

6) Notice that the connection attempt just "hangs", never seems to return.

7) Check gateway, see session number.

8) Get frustrated!

What You Should Do
---

1) When the break command is issued to GQL, wait patiently for it to complete its processing and re-activate the mouse. This means more than just being able to move the mouse, it means being able to click on the GQL query window and close it.

2) Quit GQL and request "Close" of connection.

3) When GQL quits completely, the APPC session will still be active in the gateway. Any attempts to reconnect with that LU, or with that userid and a different LU will not succeed and may "hang" the application.

4) Request the console operator to answer the outstanding "request for reply" for the server with the following command:

   nn, cancel,userid (where nn is the request number)

   This will cancel the APPC session and free the LU in the gateway.

5) To actually complete the cancel of the userid in the server, you must use the DAL Monitor to cancel the userid. This is done by logging onto the Monitor by a command such as:

   logon applid(dalserve) data(tpn=dalmon)

6) Hit 'enter' twice and you will see a listing of the active users in the server. Type a 'C' on the line for the userid to be cancelled. This will complete the cancellation of the userid in the server.

7) Steps 5 and 6 can be done in the reverse order, but both methods are required for a complete cancellation and clean-up. The first cancel will terminate the APPC session and the second cancel (which MUST be done by the OTHER method!!) will cancel the userid from the server and DB2.

Until the session is terminated and the userid canceled, the server believes that the userid is still connected and will not allow the userid to make another connection.

DAL doesn't support the "break" feature for APPC connections. It is possible to cancel queries made with any of the 3270 protocol network adapters (SNA•ps 3270, MacMainFrame, Netway, etc.) to the VTAM server.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11710

Tech Info Library

LaserWriter Pro: HP Emulation and Font Support (3/93)

Revised: 4/5/93
Security: Everyone

LaserWriter Pro: HP Emulation and Font Support (3/93)

==========

Article Created: 10 March 1993

TOPIC ----------

Do the LaserWriter Pro 600 and 630 support HP LaserJet emulation? If so, which HP LaserJet printers do they emulate? Which fonts do the LaserWriter Pro 600 and 630 support in HP mode?

DISCUSSION ----------

The LaserWriter Pro 600 and 630 do support HP LaserJet emulation. They emulate the HP LaserJet IIP printer, which supports HP PCL4+.

As with the HP LaserJet IIP printer, the only fonts accessible with the LaserWriter Pro in HP emulation mode are Courier and LinePrinter. Since there is no LinePrinter font built into the LaserWriter Pro, Courier is the only font available. No other fonts in the ROM of the LaserWriter Pro are available for use in HP emulation mode. (Note: This also holds true for the LaserWriter IIf and IIg and Personal LaserWriter NTR, since they also emulate the HP LaserJet IIP).

By the way, there is actually a bug in the HP emulator that inadvertently allows access to the Helvetica and Times-Roman fonts if the HP IIP assigned font values are used in the escape code to change typefaces.

For example, the escape code to change typefaces is:

ESC(s#T

where # is the font value

3, 4, 5 are the assigned font values for Courier, Helvetica, and Times-Roman respectively.

So, if "ESC(s4T" is sent to the printer in HP emulation mode, then the printer will use the Helvetica font. Again, this is a bug, but it seems to work if you want Helvetica or Times-Roman output.

Since Helvetica and Times-Roman are proportional fonts, remember to use these escape codes to switch to proportional spacing:

"ESC(s1P"

to turn ON proportional spacing,

"ESC(s0P"

to turn OFF proportional spacing (when using monospace fonts).

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Tech Info Library Article Number:11712

StyleWriter II: Specified Life

Revised: 3/8/93
Security: Everyone

StyleWriter II: Specified Life

==========

Article Created: 5 March 1993

TOPIC --

What is the specified life of the StyleWriter II?

DISCUSSION --

The StyleWriter II is specified to last 20,000 pages or 5 years, whichever comes first. 20,000 pages equals about 5 years at 15 pages per day and 5 days per week.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11718

Tech Info Library

Hard Drive: If It Slows When Going from 68030 to 68040 (3/93)

Revised: 8/31/94
Security: Everyone

Hard Drive: If It Slows When Going from 68030 to 68040 (3/93)

==========

Article Created: 4 March 1993
Article Updated: 31 August 1994

TOPIC ----------

My external hard drive was originally initialized by a Macintosh IIcx. Now that it's attached to a Quadra 950, the hard drive appears to be slower. What might cause this?

DISCUSSION ----------

If you install System software on a hard disk drive using a 68030-based system and later use that same drive with a 68040-based system, you may notice that the hard drive's burst rate is limited to roughly 1.3MB/second instead of the approximately 3MB/second it should be.

This happens because the Cache Switch control panel is not installed and the default in that case seems to be off. You don't need to reinstall System software on the 68040 system. Just drop the Cache Switch control panel into the System Folder to restore the full performance of the hard drive data transfers.

Article Change History:
31 Aug 1994 - Corrected minor technical errors

Support Information Services

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Tech Info Library Article Number:11719

Tech Info Library

5th Generation Systems

Revised: 7/8/93
Security: Everyone

5th Generation Systems

==========

Article Created: 03/04/93
Article Reviewed: 07/08/93
Article Updated:

5th Generation Systems

10049 N. Reiger Road
Baton Rouge, LA 70809

504-291-7221

504-295-3268 Fax

Company Profile:
Software, specializing in SuperLaserSpool that does background printing and includes the desk accessory, LaserQueue.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11720

Express Modem: Maximum Number of Chars in Command Field (3/93)

Revised: 3/16/93
Security: Everyone

Express Modem: Maximum Number of Chars in Command Field (3/93)

==========

Article Created: 5 March 1993

TOPIC ----------

What is the maximum number of characters the PowerBook Express Modem software command buffer supports?

DISCUSSION ----------

The Express Modem's command buffer can accommodate 64 characters. For example, if a user manually enters an "ATDTxxx-xxx-xxxx" command, the telephone number portion can be up to 60 characters in length.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11724

Tech Info Library

Personal LaserWriter NT: SuperATM Message and ROM Upgrade

Revised: 4/5/93
Security: Everyone

Personal LaserWriter NT: SuperATM Message and ROM Upgrade (3/93)

==========

Article Created: 9 March 1993

TOPIC ----------

A README file from Adobe's SuperATM application reads: "If you are using an Apple Personal LW NT printer which does not have upgraded ROMS from Apple, your application may not be able to print substitute fonts. Please call customer support for assistance."

Is there a ROM upgrade for the Personal LaserWriter NT?

DISCUSSION ----------

Adobe Systems, Inc. told us that this message concerns the ability to use the Substitute Font functionality (part of the Multiple Master Font technology) of SuperATM. SuperATM uses new technology not present in the version of ROM that is in the Personal LaserWriter NT. Thus, customers must upgrade to a Personal LaserWriter NTR if they want to use this specific function.

Adobe has included an addendum sheet in their SuperATM package which also states this.

There are no plans to provide a ROM upgrade for the Personal LaserWriter NT.

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Tech Info Library Article Number:11726

FaxSender 1.1: Can't Dial # Symbol (8/93)

Revised: 8/10/93
Security: Everyone

FaxSender 1.1: Can't Dial # Symbol (8/93)

==========

Article Created: 8 March 1993
Article Reviewed/Updated: 10 August 1993

TOPIC ----------

I'm using Express Modem software and FaxSender 1.1, and I need to dial the # symbol in the FaxSender application. How can I do this?

DISCUSSION ----------

Inability to dial # is a bug in FaxSender. It was fixed in the Express Modem 1.0.3 software. The current version of the Express Modem software is 1.0.4.

Article Change History:
10 August 1993 - Problem has been fixed.

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Tech Info Library Article Number:11729

Tech Info Library

Macintosh Performa: Monitors Control Panel Settings (3/93)

Revised: 3/9/93
Security: Everyone

Macintosh Performa: Monitors Control Panel Settings (3/93)

==========

Article Created: 8 March 1993

TOPIC ----------

I have a Macintosh Performa 600 and 1MB VRAM. After I set the colors to Thousands in the Monitor control panel, the computer works fine with Thousands colors. But when rebooting, the system sets the color to 256 colors.

DISCUSSION ----------

Performa system software (7.0.1P, 7.1P, 7.1P1) was initially configured to always set the Monitors control panel to 256 colors (if capable) upon restart. This was done so that a novice user couldn't turn on their Macintosh for the first time and have the system come up in black and white. (Potentially this could make the customer think something was wrong with their "color" system.)

The problem, as you have discovered, is that you may want to intentionally set the Monitors control panel to black and white or take advantage of additional VRAM and leave the Monitors control panel set to Thousands.

This has been corrected in Performa system software 7.1P2.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11731

Tech Info Library

A/UX: Duplicate Characters Within mail ~ Command (4/95)

Revised: 4/26/95
Security: Everyone

A/UX: Duplicate Characters Within mail ~ Command (4/95)

==========

Article Created: 5 March 1993
Article Reviewed/Updated: 26 April 1995

TOPIC ----------

I am using mail by rlogin to a Sun from the command shell application on A/UX 3.0. Whenever I type a ~ (tilde) command, it is duplicated on the screen. For example, when I type ~v, the command shell echoes ~v~v. This happens only with ~ commands and not other characters. I looked at the terminal characteristics under the command shell, and they were set to the defaults. The terminal type is set to VT100.

When I connect to the Sun from Mac OS via VersaTerm, I don't get this problem. In addition, other Suns rlogging do not have this problem.

DISCUSSION ----------

We have experienced the same symptom. Although the mail command shell echoed (~v~v for example) on the screen, it still performed its task.

We think the problem is a conflict in using the SAME escape character '~' between the 'rlogin' and the 'mailx' program. The 'mailx' program uses the '~' character as an executing command within mail. While the 'rlogin' program uses the DEFAULT '~' character for escaping the rlogin session.

You could avoid the symptom by changing the rlogin escape character to another\ character via the -e option of the rlogin command line. For instance:

rlogin grumpy -e@ -l dchen

This uses the '@' character instead of the default '~' character.

Article Change History:
26 Apr 1995 - Made correction of typographical errors.

..TIL11733-A-UX-Duplicate_Characters_Within_mail_Command_4-95.pdf

Support Information Services

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Tech Info Library Article Number:11733

ABS Tech Note: DAL21 AS/400 Install Doc Update (2/93)

Revised: 9/7/93
Security: Everyone

ABS Tech Note: DAL21 AS/400 Install Doc Update (2/93)

==========

Article Created: 26 February 1993

TOPIC ----------

This Tech Note contains additional information about the Data Access Language for AS/400 Server installation. These items should be noted as changes, additions, or clarifications to the "Data Access Language Server for AS/400 Installation Guide, Version 1.3.7".

More information on IBM's AS/400 system can be obtained directly from the relevant IBM publications.

DISCUSSION ----------

Informational

The following informational items are true of the server at release 1.3.7, as loaded from the distribution tape/cartridge with a volume serial number of "DAL137":

- Page 9, "Restore the DAL distribution library from tape" (Step 3 of "Installing the server"): this action will result in 57 objects being restored and 114 security or data format changes occurring.

- Page 10, "Restore the demonstration database tables" (Step 5 of "Installing the server"): this action will result in 11 objects being restored and 22 security or data format changes occurring.

These object and format counts may change with future releases of the server. For that reason this information is not included in the published documentation; since it is informative, it is included in this Technical Note for clarification.

Change required

- Page 12, "Prepare to run the DALINST command" (Step 7 of "Installing the

server"): the 'Display System Value' command is not accurate. It should be: 'DSPSYSVAL SYSVAL(QSYSLIBL) <enter>'

- Page 27, "Create an SQL view with a statement similar to" (Step 3 of "Creating an SQL view" in Appendix B, "Displaying Table Lists"): the "• Note" is not accurate. It should be: "library/DALDBV01".

Clarification

Appendix B, "Displaying Table Lists" describes the two methods that can be used to create the list of tables that an individual user (or the entire site) will see when the DAL Client command 'Describe Tables' is executed. When issued, this command creates a list of available tables that are visible to the Client. Please note that DAL uses the SQL standard format of "Creator.Tablename" instead of the AS/400 standard of "Library/File" when displaying this table list.

In the AS/400 environment the table list can actually be a list of:

- Libraries and Files: displayed in the "Creator.Tablename" format as "LibraryName.FileName"

- SQL collections and tables: displayed in the "Creator.Tablename" format as "Collection.Tablename"

- A combination of both libraries and SQL collections

When using DAL in the AS/400 environment, it is important to note that the entire file system is available for display in the table list if no View has been created, or if it has been created improperly. This is because DAL is reading a system-wide directory in the AS/400 environment, not just a DBMS system catalog (as with other DAL Server environments). This search can be quite lengthy and may cause confusion for the user, as it will probably not reflect what that user should actually be able to see and access using DAL.

It is also important to note that the AS/400's object authorization is the final authority of what a user can access. For example, when issuing a 'Describe Tables', a user may be able to see many files and/or library names in the table list. If, however, that user does not have object authority granted for a specific item, they will not be able to see column/field names, nor the actual data for all items listed as a result of a 'Describe Tables'.

As installed, there is a site-level view created which will display only the demonstration tables shipped with the DAL for AS/400 Server. A new site-level view, or set of user-specific views, must be created to display a table list which is pertinent to the desired information for the site or user(s). For more information, see "Review/modify the environment file" (Step 9 of "Installing the server").

Creating an SQL view

Page 27, "Create an SQL view with a statement similar to" (Step 3 of "Creating an SQL view" in Appendix B, "Displaying Table Lists") explains how to create an SQL view that will result in the desired list of libraries and file names. To create this view requires that you have the SQL/400 licensed product, not just the SQL/400 runtime libraries.

The entry that is listed on page 27 requires clarification: if you are creating a view for a specific user, you must first create a library with the userid as the library name and then create the view substituting the library name (which is the same as the userid) in place of "library" in the 'CREATE VIEW' statement. Use the 'STRSQL' (Start SQL) function of the AS/400 while you are signed on as QSECOFR to create this view.

If you wish to define a view with the exclusions stated in the Install guide on page 27, which are:

- entries with null file or library names
- source files (DBXTYP would be an 'S')
- all libraries or collections starting with 'Q'
- all files starting with 'QDICT',

the following is the correct SQL/400 'CREATE VIEW' statement:

```
CREATE VIEW library/DALDBV01
     AS SELECT DBXFIL, DBXLIB, DBXOWN, DBXATR, DBXNFL, DBXTYP
          FROM QADBXREF
          WHERE NOT DBXLIB = ''     (there is no space between the quotes)
               AND NOT DBXFIL = ''
               AND NOT DBXTYP = 'S'
               AND NOT SUBSTR(DBXLIB,1,1) = 'Q'
               AND NOT SUBSTR(DBXFIL,1,5) = 'QDICT'
```

If you wish to allow the user to see a list of ALL the libraries (limited as specified above) EXCEPT for a specific one, use the following:

```
CREATE VIEW library/DALDBV01
     AS SELECT DBXFIL, DBXLIB, DBXOWN, DBXATR, DBXNFL, DBXTYP
          FROM QADBXREF
          WHERE NOT DBXLIB = 'LibraryName'
               AND NOT DBXLIB = '' (again, no space between the quotes)
               AND NOT DBXFIL = ''
               AND NOT DBXTYP = 'S'
               AND NOT SUBSTR(DBXLIB,1,1) = 'Q'
               AND NOT SUBSTR(DBXFIL,1,5) = 'QDICT'
```

To limit the user to see ONLY a specific library, the command should be:

```
CREATE VIEW library/DALDBV01
     AS SELECT DBXFIL, DBXLIB, DBXOWN, DBXATR, DBXNFL, DBXTYP
          FROM QADBXREF
          WHERE DBXLIB = 'LibraryName'
               AND NOT DBXFIL = '' (again, no space between the quotes)
               AND NOT DBXTYP = 'S'
```

```
                AND NOT SUBSTR(DBXFIL,1,5) = 'QDICT'

          Multiple libraries can be chosen with the addition of:

                OR DBXLIB = 'LibraryName'

          for each additional library.
```

Similar syntax can be used to limit the display of files within a library. Please refer to the "AS/400 Structured Query Language/400 Reference and Programmer's Guide" for additional information on creating a valid 'SELECT' statement for the 'CREATE VIEW' statement.

Creating a view from a logical file

If you do not have the SQL/400 licensed product, you must create a logical file rather than creating the SQL view as documented above. Page 27, "Create a logical file" (in Appendix B, "Displaying Table Lists"), tells you how to create a logical file that will result in the desired table list. Page 28 shows the source that must be changed and then used as the basis for creating the individual logical file for each user.

The following examples explain the results that will be displayed after creating the logical file using the source file given as an example in Appendix B, as well as changes you can make if you wish to restrict the libraries/SQL collections that will be displayed. Note that this source code is column sensitive. You can refer to the AS/400 "Data Description Specifications Reference" manual for complete instructions on modifying these source control statements.

To present the user with a list of all libraries and files in the AS/400, you need only create the logical file without changing the source file (as loaded from the tape and documented on page 28). The source file is 'QDDSSRC' in the 'DALLIB' library and the 'Create Logical File' command is documented on page 28 in the last paragraph.

If you wish to allow the user to see a list of all the libraries except for a specific one, change the source to have the DBXLIB statement as:

```
     O DBXLIB       COMP (EQ 'LibraryName')
```

instead of:

```
     O DBXLIB       COMP (EQ '           ')
```

To limit the user to see only a specific library, change the source to have the DBXLIB statement as:

```
     O DBXLIB       COMP (NE 'LibraryName')
```

instead of:

```
     O DBXLIB       COMP (EQ '           ')
```

Note that both examples use negative compare logic; the 'O' preceding DBXLIB in the statement means "omit all that pass the following COMPare". Attempts to change this logic to a positive COMPare with the use of 'Select' instead of 'Omit' were not successful when tested at Apple. Thus, the statements documented here are the recommended logic. Just be careful with those compares.

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Tech Info Library Article Number:11736

Tech Info Library

ABS Tech Note: DAL26 VAX/VMS Long Passwords (4/93)

Revised: 9/7/93
Security: Everyone

ABS Tech Note: DAL26 VAX/VMS Long Passwords (4/93)

==========

Article Created: 26 April 1993

TOPIC ----------

This Technical Note describes that with DAL on VAX/VMS the passwords must be 20 characters or less.

DISCUSSION ----------

Even though VAX/VMS account passwords may be 0 to 32 characters long, to use DAL the passwords must be 20 characters or less in length. If an account password that is longer than 20 characters is used, an Error #-10632 will result. When trying to connect to a VAX/VMS host via the DAL Tester, the following messages will be displayed:

```
1: Message: Host error - Invalid userid or password
1: Disconnected.
```

In order to work around this problem, shorten your account password to 20 characters or less in length.

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Tech Info Library Article Number:11737

ABS Tech Note: SNA•ps14 APPC Security (2/93)

Revised: 9/7/93
Security: Everyone

ABS Tech Note: SNA•ps14 APPC Security (2/93)

==========

Article Created: 26 February 1993

TOPIC --

LU 6.2 provides a powerful transaction processing facility . Along with this power comes the responsibility for verifying access to network resources (that is LUs, TPs). This technical note describes two functions SNA•ps provides to assist the administrator in providing APPC security, namely: LU-LU verification and end user verification.

DISCUSSION --

Introduction

SNA•ps provides several levels of security for APPC users. LU-LU verification is a session-level security protocol, invoked at the time the session is activated. End-user verification is a conversation-level security protocol, taking place at the time a conversation between two TPs is started. This technical note describes the procedure for configuring and using these security features.

Note: it is only necessary to configure for end user verification when LU 6.2 applications are being remotely started at the Macintosh (that is the SNA•ps gateway is receiving attaches, that is FMH–5's).

LU-LU Verification

Partner-LU verification is accomplished during session establishment, with each LU using an LU-LU password and the Data Encryption Standard (DES) algorithm. LU-LU passwords are defined on a partner -LU basis: one LU-LU password is established between each LU pair and used for all sessions involving the pair.

To configure SNA•ps to use LU-LU verification, use SNA•ps Config to edit the remote LU resource. Enter the session password parameter matching the partner LU's password. If the passwords match exactly, the session is

established; if not, then no session is enabled.

Note: LU-LU passwords are established by installation and implementation-defined methods outside of SNA. Example: for the AS/400 set the LOCPWD parameter associated with the AS/400 device description.

End User Verification

Partner end user (for example, transaction program) verification is a conversation-level security protocol used to control access to remote TP applications. When a TP wishes to access another TP, it must supply adequate security information in the allocate conversation request to satisfy the requirements at the remote LU, or the request will be rejected. A user ID, password, and profile may be specified in the allocate request that will cause the receiving LU to check an authorization list before a specific TP is started. Each LU indicates at session activation time whether it will accept LU security parameters on allocation requests the partner LU sends.

It is only necessary to configure SNA•ps for end user verification when LU 6.2 applications are being started at the Macintosh (that is the Macintosh TP is receiving attaches (that is FMH-5's).

To configure SNA•ps for end user verification, use SNA•ps Config to set up user IDs and profiles for a local LU. Next assign user IDs and profiles from the associated local LU to the specified transaction programs. This is done after selecting the TP security level you wish to use. Specifying conversation level security indicates that the userid, password and profile in the allocate request will be checked, but that no TP access verification is to be performed. If one of the Access level security selections are made, this specifies that resource-level security will be validated using the authorization list specified for the TP. Next, use SNA•ps Config to edit the remote LU resource so that conversation security is selected. The pre-verified selection indicates that the local LU will accept conversation-level security without requiring a password Therefore, pre-verified should only be used if the sender is trusted by the receiver to have performed the proper verification of the user ID.

Note: the APPC protocol does not encrypt end-user passwords.

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Tech Info Library Article Number:11738

..TIL11739-ABS_Tech_Note-SNA-ps15_APPC_Return_Codes_2-93.pdf

Tech Info Library

ABS Tech Note: SNA•ps15 APPC Return Codes (2/93)

Revised: 9/7/93
Security: Everyone

ABS Tech Note: SNA•ps15 APPC Return Codes (2/93)

==========

Article Created: 26 February 1993

TOPIC ----------

This technical note discusses return codes obtained by SNA•ps APPC applications.

DISCUSSION ----------

Introduction

The purpose of this technical note is to detail those return codes for the SNA•ps APPC implementation which have changed or were omitted from the SNA•ps APPC Programmer's Reference.

Overview

SNA•ps Access is located in the Extensions folder under System 7 and in the System Folder under System 6. Programmers wishing to access APPC services on the Macintosh make calls to the SNA•ps Gateway via the SNA•ps Access file. SNA•ps Access is loaded at system startup time and provides all the necessary resources to access APPC calls.

SNA•ps Gateway 2.0 Changes

The SNA•ps Gateway 2.0 implements a new packaging scheme based on the number of connected SNA•ps Client machines, rather than the number of configured Logical Units as in previous releases.

Applications written to the SNA•ps Access API will need to handle a new error condition that can be returned from the Open Gateway Connection verb. The error occurs when the gateway rejects the request because the number of client machines limit has been reached.

If SNA•ps Access 1.1.1 or greater is on the client machine, an ioResult value of -4105 (kTooManyUsers) will be returned to the application.

If SNA•ps Access 1.1 is on the client machine, an ioResult value of -4099 (kConnFailureErr) will be returned to the application.

The SNA•ps APPC Developer's Kit will not be revised in conjunction with the SNA•ps Gateway 2.0 release. The new ioResult value will be incorporated into a subsequent release of the SNA•ps APPC Developer's Kit.

Undocumented SNA•ps Return Codes

The APPC API return values majorCode = 5, minorCode =12, obtained from the Allocate verb call, indicates that the SNA•ps gateway doesn't have enough memory to start an additional conversation. This is normally a temporary "low memory" condition and the application may retry the allocation. If the problem persists, more memory should be added to the NuBus card running the gateway (Apple Serial NB and TokenRing 4/16 NB cards are expandable to 1 or 2.5 Mb). SNA•ps Config can also be used to reduce the memory required for the SNA•ps gateway by decreasing the number of sessions and LUs, or by reducing the I-frame size.

A common programming error is that application developers do not issue Deallocate (deallocType ==kLocalDealloc) when a previous verb has completed leaving the conversation state as DEALLOCATED. The conversation resources are not freed until the TP application issues a Deallocate (deallocType ==kLocalDealloc) , Close Local LU or Close Gateway Connection. Over time, this can use up the available memory for the Gateway and cause the above mentioned error code to be returned.

The APPC return code majorCode = 1, minorCode =123, resulting from the Receive Allocate call, indicates that Open Local LU was issued with receiveAlloc = kFalse. This is corrected by specifying receiveAlloc = kTrue in the Open Local LU call.

These missing error codes will be incorporated into the header file SNAErrors.h the next time the APPC Developers Kit is updated.

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Tech Info Library Article Number:11739

ABS Tech Note: SNA•ps16 Independent LU Config (2/93)

Revised: 9/7/93
Security: Everyone

ABS Tech Note: SNA•ps16 Independent LU Config (2/93)

==========

Article Created: 26 February 1993

TOPIC ----------

This technical note describes the configuration of SNA•ps independent 6.2 LUs.

DISCUSSION ----------

Introduction

SNA•ps supports both independent (ILU) and dependent (DLU) 6.2 LUs. Significant differences exist in their abilities to handle sessions. Primary among these differences is the capability of independent LUs to support parallel sessions. The use of parallel sessions has a number of advantages and they are simple to define and easy to manage using SNA•ps Config and SNA•ps Admin.

Overview

The term dependent/independent LU is based on whether or not an LU is dependent on an SSCP for session establishment (and has an SCCP-LU session).

An independent (of an SSCP) 6.2 LU can act either as a primary LU (can send a BIND) or as a secondary LU. Hence, a SNA•ps ILU can establish a session (send a BIND) with another ILU. On the other hand, a dependent 6.2 LU is always a secondary LU (must wait to receive a BIND). A further distinction is that an ILU has the ability to have parallel and multiple sessions while a DLU is always restricted to a single session with a partner LU.

Independent LUs and Network Qualified Names

Unlike DLUs, ILUs do not have LU-IDs associated with them. IBM uses LU-IDs equal to zero to specify that an LU is SSCP-independent in some of its implementations.

Note: To determine if an LU is dependent or independent - examine a line trace showing the BINDs.

Since independent LUs are identified by name rather than ID, it is important that the names associated with these LUs be unique throughout the network. Qualified names help ensure that when communicating across networks (that is multiple domain systems), all LU names will be unique. For this reason it is highly recommended that network qualifiers be used for both DLUs and ILUs whenever communication across SNI (SNA Interconnect) networks. In general, the use of network-id qualified names when communicating using ILUs is recommended.

Specifying Independent LUs using SNA•ps Config

Using SNA•ps Config, select the peer option for the partner resource. If the gateway (that is PU) network name and network qualifier are known, enter these as well.

Next, edit the Local LU name in the APPC resource, entering the network LU name and qualifier. The network LU name and qualifier, defined as characteristics of the local LU, together constitute the name that will be issued in the BIND. Generally this will match the name of the locally defined LU, but this is not necessary.

Edit the remote LU resource. Select the parallel session option for the remote LU and enter the network LU name and network qualifier for the LU defined locally at the remote system. You will notice that the LU ID field for the remote LU is grayed out. The SNA•ps gateway will automatically set the LUID=0. You do not need to enter LUID=0 using SNA•ps Config.

Edit the Mode resource, making sure that the maximum sessions defined at both systems are equal. The contention winners parameters defined at both systems should total the maximum sessions. This parameter determines which of the two LUs has the right to control use of the session. If the two LUs attempt to initiate a conversation on the same session simultaneously, the LU that is contention winner for that session will succeed and the other, the contention loser, will fail.

Note: When using a SNA•ps gateway for terminal emulation to an AS/400, configure the SNA•ps contention winner parameter equal to the number of simultaneous users who will be performing terminal emulation at any given time (that is configure SNA•ps contention winners equal or nearly equal to the maximum sessions). This will minimize the session establishment overhead and provide optimal performance.

Independent LU Administration

Parallel sessions are managed through the use of an IBM architected Change Number of Session (CNOS) transaction program. SNA•ps simplifies use of Independent LUs and parallel sessions by shielding the users from having to deal directly with CNOS. The SNASVCMG mode, visible using SNA•ps Admin, is automatically created for use by the CNOS TP and always has two sessions

defined. One of these session is contention winner the other contention loser. The SNASVCMG mode must always be activated prior to activating any user defined modes. Once the SNASVCMG sessions are active, the user mode can be activated and sessions will be displayed.

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Tech Info Library Article Number:11740

ABS Tech Note: SNA•ps17 Dowstream Configuration (2/93)

Revised: 9/7/93
Security: Everyone

ABS Tech Note: SNA•ps17 Dowstream Configuration (2/93)

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Article Created: 26 February 1993

TOPIC ----------

A method for connecting SNA•ps to a host system "downstream" of an OS/2 gateway is presented.

DISCUSSION ----------

Introduction

OS/2 Extended Edition v1.2 and later has an SNA gateway feature that allows PC's to connect to a host through an OS/2 gateway machine. The host is only aware of the gateway machine, which appears to be a single PU2 with (potentially) many LU's. To the client (workstation) PC's, the gateway machine appears to be a host connection (PU4)

It is a simple procedure to configure a SNA•ps gateway to connect "downstream" of an OS/2 gateway.

For the purposes of this technical note we will limit discussion to the scenario with token ring for both links: host (3720 front end processor) to OS/2 gateway and OS/2 gateway to SNA•ps gateway.

Procedures - OS/2

To configure the OS/2 gateway machine:

- Re-install Communications Manager with an already created configuration file that uses SNA Gateway so that CM has the necessary pieces.

- In the CM configuration file, under SNA Features, choose SNA gateway profiles.

  There are two parts:

  - Host Connection: enter token ring address of the front end processor (3720 or 3174) with gateway feature.

  - Workstation LU: make an entry for each LU to be redistributed to downstream workstations. Enter the local address (LU ID) as it is known at the host and as it is known at the workstation (they need not be the same). Also enter the token ring address of the workstation (in this case, the Mac acting as a SNA•ps gateway). This method pre-allocates LU's to a particular workstation; it is also possible to create pools.

- The OS/2 machine ignores some of the negotiations in the XID and may send I-frame packets larger than those configured for SNA•ps . In the case where SNA•ps I-frame size is limited to 265 (for example low memory situation on the TR card), lower the RU size from 1920 to 256 under SNA Profiles/DLC profile/Token Ring in the CM configuration.

Procedures - SNA•ps

On the SNA•ps gateway, enter the following information in the configuration:

- Create a token ring line.

- Create a partner line. Choose Host type connection, enter the token ring address of the OS/2 machine for link address, and enter the Gateway XID as it is known by the host (in the NCP). If the host connection is through a 3174 gateway, this may not be necessary (but the 3174 configuration will need to know the token ring address of the OS/2 machine).

- Create LUs - the LU ID should match one of those configured in the Workstation LU configuration on the OS/2 machine. Warning: OS/2 displays the LU ID in hex, while SNA•ps uses decimal.

- To obtain optimal performance and where memory is available on the SNA•ps TR card, change the Max I-frame in SNA•ps Config's Line dialog to be the value in SNA Profiles/DLC profile/Token Ring in the CM configuration + 9.

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Tech Info Library Article Number:11741

Tech Info Library

Macintosh Serial Port: Maximum Speed (1/96)

Revised: 1/30/96
Security: Everyone

Macintosh Serial Port: Maximum Speed (1/96)

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Article Created: 8 March 1993
Article Reviewed/Updated: 30 January 1996

TOPIC ----------

It appears that the maximum speed that I can drive the Macintosh serial port is 9600 bps when also communicating to a printer or other AppleTalk device.

I need to drive the modem port at 19.2 kbps while communicating to a AppleShare file server. The Macintosh cannot keep up with the DEC terminal server under the above circumstance. Is there any test data that would confirm or debunk my observation?

DISCUSSION ----------

This article addresses Macintosh computers slower than the Macintosh IIfx. For those systems, the information from the following "d e v e l o p" magazine article presented is accurate.

For 68040 and PowerPC based desktop Macintosh computers, the limit is higher. While no official testing has been done to identify the exact limit of each platform, customers have reported error-free 14.4kbps, 19.2kbps, and 28.8kbps connections with simultaneous LocalTalk connectivity.

All 68030 based Macintosh PowerBook computers are impacted by the 9600bps limit. The 68040-based PowerBook computers have a higher limit (56.6kbps) and customers have reported successful 28.8kbps connections with simultaneous LocalTalk connectivity.

Maximum communication speeds of the Macintosh Serial Ports are limited when both ports are used simultaneously. What follows is an article from issue 9, Winter 1992 (pages 86-88), of "d e v e l o p - The Apple Technical Journal."

Question: When my hardware device sends data to a Macintosh at 57.6 kbps,

characters can get lost if LocalTalk is on and a file server is mounted. Does Apple know about the problem? Is there a solution?

Answer: The specification for the top speed of the serial port on a Macintosh is an absolute maximum given that no other processing or use of the SCC are present. Although the speed of the Macintosh IIfx has now allowed this ceiling to be reached in the presence of other processing, it is just not attainable on other models of the Macintosh except when the machine is dedicated to this purpose. While AppleTalk remains active there is no guarantee on serial port data transmissions over 2400 bps. The same processor must handle the OS, the Serial driver and the AppleTalk driver (with no advantage of DMA), so the overhead is considerable. Because of the AppleTalk driver's considerations for incoming serial data, users can usually work at up to 9600 bps without any problems. All models in the current product line, except the Macintosh IIfx, are unable to sustain throughput with baud rates beyond 19.2 kbps except when exclusively dedicated to that task.

There is essentially no way to guarantee 100% serial data acquisition when using AppleTalk. This is due to the fact that while the Macintosh is receiving an AppleTalk packet, interrupts are disabled for the duration of packet transmission. What this means in a "worst case" situation is that a 603-byte packet (the largest possible AppleTalk packet) sent to the serial port would take approximately 26 milliseconds to receive. Compare this with asynchronous serial data transmitted at 9600 bps which would only take 1 millisecond to receive. A very realistic situation arises in which 26 bits could be lost during a concurrent AppleTalk/Serial Device transmission. The possibility is further strengthened when there are routers on the network, which send out large RTMPs (Routing Table Maintenance Packets).

To alleviate possible data loss, the AppleTalk driver interrogates the serial port at key times that won't interfere with packet reception. However, the checks are not at regular intervals; they are encoded in the driver as stated above. This means that these random checks may not coincide with the demands of the serial driver, and an occasional character is lost.

This same loss of characters may also occur in conjunction with the Sony driver. If a disk is inserted and it requires special attention (like formatting) then the odds of losing characters is increased. The Sony driver has built-in considerations like the AppleTalk driver (although not as frequent). So you can still lose data at high transfer rates if a disk is inserted during the transfer.

The character dropout also occurs on systems which are not currently running AppleTalk but are receiving serial transmissions from high-speed devices (57.6 kbps) and are performing CPU tasks which require a high amount of memory access (such as a CPU like the Macintosh IIsi or IIci running on-board video in 8-bit mode, or a CPU using VM).

There is, however, a way to ensure reception of high-speed serial data without character loss—through the use of a Serial NuBus card or other third-party NuBus cards with a dedicated processor necessary to provide higher speeds. The cards in essence operate as dedicated port-handling
circuitry. They are able to perform necessary buffering while the processor is

servicing other interrupts. This is the reason that network cards such as EtherTalk and TokenTalk can accomplish lossless transactions; they do at least some of their own buffering until being serviced to avoid interference with other operations like receiving serial data.

Alternatively, you may want to develop a custom card yourself that exactly fits the needs of your product. In this case you should look into the Macintosh Coprocessing Platform (MCP) and Apple / Real-time Operating System Environment (A/ROSE) as a basis of this line of development. Development packages for both these products are available from APDA.

Article Change History:
30 Jan 1996 - Updated information about PowerBook computers.
13 Apr 1995 - Updated for current Macintosh computers.

Support Information Services

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Tech Info Library Article Number:11744

Tech Info Library

Duo Dock: How Far It Ejects the PowerBook Duo

Revised: 5/31/94
Security: Everyone

Duo Dock: How Far It Ejects the PowerBook Duo

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Article Created: 10 March 1993

TOPIC -----

When the Macintosh Duo Dock ejects a PowerBook Duo, how far should the PowerBook Duo be ejected?

DISCUSSION -----

As a general rule, the PowerBook Duo is ejected from the dock approximately 2.5 inches (6.3 cm). This is a typical measurement, not a minimum or maximum.

It's similar to a VCR ejecting a video tape: if you can easily grab the Duo and pull it out of the machine, then the Duo Dock is operating correctly.

Support Information Services

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Tech Info Library Article Number:11746

Tech Info Library

Express Modem: Hayes AT Command Set (3/93)

Revised: 3/30/93
Security: Everyone

Express Modem: Hayes AT Command Set (3/93)

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Article Created: 29 March 1993

TOPIC ----------

This article lists the AT command set for the PowerBook Express Modem.

DISCUSSION ----------

STANDARD AT COMMANDS

AT Attention code
-- --------------
All commands must begin with the attention code AT or at; the remainder of the command line contains commands for the modem. If AT is sent alone (that is, it is followed by <CR>), no command is executed but an OK result code is returned.

, Pause
- -----
This modifier introduces a delay time before dialing the next dial character or executing the next modifier in the dial string. The pause time is the value of the S8 register. Default = 2 seconds.

A Enter answer mode
- -----------------
The A command forces the modem to go off-hook in answer mode. The modem then starts sending the answer tone (CCITT answer tone independent from the B setting) unless the modem is set for leased line mode (&L command). If no carrier signal is received from the telephone line within the number of seconds specified by register S7, the modem goes on-hook, sends the NO CARRIER result code to the host, and returns to command state. If a dial tone is found, NO CARRIER is sent as a result code. Otherwise, the modem attempts to set up the carrier and, if successful, sends the appropriate CONNECT XXX

result code.

This command must be the last on a command line. Sending any character to the modem during call establishment cancels the command and generates a NO CARRIER result code. This command is not valid while the Express Modem is connected to a remote modem and in command state (after the escape sequence).

Bn Modulation protocol preference
-- ------------------------------
This command determines which protocol standard will be used for the next connection. Settings B0 and B1 apply only when ATN0 is selected and register S37 ≠ 0. Setting B2 overrides all settings of ATN and register S37.

B0	Default - When negotiating between a Bell or CCITT mode, selects CCITT V.21 or V.22 modes.
B1	When negotiating between a Bell or CCITT mode, selects Bell 103 or Bell 212A modes.
B2	Uses CCITT V.23 modulation only.

Cn Carrier control option
-- ----------------------
This command always returns OK. It is ignored and not saved in any profile.

Ds Dialing
-- -------
The dialing command first makes a connection on the telephone network with the telephone number specified in the character string s (call setup). If the remote modem answers, it continues with the carrier handshake procedure. After connection or failure to connect, the modem returns a result code with a status of the connection. (The precision of the result code depends on the last Xn command issued.) Sending any character to the modem during call establishment cancels the command and generates a NO CARRIER result code. In the simplest form, s consists of actual dial digits. This set of dial digits consists of the following characters: 0 to 9 (in pulse mode these are the only valid digits), A or a, B or b, C or c, D or d, *, and #.

Before sending the first digit, the modem waits for the dial tone, unless a comma begins the string or “blind dialing” is enabled. (See the X command.) Several dial modify subcommands, which can be part of the dial string, allow the modem to perform special dialing functions. These additional subcommands (also called dial modifiers) can precede, be embedded in, or follow the actual number to be dialed. Other characters not included in this set of modifiers are ignored while dialing and do not interrupt the dial process.

P Pulse dial
- ----------
The P modifier determines the use of Pulse dialing. Dialing speed is determined by the value of S11; the Make/Break ratio is determined by the &Pn command. These parameters can be changed only in certain countries. Any dial characters following the P modifier are dialed using pulse dialing until the T modifier is encountered. This modifier can appear anywhere in the dial string.

T Touch-tone dial (DTMF)

The T modifier determines the use of Touch-tone dialing. Any dial characters following the T modifier are dialed using DTMF dialing until the P modifier is encountered. This modifier can appear anywhere in the dial string. Default in U.S.

R Reverse mode

The R modifier changes the modem from originate mode to answer mode after the dialing process is complete. This modifier, used for compatibility with old originate-only modems, must be put at the end of the dial string.

S=n Dial phone number stored at location n

This subcommand dials the telephone number stored in location n, where n is 0, 1, or 2. This number has been previously saved using the AT&Z command.

W Dial tone detect

The W modifier makes the modem detect a dial tone before sending the next digit. If the tone has been detected by the modem before the S7 register time delay, the modem continues dialing the rest of the dial characters in the dial string. If no tone is received, the modem goes on-hook, returns the NO DIAL TONE result code to the host, and enters the local command state. This modifier can be embedded anywhere in the dial string, for example: ATDT9W5551234

: Calling card tone detect

Same as W. The colon modifier can detect most calling card tones and can be used to detect a wider range of frequencies.

@ Wait for quiet answer before dialing

For the time specified in the S7 register (default = 50 seconds), the modem attempts to detect 5 seconds of silence. This period of silence confirms that the call has been answered. If the 5 seconds of silence is detected, the modem dials the remaining numbers in the command line. The remaining numbers might be a security code, another telephone number, or an extension.

This modifier can be embedded anywhere in the dial string and can be used to access a system that requires entering additional dial characters after answering the initial call (for example, an answering machine).

Note that rings are detected reliably only when calling locally (that is, within the same country). If the ringing tone does not stop, the modem returns the NO ANSWER result code.

! Flash

This modifier causes the modem to go on-hook for a very short time and then back off-hook, as if the switch-hook button on the telephone set had been

pressed. This modifier can be placed anywhere in the dial string.

; Return to local command state after dialing
- ----------

This modifier forces the modem back to the local command state after dialing a number, allowing the modem to be used as a dialer (and the user must pick up the telephone handset at the end of the dial command) or to dial numbers in two or more steps. The semicolon (;) modifier must be put at the end of the dialing command.

En Echo off / on
-- -------------

This command controls the echoing of characters sent to the modem from the host back to the host when the modem is in command state.

E0 Disables the echo of characters sent by the host.
E1 Echoes characters sent by the host. Default

Fn Data echo to terminal
-- ----------

This command has no effect and remains for compatibility. F1 returns OK; all other values return ERROR.

Hn Off / on hook
-- -------------

When the modem is in on-line state, this command must be preceded by the +++ escape sequence.

H0 Forces the modem on-hook. If the modem is connected to the telephone line, the connection is dropped. Default.
H1 Forces the modem off-hook.

In Checksum, product information
-- ----------

I0 Requests the modem to return its product ID code. Default.
I1 Reserved for Apple Computer, Inc.
I2 Returns OK.
I3 Requests the country code of the DAA. In verbose mode, the name of the country is returned; in terse mode, only the code is returned. The following is a list of the country codes thus far defined:

E1	Sweden
E2	Switzerland
E3	United Kingdom
E4	United States
E5	Finland
F1	Australia
F2	Austria
F3	Belgium
F4	Canada
F5	Denmark
F6	France

F7 Germany
F8 Holland
F9 Ireland
FA Italy
FB Japan
FC Luxembourg
FD Norway
FE Spain

NO DAA DAA code does not correspond to a known country
Last country code / NO DAA: If no DAA is presently attached to the modem, it returns also the last country code ever attached (if any).

I4 Lists features of the modem.
I9 Returns the Apple Computer, Inc. product code and version information, as stored in the Express Modem file 'VERS' resource.

Ln Speaker volume
--

This command has no effect in the Express Modem, as the speaker is a component of the Macintosh computer and controlled by the user in the Sound control panel. The command remains for compatibility. L0-3 return OK; all other values return ERROR.

Mn Speaker on / off / auto
--

M0 Disables the speaker.
M1 Turns on the speaker until the carrier is established or until disconnection. Default
M2 Leaves the speaker on throughout the entire connection.
M3 Turns on the speaker until the carrier is established, except during dialing.

Nn Communication protocol preference
--

This command setting takes precedence over the ATB0 or ATB1 commands and over register S37. If either ATN1 or (ATN0 and S37 = 0) have been selected, the modem automatically determines Bell or CCITT mode or V.23 modulation.

Note ATB2 takes precedence over any settings of ATN or register S37. If ATB2 is selected, the modem attempts to connect at V.23 modulation, disregarding settings of ATN and S37.

N0 Uses register S37 for speed selection. If S37 = 0, uses automode, connecting at the highest possible speed and falling back as necessary, automatically determining Bell or CCITT mode, ignoring ATB0 or ATB1 settings. If S37 ≠ 0, uses only the speed specified in S37, regarding ATB0 or ATB1 setting to determine between CCITT and Bell modes. Default.
N1 Automode. Connects at the highest possible speed, falling back as necessary, automatically determining Bell or CCITT mode. Ignores ATB0 or ATB1 settings. If ATN = 1 and S37 ≠ 0, the value of S37

determines the maximum connection speed. This command is identical to setting N0 and S37 = 0.

N2 Identical to N1.

On Return to on-line state

This command brings the modem to on-line state from command state and returns ERROR if the modem is not connected to the telephone line.

O0 Returns to the on-line state after having entered command state from the escape sequence.

O1 As above but triggers retrain before reentering on-line state.

P Enable pulse dialing

Sets the default dialing mode to pulse mode. This command can also be used as a subcommand of the D command.

Qn Quiet / verbose mode

Q0 Sends result codes to the host. Default.

Q1 Disables sending result codes to the host.

Q2 Returns result codes in originate mode and not in answer mode.

Sn Select an S register

This command selects the default S register to be used in subsequent commands when no S register number is given.

Sn? Read an S register

The Sn? command is used to read the contents of a register (n = register number). The response is always expressed as a three-digit decimal number, where the leading digits or all digits may be zero. OK is returned after the display of the register contents.

Sn=m Write to an S register

This command places the value m into the register n. See the section “S Registers” for specifics of the registers and their values.

T Enable tone (DTMF) dialing

Sets the default dialing mode to Touch-Tone mode. Can be used in the dial string. Default.

Vn Numeric / verbose result codes

V0 The modem sends the result code in numeric form without line feed characters.

V1 The modem sends the result code in verbal (English) form with line

feed characters. Default.

Supported result codes are as follows:

Verbose	Terse	Meaning
OK	0	Command completed
CONNECT	1	Connection established
RING	2	Incoming ring detected
NO CARRIER	3	No connection or lost the carrier
ERROR	4	Bad command
CONNECT 1200	5	Connection established at 1200 bps
NO DIALTONE	6	Dial tone not detected in S7 seconds
BUSY	7	Busy tone detected
NO ANSWER	8	See ATD with the @ dial modifier
CONNECT 2400	10	Connection established at 2400 bps
CONNECT 4800	11	Connection established at 4800 bps
CONNECT 9600	12	Connection established at 9600 bps
CONNECT 14400	13	Connection established at 14400 bps
CONNECT 7200	15	Connection established at 7200 bps
CONNECT 12000	16	Connection established at 12000 bps
CONNECT 1200/75	22	Connection V.23 transmitting 1200 bps
CONNECT 75/1200	23	Connection V.23 transmitting 75 bps
CONNECT 300/REL	24	Connection with MNP 300 bps
CONNECT 1200/REL	25	Connection with MNP 1200 bps
CONNECT 2400/REL	26	Connection with MNP 2400 bps
CONNECT 4800/REL	27	Connection with MNP 4800 bps
CONNECT 9600/REL	28	Connection with MNP 9600 bps
CONNECT 7200/REL	29	Connection with MNP 7200 bps
CONNECT 12000/REL	30	Connection with MNP 12000 bps
CONNECT 14400/REL	31	Connection with MNP 14400 bps
CARRIER 300	40	Carrier detected at 300 bps
CARRIER 1200/75	44	Carrier detected at 1200 bps sending; 75 bps receiving
CARRIER 75/1200	45	Carrier detected at 75 bps sending; 1200 bps receiving
CARRIER 1200	46	Carrier detected at 1200 bps
CARRIER 2400	47	Carrier detected at 2400 bps
CARRIER 4800	48	Carrier detected at 4800 bps
CARRIER 7200	49	Carrier detected at 7200 bps
CARRIER 9600	50	Carrier detected at 9600 bps
CARRIER 12000	51	Carrier detected at 12000 bps
CARRIER 14400	52	Carrier detected at 14400 bps
COMPRESSION: CLASS 5	66	MNP class 5
COMPRESSION: V.42BIS	67	V.42 bis compression
COMPRESSION: NONE	69	No compression
PROTOCOL: NONE	70	Asynchronous mode
PROTOCOL: LAP-M	77	Error control mode with LAP-M protocol
PROTOCOL: LAP-M/HDX	78	LAP-M protocol Half duplex
PROTOCOL: ALT	80	Error control mode with MNP protocol
MODEM IN USE	128	Modem already in use for this or another association

DIALING DISABLED	129	Blacklisting table is full
BLACKLISTED NUMBER	130	Modem momentarily refuses to dial this number
LINE CURRENT DETECTED	131	
NO LINE CURRENT	132	
UNKNOWN COUNTRY CODE	133	Unknown DAA Country Code
FORBIDDEN NUMBER	134	Number dialed is forbidden

Codes 129 and 130 appear only in those countries where the “blacklisting” of unsuccessful telephone numbers is mandatory. The number of telephone numbers in the list will be set according to regulations in each country.

Wn Progress result codes

The ATW setting determines whether progress result codes will be displayed in addition to the ATX codes. Register S95 determines which progress result codes will be displayed.

- W0 Disables progress codes 40 through 80.
- W1 Enables progress codes 40 through 80. Default.
- W2 Disables progress codes 40 through 80; identical to W0.

When writing a CCL script, pay attention to result codes for scripts that require a specific response. If progress codes are enabled, the following strings appear on the screen during a connection (in this example, a V.22 bis connection with no error control):

```
CARRIER 2400
PROTOCOL:NONE
CONNECT 2400
```

As the modem is a bus modem and the modem-to-DTE interface is software based, only modem-to-modem speeds are returned.

Xn Activate result codes

The result codes listed in Vn are divided into subsets that can be selected by the X command.

- X0 Activates result codes [0..4, 8, 128..134].
- X1 Activates result codes [0..5, 8..134].
- X2 Activates result codes [0..6, 8..134].
- X3 Activates result codes [0..5, 7..134].
- X4 Activates result codes [0..134]. Default

Dial tone detection is enabled and disabled by X2 and X4. Busy tone detection is enabled and disabled by X3 and X4.

X0, X1, and X3 set the autodialer in “blind dialing” mode (that is, no dial tone is expected after going off-hook) in those countries where blind dialing is allowed. If X0 is set, the CONNECT result code means that a connection was established whatever the speed is. However, if X1 to X4 are set, CONNECT means that a connection was established at either 110 or 300 bps only. See

the MNP-specific modifier applicable to codes 24-28.

Yn Break handling
-- --------------
This command controls the behavior of the modem on reception of a long-space (break) signal from the remote modem of longer than 1.6 seconds for an asynchronous connection or an attention frame for MNP or V.42 connections.

- Y0 Disables long-space handling. The long-space is ignored. Default.
- Y1 Enables long-space handling. If the modem receives a long-space, it replies with a break of 4 seconds, disconnects (goes on-hook), and returns to command state.
- Y2 Enables long-space handling. If the modem receives a break when it is in data mode, it replies with a break of 4 seconds and returns to command state, remaining connected to the remote modem.

Zn Reset
-- -----
The Z command tells the modem to perform a software reset. After reset, the optional parameter profile specified in the command argument is restored.
- Z0 Loads saved profile 0 into the active profile. Default
- Z1 Loads saved profile 1 into the active profile.

&Cn DCD options
--- -----------
This command has no effect and remains for compatibility. Values 0, 1, and 2 return OK; all other values return ERROR.

&Dn DTR options
--- -----------
Since internal, or bus, modems do not have a DTR line, this command should determine modem response when the user closes the connection or the application currently using the modem (that is, when the modem is off-hook). In this situation, the Express Modem drops the connection and hangs up. Therefore, AT&D has no effect and remains for compatibility. Values 0 through 3 return OK; all other values return ERROR. Default = 3

&F Recall factory profile
-- ----------------------
This command restores the factory configuration as the active profile.

&Gn Guard tones
--- -----------
This command specifies whether guard tones should be transmitted and, if so, at what frequency. Some telephone systems use guard tones to allow proper data transfer over the network. Guard tones are not used in the United States. The modem does not recognize the value of 1 (550Hz guard tone) and returns ERROR.

- &G0 Disables guard tone (default in the United States).
- &G1 Sends 1800 Hz guard tone (default outside of the United States).
- &G2 Same as &G1.

&Kn Local flow control

--- ---

This command specifies which kind of local flow control is used between the communications application and the Express Modem software. Since flow control mechanisms are built in, this command has no effect and remains for scripting compatibility. Flow control characters generated by the communications application are always passed to the line. See the section “Flow Control” in this chapter. The &K command setting will not be stored or displayed in the profile. &K0–&K5 respond OK, and no action is taken. Other values generate ERROR.

&Ln Switched / leased line

--- ---

This command affects the modem’s behavior during the call-setup and the carrier-handshake phases at the beginning of a connection.

&L0	Selects switched (dial-up) line. All timeouts are active according to the definition of the handshake protocols. Default.
&L1	Selects leased line. All timeouts are ignored during the handshake process. Calling and answer tones are not exchanged while executing D and A command (that is, the carrier handshake is started immediately).

&Mn Asynchronous / synchronous operation

--- ---

This command has no effect and remains for compatibility. &M0 returns OK; all other values return ERROR. See also &Q.

&Pn Pulse mode make / break ratio

--- ---

&P0	Make = 39%, break = 61% Default
&P1	Make = 33%, break = 67%

Note: Pulse mode specifications vary from country to country, as set by national regulatory bodies, and are not available for change. Correct settings for each country are made automatically by the Express Modem firmware.

&Qn Connection mode

--- ---

The &Q command setting has precedence over the \N command setting and registers S36 and S48.

&Q0	Asynchronous mode (no error control, disables V.42 and MNP). Returns OK.
&Q1–4	Synchronous mode (data transparent synchronous mode). Returns ERROR.
&Q5	Error-control mode (enables V.42 and MNP); coupled with the register values set in S36 and S48. Returns OK. Default.
&Q6	Same as Q0. Returns OK.

&Rn CTS / RTS

--- ---

This command has no effect and remains for compatibility. &R0 and &R1 return OK; all other values return ERROR.

&Sn DSR

This command has no effect and remains for compatibility. Values0, 1, and 2 return OK; all other values return ERROR.

&Tn Self-Tests

The following diagnostic tests are available only when no error protocol is engaged. The duration of each test is controlled by register S18.

- &T0 Terminate the self-test; terminates (escapes) a test in progress and returns the modem to command state, if S18 = 0.
- &T1 Local analog loopback; initiates a local analog loopback test. The escape sequence must be entered to terminate this test. This mode tests the Express Modem and the host Macintosh computer. The modem responds with the CONNECT message when the loopback connection has been established.
- &T3 Local digital loopback; initiates a local digital loopback test. The Express Modem echoes characters back to the remote modem exactly as received.
- &T4 Enable remote digital loopback; enables the Express Modem to respond to a remote modem that is attempting to place it in a digital loopback test. If the remote modem places the Express Modem in remote digital loopback mode, the Express Modem echoes characters back to the remote modem exactly as received.
- &T5 Disable remote digital loopback; disables the Express Modem from responding to a remote modem that is attempting to place it in the digital loopback mode.
- &T6 Initiates remote digital loopback; tests both the Express Modem and the remote modem as well as the telephone circuits. Characters sent to the remote modem are echoed back to the Express Modem exactly as they were received.
- &T7 Remote digital loopback with self-test; initiates a remote digital loopback (like &T6) with self-test data pattern generation and error checking.
- &T8 Local analog loopback with self-test; initiates a local analog loopback (like &T1) with self-test data pattern generation and error checking. The modem responds with the CONNECT message when the loopback connection has been established. The tests terminate when the host issues an AT&T0 command or the register S18 time delay expires. The self-test data pattern is an internally generated $511 sequence. In the self-test modes, an error counter counts the number of errors and sends the final result to the host at the end of the test. The maximum number of errors that can be counted is 255.

Note: &T1 takes an optional, single-character parameter to indicate whether the analog loopback must be done in originate mode (O or o, the default) or answer mode (A or a).

&Un Trellis coding

This command enables and disables Trellis code modulation in V.32.

  &U0   Enable Trellis coding. Default.
  &U1   Disables Trellis coding.

&V   Display profiles
--   ----------------
This command displays the active profile, stored profile 0, stored profile 1, and stored telephone numbers (see AT&Z). The MNP settings are not displayed by this command.

&Wn   Profile saving
---   --------------
This command saves the current active profile.

  &W0   Saves the active profile into profile 0.
  &W1   Saves the active profile into profile 1.

&Xn   Synchronous clock source
---   ------------------------
This command, included for compatibility, is ignored and not saved in any profile. It always returns OK.

&Yn   Start-up profile
---   ----------------
This command sets the profile to be used at start up.

  &Y0   Specifies profile 0 as the start-up configuration. Default.
  &Y1   Specifies profile 1 as the start-up configuration.

&Zn=s   Store telephone number
-----   ----------------------
This command stores the dial string s (a maximum of 64 characters) in location n (equal to 0, 1, or 2). Note that the dial string s is constructed in the same fashion as for the ATD command: it must be the last command on the command line and have no other characters following the dial string. The dial string is not validated before being saved.

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Tech Info Library Article Number:11747

Tech Info Library

System 7.x: Can't Start with Install 1 Floppy Disk Copy (7/93)

Revised: 7/12/93
Security: Everyone

System 7.x: Can't Start with Install 1 Floppy Disk Copy (7/93)

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Article Created: 25 March 1993

Article Change History

07/09/93 - REVISED
- To add more history and technical explanation.

TOPIC ----------

I'm trying to make working copies of System 7.1 disks via the disk-to-disk copy method. After copying the Install 1 disk, I attempted to start up from the disk. The "Welcome to Macintosh" message appeared, a vibrating blank dialog box appeared, and then my system froze. Why did this happen using the traditional disk copy method? (When I used Disk Copy to make a backup copy, there was no problem.)

DISCUSSION ----------

This anomaly has been around since System 7.0 was introduced. It isn't a bug. There isn't enough room on a floppy disk to fit the Installer, a Finder, and a System file. A decision was made to put a System and Installer on the Install 1 disk and have the disk start up directly into the Installer application. To do this, the boot blocks on the floppy disk were written to have the Installer (not The Finder) as the startup application.

Prior to System 7, the Macintosh was capable of starting up to any application by using the Set Startup feature of the Finder (not Multi-Finder). The Set Startup feature actually wrote the application's name to the startup volume's boot blocks. Since System 7 is a multitasking operating system and no longer supports a single tasking environment, it always assumes that the Finder is the startup application. The Set Startup feature was removed from the System 7 Finder.

The problem of not being able to boot from a copy of Install 1 or

InstallMeFirst occurs because of what happens when you copy these disks to another disk using the Finder. When you copy a System file to another disk, the standard boot blocks are written with the Finder as the Startup application. This means that when a Macintosh tries to boot from the new disk, it will be trying to launch a file called Finder. Of course, there's no Finder on the Install 1 or InstallMeFirst disk, and the Macintosh will hang up.

Since the boot blocks contain the name of the Finder as the startup application, you can rename the Installer to Finder. When a Macintosh boots up from the copy of Install 1 or InstallMeFirst disks, the Macintosh will launch the renamed Installer application and the install will proceed as normal. However, Apple doesn't recommend or support this solution. The supported and recommended solution is to use a sector copy program such as Disk Copy.

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Tech Info Library Article Number:11748

Tech Info Library

A/UX 3.0: setfile Command Problem (3/93)

Revised: 3/11/93
Security: Everyone

A/UX 3.0: setfile Command Problem (3/93)

==========

Article Created: 9 March 1993

TOPIC ----------

I am running A/UX 3.0 and would like to know how to stop A/UX changing the file creator and type of a file that I have modified with vi. I would also like to know how to modify the file type and file creator -- I have tried using the A/UX setfile command, and get messages such as "can't unlock <filename>" or "can't change file info". When I try SetFile in MPW, it tells me these files are locked, and that I don't have sufficient privileges to change them.

DISCUSSION ----------

We have seen this with the setfile command under A/UX 3.0. There is a problem with the setfile command handling error messages and with the working of the command options. For example, the "setfile -aL junk" command, complains with "setfile: Can't lock junk", but if you use ResEdit and Get File Folder Info, you'll see the File Locked box is checked! Then if you do "setfile -al junk" (try to unlock the file), it also complains with "setfile: Can't unlock junk", but it DOES unlock the file after viewing with ResEdit.

We have checked for reported bugs, and there was a problem report on the setfile command stating that it doesn't set type or creator on some Apple Single Files, the "setfile ... command complained ...: Error 0", but it DOES set the file type and creator! This bug still exists in A/UX 3.0.

As a workaround until the setfile bug is fixed, use ResEdit instead of the setfile command to set file attributes .

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Tech Info Library Article Number:11750

Tech Info Library

Macintosh Family: Batteries & Part Numbers (2/97)

Revised: 3/19/97
Security: Everyone

Macintosh Family: Batteries & Part Numbers (2/97)

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Article Created: 11 March 1993
Article Reviewed/Updated: 20 February 1997

TOPIC -----

(1) Why do Macintosh computers have an internal battery?

(2) How long does this battery usually last?

(3) The battery in my Macintosh has a date stamped on it. Is this the manufacture or expiration date?

(4) What are the symptoms of a dead battery?

(5) How do I replace the battery when it goes dead?

(6) What kind of battery is the internal battery?

(7) What are the part numbers for the batteries in various Macintosh models?

DISCUSSION -----

(1) Why do Macintosh computers have an internal battery?

Macintosh computers contain a battery in order to maintain certain internal settings even when the computer is turned off. These settings include things such as the date & time, the AppleTalk on/off setting, and the color on/off setting. These settings are stored in a special part of memory called PRAM (parameter RAM).

(2) How long does this battery usually last?

We believe that a battery should last UP TO five years after you receive your Macintosh. This does NOT mean that we expect every battery to last this long.

Note that the battery may fail sooner, depending upon its shelf life, power usage patterns, and the individual battery inside your computer.

(3) The battery in my Macintosh has a date stamped on it. Is this the manufacture or expiration date?

It is the manufacture date.

(4) What are the symptoms of a dead battery?

When the Macintosh will not retain PRAM settings (such as the date/time) after it has been turned off, this generally indicates a dead battery.

(5) How do I replace the battery when it goes dead?

Apple recommends dealer installation of a new battery. Apple does not sell service parts such as batteries directly to end users. A battery can explode if installed in the wrong position. Finally, Apple-authorized service providers will return dead batteries to Apple for safe disposal or recycling.

(6) What kind of battery is the internal battery?

It depends on the model of Macintosh. The batteries used in Macintosh computers are lithium or alkaline, and are commonly 3.6-4.5 volts.

(7) What are the part numbers for the batteries in various Macintosh models?

Begin_Table

Macintosh Model	Battery Part Number
Macintosh 128, 512K, 512Ke, Macintosh Plus	742-0003
equivalents: Eveready #523-BP Ray-O-Vac #RPX-21 Duracell #PX-21 Panasonic #PX-21	
Macintosh SE 800K, Macintosh II (with leads)	742-0009
Macintosh II with 600-0530 Battery Holder Board	742-0011
Macintosh SE FDHD (with leads)	742-0011
Macintosh Classic (4-chip and 2-chip)	742-0011
Macintosh SE/30, IIx, IIcx, IIci, IIfx, IIsi	742-0011
Macintosh IIvi, IIvx, Performa 600	742-0011
Macintosh LC, LC II, LC III, Performa 400 series	742-0011
Macintosh Quadra 605, LC 475, Performa 475, 476	742-0011
Macintosh LC 520, LC 550, Performa 550	742-0011*
Macintosh LC 575, Performa 575, 577, 578	922-0750

Macintosh Classic II, Color Classic, Performa 200	742-0011*
Macintosh 630 Family including Quadra, LC, Performa	922-0750
Macintosh Centris 610, 650, 660AV	742-0011
Macintosh Quadra 610, 660AV, 650, 700, 800, 840AV, 900, 950	742-0011
Power Macintosh and Performa 5200, 5300, 6200, 6300 5400, and 6400 series computers	922-0750
Power Macintosh 6100/60, 6100/66, 7100/66, 8100/80	742-0011
Power Macintosh 7100/80, 8100/100, 8100/110, 7200 series, 7500 series, 7600 series, 8500 series, and 9500 series	922-1262

* Logic boards of the Color Classic, Macintosh LC 520, and the LC/Performa 550 have been revised and use a new battery, part number 922-0750. Your service provider will be able to determine which battery should be used.

Portable and PowerBook computers

For the system batteries listed below, readings of less than 5.4 Volts indicate sulfated (irreparably damaged) batteries for the Portable and PowerBook 100 batteries.

The Nickel Cadmium Batteries in the PowerBook 140, 145, 160, 165c, 170 and 180 computers, the Nickel Metal Hydride batteries in the PowerBook Duo, 500, 190, 5300 and 1400 computers and the Lithium Ion batteries in the PowerBook 3400 can usually be recharged even from a deep discharge.

Portable/PowerBook Model	Battery Part Number
Portable, Backlit Portable System Battery	076-0376
Portable, Backlit Portable Backup Battery	9 Volt Alkaline
PowerBook 100 System Battery	661-0782
PowerBook 100 Backup Batteries	CR-2430 (qty 3)
PowerBook 140, 145, 170 System Battery	661-0754
PowerBook 140, 145, 170 Backup Battery	661-0724 (attached to board)
PowerBook 150 System Battery	661-0013
PowerBook 150 Backup Battery	661-0190 (attached to interconnect board)
PowerBook 160, 180 System Battery	661-0789
PowerBook 160, 180 Backup Battery	661-0750 (attached to board)
PowerBook 165c System Battery	661-0013
PowerBook 165c Backup Battery	661-0764 (attached to board)
PowerBook 180c System Battery	661-0013

PowerBook 180c Backup Battery	661-0685 (attached to interconnect board)
PowerBook 190 series* System Battery	661-1028
PowerBook 190 series Backup Battery	922-1418
PowerBook Duo 200 series* System Battery	661-0053
PowerBook Duo 200 series Backup Battery	630-6546
PowerBook 500 series* System Battery	661-0055
PowerBook 500 series Backup Battery	922-0786
PowerBook 1400 series* System Battery	922-2420
PowerBook 1400 series Backup Battery	922-2429
PowerBook Duo 2000 series* System Battery	661-0053
PowerBook Duo 2000 series Backup Battery	630-6546
PowerBook 3400 series* System Battery	922-2471
PowerBook 3400 series Backup Battery	922-2692
PowerBook 5300 series* System Battery	661-1028
PowerBook 5300 series Backup Battery	922-1418

End_Table

* PowerBook Series

PowerBook 190 series includes the following models: PowerBook 190 and 190cs.

PowerBook (Duo) 200 series includes the following models: PowerBook Duo 210, 230, 250, 270c, 280, and 280c.

PowerBook 500 series includes the following models: PowerBook 520, 520c, 540, 540c, and 550 (550 sold in Japan only).

PowerBook 1400 series includes the following models: PowerBook 1400c and 1400cs.

PowerBook 2000 series includes the following model: PowerBook 2300c.

PowerBook 3400 series includes the following model: PowerBook 3400c.

PowerBook 5300 series includes the following models: PowerBook 5300, 5300c, 5300ce, and 5300cs.

Article Change History:
20 Feb 1997 - Added new PowerBook model and PowerBook series descriptions.
12 Nov 1996 - Corrected 660AV name.
30 Oct 1996 - Added 660AV and 840AV.

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Tech Info Library Article Number:11751

Tech Info Library

SNA•ps 5250: Product Description and Features(Discontinued)

Revised: 6/2/94
Security: Everyone

SNA•ps 5250: Product Description and Features(Discontinued)

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Article Created: 9 March 1993

TOPIC ----------

This article describes the Apple SNA•ps 5250 product and its features and benefits.

DISCUSSION ----------

SNA•ps 5250 (Systems Network Architecture protocols and services) is a full-function 5250 display terminal emulation program that allows Apple Macintosh personal computers to communicate with IBM AS/400 systems. This application provides multiple session windows that can be individually configured with different color settings, font sizes, connection paths, and host languages.

The SNA•ps 5250 application software works with the Apple Token Ring 4/16 NB Card or Apple Serial NB Card installed in any Macintosh II or Macintosh Quadra (NuBus capable) computer and supports directly connected or AppleTalk distributed 5250 sessions.

In an AppleTalk network with an SNA•ps Gateway installed, SNA•ps 5250 users can access AS/400 services from any Macintosh from the Macintosh Plus and later systems. In addition, users can access multiple gateways for concurrent access to multiple AS/400 systems.

SNA•ps 5250 also supports standard Macintosh copy and paste techniques, enabling users to smoothly integrate AS/400 data into their Macintosh applications. Access to AS/400 databases and files are provided by Apple's Data Access Language (DAL) Server for AS/400. These facilities allow you to query data easily from the AS/400 system and place it in a local application on the Macintosh desktop.

The SNA•ps Print application software is included with SNA•ps 5250. SNA•ps

Print allows a Macintosh computer to receive print data from an IBM AS/400 system and print the data on any printer in the AppleTalk network.

Features and Benefits

- 5250 terminal emulation allows Macintosh users to access 5250-based applications.

- Extended attribute support provides display support for base and extended attributes and status line symbols.

- On-line help provides assistance in configuring and running SNA•ps 5250.

- Keyboard remapping allows users to create any layout of 5250 control keys on the attached Macintosh keyboard.

- Configurable on-screen keypads eliminates the need for the user to memorize the keyboard map.

- Keystroke record, playback, and editing allows definition of a string of frequently used keystrokes for automated host access.

- 5250 sessions distributed over AppleTalk allows SNA access for any Macintosh system connected to an AppleTalk network.

- Multiple language support lets you choose the language for each session, to match your host environment.

- AS/400 printer emulation, SNA•ps Print, allows a user's Macintosh to retrieve and print AS/400 data.

- Configurable clipboard formats allow users to create special copy formats for copying AS/400 data into other Macintosh applications.

- "Hot spots" enable users to send 5250 function keys by double-clicking in the SNA•ps 5250 window.

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Tech Info Library Article Number:11752

Tech Info Library

SNA•ps 5250 and IBM Client Series Q&A (2/93)

Revised: 6/21/93
Security: Everyone

SNA•ps 5250 and IBM Client Series Q&A (2/93)

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Article Created: 15 February 1993

Article Change History

06/21/93 - REVISED
- To remove press inquiry contact.

TOPIC ----------

This article answers questions about the SNA•ps 5250 and IBM Client Series announcements.

DISCUSSION ----------

Q: What is SNA•ps 5250?
A: SNA•ps 5250 is software that provides Macintosh computer users with emulation of IBM's 5250 family of terminals and printers. With SNA•ps 5250, any Macintosh personal computer, from the PowerBook to the Macintosh Quadra, can access the extensive suite of applications available on IBM's AS/400 systems.

Q: What will come in the box with the SNA•ps 5250 product?
A: SNA•ps 5250 contains a personal APPC only gateway, 5250 terminal emulation software, and 3812 print emulation software enabling stand-alone access to an AS/400 when used with an Apple Token Ring NB card or Serial NB card.

Q: What is SNA•ps 5250 GC?
A: SNA•ps 5250 GC is software that provides Macintosh computer users with networked solutions for emulation of IBM's 5250 family of terminals and printers. SNA•ps 5250 GC contains a 5250 terminal emulation software, and 3812 print emulation software. When used in conjunction with a SNA•ps Gateway, and an Apple Token Ring 4/16 NB card or Apple Serial NB

card, SNA•ps 5250 GC enables networked Macintosh users via LocalTalk, EtherTalk, or TokenTalk access to an AS/400.

Q: Is IBM actually selling an Apple product?
A: Yes. The SNA•ps 5250 application software will be sold by IBM as part of the AS/400 Client Series, which specifies IBM and end-user products and application development tools designed for client/server computing. The SNA•ps 5250 product is scheduled to be included in the Client Series starting June 25, 1993.

Q: How can I order SNA•ps 5250 software from Apple?
A: SNA•ps 5250 may be ordered beginning in June 1993 through Apple authorized resellers. Pricing and availability outside the United States will vary by country. For more information, call Apple's Network Information Line at 408-862-3385 between the hours of 8AM and 5PM, Monday through Friday, Pacific Time.

Q: What does IBM's version of SNA•ps 5250 cost? How can I order SNA•ps 5250 from IBM?
A: For more information or to place orders, contact an IBM marketing representative or call 1-800-IBM-CALL.

Q: Why is IBM selling this product as part of the Client Series?
A: The goal of the Client Series is to provide AS/400 customers with products that provide personal computers users with applications and tools that allow them to effectively integrate their desktop device of choice with the AS/400 environment. Since both the Macintosh and the AS/400 are leaders in ease of use for the personal computer and midrange categories, it was natural to include support for the Macintosh in a program that is designed to deliver ready to use solutions to customers.

Q: Will Apple be selling SNA•ps 5250?
A: Yes. Apple will be selling SNA•ps 5250 through all existing channels worldwide when it begins shipping in June 1993. For more information, call the Network Information Line at 408-862-3385. Pricing and availability outside the United States will vary by country.

Q: Will SNA•ps 5250 be available from IBM worldwide?
A: No. At this time, Apple's participation in IBM's Client Series is limited to the U.S. and Canada.

Q: How will the product be supported? Should I call IBM if I have a problem or should I call Apple?
A: Customers who buy SNA•ps 5250 from IBM through the Client Series will receive support on the product directly from IBM. Technical problems that can't be addressed by the IBM Support Organization will be escalated to the Apple Engineering Support Organization.

Q: What are the key features of the product?
A: This product allows Macintosh computers equipped with either an Apple Token Ring 4/16 NB card or Apple Serial NB card to connect to any AS/400 and emulate IBM's 5250 terminal and printer family. The product supports both Token Ring and SDLC attachments to the SNA network, and

LocalTalk, Ethernet, and Token Ring connections to AppleTalk networks when running as a client to an SNA•ps Gateway. It supports IBM 5250 screen display formats, as well as keyboard remapping and keystroke recording to enhance its ease of use. SNA•ps 5250 also supports standard Macintosh copy–and–paste techniques, enabling users to smoothly integrate AS/400 data into their Macintosh applications. In addition, SNA•ps 5250 includes SNA•ps Print application software, allowing Macintosh users to print directly from the AS/400 to any locally attached or networked printer.

Q: What is the SNA•ps product family?
A: Apple's SNA•ps family is a set of software products that provide protocols and services for Macintosh users who need access to data and applications in IBM's SNA environments. The SNA•ps products offer concurrent support for terminal emulation, host based printing and peer–to–peer communication in SNA networks from a single Macintosh computer or an AppleTalk network gateway. The SNA•ps product line consists of three products: SNA•ps Gateway, SNA•ps 3270 and SNA•ps 5250 as well as programming kits for custom application development.

Q: There are existing third-party products in this market. Why has Apple elected to do this product?
A: Apple elected to develop SNA•ps 5250 for the best reason possible: our customers asked us to do it. As part of our efforts to identify what products should be developed under the Enterprise Networking Initiative (part of the alliance between Apple and IBM), both companies talked with a wide range of customers. At the top of the lists of both IBM and Apple customers was better integration between Macintosh and the IBM AS/400 midrange system. To this end, we have provided the Data Access Language Server for AS/400, and are now introducing the SNA•ps 5250 product. It is our intention to develop additional products that further the integration of the Macintosh and AS/400.

Q: Can I use it in conjunction with my existing SNA•ps Gateway? Can I use SNA•ps 5250 concurrently with SNA•ps 3270?
A: Yes. The number of sessions is limited only by the Gateway configuration and amount of memory available on the user's Macintosh to run 5250 and 3270 sessions.

Q: I am currently using SNA•ps 3287 to print to my LaserWriters. Can I upgrade to SNA•ps Print? How much does it cost? How can I get it?
A: Yes. Upgrades from SNA•ps 3287 to SNA•ps Print software will be available in June. There will be no charge for the upgrade. For additional information, contact Apple's Network Information Line at 408-862-3385.

Q: Will IBM be selling other Apple products, such as computer systems?
A: At this time, only SNA•ps 5250 will be part of the Client Series. It is the intention of both companies to add other Apple software products to the program as soon as possible. These products will allow networked Macintosh computers access to applications running on the AS/400 as well providing easy access to all of the data resident on the AS/400. While any additional products will be considered for inclusion in the Client

Series, there are no plans to include Apple hardware in the Client Series.

Q: Does Apple provide other IBM AS/400 connectivity products?
A: Yes. Apple currently offers the Data Access Language Server for AS/400, and the SNA•ps Gateway product. Data Access Language for the AS/400, which began shipping in December '92, provides easy access to relational data residing on the AS/400. The SNA•ps Gateway, available since June 1991, provides SNA services to Macintoshes on AppleTalk networks. It currently supports 3270 and APPC services, and with the shipment of SNA•ps 5250 in June will also provide support for 5250 services. These products are available through Apple's existing channels. For additional information on either product, contact Apple's Network Information Line at 408-862-3385.

Q: How does SNA•ps work with the Data Access Language Server for AS/400?
A: The SNA•ps Gateway or SNA•ps 5250 packages provide APPC connections for Apple's Data Access Language Server for AS/400, which allows Macintosh computers to transparently access relational databases and files on AS/400 systems. Data Access Language is a SQL connectivity language which provides users with a consistent interface from the desktop to the information residing on a variety of servers and host computers, including IBM, Digital, UNIX and other computers. With this consistent interface, Macintosh users can easily integrate information from the server or host computer into off-the-shelf applications for further analysis, manipulation and reporting.

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Tech Info Library Article Number:11753

Tech Info Library

SNA•ps 5250: Requirements, Related Products, Ordering (3/95)

Revised: 3/29/95
Security: Everyone

SNA•ps 5250: Requirements, Related Products, Ordering (3/95)

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Article Created: 9 March 1993
Article Reviewed/Updated: 29 March 1995

TOPIC ----------

This article describes the SNA•ps 5250 system requirements, related products, product support, and ordering information.

DISCUSSION ----------

To use SNA•ps 5250, you need

• A Macintosh II or Macintosh Quadra computer (NuBus capable)

• An Apple Token Ring 4/16 NB Card or Apple Serial NB Card

• Macintosh system software version 7.0 or later

To use SNA•ps 5250 as a client to an SNA•ps Gateway, you need
---
• SNA•ps 5250 or SNA•ps 5250 GC

• A Macintosh Plus or later Macintosh system as the client computer

• A Macintosh II or Macintosh Quadra computer running the SNA•ps Gateway software on your AppleTalk network

• Macintosh system software version 7.0 or later

To perform SQL data access on the AS/400

Through SNA•ps APPC sessions, you must have the following software:

• Data Access Language (DAL) Server for AS/400 software (either a 1/4-inch cartridge tape or a 1600 bpi 9-track tape) that provides Macintosh client access to AS/400 databases.

• Data Access Language Client version 1.3.7 software, systems software for the Macintosh computer that provides access to host data for local applications.

Ordering Information

To order the SNA•ps product famile contact Wall Data. To order Data Access Language contact ITI (Independence Technologies, Inc. The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
29 Mar 1995 - Corrected information on ordering.

Support Information Services

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Tech Info Library Article Number:11754

Tech Info Library

PowerBook Fax/Data Modem: Turning Off Data Compression 3/93

Revised: 5/31/94
Security: Everyone

PowerBook Fax/Data Modem: Turning Off Data Compression 3/93

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Article Created: 10 March 1993

TOPIC ----------

I am having a problem using a PowerBook Fax/Data Modem and MacTerminal to connect to our VAX. In order to connect, I need to disable data compression on the modem. I can do this manually, by setting the "&Q" parameter to 1, but when I use the "PowerBook Modem Tool" it resets that parameter to 5, enabling data compression.

Is there a way to modify the modem initialization string for the "PowerBook Modem Tool"?

DISCUSSION ----------

One way is to use the Serial Tool to manually configure the modem and dial.

The other way is to use the Apple Modem Tool and select "Custom" modem configuration. This allows you to specify the exact AT commands required.

The tools mentioned are available on AppleLink. Here's the path:

```
Software Sampler
  Apple SW Updates
    Macintosh
      Networking & Communications
        Communication Toolbox Tools
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Support Information Services

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Tech Info Library Article Number:11756

Tech Info Library

A/UX: C Code Portability (3/93)

Revised: 3/16/93
Security: Everyone

A/UX: C Code Portability (3/93)

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Article Created: 10 March 1993

TOPIC ----------

I need to know the list of platforms supported for compiling code. The C code used for development will need to be ported to multiple platforms. I noticed that the /bin directory shows that the following are supported:

- VAX-11/750 and 780
- PDP 11/45 and 70
- 3B 20S
- 3B 2, 5 and 15
- 680x0

DISCUSSION ----------

The programs mentioned do NOT mean the compiled code developed under A/UX is executable or portable to other hardware platforms. They are programs that let you identify the CPU type (machine id) you are currently running or are compatible with. If the return value of the program is "0" it means your CPU type is the same as the program you are running. For example under A/UX "m68k" (for Motorola 68000) returns 0 (echo $?). All other CPUs will return 255.

To port to a DIFFERENT hardware platform, the C source code must be recompiled on the targeted platform. If the C code was said to be portable or meet a standard, the C code can be recompiled without any alteration under the targeted platform. A/UX 3.0 conforms with many standards, including:

- IEEE POSIX 1003
- FIP 151-1
- AT&T System V SVVS
- ANSI C compiler from A/UX Developer's Tools

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Tech Info Library Article Number:11759

AppleCD: Proper Placement of CD in Caddy 3/93

Revised: 4/21/93
Security: Everyone

AppleCD: Proper Placement of CD in Caddy 3/93

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Article Created: 16 March 1993

TOPIC ----------

Why is placement of the CD disc in the CD Caddy important?

DISCUSSION ----------

If the CD disc is not properly placed in the CD Caddy, the CD Caddy will bow and become stuck in the CD mechanism. After this occurs, the CD mechanism is unable to eject the CD Caddy and the CD mechanism must be replaced.

Once the CD Caddy is jammed inside the CD mechanism, the only recourse for its removal involves major disassembly of the entire drive mechanism. This removal cannot be done in the field and must be handled by a complete drive replacement.

When inserting a CD into the CD Caddy, make sure the CD is completely flush with the bottom of the CD Caddy. This assures the complete closure of the CD Caddy door and insures proper function of the CD mechanism.

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Tech Info Library Article Number:11760

Tech Info Library

Macintosh Quadra 650 and 800: Interleaved Memory (7/94)

Revised: 7/28/94
Security: Everyone

Macintosh Quadra 650 and 800: Interleaved Memory (7/94)

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Article Created: 5 March 1993
Article Reviewed/Updated: 28 July 1994

TOPIC ----------

The Macintosh Centris 650, and Quadra 800 computers feature a newly designed memory controller that supports interleaved memory. The following article explains how interleaved memory works on these computers and how to configure the computers for maximum performance.

The Quadra 650 can be used interchangably with the Centris 650 in this document.

DISCUSSION ----------

Note that as of this date, the Centris 650 and Quadra 800 are the only Macintosh models that support memory interleaving. Neither the Centris 66AV nor the Quadra 840AV support memory interleaving.

Interleaved Memory on the Centris 650 and Quadra 800

The main memory subsystem of the Macintosh Centris 650 and Quadra 800 computers makes use of a memory access technique called interleaved memory. This memory organization serves to reduce the overall access time of the 68040 processor into DRAM. The following description illustrates how this memory organization works and why it results in reduced memory access time.

Non-Interleaved Memory System

In a non-interleaved memory system, all of the first bank of memory, bank 0, is addressed before the first long word of the second bank of memory, bank 1, all of bank 1 is addressed before the first long word of bank 2, and so on. Figure 1 shows this organization for two banks of N long words. (A long word is 4 bytes, or 32 bits, and is the natural unit of memory for the 68040.)

Bank 0 Bank 1

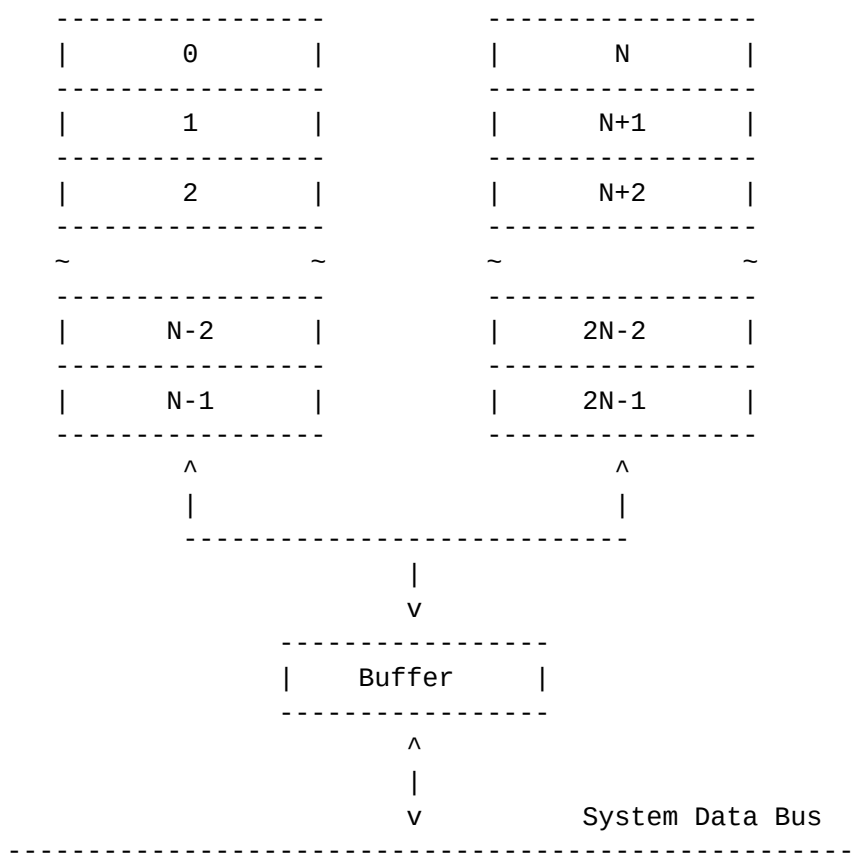

Figure 1. Non-interleaved Memory Organization

The 68040 performs burst accesses (a single bus transaction that reads or writes 16 bytes in 4 adjacent long words) to move data between its caches and memory. All 16 bytes come from one bank of DRAM in a non-interleaved memory system, so the time required to complete the transfer depends directly on the access time of the DRAM. Figure 2 shows an example of such a burst access. The time needed to access the 2nd, 3rd, and 4th long words is shorter because it uses a DRAM feature called "page-mode access."

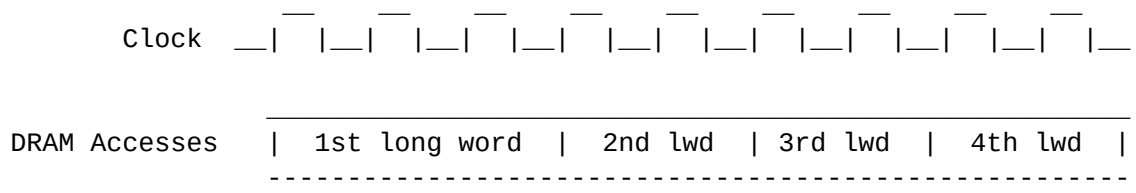

Figure 2. Non-interleaved Burst Access Timing

Interleaved Memory System

In an interleaved memory system, there are still two physical banks of DRAM, but logically the system sees one bank of memory that's twice as large. In the interleaved bank, the first long word of bank 0 is followed by the first long word of bank 1, which is followed by the second long word of bank 0, which is followed by the second long word of bank 1, and so on. Figure 3 shows this organization for two physical banks of N long words. All even long words of the

logical bank are located in physical bank 0 and all odd long words are located in physical bank 1.

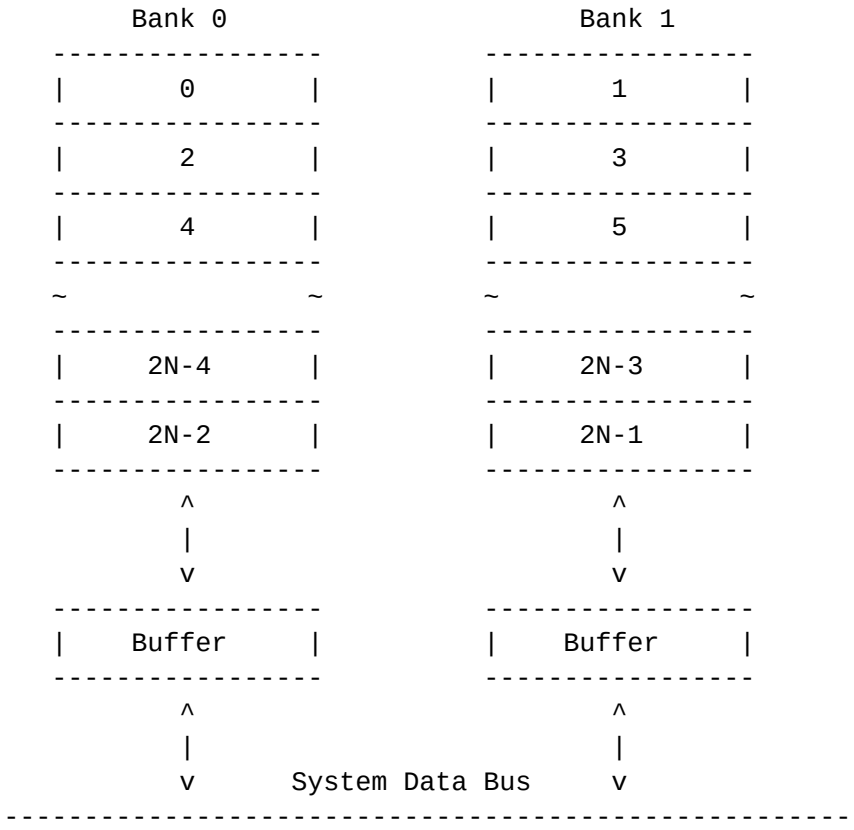

Figure 3. Interleaved Memory Organization

The interleaved memory configuration is designed to speed up 68040 burst accesses by as much as 30%. (The actual improvement depends on the system clock speed and the DRAM access time.) Since the four long words of a burst access are spread across two physical banks of DRAM, the individual accesses can be overlapped to hide part, or all, of the DRAM access time delay, as shown below in Figure 4.

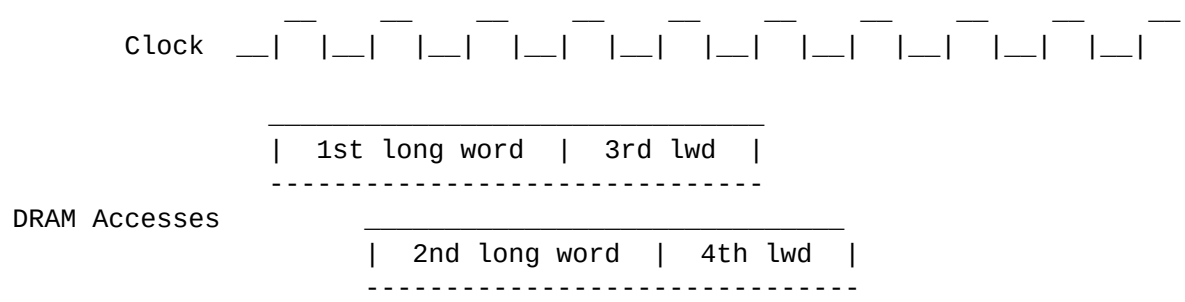

Figure 4. Interleaved Burst Access Timing

Centris 650 and Quadra 800 Memory Organization

Physically, the DRAM in a Centris 650 or Quadra 800 system is organized as 110 banks of memory, where each bank is 32 bits wide and 4MB or 16MB deep.

Logically, the DRAM is organized as 5 pairs of banks, any of which may or may not be interleaved. At system boot time, each pair of DRAM banks is examined; if they are the same size (4MB or 16 MB), the interleaved memory configuration for that bank pair will be enabled. Otherwise, the bank pair will be left in the non-interleaved configuration.

The memory controller in the Centris 610 or Quadra 800 is capable of operating with some bank pairs in the interleaved configuration and some bank pairs in the non-interleaved configuration. The type of memory access performed is determined dynamically at the start of each cycle based on the value of an "interleave configuration register" within the memory controller. ROM accesses can't be interleaved since there's only a single bank of ROM.

The Centris 650 and Quadra 800 main logic board contains 4MB or 8MB of DRAM and 4 DRAM SIMM sockets. Systems that contain 8MB on the main logic board (all Quadra 800 and some Centris 650 computers) already interleave the two 4MB banks soldered to the main logic board. Systems which have only 4MB soldered on the main logic board can't interleave the single soldered 4MB DRAM bank, although DRAM on SIMMs can still be interleaved.

Each DRAM SIMM can contain either one or two banks of DRAM. The Centris 650 and Quadra 800 use 72-pin DRAM SIMMs; these SIMMs have a 32-bit data path, allowing memory upgrades to be performed with a single SIMM. Single- sided SIMMs contain one DRAM bank; double-sided SIMMs contain two DRAM banks. A double-sided SIMM can't contain an interleaved bank pair since there aren't enough pins on the SIMM to accommodate the two 32-bit data buses required for interleaved memory. Interleaving can only be done between DRAM SIMM pairs.

The main logic board contains banks 0 and 1, SIMM slot 1 contains banks 2 and 3 (remember, SIMMs can be double-sided and contain 2 banks of DRAM), slot 2 contains banks 4 and 5, slot 3 contains banks 6 and 7, and slot 4 contains banks 8 and 9. SIMM slot pairs 1-2 and 3-4 are interleaved together whenever a bank pair is of the same size. For example, if 4MB SIMMs are placed in both SIMM slots 1 and 2, then that memory will be interleaved (banks 2 and 4). If a double-sided 8MB SIMM (that is, a SIMM with two 4MB banks on it) is placed in slot 1, and a single-sided 4MB SIMM is placed in bank 2, then two of the banks will be interleaved (banks 2 and 4) and one bank won't be interleaved (bank 3).

The gist of all this is that in order to maximally enable memory interleaving, memory upgrades should be performed with a pair of SIMMs, both of the same size. A single SIMM can be used for memory expansion, but will result in a portion of memory being non-interleaved. The system actually takes care of configuring everything automatically at boot, regardless of what memory is installed. However, by physically configuring DRAM in identically sized bank pairs, the fastest overall memory access is achieved (that is, the highest performance). The actual performance delta between an interleaved and non-interleaved memory system will depend on the application, and will vary from application to application.

Article Change History:
28 Jul 1994 - Added note that Centris 650 and Quadra 650 are interchangable in this article.
20 Aug 1993 - Added note at top.

..TIL11761-Macintosh_Quadra_650_and_800-Interleaved_Memory_7-94.pdf

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Tech Info Library Article Number:11761

Tech Info Library

Apple Internet Router 3.0.x and Apple Remote Access (9/94)

Revised: 9/13/94
Security: Everyone

Apple Internet Router 3.0.x and Apple Remote Access (9/94)

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Article Created: 11 March 1994
Article Reviewed/Updated: 12 September 1994

TOPIC ----------

This article describes running Apple Remote Access (ARA) 1.0 or 2.0, and the Apple Internet Router (AIR) 3.0.x on the same Macintosh. Also described are the versions of AppleShare are supported with ARA 2.0.

DISCUSSION ----------

It is possible to use ARA 1.0 (for dial-in access only) and the AIR 3.0 at the same time. However, how to do this is not intuitive and the AIR 3.0 manual does not give very many clues. Note, this solution was not tested by Apple and is not officially supported.

The port settings for the serial port ARA is setup to use must be cleared using the "Clear Port Info..." menu item under the Router Manager's "Edit" menu. To do this, expand the view for the serial port ARA is setup to use and click on the "DialUp" icon and select the "Clear Port Info..." menu item under the Router Manager's "Edit" menu. Then select the "LocalTalk" icon and do the same.

These are only necessary if the port had been "defined" at some point using the Router Manager software.

We have never done any testing with AIR 2.0 and ARA so we cannot say what might work. We do know that using any version of ARA for dial-out on a Macintosh running the AIR 2.0 software does not work.

The only ARA and AIR software combination that is supported and will work correctly together is ARA Multi-Port Server 2.0 or ARA Multi-Port Server 2.0.1, and AIR 3.0.1. Keep in mind that any port used by the ARA Multi-Port Server cannot be used by the AIR and vice versa.

AIR 3.0 uses Shared Library Manager 1.0 and does not work properly with ARA Multi-Port Server 2.0 because it requires Shared Library Manager 1.1.

The ARA Client-Only 2.0, ARA Personal Server 2.0, and ARA 1.0 software was not tested, and is not supported with any version of AIR software.

ARA Multi-Port Server 2.0 was only tested with AppleShare 3.0.3 and AppleShare 4.0.1 and is only supported with these versions of AppleShare.

Article Change History:
12 Sep 1994 - Made clarifications.
06 Apr 1994 - Combined articles, and updated information to ARA 2.0 and AIR 3.0.1.

Support Information Services

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Tech Info Library Article Number:11763

Tech Info Library

PowerBook 160, 180: System Enablers on Install Me First (3/93)

Revised: 7/7/94
Security: Everyone

PowerBook 160, 180: System Enablers on Install Me First (3/93)

==========

Article Created: 17 March 1993

TOPIC ----------

Our Install Me First Disk has Enabler 111 version 1.0.1. I placed version 1.0.2 of Enabler 111 on our working copy of the Disk Tools Disk for the PowerBook 160 and 180.

I tried replacing the enabler with version 1.0.2 on this Install Me First floppy disk; clearly the Installer doesn't want this and no longer recognizes the disk as the correct one. This is true even replacing the enabler with the original one.

I did a regular install to a PowerBook 180 with copies of original disks. Then, I booted with a Disk Tools Disk and dragged version 1.0.2 of the enabler onto the PowerBook hard disk. When I restart, I get an error.

Is there any way to update our Install Me First Disks so that we have the latest Enabler files?

DISCUSSION ----------

Adding or removing files from Install Me First disks ISN'T recommended. The installer script often looks for specific file attributes besides filename, like version, modified date, and created date. If the installer script doesn't find exactly what it's looking for, it will abort.

System Enabler 111 version 1.0.2 is only required on PowerBook 160s and 180s with an Express Modem installed. The enabler is automatically installed when the Express Modem software 1.0.1 is installed.

System Enabler 111 version 1.0.2 will work on the PowerBook 160 and 180 without an Express Modem installed, so I suspect you may have downloaded the "corrupted" enabler that was posted on AppleLink. We replaced the corrupted enabler, and

you can download the enabler from AppleLink again.

Support Information Services

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Tech Info Library Article Number:11764

Tech Info Library

StyleWriter II: Problems with M.Y.O.B. (3/93)

Revised: 3/25/93
Security: Everyone

StyleWriter II: Problems with M.Y.O.B. (3/93)

==========

Article Created: 12 March 1993

TOPIC ----------

M.Y.O.B. crashes or refuses to print when printing to the StyleWriter II when GrayScale is selected in the Print dialog box.

Is this a problem with the StyleWriter II driver or M.Y.O.B.?

DISCUSSION ----------

Apple Engineering has determined that the problem lies in the M.Y.O.B. software. Teleware has been notified of the problem, so we suggest contacting them directly for any further questions. Other printers are not affected.

To locate a vendor's address and phone numbers, use the vendor's name as a search string.

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Tech Info Library Article Number:11765

Tech Info Library

Macintosh: Shimmering Dialog Box at Start Up (8/95)

Revised: 8/9/95
Security: Everyone

Macintosh: Shimmering Dialog Box at Start Up (8/95)

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Article Created: 17 March 1993
Article Reviewed/Updated: 9 August 1995

TOPIC ----------

The Macintosh on restart freezes after Welcome To Macintosh disappears with either a bomb box and a system error OR an empty bomb box that "shimmers" on the screen. It also happens with extensions off. The menu bar is empty at the top of the screen. The Macintosh will boot using a System 7.1 Disk Tools disk, and the problem doesn't occur.

DISCUSSION ----------

This is not a problem with corrupt desktop files. This is usually a problem with a corrupt Finder Preferences file. The difference is the computer WILL boot with a System 7.1 Disk Tools disk. The solution to the problem is to boot with Disk Tools and trash the Finder Preferences file. On restart, the system will create a default Preferences file. If this doesn't solve the problem, then proceed with a clean install, because the Finder may be corrupt.

Also throwing At Ease in the trash while it's turned on will generate the same symptoms. At Ease modifies the boot blocks so the Macintosh will startup into At Ease. To set the boot blocks back, the At Ease control panel must be reinstalled, turned off, then removed. The manual gives complete instructions on how to properly remove At Ease.

A quick way to recover from improperly removing At Ease is to reset the boot blocks so that the Finder is the start up application. To do this follow these steps:

Step 1

Startup the computer from a floppy disk, such as the Disk Tools or the Utilities disk (for Performa Users).

Step 2

Drag the Finder outside of the System Folder.

Step 3

Drag the Finder back into the System Folder. (This blesses the System folder and resets the boot blocks to look for the Finder, not At Ease when the computer starts up).

You can now start up your computer normally.

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.
23 Feb 1994 - Added steps to reset boot blocks.

Support Information Services

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Tech Info Library Article Number:11767

Tech Info Library

AppleDesign Powered Speakers: Description (3/93)

Revised: 3/15/93
Security: Everyone

AppleDesign Powered Speakers: Description (3/93)

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Article Created: 15 March 1993

TOPIC ----------

This article describes the AppleDesign Powered Speakers

DISCUSSION ----------

AppleDesign Powered Speakers are specifically designed for computer use and near-field listening. These speakers provide excellent stereo separation and sound quality while maintaining a private listening environment.

Noise-reduction circuitry is built into AppleDesign Powered Speakers to enhance sound clarity, and each speaker is magnetically shielded for use near computer displays and peripheral devices.

AppleDesign Powered Speakers are equipped with a dual-input mixer, so you can connect them to your CD-ROM drive and computer, then receive sound simultaneously from both. You can also connect these speakers to other audio devices, such as a portable CD player, cassette player or television.

Features

Audio Quality

- Tuned-port bass-reflex system for extended low-frequency response
- Active equalization for best frequency response at all listening levels
- Focused sonic dispersion to optimize output for personal, near-field listening
- Noise-reduction circuitry for audio clarity

Computer Connectivity and Use

- Dual-input mixer for computer- and CD-generated sound
- Magnetic shielding to avoid image distortion on computer displays
- Small, sleek design to fit on a desk
- Compatibility with virtually any personal computer, CD player or audio cassette player, or any television supporting sound output

Ease of Use

- Built-in dual-channel amplifier
- Power, volume, and balance controls conveniently located on the front panel
- Headphone jack to provide privacy
- Easy setup and installation

Ordering Information and Packing List

AppleDesign Powered Speakers
Order No. M4475LL/A
- Main (powered) speaker and satellite speaker
- Power-supply module (120-V input)
- Computer interconnect cable (with 3.5-mm miniplugs)
- CD stereo cable
- Insulated dual-strand speaker-to-speaker cable
- Instruction manual
- Limited warranty statement

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Tech Info Library Article Number:11768

Tech Info Library

AppleDesign Powered Speakers: Technical Specifications (8/96)

Revised: 8/2/96
Security: Everyone

AppleDesign Powered Speakers: Technical Specifications (8/96)

==========

Article Created: 16 March 1993
Article Reviewed/Updated: 2 August 1996

TOPIC -----

This article provides the specifications for the AppleDesign Powered Speakers.

DISCUSSION -----

Speaker Type

• Full range, tuned port, bass reflex

Maximum Output

• 90 dB sound pressure level (SPL) at 0.5 m at 90 Hz

Maximum Input Voltage

• 2V peak-to-peak

Interfaces

• One stereo computer-sound input port
• One stereo CD/audio input port
• One stereo headphone output port
• One stereo mini-phono plug output to subwoofer*

* - Only available on the Rev B model.

Controls

• Power on/off

- Balance
- Volume

Power Source

- 15V DC power supply

Electrical Requirements

- Line voltage: 100 to 240 V, depending on the power-supply module
- Frequency: 50 to 60 Hz
- Power: 40 W (maximum)

Size and Weight

- Height: 9.25 in. (23.1 cm)
- Width: 4.5 in. (11.2 cm)
- Depth: 4.75 in. (11.9 cm)
- Weight: 4.8 lb. (2.2 kg)

System Requirements

- Any Apple Macintosh computer, any personal computer equipped for sound output, any CD player or audio cassette player, or any television supporting sound output

Article Change History:
02 Aug 1996 - Added information subwoofer connection.

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Tech Info Library Article Number:11769

Tech Info Library

Personal LaserWriter NTR for Windows: Description (Discontinued)

Revised: 6/2/94
Security: Everyone

Personal LaserWriter NTR for Windows: Description (Discontinued)

==========

Article Created: 5 April 1993

TOPIC ----------

This article describes the Personal LaserWriter NTR for Windows printer.

DISCUSSION ----------

Overview

The Apple Personal LaserWriter NTR for Windows printer is a flexible, high-performance PostScript laser printer.

Powered by a RISC processor, the Personal LaserWriter NTR prints documents up to five times faster than its predecessor, the Personal LaserWriter NT printer.

The Personal LaserWriter NTR for Windows is compatible with Windows and major MS-DOS applications because it uses Adobe PostScript Level 2 software and HP LaserJet IIP (PCL 4+) emulation. Automatic emulation-switching software allows DOS and Windows users to switch easily between PostScript and LaserJet IIP emulation modes.

The Personal LaserWriter NTR also offers plug-and-play installation. Parallel, serial, and LocalTalk ports connect the printer to Windows, DOS, and other computing environments. All ports stay active so you can send documents to any port, without having to change a single setting.

Power and Speed

- High-performance RISC processor
- Exceptionally fast first-page output
- Four pages per minute (maximum)

Compatibility with Windows and DOS

- Simultaneous connection to parallel, RS-232 serial, and LocalTalk ports
- Adobe PostScript Level 2 software and HP LaserJet IIP (PCL 4+) emulation
- Automatic emulation switching between PostScript and HP LaserJet IIP emulation modes; LaserTools Printer Control Panel software included

Print Quality

- 300-dpi resolution for quality text and graphics
- 75 fonts for printing in a wide range of sizes and styles

Convenience and Flexibility

- Compact, low-profile design fits easily on a desk
- Convenient printing on different types and sizes of paper; optional 250-sheet cassette available

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Tech Info Library Article Number:11770

Personal LaserWriter NTR for Windows: Specs (Discontinued)

Revised: 6/2/94
Security: Everyone

Personal LaserWriter NTR for Windows: Specs (Discontinued)

==========

Article Created: 5 April 1993

TOPIC

This article gives technical specifications for the Personal LaserWriter NTR for Windows.

DISCUSSION

Marking Engine

- Canon LBP-LX laser-xerographic

Controller

- 16 MHz AMD AMD29005 RISC processor

Memory

- 3MB ROM
- 3MB RAM, upgradable to 4MB

Speed

- 4 pages per minute, maximum

Print Quality

- 300 dpi for text and graphics

Fonts

- 75 scalable fonts
  - 35 fonts in ROM from the following font families: ITC Avant Garde Gothic,

    ITC Bookman, Courier, Helvetica, Helvetica Narrow, New Century Schoolbook, Palatino, Symbol, Times, ITC Zapf Chancery, and ITC Zapf Dingbats
  - 40 additional Windows 3.1-compatible fonts on disk from the Bitstream TrueType Font Pack, including fonts from the following families: Bitstream Oz Handicraft, Clarendon, English, Fraktur, Freehand, Geometric, Humanist, Huxley Vertical, Imperial, Impress, Incised, Informal, Nuptial, Poster Bodoni, Revival, Square Slabserif, Staccato, Umbra, and Vineta
- Any TrueType or PostScript fonts

Interfaces

- Simultaneous connection to Centronics-type parallel, RS-232 serial, and LocalTalk interfaces

Paper Feed

- Automatic or manual with integral multipurpose tray
- Automatic with optional Personal LaserWriter 250-sheet Cassette Base and the Letter Cassette, Legal Cassette, Envelope Cassette, A4 Cassette, or B5 Cassette

Print Materials

- 16-lb to 28-lb (60- to 105-g/m2) paperbond
- Paper: U.S. letter, U.S. legal, A4, B5
- Most letterhead and colored stock, labels, and envelopes
- Medium-weight photocopier transparencies
- Envelopes:
  - minimum 3.8 x 7.25 inch (96 x 184 mm)
  - maximum 7.4 x 10 inch (188 x 255 mm)

Paper Capacities

- Cassette: up to 70 sheets of 20-lb. (75-g/m2) paper
- Optional paper cassette: 250 sheets of 20-lb. (75-g/m2) paper
- Optional envelope cassette: 15 envelopes

Printable Surface

- Maximum printable line: 8.0 in. (203.2 mm)
- Minimum margins: 0.25 in. (6.35 mm) (actual printable area may vary depending on the application)

Size and Weight

- Height: 8 inches (20.3 cm)
- Width: 15 inches (38 cm)
- Depth (with optional letter-size cassette): 18.3 inches (46.4 cm)
- Weight: 29.5 lb. (13.35 kg)

Power Requirements

- U.S./Japan: 90 to 110 volts AC, 48-52Hz, 58-62 Hz

• Europe/Australia: 220 to 240 volts AC, 48-52 Hertz

Maximum Power Consumption

• 600 watts at 115 volts
• 550 watts at 220 volts

Operating Environment

• Temperature: 50 to 90° F (10 to 32.5° C)
• Humidity: 20% to 80% noncondensing
• Toner cartridge transit environment: -4 to 140° F (-20 to 40° C)

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Tech Info Library Article Number:11771

Tech Info Library

LaserWriter Pro 600 for Windows: Description (4/93)

Revised: 4/5/93
Security: Everyone

LaserWriter Pro 600 for Windows: Description (4/93)

==========

Article Created: 5 April 1993

TOPIC ----------

This article describes the LaserWriter Pro 600 for Windows printer.

DISCUSSION ----------

The Apple LaserWriter Pro 600 for Windows provides 600 dots-per-inch (dpi) resolution and lets you print text at four times the resolution of conventional laser printers.

Because it uses Apple PhotoGrade and FinePrint technologies, the LaserWriter Pro 600 can give you high-quality images and graphics even at 300 dpi. PhotoGrade technology allows up to 91 levels of gray, the equivalent of 1000 dpi. FinePrint smooths out lines and curves in text and line art that would otherwise appear jagged.

The LaserWriter Pro 600 for Windows is compatible with Windows and major MS-DOS applications because it uses Adobe PostScript Level 2 software and HP LaserJet IIP (PCL 4+) emulation. Automatic emulation-switching software allows DOS and Windows users to switch easily between PostScript and LaserJet IIP emulation modes.

The LaserWriter Pro 600 offers plug-and-play installation. Parallel, serial, and LocalTalk ports connect the printer to Windows, DOS, and other computing environments. All ports stay active so you can send documents to any port, without having to change a single setting.

For added flexibility, the LaserWriter Pro 600 comes with two paper trays and an expandable array of options, including a 500-sheet feeder and a 75-envelope feeder. The LaserWriter Pro 600 has a total paper-handling capacity of 850 sheets.

Print Quality

- 600-dpi resolution for high-quality text in PostScript mode
- PhotoGrade for enhanced images at 300 dpi, FinePrint for smooth text and lines in PostScript mode
- 300-dpi resolution HP LaserJet IIP (PCL 4+) emulation mode
- 75 fonts for printing in a wide range of sizes and styles

Compatibility with Windows and DOS

- Simultaneous connection to parallel, RS-232 serial, and LocalTalk ports
- Adobe PostScript Level 2 software and HP LaserJet IIP (PCL 4+) emulation
- Automatic emulation switching between PostScript and HP LaserJet IIP emulation modes; LaserTools Printer Control Panel software included

Convenience and Flexibility

- Two (100- and 250-sheet) paper trays
- Optional envelope feeder (75-envelope capacity)
- Optional 500-sheet feeder
- Maximum capacity with options: 850 sheets

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11772

Tech Info Library

LaserWriter Pro 600 for Windows: Specifications

Revised: 10/21/93
Security: Everyone

LaserWriter Pro 600 for Windows: Specifications

==========

Article Created: 5 April 1993

TOPIC ----------

This article gives the technical specifications of the LaserWriter Pro 600 for Windows.

DISCUSSION ----------

Marking engine

• Canon EX laser

Controller

• 25-MHz 68030 CPU, ASICs, and I/O processors

Memory

• 8MB RAM, expandable to 32MB
• 2MB ROM

Speed

• Eight pages per minute (maximum)

Print Quality

• 600 dpi
• 300 dpi enhanced with PhotoGrade and FinePrint
• 300-dpi HP LaserJet IIP (PCL4+) emulation

Fonts

- 75 scalable fonts
  - 35 fonts in ROM from the following font families: ITC Avant Garde Gothic, ITC Bookman, Courier, Helvetica, Helvetica Narrow, New Century Schoolbook, Palatino, Symbol, Times, ITC Zapf Chancery, and ITC Zapf Dingbats
  - 40 additional Windows 3.1-compatible fonts on disk from the Bitstream TrueType Font Pack, including fonts from the following families: Bitstream Oz Handicraft, Clarendon, English, Fraktur, Freehand, Geometric, Humanist, Huxley Vertical, Imperial, Impress, Incised, Informal, Nuptial, Poster Bodoni, Revival, Square Slabserif, Staccato, Umbra, and Vineta
- Any TrueType or PostScript fonts

Interfaces

-

Recommended Duty Cycle

- Toner cartridge: 6000 pages at 5% density
- Printer: 450,000 pages (minimum)

Print Materials

- Media: 20- to 24-lb. (60- to 80-g/m2) media from cassette, up to 32-lb. (135-g/m2) media manually
- Paper: U.S. letter, U.S. legal, A4, B5
- Labels, envelopes, most textured stock, and transparencies

Paper Capacities

- Standard
  - 100-sheet multipurpose tray (can also hold up to 10 envelopes)
  - 250-sheet letter cassette
- Optional
  - 500-sheet feeder
  - Envelope feeder: up to 75 envelopes

Printable Surface

- Maximum printable line: 8.1 in. (205.9 mm)
- Minimum margins:

left and right	0.1379 in. (3.5 mm)
top	0.114 in. (2.9 mm)
bottom	0.197 in. (5.0 mm)

Size and Weight

- Height: 12.1 in. (30.8 cm)
- Width: 16.8 in. (42.5 cm)
- Depth: 16.9 in. (42.9 cm)
- Weight: 39 lb. (17.7 kg)

Power Requirements

- U.S./Japan: 90 to 110 VAC, 58 to 62 Hz; 103.5 to 126 VAC, 58 to 62 Hz

- Europe/Australia: 194 to 264 VAC, 48 to 52 Hz

Power consumption

- Standby: 95 W (average)
- Operating maximums
  - 560 W at 115 V
  - 530 W at 220 V

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Tech Info Library Article Number:11773

Tech Info Library

LaserWriter Select 310 for Windows: Description (4/93)

Revised: 4/5/93
Security: Everyone

LaserWriter Select 310 for Windows: Description (4/93)

==========

Article Created: 5 April 1993

TOPIC

This article describes the LaserWriter Select 310 for Windows.

DISCUSSION

The LaserWriter Select 310 for Windows is a 5 page-per-minute personal laser printer for people working in Windows computing environments.

The LaserWriter Select 310 for Windows delivers high-quality printed output from Windows and major MS-DOS applications. It offers 53 scalable fonts, including such popular standards as Times, Helvetica, and Courier.

To start using the LaserWriter Select 310, simply connect it to your computer. A Centronics-type parallel interface is included, so there's no need to purchase additional interface cards or software drivers.

The LaserWriter Select 310 includes a cassette tray that holds 250 sheets of paper and a manual paper feed for small jobs requiring personal attention. You can also add an optional 250- or 500-sheet paper tray.

Features

Print Quality

- 300-dpi resolution for quality text and graphics
- Adobe PostScript printing
- 53 fonts for printing in a wide range of sizes and styles

Compatibility with Windows and DOS

- Centronics-type parallel interface
- Adobe PostScript software and ASCII text emulation
- Automatic emulation switching between PostScript and ASCII text modes; LaserTools Printer Control Panel software included

Versatility

- 250-sheet automatic tray and manual-feed tray included
- Optional paper-handling capabilities for up to 800 sheets of paper (includes different media)
- Compact design fits on a desk

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Tech Info Library Article Number:11774

Tech Info Library

LaserWriter Select 310 for Windows: Specifications (4/93)

Revised: 4/5/93
Security: Everyone

LaserWriter Select 310 for Windows: Specifications (4/93)

==========

Article Created: 5 April 1993

TOPIC ----------

This article provides technical specifications for the LaserWriter Select 310 for Windows.

DISCUSSION ----------

Marking Engine

• Fuji Xerox laser

Controller

• AMD AM29205 RISC processor

Memory

• 1.5MB RAM, expandable to 5.5MB
• Optional 1MB and 4MB upgrades

Speed

• Five pages per minute (maximum)

Interfaces

• Centronics-type parallel port
• RS-422 serial 8-pin DIN port

Print Quality

• 300 dpi for text and graphics

Fonts

- Includes 53 scalable fonts:
  - 13 fonts in printer ROM from the following families: Courier, Helvetica, Times, and Symbol
  - 40 additional Windows 3.1-compatible fonts on disk from the Bitstream TrueType Font Pack, including fonts from the following families: Bitstream Oz Handicraft, Clarendon, English, Fraktur, Freehand, Geometric, Humanist, Huxley Vertical, Imperial, Impress, Incised, Informal, Nuptial, Poster Bodoni, Revival, Square Slabserif, Staccato, Umbra, and Vineta
- Any PostScript font

Size and Weight

- Height: 8 in. (25.3 cm)
- Width: 15 in. (38 cm)
- Depth: 18.3 in. (45 cm)
- Weight: 26 lb. (12 kg)

Operating Environment

- Temperature: 50 to 90° F (10 to 32° C)
- Humidity: 20% to 80% noncondensing
- Toner cartridge transit environment: –4 to 104° F (–20 to 40° C)

Power Requirements

- U.S./Japan: 100 to 115 V, 50 to 60 Hz
- Europe/Australia: 220 to 240 V, 50 Hz

Power Consumption

- 450 W maximum at 115 V or 220 V

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Tech Info Library Article Number:11775

Tech Info Library

QMS 410 Printer: System 7 Compatibility (3/93)

Revised: 3/16/93
Security: Everyone

QMS 410 Printer: System 7 Compatibility (3/93)

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Article Created: 10 March 1993

TOPIC ----------

Is the QMS 410 printer compatible with System 7?

DISCUSSION ----------

According to QMS, version 9.4 and higher of the QMS firmware is System 7 compatible. On 3/1/93, the current version was 9.4a.

To check the firmware version, take the printer off line, press the "test" button, and put the printer back online.

Two test pages will print; the first one will have a printer ID box in the top left corner. The fourth line of this box indicates the firmware version.

If customers have firmware version 6, 7, or 8, they can call QMS for upgrade information. If customers still have level 1, they will have send their printer in to QMS for the upgrade.

QMS has modified the Apple LaserWriter driver to add various features to it, such as a new envelope selection and different size paper. This driver is available directly from QMS.

The Apple LaserWriter driver will work with the QMS 410. QMS suggests that an alias of the LaserWriter printer driver be in the extensions folder and that the original driver should be located in the root directory of the system folder.

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Tech Info Library Article Number:11776

Tech Info Library

Apple Internet Router 3.0, IP Extension, & Public Zone (3/93)

Revised: 3/16/93
Security: Everyone

Apple Internet Router 3.0, IP Extension, & Public Zone (3/93)

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Article Created: 12 March 1993

TOPIC -----

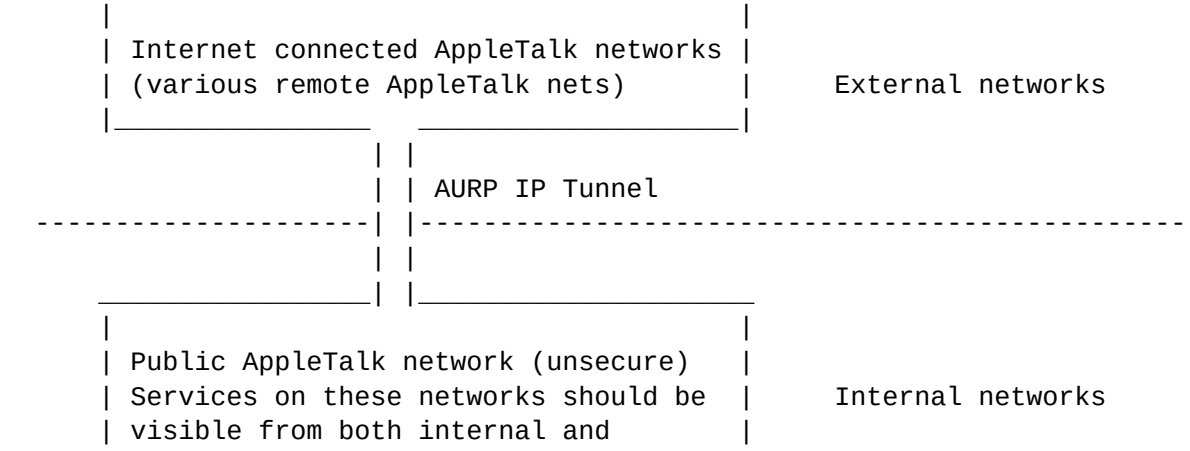
I want to allow remote and local AppleTalk networks to connect to a "public network". I want the "clients" attaching to this public network to see the services on that public network only and to have no knowledge of the peer networks attached to the public network. I may not have control of those who wish to connect to my network, so I need a method to manage the "filtering" of the inbound and outbound AppleTalk traffic.

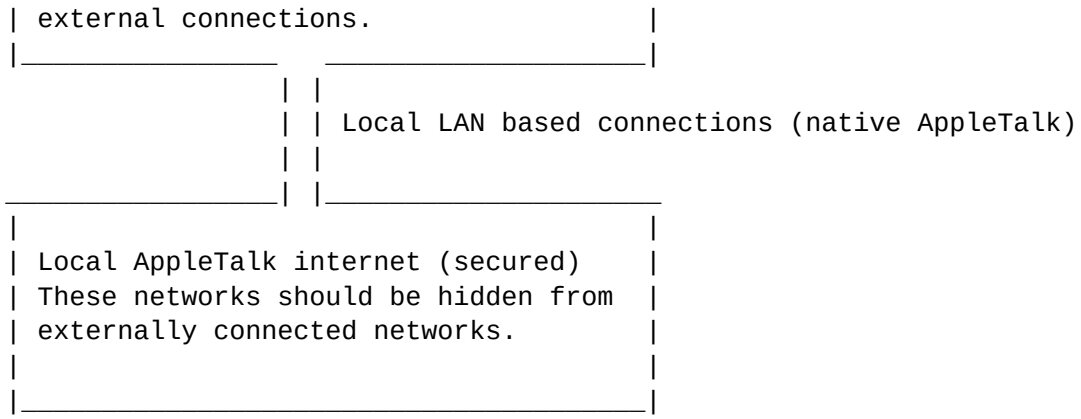
How can I set this service up using AIR 3.0 with the IP extension?

DISCUSSION -----

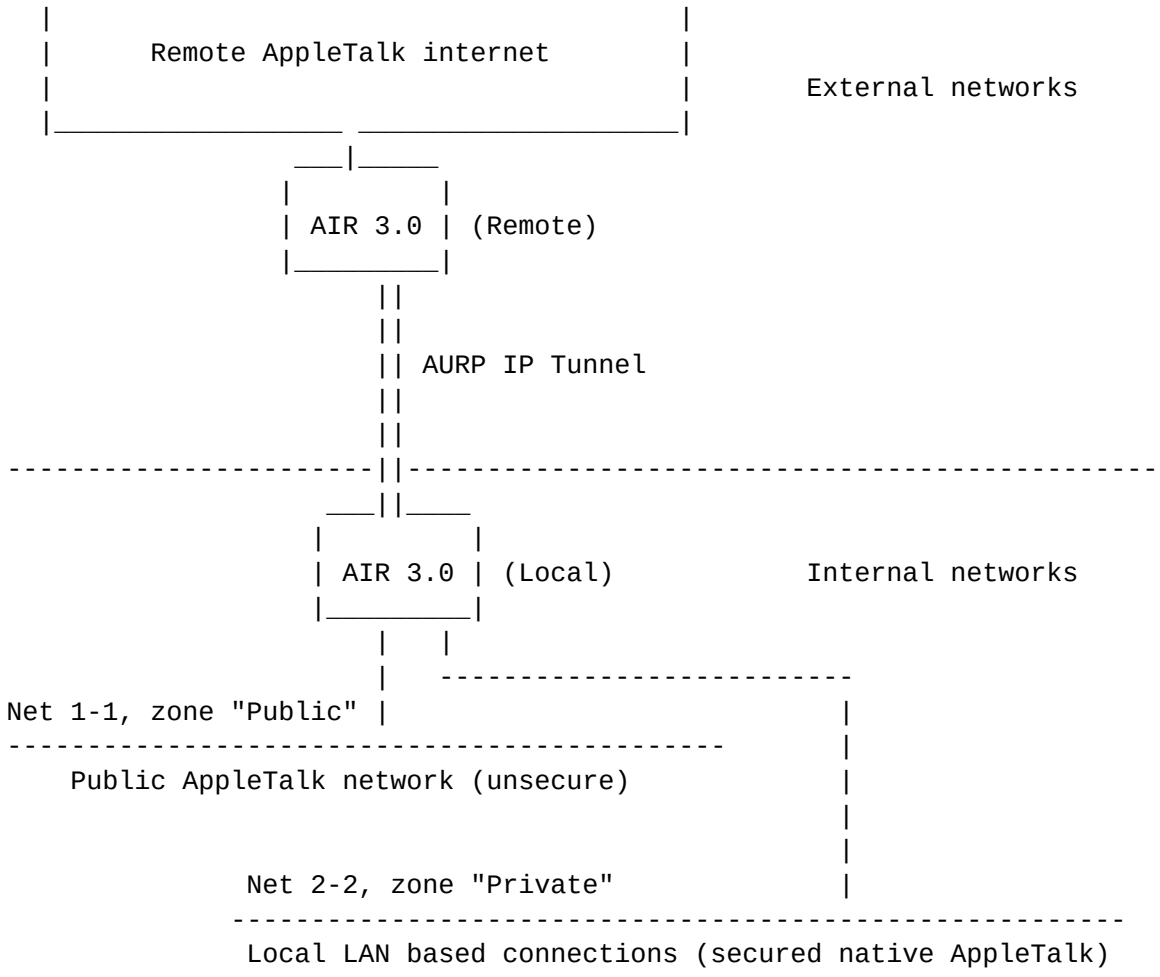
The information provided below will give you with the type of functionality you're looking for.

First, the following diagrams.





The first diagram lays out the basic design of the network; more detail is added below to show a more workable solution.



The Local Apple Internet Router

Given this configuration, you would follow these steps to configure the routers:

1) In the port info box for the IP tunneling port, deselect "Use only host ID's listed. This would allow any remote site to connect to this router to establish an AURP tunnel.

2) Select "Allow more than 15 hops". This takes care of any problems associated with remote networks that are more than 15 hops away from the public network.

3) Select "Remap remote network numbers". This will allow remote networks which use the same network number as the public network to establish an AURP connection. Chose a range of networks large enough to satisfy the expected number of remote networks you'll have to remap. This will vary from situation to situation, but with a possible range 65,279 - (local network numbers used) you should be able to spare a few thousand numbers for remote remapping purposes.

4) Select "Cluster remapped networks". This is optional and only necessary if you are concerned about the size of the routing table or RTMP packets sent to the local networks.

5) Select "Hide all networks except those listed" from the "Hide from this network" pop-up menu. Input the network number of the public network in the list of networks not to hide, in this example you would list 1-1. This would hide all your local networks to any of your AURP connected remote internets.

6) Configure all other local network numbers and zone assignments.

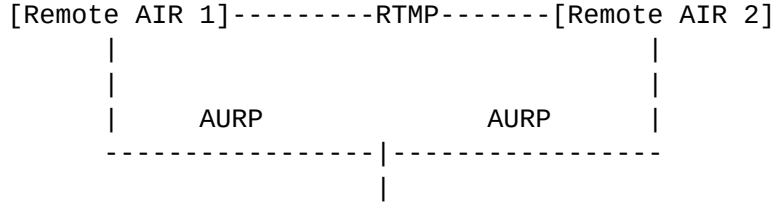
The Remote Apple Internet Router(s)

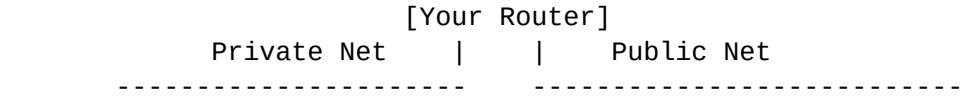
The remote router would only need to supply the address of your router and set up any options specific to their site (network number remapping, clustering, etc.).

Considerations given this configuration:

- Zones from remote sites will show up in the zone list on the local (secure) AppleTalk internet. Even though zones will show up, no services should be visible because the secure networks are hidden and thus no path exists for remote devices to respond to NBP requests.

- No routing loops can be present. In other words, no remote site could have multiple connections to your public network and also have RTMP-based connectivity between themselves.



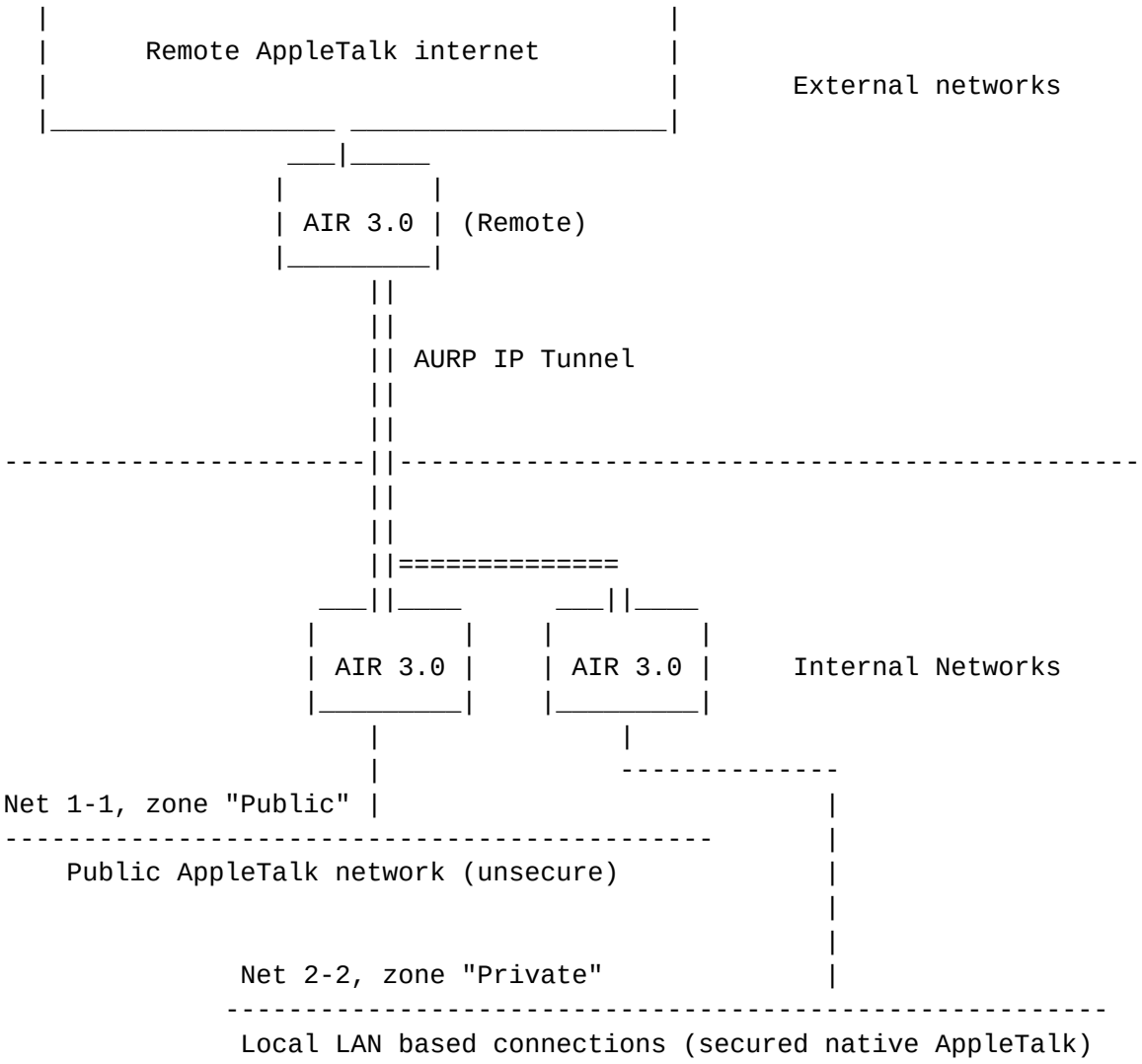


This type of configuration will not work unless you don't use network number remapping.

Private (Secured) Network

Your private (secured) network nodes would not be able to connect to other "public" networks which may be advertised on the Internet without adding another interface to the router, or by adding another router, and changing the security configuration. We just can't come up with a good general way to provide the best of both worlds such as is possible using IP.

Now let's see if I can make it a little better:



What We're trying to show here is a second Apple Internet Router connected via IP to the local public network. This configuration offers some advantages over the first configuration.

- The biggest advantage is that your local users wouldn't be bothered seeing random zones appear because you would be connected to the public network via an IP tunnel over which you would only see a single route to network 1, and a single zone "Public". This would, for the same reason, only increase the size of a local RTMP packet by a single network entry.

- You could easily configure the second router to also connect to other "public" Internet networks -- although security would still have to be carefully thought through for your private network users. Security would need to be considered because in order to enable your private network-based users to connect to remote "public" networks, you have to supply a route back into your private networks which means they cannot be hidden. You could hide your file servers and your printers using the device hiding features of the Apple Internet Router. But NBP-based security is really not all that secure since the devices could still be attacked if someone was able to discover their network and node information.

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Tech Info Library Article Number:11777

Tech Info Library

WorldScript: Using with Applications (3/93)

Revised: 3/18/93
Security: Everyone

WorldScript: Using with Applications (3/93)

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Article Created: 18 March 1993

TOPIC ----------

I need some clear documentation on what capabilities WorldScript adds to the operating system and how applications use these new capabilities. I have these specific questions:

1) What third parties have announced "WorldScript aware" applications?

2) Will HyperCard be "WorldScript aware"?

3) Is it possible for an application, say a word processor, to switch on the fly from one language to another? How is the script used for application menu items and dialog boxes selected?

DISCUSSION ----------

There is currently no single source for documentation on WorldScript that we're aware of. There are a few articles in the Tech Info Library that provide some depth on WorldScript (search on "WorldScript"). If you want to delve further into understanding international script systems, there are also a couple of good sources for that information:

• Macintosh Worldwide Development: Guide to System Software (available from APDA)

•Inside Macintosh, Volume VI (Worldwide Software Overview chapter)

Here are the answers to your specific questions:

1) The only application we're aware of is a product from Nisus Software, Inc. It's a fully WorldScript-aware word processor, and can use multiple scripts at the same time. The name of the application is

NISUS.

2) HyperCard version 2.1 is System 7.1 compatible, but doesn't support WorldScript. Apple is working on making HyperCard WorldScript-aware.

3) Switching between different "languages" is one of the key features of WorldScript. You do this through a menu in the upper right corner of the screen.

   The script for menu items and dialog boxes remains the same as the base system that WorldScript is installed on.

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Tech Info Library Article Number:11779

Tech Info Library

Imaging Products: Where to Find Installer Disks (1/95)

Revised: 1/24/95
Security: Everyone

Imaging Products: Where to Find Installer Disks (1/95)

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Article Created: 15 March 1993
Article Reviewed/Updated: 24 January 1995

TOPIC ----------

Where can I find the install disks for Apple imaging products. Specifically I'm looking for the Install disks for the Color Printer, Color Scanner, and the StyleWriter II.

DISCUSSION ----------

You can find the complete set of disk images for Apple printers on AppleLink. Individual printer drivers are available on the online services Apple posts software updates on.

The disk images for the Apple Color Scanner cannot be posted since the Ofoto software is included on the disks. However, The Color Scanner driver itself can be found in the same locations as the individual printer drivers.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
24 Jan 1995 - Updated article with correct locations.

Support Information Services

..TIL11780-Imaging_Products-Where_to_Find_Installer_Disks_1-95.pdf

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Tech Info Library Article Number:11780

Tech Info Library

Windows 3.1: Apple Events on IBM PC Computers (3/94)

Revised: 3/9/94
Security: Everyone

Windows 3.1: Apple Events on IBM PC Computers (3/94)

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Article Created: 4 March 1993
Article Reviewed/Updated: 9 March 1994

TOPIC ----------

Can I use Apple Events features on an IBM PC?

DISCUSSION ----------

IBM PCs and compatibles don't support Apple Events, but Windows 3.1 can simulate some Apple event-like procedures.

Send Message (in ScriptMaker) is the way to run another application or open a document from FileMaker Pro 2.x for Windows. This isn't documented in the user manual, and only works under Windows 3.1.

You can only use "open document." The three radio buttons should work:

- If you choose Document, specify the document you want to open or the application you want to run.
- If you choose Script Text, specify the same things you'd put in the edit control in the Run dialog of the program manager.
- If you choose Field Value, the contents of the field should follow the same rules as the contents of Script Text.

Only the first option (Bring target application to foreground) works.

This information came from Claris Corp.

Article Change History:
9 March 1994 - Reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:11781

Tech Info Library

LaserWriter IIg: Troubleshooting Macintosh and IBM Connections

Revised: 3/19/93
Security: Everyone

LaserWriter IIg: Troubleshooting Macintosh and IBM Connections

==========

Article Created: 4 March 1993

TOPIC ----------

Here is a basic outline to use when troubleshooting a LaserWriter IIg when connected to both a Macintosh and an IBM. If the configuration is IBM only, you may ignore the "Verify Connection to the Macintosh" section.

DISCUSSION ----------

Verify Connection to the Macintosh
---

1) Hook up the printer to the Macintosh using two known good LocalTalk boxes and cable.

2) Set the select switch to 0 and turn on the printer.

3) In the Chooser, select the printer (If you can't see the printer, you have a hardware problem).

4) Try printing a window from the desktop.

If this works, the printer is OK.

Verify IBM Connection
---

1) Use a Null-Modem Cable that connects from the IBM to the IIg.

2) Leave the connect switch set to 1, this will set up the DB-25 Serial port to 9600 Baud, HP Emulation.

3) Issue the proper Mode commands:

MODE COM*:96,n,8,1,p (Where * is the number of the COMM PORT.)

MODE LPT1:=COM*

4) From DOS, not from Windows, perform the following:

Type CTRL-P (This will direct further output to the LPT device.)

Type DIR followed by a RETURN.

Type CTRL-L (This sends a form feed command to eject the page.)

Type CTRL-P (This will redirect the output to the screen.)

You should see the light of the LaserWriter IIg blinking, and then it should produce a printout of the directory of the computer.

If you don't get output at this point, you have a hardware failure. This can be either in the Printer, Cable or Computer.

If the printer does produce a printout, but you can't get the output to work with Windows, then you have a software configuration issue.

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Tech Info Library Article Number:11783

Tech Info Library

Windows 3.x: Printing to LaserWriter IIg (3/94)

Revised: 3/9/94
Security: Everyone

Windows 3.x: Printing to LaserWriter IIg (3/94)

==========

Article Created: 4 March 1993
Article Reviewed/Updated: 9 March 1994

TOPIC ----------

We're using IBM PCs on a network running Windows 3.0, and we're trying to print to LaserWriter IIg printers, connected serially through DEC servers. All fonts print fine except Zapf Dingbats. Knowing that font isn't installed in ROM on the IIg, is there a fix for Windows 3.0 (or 3.1) that allows printing the Zapf Dingbat fonts over the network?

DISCUSSION ----------

First, convert the Zapf Dingbats Adobe Type 1 font that comes with the LaserWriter IIg, from resource fork format to text format. You can do this with a utility called UnAdobe.

Then, prepend the font text with "serverdict begin 0 exitserver" and append an end of file (CTRL-D). In other words:

```
  %%Begin Download
  serverdict begin 0 exitserver

..
  Text of font
.
.
  eof (CTRL-D)
  %%End Download
```

This will permanently download the font until the power is cycled.

This information is available on pages 39 and 40 of the LaserWriter Reference manual.

Article Change History:

..TIL11784-Windows_3-x-Printing_to_LaserWriter_IIg_3-94.pdf

9 March 1994 - Reviewed for accuracy

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:11784

Tech Info Library

Windows 3.x: Printer Driver Prints Incorrectly on LW NTR (3/94)

Revised: 3/9/94
Security: Everyone

Windows 3.x: Printer Driver Prints Incorrectly on LW NTR (3/94)

==========

Article Created: 4 March 1993
Article Reviewed/Updated: 9 March 1994

TOPIC ----------

If I use the recommended NT/NTX printer driver in Windows and try to print envelopes, the software will try to print down the center of the engine (where envelopes feed on a LaserWriter II). But the NTR feeds envelopes on the side of the engine, and this doesn't work.

DISCUSSION ----------

The only suggestion we have is to contact the manufacturer of the driver. Request that they place in the Page Setup dialog box the flexibility ofselecting envelope-edge feed or envelope-center feed.

We're sorry but we have no influence on third-party printer drivers written for the Windows environment.

Article Change History:
9 March 1994 - Reviewed for accuracy

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:11785

Tech Info Library

TrueType Fonts: Conversion Between Macintosh and Windows (3/93)

Revised: 3/19/93
Security: Everyone

TrueType Fonts: Conversion Between Macintosh and Windows (3/93)

==========

Article Created: 4 March 1993

TOPIC ----------

Can I use TrueType font files from Windows on the Macintosh or vice versa? Do I need a conversion or font designer program to do this?

DISCUSSION ----------

The Windows version of TrueType Fonts contain additional tables to the Macintosh version. While it may be possible to use a conversion utility to go from Windows to Macintosh, it probably won't be possible to go the other way.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11786

Tech Info Library

Windows 3.0: Obtaining a Printer Driver for Using LaserWriters

Revised: 3/19/93
Security: Everyone

Windows 3.0: Obtaining a Printer Driver for Using LaserWriters

==========

Article Created: 4 March 1993

TOPIC ----------

What printer driver should I use with Windows on an IBM PC to print to an Apple LaserWriter.

DISCUSSION ----------

Apple doesn't supply a specific driver for the Windows platform. Microsoft supplies a driver called "PScript.Drv" to use with the Apple LaserWriter II line of printers.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11787

Zenith 386/25: Printing ASCII to LaserWriter IIg (3/93)

Revised: 3/19/93
Security: Everyone

Zenith 386/25: Printing ASCII to LaserWriter IIg (3/93)

==========

Article Created: 4 March 1993

TOPIC ----------

We connected a LaserWriter IIg to our network via LocalTalk. We can successfully print PostScript files to it from both the Macintosh systems and PC systems (through Windows 3.1 to a Novell NetWare 386 print queue) over LocalTalk.

We also want to connect the LaserWriter IIg to the network serially so MS-DOS users (version 5.0) can issue a NetWare "NPRINT" or "CAPTURE" command and send text files over the network to the serial port of the LaserWriter. We would like serial printing to be at least 9600 baud.

So far, our serial print tests haven't been over the network, just by direct-connecting the PC to the printer using a serial cable. The Thumb Switch on the LaserWriter IIg is set to Position 1.

The pinouts on the Zenith 9-pin serial port are as follows:

1 - CD
2 - Receive Data
3 - Transmit Data
4 - DTR
5 - Ground
6 - DSR
7 - RTS
8 - CTS
9 - Ring Indicator

The test:

1) Direct-connect the serial ports of the PC and the printer via the serial cable.

2) On the PC, issue the DOS MODE command to redirect output from LPT1 to the COM port to which the cable is attached:

```
MODE LPT1=COM1
MODE COM1:9600,n,8,1,r
```

3) Do a DOS Print Screen (SHIFT PRTSCRN) in an attempt to send a screen dump from the PC to the LaserWriter. Result: The cursor on the PC jumps to the top left corner of the screen and hangs -- no flashing light on the LaserWriter, no printout, and the PC must be rebooted.

4) Do a DOS PRINT command to send a text file from the PC to the LaserWriter. We got the same result as above.

Which Thumb switch position should we use? What is the wiring diagram for the serial cable which will work between the Zenith 386/25 DB-9 port to the LaserWriter IIg?

An HP LaserJet IIP can print an ASCII text file, so shouldn't the LaserWriter IIg be able to print an ASCII text file if it's in HP LaserJet IIP emulation mode?

DISCUSSION ----------

The cable has to be a NULL MODEM cable (also called a MODEM ELIMINATOR cable). Based on the Zenith DB-9 connector information you gave us, the serial cable should be wired as follows:

Zenith DB-9 Connector			LaserWriter IIf/IIg DB-25 Connector	
Signal	Pin#		Pin#	Signal
SGnd	5	----------	1	SGnd
TxD	3	----------	3	RxD
RxD	2	----------	2	TxD
DSR	6	----------	20	DTR
DTR	4	----------	6	DSR

Since the PC compatible is using hardware hand shaking, it's necessary to set up the LaserWriter IIf or IIg to do hardware hand shaking as well. Switch position 1 will give you a HP LaserJet IIP emulation, 9600-baud connection with 8 data bits, 1 stop bit, no parity, and DTR flow control. The Owner's Manual for the LaserWriter IIg has a complete description of the thumb wheel settings.

The LaserWriter IIf or IIg, when in HP LaserJet IIP mode, does print ASCII text, just like the HP LaserJet IIP.

When setting up the serial port, type the following at the MS-DOS prompt:

```
MODE LPT1=COM1
```

```
MODE COM1:9600,n,8,1,p
```

The second line is the proper mode command for the serial port when using a printer.

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Tech Info Library Article Number:11788

Tech Info Library

Windows to Macintosh: Difficulties When Moving Documents (3/94)

Revised: 3/9/94
Security: Everyone

Windows to Macintosh: Difficulties When Moving Documents (3/94)

==========

Article Created: 4 March 1993
Article Reviewed/Updated: 9 March 1994

TOPIC ----------

I'm trying to use Word Perfect in a multi-vendor environment. While WordPerfect works well moving between Windows and the Macintosh, I have some problems with documents reflowing, due to different font metrics across the two platforms.

Now that Windows has TrueType, it would appear that this should be easy. I have these specific questions:

1) Are the font metrics for TrueType on a Macintosh and TrueType for Windows the same?

2) Are the font metrics of Macintosh bitmapped fonts and Windows bitmapped fonts the same (for at least the basic fonts; Times, Helvetica, Courier)?

3) How can I create documents or templates on one platform that will move to the other platform (that is, Macintosh to Windows or Windows to Macintosh) without the page breaks changing due to reflowed text?

DISCUSSION ----------

1) The fonts themselves may be the same, but the TrueType engines on the two platforms are different. Apple did the TrueType engine for the Macintosh and Microsoft did the TrueType engine for Windows. So there are differences in how TrueType fonts are represented.

2) Bitmapped fonts on the two platforms are very different.

3) At this time, you can't. You'll find many more problems than just the reflowing of text causing page layouts to change. You'll find that all the style changes will go from one platform to another as well.

There's a long way to go before moving documents across platforms without losing something in the process.

Article Change History:
9 March 1994 - Reviewed for technical accuracy

Support Information Services

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Tech Info Library Article Number:11789

Tech Info Library

NetWare: Time Stamps Cause Unrecognized Files in QuickTime 3/93

Revised: 3/15/93
Security: Everyone

NetWare: Time Stamps Cause Unrecognized Files in QuickTime 3/93

==========

Article Created: 4 March 1993

TOPIC -----

I'm using Novell 3.11, NetWare for the Mac 3.011, and System 7. I discovered that NetWare for the Macintosh doesn't provide a "transparent" file system like a standard AppleShare server. There are problems with QuickTime and backup systems.

DISCUSSION -----

NetWare changes a file in two ways when copied onto a NetWare volume:

- The modified time of the file is truncated to an even number of seconds.
- The created time is set to (an even approximation of) the current time, thus you get a file with a modifed time earlier than the creation time.

Because of the way the Macintosh operating system handles time stamps, these two changes can cause potential problems with QuickTime, backup systems, and compiler "make" systems. Whether they do cause problems depends on your software and how you use it.

How To Reproduce the Problem

Here's how to reproduce the problem using QuickTime, it requires:

- An application to play and copy QuickTime movies (for example, Simple/Movie Player from Apple)
- A QuickTime movie

- An application or DA where you can paste your movie (the QuickTime compatible Scrapbook will do)

All these should reside on a local Macintosh hard disk or on a normal AppleShare volume. Follow these steps:

1) Open the QuickTime movie with the application and copy it to the Clipboard.

2) Open the application where you'll paste it from the Clipboard.

3) Play the movie from within the application where you pasted it.

4) Move the movie and the application where it's pasted to another location on your local Macintosh hard disk or normal AppleShare volume.

5) Open the application where it's pasted again and play the movie. QuickTime will search for the movie because you've moved it. Once found (probably very quickly) it will play.

6) Move the movie onto your NetWare volume. Remove the original (that is, keep just the copy on NetWare).

7) Open the application it's pasted to again and play the movie. QuickTime will search for the movie and fail to find it. Manually locate the movie using QuickTime's dialog and select it. QuickTime will report "not a valid movie file."

Note that the movie is actually a valid file and you can repaste it into the application. But every time you move the movie off the NetWare volume and back again (or onto another NetWare volume), the playback will break and you'll have to repaste.

This occurs because NetWare changes the timestamps on the file that QuickTime uses to check whether the file is the correct one. Any program that relies on timestamps (backup systems, compiler makes) may fail for the same reason, if files are copied to NetWare volumes.

If you use NetWare, check very carefully that things are working, especially your backups. You may use NetWare without any problems, and much software isn't affected. But other software will be affected, and you may not notice the damage immediately. Its full effects aren't known.

Novell is fixing this problem in version 4.0 of Netware for Macintosh, and is working on the problem in 3.11.

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Tech Info Library Article Number:11790

Tech Info Library

System 7.1: Bad or Missing Date Format

Revised: 3/15/93
Security: Everyone

System 7.1: Bad or Missing Date Format

==========

Article Created: 15 March 1993

TOPIC ----------

In System 7.1, dates aren't displayed or contain garbage in the Finder windows. In the Date & Time control panel, the U.S. Date format contains garbage. Here are the steps we tried to remedy this problem:

1) Trashed the Date and Time control panel.
2) Zapped the PRAM.
3) Reinstalled the system software over the existing system software.

These steps didn't resolve the problem.

DISCUSSION ----------

After further investigation, we discovered that the format information is kept in the System suitcase file. We did this by changing the date format to a custom format and checking the modified date and time. We then verified this by examining the system file using ResEdit. There's a resource in the system file that contains all date formats.

Here's the procedure to resolve this issue:

1) Start up using the Disk Tools disk.

2) Be sure to backup any non-Apple sounds and keyboard layouts.

3) Drag the System suitcase file to the Trash, and select Empty Trash from the Special menu.

3) Restart the computer using the Install disk, and follow the normal system software installation procedures.

..TIL11791-System_7-1-Bad_or_Missing_Date_Format.pdf

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Tech Info Library Article Number:11791

Tech Info Library

TriSoft

Revised: 7/20/93
Security: Everyone

TriSoft

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Article Created: 20 January 1993
Article Reviewed/Updated: 20 July 1993

TriSoft

1825 East 38 1/2
Austin, Texas 78722

Sales: (800) 531-5170

Support and Info: (512) 472-0744

Fax: (512) 473-2122

Company Profile:
Providing sales and support for Hyde Park, MacSLIP product, a SLIP Link Access Protocol Module for MacTCP.

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Tech Info Library Article Number:11792

Tech Info Library

PrintMonitor 7.0.1 and 7.1: Differences (3/93)

Revised: 4/5/93
Security: Everyone

PrintMonitor 7.0.1 and 7.1: Differences (3/93)

==========

Article Created: 25 March 1993

TOPIC --------------------

What are the differences between PrintMonitor 7.0.1 and 7.1?

DISCUSSION --------------------

Compared to 7.0.1, PrintMonitor 7.1 has only cosmetic and localization changes.
• The word "LaserWriter" was replaced with the word "Printer" in a dialog box.
• A change was made to the time format for Arabic.

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Tech Info Library Article Number:11795

DART 1.5.3: Version Change History (12/94)

Revised: 12/23/94
Security: Everyone

DART 1.5.3: Version Change History (12/94)

==========

Article Created: 18 March 1993
Article Reviewed/Updated: 23 December 1994

TOPIC ----------

This article details the version change history for last three versions of DART, as well to where to locate a copy of DART.

DISCUSSION ----------

What Is DART?

DART (Disk Archive/Retrieval Tool) is an application that enables you to duplicate Macintosh, Lisa, Apple II, or MS-DOS disks, save disk images, and create disks from image files. DART 1.5 can read disk image files in DART, DiskMaker, or Disk Copy format. DART 1.5 image files are compressed, approaching a reduction in size comparable to that obtained by using a commercial compression utility. DART 1.5 is System 7.0 "savvy", and implements a custom Apple event mechanism to automate the conversion of older DART or Disk Copy files to 1.5 format. The conversion process can be run by "remote control" (even across a network!) using the accompanying HyperCard stack. (For more information, please refer to the DART User Manual.)

What's New in version 1.5.3

• Compatibility with Centris 660AV, Quadra 660AV, and Quadra 840AV.

• Compatibility with Apple Event Manager 1.0.1 (a component of AppleScript).

Note: A -64 error occurs launching DART 1.5.3 on a Power Macintosh, but if you click OK, DART continues and everything works as expected.

What's New in version 1.5.2

• Compatibility with new Macintosh Quadra 800 and Centris machines.

- Under certain circumstances, it was possible for DART to open a corrupted Disk Copy file and create an identically corrupted disk (or image file) from it. Checksums on source disk images are now verified correctly, and DART will always display a warning message if the expected and actual checksum values don't match. (Note that while a damaged Disk Copy file can no longer be converted to DART format, it's still possible to make a disk from it and potentially salvage the data on that disk.)

- Fixed a minor (but annoying) display glitch in "Multiple Copies" mode where a portion of the Status message would sometimes be "hidden" underneath the progress bar.

What's New in version 1.5.1

- Compatibility with A/UX 3.0.

- Under System 7, you can now drop a floppy disk onto DART to create an image file.

- The default filename in Save dialogs is now filled in with the volume name of the source disk (if a source has been selected.)

- Volumes can now be mounted in the Finder when DART is running in the background.

- Fixed a bug which could occasionally cause a bus error on certain machines. The error would occur either immediately on launch, or after the about box was dismissed.

- Fixed a bug which could cause DART to refuse to format a blank 1.4M floppy disk (or a 1.4M floppy formatted as 800K) when "Format Disk" was checked.

Where To Locate DART

These articles can help you locate the software update mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
23 Dec 1994 - Added Power Macintosh note.
27 Sep 1994 - Reviewed.
06 Oct 1993 - Updated with info on DART 1.5.3, and revised title.

..TIL11800-DART_1-5-3-Version_Change_History_12-94_(TA29157).pdf

Support Information Services

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Tech Info Library Article Number:11800

Tech Info Library

KanjiTalk on a Performa 600 (3/93)

Revised: 3/18/93
Security: Everyone

KanjiTalk on a Performa 600 (3/93)

==========

Article Created: 18 March 1993

TOPIC ----------

Will KanjiTalk System 7.1 run on a Performa 600? What System Enabler should I use?

DISCUSSION ----------

KanjiTalk System 7.1 WASN'T tested with the Performa 600, so the configuration isn't supported. We believe, however, that KanjiTalk System 7.1 should work fine on the Performa 600 since it differs only slightly from the Macintosh IIvx (the Performa 600 doesn't have the 32K processor cache). If you want to try using this configuration, we suggest using the Install Me First disk for the Macintosh IIvi and IIvx (there are localized versions for KanjiTalk) and try the IIvx install first.

By the way, there's a different system enabler for the Performa 600, but it's only required if you're running the 7.1P version of system software. System Enabler 001 (on the Install Me First disk for the Macintosh IIvi and IIvx) should work on the Performa 600, but again, this hasn't been tested.

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Tech Info Library Article Number:11801

Tech Info Library

PowerBook 165c: Compatibility with Connectix PB Utilities (8/93)

Revised: 7/7/94
Security: Everyone

PowerBook 165c: Compatibility with Connectix PB Utilities (8/93)

==========

Article Created: 18 March 1993
Article Reviewed/Updated: 12 August 1993

TOPIC ----------

My PowerBook 165c is freezing at various times when Connectix PowerBook Utilities (CPU) version 1.0j is active. Is there a fix for this?

DISCUSSION ----------

Connectix PowerBook Utilities (CPU) 1.0j has some incompatibilities with the PowerBook 165c. These have been confirmed by Connectix tech support.

The CPU security feature will cause the PowerBook to freeze when the correct password is entered.

The LCD screen saver will cause crashes with bad F-line instructions.

CPU cannot properly manipulate the 165c's backlighting control. This does not cause any crashes.

In order to use CPU software with a PowerBook 165c, go into each saved configuration (all sets for each defined user) and turn the Screen Saver and Security features off individually.

These problems are remedied in Connectix PowerBook Utilities 2.0.

Call Connectix for the latest information and to obtain the current release of the software. To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
12 August 1993 - CPU version 2.0 is now available.

Support Information Services

..TIL11802-PowerBook_165c-Compatibility_with_Connectix_PB_Utilities_8-93.pdf

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Tech Info Library Article Number:11802

Tech Info Library

PowerBook Express Modem: Software Versions and Issues (12/94)

Revised: 12/15/94
Security: Everyone

PowerBook Express Modem: Software Versions and Issues (12/94)

==========

Article Created: 18 March 1993
Article Reviewed/Updated: 15 December 1994

TOPIC ----------

This article describes:

- Where to obtain the latest Express Modem software.
- The different versions of Express Modem software and what fixes each version implemented.
- Using Express Modem software with the PowerBook Fax/Data Modem.
- Express Modem software support issues.

DISCUSSION ----------

These articles can help you locate software updates mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Software Versions:

1.0 First release. Support for PowerBook Duo 210 and 230 only.
Includes Fax Sender 1.1

1.0.1 Added support for PowerBook 160 and 180.
- Includes System Enabler 111 (1.0.2).
- Improved compatibility with third party extensions.

1.0.2 European release only.

1.0.3 Italy release only.

1.0.4 Worldwide release. Includes Fax Sender 1.1.2

- Early versions of the software had trouble with connections requiring parity. (Typically host connections using 7 data bits.) Connections requiring parity are now fully supported in 1.0.4.
- Fixed ring detection problem.
- Added support for Loss of Carrier indication through the serial driver (SerSatus call, ctsHold byte).
- Fixed problem with XON/XOFF flow control during error corrected connections.
- Improved compatibility with US Robotics high speed modems when running LAP-M error correction.
- Problems involving Fax Terminal Pref file corruption have been addressed in 1.0.4. Symptoms customers would experience, would be seeing an "X" appear through the Fax extension upon startup and not being able to send a fax.
- When sending a fax, the six special dial characters (*,#,A,B,C,D) are now supported in the dial string.
- Fax Sender 1.1.2 now allows you to cancel sending a fax during imaging. Earlier versions only allowed cancellation after imaging was complete.

Problems not fixed in 1.0.4:

- Incompatibility with Prodigy software, where Prodigy does not recognize the Express Modem (currently under investigation).
- Problems have been reported using the "W" (wait for dial tone) and ":" (wait for calling card tone) dial commands. For example, calling card tones like Pacific Bell's and AT&T's are detected correctly, but not some others like MCI (currently under investigation). If you find that the tone is not being properly detected, you may need to enter one or more commas (,) to tell the modem to wait before sending the calling card number. Each comma represents a delay of 2 seconds.

1.1.2 Updated to include the Macintosh AV computers that now include the Express Modem option.

1.5.1

- Fixed the '@' dial modifier command so that it now works as described in the Express Modem user manual.
- Improved throughput and reliability. Fixed a problem where fallback from MNP to async could fail and the Express Modem would hang up.
- Removed dependency on A/ROSE. A/ROSE is no longer required.
- Changed the default factory profile of atN value from 0 to 1.
- Added support for GeoPort for Power Macintosh.

1.5.2

- Fixed a problem where Faxing caused hanging from time to time with EM 1.5/1.5.1
- V23 rework for France (Minitel was not working well)
- Fixed a problem where crashes appears at random in 1.5 and 1.5.1

during the fax process or the modem power-up sequence.

1.5.3 Was released to support Japanese System Software and systems.
- Fax blacklisting delay for Norway was too short and was corrected.
- Italy and Germany line detect button was not handled properly in EM 1.5.2.
- RAM Memory card > 12MBytes were conflicting with EM 1.5.2 this is now fixed.

1.5.4 The addition of the Fax Terminal 7.5 compatibility extension. The extension consists of delaying the Fax sending of documents which are in the "Fax Waiting To Be Sent" folder at start up time.

1.5.5
- Improvement for the PowerBook 500 series modem in Sweden and France. (Express Modem II only ships internationally. The Global Village Mercury ships in the U.S.)
- Corrected a HDLC issue on all configurations except on PowerBook 200 Series computers. This affected large file transfers in MNP/V.42 mode.

Using the Express Modem software with the PowerBook Fax/Data Modem
---
The Express Modem software includes Fax Sender 1.1.2. Fax Sender 1.1.2 is backward compatible with the PowerBook Fax/Data Modem.

Why would PowerBook Fax/Data modem users want to upgrade to the Express Modem version of Fax Sender?

- Fax Sender 1.0.1 and 1.0.3 had a problem where the Fax Page Length produced would be A4 (~12.5 inches) even though US Letter was selected. This was corrected in Fax Sender 1.1.

- Performance. Imaging of documents is faster.

- New Fax Quick Send feature.

When using Fax Sender 1.1.2 software on a PowerBook with a PowerBook Fax/Data Modem it is important to note that the Serial Tool extension is required. The Serial Tool is "left over" from any earlier Fax Sender 1.0.1 or 1.0.3 installation, or can be dragged into the Extensions folder manually if a 'clean' System Software & Express Modem software installation is performed.

Other Issues Involving the Express Modem

- When sending a fax it is impossible to image with a full disk. There is no workaround (rare problem). For example, sending a 14-page fax may require approximately 1MB of free disk space.

- ATL commands are not supported but will result in "OK" if used. Use the Sound Control Panel to set volume level of the speaker.

- AT&T (Self Tests) commands are documented in the "Express Modem AT Cmds" read me, but actually are not supported.

- The Express Modem was designed to work with the Communications Toolbox (CTB). The Express Modem Tool, a CTB Connection Tool, was designed to work specifically with the Express Modem. If you use an application that supports the CTB, it is preferable that you choose the Express Modem Tool, rather than selecting the Serial Tool, Apple Modem Tool, or disabling the CTB.

- The Express Modem provides compatibility for applications that do not support the CTB. Selecting "Internal Modem" in the PowerBook control panel enables applications using serial port A (External Modem Port) to communicate with the Express Modem.

- It is not necessary to explicitly turn on the modem through the Express Modem control panel. When an application attempts to use the Express Modem, the modem will automatically be turned on.

- When your computer is transmitting or receiving data or faxes, make sure that it does not go to sleep. You can select "Don't sleep when plugged in" from the Options dialog box in the PowerBook control panel.

- Fax Terminal is not set by default to receive faxes. You must first select the "Answer calls" check box in Fax Terminal Preferences in order to receive faxes automatically.

- If you have AppleTalk Remote Access installed, it is recommended that you remove the "Serial Port Arbitrator" extension from the Extensions folder inside the System Folder. AppleTalk Remote Access will still function properly. The extension just keeps track of the names of applications using serial ports for user notification.

- Applications that use a non-standard means of accessing a modem (for example, bypassing the serial driver and directly controlling the hardware, or implementing an alternate to the standard serial driver) will have no means of accessing and using the Express Modem.

- Fax Sender will turn a page in landscape mode to portrait mode before faxing. There is no work around.

Article Change History:
15 Dec 1994 - Added information on Express Modem version 1.5.4 and 1.5.5.
29 Sep 1994 - Added information on Express Modem version 1.5.2.
21 Sep 1994 - Updated to include Express Modem version 1.5.3.
16 Jun 1994 - Updated to include Express Modem version 1.5.1 and Fax Sender only faxes in portrait mode.

Support Information Services

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Tech Info Library Article Number:11803

Tech Info Library

DAL Server for AS/400: Joining Tables In SQL Query (3/93)

Revised: 4/6/93
Security: Everyone

DAL Server for AS/400: Joining Tables In SQL Query (3/93)

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Article Created: 18 March 1993

TOPIC ----------

What is the number of tables that can be joined for a query using DAL Server for AS/400? I've heard of joining up to 32 tables for a query using other SQL methods, while the DAL server can join 2.

DISCUSSION ----------

The number of tables that can be joined in a SQL query is determined by the Database Management System (DBMS) -- NOT by DAL.

The SQL/400 Programmers' Guide and Reference Guide repeatedly mention "two or more tables being joined" -- without specifying an upper limit on the number of tables. We see no reason why you wouldn't be able to "join" 32 tables in one select statement.

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Tech Info Library Article Number:11808

Tech Info Library

DAL and Omnis 7: Using The Break Function (3/93)

Revised: 3/26/93
Security: Everyone

DAL and Omnis 7: Using The Break Function (3/93)

==========

Article Created: 18 March 1993

TOPIC ----------

When querying a table of 18,000 rows, the query returned 10,000 rows. I wanted to cancel the output, but DAL would not stop sending output until all rows had been sent, or until I restarted the computer.

I contacted Blyth about Omnis 7 and DAL, they said it was a problem with DAL. However I believe this is an Omnis 7 problem.

Is, or isn't, it possible to interrupt DAL while it is sending output?

This is the VTAM DAL server connected via an Avatar board.

I tried similar scenarios on an AS/400 DAL Server using Clear Access; output aborted successfully.

DISCUSSION ----------

- The lack of break in Omnis 7 is an Omnis problem.

- DAL supports the break function for the VAX, A/UX, TSO, VTAM and VM servers for AppleTalk, Async, TCP and 3270 protocol connections. The break is not supported for APPC connections to either VTAM or AS/400.

We have never had a copy of Omnis so we haven't been able to test with it. The Product Manager at Blyth told us that Omnis does not support DAL API calls directly. Therefore it would not support the break function, as that is a DAL API call.

As far as the break "working" in Clear Access to the AS/400:

- Clear Access does support the CLBreak API call: no problem there.

- The SNA•ps APPC network adapter does not support the actual interruption of the data being returned because of constraints in that network protocol.

The SAN•ps APPC network adapter most definitely will NOT support the termination of data from the server. We have done a lot of testing on this issue to the VTAM server and have also checked out this function to the AS/400 server. It does not work with either. The application handles the break request, but subsequent attempts to query the server have to wait for the data to be finished being sent from the first query.

The lack of break functionality in the SNA•ps APPC network adapter is not considered a "bug" by engineering, but rather a "constraint of the protocol". Therefore, DAL engineering is not planning to fix the APPC network adapter to support the break function at this time.

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Tech Info Library Article Number:11809

Tech Info Library

System Software: What Up your FCBs Does (3/93)

Revised: 3/22/93
Security: Everyone

System Software: What "Up your FCBs" Does (3/93)

==========

Article Created: 22 March 1993

TOPIC ----------

I have System 7 installed, and there's an extension licensed to Apple called "Up your FCBs." What is this, and is it necessary?

DISCUSSION ----------

A file control block (FCB) is used for any file that's open. If a file has both a data fork and a resource fork, it needs two file control blocks. The system needs a number of files open all the time. Examples of these are the System, the Finder, and the Desktop Database.

When you mount hard disks or floppy disks, they use three FCBs for their Desktop files and other needed information. When you mount an AppleShare volume, it uses one FCB. When you open a file from within an application, it depends on the application as to whether it will use an FCB. It needs to open the file to get the data out of it, but some applications (like AppleLink) close the file after reading the data, and no longer use that FCB.

Under system software 6.0.x, the number of FCBs the system could have open at one time was set in the boot blocks. The "Up your FCBs" INIT allowed you to modify this number in the boot blocks.

System 7 doesn't work this way. Under System 7, the number of free FCBs changes dynamically. When the system needs more FCBs, the number increases, and there's no need to change it in the boot blocks. The maximum number of FCBs, however, is 346.

The bottom line, then, is that under System 7, "Up your FCBs" isn't any benefit. Under system software 6.0.x, "Up your FCBs" is useful to increase the number of free FCBs because it doesn't happen

dynamically.

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Tech Info Library Article Number:11811

Tech Info Library

AppleSearch 1.0.1: Product Description (7/94)

Revised: 7/22/94
Security: Everyone

AppleSearch 1.0.1: Product Description (7/94)

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Article Created: 22 March 1993
Article Reviewed/Updated: 22 July 1994

TOPIC ----------

This article describes AppleSearch, the full-text search and retrieval software.

DISCUSSION ----------

AppleSearch offers a powerful yet easy way for Macintosh users to access information on a server by providing text search and retrieval. Client users can quickly find information on topics they specify or they can let AppleSearch act as a personal agent that periodically provides updated information.

AppleSearch provides electronic "Reporters" and newspaper-like updates as intuitive ways to obtain personalized information. A Reporter is a user-defined electronic search agent that looks for and retrieves the information requested. If a Reporter is set to make scheduled searches, it looks for new or recently modified documents relevant to the search request and automatically delivers the results—from the server to the user's computer—in an easy-to-read update.

Both beginners and expert users will benefit from a wide range of query features. Because AppleSearch processes natural language search queries, users can simply ask for information in their own words. They can also search for a particular phrase or for terms that occur frequently with a search query term. For users familiar with the Boolean query language, AppleSearch supports the full range of Boolean operators.

AppleSearch gives users transparent access to documents in various formats, including word-processing, page-layout, spreadsheets, and electronic-mail. XTND file format translators extract plain text from these document types so that AppleSearch clients can view the text regardless of the document's original format.

AppleSearch information sources are shared folders of documents (such as

correspondence, reports, or on-line newsfeeds) that reside on the server or a locally mounted volume.

The AppleSearch search engine automatically creates an index for each information source, which is used to find the best matches to user search requests. Using a one- to five-star rating system, results are automatically ranked in the order of their relevance to the request.

Benefits

Easy to use
- Allows search queries to be entered in the user's own words

Personalized information updates
- Formatted updates delivered to user's desktop on a daily or weekly basis

Easy-to-read, prioritized information
- Provides quick access to the most relevant document titles

Transparent access to source documents
- Displays text independently of the original application

Powerful full-featured search engine
- Processes natural language or Boolean queries

Easy to administer
- Provides automated indexing of information sources

Customizable
- Can be adapted to meet an organization's specific needs

Article Change History:
22 Jul 1994 - Change title to reflect product version number.
28 Apr 1994 - Updated information to AppleSearch 1.0.1.

Support Information Services

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Tech Info Library Article Number:11814

Tech Info Library

AppleSearch 1.0.1: Product Details, System Requirements (7/94)

Revised: 7/22/94
Security: Everyone

AppleSearch 1.0.1: Product Details, System Requirements (7/94)

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Article Created: 22 March 1993
Article Reviewed/Updated: 22 July 1994

TOPIC ----------

This article contains AppleSearch product details, system requirements, and licensing and ordering information.

DISCUSSION ----------

AppleSearch Client

The Client software provides electronic Reporters and newspaper-like updates as an intuitive way to retrieve information when it is needed. You create an AppleSearch Reporter to search for information on a specific topic. The AppleSearch Reporter searches all selected information sources on the AppleSearch server for key words in a query, then quickly provides a list of documents that are relevant to the query ranked from one to five stars.

You can choose to view the text of each document, or you can retrieve the full document in its original format. AppleSearch can display the Reporter's results in an update created automatically, on a regular basis, and delivered to a specified location on a hard disk. The Reporters can be saved to use again or to share with colleagues.

AppleSearch Server

The Server software has a feature-rich search engine from Personal Library Software that processes the queries of AppleSearch client users. For each information source, AppleSearch maintains an index of all potential query terms in the document and their relationship to each other. You can index an information source immediately or schedule incremental indexing so that users always have access to the latest information. The Server software maintains a list of all Reporter names, organized by user ID. Once created, Reporters reside on the server and their users can access and use them over a local network or remotely by using Apple Remote Access.

Product Details

Setup and Configuration

- AppleSearch is quick and easy to install. You simply double-click the Installer icon on your Setup disk for both the Client and the Server.
- Supports up to 50 users.

Information Sources

- Any shared folder on an AppleSearch server volume.
- Users can make information available to be searched and retrieved by dragging document files into shared folders on the server.
- Can reside on any locally mounted volume such as a hard drive or CD-ROM.

Indexing

- For each AppleSearch information source, AppleSearch indexes all documents and creates an index file of query terms.
- Indexes information sources at 10–30 megabytes/hour (depending on the type of computer used for the server and the file format of the documents).
- The network administrator can schedule incremental indexing to occur automatically at hourly, daily, or weekly intervals. Portions of an index will be updated when documents are modified in the corresponding info source.
- Performs automatic compacting to reorganize the index and release unused disk space.
- Typically requires the same amount of disk space as the text of the content itself.
- A CD-ROM can be made AppleSearch-ready simply by pre-indexing its content.

Document Independence

Apple's XTND file format translator technology in conjunction with MacLinkPlus/AppleSearch, from DataViz, Inc., is used for AppleSearch indexing, searching and retrieving. It allows AppleSearch users to view the text of nearly all document types without using the application that created it.

The following translators are included with AppleSearch server software: MacWrite versions 4.5, 5.0, and II; Microsoft Word for Macintosh version 3.0, 4.0, 5.0, and 5.1; Microsoft Works (word processing) versions 2.0 and 3.0; FrameMaker MIF versions 2.0 and 3.0; PageMaker version 4.0; Ragtime version 3.1; Apple Works; WriteNow versions 2.0 and 3.0; Nisus version 3.0; and PICT. Additional translators are available from third-party developers.

Reporters and Updates

- Reporters contain search criteria defined by the user; once saved, they reside on the server and can be scheduled to periodically search and retrieve information relevant to the search request.
- Results found by a scheduled reporter are automatically formatted in an easy-to-read update and delivered to users on the days and times they specify.

- The Import/Export Reporter feature allows users to share Reporters.

Security

- Provides password logon to the server.
- Manages search requests based on the user access privileges associated with the security features of AppleShare or Macintosh System 7 file sharing.
- Allows guest users to conduct on-demand searching.

Query Features

- Natural language processing—allows users to process queries in their own words and get effective results.
- Relevancy ranking—assigns a ranking to each document according to its relevance to the search query.
- Co-occurring words—displays words that frequently co-occur with a query term.
- Stemming—searches for variations of the root query term.
- Proximity—searches for words within a certain number of words.
- Phrase searching—searches for two or more words next to each other.
- Wild string—searches for part of the search term.
- Boolean operators (and, or, not) supported.

AppleSearch Client Developer's Kit

The Client Developer's Kit is for developers who want to write custom client interfaces to the AppleSearch server or integrate AppleSearch functionality with other applications. The API comes in C Library and Apple events versions. The kit includes several header and object files, developer documentation, and a sample application with source code. With this kit you also get the AppleSearch Update File Format Developer's Kit, which includes utility routines

System Requirements

AppleSearch Server

To set up an AppleSearch server, you need:

- An Apple Macintosh computer with a 68040 microprocessor, a Power Macintosh computer, or a Workgroup Server
- At least 8 megabytes (MB) of RAM (for use with Macintosh system software version 7.0 or later, or with AppleShare 3 software); 12MB of RAM (for use with AppleShare 4 software); or 16MB of RAM (for use with AppleShare Pro software)
- An Apple SuperDrive floppy disk drive
- An internal hard disk with available storage space equivalent to two-and-a-half times the space required for textual content of the source being indexed
- AppleSearch Server software and the AppleSearch Update File Format Reference, needed to write software that can read and write AppleSearch-compatible updates.

AppleSearch Client

To set up an AppleSearch client, you need:

- Any Macintosh computer with an internal hard disk and at least 4MB of memory

- Macintosh system software version 7.0 or later
- An Apple SuperDrive floppy disk drive
- A hard disk drive
- AppleSearch Client software

Network Requirements

To set up a network with AppleSearch you need:

- AppleShare or the Macintosh file-sharing feature (AppleShare can be purchased to provide a higher performance configuration that allows a larger number of users. AppleSearch is compatible with AppleShare 3, 4, and Pro.)
- AppleTalk software and an AppleTalk network connection (LocalTalk, EtherTalk, TokenTalk, or Apple Remote Access)

Licensing and Ordering Information

AppleSearch Server/Client 5-Pack
Order No. M2136Z/B

With your order, you receive:

- AppleSearch Server software
- The AppleSearch Administrator's Guide
- AppleSearch Client software
- 5 copies of the AppleSearch User's Guide
- User license to make up to 5 copies of the AppleShare Client software

AppleSearch Client 10-Pack
Order No. M1588Z/A

With your order, you receive:

- AppleSearch Client software
- 10 copies of the AppleSearch User's Guide
- User license to make up to 10 copies of the AppleShare Client software

Article Change History:
22 Jul 1994 - Changed title to reflect product version number.
28 Apr 1994 - Updated to AppleSearch 1.0.1

Support Information Services

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Tech Info Library Article Number:11815

Tech Info Library

Apple Workgroup Server 60: Description (10/93) (Discontinued)

Revised: 6/2/94
Security: Everyone

Apple Workgroup Server 60: Description (10/93) (Discontinued)

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Article Created: 22 March 1993
Article Reviewed/Updated: 21 October 1993

TOPIC ----------

This article describes the Apple Workgroup Server 60.

DISCUSSION ----------

The Apple Workgroup Server 60 provides the performance, reliability, and manageability you need to meet small and medium workgroup requirements for file and print server applications. The most affordable of Apple's server family, this system is based on the 20-megahertz Motorola 68040 microprocessor. With on-board Ethernet and built-in AppleTalk networking capability, this product is ideal for the needs of up to 20 users (that is, users simultaneously reading from and writing to the server).

The Apple Workgroup Server 60 gives you flexibility and choice. You can choose a 230MB or 500MB internal hard disk, add an internal CD-ROM drive, and install a NuBus or processor-direct slot card. A high-speed SCSI interface lets you add peripherals, such as hard disks and other high-capacity storage devices.

The Apple Workgroup Server 60 continues the "plug and play" tradition established by the Macintosh. System 7 and high-performance AppleShare 4.0 file and print server software is preloaded, so all you do is attach your monitor, keyboard, power cables, and network connection -- and in minutes the server is available to users. Because it's a snap to maintain, manage, and reconfigure, over the long run the Apple Workgroup Server 60 offers the lowest cost of ownership in its class.

To provide an entry-level file and print server solution for your small business, classroom, or similar environment, build your solutions around the Apple Workgroup Server 60.

Workgroup Server 60 Features

Power and speed
• 25 MHz 68040 microprocessor with FPU; 32-bit data bus

Memory
• 8MB RAM, expandable to 68MB

Display
• Works with all Apple displays
• 256 colors, expandable to 32,768

Expansion
• Eight built-in ports for peripherals
• Slot for additional expansion card
• Optional internal CD-ROM drive

Usability
• Easy to set up, learn, use, and extend

System software
• System 7 operating system
• AppleShare 4.0 file and print server software

Networking
• Built-in AppleTalk networking capability
• On-board Ethernet capability

Compatibility
• Reads Macintosh, MS-DOS, OS/2, and ProDOS floppy-disk formats

Article Change History:
21 Oct 1993 - Updated article for updated product released in Oct. 1993.

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Tech Info Library Article Number:11816

Tech Info Library

Apple Workgroup Server 60: Specifications

Revised: 6/20/94
Security: Everyone

Apple Workgroup Server 60: Specifications

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Article Created: 22 March 1993
Article Reviewed/Updated: 21 October 1993

TOPIC ----------

This article provides technical specifications for the Apple Workgroup Server 60.

DISCUSSION ----------

Microprocessor

- MC68040, running at 25 MHz clock speed; 32-bit data bus; with a floating-point unit (FPU)
- Integral Paged Memory Management Unit (PMMU) and 8K cache architecture

Memory

- 8MB RAM, expandable to 68MB by adding SIMMs to two 72-pin slots

Storage

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 230MB or 500MB hard disk
- Accommodates one 5.25-in. half-height device, such as the AppleCD 300i internal CD-ROM drive

Video Display

- Supports all Apple displays
- Works with a wide range of third-party displays, including some 19-inch, VGA, SVGA, NTSC, and PAL monitors

Video RAM (VRAM)

- Can support up to 1024K

- 512K standard supports:
  - 32,768 colors on the Macintosh 12" RGB Display
  - 256 colors on the AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16-inch Color Display
  - 256 shades of gray on the Macintosh 12" Monochrome Display
  - 16 shades of gray on the Macintosh Portrait Display (15")
  - 16 colors on the Macintosh 21" Color Display

Interfaces

- Internal expansion slot for one processor-direct or 7-inch NuBus expansion card (requires adapter)
- SCSI interface for connecting up to six external peripheral devices
- AAUI Ethernet connector
- Two serial (RS-232 or RS-422) ports
- One video port for color and monochrome displays of various sizes and resolutions
- One sound-output port (stereo) for external amplifier or headphones, and CD play-through
- One sound-input port for monaural sound input
- Two Apple Desktop Bus (ADB) ports for a keyboard, mouse, and other devices

Sound Generator

- Custom integrated circuit drives a stereo miniature headphone jack (22 kHz sample rate)

Keyboard and Mouse

- Several ADB keyboards with numeric keypads available
- Apple Desktop Bus Mouse II

Clock/Calendar

- Custom integrated circuit with long-life lithium battery

Disability Access

- CloseView, Easy Access, and visible-beep software are built in. These and third-party options provide alternative input and output devices

Power Requirements

- Line voltage: 100 to 240 V AC, RMS single phase, automatically configured
- Frequency: 47 to 63 Hz
- Power: 86 W maximum, not including display power

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 mA (recommended maximum of three ADB devices)

- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA, depending on the model used

Size and Weight

Main Unit:
- Height: 3.4 in. (8.5 cm)
- Width: 16.3 in. (41.5 cm)
- Depth: 15.6 in. (39.7 cm)
- Weight: 14.0 lbs (6.4 kg) varies with internal devices installed

Mouse
- Height: 1.3 in. (3.3 cm)
- Width: 2.4 in. (6.2 cm)
- Depth: 4.2 in. (10.7 cm)
- Weight: 4.0 oz. (0.10 kg)

Operating Environment

- Operating temperature: 50° to 104° F (10° to 40° C)
- Storage temperature: –40° to 116.6° F (–40° to 47° C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 ft. (3,048 m)

Ordering Information

Apple Workgroup Server 60 8/230
- Apple Workgroup Server 60 computer with 8MB of RAM, built-in 1.4MB Apple SuperDrive, and internal 230MB hard disk drive
- Mouse
- System software, AppleShare 4.0 file and print server software, and Apple documentation viewer preloaded on hard drive
- AppleShare file and print server software and installer software
- Complete on-line and hard-copy documentation
- Limited warranty statement

Other configurations
- Internal 500MB hard disk
- Internal AppleCD 300i CD-ROM drive

NuBus Adapter
Order No. M1402LL/A
- Macintosh Centris 610 NuBus Adapter (fully compatible with the Apple Workgroup Server 60)
- Limited warranty statement

Article Change History:
21 Oct 1993 - Updated article for updated product released in Oct. 1993.

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Tech Info Library Article Number:11817

Tech Info Library

Apple Workgroup Server 80: Description (3/93) (Discontinued)

Revised: 6/2/94
Security: Everyone

Apple Workgroup Server 80: Description (3/93) (Discontinued)

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Article Created: 22 March 1993

TOPIC ----------

This article describes the Apple Workgroup Server 80.

DISCUSSION ----------

The Apple Workgroup Server 80 provides the performance, reliability, scalability, and manageability you need to meet the requirements of medium-sized workgroups for file and print, workgroup database, or communications services. Representing the midrange of Apple's server family, this system is based on the fast 33-megahertz Motorola 68040 microprocessor. With on-board Ethernet and built-in AppleTalk networking capability, the Apple Workgroup Server 80 is ideal for up to 30 active users (that is, users simultaneously reading from and writing to the server). It can act as a communications server by running applications such as Apple's SNA•ps, MacX25, or MacX.400 gateway products, or the Apple Internet Router.

The Apple Workgroup Server 80 is expandable. You can add up to 136MB of RAM, install up to three NuBus cards, and store up to three additional high-capacity internal storage devices, such as an internal DDS-DC 4mm tape drive for backups.

Apple servers continue the "plug and play" tradition established by the Macintosh. System 7 and high-performance AppleShare 4.0 file and print server software is preloaded, so installation takes just minutes. Because it's a snap to maintain, manage, reconfigure, and expand, over the long run the Apple Workgroup Server 80 offers the lowest cost of ownership in its class.

To provide a midrange file and print server solution for your business, to supply classroom-to-campus integration, or to meet other communications

requirements, build your solutions around the Apple Workgroup Server 80.

Power and speed
• 33 MHz 68040 processor
• Integrated 33 MHz math coprocessor
• 8K integrated cache

Memory
• 8MB RAM, expandable to 136MB

Display
• Works with all Apple displays

Expansion
• Room for three internal storage devices, such as the AppleCD 300i internal CD-ROM drive and internal DDS-DC 4mm tape drive
• Three NuBus expansion slots
• One inline 68040 processor-direct slot

Usability
• Easy to set up, learn, use, and extend

System software
• System 7 operating system
• AppleShare 4.0 file and print server software

Networking
• Built-in AppleTalk networking
• On-board Ethernet

Compatibility
• Reads Macintosh, MS-DOS, OS/2, and ProDOS floppy disk formats

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Tech Info Library Article Number:11818

Tech Info Library

Apple Workgroup Server 80: Specifications (3/93) (Discontinued)

Revised: 6/2/94
Security: Everyone

Apple Workgroup Server 80: Specifications (3/93) (Discontinued)

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Article Created: 22 March 1993

TOPIC ----------

This article provides specifications for the Apple Workgroup Server 80.

DISCUSSION ----------

Microprocessor

- MC68040, running at 33 MHz clock speed
- Integrated 33 MHz floating-point unit (FPU)
- Integral Paged Memory Management Unit (PMMU) and 8K cache architecture

Memory

- 8MB RAM on the logic board
- Four industry-standard 72-pin Single Inline Memory Module (SIMM) sockets allow expansion to 136MB
- Includes RAM disk software

Storage

- One built-in Apple SuperDrive 1.4MB floppy-disk drive
- Accommodates one full-height, 3.5-inch hard disk drive and one removable 3.5-inch device, such as an internal DDS-DC tape drive
- Accommodates one 5.25-inch, half-height device such as the AppleCD 300i internal CD-ROM drive

Video Display

- Supports all Apple displays
- Works with a wide range of third party displays, including some 19-inch, VGA, SVGA, NTSC, and PAL monitors

Interfaces

- Three internal NuBus 12-inch expansion slots
- One 68040 processor-direct slot
- SCSI interface for connecting up to six external devices
- AAUI Ethernet connector
- Two serial (RS-232/RS-422) ports, 230.4 Kbit/sec maximum (up to 0.920 Mbit/sec if clocked externally)
- One video port for color and monochrome displays of various sizes and resolutions
- One sound-output port for stereo playback from CDs and stereo playback of Macintosh sound
- One monaural sound-input port
- Two Apple Desktop Bus (ADB) ports for a keyboard, mouse, and other devices

Video RAM (VRAM)

- Can support up to 1024K
- 512K standard supports:
  - 32,768 colors on the Macintosh 12" RGB Display
  - 256 colors on the AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16" Color Display
  - 256 shades of gray on the Macintosh 12" Monochrome Display
  - 16 shades of gray on the Macintosh Portrait Display (15")
  - 16 colors on the Macintosh 21" Color Display

Sound Generator

- Custom integrated circuit drives a stereo miniature headphone jack (22 kHz sample rate)

Keyboard and Mouse

- Several different ADB keyboards are available
- Apple Desktop Bus Mouse II

Clock/Calendar

- Custom integrated circuit with long-life lithium battery

Disability Access

- CloseView, Easy Access, and visible-beep software are built in. These and third-party options provide alternative input and output devices.

Power Requirements

- Line voltage: 100 to 240 V AC, RMS, automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 200 W maximum, not including display power

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 mA (recommended maximum of three ADB devices)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA, depending on the model used

Size and Weight

Main unit:
- Height: 14.25 in. (30.6 cm)
- Width: 8.9 in. (19.6 cm)
- Depth: 16.0 in. (39.6 cm)
- Weight: 25.3 lb. (11.5 kg) varies with internal devices installed

Mouse:
- Height: 1.3 in. (3.3 cm)
- Width: 2.4 in. (6.2 cm)
- Depth: 4.2 in. (10.7 cm)
- Weight: 4.0 oz. (0.10 kg)

Operating Environment

- Operating temperature: 50° to 104° F (10° to 40° C)
- Storage temperature: -40° to 116.6° F (-40° to 47° C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 ft. (3,048 m)

Ordering Information

Apple Workgroup Server 80 8/500/DDS-DC
- Apple Workgroup Server 80 computer with 8MB of RAM, built-in 1.4MB Apple SuperDrive, 500MB internal hard disk drive, and an internal digital data storage-data compression (DDS-DC) 4 mm tape drive
- Mouse
- System software, AppleShare 4.0 file and print server software, and Apple documentation viewer preloaded on hard drive
- AppleShare 4.0 file and print server software
- Complete on-line and hard-copy documentation
- Limited warranty statement

Other configurations
- 16MB RAM
- 1000MB (1GB) internal hard disk
- Internal AppleCD 300i CD-ROM drive

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Tech Info Library Article Number:11819

Tech Info Library

Apple Workgroup Server 95: Specifications (3/93) (Discontinued)

Revised: 6/2/94
Security: Everyone

Apple Workgroup Server 95: Specifications (3/93) (Discontinued)

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Article Created: 22 March 1993
Article Revised/Updated: 17 February 1994

TOPIC -----

This article provides specifications for the Apple Workgroup Server 95.

DISCUSSION -----

Microprocessor

- Motorola 68040, 32-bit architecture, running at 33 MHz clock speed
- Integral Paged Memory Management Unit (PMMU), Floating Point Unit (FPU), and 8K-cache architecture

Memory

- Entry system comes with 16MB of parity RAM standard
- 16 Single In-line Memory Module (SIMM) sockets, allowing expansion to 256MB of RAM with 16MB SIMMs. Must replace all 4MB RAM SIMMs with 16MB SIMMs to reach 256MB
- 128K second-level 68040 memory cache on board, expandable to 512K

Operating System

- Version of multitasking, industry-standard UNIX operating system
- Performance-tuned for file and database services (including asynchronous I/O and SCSI DMA driver support)

Mass Storage Devices

- Built-in Apple SuperDrive 1.4MB floppy-disk drive
- Accommodates five 3.5" half-height SCSI hard drives for a total of 10GB of internal storage and one CD-ROM or DDS-DC 4mm tape drive
- DDS-DC 4mm tape drive uses the Media Recognition System (MRS) and can back up 4 to 6 GB of compressed data (dependent on data being compressed) on

90-meter tapes.

Interfaces

- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices daisy-chained through a synchronous serial bus
- Two serial (RS-232 or RS-422) ports, 230.4 Kbit/sec. maximum (up to 0.920 Mbit/sec if clocked externally)
- Two SCSI DMA channels, four SCSI bus interfaces total
- All SCSI channels support disconnect/reconnect SCSI feature
- The two SCSI DMA channels support active termination and active negation
- Five internal NuBus expansion slots (one used by PDS card)
- Sound-input port for monaural sound input
- Dual mono line input ports
- AAUI Ethernet connector

Security

- Electronic key lock

Video Display

- Can support up to 2MB VRAM
- 1MB VRAM standard supports
  - 32,768 colors on the Macintosh 12-inch RGB Display
  - 256 colors on the AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16" Color Display
  - 256 shades of gray on the Macintosh Portrait Display (15")
  - 16 colors on the Macintosh 21" Color Display
- Supports all Apple monitors
- Supports a wide range of non-Apple monitors, including some 19” VGA, SVGA, NTSC, and PAL

Keyboard and Mouse

- Supports all Apple Desktop Bus keyboards
- Apple Desktop Bus Mouse II

Clock/Calendar

- Custom chip with long-life lithium battery

Electrical Requirements

- Line voltage: 100 to 240 V AC, RMS automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 303 W maximum, not including display power

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 mA (recommended maximum of three ADB devices)

- Mouse draws 80 mA
- Keyboard draws 25 to 80 mA, depending on the keyboard model used

Operating Environment

- Operating temperature for a configuration with five 2GB hard drives: 50° to 95° F (10° to 35° C)
- Operating temperature for all other environments: 50° to 104° F (10° to 40° C)
- Storage temperature: –40° to 116.6° F (–40° to 47° C)
- Relative humidity: 20% to 80% noncondensing
- Maximum altitude: 10,000 ft. (3,048 m)

Size and Weight

Main unit:

- Height: 18.6 in. (47.3 cm)
- Width: 8.9 in. (22.4 cm)
- Depth: 20.6 in. (52.3 cm)
- Weight: 36 lb. 12 oz. (16.7 kg)*

  * Weight will be greater with internal hard disks and additional internal storage devices.

Mouse:

- Height: 1.3 in. (3.3 cm)
- Width: 2.4 in. (6.2 cm)
- Depth: 4.2 in. (10.7 cm)
- Weight: 4.0 oz. (0.10 kg)

Article Change History -
17 February 1994 - Added data about updated Apple Workgroup Server 95 models; moved ordering information to the article titled "Apple Workgroup Server 95: Description"

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Tech Info Library Article Number:11821

Tech Info Library

DAL for Sybase on OS/2 (3/93)

Revised: 4/6/93
Security: Everyone

DAL for Sybase on OS/2 (3/93)

==========

Article Created: 19 March 1993

TOPIC ----------

I'm interested in accessing Sybase on OS/2 via DAL. Is a DAL server available? If not, would I be able to access Sybase using GQL or DataPrism on a Macintosh using Sybase's Open Client.

DISCUSSION ----------

DAL does not have a server that runs on the OS/2 platform.

However, both GQL and DataPrism support access to the Sybase Open Client product, which operates as a server on OS/2.

For GQL, this server is referred to as "DB Library" rather than Sybase Open Client in the connection selection window.

For DataPrism, release 1.8 or higher is required and then the Sybase Open Client is supported as a server connection selection.

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Tech Info Library Article Number:11822

Tech Info Library

PowerBook or Standard Keyboards: Using Easy Access (9/94)

Revised: 9/26/94
Security: Everyone

PowerBook or Standard Keyboards: Using Easy Access (9/94)

==========

Article Created: 23 March 1993
Article Reviewed/Updated: 26 September 1994

TOPIC ----------

How can I activate Easy Access on a PowerBook without going through the Control Panel? The keyboard sequence Shift+Command+Clear doesn't work on the PowerBook since there's no Clear key. The Easy Access control panel also doesn't work on Macintosh computers with standard keyboards.

This would help when the mouse is failing or disabled.

DISCUSSION ----------

We're assuming that you want to enable the Mouse Keys function of Easy Access. Basically, PowerBooks don't support Mouse Keys since they don't have a numeric keypad. Even if you enable Mouse Keys through the Control Panel, you'd need a keypad to move the pointer. We don't have a keypad to try this, but it should work.

When the mouse is inoperable, you might use the Sticky Keys portion of Easy Access. Press the Shift key five times to enable or disable Sticky Keys. For further information on how to use Easy Access on the PowerBooks, look on page 141 of the user's manual: "Macintosh User's Guide for Macintosh PowerBook Computers."

Also, there's an INIT called "MouseKeys" that will allow the PowerBook and computers with standard keyboards to access the functionality of Easy Access. This is unsupported free software from Apple.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA

Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History
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26 Sep 1994 - Removed binary attachment, provided info on where it is.
13 Oct 1993 - Added MouseKeys INIT information.

Support Information Services

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Tech Info Library Article Number:11823

Tech Info Library

LW IIf, IIg, Pro: Switch to HP Emul via Parallel Port (4/93)

Revised: 4/26/93
Security: Everyone

LW IIf, IIg, Pro: Switch to HP Emul via Parallel Port (4/93)

==========

Article Created: 7 April 1993

TOPIC ----------

I've directly connected a LaserWriter Pro to the parallel port of an MS-DOS compatible computer. How can I temporarily switch from PostScript mode to HP emulation mode so I can print jobs encoded in HP's Printer Control Language (PCL)?

DISCUSSION ----------

If you've connected a LaserWriter IIf, IIg, or Pro to the parallel port of an MS-DOS compatible, the following information will allow you to switch your LaserWriter Pro from PostScript to HP LaserJet IIP emulation mode for the duration of the current job. The steps below must precede each print job that uses HP emulation.

Follow these steps:

1) Set the LaserWriter Pro communications thumbwheel switch to position 9; this will configure the parallel port for PostScript using Binary Serial Protocol (BSP). Note that the switch settings are listed on page 125 and 126 of the LaserWriter Pro User's Guide.

2) Embed the following line, which is case sensitive, into your PostScript code. This line will set the printer into HP emulation mode:

   currentfile /LaserJetIIP statusdict /emulate get exec

3) You must put a CTRL-D character (End of File or EOF) at the end of the PostScript file. Here is a simple BASIC program which will create a file "CTRL-D.TXT" that contains the CTRL-D character.

   10 OPEN "CTRL-D.TXT" FOR OUTPUT AS #1

```
20 PRINT #1, CHR$(04)
30 CLOSE #1
```

4) Use the MS-DOS COPY command to attach the CTRL-D to the PostScript file. If your PostScript code resides in a file named "PSFILE.TXT", the following command will attach the CTRL-D character and create a new file named "NEWFILE.TXT". For example:

```
COPY PSFILE.TXT+CTRL-D.TXT NEWFILE.TXT
```

5) Send the PostScript file to the parallel port (LPT1:) of the LaserWriter with this command:

```
COPY NEWFILE.TXT LPT1:
```

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Tech Info Library Article Number:11825

Tech Info Library

At Ease: Rebuilding the Desktop (7/96)

Revised: 7/30/96
Security: Everyone

At Ease: Rebuilding the Desktop (7/96)

==========

Article Created: 23 March 1993
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

The article describes how to rebuild the desktop when At Ease is installed.

DISCUSSION ----------

If you are running At Ease and have it turned on, the desktop file will not rebuild.

System 7.5 Users

Here is how to rebuild the desktop file:

Step 1:
Turn At Ease off

Step 2:
Restart

Step 3:
Hold down the Space Bar to bring up the Extensions Manager control panel

Step 4:
Turn off all the extensions EXCEPT Macintosh Easy Open

Step 5:
Close Extensions Manager

Step 6:
Hold the Option-Command keys.

Step 7:
After rebuilding the desktop, open the Extensions Manager and turn the

extensions back on.

Step 8:
Turn At Ease back on.

Step 9:
Restart

Non-System 7.5 Users

Here is how to rebuild the desktop file:

Step 1:
Turn At Ease off.

Step 2:
Restart holding down the Shift key to turn extensions off.

Step 3:
After you see the extensions off message, hold down the Option-Command keys to rebuild the desktop.

Another method of rebuilding the desktop requires the At Ease user to have Finder access.

Step 1:
Sign into that user.

Step 2:
Hold down the Option-Command keys (continue holding these keys down).

Step 3:
Select "Go To Finder" from the Options menu.

The recommended way to rebuild the desktop is with all Extensions OFF (especially when running virus protection software). Most of the time, holding down Option-Command keys on restart is sufficient.

Article Change History:
30 Jul 1996 - Minor typographical correction.
22 Feb 1995 - Added keyword; made minor technical udpates.
13 Jan 1995 - Rewrote discussion and included System 7.5 steps.

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Tech Info Library Article Number:11828

Tech Info Library

Shared Device Names Not Available in the Chooser (3/93)

Revised: 4/6/93
Security: Everyone

Shared Device Names Not Available in the Chooser (3/93)

==========

Article Created: 19 March 1993

TOPIC -----

After installing System Software 7.1, shared device names, such as LaserWriters or File Servers, do not appear in the Chooser when their device icons are selected. AppleTalk is active in the Chooser. The network connections have been verified. I selected the Network control panel and no resources are selected. When any of the network resources in the Network control panel (LocalTalk, EtherTalk, TokenTalk) is selected, I get the error "The correct version of AppleTalk is not installed. Please reinstall the Network software". Reinstalling the network software does not resolve the problem.

DISCUSSION -----

If no resources are selected in the Network control panel, this is a possible sign of corruption for the network settings in Parameter RAM (PRAM). If AppleTalk is active in the Chooser, one of the network resource should always be selected in the Network Control Panel.

To resolve this issue you must zap the Parameter RAM. To zap PRAM under System 7.x, restart the Macintosh while holding down Command-Option-P-R. Keep the keys held down until you hear the startup chime a second time. This resets the Parameter RAM of the Macintosh.

Select the proper network resource device in the Network control panel. Make sure the shared device names appear in the Chooser.

You must also re-enter the setting changes you may have made to other control panels (Keyboard, Mouse, Sound, and so on). When you zap PRAM, it is reset to default values.

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..TIL11830-Shared_Device_Names_Not_Available_in_the_Chooser_3-93.pdf

Tech Info Library Article Number:11830

Tech Info Library

Macintosh IIsi: How to Avoid Memory Fragmentation (8/95)

Revised: 8/15/95
Security: Everyone

Macintosh IIsi: How to Avoid Memory Fragmentation (8/95)

==========

Article Created: 9 March 1993
Article Reviewed/Updated: 15 August 1995

TOPIC ----------

My Macintosh gives me incorrect reports about how much memory I have available. I have a Macintosh IIsi with 5MB of RAM. I'm using system software version 7.0.1, and Microsoft Word 5.0 with the memory allocation reduced to 1MB.

When I choose "About This Macintosh," it tells me that system software uses 2MB and Word uses about 1MB. It seems that I should have about 2 megabytes left, but it says I have only 800K.

DISCUSSION ----------

When you choose "About This Macintosh", it tells you the largest unused block of memory, not the total amount of unused memory. This fragmentation of memory occurs often, if you don't quit applications and desk accessories in exactly the reverse order in which you launched them each and every time. Your computer may have several unused blocks of memory mixed in with the used blocks of memory.

Order of Application Launches and Quits

To fix a situation where you have fragmented memory, you can either:

• Quit all open applications and desk accessories, and then open them again, or
• Restart your computer.

In order to avoid fragmentation again, be careful in planning the order in which you open and quit programs:

1) Open first the applications and desk accessories you're least likely to quit.

2) Open last those applications and desk accessories you're most likely to quit

during a work session.

When you need more memory, quit the application or desk accessories you opened most recently. By opening and closing applications and desk accessories this way, you free up a contiguous portion of memory. When you quit programs in random order, you're likely to have fragmented memory.

The Role of System 7 Tune-Up

The System 7 Tune-Up 1.1.1, improves handling of low-memory situations. System 7 Tune-Up 1.1.1 has some bug fixes and other benefits that improve both System 7.0 and 7.0.1. However, it can lead to memory fragmentation by encouraging you to let the Finder decide which programs to quit when you need more memory.

With Tune-Up installed in your system software, it considers only whether an application has windows open, and not the order you launched them. It first closes applications with no windows open. This means it could actually quit a 2000K program to open a 1800K program, thus creating a 200K fragment in memory. Since the Finder asks if it's okay to quit a program in a low-memory situation, you can choose not to.

Reducing Reserved Memory for Built-in Video

Use the Monitors control panel to reduce the amount of memory a Macintosh reserves for built-in video. To do this, hold down the Option key while clicking the Option button in the Monitors control panel. This brings up a special dialog box where you can set the maximum number of colors or grays to 256, 16, 4 or black and white. Restart your computer for memory changes to take effect. Here's a table that tells you how much memory you reserve for each selection:

Begin_Table

Colors or Grays	Memory Reserved for Built-in Video
256	350K
16	190K
4	126K
Black & White	94K

End_Table

Article Change History:
15 Aug 1995 - Editing changes.
28 Jun 1995 - Retitled for clarity.
22 Jun 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:11832

32-Bit System Enabler: DayStar Compatibility (3/93)

Revised: 3/23/93
Security: Everyone

32-Bit System Enabler: DayStar Compatibility (3/93)

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Article Created: 23 March 1993

TOPIC ----------

I installed the 32-Bit System Enabler on a Macintosh IIcx with a DayStar accelerator. When I restart and check the Memory control panel, 32-Bit addressing is turned on. But when I select "About This Macintosh..." the system software is taking all memory above 8MB just as it does when 24-Bit addressing is used.

DISCUSSION ----------

DayStar Digital Technical Support indicates that both the PowerCard series and PowerCache series products work properly with the 32-Bit System Enabler. They did indicate that in one instance during testing they had to reset the PRAM before the 32-Bit System Enabler would work with a PowerCache card.

Please contact DayStar Digital directly. DayStar Digital Technical Support is searching for configuration information that would allow them to reproduce the problem.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:11835

Tech Info Library

LaserWriter Pro: Configuring Paper Trays (4/93)

Revised: 4/23/93
Security: Everyone

LaserWriter Pro: Configuring Paper Trays (4/93)

==========

Article Created: 20 April 1993

TOPIC ----------

This article discusses paper handling on the LaserWriter Pro printer series.

DISCUSSION ----------

Paper Input Sources

The LaserWriter Pro allows for up to four paper input sources attached to the printer at any one time. These input sources include:

- Multipurpose tray
- 75-Envelope tray
- 250 Sheet-Feeder tray
- 500 Sheet-Feeder tray

The 250 Sheet-Feeder comes standard with the printer. This is also the default paper tray.

Setting Up The Driver

Use the LaserWriter Pro Installation diskette to install the driver on your Macintosh. You must use the 7.2 driver to take advantage of Multi-bin printing.

Once the additional options (trays) have been installed on the printer the driver must be prepped to see the additional input sources. The procedure for setting up the driver is:

1) Choose the Chooser from the Apple menu.
2) Select the LaserWriter icon.

3) Select a LaserWriter Pro printer for printing.
4) Click Setup. This will prep the LaserWriter driver for all input sources installed.

NOTE: The Setup button in the Chooser is located next to the background printing radio button. The button will either read Setup (if you are setting up the printer for the first time) or Review.

Tray Switching

The Tray Switching option allows you to control what happens when a multiple-bin printer (such as the LaserWriter Pro 600 or 630 with the optional second tray installed) runs out of paper during a print job. You can set the printer to continue printing from the next available paper tray, or to stop printing and return an Out of Paper message when the tray being used runs out of paper during a print job.

With tray switching turned on, the LaserWriter Pro 600 and 630 printers can print up to 350 pages at a time using the 250 sheet cassette and the 100 sheet multipurpose tray. With the optional 500 sheet feeder installed, tray switching works only between the 250 sheet cassette and the 500 sheet feeder. This allows printing of up to 750 pages at one time.

The output tray holds a maximum of 250 sheets. You must empty it if you have a print run greater than 250 pages. The paper output tray can be emptied on-the-fly without stopping the printer.

When using the 7.2 driver you have the option of printing from any of the four paper input sources; however there is some limitation with the bin selection. The LaserWriter driver version 7.2 gives you the option of printing the first page from any of the four input sources and then the remaining portion of the document must be printed from one and only one of the four input sources. The limitation is that the user may choose to print the first page from one input tray and the remaining portion of the document must be printed from one and only one of the paper input sources.

See the LaserWriter Pro User's Guide under "Printing documents" for more information on printing options.

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Tech Info Library Article Number:11840

Tech Info Library

AppleShare & System 7.x.x: Removing a Corrupt PDS File (7/96)

Revised: 7/26/96
Security: Everyone

AppleShare & System 7.x.x: Removing a Corrupt PDS File (7/96)

==========

Article Created: 22 March 1993
Article Reviewed/Updated: 26 July 1996

TOPIC ----------

How do I remove a corrupt AppleShare PDS file?

DISCUSSION ----------

CAUTION: Removing the AppleShare PDS file will result in a loss of file and folder access privileges. You will have to use the AppleShare Admin application to reassign these access privileges.

There are several ways to remove a corrupt AppleShare PDS file.

If you are using System 7.5.3 on an AppleShare File Server

Follow the steps below:

Step 1
Quit the AppleShare application.

Step 2
Choose the Find... command in the File menu.

Step 3
In the Find Items section, choose "on local disks" in the pop-up menu. In the two pop-up menus below, choose from left to right, name, and contains, then enter PDS in the field on the right.

Step 4
Click More Choices

Step 5
Press and hold the option key while you click and hold the size pop-up menu, choose visibility. In the pop-up menu under the field you entered PDS, choose

invisible.

Step 6
Click Find.

Step 7
The hit-list is presented in the Items Found window, and there should be an AppleShare PDS file for each volume on a Mac OS server. Click and drag the volume's PDS file listed to the trash. You should receive the message "The file can not be left in the trash. Delete it now?" Click OK.

Step 8
Reset access privileges by using the AppleShare Admin application.

If you are using ResEdit or third-party utility

If you have ResEdit or a third-party utility, like Norton Disk Editor, that is capable to change the visibility of a file, and you are skilled in using this application, follow these steps:

Step 1
Quit the AppleShare application.

Step 2
Use ResEdit or the third-party utility to make the AppleShare PDF file visible. Quit the application.

Step 3
Drag the AppleShare PDF file to the trash.

Step 4
Choose Empty Trash from the Special menu.

Step 5
Choose Restart from the Special menu.

Step 6
Reset access privileges using AppleShare Admin.

If you are not using System 7.5.3 on an AppleShare File Server or ResEdit
---
If you are not using System 7.5.3, and you do not have ResEdit or third-party utility, follow these directions:

NOTE: These directions will require you to have your AppleShare serial number available if you are using AppleShare version 4 or newer.

Step 1
Quit the AppleShare application.

Step 2

At the root level of your hard drive, choose New Folder from the File menu.

Step 3
Name the new folder "Old Users & Groups" or something similar.

Step 4
Open the System Folder, open the Preferences folder, find the Users & Groups Data File.

Step 5
Drag the Users & Groups Data File from the Preferences folder to the new folder you created above.

Step 6
Launch the AppleShare Admin which is usually located in the Apple Menu. Enter the server information including the serial number if prompted.

Step 7
Quit the AppleShare Admin.

Step 8
Move the Users & Groups Data File from the folder you created in Step 2 above to the Preferences folder in the System Folder. You should see the message "An item named 'Users & Groups Data File' already exists in this location. Do you want to replace it with the one you're moving?" Click OK.

Step 9
Again launch AppleShare Admin. You should see this message for every volume you have on your server, "All access privileges on the volume named (volume name) have been lost. You will need to reset access privileges for this volume." Click OK. A new AppleShare PDS file has been created for your server.

Step 10
Reset all access privileges while in AppleShare Admin.

If you have an Apple WorkGroup Server 95

Please see the article entitled "AppleShare File Server Software Will Not Start".

Article Change History:
26 Jul 1996 - Specified System 7.5.3 on an AppleShare File Server.
09 Jul 1996 - Added reference to AWS 95
11 Jun 1996 - Article completely updated.

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Tech Info Library Article Number:11841

Centris 610 & 650, Quadra 800: Built-In Video (7/94)

Revised: 7/28/94
Security: Everyone

Centris 610 & 650, Quadra 800: Built-In Video (7/94)

==========

Article Created: 22 March 1993
Article Reviewed/Updated: 28 July 1994

TOPIC ----------

This article discusses the built-in video characteristics for the Macintosh Centris 610, Centris 650, and Quadra 800 computers.

The information in this article relative to the Centris 610 and Centris 650 is also relevant to the Quadra 610 and Quadra 650.

DISCUSSION ----------

The video hardware design of the Macintosh Centris 610 and 650 and the Quadra 800 derives closely from the earlier Quadra machines. Most of the Quadra video features were carried through to the Centris 610/650 and Quadra 800. The main exceptions are support for Apple convolution (flicker reduction) for NTSC and PAL, and support for 24 bits per pixel (bpp).

The video hardware for all three systems is virtually identical. The only exception is that the Centris 610 only requires 100 ns VRAM, while the Centris 650 and Quadra 800 require 80 ns VRAM.

The maximum supported pixel depth is 16 bpp. This is not a matter of the amount of VRAM in the machine -- it is a hardware limitation The RAM/DAC used by all three machines simply does not include the hardware required to do 24 bpp on any display. The same is true for the lack of support for Apple convolution -- the hardware necessary to do this is not present.

The Centris 610 and 650, and the Quadra 800, do support all the monitor types supported by the Quadra 950. This includes support for a 1024 x 768 resolution on 19-inch displays (which was not provided by the Quadra 700).

One area that was positively impacted was performance. At the same processor clock speed, the video section of these new machines outperforms the video section of the older Quadras. (Video performance on the Centris 650 is better

than the Quadra 700, and on the Quadra 800 is better than the Quadra 950.) Due to an improved video memory controller design, one wait state was removed from many of the frame buffer access cycles. This results in reduced memory access time overall, and therefore improved performance.

Article Change History:
28 Jul 1994 - Added reference to Quadra 610 and 650 to aid in searching.

Support Information Services

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Tech Info Library Article Number:11843

Tech Info Library

Centris 610 & 650, Quadra 800: VRAM and Pixel Depth (7/94)

Revised: 7/28/94
Security: Everyone

Centris 610 & 650, Quadra 800: VRAM and Pixel Depth (7/94)

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Article Created: 22 March 1993
Article Reviewed/Updated: 28 July 1994

TOPIC -----

This article describes the memory configurations necessary to support each of the video modes at specific pixel depths on the Macintosh Centris 610 and 650, and the Quadra 800.

The information in this article relative to the Centris 610 and Centris 650 is also relevant to the Quadra 610 and Quadra 650.

DISCUSSION -----

The frame buffers on the Centris 610, Centris 650, and Quadra 800 systems support a variety of pixel depths, from 1 to 16 bits per pixel (bpp). The supported pixel depths (1, 2, 4, 8, or 16 bpp) depend on the display resolution and the amount of VRAM present. The fully expanded capability of all three systems is the same: 1MB of VRAM. As with the Quadra 950, these systems can be expanded using 256K (128K x 16) 80 nanosecond VRAM SIMMs (although the Centris 610 requires only 100 ns VRAM).

The following chart lists the Centris 610 and 650 and the Quadra 800 built-in video's maximum pixel depth supported, depending upon the VRAM configuration:

Display size	512K VRAM	1MB VRAM
12-inch landscape 384 x 512	16 bpp	16 bpp
12-inch Monochrome 640 x 480	8 bpp	8 bpp
13-inch RGB & VGA 640 x 480	8 bpp	16 bpp

SVGA		
800 x 600	8 bpp	16 bpp
15-inch Portrait (b/w)		
640 x 870	4 bpp	8 bpp
16" Color,		
832 x 624	8 bpp	16 bpp
19" Color,		
1024 x 768	4 bpp	8 bpp
2-Page Display (b/w)		
1152 x 870	4 bpp	8 bpp
21" Color		
1152 x 870	4 bpp	8 bpp
PAL		
underscan-640x480	8 bpp	16 bpp
overscan-768x576	8 bpp	16 bpp
NTSC		
underscan-512x384	8 bpp	16 bpp
overscan- 640x480	8 bpp	16 bpp

Article Change History:
28 Jul 1994 - Added reference to Quadra 610 and 650 to aid in searching.

Support Information Services

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Tech Info Library Article Number:11844

Tech Info Library

PowerCD: Description (3/93) (Discontinued)

Revised: 5/7/96
Security: Everyone

PowerCD: Description (3/93) (Discontinued)

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Article Created: 22 March 1993
Article Reviewed/Updated: 7 June 1994

TOPIC ----------

This article describes the Apple PowerCD player.

DISCUSSION ----------

PowerCD is a portable CD-ROM drive, Photo CD player, and audio CD player all in one.

Connected to Macintosh computer, PowerCD is a low-cost portable CD-ROM drive for use with existing computer multimedia titles, business presentations, interactive learning, or games.

As a PhotoCD player, PowerCD allows you to access, manipulate and display high-quality photographic images on a television or computer monitor. With PowerCD, you can view and manipulate photographs (for example, zoom in, rotate, or crop them), then integrate audio with the photographs for presentations.

PowerCD can also be used as a standalone audio CD player. Users can listen to standard audio CDs either through headphones, through a television, or by attaching PowerCD to external stereo speakers.

PowerCD is battery operated and includes a standard AC power adapter and remote control.

The PowerCD supports the following CD-ROM formats:
• Macintosh HFS
• ISO-9660/High Sierra
• Standard CD-DA Audio
• CD-ROM XA, Multisession Kodak Photo CD

Article Change History:

7 June 1994 - Added CD-ROM formats

Support Information Services

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Tech Info Library Article Number:11845

Tech Info Library

Macintosh: Sharing a CD-ROM on LAN Manager 2.1 Server (3/93)

Revised: 4/13/93
Security: Everyone

Macintosh: Sharing a CD-ROM on LAN Manager 2.1 Server (3/93)

==========

Article Created: 23 March 1993

TOPIC ----------

I want to share a CD-ROM on a Microsoft LAN Manager 2.1 server with a Macintosh sharing the CD-ROM. Is this possible?

DISCUSSION ----------

It is not possible for a Macintosh to share a CD-ROM on a LAN Manager 2.1 server. PCs can share CD-ROMs on a LAN Manager server, but in order to have a place to store desktop information and resource forks of Macintosh files, the LAN Manager AFP server stack creates invisible subdirectories and files in the same area as the files being accessed. CD-ROMs are read-only devices, therefore these invisible subdirectories and files can't be created. Consequently, you get a number of error messages on the server and client alike.

If you would like to talk to Microsoft about this, call them and ask for LAN Manager support.

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Tech Info Library Article Number:11846

Tech Info Library

Express Modem & Blind Dialing With FAX Software (12/94)

Revised: 12/1/94
Security: Everyone

Express Modem & Blind Dialing With FAX Software (12/94)

==========

Article Created: 16 March 1993
Article Reviewed/Updated: 1 December 1994

TOPIC ----------

Duo Express Modem: I'm unable to dial blindly (the modem not waiting for a dial tone) from the Fax software by entering "ATX0" in the prefix field.

Is this a known anomaly in the software or hardware? I made sure I was using a numeric "0" in the ATX0 command.

DISCUSSION ----------

The latest Express Modem control panel, version 1.5.3, which is part of Express Modem software 1.5.4 now contains an option to ignore dial tone when dialing. Choosing this setting will cause the dial tone to be ignored for data or Fax transmissions. Versions of the Express Modem control panel prior to 1.5.3 will still need the procedure below to accomplish blind dialing.

The comma dial modifier allows you to insert a pause while dialing as determined by the S8 register (default = 2 seconds). It is useful when accessing an outside phone line for example, "9,555-1212".

One side effect of the comma dial modifier is that all characters after the comma are blind-dialed, without waiting for a dial tone.

A workaround: insert a comma as the first character of the telephone number you are dialing, and then the entire number will be blind dialed. For example: ",555-1212".

Article Change History:
01 Dec 1994 - Updated article for Express Modem software 1.5.4.

Support Information Services

..TIL11847-Express_Modem_and_Blind_Dialing_With_FAX_Software_12-94.pdf

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Tech Info Library Article Number:11847

Tech Info Library

Performa: Can't Use Apple Restore for External Drives (6/95)

Revised: 6/8/95
Security: Everyone

Performa: Can't Use Apple Restore for External Drives (6/95)

==========

Article Created: 24 March 1993
Article Reviewed/Updated: 8 June 1995

TOPIC ----------

I want to place the Performa operating system onto external hard drives to allow booting Performa computers from the external drive.

It appears that Apple Restore looks for SCSI ID "0" as a destination for the restored software. This doesn't allow performing a restore to the external drive.

Is there any way to get Apple Restore to allow for restoring to external hard drives?

DISCUSSION ----------

Apple Restore will only let you restore to the internal drive (SCSI=0). The only workaround would be to use a third-party backup program like Retrospect.

Apple Restore was written with novice users in mind to make it as easy as possible to use.

Article Change History:
08 Jun 1995 - Updated article and changed distribution status.

Support Information Services

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Tech Info Library Article Number:11848

OneScanner for Windows: Support for SCSI-2 Command (3/93)

Revised: 3/25/93
Security: Everyone

OneScanner for Windows: Support for SCSI-2 Command (3/93)

==========

Article Created: 25 March 1993

TOPIC ----------

Does the Apple OneScanner for Windows support SCSI-2 commands from an MS-DOS or Windows-compatible computer?

DISCUSSION ----------

The OneScanner is a SCSI-1 device. The Adaptec 1510 SCSI card that ships with the OneScanner accepts SCSI-2 commands, but it transposes them into SCSI-1 commands.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11849

AppleTalk Connection for Macintosh: Description (3/93)

Revised: 3/24/93
Security: Everyone

AppleTalk Connection for Macintosh: Description (3/93)

==========

Article Created: 19 March 1993

TOPIC ----------

This article describes the AppleTalk Connection for Macintosh.

DISCUSSION ----------

AppleTalk Connection software for the Macintosh computer provides the most current version of Apple's signature networking software. New for this version is MacSNMP, Apple's implementation of the industry-standard SNMP network management protocol. With MacSNMP, networked Macintosh computers can be managed from a variety of available consoles. AppleTalk Connection also includes the latest version of the AppleTalk transport stack plus updated software drivers for LocalTalk, Ethernet, and Token Ring.

Since its introduction in 1983, AppleTalk has evolved into a powerful networking system that is suitable for large and small organizations, and one that remains the easiest in the industry to use. Creating a network is simply a matter of connecting devices with the appropriate cables; the AppleTalk Connection software takes over from there. And AppleTalk's Name Binding Protocol allows quick and easy access to network resources such as printers and servers using names that you create.

AppleTalk Connection is a complete foundation for network printing and file sharing, as well as for collaborative and client-server functions like electronic mail and database service. Apple will continue to enhance AppleTalk by integrating networking standards like SNMP to improve its scalability and efficiency.

Available through all Apple retail channels, AppleTalk Connection comes in a single-user package, with multi-user license extensions offered as an economical option. Apple also offers AppleTalk Administration, a product that provides comprehensive documentation and utilities for centralized

configuration of the SNMP software.

AppleTalk Connection Features

Includes MacSNMP network management software

- Built-in AppleTalk, Network, and Macintosh agents for easy manageability.
- Supports existing UNIX and Macintosh-based SNMP management consoles.
- Administrator can preconfigure and lock the SNMP software.
- Extensible architecture allows for additional agents and transports from Apple and third parties.

NBP name service

- Provides easy access to network resources using descriptive names.

Includes latest version of all AppleTalk software

- Compatible with all current Macintosh computers and system software versions.
- Integrated drivers support all Apple cards, with defined data-link interfaces for third-party cards.
- Convenient retail availability.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11850

Tech Info Library

SNMP for Macintosh: Tech Bulletin, Network Management (3/93)

Revised: 3/29/93
Security: Everyone

SNMP for Macintosh: Tech Bulletin, Network Management (3/93)

==========

Article Created: 24 March 1993

TOPIC ----------

This article is a technology bulletin on Network Management - SNMP for Macintosh.

DISCUSSION ----------

Today's network managers are looking for the most efficient way to administer services, con-figure devices, and monitor usage on complex, multivendor networks. Apple has selected the Simple Network Management Protocol (SNMP) to meet this customer requirement. SNMP is an industry-standard protocol for network management defined by the Internet Engineering Task Force (IETF), the body that regulates the Internet technology and defines new standards for the TCP/IP protocol suite.

Because manageability is such a fundamental requirement for network components, Apple will be including SNMP agents in most of its future network product offerings. Apple Computer endorses SNMP as the management protocol for its TCP/IP Connection and AppleTalk Connection products. Together, the IETF and Apple have defined a standard MIB (Management Information Base) for AppleTalk, which is documented in RFC 1243. In addition, Apple has defined a MIB for reporting the Macintosh hardware and software configuration over SNMP, and provides this Macintosh Agent in both the AppleTalk Connection and TCP/IP Connection products.

Apple recognizes the value of integrating industry standards like SNMP into AppleTalk and the Macintosh Operating System as one of the ways Apple can develop the robust networking products required in today's large organizations. Future Apple network products and services will also have their own agents, providing the Macintosh with a level of SNMP manageability that is unmatched by other personal computers.

Apple's SNMP implementation on the Macintosh, called MacSNMP, has been designed to allow for future and third-party extensibility. This extensible architecture was achieved by adding a new manager to the Macintosh Operating System called the SNMP Manager. Designed as a Macintosh System 7 extension, the SNMP Manager and all SNMP Agents are implemented as shared libraries using a facility called the Shared Library Manager. The Shared Library Manager supports fully object-oriented libraries and provides for dynamic loading and linking of system libraries. Libraries designed for the Shared Library Manager also support inheritance and the ability to share code. Developers writing SNMP agents for the Macintosh will be able to implement them as shared libraries and take advantage of the facilities offered by the Shared Library Manager and the MacSNMP development environment.

The MacSNMP architecture consists of several components:

- The SNMP Manager with a built-in Network agent runs on the networked Macintosh, collecting a variety of information from the other SNMP agents and relaying it to the console. The transport-independent SNMP Manager handles all SNMP protocol generation and reception, and is capable of transmitting and receiving management information using AppleTalk, TCP/IP, and other network protocols.

- Different SNMP agents, which interface to their appropriate system components, drivers, entities, or applications, capture the operational variables and report the information that they gather to the SNMP Manager. This information is then passed on to the management console upon query. All protocol stack agents and the SNMP manager's own agent provide the traditional network management functions, capturing statistics on such events as CRC errors, buffer overruns, and timeouts. The Macintosh Agent provides a dynamic hard-ware and software profile of a Macintosh, including RAM and disk space, types of add-in cards, system software versions, and the types and versions of application programs resident on- disk.

- The individual SNMP transport modules provide the transport-independent interface between the different network protocol stacks and the SNMP Manager.

- Two applications, called MacSNMP Client and MacSNMP Admin, allow users and administrators to view and modify SNMP Manager state and configuration information.

This SNMP architecture allows Macintosh computers to be managed by a variety of SNMP consoles, including those from Sun Micro-systems, Hewlett-Packard, IBM, InterCon, Neon Software, and Cabletron.

The SNMP Manager API and developer's kit enables software and hardware developers to create additional SNMP agents for their Macintosh services and products. The architecture can support SNMP agents for routers; mail services; file services; general applications; different protocol stacks; drivers for Token Ring, Ethernet, and FDDI cards; and other peripherals and network products.

Technology Details and System Requirements

Depending on the agents installed, MacSNMP can report a wide variety of management information to the monitoring console. The following information is reported by the agents included with the core MacSNMP technology:

Information Reported by the Macintosh Agent

- Machine name, location, and description
- Machine icon
- The amount of time a machine has been turned on
- User name and phone number
- Printer type
- Default zone
- Chosen printer, printer zone, and printer driver
- System file location and information
- Application location and information
- NuBus card location, information, and identification
- SCSI device location, information, and identification
- Amount of RAM
- ROM and AppleTalk versions

Information Reported by the Network Agent

- SNMP protocols (such as packet count)
- Network cards (network speed, the number of cards installed, the type of protocol running on the card)
- The type of computer being used (Macintosh, Sun, and so on)
- The location of a computer on the network
- The computer owner's name

Other SNMP agents, which are included with their corresponding products, are available for

- The AppleTalk 58 stack (RFC 1243)
- The MacTCP 2.0 stack (RFC 1213)
- The Apple Internet Router Basic Connectivity Package

System Requirements

MacSNMP can be installed on any Macintosh computer running System 7 or later (4MB of RAM is recommended).

Ordering and Licensing Information

The core MacSNMP Client software for the Macintosh is available in the AppleTalk Connection and TCP/IP Connection products. These are available as retail products consisting of a single-user package with multi-user and volume license extensions. A MacSNMP developer kit is available from APDA. See the following product listings for details.

AppleTalk Connection for Macintosh Single-user package. (Order No. M8069Z/A)

- AppleTalk stack and driver software
- MacSNMP Client
- Macintosh, AppleTalk, and Network agents and MIBs

- AppleTalk Connection Installation and User's Guide

20-user license extension (Order No. M8065Z/A). This license extension contains no software.

AppleTalk Administration for Macintosh Single-user package (Order No. M8066Z/A)

- Complete AppleTalk Connection product
- MacSNMP Admin software
- About AppleTalk Administration
- MacSNMP Administrator's Guide
- AppleTalk Connection Installation and User's Guide
- Planning and Managing AppleTalk Networks

TCP/IP Connection for Macintosh Single-user package (Order No. M8113Z/A)

- MacTCP stack and driver software
- MacSNMP Client
- Macintosh, TCP/IP, and Network agents and MIBs
- TCP/IP Connection User's Guide

20-user license extension (Order No. M8115Z/A). This license extension contains no software.

TCP/IP Administration for Macintosh Single-user package (Order No. M8114Z/A)

- Complete TCP/IP Connection product
- MacTCP Admin and MacSNMP Admin software
- MacTCP Administrator's Guide
- MacSNMP Administrator's Guide
- TCP/IP Administration: Overview and Installation
- TCP/IP Connection User's Guide

MacSNMP 1.0 Developer's Kit
Available on the Essentials•Tools•Objects (E.T.O.) CD-ROM from APDA. (Order No. M0895LL)

To order APDA products or get additional information, contact APDA, whose addresses and phone numbers are listed in a separate Tech Info Library article.

AppleTalk Connection and TCP/IP Connection Products:
Large-Volume Licenses, Licensing details are available from ESD Licensing Department at:

Apple Computer, Inc.
20525 Mariani Avenue, M/S 35-AE
Cupertino, CA 95014 U.S.A.
Telephone: 408-974-2320
AppleLink address: ESD.LICENSE

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Tech Info Library Article Number:11852

Tech Info Library

TCP/IP Connection For Macintosh: Description (3/93)

Revised: 3/24/93
Security: Everyone

TCP/IP Connection For Macintosh: Description (3/93)

==========

Article Created: 24 March 1993

TOPIC ----------

This article describes TCP/IP Connection for Macintosh.

DISCUSSION ----------

TCP/IP Connection provides the software to connect a Macintosh personal computer to a TCP/IP network and to manage the Macintosh from a console using the Simple Network Management Protocol (SNMP).

The product includes:
• A TCP/IP protocol implementation (MacTCP)
• SNMP network management software
• Data-link drivers for Ethernet, LocalTalk, and Token Ring
• A Domain Name Resolver
• Support for Hosts files
• A ping test application (MacTCP Ping).

TCP/IP Connection is the source for the latest version of the TCP/IP networking protocols for the Macintosh computer. It provides the standard interface for all Macintosh-based TCP/IP network applications such as FTP, Telnet, NFS, and others. The product also provides driver software for Apple's LocalTalk, Ethernet, and Token Ring data links. The MacTCP configuration tools give the network administrator the choice of controlling all configuration or assigning various levels of configuration authority to users.

Available through all Apple retail channels, TCP/IP Connection can be purchased as a single-user package. Volume licensing is available through a user license extension as well as through Apple's volume-licensing program, both of which offer an economical option for large organizations.

Apple also offers TCP/IP Administration for the Macintosh computer, a product that provides comprehensive documentation and utilities for centralized configuration of the TCP/IP and SNMP software.

TCP/IP Connection Features

SNMP Network Management

- Allows Macintosh personal computers to fit into existing SNMP management systems.
- Provides remote network and system management of Macintosh computers over a TCP/IP network.
- Allows access to SNMP management information over both TCP/IP and AppleTalk protocols when combined with the AppleTalk Connection product for the Macintosh computer.

Standard API

- Provides a single, standard interface for all TCP/IP applications on the Macintosh.

Concurrent TCP/IP and AppleTalk services

- Supports multiple concurrent TCP/IP services.
- Supports concurrent use of TCP/IP and AppleTalk services. (For example, users can connect to TCP/IP services while printing to an AppleTalk network printer.)

Security and Control

- Administrators, using the TCP/IP Administration Kit, can preconfigure and lock both the TCP/IP and SNMP software.

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Tech Info Library Article Number:11853

Tech Info Library

TCP/IP Connection For Macintosh: Specifications (3/93)

Revised: 3/24/93
Security: Everyone

TCP/IP Connection For Macintosh: Specifications (3/93)

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Article Created: 24 March 1993

TOPIC ----------

This article describes system requirements, ordering and licensing information, and other product details for TCP/IP Connection for Macintosh.

DISCUSSION ----------

System Requirements

To use TCP/IP Connection you need a Macintosh Plus or later model Macintosh computer with the appropriate data link, such as built-in LocalTalk or Ethernet, or a networking card, such as the Apple Ethernet NB Card, Apple Ethernet LC Card, the original Apple EtherTalk Card, Apple Token Ring 4/16 NB Card, or the original Apple TokenTalk NB Card. You install TCP/IP Connection from a 1.4MB floppy disk or from the network.

LocalTalk connections also require a router with AppleTalk to TCP/IP gateway support, such as the Shiva Corporation FastPath 5 or the Cayman Systems GatorBox CS.

Token Ring connections also require the MacTCP Token Ring Extension software, contained in this product. Third-party Token Ring cards must be compatible with Apple's MacTCP Token Ring Extension software, or the manufacturer must provide its own extension software that is compatible with the MacTCP driver.

To use the MacTCP software, you need system software version 6.0.5 or later, or version 7 or later.

MacTCP implements the following protocols:
- IP (RFCs 791, 894; MIL-STD 1777)
- UDP (RFC 768)

- TCP (RFC 793, MIL-STD 1778)
- ARP (RFC 826)
- RARP (RFC 903)
- ICMP (RFC 792)
- BootP (RFCs 951, 1048)
- RIP (RFC 1058)
- DNS (RFCs 1034, 1035)
- Internet Subnetting (RFC 950)
- Internet Assigned Numbers (RFC 1340)

MacTCP complies with Requirements for Internet Hosts-Communication Layers (RFC 1122) and with A Standard for the Transmission of IP Datagrams over IEEE 802 Networks (RFC 1042).

To use the MacSNMP software, you need system software version 7.0 or later and 4MB of RAM. You also need an SNMP console that supports TCP/IP, such as those from IBM, Sun, and InterCon.

The SNMP agents included in the TCP/IP product support the following MIB definitions:

- TCP/IP MIB II (RFC 1213)
- Macintosh MIB (defined by Apple)

If you want the AppleTalk SNMP agent or plan to run the SNMP protocol over AppleTalk, to provide protocol redundancy, you need to purchase the AppleTalk Connection product for the Macintosh. This product supplies the AppleTalk SNMP transport and AppleTalk Agent needed for management over AppleTalk.

Ordering and Licensing Information

TCP/IP Connection and the other products in the Connection series are available as retail products consisting of a single-user package with multi-user license extensions. Associated TCP/IP and SNMP developer products are available from APDA. See the following product listing for details:

TCP/IP Connection for Macintosh Single-user package. (Order No. M8113Z/A)

- MacTCP stack and driver software
- MacSNMP Client
- Macintosh, TCP/IP, and Network agents and MIBs
- TCP/IP Connection User's Guide

20-user license extension. (Order No. M8115Z/A). This license extension contains no software.

TCP/IP Administration for Macintosh Single-user package. (Order No. M8114Z/A)

- Complete TCP/IP Connection product
- MacTCP Admin and MacSNMP Admin software
- MacTCP Administrator's Guide
- MacSNMP Administrator's Guide
- TCP/IP Administration: Overview and Installation
- TCP/IP Connection User's Guide

AppleTalk Connection for Macintosh Single-user package. (Order No. M8069Z/A)

- AppleTalk stack and driver software
- MacSNMP Client
- Macintosh, AppleTalk, and Network agents and MIBs
- AppleTalk Connection Installation and User's Guide

20-user license extension. (Order No. M8065Z/A). This license extension contains no software.

AppleTalk Administration for Macintosh Single-user package. (Order No. M8066Z/A)

- Complete AppleTalk Connection product
- MacSNMP Admin software
- MacSNMP Administrator's Guide
- About AppleTalk Administration
- AppleTalk Connection Installation and User's Guide
- Planning and Managing AppleTalk Networks

OSI Connection for Macintosh Single-user package. (Order No. M8096Z/A)

- MacOSI Transport and driver software
- MacOSI Transport connection tool
- MacOSI Transport Administrator's Guide

MacTCP 2.0 Developer's Kit - MacSNMP 1.0 Developer's Kit
Available on the Essentials•Tools•Objects (E.T.O.) CD-ROM. Complete new subscriber package. (M0895LL)

To order APDA products or get additional information, contact APDA at:
Apple Computer, Inc.
P.O. Box 319
Buffalo, NY 14207-0319 U.S.A.
800-282-2732 (U.S.A.)
800-637-0029 (Canada)
(716) 871-6555 (International)
Fax: (716) 871-6511, Telex: 171-576
AppleLink address: APDA
Internet address: APDA@applelink.apple.com

TCP/IP Connection and AppleTalk Connection products: Large-Volume Licenses, Licensing details are available from your Apple sales representative or you may contact ESD Licensing Department at:
Apple Computer, Inc.
20525 Mariani Avenue, M/S 35-AE
Cupertino, CA 95014 U.S.A.
Telephone: (408) 974-2320
AppleLink address: ESD.LICENSE

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Tech Info Library Article Number:11854

Tech Info Library

AppleShare 4.1: Specifications (6/96)

Revised: 6/13/96
Security: Everyone

AppleShare 4.1: Specifications (6/96)

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Article Created: 24 March 1993
Article Reviewed/Updated: 13 June 1996

TOPIC -----

This article describes the AppleShare File and Print Server product details, specifications, and order information on the following:

- AppleShare 3.0.3
- AppleShare 4.0.2
- AppleShare 4.1
- AppleShare Pro 1.1

DISCUSSION -----

Product Details

Capabilities and services
- Includes file and print servers
- Supports Mac OS program linking and publish and subscribe
- Features an open environment that allows additional network services
- Macintosh client software built into every Macintosh; Windows client software sold separately

Sharing options
- On-line CD-ROM exchange
- Either folders or entire disks can be shared
- Easy server selection through the Chooser
- Intuitive, consistent access to shared resources
- User-controlled access to information

Print spooling
- Spooling for up to five networked printers
- Centralized queue management
- Simultaneous print requests accepted
- Frees client workstations immediately

• Print log for up to 1,000 print jobs

Administrator control
• Administrator-determined number of connected users
• Server messages can be broadcast or sent to selected users
• Administrator-determined cache sizes to maximize performance

Security
• Minimum password length
• Password aging
• Password history to prevent immediate reuse
• Ability to disallow saved passwords
• Account disable after specified number of password failures
• Adjustable time limit for temporary accounts
• Guest access turned off by default
• Copy-protection setting for documents
• "Lock" setting for folders
• Adjustable number of concurrent application launches *
• Inherited folder privileges
• Administrator log-off of any user

* Requires a multilaunch application and appropriate license agreement.

Begin_Table
Specifications

	3.0.3	4.0.2	4.1	Pro 1.1
Concurrent logons	120	150	150	200
Active Users	15	30	30	50
Open files	346	346	346	5000
Number of hard disks	7	7	7	20
Users **	8192	8192	8192	8192
Groups **	8192	8192	8192	8192
Users in group **	8191	8191	8191	8191
Groups per user	42	42	42	42
Locked ranges per user	20	20	20	20
Apple II logon	yes	yes	yes	no
Apple II network startups	40	n/a	n/a	n/a
Minimum RAM	4MB	8MB	8MB	16MB
System software	7.0	7.1	7.5	A/UX 3.1

** The sum of users and groups cannot exceed 8,192. The recommended limit is 2,000.
End_Table

Supported platforms
• AppleShare 3.0.3: 68030-based (or earlier) Macintosh computers
• AppleShare 4.0.2: 68040-based Macintosh computers*
• AppleShare 4.1: PowerPC processor-based computers, but not PCI-based systems like the Power Macintosh 7200, 7500, 8500, or 9500.

* AppleShare 4.0.2 does not run on the Macintosh Centris/Quadra 660AV and Quadra 840AV computers. Early versions of AppleShare 4.0.2 shipped with a set of installation disks for Power Macintosh computers. This is no longer the supported configuration and customers need to upgrade to AppleShare 4.1 to setup a PowerPC based server.

AppleShare Client

Macintosh

- An Apple Macintosh computer with an internal hard disk drive and at least 4MB of RAM
- Mac OS software version 6.0.7 or later
- System 7.5 required for performance of AppleShare 4.1

Windows

- Any IBM or 100 percent compatible computer running Intel processor 386 or greater; ISA, MicroChannel, VISA, and EISA internal buses; 4MB of RAM
- Windows 3.1, 3.11, or Windows for Workgroups 3.11 software
- MS-DOS 5.0 or later
- Ethernet network adapter card
- NDIS 3.0 or ODI network interface driver

Network requirements

An AppleTalk network connection (through LocalTalk, Ethernet, Token Ring, or Apple Remote Access software); Windows software-based computers must be connected through Ethernet

AppleShare Access Privileges

- Both the user and the administrator can control access to information
- Eight different access privileges
  - How users view shared data:
    - Full access privileges
    - Drop folder, write capability only
    - No access privileges
  - How users protect their data:
    - Can't see enclosed folders
    - Can't see enclosed files
    - Can't write to folder
    - Can't write to or see folders
    - Can't write to or see files

Ordering Information

AppleShare 3.0.1
Order No. M0090LL/B

AppleShare 4.0.2
Order No. M3995Z/A

AppleShare 4.1

(Included in some PowerPC-based Workgroup Server configurations)

AppleShare Pro 1.1
Order No. M6825Z/B

AppleShare Client for Windows
Order No. M3481Z/A
(Also included in PowerPC processor-based Workgroup Server configurations; client network license is included and allows the installation of the client software on any Windows software-based PC on the network)

Article Change History:
13 Jun 1996 - Changed title to show AppleShare 4.1.
02 Oct 1995 - Added number of active users.
26 Sep 1995 - Made correction for AppleShare 4.1.

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Tech Info Library Article Number:11855

Tech Info Library

AppleShare 4.1: Description (6/96)

Revised: 6/13/96
Security: Everyone

AppleShare 4.1: Description (6/96)

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Article Created: 24 March 1993
Article Reviewed/Updated: 13 June 1996

TOPIC --

This article describes the AppleShare File and Print Server family, including:

- AppleShare 3.0.3
- AppleShare 4.0.2
- AppleShare 4.2
- AppleShare Pro

DISCUSSION --

AppleShare is high-performance, easy-to-use file and print sharing software that allows networked Macintosh and Microsoft Windows software-based computers to share files, applications, and printers.

With AppleShare file server software, organizations can store all of their shared files and applications in a single, central location, providing convenient, easy access to every user on the local area network. By allowing networked users to centralize all key files and applications for easy sharing, AppleShare improves everyone's productivity. It eliminates time spent looking for files, worrying about misplaced documents, and determining the file or application version.

AppleShare print server software offers all users queued access to up to five networked printers. This time saving function allows users to be more productive because they can use their computers to tackle other tasks instead of waiting for documents to print.

Now, all networked users can connect easily to an AppleShare server. AppleShare lets Macintosh users access shared resources via the Mac OS, and Windows software-based computers users via the Windows interface. AppleShare's network architecture coexists with other application programs and networking services such as Novell NetWare, Windows for Workgroups, and even the Internet.

Yet for all of its power and capabilities, AppleShare is extremely reliable and easy to set up, use, and maintain.

It continues in the "plug and play" tradition established by the Macintosh more than a decade ago; most system administrators find that they can get an AppleShare server up and running within 15 minutes. And overall maintenance including the addition and deletion of users is so simple that a dedicated, full-time administrator is not required. In fact, because AppleShare is so easy to install, maintain, reconfigure, and expand, it offers the lowest long-term cost of ownership of any product in its class.

Whether your organization is a small or medium-size business, a classroom, or a department within a global enterprise, AppleShare improves collaboration and increases efficiency for all users.

AppleShare Family and Advantages

• Easy to set up, administer, and use
• Performance scalable to any size AppleTalk workgroup
• Powerful, flexible security

Which version of AppleShare is right for you? The answer depends on the size of your workgroup and your performance needs.

• AppleShare 3.0.3 is designed for smaller workgroups of Macintosh and Windows software-based computers that have outgrown the basic file sharing capabilities of the Mac OS. It runs on 68030-based, or earlier, Macintosh computers.

NOTE: Appleshare 3.0.x can be run and is supported on 68040-based Macintosh computers, but is not marketed for them. However, since customers with 68040-based Macintosh computers will greatly benefit from the increased performance of AppleShare 4.0.2, it is the recommended version.

• AppleShare 4.0.2 offers significant performance improvements over AppleShare 3.0.1, and runs on 68040-based Macintosh computers, except the Macintosh Quadra 660AV and Quadra 840AV computers. Like AppleShare 3.0.1, it's appropriate for smaller, cross-platform workgroups that want to move beyond simple Mac OS file sharing and is extremely easy to set up and administer.

• AppleShare 4.2 is the highest-performance AppleShare version available. Optimized for Apple PowerPC processor-based Workgroup Servers, it offers higher performance and supports more users than previous versions, yet retains the ease of use shared by the other product offerings in the AppleShare family.

• AppleShare Pro 1.1 utilizes the specialized hardware and operating system of the Workgroup Server 95 running A/UX. AppleShare Pro boosts server performance to more than four times that of AppleShare 3 running on a Macintosh Quadra 950. Larger workgroups that need the higher-performance file and print service will want to take full advantage of the speed and scalability of AppleShare Pro. Because it has the traditional AppleShare ease of setup and administration, you already know how to use it. In addition, AppleShare Pro supports up to 5,000 open files and 20 hard disks connected to the server. Now there is an AppleShare

product for even the most demanding of server environments.

Article Change History:
13 Jun 1996 - Change title to show AppleShare 4.1.
12 Mar 1996 - Added information about 3.0.x running on 68040 computers.
12 Jan 1996 - Updated with AppleShare 4.2 which replaced 4.1.

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Tech Info Library Article Number:11856

Tech Info Library

MacX: How To Work With DEC Application Keypad (3/93)

Revised: 4/6/93
Security: Everyone

MacX: How To Work With DEC Application Keypad (3/93)

==========

Article Created: 24 March 1993

TOPIC ----------

Operating System: VAX/VMS
Window System: DECwindows

MacX does not handle some of the Macintosh keypad keys correctly in a DECterm set to Application Keypad (SET TERM/APPL). Specifically, I found that the following keypad keys did not produce the application sequences:

- Keypad Num Lock
- Keypad =
- Keypad /
- Keypad *
- Keypad +

In fact, these keys produced the character on the key face (except Num Lock, which, in TPU, produced an apparent Control-K (Learn) sequence).

DISCUSSION ----------

You need to map the keys of the numeric keypad to send the PFn keysyms using the program MSAX$MODMAP. This program is located in directory SYS$SYSTEM:

For example, to map the top row of the keypads, the correct mapping is:

```
keycode 79 = KP_F1
keycode 89 = KP_F2
keycode 83 = KP_F3
keycode 75 = KP_F4
```

If you have PATHWORKS for Macintosh, DEC has some example mapping files in

the directory MSA$EXAMPLES. They are called:

```
MSAX$INSCRIPTIONAL_EXTENDED_KEYBOARD.DAT
MSAX$POSITIONAL_EXTENDED_KEYBOARD.DAT
MSAX$STANDARD_KEYBOARD.DAT
```

You will find the above mapping in these files also.

You run MSAX$MODMAP as a client by using this remote command in MacX:

```
MCR MSAX$MODMAP mapping-file-name
```

After that, your keypad keys should work correctly in Application Keypad mode.

For more information regarding MSAX$MODMAP, refer to the DECwindows documentation.

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Tech Info Library Article Number:11857

AppleShare 3.0: Transfers Are Faster Server to Client (3/93)

Revised: 4/6/93
Security: Everyone

AppleShare 3.0: Transfers Are Faster Server to Client (3/93)

==========

Article Created: 24 March 1993

TOPIC -----

AppleShare pulls (workstation copy from server) are always faster than pushes (workstation copy to server). I would imagine this is at the AFP level, but could you explain?

My environment:
• AppleShare 3.0
• Twisted-pair Phone Net, Active Star
• AppleShare running on a Macintosh IIci, and Quadra 950
• AppleShare is the only application running on each computer

DISCUSSION -----

The server-to-workstation copies are faster for two reasons. First, the server-to-workstation copy requires fewer transactions to accomplish the same job. Second, the retransmission timer is smaller for the workstation than for the server, which in the event of any packet loss results in faster retransmission of lost packets and thus faster over-all transfer times.

Workstation-to-Server Copy

Workstation ------> ATP TReq ------> Server
Workstation <------ ATP TReq <------ Server
Workstation ------> ATP TRsp ------> Server (1 to 8 response packets)
...
Workstation <------ ATP TRel <------ Server
Workstation <------ ATP TRsp <------ Server
Workstation ------> ATP TRel ------> Server

1) There are more transactions (two packets in each direction) in

workstation to server because the workstation has to initiate the transaction by requesting that the server request the data from the workstation. This results in four additional packets, with the increased possibility of lost packets and retransmission. In addition, in the case of workstation-to-server copies, there are actually two ATP XO transactions, one wrapped inside the other, which means there are TRel's passed in both directions; if either side losses the TRel packet no data will be passed in either direction for at least 30 seconds (TRel timer value), possibly more. The TRel timer value is set by the application program. TRels are never retransmitted:, see Inside AppleTalk, Second Edition, for more details concerning ATP XO transmissions.

2) The retransmission timer in the server is six seconds. If any of the eight data packets are lost, the server waits six seconds before requesting retransmission of the data by the workstation.

```
Server-to-Workstation Copy
--------------------------
Workstation ------> ATP TReq ------> Server
Workstation <------ ATP TRsp <------ Server (1 to 8 response packets)
...
Workstation ------> ATP TRel ------> Server
```

In this case, several factors could contribute to faster transfer times. First, there are fewer transactions to complete the operation and less traffic is generated. In addition, if any of the data packets (1 - 8 TRsp) packets are lost, the workstation will request their retransmission in two seconds, verses the six seconds the server waits (see in the prior example) before asking for retransmission.

There is no simple way to change the ATP retransmission timer values. These timers are selected by the application developer at compile time and are therefore not easily changed.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11858

Tech Info Library

StyleWriter II: Executive Paper Size (2/95)

Revised: 2/16/95
Security: Everyone

StyleWriter II: Executive Paper Size (2/95)

==========

Article Created: 25 March 1993
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

The StyleWriter II manual states that the Executive paper size is 7.5-in.w by 10.5-in.h, but the Page Setup dialog shows it as 5.5-in.w by 8.5-in.h.

Which one is correct?

DISCUSSION ----------

You are correct that the manual states one size for Executive paper, and the StyleWriter II driver uses another. Version 1.2 of StyleWriter driver has been changed to use 7.5-in.w x 10.5-in.h as the Executive paper size. Apple has decided to standardize on that size for all Apple printers.

If you want to modify the StyleWriter II driver to use the 7.5-in.w by 10.5-in.h paper size, the best way is to modify the StyleWriter II PREC id=3 resource. Just change the paper height and width values of Btn 3 to 1260 (105x12) and 900 (75x12), respectively.

Article Change History:
16 Feb 1995 - Added version of driver that corrects issue.
08 Jun 1993 - Added width and height abbreviations.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:11860

Tech Info Library

Easy Access: Slow Keys Appears to Prevent Keyboard Input (3/93)

Revised: 3/25/93
Security: Everyone

Easy Access: Slow Keys Appears to Prevent Keyboard Input (3/93)

==========

Article Created: 25 March 1993

TOPIC ----------

I lose the ability to input data from the keyboard after entering numerous hard returns in Microsoft Word or TeachText. I hear a beep, then the keyboard won't accept more keystrokes -- it just makes a strange beep. Even quitting the application doesn't fix it.

This doesn't happen with extensions off, but occurs even immediately after a clean install.

DISCUSSION ----------

This is a feature of Easy Access called Slow Keys. Slow Keys gets turned on whenever the return key is held down for 8 consecutive seconds (there's a warning beep after 4 seconds). Thus, even though all features of Easy Access Control Panel may be off, Slow Keys can still activate itself. Slow Keys is supposed to prevent accidental key presses by waiting a brief amount of time before accepting a keystroke. It may appear as though the keyboard is locked up.

When this happens, turn off Slow Keys in the Easy Access control panel (the mouse will still be functional). Be aware, however, that holding the return key down again for another 8 seconds will turn it back on. The long-term solution is simply to remove Easy Access.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11861

Tech Info Library

QuickTime for Windows: Library not found Message (3/93)

Revised: 4/5/93
Security: Everyone

QuickTime for Windows: "Library not found" Message (3/93)

==========

Article Created: 29 March 1993

TOPIC ----------

I just installed QuickTime for Windows on a DOS 5.0/Windows 3.1 machine. Installation ran fine with no errors reported.

In trying to start the applications MoviePlayer and PictureViewer, I got the error message: "QuickTime for Windows could not run because the QuickTime library could not be found."

My assumption is that Windows can't find one or more of the .DLLs that comes with QuickTime. Where should the .DDLs be stored? What in the Windows environment needs to be updated ?

QUESTION ----------

It is very likely that the QuickTime applications cannot locate the required .DLL files.

The installation program normally ensures that the SET LIB, SET INCLUDE, and PATH statements are properly updated to include the directories containing the QuickTime for Windows tools, libraries, and header files. That is, unless you do not allow the SETUP program to modify your AUTOEXEC.BAT file.

In this case, you would need to modify the AUTOEXEC.BAT file yourself. The suggested changes should be in a file called AUTOEXEC.QTW. SETUP produced the file during the installation process. The basic alteration required to get the MoviePlayer and PictureViewer applications working is to ensure a PATH entry pointing to the QTW\BIN directory exists.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11862

Tech Info Library

LaserWriter Pro: Printer Control Language Commands (5/96)

Revised: 5/7/96
Security: Everyone

LaserWriter Pro: Printer Control Language Commands (5/96)

==========

Article Created: 29 March 1993
Article Reviewed/Updated: 7 May 1996

TOPIC ----------

1) What fonts does the Primary Symbol Set in HP PCL4 (LaserJet emulation) in the LaserWriter Pro support? I tried to select a font other than ROMAN-8 or PC-8 US but the printer ignored it.

2) Is there support for IBM-PC (Danish/Norwegian) or ISO-60 Norway which is needed for programs not supporting ROMAN-8?

3) What is the command to change the page length on a LaserWriter Pro?

DISCUSSION ----------

In regards to questions 1 and 2, there is support for ISO-60 Norway and a variety of other Symbol Sets. There are two ways to enable them:

• To use the specified Symbol Set for just the current job:

In HP emulation mode, type <ESC>(#X where #X is a number/letter pair. For example, type <ESC>(8U to utilize the Roman-8 symbol set.

Note:
"8U" is the HP number/letter pair value for the Roman-8 symbol set, (see chart below).

• To change the default Symbol Set using PostScript. Send the following three lines of PostScript to the printer:

```
%==========================================================
% Begin PostScript code
%
(%LaserJetIIP%)
```

```
<</FontSymbolSet 277>>
setdevparams
%
% End PostScript code
%============================================================
```

Notes:

• The PostScript code to change the default PCL font does not persist beyond power cycles. Typically, there are "_NV" suffixes that can be added to devices (such as %Serial_NV% or %Parallel_NV%) which provide storing of persistent parameters, however, the %LaserJetIIP% device does not have any such storage, so you will not be able to set a default PCL font to survive power cycles.

The only workarounds we can think of are to download the PostScript code each time the printer is restarted, or to just leave the printer ON.

• "277" is the Symbol Set Value for the Roman-8 symbol set, (see chart below).

Begin_Table

Symbol Sets Supported by the LaserWriter Pro

Symbol Set	HP #/letter pair	Symbol Set Value
ISO-60 Norweg	øD	4
ISO-25 French	øF	6
German	øG	7
ISO-15 Italian	øI	9
ISO-14 JISASCII	øK	11
ECMA-94 Latin 1	øN	14
ISO-11 Swedish	øS	19
ISO-6 ASCII	øU	21
ISO-61 Norweg	1D	36
ISO-4 UK	1E	37
ISO-69 French	1F	38
ISO-21 German	1G	39
Spanish	1S	51
ISO-57 Chinese	2K	75
ISO-17 Spanish	2S	83
ISO-2 IRV	2U	85
ISO-10 Swedish	3S	115
ISO-16 Portug	4S	147
ISO-84 Portug	5S	179
ISO-85 Spanish	6S	211
Roman-8	8U	277
PC-8 US	10U	341

End_Table

3) To change the page length on a LaserWriter Pro, use the HP escape code <ESC>&l#e##F while in HP emulation mode.

```
# is the top margin
## is text length (max 66)
```

Article Change History:
07 May 1996 - Added info on PostScript not surviving power cycles.

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Tech Info Library Article Number:11863

Tech Info Library

Apple Color Printer: Printer Description Files (9/94)

Revised: 9/1/94
Security: Everyone

Apple Color Printer: Printer Description Files (9/94)

==========

Article Created: 26 March 1993
Article Reviewed/Updated: 1 September 1994

TOPIC ----------

Is Apple working on a Quark Xpress PDF (Printer Description File) for the Apple Color Printer?

DISCUSSION ----------

We have not heard of any PDF (Printer Description File) files for the Apple Color Printer. If one is required for Xpress, you would have to acquire it from Quark, Inc. since it would be an application-specific file.

Apple is responsible for creating PPD (PostScript Printer Description) files for our LaserWriters. It's still up to the developers to acquire the files from Apple Developer Technical Support and then modify (if needed) and distribute the files.

Article Change History:
01 Sep 1994 - Reviewed for accuracy.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:11864

Tech Info Library

Quadra: White Line on Display May Mean Wrong VRAM (5/94)

Revised: 5/18/94
Security: Everyone

Quadra: White Line on Display May Mean Wrong VRAM (5/94)

==========

Article Created: 25 March 1993
Article Reviewed/Updated: 18 May 1994

TOPIC ----------

On a Macintosh Quadra 610 or 650 with 1MB video RAM (VRAM) and set to 32,000 colors, a horizontal white line appears just below halfway down the screen. This is a 14-inch color display, but the symptom occurs with different monitors.

DISCUSSION ----------

Check the VRAM on these computers. The Macintosh Quadra 610 and 650 require VRAM with a speed of 80ns. 100ns VRAM -- such as that found in a Macintosh IIvx -- is not meant for use in these systems.

Article Change History:
18 May 1994 - Changed to reflect 80ns VRAM required for Quadra 610/650 and not Centris series.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:11865

Tech Info Library

Performa: Turning the Launcher Off (10/96)

Revised: 10/24/96
Security: Everyone

Performa: Turning the Launcher Off (10/96)

==========

Article Created: 26 March 1993
Article Reviewed/Updated: 24 October 1996

TOPIC ----------

When I first got my Macintosh Performa I really appreciated Launcher. But now that I’m experienced with Macintosh, I don't need it. How do I turn it off?

DISCUSSION ----------

Launcher is great when you are just learning the Macintosh, but experienced users may not want or need it. Turning of the Launcher depends on which Performa you have.

If you have a Performa 200, 400, 600, or 600CD. With Launcher version 1.3 or earlier. Just remove the Launcher alias from the Startup Items folder:

1) Make sure you are in the Finder.

2) Open the Macintosh Hard Disk icon (double-click on it).

3) Open the System Folder. Find the Startup Items folder and open it.

4) Click on the Launcher alias. While holding down the mouse button, drag it out of the Startup Items folder and put it into the System folder (be careful that you do not drop it by accident into another folder within the System Folder; the safest way is to drop the Launcher alias onto the System Folder icon itself).

5) Restart the computer. Launcher should not be active. If you would like to have Launcher back at any time, all you need to do is put the Launcher alias back into the Startup Items folder and restart the computer.

If you have any other Performa computer's, with Launcher version 2.0 or later. Just turn off "Launcher open at Startup" in the Performa Control Panel:

1) Select Control Panels from the Apple Menu.

2) Double-Click on the Performa control panel.

3) Deselect the option for " Launcher Open at Startup."

4) Close the Performa control panel and the Control Panels.

5) Restart the computer. Launcher should not be active. If you would like to have Launcher back at any time, all you need to do is re-select " Launcher Open at Startup" in the Performa control panel.

Performa computers, with System 7.5 or later. Deselect the Show Launcher at system starup checkbox in the General Controls control panel.

Article Change History:
24 Oct 1996 - Added System 7.5 or later information.
22 Jun 1994 - Inlcuded the changes for Launcher 2.0 and Performa 1.0.

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Tech Info Library Article Number:11866

Tech Info Library

Macintosh LC III: Using VRAM from LC II (7/93)

Revised: 7/16/93
Security: Everyone

Macintosh LC III: Using VRAM from LC II (7/93)

==========

Article Created: 22 March 1993
Article Reviewed/Updated: 13 July 1993

TOPIC ----------

The Macintosh LC III comes with 512K of video RAM (VRAM) soldered onto the logic board, and one slot for adding an additional 256K of VRAM. Can I use the same 256K VRAM memory card used in the LC II for this upgrade? What happens if I use a 512K VRAM memory card from the LC II in the LC III?

DISCUSSION ----------

The 256K VRAM memory card used in the Macintosh LC II is fully compatible with the Macintosh LC III and Performa 450. Adding this memory card brings the LC III's total video RAM to 768K, allowing it to support 32,768 colors on some color monitors.

Adding a 512K VRAM card to the LC III will work as well, but the computer will recognize only 768K of the total 1024K installed.

For more information on which monitors are supported, search related articles.

Video RAM (VRAM)

- 512K standard supports:
  - 32,768 colors on the Macintosh 12-inch RGB Display
  - 256 colors on the AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16-inch Color Display
  - 256 shades of gray on the Macintosh 12-inch Monochrome Display
  - 16 shades of gray on the Macintosh Portrait Display (15")

- 768K (512K standard plus 256K VRAM card) option supports:
  - 32,768 colors on the Macintosh 12-inch RGB Display, AppleColor High-Resolution RGB Display (13"), and Macintosh Color Display (14")

- 256 colors on the Macintosh 16-inch Color Display
- 256 shades of gray on the Macintosh 12-inch Monochrome Display and Macintosh Portrait Display (15")

Article Change History:
07/13/93 - Revised to include Performa 450.

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Tech Info Library Article Number:11867

Tech Info Library

Macintosh Print Pack: Description (3/93)

Revised: 3/30/93
Security: Everyone

Macintosh Print Pack: Description (3/93)

==========

Article Created: 26 March 1993

TOPIC ----------

This article describes the Macintosh Print Pack.

DISCUSSION ----------

The Macintosh Print Pack allows MS-DOS and Windows-compatible printers to be connected to Macintosh computers with a set of hardware and software tools.

The Print Pack includes a special cable to connect a Macintosh to virtually any printer that has a standard Centronics parallel port. Also included are special software printer drivers, which are installed with a one-click installer.

You can select your printer through the Chooser. The printer drivers available are:

Epson FX (for use with compatible 9 pin dot-matrix printers and any MS-DOS or Windows-compatible laser printers that use this emulation)

Epson LQ (for use with compatible 24-pin dot-matrix printers and any MS-DOS or Windows-compatible laser printers that use this emulation)

Kodak Diconix
Canon BJ10EX (for connection to compatible ink jet printers)

The Macintosh Print Pack is compatible with:
• all Macintosh font formats: bitmap, TrueType, and Adobe's Type 1
• all Macintosh graphics formats: bitmap, PICT, and TIFF.

It supports all standard paper sizes, vertical or horizontal page formats, and reduction or enlargement.

The Macintosh Print Pack requires System 7.1 and for optimal performance. Apple recommends a minimum of 4MB of RAM.

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Tech Info Library Article Number:11868

Tech Info Library

Macintosh: DOS, OS/2, and Windows Compatibility (3/93)

Revised: 5/24/95
Security: Everyone

Macintosh: DOS, OS/2, and Windows Compatibility (3/93)

==========

Article Created: 24 March 1993
Article Reviewed/updated: 25 March 1994

TOPIC ----------

I hear that Macintosh computers are compatible with MS-DOS and Windows computers. How does Apple define compatible?

DISCUSSION ----------

The best way to start answering these questions is to determine what you are really asking about when you discuss compatibility. There are two questions to ask when defining levels of compatibility:

• Do you want to use MS-DOS or Windows files on a Macintosh?

• Do you want to run MS-DOS applications (software programs) on a Macintosh? The essential ingredients that ensure compatibility come with your Macintosh Performa computer: a SuperDrive disk drive and Macintosh PC Exchange software.

Every Macintosh has a built-in SuperDrive, which can read and write to DOS, Windows, OS/2, and Apple II formatted 3.5-inch floppy diskettes. These floppy diskettes can be 400K, 800K, or 1.44MB in capacity. Macintosh PC Exchange is included in the System software that comes with every Macintosh Performa, Power Macintosh and other selected Macintosh models.

With Macintosh PC Exchange users can easily work with files stored on DOS or Windows floppy disks. You can move files between a Macintosh and PC as easily as you can between two Macintosh computers. By creating program links, you can directly launch a Macintosh program and translate a file by simply double-clicking on your PC file. You can even format floppy disks in DOS or Windows format on your Macintosh using Macintosh PC Exchange.

If you want to run MS-DOS applications on your Macintosh, you will need an additional program such as SoftPC or SoftWindows (for the Power Macintosh series) from Insignia Solutions, Inc.

To locate a vendor's address and phone numbers, use the vendor name as a search string in the Apple Tech Info Library.

Article Change History:
25 March 1994 - Revised and retitled to reflect additional Macintosh models in addition to the Performa series.

Support Information Services

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Tech Info Library Article Number:11869

Tech Info Library

Macintosh: Glossary of Terms (2/95)

Revised: 2/22/95
Security: Everyone

Macintosh: Glossary of Terms (2/95)

==========

Article Created: 24 March 1993
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

This article describes some of the common terms used when discussing Macintosh computers in general and the Performa models in particular.

DISCUSSION ----------

Alias

A file that stands for and points to a file, application, folder, or disk that you use as if it were the original. When you open an alias you are actually opening the original.

Apple Backup

An application for the Macintosh Performa computers that lets you copy files on your hard disk onto a series of high-density floppy disks. If the original files on your hard disk are lost or damaged, you can use these backup disks to restore your files.

Apple Desktop Bus (ADB)

Input circuitry built into most Apple computers. You use the ADB port to attach the keyboard, the mouse, and other input devices, such as graphics tablets and bar code readers.

Apple Menu

The menu at the left end of the menu bar, indicated by the Apple logo. You choose items from this menu to open items (such as desk accessories) that you have placed in the Apple Menu Items folder, and to get information about programs that are currently running ("About…").

Apple Restore

An application program that lets you restore information on your hard disk from a backup disks made with Apple Backup.

AppleTalk Network

A comprehensive network system that runs on a variety of cable systems and protocols. It facilitates communication between network devices, such as your computers, file servers, and printers, which may be a mixture of Apple and non-Apple products. Several elements make up an AppleTalk network system: AppleTalk software and AppleTalk hardware; the latter includes computing components and connectivity components.

AppleTalk Connectivity

AppleTalk's design lets you include a variety of data-link and cabling methods in a network system. Data-link and cabling methods widely used include LocalTalk; EtherTalk, using standard Ethernet media; and TokenTalk, using token ring media.

At Ease

Software that lets you use a Macintosh without using the Finder interface. At Ease provides easy ways to open files and prevents you from deleting files or changing system software. It is particularly suited to homes and classrooms.

Chooser

A program that lets you designate devices such as printers and shared disks on a network for your Macintosh to use.

Clipboard

An area in the computer's memory that functions as a holding place for what you last cut or copied. Information on the clipboard can be pasted into documents.

Control Panels

Programs that let you change various Macintosh features, such as sound, mouse movement, and keyboard options. Control panels are located inside the System folder.

Desk Accessories

Small application programs that you can add to your system. Desk accessories are installed in the Apple menu. Those provided with the Macintosh include the Calculator, the Chooser, Control Panels, Key Caps, and the Scrapbook.

Desktop

Your working environment when you are using the Finder interfaces on the computer (the menu bar and the background area on the screen), on which you work

with icons and windows.

Documents Folder

A folder on the desktop that is the default folder when you save a document. For (System 7.5 or Macintosh Performa only.)

Finder

The application program that maintains the Macintosh desktop and starts up other programs at your request. You use it to manage documents and programs, and to get information to and from disks. The Finder is what you see when you start up your computer.

Folder

A container for documents, programs, as well as other folders on the desktop or in directory windows.

Icon

A small pictorial representation of a file, disk, menu, option, or other object or feature.

Launcher

A system extension containing aliases of programs and other items. The Launcher window opens automatically when you start your computer. You can add to or change the contents of the Launcher to suit your own needs. (System 7.5 or Macintosh Performa only.)

NuBus

A bus architecture that lets you add a variety of components to your Macintosh by installing cards into expansion slots (such as video capture cards and networking).

Operating System

Software that coordinates the internal activities of the computer and its peripheral devices. An operating system performs basic tasks such as moving data to and from devices and managing information in memory.

ProDOS

The operating system for Apple II computers.

QuickTime

A System 7.x software extension that lets you play synchronized video and sound clips on your Macintosh.

Scrapbook

A desk accessory in which you can save frequently-used graphics, text, and sounds. The scrapbook can store multiple images. You can cut or copy images from the Scrapbook and paste them into documents.

SCSI (Small Computer Systems Interface)

A specification of mechanical and electrical standards for connecting certain peripheral devices (such as CD-ROM drives, external storage drives, and scanners) to a computer.

System File

A software file required for starting up the computer. You can customize it with fonts and desk accessories.

Article Change History:
22 Feb 1995 - Added keyword; made minor technical updates.
13 Feb 1995 - Changed AppleTalk information.

Support Information Services

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Tech Info Library Article Number:11870

Tech Info Library

At Ease 1.0: Workaround for Forgotten Password (8/95)

Revised: 8/8/95
Security: Everyone

At Ease 1.0: Workaround for Forgotten Password (8/95)

==========

Article Created: 23 March 1993
Article Reviewed/Updated: 08 August 1995

TOPIC ----------

After I brought my Performa home, I set up At Ease. Now I've forgotten my password. What do I do?

DISCUSSION ----------

You'll need to start up your computer with another disk that has system software on it. If your computer came with a floppy disk called Utilities, you can use that disk.

1) Turn on the computer and push the Utilities disk into the floppy disk slot immediately.

2) The disk icon at the top of the desktop will be Utilities, and the next icon below that will be your Macintosh Hard Disk.

3) Open the Macintosh Hard Disk by double-clicking on its icon. Open the System Folder the same way.

4) Open the Preferences Folder. Click on the file called At Ease Preferences and drag it into the Trash.

5) From the Special menu, select Empty Trash.

6) Your Macintosh no longer remembers your At Ease Password. Now close the windows and restart your computer. You'll have to configure At Ease with a new Password you have selected.

Article Change History:
08 Aug 1995 - Reviewed for technical accuracy.

..TIL11871-At_Ease_1-0-Workaround_for_Forgotten_Password_8-95.pdf

Support Information Services

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Tech Info Library Article Number:11871

Tech Info Library

Performa: Cure for Unsuccessful Startup After Restore (3/93)

Revised: 3/30/93
Security: Everyone

Performa: Cure for Unsuccessful Startup After Restore (3/93)

==========

Article Created: 24 March 1993

TOPIC ----------

When I restored the backup software to my Performa, on the next startup attempt a picture of a diskette with a flashing question mark appeared, and nothing further happened. What do I do now?

DISCUSSION ----------

The Restore process should complete its procedure automatically, but it is not always successful. If you can't startup after a Restore, follow these steps:

1. Restart the computer with the Utilites diskette.

2. Move the System suitcase or the Finder out of the System Folder, then move it right back into the System Folder. If your folders are arranged in Icon view, you should see a small image of a Macintosh appear inside the System Folder icon.

3. Restart the computer again.

Another reason for the unsuccessful startup may have been that the corrupt system was not replaced during the restore process. This could happen if you were presented with the dialog, "The item 'System' on your computer is newer than the one on the backup diskette. Do you want to replace it with the older one or keep the newer one?" and you chose not to replace it with the older version.

If this happened, restore again, this time making certain to choose "Replace newer with older."

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11872

Tech Info Library

Performa: Disk-to-Disk Copying (3/93)

Revised: 3/30/93
Security: Everyone

Performa: Disk-to-Disk Copying (3/93)

==========

Article Created: 24 March 1993

TOPIC ----------

I just bought some software that tells me to make a copy of my original diskette for backup. What's the best way to do this?

DISCUSSION ----------

The best way to copy then entire content (programs, data) from one diskette to another is to drag its icon onto the icon of a blank diskette. If you are currently using At Ease, first get back to the Finder. Then follow the instructions below:

1) Insert the blank diskette. Format it (initialize it) if necessary.

2) Eject the blank diskette by choosing Eject Disk from the Special menu or pressing Command-E, but NOT by dragging the disk to the Trash.

3) Insert the diskette from which you want to copy.

4) Drag the icon of that diskette over the icon of the blank diskette. A dialog box will appear asking if you want to replace the entire contents of the blank diskette with the contents of the diskette currently in the drive. Click Okay.

This works with other Macintosh models as well.

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Tech Info Library Article Number:11873

Tech Info Library

LaserWriter Pro, HP Emulation Mode: Switching Paper Bins (3/93)

Revised: 3/30/93
Security: Everyone

LaserWriter Pro, HP Emulation Mode: Switching Paper Bins (3/93)

==========

Article Created: 10 March 1993

TOPIC --

How do I switch paper bins on a LaserWriter Pro in HP emulation mode?

DISCUSSION ---

If you want to switch paper bins on a LaserWriter Pro in HP emulation mode, you must send an escape code sequence directly to the printer. One way to do this is to type the escape code sequence into to a text file. This is the HPCL escape code sequence to switch between paper bins:

ESC&l#H

where # is the bin selection value and the letter after the "&" is lowercase L.

0 is the bin selection value for the default paper tray.
1 " " for the upper tray.
2 " " for the manual feed tray.
4 " " for the lower tray.
6 " " for the envelope feeder.

For instance, to select the 500 page cassette (or lower tray), send "ESC&l4H" to the printer.

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Tech Info Library Article Number:11881

Tech Info Library

Macintosh: Specifications of Metal Enclosures (1/95)

Revised: 1/3/95
Security: Everyone

Macintosh: Specifications of Metal Enclosures (1/95)

==========

Article Created: 30 March 1993
Article Reviewed/Updated: 03 January 1995

TOPIC ----------

Which Macintosh computers utilize metal for their case construction and what are the specifications for the metal?

DISCUSSION ----------

At this date, metal enclosures are used for the following Macintosh models:

- Macintosh IIvx and IIvi
- Performa 600
- Centris/Quadra series (610, 650 and 660AV)
- Quadra 800 and 840AV
- All Power Macintosh models

The cases of these Macintosh models, as well as of some peripherals, are made of cold rolled prime sheet steel, #C1008-1010. Temper is commercial quality RB50 (RB65 Maximum). Finish is electrogalvanized preplate (bright or matte). Cosmetic paint application is site-specific depending on the point of origin, but the color of paint worldwide is Apple Platinum, per CCP 912 - 0037 - A.

The front panels of these Macintosh models and of some peripherals are made of Cycolac ABS grade KJC injection molded plastic. No paint finish is required on plastic panels or bezels.

Article Change History:
03 Jan 1995 - Reviewed for technical accuracy.
01 Apr 1994 - Added Power Macintosh models to the list.
25 Aug 1993 - Added AV Macintoshes to the list.

Support Information Services

..TIL11882-Macintosh-Specifications_of_Metal_Enclosures_1-95.pdf

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Tech Info Library Article Number:11882

Color Classic, LC 520: Power On/Off Sequence (8/93)

Revised: 8/2/93
Security: Everyone

Color Classic, LC 520: Power On/Off Sequence (8/93)

==========

Article Created: 30 March 1993
Article Reviewed/Updated: 2 August 1993

TOPIC ----------

Could you explain the Macintosh Color Classic and Macintosh LC 520 Power On/Off sequence?

DISCUSSION ----------

The Macintosh Color Classic and Macintosh LC 520 use a power on sequence that is slightly different from all previous Macintosh computers. The Color Classic and LC 520 incorporate a power switch across the incoming AC power. This switch is similar to the storage switch on the PowerBook 100 and need only be switched off when storing the machine or when removing the logic board. Otherwise, trickle power is always supplied to the logic board. This main power switch is located on the right back side of the computer right next to where the power cord plugs into the unit.

To start up the machine, rock the main power switch to the on position, then press the Power On key on the keyboard (the key with a triangle pointing to the left located either at the top center or at the top right of the keyboard).

Before assuming a Color Classic or LC 520 is defective, be sure to press the keyboard Power On key.

In addition, once the machine is started up, the Power On key also serves as a Shut Down key. The effect of pressing the Power On key is the same as choosing Shut Down from the Special menu. After the user is prompted to save any open documents, the system will shut down. Choosing Shut Down with the mouse or pressing the Power On/Off key accomplishes the same result.

Article Change History:
2 August 1993 - Updated with references to LC 520 as well.

..TIL11883-Color_Classic_LC_520-Power_On-Off_Sequence_8-93.pdf

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:11883

Tech Info Library

Macintosh Performa: Inserting a New Floppy Disk (3/93)

Revised: 4/6/93
Security: Everyone

Macintosh Performa: Inserting a New Floppy Disk (3/93)

==========

Article Created: 24 March 1993

TOPIC ----------

When I inserted a brand new blank diskette into the computer, the screen did not show the dialog box that the manual says it should. The floppy disk appears as if it has been used already, though there is nothing on it. Why is this?

DISCUSSION ----------

The most likely reason for this is that the diskette has been formatted by the manufacturer. You won't see the dialog asking if you want to format a diskette unless it is truly blank. Check the packaging that came with your floppy disks to see if they have been preformatted at the factory.

If you are running Macintosh PC Exchange, which is included with certain Performa models, even preformatted DOS disks will appear on the desktop without you being asking whether you want to initialize them (again, the packaging should indicate for which type of computer the disks are formatted).

If you find yourself with a preformatted DOS disk, just select Erase Disk from the Special menu, and PC Exchange (if installed) will present you with a choice of formats in a pulldown menu. Choose Macintosh, erase the disk, and you'll be all set.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11884

Tech Info Library

Macintosh: No Printer Available Message (3/93)

Revised: 4/16/93
Security: Everyone

Macintosh: "No Printer Available" Message (3/93)

==========

Article Created: 24 March 1993

TOPIC ----------

I connected my Macintosh to my printer, turned everything on, and tried to print. But I got a message saying that there isn't a printer available.

DISCUSSION ----------

In order to use any printer connected to your Macintosh, you need to select it in the Chooser. You can find the Chooser in the Apple menu. Once you have clicked on the printer icon in the Chooser, make sure you have selected the port corresponding to the port on the Macintosh where you have connected the printer cable.

If the icon for your printer does not appear in the Chooser, you may need to reinstall the system software.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11885

Tech Info Library

Performa: Running Apple II Software (3/93)

Revised: 1/6/94
Security: Everyone

Performa: Running Apple II Software (3/93)

==========

Article Created: 24 March 1993

Article Change History

06/22/93 - REWROTE
- With more complete information.

TOPIC ----------

I would like information on running Apple II software on my Performa 430. Do I need a card? Where do I install it? Where do I get it, and the necessary supporting software?

DISCUSSION ----------

The Apple IIe Card is an accessory card that lets you run Apple IIe programs on several Macintosh models. At this writing, those models were Performa 400, 405, 430, and 450; Macintosh LC, LC II, and LC III; and Macintosh Color Classic. When the Macintosh is in the Apple IIe mode, it performs just like an Apple IIe Computer. You can start up and use Apple IIe software applications just as you would on an Apple IIe.

Features of the Apple IIe Card:

- Runs virtually all Apple IIe applications -- more than 10,000 programs.
- Applesoft BASIC programming language is built in. The Apple IIe Card supports ProDOS, DOS 3.3, and Apple II Pascal operating systems.
- The Macintosh hard drive may be partitioned for the ProDOS operating system to allow mass storage of Apple IIe programs and files.
- The Macintosh's internal SuperDrive can be used with ProDOS-formatted disks. ProDOS disks appear on the Macintosh desktop to allow easy transfer

of files to the hard drive.

- Allows connection of one UniDisk 3.5 disk drive and two Apple 5.25 disk drives through the Apple IIe Card's connection cable. This cable also allows the attachment of an Apple IIe joystick.

- Can print from Apple IIe applications to any printer that the Macintosh can select.

You can purchase the Apple IIe Card at your Local Apple Dealer. Also, the Local Apple Service Provider can install the card. You can find the Local Apple Dealer/Service Provider by calling (800) 538-9696. You can also purchase the Apple IIe Card from the Apple Catalog (800) 795-1000.

If you need help with the Apple IIe Card, then you can call the Apple Assistance Center at (800) SOS-APPL Extension 555.

Here is what you need to order:

- Apple IIe Card (Product Number M0444/D,Catalog Number B1043)

Optional Items:

- Apple 5.25 Drive (Product Number A9M0107, Catalog Number B1024)
- Joystick II (Product Number A2M2012, Catalog Number B1360)

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Tech Info Library Article Number:11886

Tech Info Library

Macintosh Performa: System Disks Not Included (7/95)

Revised: 7/10/95
Security: Everyone

Macintosh Performa: System Disks Not Included (7/95)

==========

Article Created: 24 March 1993
Article Reviewed/Updated: 10 July 1995

TOPIC ----------

I just purchased a Performa computer, and I think I'm missing something from my package. Where are the system disks? And where are the master disks for the application software that was included with my Performa? Everything is on the hard drive, but what happens if something happens to the software there?

DISCUSSION ----------

You are not missing anything. The Performa line of computers comes with Apple Backup, a software utility that allows you to backup the entire hard drive, including system software and application software, onto high density floppy disks. You can buy blank floppy disks at many office supply stores, as well as from computer retailers.

Many later Performa computers come with the Performa Backup CD. Computers that include the Performa Backup CD are:

Macintosh Performa 550 (later versions)
Macintosh Performa 575, 577, 578
Macintosh Performa 630CD, 635CD, 636CD, 637CD, 638CD
Macintosh Performa 5200 series
Macintosh Performa 6110CD, 6112CD, 6115CD, 6118CD

This disc contains all the software that is pre-loaded on your hard drive including system software and third party programs. If you have this disc, it is not necessary for you to run the Apple Backup program to back up your pre-loaded software. However, you should still back up your personal files and any other software you add later.

If at some time you remove software from your computer, you will need to use the backup disks you create and run the Apple Restore program or use the Performa

Backup CD to restore the software. This procedure will restore all the programs, but will replace them so that there are no duplicate copies on your hard drive. You will not lose any personal files.

Backing up regularly is a good habit to get into, as it provides a way for you to recover important documents that you have created, as well as system software and applications, should anything ever happen to your hard drive.

Article Change History:
10 Jul 1995 - Updated to include Performa Backup CD information.

Support Information Services

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Tech Info Library Article Number:11887

Tech Info Library

Casa Blanca Works, Inc.

Revised: 4/4/97
Security: Everyone

Casa Blanca Works, Inc.

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Article Created: 03/31/93
Article Reviewed: 07/07/93
Article Updated: 04/04/97

Casa Blanca Works, Inc.
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148 Bon Air Center
Greenbrae, CA 94904

415-461-2227

415-461-2249 Fax

Company Profile:
Specializes in software utilities for the Macintosh, line of hard drive enclosures and bracket kits

Article Change History: 07/07/93 New Product Information Added, Name Information Added

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Tech Info Library Article Number:11890

Tech Info Library

System 7.1: LaserWriter Fonts Q&A (4/93)

Revised: 4/23/93
Security: Everyone

System 7.1: LaserWriter Fonts Q&A (4/93)

==========

Article Created: 13 April 1993

TOPIC ----------

1) Is it necessary to have the Adobe PostScript printer font in the Fonts folder if that font is loaded in the printer?

2) If I have downloaded fonts to the printer, are they lost when the printer is turned off?

3) Is it correct that the TrueType font is used for both the screen and printer?

4) Where can I get detailed documentation regarding fonts and System 7.1?

DISCUSSION ----------

1) If the font is not resident in the printer, the LaserWriter driver gets the font from the system and downloads the font to the printer. Therefore, since the font is already resident there is no need to have it in the Fonts folder.

2) Fonts can be temporarily downloaded either on a per-document basis or permanently downloaded until the printer's power is turned off. Only those fonts that are resident in ROM remain after a power cycle.

3) Outline fonts (TrueType) describe each letter, number, or symbol as a mathematical formula that define the character's shape and adjusts itself to make the character's size larger or smaller. Your Macintosh, therefore, needs on a single outline font in a particular typeface (such as Times) to able to print or display that typeface in different sizes.

4) You can get information from the "Macintosh User's Guide" which was

shipped with your computer or the System 7.1 upgrade kit. For more detailed information on font technology, I would recommend "Technical Introduction to the Macintosh Family, Second Edition" and "Apple LaserWriter Reference." Both of these books are published by Addison-Wesley.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11891

Tech Info Library

AppleScript: Description (11/95)

Revised: 5/21/96
Security: Everyone

AppleScript: Description (11/95)

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Article Created: 20 April 1993
Article Reviewed/Updated: 27 November 1995

TOPIC ----------

AppleScript is a full-featured, object-oriented, programming language built into the Macintosh operating system. It can access internal software functionality of applications supporting the Open Scripting Architecture (OSA) of System 7.

DISCUSSION ----------

AppleScript extends the Macintosh graphical user interface to offer scripting for automation, customization, and application integration. It allows tailoring applications for developers. The AppleScript product consists of a language, a system software extension, a scripting environment, and add-on utilities.

FEATURES

- A natural, English-like syntax that can be localized and/or replaced.

- Integration with the Open Scripting Architecture for seamless communication with multiple applications both within a computer and across networks.

- Use of OSA standards that enable a consistent scripting experience.

- A Script Editor utility that records scripts from user actions.

BENEFITS

- Rapid custom solution development for business problems.

- Automation of complex tasks and work flows within organizations.

- Simplification of desktop and network administration within organizations.

• Automation of routine tasks that can increase personal productivity.

CONFIGURATION REQUIREMENTS

AppleScript requires a Macintosh configured with:

• A 68000 or greater processor
• Minimum 4 megabytes of RAM
• System 7.0 or later

RAM IMPACT

With no scripts running, AppleScript takes up less than 5K of RAM. A running script occupies less than 250K of RAM. Editing and compiling a script consumes about 750K RAM.

The AppleScript Extension requires 250K of disk space when installed uncompressed whether on the hard disk or on floppy disks.

The AppleScript Script Editor requires 150K of disk space. The Scriptable Text Editor requires 100K of disk space.

LANGUAGE

The AppleScript language takes an "English-like" approach. In addition, it's flexible enough to adapt easily to the needs of languages other than English. The base AppleScript language includes language control structures (repeat, if...then, and so on) and a library of built-in commands.

The default syntax of AppleScript is similar to HyperTalk in its natural language approach, but is more regular and predictable. You can replace the default AppleScript syntax with localized language dialects or programming languages (BASIC-like, C-like).

SYSTEM SOFTWARE

AppleScript is implemented as a component, and makes use of the QuickTime Component Manager. This makes it accessible to any developer who wants to take advantage of it to give an application intuitive, consistent scripting capabilities. Implementing the scripting system at the system software level makes scripting an integral part of the Macintosh computing environment.

SCRIPTING ENVIRONMENTS

AppleScript is delivered with a simple script generation and editing facility known as the Script Editor. The Script Editor generates scripts by "watching" the user's actions. Then you can edit and run the scripts.

The End User and Professional versions of the Script Editor differ in particular features, but the basic interface is the same.

ADD-ON EXTENSIONS AND UTILITIES

Several add-on components complete the scripting product for different users. Sample Scripts help teach in-house developers how to use scripting to solve pertinent business problems. They can modify sample scripts to meet particular needs.

End Users can use sample scripts to make using the Macintosh more convenient and effective. A script launching utility launches scripts while the computer's owner is absent.

Finally, Open Scripting Architecture Extensions (OSACS) can extend the reach of AppleScript into other development arenas.

USAGE SCENARIOS

The following categories are the major classes of functionality that AppleScripts enable. AppleScripts create new, custom solutions from existing applications. These could be internal or commercial solution sets. A custom front-end might be built that uses attached scripts to communicate with different applications while keeping this activity transparent to the user.

Work Flow

You can use scripts to automate the process of working: to move data, documents, and information from person to person, computer to computer, department to department, and application to application.

Work flow scripts will automate some aspect of a group's work process such as tracking and reporting the status of project elements, managing versions, routing documents, and archiving files.

They are likely to afford a low-cost minimum-feature alternative for those who don't require extensive document management systems. Work flow scripts access, manage, and report the "data about data" in their working environment and drive applications for communication, including electronic mail.

Administration

Scripts perform administrative functions including software installation and upgrades, backups, remote user support, and troubleshooting across local area networks.

Unattended Computing

Unattended scripts take the place of the user interaction with the Macintosh and provide for the execution of predetermined instructions when specified conditions are met.

Scripts let you "set-and-forget" a series of things for an application to do, or several applications together. You can write scripts that test for certain conditions in your environment, in some document, or in another Macintosh across the network, and execute when those conditions are met.

It's possible to impose time conditions on unattended scripts to allow delayed execution, often overnight.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
27 Nov 1995 - Added keyword and review for accuracy.
12 Jan 1995 - Revised title slightly.
14 Oct 1994 - Reviewed for consistency and updated format.

Support Information Services

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Tech Info Library Article Number:11893

Tech Info Library

AppleScript: Software Components (4/93)

Revised: 6/24/93
Security: Everyone

AppleScript: Software Components (4/93)

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Article Created: 20 April 1993

TOPIC ----------

This article describes the AppleScript software components.

DISCUSSION ----------

Software

- AppleScript Extension
  - Executes, compiles, and records scripts
  - AppleScript English dialect
  - Apple Events User Terminology (AEUT) resource: provides the human readable equivalents for the standard Apple Event suites.
  - Implementation of the API through which applications can ask for execution, compilation, editing and recording of scripts
  - The AppleScript Professional Scripting Environment contains an additional API for replacement editors, debugger, stepper and tracer.

- AppleScript Editing and Recording Utility
  - Simple user interface for generating scripts from user actions
  - Simple user interface for editing scripts
  - Mechanism for loading and saving scripts
  - The AppleScript Professional Scripting Environment includes a Script Editor implementation of a replacement editor, debugger, stepper, and tracer.

- WindowScript Interface Building Utility
  - Generates simple user interfaces
  - Allows users to easily draw an interface from standard Macintosh interface elements and attach scripts to those elements.

- Scriptable Text Editor

  - Sample scriptable and recordable text processor.

- Apple Event Manager v. 1.0.1 Extension
  - Supports AppleScript recording
  - Includes the Object Support Library (OSL)

- AppleScript Extensions
  - Extensions to AppleScript that extend the AppleScript language to include subroutines in other languages.

- 99 AppleScripts for the Macintosh
  - Scripts which get the Finder, Scriptable Text Editor, and other parts of the system to do interesting and useful things for end users.

- Installer and AppleScript Install Script
  - One-button install for all of the software components above.

- AppleScript Demonstration CD
  - A CD with restricted versions of scriptable applications that are available commercially along with documentation and sample scripts.

Documentation

- Getting Started with AppleScript
  - How to install AppleScript
  - How to run scripts
  - How to record and edit scripts with the Script Editor

- AppleScript Language Guide
  - Introduction to the AppleScript language
  - Scripting tutorial, language reference
  - Describes only the base language; doesn't describe the scriptable Finder.
  - Addendum on C-dialect.

- AppleScript Language Quick Reference
  - Summary of AppleScript language syntax and semantics

- AppleScript Solutions Guide
  - Supplements AppleScript Language Guide
  - Gives an overview of how to build AppleScript solutions using AppleScript, WindowScript, and Quickeys and DAL components.
  - Third-party-provided documentation on WindowScript, DAL, and Quickeys.

- The Apple Index of Applications that Support AppleScript
  - Identifies applications that support scripting and concisely shows what level of support they provide.

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Tech Info Library Article Number:11894

Tech Info Library

AppleScript: Modified Parts of the Macintosh OS (4/93)

Revised: 6/24/93
Security: Everyone

AppleScript: Modified Parts of the Macintosh OS (4/93)

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Article Created: 20 April 1993

Topic ----------

This article describes several pieces of the Macintosh operating system that must be modified to maximize the benefits that AppleScript offers.

Discussion ----------

Finder

Release of AppleScript is dependent on the user interface support in the Finder. The user interface to AppleScript in the Finder includes:

- Script document look
- Mechanism for setting the behavior of a script document on double-click (launch or edit)
- AppleScript recorder access
- One-step script access

The Finder becomes a scriptable and recordable application. A suite of Finder Apple Events and objects have been defined which act as the vocabulary of the Finder's extensions to AppleScript. Scripts can retrieve information about and control the Macintosh file system and desktop objects. This capability is implemented in Finder 7.1.1 as a Finder extension.

The Finder also allows you to attach scripts to objects such as disks, files, and folders. You can define actions that should occur when one of these objects is opened, closed, or something is dropped on it. In this way, AppleScript will generalize the "drag and drop" gesture in the Finder, and make it user-customizable.

System

The tasks done through tools such as the Control Panel and the Chooser are possible via AppleScript as well. A new Layer Manager allows the Script Editor to appear to be a part of an application.

Apple Event Manager

Two changes are required in the Apple Event Manager to support AppleScript:

- Recording support

- Roll-in of the Object Support Library (OSL)

Apple Event Manager 1.5 incorporates these changes.

QuickTime Component Manager

The QuickTime Component Manager is required for AppleScript execution, because AppleScript is implemented as a component.

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Tech Info Library Article Number:11898

Tech Info Library

System 7.x: Rebuilding Desktop on Diskettes

Revised: 4/2/93
Security: Everyone

System 7.x: Rebuilding Desktop on Diskettes

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Article Created: 29 March 1993

TOPIC ----------

In System 7, 7.0.1, and 7.1 we can't rebuild the Desktop File on diskettes unless there is something on the diskette. We need at least an empty folder on the diskette. Please explain.

DISCUSSION ----------

This is a known problem and has been reported to our engineering team.

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Tech Info Library Article Number:11900

Tech Info Library

System 7.1: Custom Install Bug with Monitor CDEV (6/93)

Revised: 6/11/93
Security: Everyone

System 7.1: Custom Install Bug with Monitor CDEV (6/93)

==========

Article Created: 29 March 1993

Article Change History

06/11/93 - REVISED & RETITLED
- The problem isn't strictly on the Quadra.

TOPIC ----------

You must use Easy Install when installing System 7.1 on these systems:

- Quadra 700, 900, and 950
- Macintosh LC and LC II
- PowerBooks 100, 140, and 170

DISCUSSION ----------

There is a known problem in the Custom Install that doesn't install all of the appropriate resources for the Monitors CDEV. The problem manifests itself when you try to use the OPTIONS portion of the CDEV. You will get an "Out of Memory" message, which will prevent you from accessing the options. By the way, replacing the Monitors CDEV doesn't resolve the issue!

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Tech Info Library Article Number:11901

Tech Info Library

WorldScript: Multiple Page Setups (3/93)

Revised: 4/6/93
Security: Everyone

WorldScript: Multiple Page Setups (3/93)

==========

Article Created: 29 March 1993

TOPIC: ----------

Does WorldScript allow multiple "Page Setups" in the same document?

DISCUSSION: ----------

The Page Setup feature does not function any differently in the WorldScript environment. Its implementation is up to the application software, which is responsible for saving the Page Setup options with its documents. We have not seen an application that allows multiple Page Setups, but it is possible to implement.

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Tech Info Library Article Number:11902

Tech Info Library

LaserWriter Driver 7.2: Setup Button in the Chooser

Revised: 4/6/93
Security: Everyone

LaserWriter Driver 7.2: Setup Button in the Chooser

==========

Article Created: 29 March 1993

TOPIC: ----------

After installing the LaserWriter Driver 7.2, I noticed a new feature, a "Setup" button in the Chooser. What's the purpose of the Setup button?

DISCUSSION: ----------

The LaserWriter Driver 7.2 Setup feature queries the printer for information. Specifically, it checks the printer model, the paper source (Built-in trays, 75-envelope feeder or optional 500-sheet tray), and imaging options which are available for your printer. It was put in place to determine what options should be presented in the Print dialog box.

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Tech Info Library Article Number:11903

Tech Info Library

Macintosh LC III: FPU Configurations with PDS Cards (7/93)

Revised: 7/16/93
Security: Everyone

Macintosh LC III: FPU Configurations with PDS Cards (7/93)

==========

Article Created: 1 April 1993
Article Reviewed/Updated: 13 July 1993

TOPIC ----------

A Macintosh LC III (Performa 450) can potentially have two FPUs: one on the logic board, and another on an expansion card. This article describes the four possible combinations of FPU (on logic board and on add-on card) in a Macintosh LC III.

DISCUSSION ----------

- No FPU on the logic board, and none on the expansion card. No problem.

- No FPU on the logic board, but one on the expansion card. The system uses the one on the card -- at 16 MHz.

- An FPU on the logic board, but none on the expansion card. The system uses the one on the logic board -- at 25 MHz.

- Two FPUs: one on the logic board, and one on the expansion card. Both FPUs are on the processor bus. There's no way to predict which one will respond to a given FPU cycle, and no way to assign priority.

Apple does NOT recommend removing an FPU from an expansion card and installing it on the logic board. Expansion card FPUs are 16 MHz, but the logic board requires a 25-MHz FPU.

If, after installing a card with an FPU, your system crashes, contact the vendor of the card to determine if there are any known incompatibilities between that card and the Macintosh LC III.

Article Change History:
07/13/93 - Revised to include Performa 450.
06/24/93 - Revised in response to input from Apple Engineering.

..TIL11904-Macintosh_LC_III-FPU_Configurations_with_PDS_Cards_7-93_(TA29224).pdf

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Tech Info Library Article Number:11904

Tech Info Library

Macintosh: Which Models Can Start Up from CD-ROM (4/93)

Revised: 4/16/93
Security: Everyone

Macintosh: Which Models Can Start Up from CD-ROM (4/93)

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Article Created: 5 April 1993

TOPIC ----------

Which Macintosh models can be started up from a CD-ROM volume, and which can't?

DISCUSSION ----------

- The following Macintosh models don't support starting up from a CD-ROM:
  Macintosh 128K, 512K, 512Ke
  Macintosh Plus, SE, and SE/30
  Macintosh Portable
  Macintosh II, IIx, and IIcx
  Macintosh Classic

- All other Macintosh models do support starting up from a CD-ROM.

- We assume that all future models will be able to start up from a CD-ROM.

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Tech Info Library Article Number:11905

Tech Info Library

Macintosh: Virus List (4/94)

Revised: 4/1/94
Security: Everyone

Macintosh: Virus List (4/94)

==========

Article Created: 1 December 1992
Article Reviewed/Updated: 1 April 1994

TOPIC ----------

This article lists all known Macintosh viruses, when they were discovered and the effects of each virus if not discovered and removed from the affected Macintosh computers.

DISCUSSION ----------

Part I: Benign Viruses

Benign viruses replicate with no real damage to data files.

Peace
• One-time peace message - destroyed itself after 3/22/88

Extension
• Gives message “this disk needs minor repairs” for a locked floppy
• Infects unlocked floppies upon insertion
• Printing problems
• Extension conflicts
• MultiFinder crashes

ANTI, ANTI-ANGE
• First virus to modify code resource. Only affects application and Finder.
• May cause system crashes
• Cause applications to crash once infected (Anti-Ange)

CDEF
• Non-destructive
• Adds devices to the Desktop file

CDEF Mutation (discovered 24-Feb-93)
• Minor changes to the code

• same effects as original CDEF virus.

CODE 252
• Designed to spread from January 1 through June 5 of any year
• Virus triggered on and after June 6
• No intentional damage to file or disks
• Displays following message:
  "You have a virus."
  "Ha Ha Ha Ha Ha Ha Ha"
  "Now erasing all disks..."
  "Ha Ha Ha Ha Ha Ha Ha"
  "P.S. Have a nice day."
  "Ha Ha Ha Ha Ha Ha Ha"
  "(Click to continue...)"
• System may behave erratically
• Periodic system crashes
• Infects the System, Finder, and Applications
• Spreads very quickly under System 6.0.x

GARFIELD
• Odd menu behavior, most common is menus will not pop down.
• System files and applications are the most likely to get infected.
• Unknown how virus is spread.

INIT 29-B (Discoverd late March, 1994)
• no malicious intent.
• Spreads very rapidly.
• Infects all types of files: applications, system files and data files.
• Not contagious when found in a data file, meaning it can not spread from a data file
• Can reinfect a file again and again and again. This multiple infection characteristic can result in a wide variety of problems including out of memory error when running applications, the usual unexpected crashes, erratic behavior and an unexpected increase in file size.
• Running an application infected with INIT 29-B can spread the infection to the System file. Once the machine is rebooted, the virus will then spread from the infected System file to any file that is opened.

INIT-M (discovered May 1993)
• Designed to trigger on any Friday the 13th.
• The virus may infect all kinds of files -- including extensions, applications, preference files, and document files --
• Causes problems with the proper display of windows.
• The virus spreads and attacks only under System 7.0 or later.
• It does not spread or attack System 6.

MBDF A
• Spreads quickly
• System crashes
• Infects applications-adds MBDF resource with id 0
• Infects System file-adds MBDF resource with id 0 and renumbers existing MBDF id 0 to id 1.

MERRY CHRISTMAS VIRUS (discovered December, 1993)
• Only affects HyperCard stacks
• The Merry Christmas virus is written in HyperTalk, the HyperCard scripting language.
• Many stacks can function properly when infected, some such as Apple's Service Source cannot.
• Basically, the virus traps these messages:
 - openbackground
 - closebackground
 - idle
Then it looks in the Home stack script for itself, and if it isn't there it copies itself. From the Home stack it checks the currently active stack for itself, and if it isn't there it copies itself.
• merryxmas vaccine (HyperCard stack) will remove any occurances of the virus, as well preventing future infections. The stack is available on online services.

WDEF
• Instructs Finder to infect desktop
• Infects diskettes immediately upon insertion
• Slow performance
• System crashes
• System beeps
• Easily eradicated by rebuilding the desktop, or using SAM Virus Clinic
• Does not affect Macintosh computers running System 7 and higher.

Part II: Malicious Viruses

Malicious viruses damage files, and can even alter applications.

CHINATALK - Trojan Horse
• System extension
• Claims to be a female sound driver that is MacinTalk compatible
• Erases Hard Disk

CPRO - Trojan Horse
• application
• found in a file named CPRO141.SEA, looks like an update to a popular file compression program.
• If the CPro application is run, it attempts to format mounted hard disks and floppy disks.
• Only successful in formatting floppy disks.

FONTFINDER - Trojan Horse type
• Trigger date of Feb 10th, 1990
• Before date, displayed lists of fonts and point sizes in the System file
• On or after date, destroys directories of all mounted volumes

INIT 1984
• Trigger date of Friday 13th in 1991 and after
• Changes names and attributes of large number of folders and files to random strings
• Deletes a small percentage of files (< 2%)

INIT-9403 (discovered 3 March 1994)
• Damage: Alters applications and system files.
May destroy all disk volumes.
• Spreads: only in Italian version of MacOS so far, but extensive there.
• Systems affected: All Apple Macintosh computers, all systems.
• Once present, the virus alters the Finder file, and may insert copies of itself in various compaction, compression, and archive programs.
• These infected files can then spread the virus to other Macintoshes.
• This virus can only spread under the Italian release of MacOS.
• After a certain number of other files have been infected, the virus will erase disks connected to the system: it attempts to destroy disk information on all connected hard drives (> 16 Mb) and attempts to completely erase the boot volume.

MOSAIC - Trojan Horse type
• Destroys directories
• Renames attached disks to "GOTCHA"
• All available unmounted SCSI disks are mounted and destroyed

NVIR (including nVIRa, nVIRb, nVIR-f nFLU, AIDS, Hpat, Jude, MEV#)
• Infects by installing first in System file, often infects Finder and DA Handler. Lies dormant, then makes itself known.
• Applications beep when launched
• Files disappear mysteriously
• System crashes
• MacinTalk, if installed, says "don’t panic"

SCORES
• Creates invisible SCORES file
• Creates new desktop file in System folder
• Changes Notepad and Scrapbook to generic documents
• Causes system crashes after a certain time
• Difficulty running applications, and printing
• MS Excel files show damage
• Unexplained increases in file size
• Slow system

STEROID - Trojan Horse type
• Trigger date of July 1, 1990
• INIT which claims to speed up QuickDraw on 9-inch screens
• Shipped with a file name (Steroid) preceded by 2 invisible characters (so it loads before SAM Intercept and other extensions)
• Zeros your volume directories
• If file renamed, so that it runs after SAM, in advanced or custom modes you will get SAM alerts saying "There is an attempt to bypass the file system" when the Trojan attacks your volumes. Denying these attempts prevents the Trojan from doing damage.
• NOTE: Having CommToolbox installed seems to interfere with the INIT and keeps the erase from happening.

T4-A/T4-B
• Included with a game called GoMoku (versions 2.0 and 2.1)

- From GoMoku 2.0, virus will spread on August 15, 1992 and later
- From GoMoku 2.1, virus will spread on June 26, 1992 and later.
- Alters/damages The System file.
- System Extensions and INIT files unable to load
- System may become unbootable
- Attempts to modify applications on boot volume
- Damage applications by overwriting locations with infecting code. These damaged applications cannot be repaired.

T4-C

- Affects all Apple Macintosh computer systems and infects applications and System files.
- Under System 6, when activated, T4-C attempts to alter the System file, resulting in INIT files not being able to load. The system may be unbootable.
- Attempts to modify application files on the start-up volume. These damaged applications cannot be repaired.
- Damages the System file, therefore it is important to re-install your system if you think you may have been infected with this virus.

ZUC

- Adds a 1256 byte piece of code at the end of the first executed CODE resource (similar to ANTI)
- 90 seconds after launching infected application ZUC takes over cursor, moving it diagonally until you reboot.
- Only applications are infected.

Article Change History:
1 April 1994 - Added all viruses discovered since March, 1993.
5 March 1993 - Added info on variation of CDEF virus and new T4-C virus.

Support Information Services

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Tech Info Library Article Number:11907

Tech Info Library

System 7.1: 32-Bit Enabler and Drive7 Incompatibility (3/93)

Revised: 7/27/93
Security: Everyone

System 7.1: 32-Bit Enabler and Drive7 Incompatibility (3/93)

==========

Article Created: 30 March 1993
Article Reviewed/Updated: 26 July 1993

TOPIC ----------

I have been unable to start my Macintosh SE/30 with the 32-Bit System Enabler, version 1.0.3, installed. I am also using Drive7 formatting software, driver version 2.3.2. I have already tried the various suggestions of doing a clean install of System 7.1, and removing inits.

DISCUSSION ----------

It has been verified that there is a third-party compatibility problem with the 32-Bit System Enabler, Version 1.0.3. The 32-Bit System Enabler is incompatible with versions 2.3.2 (and before) of Casa Blanca Works, Inc.'s Drive7 formatting software. When the 32-Bit System Enabler is used on a system which has been formatted with Drive7, the system will not start up.

Casa Blanca Works, Inc. is releasing a new version, 2.3.4, which they report corrects this problem.

To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
26 July 1993 - Company title updated from Casa Blanca to Casa Blanca Works, Inc.

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Tech Info Library Article Number:11908

Tech Info Library

Bitmap, PostScript, and TrueType Fonts Compared (7/96)

Revised: 7/1/96
Security: Everyone

Bitmap, PostScript, and TrueType Fonts Compared (7/96)

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Article Created: 2 April 1993
Article Reviewed/Updated: 01 July 1996

TOPIC ----------

This article compares bitmap, PostScript, and TrueType fonts as System 7 uses them. This article also explains the basics of font terminology and mechanics and answers some of the most frequently asked font questions.

You can mix all three types of fonts in the same document.

DISCUSSION ----------

Bitmap, TrueType, and PostScript Fonts

Suitcases can contain only bitmap and TrueType fonts; PostScript printer fonts are separate files. So a suitcase could contain just bitmap fonts, bitmap fonts and a corresponding TrueType font, or bitmap fonts that correspond to a separate PostScript printer font.

Bitmap Font

Bitmap fonts (also called fixed-size) is a representation of a certain font in an exact size. Bitmap fonts have the single letter "A" shown on their icons. You need a separate font file for each size of character you want to use.

These fonts consist of "pictures" of a typeface at specific sizes. For example, you might have bitmap fonts at 10, 12, and 18 point sizes installed in your Macintosh computer. “Times 12” is each character of the Times font at exactly 12 point.

If you try to use sizes that aren't installed, the Macintosh scales the largest installed bitmap, often resulting in type that is blocky and less legible. Specifically installed bitmap font sizes look smooth on any screen and print

smoothly on PostScript printers.

PostScript Font

PostScript is an industry-standard page-description language used for describing text, graphics, and digitized images for printed pages. This font has two parts to it; a bitmap font that the Macintosh uses like any other bitmap font, and a printer font used only by PostScript printers and Adobe Type manager software. All PostScript printer fonts have corresponding bitmaps; without them, your font does not appear in the Font menu of your applications. Like TrueType, PostScript printer fonts are a scalable outline. However, they require Adobe Type Manager (ATM) software to display without “jaggies” or print smoothly on a non-PostScript printer. The LaserWriter driver converts fonts to mathematical formulas instead of bitmapped images.

PostScript uses outline font technology to describe characters as a number of PostScript or B-spline curves. These curves are stored as mathematical constructs that form the outline of a character. The print controller processes the constructs to arrive at the desired size, style, and orientation, and then fills in the object with dots at the specific resolution of the printing device.

Several Apple LaserWriter printers support PostScript. PostScript fonts are also used in combination with bitmap fonts to support additional fonts on the Macintosh.

To use PostScript fonts with system software version 7.1, install bitmap and PostScript fonts in the Fonts folder. You can drag fonts or font suitcases to the closed System Folder, and the system will ask if you want to place them in the Fonts folder. Click the OK button.

In system software versions 7.0 or 7.0.1, install bitmap fonts by dragging a font suitcase or font file onto the closed System file. Put PostScript fonts in the Extensions folder.

For versions of System 6, use Font/DA Mover to install bitmap fonts into the System file and put PostScript files into the System Folder.

TrueType Font

TrueType (also called variable-size, outline, or scalable) fonts describe a typeface without rigidly specifying a size, and thus look good whichever size you choose. A TrueType font is a representation of a certain font defined by a scalable outline. Your Macintosh uses this outline to generate the size of the font you require. TrueType fonts provide sharp text at any size on any device, whether screen or printer. The TrueType font format is an open-industry standard, so you can mix and match TrueType fonts from various font vendors.

TrueType fonts are mathematical descriptions of text characters that store individual characters as a series of lines and curves, rather than a group of pixels (a bitmap). When an application asks for a character in any size, like 33

point, the Macintosh enlarges this outline to 33 point and fills in the dots for the display or printer output.

Only Macintosh computers running system 6.0.7 or later versions support TrueType fonts. To use TrueType fonts with System 6, be sure you have at least 1MB of RAM, install version 6.0.7 or later, and install the TrueType INIT. Install the fonts using Font/DA Mover version 4.1.

Versions of System 7 don't require the TrueType INIT nor the Font/DA Mover. Drag TrueType fonts onto the closed System file, and system software version 7.1 places fonts in the Fonts folder. TrueType is fully compatible with all Macintosh hardware. As part of the operating system of the Macintosh, it's transparent to the user, making it easier to use and to manage fonts.

TrueType prints on most devices, including PostScript devices. Very little has changed about printing in versions of System 7. Apple provides a TrueType core set that maps to the internal fonts in printer ROM, as they did in System 6. When you print a page with a third-party TrueType font on it, the LaserWriter driver sends the TrueType font and the TrueType scaling software to the printer. This ensures the best match to the screen display, because the printer uses the same font and scaling software.

Low-cost, non-PostScript printers (like the Personal LaserWriter LS, StyleWriter, HP DeskWriter, and so on), used with a Macintosh computer, can produce excellent type quality with System 7 and TrueType fonts. Also, direct-connect printers, driven by QuickDraw and TrueType, print with good type quality.

You can recognize TrueType fonts by these characteristics:

- Multiple letters on the icon — TrueType fonts have a scaling "A" shown on their icons.

- There's no point size in the name.

Using TrueType with PostScript

PostScript is a page-description language, and TrueType is a font technology. They aren't interchangeable. However, if a file requires a PostScript font not available in LaserWriter ROM nor in the System Folder, PostScript can use the available TrueType font to print. Using the TrueType font requires additional processing, and can reduce LaserWriter efficiency.

TrueType fonts don't necessarily take more disk space than PostScript Type 1 fonts. People sometimes look at the size of the downloadable Type 1 font and compare that to the size of the TrueType font. This isn't an accurate comparison, because a raw Type 1 font doesn't work on the Macintosh without the bitmap fonts and metrics contained in the screen font "suitcase". When the suitcase is added to the equation, PostScript fonts and TrueType fonts typically occupy about the same space.

TrueType fonts have the potential to become larger in point size than PostScript

Type 1 fonts, due to the enhanced functionality offered by the technology. Many high-quality headline typefaces aren't offered in PostScript form, because of limitations in the Type 1 technology -- like the number of points or contours in a character.

The core set of TrueType fonts (Times, Helvetica, Courier, Symbol, Avant Garde, Bookman, New Century Schoolbook, Palatino, Zapf Chancery, and Zapf Dingbats) have the same metrics as the fonts in the PostScript LaserWriters that Apple ships.

Using TrueType with Bitmap

Bitmap screen fonts come installed with TrueType fonts on systems using System 7 to maintain compatibility with documents created on Macintosh systems that don't have TrueType fonts. If a document uses a font family and size that's available as both a TrueType font and a bitmap font, the Font Manager uses the bitmap font when the application opens the document. If you want the Macintosh to use the TrueType font, you need to remove the bitmap font from your system.

For example, if a document uses Times 12, available in that size as a bitmap and as a TrueType font, the system uses bitmap. If a document uses Times 4, the system scales the TrueType font to that size because a bitmap version isn't available.

Using only TrueType fonts produces a closer match between appearance of type on the screen and when printed. However, any existing documents you've created with the bitmap fonts will be reformatted with the TrueType fonts, and line breaks in these documents may change. A document created on a system that has TrueType or the Adobe Type Manager installed will have different spacing, kerning, and so on, when opened on a system that doesn't have TrueType or the Adobe Type Manager.

What You Should Use

You can use both TrueType and PostScript fonts at the same time. You don’t, however, want to have both versions of the same font. Helvetica, for example, is available in both TrueType and PostScript, so you should decide on one to avoid needless duplication. This table shows what you can expect depending on what kind of font and what kind of printer you have:

Font Type	Screen	Non-PostScript Printer	Printer
TrueType	Smooth	Smooth	Smooth
PostScript without ATM	Jagged	Jagged	Smooth
PostScript with ATM	Smooth	Smooth	Smooth

How the Macintosh Displays Fonts on the Screen

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These are the steps your Macintosh goes through to display your request on screen:

STEP	ACTION
1	The System Software checks to see if there is a bitmap of the font you want in the exact point size you requested; if found it displays it.
2	If the requested point size is not present, it looks for the TrueType version of the font, which is used to generate the requested point size and then displayed.
3	If the TrueType version of the font is not present, the System Software scales the largest point size available to the requested size and displays it. This is when you see the “jaggies” on your screen.
4	However, if Adobe Type Manager is present, it steps in. If the PostScript printer file of the requested font is also present, Adobe Type Manager generates the requested point size and then pass it on to the System Software to be displayed.

The 128 Font Limit

Only font files and suitcases count towards the 128 limit. Printer files do not, as they are not resources loaded by the System. Drag any loose font files onto a suitcase and/or combine suitcases by dragging them on top of each other. If you want to make an empty suitcase, simply duplicate any suitcase, open it, and throw away the contents.

Font Corruption

Sometimes a font can become corrupted. The most obvious symptom of this is that it cannot be removed or causes your Macintosh to crash when you choose it. In System 7.0 or 7.1 you can check for font corruption by double-clicking on a suitcase or font file. An error message stating that it cannot be opened means you need to replace that suitcase or font from your original disks. In System 7.1, if you get an error message trying to pull a font or suitcase out of the Fonts folder, first make sure you have quit all running applications. Then, drag the Fonts folder out of the System Folder onto the Desktop. You should now be able to remove corrupt font or suitcase. When you’re finished, put the Fonts folder back in the System Folder.

Just Drag and Drop

Most font-related problems come from missing pieces; a quick check to make sure everything is installed properly usually results in a quick fix. In System 7 and

above, the easiest way to make sure the different components wind up in the right place is to simply drag each item on top of the System Folder icon; the System places things where they need to be for you. Remember not to drag a folder on top of the System Folder; the items inside are not moved to where they need to be.

Viewing Your Fonts

To see what fonts you have installed:

- For versions of System 6, use the Font/DA Mover.
- For versions of System 7 before 7.1, double-click the System file to open it as you would any other file.
- For system software version 7.1, open the Fonts folder within the System Folder.

If you have a version of System 7, you can see samples of the fonts. Double-click the font file, and a window appears displaying the font.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
01 Jul 1996 - Added Fax Doc Word
11 Oct 1994 - Added keyword as well as additional information.
30 Sep 1994 - Removed reference to an image of a font suitcase.
09 Feb 1994 - Retitled and edited.

Support Information Services

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Tech Info Library Article Number:11909

Tech Info Library

DAL Server for AS/400: 90-Day Evaluation Procedure (3/93)

Revised: 4/6/93
Security: Everyone

DAL Server for AS/400: 90-Day Evaluation Procedure (3/93)

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Article Created: 18 March 1993

TOPIC ----------

How can I get a 90-day evaluation of DAL Server for AS/400?

DISCUSSION ----------

There is a 90-day evaluation program for the AS/400. To apply for an evaluation copy, call 408-974-2320 (ESD Licensing), leaving your name and address. You should then be sent an evaluation agreement and when the signed agreement is received by ESD Licensing, the evaluation product will be shipped. The product numbers are:

- B1230LL/A for the 1/4 inch cartridge
- B1238LL/A for the 9-track reel

Manuals for DAL Server for AS/400 are available from APDA for a fee.

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Tech Info Library Article Number:11910

Tech Info Library

DAL Server for AS/400: 800 Number Telephone Support (3/93)

Revised: 4/6/93
Security: Everyone

DAL Server for AS/400: 800 Number Telephone Support (3/93)

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Article Created: 18 March 1993

TOPIC ----------

Where can a customer get installation, and yearly fee-based support?

DISCUSSION ----------

The DAL AS/400 Server product is backed by an initial 90-day free software support 800 number. This support service applies to the 90-day evaluation process, or the initial 90 days of a purchased server.

To purchase Yearly Support and/or Software Developer Support, call 800-950-2442.

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Tech Info Library Article Number:11911

Tech Info Library

DAL Server For AS/400: Pricing Basis For Server (3/93)

Revised: 4/6/93
Security: Everyone

DAL Server For AS/400: Pricing Basis For Server (3/93)

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Article Created: 18 March 1993

TOPIC ----------

Is the pricing based on concurrent users on the DAL Server or number of Hosts with DAL client installed?

DISCUSSION ----------

Pricing for the server is based on the number of simultaneous client connections. There are three sizes:

- 1 to 8 users
- 1 to 32 users
- over 32 users

The cost of the client varies by the number of clients purchased. You must also purchase a separate DAL client product, version 1.3.7, for each user's Macintosh. This is not the Developer's Toolkit product, but is a separate, less expensive client product that includes the Client, the DAL Tester, the Network Adapters, and an installation manual for information on client network connections.

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Tech Info Library Article Number:11912

Tech Info Library

Macintosh: Compressed Archives and Error -39 (4/93)

Revised: 4/6/93
Security: Everyone

Macintosh: Compressed Archives and Error -39 (4/93)

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Article Created: 1 April 1993

TOPIC ----------

I was trying to open a file that was compressed with DiskDoubler as a self-extracting archive. I got error -39. Why?

DISCUSSION ----------

The problem is not necessarily associated with DiskDoubler. When extracting compressed archives, make sure you have enough room on your hard disk. Unfortunately, applications do not always display an error message when needed because of an application problem or extension conflict.

If you have enough space on the hard disk, try downloading the file again. The archive may have been damaged during transfer. It is also possible that the file was defective when compressed. You may want to contact the individual or group that originally compressed the file.

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Tech Info Library Article Number:11913

DAL Server for AS/400: How Much Storage is Needed (3/93)

Revised: 4/6/93
Security: Everyone

DAL Server for AS/400: How Much Storage is Needed (3/93)

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Article Created: 18 March 1993

TOPIC ----------

What is the minimum RAM and DASD requirement for the DAL Server for AS/400? Is SQL/400 a must for it to work?

DISCUSSION ----------

RAM is determined by the partition of the Interactive Subsystem of the AS/400, the DAL Server will swap in and out of RAM. The storage requirement on the AS/400 is approximately 3MB of DASD for the DAL Server installation and the demo library.

The SQL/400 licensed product is NOT a must. The run-time portion of SQL/400 that is shipped as part of OS/400 is sufficient for DAL operation. However, if you wish to exercise better maintenance control over database files (update), then we recommended you purchase the IBM-supplied SQL/400 licensed program.

APPC connectivity on the AS/400 side is also required, as the only connection method for this server is a SNA•ps APPC gateway.

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Tech Info Library Article Number:11914

Tech Info Library

A/UX and Netware (8/93)

Revised: 8/9/93
Security: Everyone

A/UX and Netware (8/93)

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Article Created: 10 March 1993
Article Reviewed/Updated: 6 August 1993

TOPIC -----

Is it possible to run Netware under A/UX so that the PCs on the network could use the A/UX station for Novell print services?

DISCUSSION -----

According to Novell, no Netware for A/UX product is available. However, Novell has licensed their Netware code to Acer Computers (formerly Alto Computers), a vendor of Intel-based UNIX workstations. Acer Computers has written their own Netware code for Acer's UNIX host, and the code is reported to be portable for other UNIX platforms. Contact Acer Computers for more details. To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
6 August 1993 - Changed vendor to new company name.

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Tech Info Library Article Number:11915

Tech Info Library

Personal LaserWriter NTR for Windows: Ordering Info (4/93)

Revised: 4/5/93
Security: Everyone

Personal LaserWriter NTR for Windows: Ordering Info (4/93)

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Article Created: 5 April 1993

TOPIC ----------

This article describes the ordering information for the Apple Personal LaserWriter NTR for Windows.

DISCUSSION ----------

Personal LaserWriter NTR for Windows
Order No. B1214LL/A
- Personal LaserWriter NTR printer
- Toner cartridge
- Windows printer-driver software
- Bitstream TrueType Font Pack for Windows
- LaserTools Printer Control Panel software
- Personal LaserWriter NTR user’s guide
- Limited warranty statement

Personal LaserWriter Toner Cartridge
Order No. M0089LL/A

Personal LaserWriter 250-Sheet Cassette Base
(for use with the Personal LaserWriter Letter Cassette, Legal Cassette, Envelope Cassette, A4 Cassette, and B5 Cassette, which must be ordered separately)
Order No. M8028G/A

Personal LaserWriter Letter Cassette
Order No. M0091LL/A

Personal LaserWriter Legal Cassette
Order No. M0302LL/A

Personal LaserWriter Envelope Cassette
Order No. M0094LL/A

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Tech Info Library Article Number:11916

Tech Info Library

AppleShare 3.0.1: PrintServer and LaserWriter Pro (4/93)

Revised: 4/20/93
Security: Everyone

AppleShare 3.0.1: PrintServer and LaserWriter Pro (4/93)

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Article Created: 6 April 1993

TOPIC ----------

After capturing a LaserWriter Pro using AppleShare PrintServer 3.0.1, I tried to select the LaserWriter (via the Chooser) to "Setup" the paper source (trays).

This did not work. The LaserWriter Pro appears as "unknown" and the only option is to choose "Cancel". How do I obtain access to the paper trays? I'm using the 7.2 printer driver. Is there a workaround?

DISCUSSION ----------

The solution is on the client side. Open the Chooser and select the print spooler. You must then do a manual Setup by holding down the Option key and clicking Setup in the Chooser dialog box. This will display a list of printers and options associated with those printers.

Once the Setup is complete, you can select different paper trays.

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Tech Info Library Article Number:11921

Tech Info Library

A/UX 3.0: FileSharing Shows Incorrect Volume Size (4/95)

Revised: 4/26/95
Security: Everyone

A/UX 3.0: FileSharing Shows Incorrect Volume Size (4/95)

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Article Created: 5 April 1993
Article Reviewed/Updated: 26 April 1995

TOPIC ----------

I'm running A/UX 3.0 on a Quadra 950 with 16MB of RAM and a 600MB internal hard drive. I currently have 375MB free on slice 0 and 90MB in use. I did a df -B command and its number matches with the finder.

Whenever a user connects to this A/UX machine with personal file sharing either as a user, or owner the finder says there is 1MB free and 17MB in use on this volume. I got the same result from other client machines. The client machines are running System 7.1 and are primarily Quadra 700s.

What is causing the discrepancy? Is there a fix to this problem? This isn't an issue of having several partitions mounted under "/" since the df -B command does show that 375MB are free on slice 0.

At one point I loaded AppleShare 3.0 on the A/UX machine and found it wasn't compatible. I then removed the AppleShare software but never reinstalled A/UX. Everything seemed to be running until recently.

DISCUSSION ----------

We were able to duplicate the problem. In A/UX 3.0, the root / volume shows 99.6MB in disk with 18MB available. A Mac OS client sharing the A/UX root / volume shows 35.7MB in disk and 18MB available.

This is a known bug in the File Sharing version used in A/UX 3.0: A/UX volume shows incorrect size on the client using File Sharing. It is currently being analyzed.

Article Change History:
26 Apr 1995 - Made correction of typographical errors.

..TIL11922-A-UX_3-0-FileSharing_Shows_Incorrect_Volume_Size_4-95.pdf

Support Information Services

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Tech Info Library Article Number:11922

Tech Info Library

Acer Computers (Formerly Altos Computers 3/93)

Revised: 7/2/93
Security: Everyone

Acer Computers (Formerly Altos Computers 3/93)

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Article Created: 03/10/93
Article Reviewed: 07/02/93
Article Updated: 07/02/93

Altos Computers

800-258-6787
800-637-7000 (Technical Support and Customer Service)

Company Profile:
Hardware and software, Intel-based UNIX workstations.

Article Change History: 07/02/93 Name changed, phone number added

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Tech Info Library Article Number:11923

Gupta SQLbase and Macintosh Client Access (4/93)

Revised: 4/13/93
Security: Everyone

Gupta SQLbase and Macintosh Client Access (4/93)

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Article Created: 6 April 1993

TOPIC ----------

Is there a way to permit Macintosh clients using an application and/or DAL Server to access and use a database on SQLbase, from Gupta running as NLM on Novell Netware 3.11?

DISCUSSION ----------

Novell told us that their DAL for Netware SQL only supports their own Btrieve database, and no other SQL databases running on their Netware server.

Gupta told us that there is no current Macintosh client access to SQLbase. There is some discussion about Macintosh clients but they don't have any plans as yet.

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Tech Info Library Article Number:11926

Tech Info Library

LaserWriter Select 310: No GrayShare Support (4/96)

Revised: 4/12/96
Security: Everyone

LaserWriter Select 310: No GrayShare Support (4/96)

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Article Created: 8 April 1993
Article Reviewed/Updated: 12 April 1996

TOPIC ----------

Will Apple support GrayShare technology in the LaserWriter Select 310?

DISCUSSION ----------

There are currently no plans to provide "sharing" functionality for the LaserWriter Select 310. Since GrayShare was designed for QuickDraw-based printers, it does not support the LaserWriter Select 310. Using QuickDraw GX you can use the LaserWriter GX driver. This allows you to use the LaserWriter Select 310 on more than one Macintosh computer. However, anyone on the network who wants to print to the LaserWriter Select 310 must use QuickDraw GX. If QuickDraw GX is not used, it can only be used as a single-use serial PostScript printer.

Article Change History:
12 Apr 1996 - Added QuickDraw GX solution.

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Tech Info Library Article Number:11929

Tech Info Library

SNA•ps Gateway and LAN Routing Services (4/93)

Revised: 4/13/93
Security: Everyone

SNA•ps Gateway and LAN Routing Services (4/93)

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Article Created: 7 April 1993

TOPIC ----------

I'm confused about the appropriate time to use a router with a SNA•ps Gateway. Here are some examples to help explain my question:

- If I'm using s SNA•ps gateway with a Coax/Twinax card or Serial NuBus card and then distributing those sessions to an attached network with either LocalTalk, Ethernet, or Token Ring, I don't need a router.

- Now if I have a SNA•ps gateway running on a Token Ring card, is a router needed to distribute SNA sessions via TokenTalk as well as LocalTalk on the same gateway system?

- What if I utilize a system with Ethernet, LocalTalk, and Token Ring on the SNA•ps Gateway system. Can I distribute SNA sessions over all three?

Since SNA•ps is an AppleTalk to SNA gateway, and is at a higher level on the OSI model than a router, does that negate my need for a router on a system using a Token Ring Card and distributing sessions over Ethernet?

DISCUSSION ----------

Any SNA•ps gateway (Coax, Token Ring, or SDLC) can distribute SNA traffic to clients on AppleTalk networks. The Macintosh performing the gateway function can distribute AppleTalk traffic to only one physical network type, at a time, as defined by the Network Control panel in the gateway machine. Perhaps a table of connections will help:

Gateway type	Physical LAN	Network Control Panel
COAX	LocalTalk	Built-in
COAX	Ethernet	EtherTalk

COAX	Token Ring	TokenTalk
SDLC (Serial)	LocalTalk	Built-in
SDLC	Ethernet	EtherTalk
SDLC	Token Ring	TokenTalk
Token Ring	LocalTalk	Built-in
Token Ring	Ethernet	EtherTalk
Token Ring	Token Ring	TokenTalk

In all the environments listed above, you do NOT need a router! The only confusing one is Token Ring for SNA and TokenTalk for AppleTalk. Both protocols are running on the Token Ring card at the same time. Still no router needed.

If you have a LAN environment with multiple physical environments (LocalTalk, Ethernet, and Token Ring), then the gateway machine will determine the initial physical LAN type for AppleTalk client distribution. You will need a router to get the traffic to other physical LAN types in this case.

You may have routers in just one LAN type for all the reasons you need routers, to break-up large networks to improve performance.

In reality, an SNA gateway is really the combination of an SNA controller and a special purpose router. It does not use the OSI model (it is SNA) and it is not at a "higher level" than a router.

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Tech Info Library Article Number:11934

Tech Info Library

PowerBook Duo Dock and 3COM EtherLink NB Card (4/93)

Revised: 7/7/94
Security: Everyone

PowerBook Duo Dock and 3COM EtherLink NB Card (4/93)

==========

Article Created: 7 April 1993

TOPIC ----------

I have tried to install two different 3COM EtherLink NB REV E cards in a Duo Dock we are using for demonstrations. We have used these cards in the past in a Macintosh IIfx and Macintosh IIci without problems. After the cards were installed (very tight fit, but everything seated properly), and EtherLink network drivers were installed, the card weren't recognized. We put the cards back in the Macintosh IIfx and Macintosh IIci and everything was OK.

After checking with 3COM I learned they haven't tested their card in the Duo Dock. They said it's the same part and version number as the Apple EtherTalk NB card, and it should function the same as the Apple card. Are there any reports of the Apple EtherTalk NB card having problems with the Duo Dock?

We are using the network EtherTalk drivers that come with System 7.1. We also have not encountered any other problems with the Duo and Duo Dock; it has been in use for about two months.

DISCUSSION ----------

Apple does not support the use of the EtherTalk NB card in the Duo Dock. The main reason is a physical incompatibility: it doesn't fit in the machine without modification (one of the AUI posts catches the edge of the rear opening, which prevents the Dock from being reassembled). Because of this, the driver software was not tested.

We verified the physical incompatibility here at our labs this morning.

We also tried the newer Apple Ethernet NB card and it installs easily into the Duo Dock and works perfectly.

Our recommendation is to try a different type of Ethernet card. The 3COM EtherLink card and the Apple EtherTalk NB card appear to be incompatible with

the Duo Dock.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11935

Tech Info Library

Centris 650 & Macintosh IIci: SCSI Differences (7/94)

Revised: 7/28/94
Security: Everyone

Centris 650 & Macintosh IIci: SCSI Differences (7/94)

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Article Created: 16 April 1993
Article Reviewed/Updated: 28 July 1994

TOPIC ----------

How different is the SCSI implementation on the Centris 650, as opposed to the Macintosh IIci? Are there any inconsistencies that could lead to bus errors?

The information in this article relative to the Centris 650 is also relevant to the Quadra 650.

RESPONSE ----------

The major differences between the SCSI implementation on a Macintosh IIci and a Centris 650 are: the Centris 650 utilizes a different SCSI controller (same as the Quadra 700), and uses an active SCSI termination scheme which is automatically enabled depending on the state of the SCSI bus termination.

Though the SCSI controller is different, the Centris 650 utilizes the same SCSI Toolbox routines as the Macintosh IIci, so its SCSI implementation is backward compatible.

Article Change History:
28 Jul 1994 - Added reference to Quadra 650 to aid in searching.

Support Information Services

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Tech Info Library Article Number:11936

Tech Info Library

Macintosh PC Exchange: OS/2 Filing System Support (4/93)

Revised: 4/23/93
Security: Everyone

Macintosh PC Exchange: OS/2 Filing System Support (4/93)

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Article Created: 8 April 1993

TOPIC ----------

Which directory filing system does Macintosh PC Exchange support?

DISCUSSION ----------

Macintosh PC Exchange supports Apple II, DOS FAT, and IBM's OS/2 implementation of DOS FAT -- but not OS/2 native HPFS.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11937

Tech Info Library

Macintosh Plus: 120ns SIMMs (4/93)

Revised: 4/16/93
Security: Everyone

Macintosh Plus: 120ns SIMMs (4/93)

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Article Created: 7 April 1993

Article Change History

04/07/93 - REWROTE
- Separated this information from a previous, unrelated article.

TOPIC ----------

The Macintosh Plus came with Apple-labelled DIP SIMMs silk-screened as being for Macintosh Plus or Macintosh SE only, rated at 120ns. I understand that DIP SIMMs are not to be used for upgrades on Macintosh Plus and Macintosh SE systems because of space constraints for hardware additions. But why are 120ns SIMMs unacceptable for Macintosh II computers, since that is the nominal rating for the ones Apple ships in production Macintosh II computers?

DISCUSSION ----------

The SIMMs you are referring to are for finished goods systems only and are not included in any memory expansion kits. These SIMMs will either be 150ns or 120ns and have a different refreshing scheme (RAS before CAS) than what is supported by the Macintosh II (CAS before RAS). This is why the silk-screening identifies these SIMMs as for the Macintosh Plus and Macintosh SE only.

These SIMMs will fit in all four SIMM positions in the Macintosh Plus and in SIMM positions 3 and 4 of the Macintosh SE.

The 120ns version of these SIMMs work properly in the Macintosh SE/30, Macintosh IIx, and Macintosh IIcx.

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Tech Info Library Article Number:11939

Tech Info Library

Centris 610: 3197 and 3178c Terminal Emulation (4/93)

Revised: 4/13/93
Security: Everyone

Centris 610: 3197 and 3178c Terminal Emulation (4/93)

==========

Article Created: 8 April 1993

TOPIC ----------

I need to connect my Centris 610 to a mainframe that emulates a 3197 and 3178c Terminals. What software or hardware solutions would achieve this?

DISCUSSION ----------

We will separate this question into two parts:

1) The 3197 and 3178 emulation issue

2) The Centris 610 issue

1) The 3197 terminal shows up primarily on IBM midrange systems so any 5250 style emulation will do the trick. As of April, 1993, two 5250 emulation products are available: Andrew's MacMidrange products, and IDEAssociates' IDEACom Mac products. In June, 1993, Apple's SNA•ps 5250 product, which connects only to AS/400s over APPC SNA•ps gateways, will be available. If you have System 38s or 36s, be sure the midrange product you choose supports them. There may be a model of 3197 which emulates a 3270-style terminal. If that is the case, then include the 3197 in the discussion of 3270 emulations below.

   The 3178c terminal is a color terminal in the 3270 family. Any Macintosh 3270 emulation will support this terminal type. The vendors are:

   a) Apple with SNA•ps 3270
   b) DCA with MacIRMA, MacMainFrame, and Netway
   c) AttachMate with EXTRA! for the Macintosh
   d) Netware for SAA for the Macintosh

All the products listed above primarily use the client-server relationship to connect Macintoshes to IBM mainframe or midrange machines. The server types cover a multitude of hardware solutions from special Twinax cards (in Macintosh), APPC gateways on Token Ring or SDLC (in Macintosh), 3270 gateways on Coax, Token Ring, or SDLC cards (in Macintosh), 3270 solutions in stand alone SPARC based hardware (Netway), and 486 PC based gateways (DCA IRMALan, AttachMate and Netware for SAA).

There are also standalone solutions which generally require the installation of a NuBus card in a NuBus slot in the Macintosh. There are coax, Token Ring, and SDLC based standalone solutions which use NuBus cards.

2) The Centris 610 has some special issues. The NuBus slot only allows a 7 inch long card. This eliminates ALL currently available stand alone solutions since all available Coax, Token Ring, or SDLC cards are longer than 7 inches and do not fit in the Centris 610. So you have to use the client-server or distributed session products to do all emulations. The Centris 610 has built-in LocalTalk and can accept the Apple Ethernet NB card and other vendor's Ethernet cards since they are all within the Centris 610 7 inch NuBus limitations. There are NO Token Ring cards available from any vendor which fit into the Centris 610.

Summary

The Centris 610 can only be connected to larger IBM machines via terminal emulation using gateways with emulation data streams delivered via AppleTalk. The only physical connections offered are LocalTalk and Ethernet. 3197 emulation is generally a 5250 vendor offering and 3178 emulation is a 3270 vendor offering. If the customer wants a standalone solution, another Macintosh computer should be selected (capable of accepting Coax, Token Ring, or SDLC cards).

To get more background on these solutions, refer to the Apple Network Solutions guide, 1992 edition, published by the MZ Group in San Francisco. Read from page 165 and beyond about Communication Services.

To locate a vendor's address and phone number, use the vendor name as a search string.

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Tech Info Library Article Number:11940

Tech Info Library

AppleShare Print Server 3.0.1 & Retrospect 1.3 (8/93)

Revised: 8/27/93
Security: Everyone

AppleShare Print Server 3.0.1 & Retrospect 1.3 (8/93)

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Article Created: 8 April 1993
Article Reviewed/Updated: 27 August 1993

TOPIC ----------

Are there any reported problems when the Retrospect Application 1.3 and AppleShare Print Server 3.0.1 run on the same Macintosh?

DISCUSSION ----------

Crashes and "unexpectedly quit" errors have been reported where the Retrospect Application is running on the same computer as the print server.

The solution is to use the AppleShare 3.0.2 Patch Program to update AppleShare 3.0 or 3.0.1 file and print servers to version 3.0.2. The AppleShare 3.0.2 Patch Program is available directly from Apple or on AppleLink in the following path:

Software Sampler
 Apple SW Updates
  Macintosh
   Networking & Communications
    AppleShare 3.0.2 Patch Program

To locate Dantz's address and phone number, use Dantz as a search string.

Article Change History:
27 August 1993 - Revised article with AppleShare 3.0.2 patch solution.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11942

Tech Info Library

AppleCD 300: Recording Sounds From an Audio CD (7/93)

Revised: 7/16/93
Security: Everyone

AppleCD 300: Recording Sounds From an Audio CD (7/93)

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Article Created: 13 April 1993
Article Reviewed/Updated: 13 July 1993

TOPIC ----------

I have some questions about recording sounds from CDs.

1) How can I record sounds directly from a CD on the Centris
   and the Quadra 800 computers?

2) With the Macintosh IIvx (Performa 600CD) and IIvi, I was surprised that I
   had to record from the CD and the microphone at the same time. The "Options"
   button in the Sound control panel was always disabled. Why? The
   Quadra 950 and the Color Classic both have and use their "Options"
   button. Can you explain this?

DISCUSSION ----------

1) You can record sound from an audio CD. The Macintosh IIvx and IIvi,
   Centris 610 and 650, and Quadra 800 allow an audio CD (in the built-in
   CD-ROM player) to output sound to the built-in speaker. The key is to
   unplug the microphone from the computer.

   If an audio CD-ROM is playing and a microphone is plugged in, you are
   able to record the audio output since the audio will play through the
   built-in speaker. The microphone picks up this sound as input, along
   with other ambient sounds. Also, if the microphone is plugged in via
   the ports on a monitor, such as the Macintosh 16" Color Display, then
   the cable that plugs into the computer must be unplugged. Unplugging the
   microphone at the monitor is not sufficient.

   Again, if you want to record from the CD, unplug the microphone from
   the computer. If you do not want music included in a recording while using
   the microphone, don't play a CD.

2) The Options button is grayed out because the sound circuitry on these

systems (Macintosh IIvx and IIvi) is less sophisticated than the Quadra 950's. The Quadra 950 allows the input source to be selected from software.

When a microphone is plugged into the other systems, the input defaults to the microphone due to the internal connections that are made. When no microphone is plugged in, then the sound input is from the CD.

Article Change History:
07/13/93 - Revised to include Performa 600CD.

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Tech Info Library Article Number:11944

Tech Info Library

System 7.1: Damaged Font Suitcase Message (7/96)

Revised: 7/1/96
Security: Everyone

System 7.1: Damaged Font Suitcase Message (7/96)

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Article Created: 9 April 1993
Article Reviewed/Updated: 1 July 1996

TOPIC

This article tells you what to do when you try to open or remove a font suitcase file, and the Macintosh displays a message saying that the font suitcase is damaged.

If you try to move the damaged font suitcase from the Fonts folder to the Trash or to another folder, the Macintosh returns a System error. The System 7.1 Finder doesn't allow moving or deleting some damaged font files from the active Fonts folder.

DISCUSSION

TESTING AND REMOVING A DAMAGED SUITCASE

To test a font suitcase file to see whether it's damaged, double-click on the font suitcase to open it. If you can open the suitcase, it probably isn't damaged. If you can't open the suitcase (receive a system error typically -39 or "Command could not be completed because the file is damaged."), here's how to remove it from the Fonts folder:

1) Move the Fonts folder to the desktop.

2) Create a new Fonts folder in the System Folder.

3) Drag the known good Fonts from the desktop Fonts folder to the newly created Fonts folder.

4) Restart the Macintosh.

5) Drag the Fonts folder on the desktop, with the corrupted font suitcase, to the Trash.

6) Drag a "good" copy of the corrupted font suitcase from a backup copy or from the original font disk to the closed System Folder.

REASONS THE SYSTEM IDENTIFIES A SUITCASE AS DAMAGED

Name Longer Than 31 Characters

System 7 considers a font damaged if its name is longer than 31 characters. System 6 allowed fonts to have longer names, but System 7 doesn't. You should contact the font vendor and request a System 7-compatible version of the font.

(The Finder has always limited file names to a maximum of 31 characters. System 6 fonts couldn't exist as files on the desktop. System 7 allows fonts to exist in suitcases, like System 6 and earlier, or as individual files on the desktop. But since the Finder doesn't allow font names longer than 31 characters, it treats these fonts as damaged.)

Compressed by Third-Party Utility

System 7.1 reports fonts as damaged if a third-party font compression utility (such as Font & Sound Valet, included with Suitcase from Fifth Generation Systems, Inc.) compressed the font. Versions of Font & Sound Valet before 1.3 create suitcases that appear damaged in System 7.1.

To fix a damaged suitcase, decompress the suitcase with the proper utility and open the suitcase to test if the suitcase is damaged. If you have Font & Sound Valet, use version 1.3 or later to decompress the font suitcase. Otherwise, reinstall the original uncompressed font suitcase.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
01 Jul 1996 - Added Fax Doc Word
07 Sep 1994 - Reviewed fax document. Added paragraph about Apple Fax line.
22 Feb 1994 - Reviewed and edited.
01 Apr 1994 - Revised the steps to remove and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:11947

Tech Info Library

Performa 400 and 600 Series: Overview and Differences (4/93)

Revised: 7/12/93
Security: Everyone

Performa 400 and 600 Series: Overview and Differences (4/93)

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Article Created: 12 April 1993

Article Change History

07/09/93 - REVISED
- To include Macintosh equivalents

TOPIC ----------

What are the differences between the Performa 405 and 430, and between the Performa 430 and 450? And how do they compare with the Performa 600 and 600CD?

DISCUSSION ----------

What the Performa 405, 430, and 450 Have in Common

- Complete system. The computer (the main unit), color display (monitor), keyboard, mouse, fax/data modem, microphone, and software are all included. You need no additional software or cables to begin using a Performa 405, 430, or 450. In addition, these models are packed in a single box: computer, display, and accessories all in one carton.

- Ease of use. Like all Apple Macintosh computers, these Performa models are easy to set up, learn, and use.

- Software already installed. All three models feature System 7.1P, disability access features, At Ease, Macintosh PC Exchange, Launcher, and a selection of productivity and communication software.

- Compatibility. Each of these Performa models has a built-in SuperDrive, which can read disks from Macintosh, Apple II, MS-DOS, and Windows computers. AppleTalk is built in to every model.

- Service & Support. All three models feature one year limited warranty, one year free in-home service, and a toll-free help line.

How They Differ

The following table summarizes the differences among the three models, as well as the Performa 400, 600, and 600CD.

	400	405	430	450	600	600CD
Processor	68030	68030	68030	68030	68030	68030
Clock speed	16 MHz	16 MHz	16 MHz	25 MHz	32 MHz	32 MHz
FPU Socket	No	No	No	Yes	Yes	Yes
Std. RAM	4MB	4MB	4MB	4MB	4MB	5MB
Max. RAM	10MB	10MB	10MB	36MB	68MB	68MB
Std. Hard Drive	80MB	80MB	120MB	120MB	160MB	160MB
Display	Separate	Included	Included	Included	Separate	Separate
VRAM	512K	256K	512K	512K	512K	1MB
Colors	256	16	256	256	256	32,000
Dot Pitch	.39mm/.29mm	.39mm	.39mm	.29mm	.29mm	.29mm
Slots	1 PDS	1 PDS	1 PDS	1 PDS	1 PDS & 3 NuBus	1 PDS & 3 NuBus
Keyboard	Standard	Standard	Standard	Standard	Extended	Extended

NOTE: Performa 400 = Macintosh LC II with 512K video RAM.
Performa 405 = Macintosh LC II with an external modem.
Performa 430 = Macintosh LC II with 512K video RAM and external modem.
Performa 450 = Macintosh LC III with an external modem.
Performa 600 = Macintosh IIvx without the 68882 math coprocessor.

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Tech Info Library Article Number:11948

Tech Info Library

Performa 405: Specifications (7/94)

Revised: 7/26/94
Security: Everyone

Performa 405: Specifications (7/94)

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Article Created: 12 April 1993
Article Reviewed/Updated: 26 July 1994

TOPIC ----------

This article provides technical specifications for the Macintosh Performa 405 computer.

DISCUSSION ----------

Microprocessor

- MC68030, 32-bit architecture, 16 MHz clock speed
- CMOS custom clock/calendar with long-life lithium battery

Memory

- 4MB RAM on logic board, expandable to 10MB via two SIMM slots
- 256K Video RAM (VRAM) for 16 colors on the Apple Performa Display
  VRAM expandable to 256 colors

Video Display

- Apple Performa Display standard:
  - 14-inch color display
  - 640 x 480 pixels
  - 0.39mm dot pitch
  - Meets international magnetic-field emissions guidelines (SWEDAC MPR2)

Storage

- One internal SuperDrive 1.4MB high-density floppy-disk drive, reads disks from Macintosh, Apple II, MS-DOS, and Windows systems
- One internal 80MB SCSI hard disk drive
- Optional external SCSI hard disk drive (many capacities available)

- Optional external AppleCD CD-ROM drive

Modem

- TelePort/Bronze for Macintosh Performa
  (from Global Village Communication, Inc.)
- GlobalFax software (send-only fax) for 9600-baud faxing from any application
  to fax machines worldwide (upgradable to receive fax via software)
- Modem also serves as 300/1200/2400-baud data modem
- No separate power adapter required

Power Input

- Line voltage: 90 to 240 volts AC, RMS automatically configured
- Frequency: 47 to 63 Hz single phase
- Power: 50 watts maximum, not including display power

Interfaces

- One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other
  devices daisy-chained through a low-speed, synchronous serial bus
- Two serial (RS-232/RS-422) ports, 230 kilobits per second maximum
  (up to 0.920 megabits per second if clocked externally)
- SCSI interface for connecting up to six external devices
- Video port supports RGB and monochrome monitors of various sizes and
  resolutions
- Sound output port capable of delivering monophonic sound to both
  channels of a stereo device
- Sound input port for monaural sound input (monaural 8-bit sound, sampled
  at 22 or 11 kHz)
- Internal expansion slot for one processor-direct expansion card

Keyboard and Mouse

- Apple Desktop Bus (ADB) keyboard with numeric keypad and two-level tilt
  adjustment
- Apple ADB Mouse II

Apple Desktop Bus Power Requirements

- Maximum current draw for all ADB devices: 200 milliamperes (mA)
- Recommended maximum of three ADB devices
- Mouse draws 10 mA
- Keyboard draws 25 mA

Microphone

- Hands-free omnidirectional electret microphone included

Sound Generator

Custom sound chip, including mono sampling generator capable of driving stereo
miniature phone jack headphones, or stereo equipment by sending the same output

into each channel.

Software

- Macintosh System Software version 7.1P, designed specifically for Performa computers.
- At Ease software lets adults share the computer with children -- while protecting valuable data.
- Macintosh PC Exchange lets you work with MS-DOS and Windows disks.
- Application software: a selection of productivity and communication tools already installed on the hard drive.

Disability Access

- CloseView, Easy Access, and "visible beep" software are built in.
- Third-party options provide other alternative input and output devices

Size and Weight

- Main Unit
  Weight: 8.8 lb. (4.0 kg)
  Height: 3.0 inches (77 mm)
  Width: 12.2 inches (310 mm)
  Depth: 15.0 inches (382 mm)
- Mouse
  Weight: 6 oz. (0.17 kg)
  Height: 1.1 inches (27.9 mm)
  Width: 2.1 inches (53.3 mm)
  Depth: 3.8 inches (96.5 mm)
- Keyboard
  Weight: 2 lb. (1 kg)
  Height: 1.8 inches (44 mm)
  Width: 16.5 inches (418 mm)
  Depth: 5.6 inches (142 mm)

Environment

- Operating temperature: 10 to 40° C (50 to 104° F)
- Storage temperature: -40 to 47° C (-40 to 116.6° F)
- Relative humidity: 20% to 80% (noncondensing)
- Maximum altitude: 3048 m (10,000 ft.)

Service and Support

- One year limited warranty
- One year free in-home service
- Toll-free help line
- Support for non-Apple software is provided by the respective software publishers.

Article Change History:
26 Jul 1994 - Expanded information on sound generation.

..TIL11949-Performa_405-Specifications_7-94.pdf

Support Information Services

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Tech Info Library Article Number:11949

Tech Info Library

Performa 430: Specifications (7/94)

Revised: 7/26/94
Security: Everyone

Performa 430: Specifications (7/94)

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Article Created: 12 April 1993
Article Reviewed/Updated: 26 July 1994

TOPIC ----------

This article provides technical specifications for the Macintosh Performa 430 computer.

DISCUSSION ----------

Microprocessor

- MC68030, 32-bit architecture, 16 MHz clock speed
- CMOS custom clock/calendar with long-life lithium battery

Memory

- 4MB RAM on logic board, expandable to 10MB via two SIMM slots
- 512K Video RAM (VRAM) for 256 colors on the Apple Performa Display

Video Display

- Apple Performa Display standard:
  - 14-inch color display
  - 640 x 480 pixels
  - 0.39mm dot pitch
  - Meets international magnetic-field emissions guidelines (SWEDAC MPR2)

Storage

- One internal SuperDrive 1.4MB high-density floppy-disk drive, reads disks from Macintosh, Apple II, MS-DOS, and Windows systems
- One internal 120MB SCSI hard disk drive
- Optional external SCSI hard disk drive (many capacities available)
- Optional external AppleCD CD-ROM drive

Modem

- TelePort/Bronze for Macintosh Performa
  (from Global Village Communication, Inc.)
- GlobalFax software (send-only fax) for 9600-baud faxing from any application to fax machines worldwide (upgradable to receive fax via software)
- Modem also serves as 300/1200/2400-baud data modem
- No separate power adapter required

Power Input

- Line voltage: 90 to 240 volts AC, RMS automatically configured
- Frequency: 47 to 63 Hz single phase
- Power: 50 watts maximum, not including display power

Interfaces

- One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other devices daisy-chained through a low-speed, synchronous serial bus
- Two serial (RS-232/RS-422) ports, 230 kilobits per second maximum (up to 0.920 megabits per second if clocked externally)
- SCSI interface for connecting up to six external devices
- Video port supports RGB and monochrome monitors of various sizes and resolutions
- Sound output port capable of delivering monophonic sound to both channels of a stereo device
- Sound input port for monaural sound input (monaural 8-bit sound, sampled at 22 or 11 kHz)
- Internal expansion slot for one processor-direct expansion card

Keyboard and Mouse

- Apple Desktop Bus (ADB) keyboard with numeric keypad and two-level tilt adjustment
- Apple ADB Mouse II

Apple Desktop Bus Power Requirements

- Maximum current draw for all ADB devices: 200 milliamperes (mA)
- Recommended maximum of three ADB devices
- Mouse draws 10 mA
- Keyboard draws 25 mA

Microphone

- Hands-free omnidirectional electret microphone included

Sound Generator

Custom sound chip, including mono sampling generator capable of driving stereo miniature phone jack headphones, or stereo equipment by sending the same output into each channel.

Software

- Macintosh System Software version 7.1P, designed specifically for Performa computers.
- At Ease software lets adults share the computer with children -- while protecting valuable data.
- Macintosh PC Exchange lets you work with MS-DOS and Windows disks.
- Application software: a selection of productivity and communication tools already installed on the hard drive.

Disability Access

- CloseView, Easy Access, and "visible beep" software are built in.
- Third-party options provide other alternative input and output devices

Size and Weight

- Main Unit
  Weight: 8.8 lb. (4.0 kg)
  Height: 3.0 inches (77 mm)
  Width: 12.2 inches (310 mm)
  Depth: 15.0 inches (382 mm)
- Mouse
  Weight: 6 oz. (0.17 kg)
  Height: 1.1 inches (27.9 mm)
  Width: 2.1 inches (53.3 mm)
  Depth: 3.8 inches (96.5 mm)
- Keyboard
  Weight: 2 lb. (1 kg)
  Height: 1.8 inches (44 mm)
  Width: 16.5 inches (418 mm)
  Depth: 5.6 inches (142 mm)

Environment

- Operating temperature: 10 to 40° C (50 to 104° F)
- Storage temperature: -40 to 47° C (-40 to 116.6° F)
- Relative humidity: 20% to 80% (noncondensing)
- Maximum altitude: 3048 m (10,000 ft.)

Service and Support

- One year limited warranty
- One year free in-home service
- Toll-free help line
- Support for non-Apple software is provided by the respective software publishers.

Article Change History:
26 Jul 1994 - Expanded information on sound generation.

Support Information Services

..TIL11950-Performa_430-Specifications_7-94.pdf

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Tech Info Library Article Number:11950

Tech Info Library

Performa 450: Specifications (7/95)

Revised: 7/7/95
Security: Everyone

Performa 450: Specifications (7/95)

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Article Created: 12 April 1993
Article Reviewed/Updated: 7 July 1995

TOPIC ----------

This article provides technical specifications for the Macintosh Performa 450 computer.

DISCUSSION ----------

Microprocessor
==========
• MC68030, 32-bit architecture, 25 MHz clock speed
• Socket for optional 68882 FPU
• CMOS custom clock/calendar with long-life lithium battery

Memory
======
• 4 MB RAM on logic board, expandable to 36 MB via one 72-pin SIMM slot
• 512K Video RAM (VRAM) for 256 colors on the Apple Performa PLUS Display.
. VRAM is expandable to 768K for 32,000 colors.

Video Display
==========
• Apple Performa Plus Display standard:
. - 14-inch color display
. - 640 x 480 pixels
. - 0.29mm dot pitch
. - Meets international magnetic-field emissions guidelines
. (SWEDAC MPR2)

Storage
=======
• One internal SuperDrive 1.4 MB high-density floppy-disk drive, reads disks
. from Macintosh, Apple II, MS-DOS, and Windows systems
• One internal 120MB SCSI hard disk drive

• Optional external SCSI hard disk drive (many capacities available)
• Optional external AppleCD CD-ROM drive

Modem

• TelePort/Bronze for Macintosh Performa
. (from Global Village Communication, Inc.)
• GlobalFax software (send-only fax) for 9600-baud faxing from any application
. to fax machines worldwide (upgradable to receive fax via software)
• Modem also serves as 300/1200/2400-baud data modem
• No separate power adapter required

Power Input

• Line voltage: 90 to 240 volts AC, RMS automatically configured
• Frequency: 47 to 63 Hz single phase
• Power: 50 watts maximum, not including display power

Interfaces

• One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other
. devices daisy-chained through a low-speed, synchronous serial bus
• Two serial (RS-232/RS-422) ports, 230 kilobits per second maximum
. (up to 0.920 megabits per second if clocked externally)
• SCSI interface for connecting up to six external devices
• Video port supports RGB and monochrome monitors of various sizes and
. resolutions
• Sound output port capable of delivering monophonic sound to both
. channels of a stereo device
• Sound input port for monaural sound input
. (monaural 8-bit sound, sampled at 22 or 11 kHz)
• Internal expansion slot for one processor-direct expansion card

Keyboard and Mouse

• Apple Desktop Bus (ADB) keyboard with numeric keypad and two-level tilt
. adjustment
• Apple ADB Mouse II

Apple Desktop Bus Power Requirements

• Maximum current draw for all ADB devices: 200 milliamperes (mA)
• Recommended maximum of three ADB devices
• Mouse draws 10 mA
• Keyboard draws 25 mA

Microphone

• Hands-free omnidirectional electret microphone included

Sound Generator

Custom sound chip, including mono sampling generator capable of driving stereo miniature phone jack headphones, or stereo equipment by sending the same output into each channel.

Software

- Macintosh System Software version 7.1P, designed specifically for Performa computers.
- At Ease software lets adults share the computer with children -- while protecting valuable data.
- Macintosh PC Exchange lets you work with MS-DOS and Windows disks.
- Application software: a selection of productivity and communication tools already installed on the hard drive.

Disability Access

- CloseView, Easy Access, and "visible beep" software are built in.
- Third-party options provide other alternative input and output devices

Size and Weight

Main Unit

Weight: 8.8 lb. (4.0 kg)
Height: 3.0 inches (77 mm)
Width: 12.2 inches (310 mm)
Depth: 15.0 inches (382 mm)

Mouse

Weight: 6 oz. (0.17 kg)
Height: 1.1 inches (27.9 mm)
Width: 2.1 inches (53.3 mm)
Depth: 3.8 inches (96.5 mm)

Keyboard

Weight: 2 lb. (1 kg)
Height: 1.8 inches (44 mm)
Width: 16.5 inches (418 mm)
Depth: 5.6 inches (142 mm)

Environment

- Operating temperature: 10 to 40° C (50 to 104° F)
- Storage temperature: -40 to 47° C (-40 to 116.6° F)
- Relative humidity: 20% to 80% (noncondensing)
- Maximum altitude: 3048 m (10,000 ft.)

Service and Support

- One year limited warranty

- One year free in-home service
- Toll-free help line
- Support for non-Apple software is provided by the respective software
. publishers.

Article Change History:
07 Jul 1995 - Corrected information about number of SIMM slots.
26 Jul 1994 - Expanded information on sound generation

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:11951

Tech Info Library

LaserWriter Pro: Lower Rollers Before Printing (4/93)

Revised: 4/16/93
Security: Everyone

LaserWriter Pro: Lower Rollers Before Printing (4/93)

==========

Article Created: 9 April 1993

TOPIC ----------

This article describes how to make a new LaserWriter Pro ready for printing by lowering the fuser pressure rollers.

DISCUSSION ----------

All LaserWriter Pro printers are shipped from the factory with their fuser pressure rollers in the up position to prevent fuser rollers from developing flat spots during long-term storage. The fuser rollers must be lowered before printing to ensure good print quality. If you print to the LaserWriter Pro with its fuser rollers raised in their shipping position, the toner on your documents will not fuse properly and may easily be scraped or wiped from your documents.

To lower the fuser pressure rollers:

1) Open the fuser assembly doors on the left side of the printer and remove the packing materials.

2) Locate the fuser assembly levers located on either side of the metal frame that supports the lower fuser roller.

3) Lower the fuser assembly levers (you will have to push firmly) all the way to the bottom of their travel.

4) Close the fuser assembly doors and begin printing.

This procedure is also described and illustrated on page 6 of the LaserWriter Pro User's Guide.

..TIL11952-LaserWriter_Pro-Lower_Rollers_Before_Printing_4-93.pdf

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11952

A/UX 3.0: Secure Startup and auxstartuprc (4/93)

Revised: 4/16/93
Security: Everyone

A/UX 3.0: Secure Startup and auxstartuprc (4/93)

==========

Article Created: 8 April 1993

TOPIC ----------

A/UX 3.0 Macintosh partition doesn't show on the desktop when logged in as anything but the root. I went into the startup shell, as it says to do in the TIL article, and the password check option was already off. When we rebooted A/UX and logged in as a user we still couldn't see the Macintosh partition.

Is there somewhere else that might be storing this bit or is there some preferences file we could throw away?

DISCUSSION ----------

The problem might be the existence of the /etc/auxstartuprc file in the system.

According to the manual pages of auxstartuprc(4), "whether the /etc/auxstartuprc file is empty or not, and whether A/UX Startup has Password checking disabled or not, the EXISTENCE of /etc/auxstartuprc causes the A/UX Finder to suppress the display of a desktop icon for the Macintosh volume residing on the root disk, for normal users except the 'root' account."

If the /etc/auxstartuprc exists and is EMPTY, and Password checking in A/UX Startup is disabled, the /etc/auxstartuprc file will automatically be removed by A/UX Startup. If the Password checking is enabled, the empty /etc/auxstartuprc file will be re-created.

Note that a non-empty /etc/auxstartuprc file will never be removed by A/UX Startup even if the Password checking is disabled.

If you don't need a secure A/UX Startup, and you give any user total access

to A/UX Startup and the Macintosh volume on the root disk, do the following:

- Disable Password checking
- Remove /etc/auxstartuprc, or rename it

See auxstartuprc (4) NOTES for more information.

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Tech Info Library Article Number:11953

Tech Info Library

IBM PC: Cable Pinouts to LaserWriter Pro (4/93)

Revised: 4/12/93
Security: Everyone

IBM PC: Cable Pinouts to LaserWriter Pro (4/93)

==========

Article Created: 7 April 1993

TOPIC ----------

What are the pinouts for the cables connecting an IBM PC to a LaserWriter Pro?

DISCUSSION ----------

Here are the pinouts:

```
       CPU            Printer

    DB-9 Female      DB-9 Male

         1------------7&8
         2------------3
         3------------2
         4------------6
         5------------5
         6------------4
        7&8-----------1
```

Hee are the Pin Assignments for the IBM DB-9 and LaserWriter Pro DB-9
1 DCD
2 RxD
3 TxD
4 DTR
5 SG
6 DSR
7 RTS

8 CTS
9 Ring Indicator (not implemented)

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11954

Tech Info Library

Language Kits: Language Registers (2/95)

Revised: 2/22/95
Security: Everyone

Language Kits: Language Registers (2/95)

==========

Article Created: 12 April 1993
Article Reviewed/Updated: 22 February 1995

TOPIC -----

This article describes the Japanese Language Register, however, please note that the same applies for the registers that come with the Chinese Language Kit.

DISCUSSION -----

The Japanese Language Register is an application which ships with the Japanese Language Kit. This application is installed in the Apple Extras folder, which is located at the root level of the hard disk drive.

Application programs contain a language and region code that tells the system which script (writing system) and font to use for menus, dialog boxes, help balloons, and other items.

Some programs, however, did not properly set these codes. As a result, some Japanese programs which are launched under the Japanese Language Kit will have menus, dialog boxes, and other text strings which are unreadable.

This problem can be remedied by "registering" these applications with the Japanese Language Register. By either selecting the application through the standard file dialog box or by "dragging and dropping" the application icon to the Japanese Language Register icon, the correct language and region information will be stored in a database found in the Language Kit Preferences file.

Once these applications with unreadable menus are registered, the correct language and region information is used, so text is displayed correctly. Applications only need to be registered once, as long as the Language Kit Preferences file is not lost.

Article Change History:
22 Feb 1995 - Changed article to include all Language Kits.

..TIL11957-Language_Kits-Language_Registers_2-95.pdf

Support Information Services

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Tech Info Library Article Number:11957

Tech Info Library

LaserWriter Pro: Line Frequency and Gray Levels (4/94)

Revised: 4/18/94
Security: Everyone

LaserWriter Pro: Line Frequency and Gray Levels (4/94)

==========

Article Created: 8 April 1993
Article Reviewed/Updated: 18 April 1994

TOPIC ----------

What is the highest line frequency and number of gray levels that the LaserWriter Pro can support (with PhotoGrade) at 300 and 600 DPI?

DISCUSSION ----------

The LaserWriter Pro supports five settings via the LaserWriter Utility 7.4 when PhotoGrade is turned on. Here are the numbers:

Far right:	Frequency: 150 lpi;	Screen Angle: 0 degrees
Middle right:	Frequency: 106 lpi;	Screen Angle: 45 degrees
Center:	Frequency: 83 lpi;	Screen Angle: 56 degrees
Middle left:	Frequency: 75 lpi;	Screen Angle: 0 degrees
Far Left:	Frequency: 53 lpi;	Screen Angle: 45 degrees

Note: lpi = lines per inch.

PhotoGrade at 300 DPI supports 91 gray levels when the frequency is 53 lpi and the screen angle is 45 degrees. In the 600 DPI mode the frequency is 85 lpi and the screen angle is 45 degrees.

PhotoGrade is not available when printing at 600 DPI; however, it is possible to get 33 gray levels at 106 lpi when using PhotoGrade at 300 dpi.

Article Change History:
18 April 1994 - Clarified last statement about gray levels at 106 lpi.

Support Information Services

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Tech Info Library Article Number:11958

Tech Info Library

Language Kits: Viewing Files/Folders in Japanese/Chinese (2/95)

Revised: 2/22/95
Security: Everyone

Language Kits: Viewing Files/Folders in Japanese/Chinese (2/95)

==========

Article Created: 12 April 1993
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

How do I display my files and folder names in Japanese or Chinese after installing one of the Language Kits on my Macintosh computer which is running System 7.1 (or higher)?

DISCUSSION ----------

After installing one of the Language Kits on your System 7.1 or higher Macintosh computer, change the Views control panel font to either a Japanese or Chinese font so that file and folder names appear correctly.

The font which is currently selected may not be appropriate for the Language Kits. For example, many people use the Geneva font for file and folder names, but Geneva only contains characters for English and other languages that use the Roman character set (such as French, Spanish, and German).

The Osaka font contains Japanese characters as well as most commonly used Roman characters. Selecting Osaka in the Views control panel will make Japanese filenames readable.

Beijing and Taipei fonts contain Chinese characters as well as the most commonly used Roman characters. Selecting one of these fonts in the Views control panel will make Chinese file and folder names readable.

There is a side effect of choosing a Language Kit font in the Views control panel: certain accented characters and symbols (é and ™) will be replaced by other characters. This occurs because the Language Kit fonts have a different character mapping of the upper ASCII table than Roman fonts.

Article Change History:
22 Feb 1995 - Changed article to include all Language Kits.

Support Information Services

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Tech Info Library Article Number:11959

Language Kits: Kanji Bitmap Fonts (2/95)

Revised: 2/22/95
Security: Everyone

Language Kits: Kanji Bitmap Fonts (2/95)

==========

Article Created: 12 April 1993
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

This article gives information about Kanji Bitmap fonts.

DISCUSSION ----------

Both the Chinese and Japanese Language Kits include bitmap fonts. The font file icons are identified by the Kanji character "kan" with the circle behind it. They are sometimes referred to as "fbit/fdef" fonts because the font resource is tagged "fbit" and the code necessary to process these fonts were stored as a "fdef" resource.

Typically, each font is divided into two files, L1 and L2. These two files correspond to the Industry Standard Level 1 and Level 2 standard for the Japanese and Chinese character sets. These two font files contain a range of bitmap sizes for that font (for example: 10, 12, 14, 18, 24 points). In some cases, however, each file has only one point size and is appropriately labeled as such.

The InputBackSupport extension provides backwards compatibility with system 6.x (KanjiTalk for example) input methods and fbit/fdef bitmap fonts. Unless this extension is installed, the Kanji bitmap fonts provided with the kits will have garbled characters which typically include black squares.

These fonts must be located at the root level of the system folder, NOT in the Fonts folder. These fonts are not kept in the Fonts folder for compatibility reasons.

Support Information Services

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Tech Info Library Article Number:11960

Tech Info Library

Fonts: Terminology (4/93)

Revised: 4/21/93
Security: Everyone

Fonts: Terminology (4/93)

==========

Article Created: 6 April 1993

TOPIC --------------------

When using a TrueType font, Times Roman for instance, and I chose to make it bold, does the printer select a true Times bold font? Or does it just make the plain version bolder?

DISCUSSION --------------------

To work with fonts in your application, you need to understand some basic font definitions. The following definitions are those used in the LaserWriter Reference and Inside Macintosh manuals.

- Intrinsic font: A font whose characteristics are entirely defined in a FONT or NFNT resource. The plain style of any family is an intrinsic font. Other styles may or may not be intrinsic. QuickDraw or the LaserWriter can use an intrinsic font without modification.

- Derived font: A font whose characteristics are partially determined by modifying an intrinsic font. A derived font might be one whose characters are slanted to achieve an italic style.

- Style: The characteristics other than size that uniquely define the fonts of a single font family. Times bold and Times italic are two styles of the Times font family.

Let us assume you are printing some italicized text. The LaserWriter driver may choose an intrinsic font (if available) or modify the intrinsic font to achieve the derived style. For example, Times Italic is an intrinsic font and Avant Garde Book Oblique is a derived font.

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Tech Info Library Article Number:11961

Tech Info Library

VM DAL Server and Non-IBM TCP/IP Connection (4/93)

Revised: 4/16/93
Security: Everyone

VM DAL Server and Non-IBM TCP/IP Connection (4/93)

==========

Article Created: 13 April 1993

TOPIC ----------

I'm working on a project to hook a number of Macintosh computers to an IBM mainframe SQL/DS data base under VM using DAL over TCP/IP. The challenge is the TCP/IP package on the IBM hosts is NOT from IBM but from a company called Fibronics, K2000 KNET TCP/VM.

I have an evaluation copy of the DAL server for VM, and installed it on the host, but the network connection does not work. Installation and verification have been completed successfully at the host side. Now, any virtual machine can select data from SQL using IDAL at the host side. Should these files be copied to any service VM or KNET virtual machine? (KNET/VM is Fibronics software similar to TCP/IP VM). I have no idea if KNET has the necessary socket interface for SQL connection. Would it be necessary to copy DAL Server files to TCP/IP VM, if we would have IBM's TCP/IP software and related hardware?

Here is additional information on the environment:

```
  Host:     IBM 3081
  OS:       VM/SP Release 5, HPO level 50 service level 520
            CMS release 5
  Database: SQL/DS version 2, release 2

  Host:     IBM ES 9000/320
  OS:       VM/ESA release 1.1, service level 0102
            CMS level 8, service level 101
  Database: VSE/SP CICS (MRPII)
```

Network configuration:
- 2 Ethernet
- 2 LocalTalk (connected to Ethernet via FASTPATH)

Mainframe connection:
FIBRONIC K2000 KNET TCP/VM
K2000 controller (Ethernet-IBM) channel attached.

KNET TCP/VM 3.1 is running in KNET VM to manage TCP/IP communication and provide TELNET and FTP services to Macintosh and PC over Ethernet which are using TELNET &FTP

Common protocol:
TCP/IP

DISCUSSION ----------

In answer to your questions:

- The only TCP/IP connection supported by DAL for VM is the "IBM TCP/IP Version 2 for VM" product. (Program Number 5735-FAL) See page 2 of the VM Install Guide, "System Requirements" for required products.

- The DAL product need only be installed on a disk which is accessible to all the users. It does not need to be copied to the TCP/IP Virtual Machine.

- The VM host file would need to be updated to contain the IP addresses of Macintoshes which will be allowed to access the DAL Server via the TCP/IP connection. These addresses will be verified by the REXEC Daemon before the DAL TCP/IP connection is allowed.

Since the IBM product is a requirement for TCP/IP access to the DAL VM Server, we're afraid that you will have to purchase that product to use TCP/IP to access the server. The other 3270 connections (SNA•ps, MacMainFrame, Netway, and so on) would be supported without any additional host requirements.

By the way, there is a difference between VM/SP and VM/ESA systems as related to SQL/DS. VM/SP supports the "connect to database" feature of SQL/DS. VM/XA and VM/ESA do not.

Therefore, for DAL installations in VM/ESA sites, the access module (CL1DBI01) may need to be changed to comment out the "connect to database" commands. Whether this is required is a function of your SQL/DS environment, some sites can prep and assemble the module without having to comment out the commands.

This constraint of the VM/ESA operating system means that the DAL 'Open Database' command needs to reference a special database name that tells DAL not to attempt to issue a "connect to database" SQL command ('@sql'), rather than the actual database name.

This special database name (@sql) should be the only one listed in the Environment File in the SSID= field. Sites with VM/ESA have only a single database name available under SQL/DS, but that name cannot be listed in the

Environment File or DAL will attempt to use it in a "connect to database" command, which will fail.

The format of the DAL 'Open Database' command is:

```
open database '@sql';
```

Rather than:

```
open database 'database name';
```

Which would be used in a VM/SP environment.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11962

Tech Info Library

A/UX 3.0 and Telnet Receiving Two Mail Notices (4/93)

Revised: 4/16/93
Security: Everyone

A/UX 3.0 and Telnet Receiving Two Mail Notices (4/93)

==========

Article Created: 12 April 1993

TOPIC ----------

I have been receiving two mail notices whenever I connect to A/UX 3.0 with telnet.

DISCUSSION ----------

We looked at the A/UX 3.0 source code and this is what we found:

- The first "You have mail" message, is generated by the process remlogin, which is called by the in.telnetd process when a telnet login is performed.

- The second "You have mail" message is displayed by the initialization scripts during the login sequence. Both /etc/profile and /etc/cshrc check for mail.

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Tech Info Library Article Number:11964

Tech Info Library

Language Kits: Inline Support (2/95)

Revised: 2/15/95
Security: Everyone

Language Kits: Inline Support (2/95)

==========

Article Created: 13 April 1993
Article Reviewed/Updated: 15 February 1995

TOPIC -----

When inputting Japanese or Chinese text into a Japanese or Chinese TeachText document or into the Finder (including control panels) using the Japanese or Chinese Language Kit the text does not show up inline like in KanjiTalk 7. Why not?

DISCUSSION -----

The inline text feature is not available in the Japanese or Chinese Language Kits because the Text Services Manager Text Edit (TSMTE) patches are not included with the Kits. Thus, inline text support is not available for TeachText, the Finder, or any other application that relies on Text Edit system routine for text input.

However, Japanese or Chinese text can still be input using the standard input window. In addition, applications that implement their own inline code or utilize the Text Services Manager will provide inline support under the Japanese or Chinese Language Kits.

Article Change History:
15 Feb 1995 - Added Chinese Language Kit info.

Support Information Services

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Tech Info Library Article Number:11965

Language Kits: Language Kit Extension (2/95)

Revised: 2/15/95
Security: Everyone

Language Kits: Language Kit Extension (2/95)

==========

Article Created: 13 April 1993
Article Reviewed/Updated: 14 February 1995

TOPIC --------------------

What is the Language Kit Extension?

DISCUSSION --------------------

The Language Kits come with the Language Kit extension. This extension provides system support for the integration of scripts (writing systems, or alphabets) other than the primary script. It provides a mechanism for applications to show the menu bar, title bar name, and file names in the Standard File dialog.

Specifically, for the Japanese Language Kit, this extension allows Japanese text to show up in Japanese application menu bar, the document title bar, and the Standard File Open and Save dialogs. The Language Kit Extension uses the Japanese Support extension to provide the proper user interface in Japanese. The same is true of the Chinese Language Kit.

Note:
In the standard Open and Save file dialogs, the file names shown in the scrolling field and text box will show in Japanese only if a Japanese font is selected (in Chinese if a Chinese font is selected) in the Views control panel. Otherwise, the text will be unreadable.

Article Change History:
15 Feb 1995 - Made article more general for all language kits.

Support Information Services

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Tech Info Library Article Number:11966

Language Kits: Script Preference (2/95)

Revised: 2/22/95
Security: Everyone

Language Kits: Script Preference (2/95)

==========

Article Created: 13 April 1993
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

How can I view my filenames in Japanese or Chinese instead of English after installing one of the Language Kits?

DISCUSSION ----------

The Language Kits create a multiscript system. A system with one of the Language Kits installed now has a choice between English and that language for certain system functions such as sorting or entering text.

The following describes the preferences of one script (writing system or alphabet) over the other (the Japanese Language Kit is used in the example):

In the standard file Open and Save dialog box, the filenames are displayed in the font selected in the Views control panel. If a user wants to view Japanese filenames, a Japanese font needs to be selected. The Views control panel selection also affects the text which can be entered in the text box.

Within a Finder window or the standard file Open and Save dialog box, the system sorts icon names based on the primary script. For example, on an Arabic system, the Arabic sort order will be used. Thus, the sorting will be different from a Japanese system.

Icon names can be edited in either Japanese or English. However, the Views control panel must be set to a corresponding font. In order to edit or to view a file name with Kotoeri, the Japanese Language Kit input method, a Japanese font such as Osaka must be selected in the Views control panel. Otherwise, the Kotoeri input method will be grayed out in the Keyboard menu.

Article Change History:
22 Feb 1995 - Changed article to include all Language Kits.

..TIL11967-Language_Kits-Script_Preference_2-95.pdf

Support Information Services

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Tech Info Library Article Number:11967

Tech Info Library

Language Kits: Unreadable Text (2/95)

Revised: 2/22/95
Security: Everyone

Language Kits: Unreadable Text (2/95)

==========

Article Created: 13 April 1993
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

This article discusses why text may appear unreadable in the Chinese or Japanese Language Kits. The discussion below uses the Japanese Language Kit as an example.

DISCUSSION ----------

When the Japanese Language Kit is installed, there are instances when Japanese text is unreadable (for example: Ç±ÇΔÇ¶ÇË). This situation occurs when an English font is used for Japanese text. In some instances, the problem can be fixed, in others not.

Japanese Font System Basics

Please check the following basic points to make sure the Japanese font system is complete:

Kanji Bitmap Fonts In Root Level Of System Folder

The "fbit/fdef" Kanji bitmap fonts (the one with the Kanji character "kan" and the circle behind it icon) are located at the System Folder root level (not Fonts folder). At minimum, the Osaka (*Beijing* or Taipei for Chinese Language Kit) font must be installed.

InputBackSupport in Extensions

The InputBackSupport extension is installed in the Extensions folder.

Make Unreadable Fonts Readable

Following are situations where unreadable Japanese text can be made readable:

Filenames In Finder Windows:

Open the Views control panel and select a Japanese font (for example, Osaka). Note: There is a side effect in choosing a Japanese font in the Views control panel. Certain accented character and symbols (é and ™) will be replace by another character. This occurs because Japanese fonts have a different character mapping of the upper ASCII table than Roman fonts.

Japanese Application Menu Bar And Dialog Boxes:

Applications have a resource that tells the system for which language the application was written. The system uses the information to select the appropriate font. In some case, this resource was not properly set and the system has assumed English as the application's language. Use the Japanese Language Register (or Chinese Language Register) application to register the application as Japanese (or Chinese). NOTE: Some applications hard-code the font to be used, for example in text entry window or font list. In this case, the Japanese Language Register will not correct this misused font.

Unreadable Text That Cannot Be Made Readable

The following are situations where Japanese text shows up as unreadable and there is no fix:

Unreadable Text In Menus And Dialog Boxes

Unreadable text will occur in the menus and dialog boxes. For example, the Applications Menu showing an application with a Japanese name. These areas of the system were not designed to support multiple scripts (writing systems). You will see this with the Kotoeri alert messages. The alert dialog box routine uses the primary script to display the message.

Article Change History:
22 Feb 1995 - Changed article to include all Language Kits.

Support Information Services

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Tech Info Library Article Number:11968

Tech Info Library

System 7: Optimizing Hard Disk Space with Virtual Memory (4/93)

Revised: 4/23/93
Security: Everyone

System 7: Optimizing Hard Disk Space with Virtual Memory (4/93)

==========

Article Created: 14 April 1993

TOPIC ----------

I attempted to free up some space on my hard drive, so I dragged more than 7MB of files into the Trash. Even after I emptied the Trash, the Finder showed less than 1MB free. Can you explain?

DISCUSSION ----------

Look in the Control Panels folder under Memory. Check to see that you haven't set your Virtual Memory allocation to its maximum. If you turn Virtual Memory off (or down a bit), and restart the computer, you should have more free space on your hard drive.

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Tech Info Library Article Number:11971

Tech Info Library

At Ease 1.0 : Saving Existing Documents to Floppy (8/95)

Revised: 8/9/95
Security: Everyone

At Ease 1.0 : Saving Existing Documents to Floppy (8/95)

==========

Article Created: 14 April 1993
Article Reviewed/Updated: 08 August 1995

TOPIC ----------

I want to set up documents in At Ease so that when someone opens an existing document and modifies it, they are required to save it to floppy disk.

I have set "Require a floppy disk" in the At Ease control panel, but when someone opens the document, it can still be saved on the hard drive. What is the workaround?

DISCUSSION ----------

Existing documents opened with At Ease can be saved to the hard disk even when the "Require a floppy disk" option is enabled. The option of saving to a floppy applies only to saving new documents.

To make At Ease require a floppy disk to save an existing document, make the document a "Stationery pad". Here's how:

1) In the Finder, select the document

2) Choose "Get Info" from the File Menu

3) Click "Stationery pad".

A document marked as Stationery pad will be opened as a new document containing all the information of the original. The student can then make modifications and save document. At Ease will require a floppy disk when saving the document because it is a new copy of the original document.

Article Change History:

08 Aug 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:11972

Tech Info Library

A/UX 3.0 and Password Entry Error (4/93)

Revised: 4/20/93
Security: Everyone

A/UX 3.0 and Password Entry Error (4/93)

==========

Article Created: 14 April 1993

TOPIC -----

I'm running A/UX 3.0 and getting the following message when booting:

  banjo: syslog: getpwnam invalid name field:

When I hit OK, everything seemed fine. The message has gone away for now, but I've had to cut quite a bit out of my /etc/password file.

The original /etc/password file contained 172 lines of code, but the new one contains 28 lines.

I'm planning on restoring some of the userids not in the current file, but I would like to know what might be causing these error messages. I can't locate the offending entry.

DISCUSSION -----

The "... syslog: getpwnam: invalid name field:" message will be shown on the A/UX System Console window recorded by the "syslogd" deamon if there are any blank line(s) or the name filed(s) are white space(s).

Hence the blank line(s) and white space(s) field in /etc/passwd are not allowed.

We can reproduce this by inserting a blank line in the /etc/passwd file.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11976

Tech Info Library

ARA: Installing Software Remotely (4/93)

Revised: 4/20/93
Security: Everyone

ARA: Installing Software Remotely (4/93)

==========

Article Created: 16 April 1993

TOPIC ----------

I have a PowerBook Duo with an Express Modem. When I'm using my Duo remotely, I sometimes need to update software. However, the installer functions for the software being updating require you to quit all applications -- including ARA or other connection software. Is there a workaround for this problem?

DISCUSSION ----------

There does not seem to be any workaround to the problem of an ARA connection getting stopped by the Installer. There is a limit to what a "live" install can be expected to do. We assume you are asking this question because you can't download the software (no floppy adapter and drive, or no external hard drive) then perform the installation.

We came up with two similar procedures that still require downloading the software then doing the install, but at least they do not require any additional equipment:

- Depending on the amount of software that must be downloaded and the amount of RAM installed in the Duo, you could create a RAM disk to copy the software into, disconnect and quit ARA, then run the installation. The RAM disk still appears if you then restart with the Shift key down to disable extensions. This will increase the amount of RAM available for the Installer to run in. We successfully downloaded Microsoft Mail and installed it using a RAM disk on a Duo with 4MB of RAM.

- The RAM disk method isn't likely to work with a huge program like Word or Excel. We used disk partition software that comes with Norton Utilities. We created a couple of partitions on our hard drive and copied the

software into them. The nice thing about these kind of partitions is that they can be created and deleted on the fly. Although we didn't perform extensive testing, this method also appeared to work.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11977

Tech Info Library

Excel: Accessing Sybase Without DAL (4/93)

Revised: 4/20/93
Security: Everyone

Excel: Accessing Sybase Without DAL (4/93)

==========

Article Created: 15 April 1993

TOPIC ----------

Does the Data Access Macro, which comes with Microsoft Excel 4.0, only support databases accessible by DAL servers?

Is code available -- macros, add-ins, drivers -- which provide data access using the Sybase DB-Lib/Open Client driver? This should be an available option, since Microsoft's relational server product on Lan Manager is SQL Server from Sybase.

Is there support for data access via the Data Access Manager and thereby the Database extension for Open Client from ClearAccess?

DISCUSSION ----------

We checked with Microsoft and they only support the DAL Servers with their Data Access Macro.

They claim their macro is not DAM (Data Access Manager) compliant, and therefore would not support any of the other servers.

It is possible to use ClearAccess to actually access a far broader range of servers and platforms, and then paste the information into an Excel spreadsheet.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11978

Tech Info Library

DAL Server For VMS and VAX Cluster Arrangement (4/93)

Revised: 4/20/93
Security: Everyone

DAL Server For VMS and VAX Cluster Arrangement (4/93)

==========

Article Created: 15 April 1993

TOPIC ----------

Questions regarding the DAL server for VMS and Rdb:

- Do Pathworks and the DAL server software need to be on the same VAX as the Rdb dataset?
- What if the VAXes are clustered: can DAL be on VAX1 and Rdb or at least the data be on VAX2?
- If a distributed topology is allowed, are there performance or support drawbacks?

DISCUSSION ----------

The DAL Server and the Rdb DBMS server must both be on the same VAX in the cluster. This is an architectural constraint and is enforced by the installation process. The DAL Server cannot be installed if the DBMS server is not present on the same VAX system.

The Rdb data can be on a different VAX in the cluster as long as the data disks are sharable across the nodes in the cluster.

Performance would depend on network traffic load among the VAXes as well as load on each of the VAXes themselves. We would expect a minimal impact when DAL and the data are separated, ALL OTHER THINGS BEING EQUAL.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11979

Tech Info Library

MacTCP, Asanté, & Sperry Connectivity (4/93)

Revised: 4/20/93
Security: Everyone

MacTCP, Asanté, & Sperry Connectivity (4/93)

==========

Article Created: 15 April 1993

TOPIC ----------

I have several Macintosh computers with Asanté Ethernet cards connected to a Sperry computer. They are running a Sperry product called PEP, which came with MacTCP. Everything is working fine except on one Macintosh.

This is an original Macintosh II. There is no other Macintosh II in the building. The problem shows up when you try to connect to the Sperry: nothing connects.

If I try to use 'Ping' from this machine, nothing happens UNTIL you ping it from somewhere else. Then it works fine.

I have placed a Macintosh IIci in the same office on the same port and things work fine. I put a different Asanté card in the Macintosh II and that didn't work. I reinstalled most of the software, and still nothing worked.

DISCUSSION ----------

Your problem is most likely due to old Asanté Ethernet drivers. The current version of the drivers are included on their Universal Installer 5.1 disk. You can download it from the Third Parties board on AppleLink. Here is the path:

Third Parties
  Third Parties (A-G)
    Asanté Technologies
      Software Upgrades

If you have the latest Asanté drivers installed already, the next step is to use the Asanté installation diskette to remove the Asanté drivers. Once

removed, you should install Apple's Ethernet drivers. If you are running System 7, use the System 7 installation set and select EtherTalk Software from the customize option menu. If you are using System 6, then you will need to use the Network Software Installer version 1.2 or above, or the original EtherTalk Installer version 2.5.1.

Also use the Asanté TroubleShooter, a diagnostic program Asanté supplies on the Installation diskette. It checks the basic integrity of the Asanté card. Be sure the Bandwidth option collects packets.

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Tech Info Library Article Number:11980

Tech Info Library

LaserWriter Pro for Windows: Printing Problem (4/93)

Revised: 4/23/93
Security: Everyone

LaserWriter Pro for Windows: Printing Problem (4/93)

==========

Article Created: 16 April 1993

TOPIC ----------

I am using a LaserWriter Pro 600 for Windows, connected to a 33mhz 486 computer through the parallel port. I have the port switch set to 0. PostScript files print fine in the portrait mode. When I try to print them in landscape mode or print graphics, the document appears upside down and backwards. (I was using a Hewlett Packard 3P previously and it printed fine.)

I tried the drivers that came with my Pro 600 (600 and 300 dpi), and my original HP PostScript drivers, to no avail. When I reconnected my HP 3P printer, the documents printed fine in landscape mode with either driver. It also worked when I connected to a Linotronic printer. The problem only occurs when printing on the LaserWriter Pro 600.

DISCUSSION ----------

We believe this problem is related to the Windows PostScript driver (.WPD) because the .WPD files included in the "LaserWriter Pro Software for Windows" disk are only printer description files, and not drivers. The files just describe the specifications of the printer (tray capability, imageable area, etc.), so the PostScript code to render the actual image is produced by the Windows PostScript driver.

The latest version of the PostScript driver (PScript.DRV) is v3.55. Try reinstalling the driver, and then install the .WPD files again following the instructions in the LaserWriter Pro User's Guide. If the problem persists, we suggest you call Windows Technical Support directly. To locate a the phone number, search the Tech Info Library with "Windows and support".

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..TIL11981-LaserWriter_Pro_for_Windows-Printing_Problem_4-93.pdf

Tech Info Library Article Number:11981

Tech Info Library

Landscape vs. Portrait (4/93)

Revised: 4/16/93
Security: Everyone

Landscape vs. Portrait (4/93)

==========

Article Created: 16 April 1993

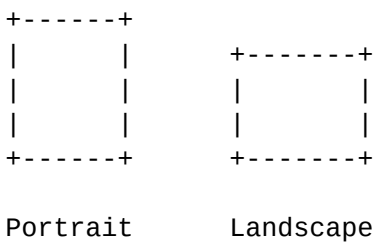
TOPIC --

In articles about displays, printers, and photographs I often read the terms "landscape" and "portrait." What do these terms mean?

DISCUSSION --

- Portrait is the vertical orientation, in which the display or image is higher than it is wide.

- Landscape is the horizontal orientation, where the display or image is wider than it is high.



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Tech Info Library Article Number:11983

Tech Info Library

Peachpit Press (4/93)

Revised: 7/15/93
Security: Everyone

Peachpit Press (4/93)

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Article Created: 16 April 1993
Article Reviewed/Updated: 15 July 1993

Peachpit Press

2414 Sixth St.
Berkeley, CA 94710

800-283-9444

510-548-4393

510-548-5991 Fax

Company Profile:
Publisher of computer-related books, including books about Macintosh and Performa computers.

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Tech Info Library Article Number:11984

Tech Info Library

CD-ROM: Making a Macintosh Start-Up Volume (4/93)

Revised: 4/16/93
Security: Everyone

CD-ROM: Making a Macintosh Start-Up Volume (4/93)

==========

Article Created: 5 April 1993

TOPIC ----------

What are the issues involved in making a CD-ROM volume from which a Macintosh can start up?

DISCUSSION ----------

The process of making a "bootable" CD is not trivial. The partition for the driver must be expanded -- from the HD default size of 16K to 32K -- and the CD-ROM driver must be written to that partition.

In addition, there are many portions of system software that expect to be able to write to the disk (for example, creating a preferences file) that it will obviously not be able to. Therefore, only minimal system software is included on the bootable CD-ROM. And special care must be taken to properly prepare the Desktop and Trash folders.

The boot blocks are the same as those on a hard disk, including the signature byte of "LK", indicating that the disk is bootable. An AppleCD 300i is not required to use a bootable CD. In order to make the boot process ignore the built-in hard disk, hold down the Shift, Option, Command, and Delete keys.

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Tech Info Library Article Number:11985

Tech Info Library

LaserWriter Pro and Select 310: PageMaker 4.2 and PPD (4/93)

Revised: 4/23/93
Security: Everyone

LaserWriter Pro and Select 310: PageMaker 4.2 and PPD (4/93)

==========

Article Created: 21 April 1993

TOPIC ----------

I have a LaserWriter Pro 630 and I'm using PageMaker 4.2. I realize that I need a new PPD to use the printer with PageMaker 4.2. I found the PPD on AppleLink, and placed it in my System Folder in the following location:

```
System Folder
  Aldus
     PPDs
```

PageMaker was not able to see it. I went back to AppleLink and I read that PageMaker wants to see .PPD at the end of the PPD file. I changed the name, but it still doesn't work. I get a message that says:

"Internal Error: Bad Printer Description file LASERWRITER PRO 630 V2010.PPD, line 53". Then next to the CONTINUE button it says 7304:5953.

DISCUSSION ----------

The problem is related to PageMaker 4.2 being unable to recognize PPD files of version spec 4. The PPD files for the LaserWriter Pro series and LaserWriter Select 310 are of version 4, and PageMaker 4.2 only recognizes version 3 files. The resolution is to upgrade to PageMaker 4.2a, which recognizes PPD spec 4 files.

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Tech Info Library Article Number:11987

Tech Info Library

LaserWriter Drivers: CRs & Generated PostScript Code (4/93)

Revised: 4/23/93
Security: Everyone

LaserWriter Drivers: CRs & Generated PostScript Code (4/93)

==========

Article Created: 21 April 1993

TOPIC ----------

The LaserWriter driver generates PostScript code that does not insert a carriage return (CR) every 128 characters or less automatically. This is a problem because VaxStations are unable to display or use these PostScript files. When they generate PostScript files on their Intel PCs using Windows, they do not experience this problem.

Efforts to resolve the problem:
The customer has a workaround that involves a couple of pages of instructions on reformatting the output in Microsoft Word. This is not a tenable solution since it is very cumbersome on their staff

DISCUSSION ----------

You are correct in stating that our LaserWriter drivers do not insert a carriage return (CR) every 128 characters. The carriage return is placed after a very large number, which we were unable to determine. Basically, this implementation design is because Macintoshes word-wrap lines that are too long.

We understand that this may be an issue with some computers (such as the VaxStations or the applications on them) so we will forward this information on to engineering as an enhancement request.

Theoretically, it should be fairly easy to modify the PostScript output to include a carriage return every 128 characters or less with a Macintosh text editor or a Vax editor. As long as the carriage return is placed before or after a space (the PostScript delineator), the files will be fine. By the way, we also checked the line length of PostScript comments produced by the driver and none exceeded 128 characters, so comments are not an issue.

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Tech Info Library Article Number:11989

Tech Info Library

Installer: Doesn't Replace Corrupt Files (4/93)

Revised: 4/22/93
Security: Everyone

Installer: Doesn't Replace Corrupt Files (4/93)

==========

Article Created: 16 April 1993

TOPIC -----

If I reinstall system software (using the System disks) over an existing System (with the same version as the one on the Installation disk), will the Installer overwrite/replace the existing software?

DISCUSSION -----

No, the Installer will not overwrite software with the same version number as is on the Installer. This means the Installer cannot be used to replace a corrupt file unless the corrupt file is first thrown away.

The Installer does not check for corruption or change in a file. Installer scripts vary, but in general an Installer will not replace a file if that same file exists on the Installation disk and is a like version.

This also applies to system software that has been modified by utilities such as ResEdit. The Installer will look at the modified system files, see that it is the same version as on the Installation disk and will leave the information unaltered.

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Tech Info Library Article Number:11991

Tech Info Library

How Will DAL Support ODBC and Its Relevance (4/93)

Revised: 4/21/93
Security: Everyone

How Will DAL Support ODBC and Its Relevance (4/93)

==========

Article Created: 19 April 1993

TOPIC ----------

I'm evaluating DAL (Data Access Language), I have some concerns about DAL and how it relates to ODBC. My concern centers on the expense of the DAL servers and the function of the servers as I might migrate to ODBC. In this case I'm spending a considerable amount for a single VTAM DAL server. Recognizing the "industry direction" is toward ODBC, I want to make sure my expenditure won't be a throwaway when Apple has ODBC support in DAL.

As I understand it the ODBC support Apple will have, is for the API. In the case of ODBC with DAL, the user would code to the ODBC API, but the final conversion to the native SQL will still be performed by the DAL server on the host. Is this correct? This is backward from the way ODBC would typically work, where the conversion to the native SQL is performed on the CLIENT and native SQL is then passed over the network to the host.

In DAL, you only need to change a single server instead of all the clients should you add or change a DBMS on the host server. I just want to make sure my understanding is correct.

DISCUSSION ----------

Your understanding of this issue is correct. The ODBC support will involve supporting ODBC API calls in DAL and DAM (Data Access Manager). This will enable applications that write to the ODBC API to now access all the DAL Servers. This will not make DAL a throw-away but will rather enhance it in the marketplace as it will allow more applications to participate in the environments it supports.

And yes, you were correct in the understanding that one of DAL's benefits is that a single client supports many servers. Unlike some other products, you don't have to get a client to match each server, you can expand the

server and thereby enhance "all the clients".

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Tech Info Library Article Number:11993

Tech Info Library

HP Deskwriter C: Out of Memory Error (4/93)

Revised: 4/23/93
Security: Everyone

HP Deskwriter C: Out of Memory Error (4/93)

==========

Article Created: 4/23/93

TOPIC ----------

I had a situation with a Macintosh IIsi (with 5MB of dynamic RAM, 16MB with Virtual Memory turned on) running System 7.1, attached to an HP Deskwriter C (running HP's Version 2.0 drivers). Whenever I printed from any application and then tried to launch another application, the Macintosh would come back with an "Out of Memory" message.

DISCUSSION ----------

HP Printer Support said if you are printing to an HP DeskWriter C with HP's Version 2.0 drivers (the latest), using the HP PrintMonitor, their PrintMonitor will take whatever memory is available to process the print job. This prevents you from opening other documents until the print job is completed and the PrintMonitor releases that memory. This will occur if the printer is connected via LocalTalk or serially.

Not having sufficient memory to open additional documents may not occur in every case when printing, but is quite prevalent. For example, you might be able to launch other processes while the PrintMonitor is processing a small document (say 50K) when your Macintosh has a few megabytes of available memory. However, if the print job were larger (we don't know how much larger) you may have to wait until the print job has finished.

We were unable to obtain more specific guidelines from HP Support on when problems could arise. The present workaround is to open the other documents you wanted to use prior to printing, or wait until the PrintMonitor has completed the print job.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11994

Tech Info Library

Imagewriter LQ: Connector Cables for Apple Computers (3/95)

Revised: 3/14/95
Security: Everyone

Imagewriter LQ: Connector Cables for Apple Computers (3/95)

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Article Created: 16 April 1993
Article Reviewed/Updated: 14 March 1995

TOPIC ----------

What cables does the ImageWriter LQ use to connect to all Apple computers?

DISCUSSION ----------

The ImageWriter LQ connects to Apple computers with the following cables:

Note that the cables are listed with their Finished Goods part number followed by their Apple Service part number, where available, in parentheses.

Apple Cable P/N	Computer
M0196 (590-0551)	Macintosh 512 and 512K (Macintosh 128K is not compatible with the ImageWriter LQ printer driver)
M0197 (590-0552) or M2068 - LocalTalk connector	All other Macintosh computers, PowerBook MiniDock, PowerBook Duo Dock, and Apple IIGS
A9C0314 (590-0556) (w/Super Serial Card jumper set to Terminal) or A2C0312 (590-0555) (w/Super Serial Card jumper set to Modem)	Apple II, Apple II Plus, and Apple IIe
A2C4313 (590-0554)	Apple IIc

M0197 (590-0552) Apple IIc Plus

Article Change History:
14 Mar 1995 - Corrected wording of MiniDock.

Support Information Services

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Tech Info Library Article Number:11995

Tech Info Library

Duo Dock: Third-Party Internal Hard Drives (5/93)

Revised: 7/7/94
Security: Everyone

Duo Dock: Third-Party Internal Hard Drives (5/93)

==========

Article Created: 24 May 1993

TOPIC -----

This article lists some third-party hard drive providers for the Macintosh Duo Dock.

DISCUSSION -----

MicroNet, MicroTech and APS are companies that provide internal hard drives for the Macintosh Duo Dock. For more information, search the Technical Information Library under each company's name.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:11996

Tech Info Library

Procom Technology (4/97)

Revised: 4/4/97
Security: Everyone

Procom Technology (4/97)

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Article Created: 20 April 1993
Article Reviewed/Updated: 4 April 1997

Procom Technology

2181 Dupont Drive
Irvine, CA 92715

714-852-1000

714-852-1221 Fax

Company Profile:
Specializes in storage products, particularly SCSI devices.

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Tech Info Library Article Number:11997

Tech Info Library

Apple Restore: Restoring Files (4/93)

Revised: 4/22/93
Security: Everyone

Apple Restore: Restoring Files (4/93)

==========

Article Created: 16 April 1993

TOPIC ----------

Will the application Apple Restore allow me to replace files on a volume from my backup, if the files on the volume and the backup are identical in terms of version and creation dates?

DISCUSSION ----------

Yes, Apple Restore overwrites files with the same name and path information on the volume being restored. If the file on the volume has been modified since the backup was made, Apple Restore will prompt the user asking if the user wants to replace the modified file.

Files that were not archived with the backup are not affected during the restore procedure.

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Tech Info Library Article Number:11998

Tech Info Library

LaserWriter Pro: Paper Tray Questions (11/95)

Revised: 11/29/95
Security: Everyone

LaserWriter Pro: Paper Tray Questions (11/95)

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Article Created: 20 April 1993
Article Reviewed/Updated: 29 November 1995

TOPIC ----------

This article addresses questions on paper handling options with the LaserWriter Pro printer.

DISCUSSION ----------

Question: If a 500 sheet tray is added, can it be chosen as a separate paper source if a customer wants to have three different types of paper?

Answer: Yes, the user will have three paper sources to choose from. The 500 sheet feeder does act as a completely separate paper source.

Question: Can a 500 sheet tray be chosen as the next source if the 100 or 250 sheet trays are empty?

Answer: Yes. The user must set this up via the LaserWriter Utility 7.4.

Question: Can more than one 500 sheet feeder/tray be added to the printer?

Answer: The printer can only one 500 sheet feeder mechanism attached at any one time.

Question: If customers add an envelope feeder, will they have three different paper sources to choose from?

Answer: Yes. Once the envelope tray is attached, it will appear as an additional paper input source to choose from.

Question: If customers add an envelope feeder and a 500 sheet tray, will they have four sources to choose from?

Answer: Yes, this is the maximum at the current time. The user will have four input sources to choose from.

Question: If customers adds an envelope feeder, will they be able to use the manual feed option?

Answer: Yes, adding a envelope feeder does NOT disable the multipurpose tray.

NOTE: Remember that once a paper input source has been added, the User Test Print will indicate that the additional input paper sources are attached. However the printer driver will not show these paper input sources as additional selections until the printer driver is configured.

Steps to configure the driver:

Step 1

Choose Chooser from the Apple menu.

Step 2

Select the LaserWriter icon.

Step 3

Select a LaserWriter Pro printer for printing.

Step 4

Click Setup. This will prepare the LaserWriter driver for all input sources installed.

NOTE: The Setup button in the Chooser is located next to the background printing radio button. The button will either read Setup (if you are setting up the printer for the first time) or Review.

Step 5

The printer driver will now have these additional paper input sources as selections.

Article Change History:
29 Nov 1995 - Updated format.

Support Information Services

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Tech Info Library Article Number:11999

Tech Info Library

Built-In and NuBus Ethernet Maximum Transfer Rate (3/96)

Revised: 3/20/96
Security: Everyone

Built-In and NuBus Ethernet Maximum Transfer Rate (3/96)

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Article Created: 20 April 1993
Article Reviewed/Updated: 20 March 1996

TOPIC ----------

What is the maximum data transfer rate possible with the built-in Ethernet port in comparison to NuBus Ethernet cards?

DISCUSSION ----------

According to IEEE 802.3 Ethernet specification, Ethernet's maximum data transfer rate is 10 Mbits per second. The Apple EtherTalk card, Apple Ethernet NB card, and on-board computer Ethernet provide physical and link-level access to data communications networks meeting IEEE 802.3 and 802.2 Logical Link Control (LLC) type 1 standards.

In real life, Ethernet transfer rates from 4 to 10 Mbits per second vary depending on a number of factors, such as:

- The load of the internet network
- The network configuration
- The Ethernet buffer size on the card or board
- The type of Macintosh
- The software running
  - Version of AppleTalk
  - Operating System
  - MacTCP
  - MTU (Maximum Transmission Unit

Regarding the differences between on-board Ethernet and the Ethernet NB card, on-board Ethernet is about 15% to 20% faster than Ethernet NB card. This is because built-in Ethernet uses Direct Memory Access (DMA), it doesn't rely on NuBus data transfers, and the chip is operating at the faster system bus clock rate. Built-in Ethernet interface utilizes a 32-bit data path. The following systems use Ethernet DMA:

- Quadra systems with built-in Ethernet
- Performa 611x series
- Power Macintosh 6100, 7100, and 8100 series
- Workgroup Server 6150, 8150, 9150 series

The Quadra's on-board Ethernet is implemented using the National DP83932 SONIC Ethernet controller chip. This device includes an IEEE 802.3 encoder/decoder (ENDEC), media access control (MAC) unit, separate 32-byte send and receive FIFOs, and DMA controller in one device. SONIC is housed in a 132-pin PQFP package. A small ROM provides the Ethernet global address (which provides a unique 48-bit identity for each Quadra built). The SONIC controller includes DMA capability. It will request the bus and transfer data between its internal registers and main memory.

The Curio integrated circuit (IC) controls the Ethernet functions on Power Macintosh computers. The Curio IC is a multipurpose custom IC that contains a Media Access Controller for Ethernet (MACE), a SCSI controller, and a Serial Communications Controller (SCC). The Curio IC supports DMA transfers between its I/O ports and the computer’s main memory.

Article Change History:
20 Mar 1996 - Updated article to include new computers.

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Tech Info Library Article Number:12000

DAL and DB2 HyperCard Demo Disks (4/93)

Revised: 4/22/93
Security: Everyone

DAL and DB2 HyperCard Demo Disks (4/93)

==========

Article Created: 20 April 1993

TOPIC ----------

If I have the DAL demo database on a user dataset, for example APPLE1, I can't use it from APPLE2 with the Raskin-Bobbins HyperCard stack, because the requests mention APPLE2.OFFICES. Do I have to change something in the HyperCard stack, DAL parameters, or make logical links in DB2 to resolve my problem?

DISCUSSION ----------

DB2 requires that all tables are referenced by both the creator name (or owner name) and the tablename. This means that, if you don't supply the creator name in the SQL statement, DB2 will append your userid to the tablename and search for that "creator.tablename". So when APPLE2 tries to use the Raskin-Bobbins stack, which does not explicitly supply the creator name, DB2 will search for:

APPLE2.ORDERS, and so on

Since your tables are created with "APPLE1" as the creator, no valid tablenames will be found and the queries won't work.

In order to be able to use the Raskin-Bobbins stack against DB2 in this instance, without having to go into all the scripts and change every SQL statement, you have to be able to enter the creator name as needed, in this case as "APPLE1" whenever you sign on as some other userid.

This can only be done on the connection card that is offered after the 'Setup' button is clicked. This card will display the "Host Connection" card which requests the Connection Name, Userid and Password.

You use the pop-up menu to select your hosts.cl1, or DAL Preferences,

Connection Name. If the hostname of the selected connection script begins with 'tso', 'vm', or 'cics' another field will appear called "Owner ID".

This field is required for you to be able to enter the desired creator or owner name. This will become the creator name that is automatically used in every SQL statement in the current execution of the stack.

There is only one feasible way to be able to get this button to appear on the Setup card:

> Change the hostname (first field) in the connection script to begin with 'tso' -- the script keys, off those characters and will display the field to allow you to enter the desired creator name.

When you do that:

- The "Owner ID" field will appear
- You will be able to insert the creator name you wish to use
- BE SURE TO follow it with a period ('.') so it displays as: "APPLE1."
- Then insert your userid and password and continue as usual

This will cause all the SQL statements to access the tables as (APPLE1.tablename) instead of as (uerid.tablename) which is what you desire.

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Tech Info Library Article Number:12001

Tech Info Library

LaserWriter Pro: Envelopes Must Load Flush Left (4/93)

Revised: 4/16/93
Security: Everyone

LaserWriter Pro: Envelopes Must Load Flush Left (4/93)

==========

Article Created: 9 April 1993

TOPIC ----------

I normally use a LaserWriter Plus to print envelopes. When I printed some envelopes on my LaserWriter Pro, they came out blank.

DISCUSSION ----------

This happened because your document is configured to print the address in the wrong place on the envelope.

With the LaserWriter, LaserWriter Plus, and Personal LaserWriter printers, you feed the envelopes into the right side of the Manual Feed Tray or Multipurpose Tray. In landscape mode, the address will print on the top of the imaged page, so you must put the address block across the top of the document.

With the LaserWriter II and LaserWriter Select printers, you feed envelopes into the center of the Manual Feed Tray, Multipurpose Tray (for the LaserWriter Select), or Envelope Feeder/Cassette. In landscape mode, the address will print in the center of the image, so you must move the address block down to the middle of your document.

With the LaserWriter Pro, you must feed envelopes onto the left side of the Multipurpose Tray or Envelope Feeder. In landscape mode, the address will print toward the bottom of the image, so you must move the address block down to the bottom of your document.

For instance, if you've created a document to print envelopes on a LaserWriter Plus and use it to print envelopes to a LaserWriter Pro, the address block will miss the envelope and print on the inside of the printer instead.

To cure this, you must put the address block on the appropriate part of the document for the printer you are using, then adjust the top and bottom margins

until the address prints in the proper place.

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Tech Info Library Article Number:12002

Tech Info Library

DAL For MVS/VTAM and Authority List of DB2 (4/93)

Revised: 4/22/93
Security: Everyone

DAL For MVS/VTAM and Authority List of DB2 (4/93)

==========

Article Created: 20 April 1993

TOPIC ----------

Is it true that DAL uses the authority list of DB2 running on MVS/VTAM, and not its own list?

DISCUSSION ----------

Yes, DAL uses only the DBMS's authorization. DAL uses the operating systems's security package (RACF, ACF2, Top Secret, and so on) to verify a userid and password. When these are valid, DAL then passes the userid on to the DBMS and it determines all data access based on that userid. DAL has no "authorization" information, or qualification, of its own.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12003

Tech Info Library

Photo CD: How to Display an Image (4/93)

Revised: 4/26/93
Security: Everyone

Photo CD: How to Display an Image (4/93)

==========

Article Created: 15 April 1993

TOPIC ----------

This article describes how to display a Photo CD image on a Macintosh computer.

DISCUSSION ----------

1) Insert the Photo CD into your CD-ROM drive. A Photo CD Icon should appear on your desktop.

2) Double-click on the Photo CD icon. You will see photo folders, a Kodak folder, a "Slideshow" file, the Slideshow Viewer application, and a Photo CD folder.

3) To see a slideshow of your images, open the Slideshow View application. You will be able to display each picture, and scroll through the pictures.

4) To see an image at high resolution, open the photo folder and double-click on the image you wish to display. You'll be asked if you want to view the picture in TeachText. TeachText will display the image (if enough memory is available) and you can copy and paste or print the image. Each image is included in five pixel resolutions: 128 by 192, 256 by 384, 512 by 768, 1024 by 1536, and 2048 by 3072.

Photo CD images can be opened from the CD by any application that can open a PICT file.

You must have the following resources to display Photo CD images:

- A Macintosh computer with a 68020 processor (or better), and at least 2MB of memory (4MB is recommended).

- An AppleCD SC, AppleCD SC Plus, or AppleCD 150 (for single session Photo CDs only); or AppleCD 300 or 300i (single or multisession Photo CDs) CD-ROM drive -- or an Apple-compatible CD-ROM drive which can read the CD-XA format, with compatible driver software.
- System Software 6.0.7 or later.
- CD-ROM Setup 4.0.2 or later (Apple CD-ROM drives only).
- QuickTime 1.5 or later.
- Apple Photo Access.

The CD-ROM Setup driver must be installed in your System Folder.

Here's where the QuickTime 1.5 and Apple Photo Access system extensions must be installed:
- System 7: in the Extensions Folder in your System Folder
- System 6.0.7/6.0.8: in the root level of your System Folder

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12005

Tech Info Library

PhotoGrade: Description (4/93)

Revised: 4/26/93
Security: Everyone

PhotoGrade: Description (4/93)

==========

Article Created: 16 April 1993

TOPIC ----------

This article describes PhotoGrade printing technology, Apple's proprietary technology that uses grayscaling and halftoning to provide high-quality graphic images on Apple laser printers.

DISCUSSION ----------

How Grayscale Images are Produced

While many graphic images are grayscale, laser printers can only print black dots or no dots (which produces white areas). To print gray images, laser printers must convert grayscale images into black and white images for printing. This process is called halftoning.

Screening, the most popular halftoning technique, uses a matrix of black and while pixels to simulate shades of gray. Each matrix of pixels is also known as a halftone cell or screen. As you add more pixels to the halftone cell, you have more shades of gray available.

The size of the halftone cells determines the screen frequency. Screen frequency is defined as the maximum effective image resolution of the printer for a given size halftone cell. As the screen frequency increases, the number of gray shades decreases.

How PhotoGrade Works

PhotoGrade optimizes graphic images to provide the maximum possible screen frequency with the largest possible number of gray shades.

PhotoGrade increases the number of gray shades available. It uses a custom ASIC to allow the laser to fire at shorter than normal intervals, which

produce smaller dots than normal. This, in itself, produces more gray shades. Once smaller dots are produced, PhotoGrade can intelligently select which gray shades are most distinct and thereby provide more apparent gray shades.

PhotoGrade also combines halftoning with its grayscaling ability. Because PhotoGrade has so many more gray levels for each pixel, a much smaller halftone cell can be used while providing more gray shades. This results in a higher effective resolution and produces sharper images.

PhotoGrade can produce up to 91 levels of gray on the LaserWriter Select 300 and LaserWriter Pro 600 and 630 with a 106 line halftone screen. Without PhotoGrade, 600 dpi laser printers produce 33 levels of gray and 300 dpi laser printers produce 9 levels of gray with a 106 line halftone screen.

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Tech Info Library Article Number:12006

Tech Info Library

DAL: MVS/VTAM Installation Effort (4/93)

Revised: 4/26/93
Security: Everyone

DAL: MVS/VTAM Installation Effort (4/93)

==========

Article Created: 22 April 1993

TOPIC ----------

I have some questions regarding the installation effort with DAL for MVS/VTAM. I'm interested in evaluating DAL and would like to know how much time and effort is involved. I plan on using SMPE to install DAL: would this cause a problem? Also please provide a rundown of the installation steps and other related configuration changes (NCP gen, and so on) that would be required.

DISCUSSION ----------

SMPE is the facility that IBM uses for the installation of their system software. It simplifies backing out of an installation if something goes wrong. Data Access Language's installation is very straight-forward and consequently is not set up to install under SMPE. Instead, the tape comes with the first file being JCL, which downloads the remainder of the files on the tape to a number of libraries (JCL, LINKLIB, and so forth) as appropriate.

The Installation Guide for the VTAM Server should give you a good idea of the magnitude of the task.

A length-of-time estimate would be difficult because each site's configuration can have an effect on the amount of time it takes to install. A range is from less than a day, to a maximum of three days.

If the product is installed in a site where:

- RACF is the security package
- Only 3270 (no APPC) connections will be made
- There is no problem installing with a high-level dataset name of 'DAL'
- The DBA is free to do the Bind and Grant in a timely manner

- The Systems Programmer takes the 1 1/2 to 2 hours to read the entire install guide before beginning
- The Systems Programmer verifies the install as defined on page 16 of the install guide
- There is someone on the client side familiar with Macintosh and what is required to connect with a 3270 session to the site's MVS system

Then it should take less than a day to install the server and make a connection from the Macintosh. No additional NCP definitions are required if you use 3270 (LU2) sessions off existing controllers, or gateways.

The security product ACF2 requires additional installation work, a SAF rule.

If SNA•ps is used for the connectivity, the connection process is likely to take longer to configure than Avatar or Netway, and so on. However, it is much more powerful, offering the opportunity to do APPC connections as well as 3270 sessions. It is the APPC configuration which can cause additional installation time, as changes may be required to the VTAM tables to define an XID and Log Mode to support LU6.2 connections.

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Tech Info Library Article Number:12007

Tech Info Library

Connectix: Enabler Patch (4/93)

Revised: 4/26/93
Security: Everyone

Connectix: Enabler Patch (4/93)

==========

Article Created: 23 April 1993

TOPIC ----------

The purpose of this article is to clear up the confusion regarding the "Enabler patch" (released by Connectix), which patches a specific ROM routine (GetIndResource) to change its behaviour when an invalid parameter is passed to that routine.

DISCUSSION ----------

When a negative index is passed to GetIndResource, low memory globals can become corrupted, which will lead to a system error. There is no situation where a negative index should be passed to this routine. Instead of changing the code that passes a negative index to GetIndResource, Connectix chose to modify the behavior of the GetIndResource routine with their patch.

Apple does not support or recommend the enabler patch distributed by Connectix. The patch has not been completely tested, and it causes new compatibility problems with other third-party software. Customers with further questions on the enabler patch should contact Connectix.

There has been additional confusion between Apple's Hardware Systems Update and Connectix's patch, partly because they were released at about the same time. The Hardware Systems Update released in February does not patch GetIndResource. There was a problem with Apple File Exchange on a few machines where Apple File Exchange had the same problem of passing an invalid index to GetIndResource. The Hardware Systems Update fixes Apple File Exchange on these systems. It does not modify GetIndResource.

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Tech Info Library Article Number:12008

Tech Info Library

PowerBook Duo, Express Modem, & StyleWriter II (3/95)

Revised: 3/14/95
Security: Everyone

PowerBook Duo, Express Modem, & StyleWriter II (3/95)

==========

Article Created: 22 April 1994
Article Reviewed/Updated: 14 March 1995

TOPIC ----------

I have encountered an anomaly using a PowerBook Duo 230 with StyleWriter II printers. In this case, it is a Duo with an Express Modem installed.

Assume I'm printing from an undocked Duo and that AppleTalk is inactive as defined in the Chooser.

In the Chooser, select the StyleWriter II icon, turn on Background Printing, and click on Printer (Serial Port). Close the Chooser. Print a document. PrintMonitor comes up with an alert that "The serial port is currently in use by another application. Please quit that application and print again." But it just isn't so!

Apple Remote Access (ARA) is not set to answer calls (this should be irrelevant, since we are set to use the Express Modem). Personal File Sharing & Program Linking are off (this should also be irrelevant, since AppleTalk is turned off).

Similar weirdness seems to happen with a MiniDock, although I have not been able to evaluate all the combinations.

Are there any tricks in printing to the StyleWriter II with a Duo 250 and/or a 270c?

DISCUSSION ----------

Regarding the undocked configuration you describe (Duo 230 w/ Express Modem, ARA 1.0, StyleWriter II connected to the serial port, AppleTalk turned off) -- Yes, it is possible to print to the StyleWriter II.

If you have AppleTalk turned on, you need to select "Remote Only" in

the Network Control Panel.

If you have AppleTalk turned off, no changes are needed.

Select External Modem in the PowerBook control panel. The Express Modem provides a means of compatibility for those applications which do not support the Comm Toolbox. Selecting Internal Modem in the PowerBook control panel will enable applications using serial port A (External Modem Port) to communicate with the Express Modem. ARA does not have that problem, therefore the PowerBook control panel should be set to External Modem.

When you select StyleWriter II via the Chooser, two icons will be displayed: printer and modem. It doesn't matter which one you select, because they are both directed to one port anyway. Because of this, the modem icon will always be highlighted when you open the Chooser and select StyleWriter II.

Because you have Apple Remote Access installed, it is recommended that you remove the Serial Port Arbitrator extension from the Extensions folder inside the System Folder. Apple Remote Access will still function properly. The extension just keeps track of the names of applications using serial ports for user notification.

The software (with the Duo 250 and 270c) used to print to the StyleWriter II with a 250 and 270c is differenct from the software that is used with the Duo 210/230.

The following procedure works well when using an undocked Duo and a StyleWriter II:

a) Go to Express Modem Control Panel and turn it OFF.
b) Go to PowerBook Setup Control Panel and set modem to Normal (External).
c) Go to Chooser and verify that Appletalk is OFF. If ON, turn OFF.
d) Select the StyleWriter II driver and select the MODEM port.

Article Change History:
14 Mar 1995 - Corrected wording of MiniDock.
19 Jan 1994 - Added information on the 250 and 270c

Support Information Services

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Tech Info Library Article Number:12009

Tech Info Library

HyperCard 2.1 Player: Error t63 (4/93)

Revised: 4/23/93
Security: Everyone

HyperCard 2.1 Player: Error t63 (4/93)

==========

Article Created: 23 April 1993

TOPIC --------------------

What is HyperCard's error "t63"?

DISCUSSION --------------------

Error t63 is generated by the HyperCard 2.1 Player. The error mechanism in the Player is different from HyperCard's. HyperCard Player produces a letter indicating the error type and then a number indicating an exact message.

In this case, the "t" refers to the string resource "Talk Errors" and "63" means: Can't understand "^0".

For more information on HyperCard Player Error Messages refer to the Technical Information Library on AppleLink. Follow this folder structure:

Support
Third Parties
Third Parties (A-G)
Claris
Claris Tech Info
Type: HyperCard Player Error Messages

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12011

Tech Info Library

LaserTools Corporation (4/93)

Revised: 7/12/93
Security: Everyone

LaserTools Corporation (4/93)

==========

Article Created: 04/21/93
Article Reviewed: 07/12/93
Article Updated:

LaserTools Corporation

1250 45th Street, Suite 100
Emeryville, CA 94608

800-767-8004

510-420-1150 Fax

Company Profile:
Specializes in printer utilities software for Macintosh and DOS environments.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12012

Tech Info Library

Incorrect SQLCode With DAL and Selective UPDATES (4/93)

Revised: 6/4/93
Security: Everyone

Incorrect SQLCode With DAL and Selective UPDATES (4/93)

==========

Article Created: 23 April 1993

Article Change History

06/04/93 - REVISED
- To better state the problem.

TOPIC ----------

There is a problem with DAL that an update with a "where" clause does not return the proper sqlcode if no rows met the "where" criteria.

DISCUSSION ----------

There is a workaround to do a select with the desired "where" clause before attempting the update, checking the sqlcode to see if there were any rows, and then continuing with the update only when the sqlcode is 0:

```
Select * from offices where city = 'none';
fetch;
print $sqlcode;
```

If there was at least one row in the cursor, the $sqlcode will be zero (0), otherwise it will be one hundred (100).

It is necessary to do a fetch before the "print $sqlcode", because the SQL generated by the select is only the prepare, describe and open of the cursor. The fetch command actually causes the DBMS to execute the statement and return rows to the cursor table.

Alternatively, if you want a 'count' of the rows that would be changed, as opposed to just knowing whether there were 'any' rows that met the where clause, the workaround statements should look like this:

```
   select * from offices where city > 'abc' for scrolling;
   fetch last;
   print $rowcnt;
```

Here, a "select...for scrolling" (or "select...for extract") is required to be able to get a count of the entire cursor table with a single fetch statement. The "fetch last" is required to force the server to actually fetch all the rows that qualify. This then enables the "print $rowcnt" command to return the actual number of qualifying rows with one fetch command.

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Tech Info Library Article Number:12015

Tech Info Library

LaserWriter: Available PCL-Compatible Fonts (12/96)

Revised: 12/20/96
Security: Everyone

LaserWriter: Available PCL-Compatible Fonts (12/96)

==========

Article Created: 26 April 1993
Article Reviewed/Updated: 19 December 1996

TOPIC ----------

Which Hewlett-Packard PCL-compatible fonts, styles, and sizes are included in Apple's PCL-compatible LaserWriter printers?

DISCUSSION ----------

Here is a table that shows the PCL fonts available for PCL-compatible LaserWriter printers.

Begin_Table

Apple LaserWriter Model	PCL ROM-Resident font	PCL ver.	Notes
LaserWriter IIf, LaserWriter IIg, LaserWriter Pro 600, LaserWriter Pro 630, Personal LaserWriter NTR	Courier No Line Printer font available. No other ROM-Resident fonts available in PCL mode.	4+	1
LaserWriter Pro 810	33 of the 35 Type 1 fonts are used and rasterized as PCL fonts. Only ZapfDigbats Symbol fonts cannot be used as PCL fonts.	4+	
LW Select 360, LW 16/600 PS, LW 12/640 PS	Times Roman, Univers Medium, Courier, Line Printer	5	

End_Table

NOTES:

(1) There is actually a problem with the HP emulator that inadvertently allows access to the Helvetica and Times-Roman fonts. You can access these two fonts through the same PCL escape code command to change typefaces.

PCL Escape Codes
================

In terms of styles and sizes, Apple supports the PCL escape codes listed below for font manipulation:

```
<esc>(s#T    : typeface selection (#= 3-Courier,4-Helvetica,
               5-Times-Roman)
<esc>(s#H    : pitch selection (#= usually 10 or 16.66 built-in)
<esc>(s#V    : character height (#= Font Size in points)
<esc>(s#B    : stroke weight (#= -7 to 7 for BOLD style)
<esc>(s0P    : proportional spacing OFF
<esc>(s1P    : proportional spacing ON
<esc>(s0S    : italic OFF
<esc>(s1S    : italic ON
<esc>&d@     : underlining OFF
<esc>&dD     : underlining ON
```

Apple also supports a variety of symbol sets (i.e. USASCII, PC-8 US, etc.) which are different types of characters available as part of the different fonts. These characters include mathematical symbols, foreign language accented characters, etc.

```
<esc>(#      : change Symbol Set (#= symbol set as listed below)
```

Symbol Set	#
ISO-60 Norwegian	0D
ISO-25 French	0F
German	0G
ISO-15 Italian	0I
ISO-14 JISASCII	0K
ECMA-94 Latin 1	0N
ISO-11 Swedish	0S
ISO-6 ASCII	0U
ISO-61 Norwegian	1D
ISO-4 UK	1E
ISO-69 French	1F
ISO-21 German	1G
Spanish	1S
ISO-57 Chinese	2K

ISO-17 Spanish	2S
ISO-2 IRV	2U
ISO-10 Swedish	3S
ISO-16 Portuguese	4S
ISO-84 Portuguese	5S
ISO-85 Spanish	6S
Roman-8	8U
PC-8 US	10U

In the PCL commands and Symbol Set list above, 0 represents the numeral zero, not the upper-case letter O. Also, <esc> represents the ESCAPE or esc character.

This article appeared in the 19 December 1996 issue of the Information Alley.

Article Change History:
19 Dec 1996 - Added additional printers.

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Tech Info Library Article Number:12016

Tech Info Library

LW Select 310: Serial Connection to MS-DOS Computer (4/93)

Revised: 4/28/93
Security: Everyone

LW Select 310: Serial Connection to MS-DOS Computer (4/93)

==========

Article Created: 26 April 1993

TOPIC ----------

Can you connect a MS-DOS/Windows computer to the RS-232 serial port of a LaserWriter Select 310?

Also, can you use both serial and parallel ports at the same time?

DISCUSSION ----------

To answer the second question first: you CANNOT use the parallel and the serial ports simultaneously. The LaserWriter Select 310 will get confused as it polls both ports for data.

You may be able to connect an MS-DOS or Windows computer to the RS-232 serial port of the LaserWriter Select 310 and print documents, but Apple does NOT support this solution. Apple only supports connection to a MS-DOS or Windows computer through the Centronics parallel connector.

If you want to try to connect the Select 310 serial port to your MS-DOS or Windows computer, we have included the pinouts below for the DB-25 to DIN-8 cable (DTR/DSR protocol is enabled). You will also need a communications program to send data to the printer at 57.6K baud.

Remember that the LaserWriter Select 310 is a PostScript-only printer and does not emulate any other printers.

Cable Pinouts

(DTE)

25 PIN	8 PIN	Signal	Description	I/O
---	---	---	---	---

2	3	/TXD	Transmit Serial Data	Output
3	5	/RXD	Received Serial Data	Input
6	2	DSR	Data Set Ready	Output
7	4,6	GND	Signal Ground	
20	1	DTR	Data Terminal Ready	Input

The remaining pins are not connected.

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Tech Info Library Article Number:12017

Tech Info Library

FileShare & AppleShare: Setting Labels On Shared Files (4/93)

Revised: 4/27/93
Security: Everyone

FileShare & AppleShare: Setting Labels On Shared Files (4/93)

==========

Article Created: 25 April 1993

TOPIC ----------

I have had problems setting labels on shared files in the following situations:

- I logged on to a Personal File Sharing machine, selected a folder, changed the label (color), and closed the window. When I re-opened the window, the color had reverted to the original color.

- I tried doing the same thing with an AppleShare file server with the same result.

- I then tried this on a AppleShare file server with a folder I owned, thinking perhaps I was prohibited from changing the color of a folder I didn't own. I closed the window and re-opened it, the folder had reverted back to the original color.

DISCUSSION ----------

The owner of a folder or volume controls the labels in the first level of that folder or volume. The bottom line: unless you own the folder that contains the folders you are trying to change the labels on, the changes won't remain. As long as a window is open, whatever labels are assigned will remain. When the window is closed, the labels revert to their previous state.

As an example, create a folder named A1, owned by A, that allows all privileges to users A, B, and C. Within the A1 folder users A, B, and C create folders A2, B2, and C2, respectively. Only user A can change the labels on folders A2, B2, and C2. All three users, A, B, and C have read write access to all three folders A2, B2, and C2. Let all three users create folders within A2, B2, and C2. Only user A will be able to change

labels in folder A2, B in folder B2, and C in folder C2.

The confusion results from your expecting that, as owners of a folder you should be able to control the label of that folder. This is not the case.

This appears to hold true for both File Sharing and AppleShare. We don't believe this is a problem because AppleShare 3.x requires System 7 but does not require System 7 on the client side. Since System 6.0.x does not support labels there isn't a compelling reason to have AppleShare update that information dynamically the way file or folder names are. Since View by Name, Data, and so on is supported by both System 6 and 7 it makes sense to maintain the view that the user selects at least to one level of depth. If you change the view in a window that is two levels down and you close all the windows the view will revert to the original. The overhead of keeping track of the views dynamically while multiple people are using the same folders would be too great. Obviously these attributes are kept locally and in a limited fashion.

This does not cause any data loss, but users may be disappointed if things do not work intuitively. Workarounds can be devised, such as setting the label on a folder locally, then copying the folder to the server, but we doubt the "cure" will be worth the effort in most cases.

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Tech Info Library Article Number:12018

Tech Info Library

Macintosh II: 32-bit System Enabler (2/95)

Revised: 2/24/95
Security: Everyone

Macintosh II: 32-bit System Enabler (2/95)

==========

Article Created: 27 April 1993
Article Reviewed/Updated: 24 February 1995

TOPIC ----------

This article describes what is needed to use the 32-bit System Enabler with the Macintosh II.

DISCUSSION ----------

To use the 32-bit System Enabler, a Macintosh II must have:

- a PMMU
- FDHD (SuperDrive) ROMs
- rev B logic board (required for FDHD ROMs)

See your authorized Apple reseller for these items.

Article Change History:
24 Feb 1995 - Article reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12019

Tech Info Library

MacTCP: No Public Domain Version, but Workaround (4/93)

Revised: 4/28/93
Security: Everyone

MacTCP: No Public Domain Version, but Workaround (4/93)

==========

Article Created: 27 April 1993

TOPIC --

I'm looking for a "Public Domain" version of MacTCP. This may be a version 1.0 that was available, before we had site licensing issues.

Some questions:

• Is there a Public Domain version of MacTCP?

• Is it available now?

• Will it still work? (Or was it tied to a specific version of the OS?)

DISCUSSION --

There isn't really a "public domain" version of MacTCP available.

Although you might be able to find a copy of the MacTCP 1.0 product and there might not seem to be a "legal" reason to not give it out, there is, however, a technical reason not to. That release of the software (and 1.0.1 also) will not work with newer releases of system software, notably 7.1.

Instead, we suggest that you get release 2.5 of NCSA Telnet. With this release you can support either MacTCP or direct Ethernet / AppleTalk connections. You would not need to use MacTCP at all. Also, at release 2.3 of NCSA Telnet there was one version that supported MacTCP and another that supported Ethernet / AppleTalk directly -- so even at that release level you are not forced to use MacTCP.

Please refer to the following excerpt from the ReadMe that accompanied the 2.5 release of NCSA Telnet:

========== ReadMe ==========

IMPORTANT NOTES- June 1992 NCSA/BYU Telnet 2.5

There are some substantial changes with this release of Telnet. While all of these changes are described fully in the documentation, they are worthy of another mention here. If you do not already have the Telnet 2.5 documentation, please get it from anonymous ftp from: ftp.ncsa.uiuc.edu

NCSA/MacTCP drivers

NCSA Telnet previously came in two versions: NCSA driver version, and MacTCP driver version. However, in this release of Telnet, the two versions have been merged into one application. This allows greater flexibility, along with removing the need to have two different applications for basically the same program. You may select the NCSA drivers, by appropriately setting the hardware= line in config.tel to ether, or atalk.

To select the MacTCP drivers, you may set hardware=mactcp in the config.tel file. Also, since Telnet defaults to MacTCP, if there is no hardware= line, Telnet will still assume that MacTCP is to be used.

========== End ReadMe Selection ==========

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12020

Tech Info Library

LaserWriter Pro 630: Changing Default Paper Tray (4/97)

Revised: 4/14/97
Security: Everyone

LaserWriter Pro 630: Changing Default Paper Tray (4/97)

==========

Article Created: 4 May 1993
Article Reviewed/Updated: 14 April 1997

TOPIC ----------

If I install a 500-sheet feeder on a LaserWriter Pro 630, in a standard MS-DOS environment how do I make the 500-sheet tray the default tray?

DISCUSSION ----------

The PostScript code below changes the default paper tray to the 500-sheet tray. (Remember, PostScript code IS case-sensitive.)

PostScript Level 1 code:

```
%============================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin 2 setdefaultpapertray end
%
% end PostScript Code
%============================================================
```

CAUTION:
Use this PostScript code at your own risk. You are responsible for the support of any problems associated with changing the default tray. You should also inform others using the printer that you have changed the default tray. Changing the default tray on the printer may cause the paper out LED to light if there is no paper present in the default tray, or if the wrong size paper is used in the tray. When this happens, there is nothing wrong with the printer's hardware.

To change the default tray to another tray, change the number before the "setdefaultpapertray" operator to one of the following values.

Value	Tray Selection

0	250 Sheet Cassette
1	Multi-purpose tray
2	500 Sheet Cassette
3	Envelope tray

This is the equivalent PostScript Level 2 code:

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
1 dict dup /InputAttributes 1 dict dup /Priority [2 1 0] put put setpagedevice
%
% End PostScript Code
%=========================================================
```

This sets the paper tray priority to:
1st Priority - Cassette (500 Sheets) - designated by the "2" in the array above.
2nd Priority - Multipurpose Tray - designated by the "1" in the array above.
3rd Priority - Cassette (250 Sheets) - designated by the "0" in the array above.

You can change the paper tray priority order by changing the values in "/Priority [2 1 0]".
For example, /Priority [0 1 2] makes the 250 sheet cassette first priority, then the Multipurpose tray next, then the 500 sheet cassette.

After downloading the code, you can verify that the change was made by printing the configuration page.

Article Change History:
14 Apr 1997 - Added PS Level 2 code.
21 Apr 1995 - Added Caution message.

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Tech Info Library Article Number:12024

Tech Info Library

LaserWriter: Sharing a Hard Drive with a Macintosh (5/93)

Revised: 5/4/93
Security: Everyone

LaserWriter: Sharing a Hard Drive with a Macintosh (5/93)

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Article Created: 3 May 1993

TOPIC ----------

I've used the LaserWriter utility software to format an Apple hard drive to store fonts for a LaserWriter. If I decide to use the same drive with a Macintosh, will the computer recognize the drive, or must I reinitialize the drive first? In other words, does the LaserWriter utility format the hard drive in a different way than the Macintosh does?

If the formatting is different, will formatting the drive for the Macintosh (instead of using the LaserWriter Utility) allow the hard drive to be attached to a LaserWriter (such that the LaserWriter recognizes it for storing fonts)?

Which LaserWriter, and which version of LaserWriter Utility, will allow a hard drive to be recognized by both a Macintosh computer and a LaserWriter? Can the same results be expected if a third-party hard drive is used (providing the hard drive functions on the Macintosh and/or the LaserWriter?

DISCUSSION ----------

The answer depends on which LaserWriter you're using.

LaserWriter NTX

The LaserWriter NTX uses the LaserWriter Font Utility to initialize drives and download fonts. This utility formats the disk(s) as one logical disk device for the PostScript file system. Because the LaserWriter NTX regards all attached hard disks as a single logical unit, these drives are not recognized by the Macintosh file system.

LaserWriter IIf and IIg, LaserWriter Pro Series

Beginning with the LaserWriter IIf and IIg, LaserWriter Utility (version 7.1 and later) took over the task of downloading the fonts and initializing the drives. With this utility, the drive is Macintosh (HFS) compatible and supports the PostScript file system. The file system supported by the LaserWriter IIf and IIg, and the LaserWriter Pro series, is described in sections 3.8.2 and 3.8.3 of the PostScript Language Reference Manual (second edition), with the following restrictions:

- Filenames cannot begin or end with a slash, or contain adjacent slashes (//).

- Filenames may not contain the colon character (:).

- There may not be more than 31 non-slash characters between two slash characters, and the total number of characters in the filename may not exceed 255.

- Because the printer uses SCSI ID 6, it is not possible to use a disk drive whose SCSI ID is also 6.

While formatting the drive, the LaserWriter Utility does some additional functions. It names the drive "disk#" (where # is the drive's SCSI ID) and it creates a folder, at the root level, named "fonts". Although it is possible to manually do these functions from the Macintosh, it is much simpler and cleaner to let the Utility do the work.

Downloading fonts should be done only through the LaserWriter Utility. So that the fonts are recognized on the PostScript file system, the utility:

- Removes the fonts from their suitcases and places them in the "fonts" folder.

- Changes the file type and creator.

- Renames the fonts (for example, "Courier (bold)" is renamed "Courier-Bold").

Non-Apple Drives

If you are considering connecting non-Apple hard disks to your LaserWriter, keep these points in mind:

- The LaserWriter must be able to tell how much space is available on the disk. This is not possible with some hard disks from manufacturers other than Apple.

- Some non-Apple disks have internal SCSI terminators. Since the LaserWriter has an internal terminator, put any disk with an internal terminator at the other end of the chain, and do not use an external terminator. There should be no more than two terminators in any SCSI chain.

..TIL12026-LaserWriter-Sharing_a_Hard_Drive_with_a_Macintosh_5-93.pdf

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Tech Info Library Article Number:12026

Tech Info Library

MacX 1.2 Features, from Release Notes (4/93)

Revised: 4/29/93
Security: Everyone

MacX 1.2 Features, from Release Notes (4/93)

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Article Created: 28 April 1993

TOPIC ----------

This article describes the new features and other improvements of MacX 1.2, configured to broaden compatibility with X client applications and to provide you with increased ease of use. You may even notice some improvements in performance. In most cases, you'll never have to adjust the MacX 1.2 default settings. Advanced users, however, may want to study the following feature descriptions to see if their special needs might be met by changing the default settings.

DISCUSSION ----------

This section provides information about improvements and features not described in the MacX 1.1.7 Release Notes or the MacX User's Guide:

- If your Macintosh computer has a color monitor and video card, MacX 1.2 makes color graphics capabilities available to X client applications by default. No special "screen" designations are required. Advanced users, however, can change the screen designation to meet special needs.

- MacX 1.2 provides further display improvements with a special option preset to disable non-zero screens. With this option as the default, the server only recognizes screen 0. This is helpful for those clients that experience programmatic conflicts caused by the presence of multiple screens. Advanced users, however, can change this option to enable multiple screens.

- MacX 1.2 provides standard X Window System Backing Store and Save Under capabilities. With these features, graphics don't have to be redrawn every time an overlapping window or pop-up menu is moved or closed. Some X client applications rely on these capabilities to support complex graphical operations.

- MacX 1.2 makes all 256 entries of each screen's default colormap available for use by X client applications. This treatment of screen colormaps represents a change in the default function of MacX 1.1.7.

- By default, MacX 1.2 disables the Smoother Animation feature in order to provide better graphics performance. This represents a change in the default setting from the MacX 1.1.7 setting.

- MacX 1.2 allows client applications to connect to your Macintosh computer without any action on your part. If you want to control which X client applications are displayed on your MacX server, you can enable Access Control from the MacX Remote menu. As a result, a host access alert box will be presented to you before an X client is allowed to be displayed on your screen. This treatment of host access alert boxes represents a change in the default setting from MacX 1.1.7.

- New window-menu commands give you more ways to manage windows. The Circulate Up and Circulate Down commands give you easy ways to switch between windows. The Maximum Height / Restore Height command gives you an easy way to resize windows.

- MacX 1.2 reports the size of a window as you resize it.

More Flexible Screen Configurations

MacX 1.2 provides greater compatibility for X client applications that are unable to support more than one X server screen. This improvement is especially useful for clients that only check the default screen for color support. MacX now supports clients that expect color capability on the default screen, also called screen zero, or the screen corresponding to the display host:0.0.

The default settings for screen zero are as follows:

- Match Best Monitor. If you have a color monitor connected to your Macintosh computer, the default screen is configured for color. If you don't have a color monitor, MacX displays the screen in black and white. If you have more than one monitor attached to your Macintosh, the MacX Window Manager places clients on the color monitor by default.

- Rootless Mode. The default screen is a rootless screen that uses the MacX Window Manager to adorn client windows in the Macintosh style.

Advanced users can change the screen designation to meet special needs. To change the default screen configuration, follow these steps:

1) Open the MacX application program by double-clicking its icon.

2) Choose the Display Preferences command from the Edit menu.

3) Click the Screen Zero options that correspond to the configuration you want.

Once you choose Screen Zero options, the attributes of the other MacX screens are established according to the following table.

- Note - If you have the Disable Non-zero Screens option (the default setting) turned on, then only the screen 0 column has meaning.

MacX Screens - ("Monochrome/" is represented in the table as "Monochrm/")

Screen Zero options	Video card	Screen 0	Screen 1	Screen 2	Screen 3
Match Best Monitor (Rootless)	8-bit/pixel (256 colors)	Color/ Rootless	Color/ Rooted	Monochrm/ Rootless	Monochrm/ Rooted
	1-bit/pixel (monochrome)	Monochrm/ Rootless	Monochrm/ Rooted	Color/ Rootless	Color/ Rooted
Match Best Monitor (Rooted)	8-bit/pixel (256 colors)	Color/ Rooted	Color/ Rootless	Monochrm/ Rooted	Monochrm/ Rootless
	1-bit/pixel (monochrome)	Monochrm/ Rooted	Monochrm/ Rootless	Color/ Rooted	Color/ Rootless
Color (Rootless)	Any	Color/ Rootless	Color/ Rooted	Monochrm/ Rootless	Monochrm/ Rooted
Color (Rooted)	Any	Color/ Rooted	Color/ Rootless	Monochrm/ Rooted	Monochrm/ Rootless
Monochrome (Rootless)	Any	Monochrm/ Rootless	Monochrm/ Rooted	Color/ Rootless	Color/ Rooted
Monochrome (Rooted)	Any	Monochrm/ Rooted	Monochrm/ Rootless	Color/ Rooted	Color/ Rootless

- Click the Black and White button, and screen zero (the default screen) will support X client applications that only require 1 bit per pixel.

- Click the Color button, and screen zero (the default screen) will support X client applications requiring 8-bit color.

- The Screen Zero option is preset to Match Best Monitor. With this selection, MacX configures the default screen in either of two ways:
  - as an 8-bit color screen if your monitor is set for greater than 1 bit per pixel
  - as a 1-bit monochrome screen if your monitor is set for 1 bit per pixel (black and white)

- The screen zero option is preset to Rootless. With this selection, X clients that connect to the default screen are displayed in rootless mode; that is, they are managed by the Macintosh Window Manager alongside other Macintosh application windows.

- Click the Rooted button, and X clients that connect to the default screen are displayed in rooted mode; that is, they are drawn on an X

root window and must be managed by a foreign (remote) window manager.

- The Disable Non-zero Screens option is preset to "enabled." With this selection, all screens other than the default screen (screen zero) are ignored by MacX. As a result, client applications that are designed to connect only with screen zero are displayed correctly on the MacX server because multiple screens are no longer available. To turn off this option, click the checkbox to remove the "X" from the box.

4) Click the OK button to confirm your preferences.
   An alert box appears to report that your preferences will not be enabled until the MacX file, or document, is reopened.

5) Click the OK button to dismiss the alert box.

6) Save, close, then reopen the MacX document to enable your new display preferences.

For more information about rooted and rootless windows, see Chapter 1 of your MacX User's Guide.

Support for Backing Store and Save Under to Preserve Client Windows
---
MacX now provides Backing Store and Save Under features as defined by the X Window System standard.

By default, Backing Store and Save Under support are given to those client applications that require the MacX server to preserve window contents. Typically, these X clients create complex graphic images that can take a substantial amount of time to refresh. By taking advantage of Backing Store and Save Under, X client applications can greatly reduce the time they need to refresh their windows.

These new capabilities, however, may incur an additional memory cost to your MacX application program because the MacX server must set aside additional memory to preserve portions of client windows.

- Backing Store and Save Under may consume additional memory. In the course of providing Backing Store and Save Under to X client applications, MacX may use additional memory. As a result, you may want to increase the "application memory size" of MacX. For more information, see "Can't Use a MacX Feature," in Chapter 6 of your MacX User's Guide.

Backing Store and Save Under features are set by default to provide you with the level of support required by most X client applications. Experienced users of the X Window System, however, may want to adjust this level. For example, you can disable Backing Store entirely or force it on every window of every X client. In addition, you can disable Save Under entirely.

Follow these steps to change the level of Backing Store capability.

1) Open the MacX application program by double-clicking its icon.

2) Choose the Display Preferences command from the Edit menu.

3) Click the Backing Store option that corresponds to the level of feature support needed.

   - Click the Off button to disable the Backing Store feature entirely. With the feature in this state, client applications must redraw their windows each time they are exposed. You save computer memory, but you may have to wait for some client windows to redraw themselves when Backing Store is turned off. The amount of computation time needed to redraw the client window depends on the client application itself, the network bandwidth, and the speed of your computer.

   - The Backing Store feature is preset to Requesting Clients. This selection enables the Backing Store feature only for the windows of client applications that request it. Clients that do not request Backing Store may redraw their windows more slowly than those with the feature enabled.

   - Click the All Windows button to provide Backing Store capability for all client application windows, regardless of whether or not they request it. With the feature in this state, you typically use additional computer memory but get the benefit of not having to wait for client windows to redraw themselves each time they are exposed. Because many clients (particularly those that primarily draw text) perform worse with Backing Store enabled, this setting should be used with caution.

4) Click the Save Under option that corresponds to the level of feature support needed.

   - Click the Off button to disable the Save Under feature. With the feature in this state, client applications must redraw their windows each time they are exposed. You save computer memory when Save Under is turned off, but you may have to wait for some client windows to redraw themselves.

   - The Save Under feature is preset to Requesting Clients. This selection enables the Save Under feature only for the windows of client applications that request it. When a window requesting Save Under is displayed on your monitor, the contents of windows behind it are saved (even if they didn't request Backing Store); when the window is dismissed, the saved contents are restored. Save Under is used mainly for transient windows such as menus and dialog boxes.

5) Click the OK button to confirm your preferences.
   An alert box appears to report that your preferences will not be enabled until the MacX file, or document, is reopened.

6) Click the OK button to dismiss the alert box.

7) Save, close, then reopen the MacX document to enable your new display

preferences.

Greater Client Compatibility with colormaps

MacX 1.2 makes all 256 entries of each screen's default colormap available for use by X client applications. A default "standard" colormap is no longer installed automatically by MacX. This change provides support for those X client applications that require many free colormap entries in the screen's default colormap.

Earlier versions of MacX installed a standard colormap as the screen default colormap, leaving only 128 empty colormap entries available for client allocation. This caused problems with clients requiring that more than 128 colormap entries be available in the default colormap.

If your particular X application expects a standard colormap to be present in the screen default colormap, follow these steps to load the standard colormap:

1) Open the MacX application program by double-clicking its icon.

2) Choose the Misc. Preferences command from the Edit menu.

3) Click the Load Standard Colormap at Startup checkbox.

4) Click the OK button to confirm your preferences.
   An alert box appears to report that your preferences will not be enabled until the MacX file, or document, is reopened.

5) Click the OK button to dismiss the alert box.

6) Save, close, then reopen the MacX document to load the standard colormap.

• Are you having trouble displaying a color X client on your MacX server alongside other color clients? Try displaying the troublesome client application on your MacX server by itself. Your other X clients may have filled up the colormap, and the troublesome application, finding the colormap already full and not requesting MacX to create a new one, fails to run. By running only the troublesome X client application, you allow it to take advantage of all the colormap entries it needs since no other applications are competing for colormap entries.

Faster Display of Client Applications, with Smoother Animation Turned Off

Smoother (but Slightly Slower) Animation is no longer enabled by default, with the result that client applications may be displayed more quickly on your MacX screen.

The Smoother Animation option regulates how often MacX responds to client graphics requests. With this option turned off, client graphics requests are batched for approximately one-sixth of a second before executing to prevent constant screen refreshing—a time-consuming process.

With Smoother Animation turned on, client graphics requests are rendered immediately, meaning that client applications may be displayed more slowly on your monitor than with the feature turned off.

Depending on your needs, you can enable Smoother Animation anytime. Follow these steps:

1) Open the MacX application program by double-clicking its icon.

2) Choose the Misc. Preferences command from the Edit menu.

3) Click the Smoother (but Slightly Slower) Animation checkbox.

4) Click the OK button to enable your new preference and to dismiss the preferences window.

For more information about animation preferences, see the section "Animation and Mouse-Movement Preferences" in Appendix A of the MacX User's Guide.

Easy Client Access to MacX, with Host Access Alert Boxes Turned Off
---
Host access alert boxes are no longer enabled by default, allowing unrestricted access by client applications to MacX. As a security feature, the following alert box, if enabled, appears automatically when clients attempt to connect to MacX. The alert box requests your permission to accept connections from the client.

This alert box may appear several times in the course of establishing a connection. With the alert box suppressed, you no longer have to respond to it before clients can connect to MacX. However, this also means that you no longer have control over client connections.

Depending on your needs, you can enable the host access alert box at any time. Follow these steps:

1) Open the MacX application program by double-clicking its icon.

2) Choose the Access Control command from the Remote menu.

New Window Commands for Easier Window Control

Three new commands have been added to the Window menu to give you greater convenience when controlling windows.

Circulate Up (Cmd-U) This command causes the window farthest back in the collection of MacX windows to be brought to the front of the stack. This is handy for switching between windows easily without removing your hands from the keyboard to use the mouse.

Circulate Down (Cmd-D) This command causes the front most window in the collection of MacX windows to be sent to the back of the stack. This is

handy for switching between windows easily without removing your hands from the keyboard to use the mouse.

Maximize Height/Restore Height (Cmd-M) This command, which is only enabled when the front most window is a rootless X client window, makes the front most window taller by extending its bottom edge to the bottom of the screen. If the front most window has already been extended in this way, the command restores the window's previous height.

Window Dimensions Reported During Resizing

While rootless X windows are being resized, the size of the window in client-specified units (normally, pixels for graphics or characters for text-oriented clients such as terminal emulators) is displayed in the menu bar.

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Tech Info Library Article Number:12027

Tech Info Library

Macintosh LC III, Performa 450: 16-Bit Color in 512K VRAM (4/93)

Revised: 5/4/93
Security: Everyone

Macintosh LC III, Performa 450: 16-Bit Color in 512K VRAM (4/93)

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Article Created: 30 April 1993

TOPIC ----------

This article describes a setting that enables the Macintosh LC III and Performa 450 to display images at 16 bits per pixel -- though with a smaller screen area -- without adding optional video RAM above the 512K included with the computer.

DISCUSSION ----------

The AppleColor High-Resolution RGB Monitor, Macintosh Color Display, and Macintosh 12" Monochrome Display can be set to display images of 16 bits per pixel with just the 512K of video RAM included with the Macintosh LC III and Performa 450. But to obtain the higher depth, the active screen area is reduced from the normal size 640 x 480 pixels to 640 x 400 pixels.

To turn on this option, open the Monitors control panel and click on the Options button. Choose the 640 x 400 pixel display mode, and restart the computer. The screen window will be at the same resolution as that of a PowerBook display, shorter at 400 pixels than in normal display mode. You can then set the monitor to thousands of colors, instead of the 256 colors available in 640 x 480 mode.

Adding the optional VRAM upgrade will allow the monitor to display thousands of colors in normal (640 x 480) pixel mode.

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Tech Info Library Article Number:12028

DAL 1.3.5: VM/CMS ESA Connection (4/93)

Revised: 5/18/93
Security: Everyone

DAL 1.3.5: VM/CMS ESA Connection (4/93)

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Article Created: 29 April 1993

TOPIC ----------

I will be installing DAL 1.3.5 for VM/CMS on an ES/9000 mainframe with the VM/ESA Operating System. I have an installation of about 200 Macintosh computers. For host access I use Avatar's MacMainFrame via coax to a 3174 Unit Controller and I have to make the installation via this path.

Only one Unit Controller is available to make the connection and this unit is configured as non-SNA. It's this way because this is the controller that attaches to the system console.

Here are my questions:

1) I have release 3.2 of Avatar MacMainFrame. I should have no problems accessing the non-SNA Control Unit because Avatar supports CUT, NLCA, and DFT, but is there a compatibility problem with Avatar MacMainFrame 3.2 and DAL 1.3.5?

2) I also want to make a SNA•ps connection. I've read DAL supports CUT, NLCA, and DFT access using MacDFT through the 3270mac network adapter. Does the SNA•ps 3270 driver support CUT and NLCA through the 3270mac network adapter? I don't think it does, but I would like confirmation of this.

3) If CUT and NLCA access through the SNA•ps 3270 driver is not supported, can I make the connection through a SNA•ps gateway using the DALnet SNAps3270 network adapter via a non-SAN control unit?

DISCUSSION ----------

There is more to this issue than just the questions you have asked. Here are the answers to your questions:

1) DAL 1.3.5 does not work with MacMainFrame 3.2. That is a very old release and has not been supported by Avatar for quite some time. You need to get release 4.0.1 at least before you will be able to work with DAL 1.3.5 successfully.

2) DAL supports the SNA•ps 3270 connection only through the DALnet SNAps3270 network adapter. This network adapter is only available in the DAL Client release 1.3.5 or greater. This connection uses the SNA•ps 3270 API and requires a SNA•ps 3270 gateway.

3) Both CUT and NLCA are usually single-session coax connections. It is not possible to run a gateway over a single session, non-SNA connection. DAL uses the SNA•ps 3270 API and that requires a SNA Gateway. So, no you can't put a SNA•ps gateway on this controller. You could use the SNA•ps 3270, not the GC (Gateway Client), product to show that the emulator works, but that will not work with DAL as it uses the SNA•ps 3270 API -- the 3270 emulator does not use the 3270 API.

Now, for another issue: With VM/XA and VM/ESA (as opposed to VM/SP) operating systems, IBM does not support the SQL command "Connect to Database", which DAL does support -- as it is available in VM/SP systems.

Since DAL supports this command, there is a possibility that the installation of the DAL Server could run into a problem when doing the SQL Prep of the Access Module (page 7 on the DAL Server for VM Installation Guide). If the SQL Prep process takes exception to the "Connect to Database" command, simply comment those commands out in the CL1DBI01 TEXT module and rerun the SQL Prep process.

Regardless of whether the SQL Prep process has a problem with the inclusion of that command, there is work that needs to be done to allow users to access the database when the installation is complete.

The Environment file (ENV DAL) must be updated to have the first line, SSID= changed to:

```
SSID=@SQL
```

The use of "@SQL" is a key to the DAL Server to NOT attempt to issue the "Connect to Database" command.

It is necessary that the SSID= field in the environment file be changed because commercial applications like ClearAccess™ require the user to select a database name from a list. If the actual database name were listed, and the user selected it, DAL would attempt to issue the command that is not supported and the user would never be able to connect.

It is also possible to use a null value ('' -- quotes with no space inside) instead of the @SQL value. This will only work where the application supports the entry of the database name and supports a null value.

For example, if the user used the DAL Tester, then his Open Database

command could use either @SQL or a null as the value of the database name:

```
    Open SQLDS dbms;
    Open database '';
```

or:

```
    Open SQLDS dbms;
    Open database '@SQL';
```

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Tech Info Library

MacX 1.2: File Compatibility with Earlier MacX Versions (4/93)

Revised: 5/4/93
Security: Everyone

MacX 1.2: File Compatibility with Earlier MacX Versions (4/93)

==========

Article Created: 29 April 1993

TOPIC ----------

This article describes compatibility with MacX 1.2 of files created in earlier versions of MacX.

DISCUSSION ----------

Your MacX 1.1.7 documents are fully compatible with MacX 1.2. If you are in MacX 1.2 and open documents created with earlier versions of MacX, you are presented with an alert box that asks you to preserve or update your default settings. You have two options:

- If you click the Update Defaults button, the default settings of MacX 1.2 are applied to the MacX document that was created with an earlier version of MacX.

  The Update Defaults selection provides you with increased compatibility with all X client applications, and you may recognize some improvements in performance.

- If you click the No Change button, the old default settings are carried over to the newly converted document.

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Tech Info Library

MacX 1.1.7: Read Me Technical Information (4/93)

Revised: 5/18/93
Security: Everyone

MacX 1.1.7: Read Me Technical Information (4/93)

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Article Created: 29 April 1993

TOPIC ----------

This article contains technically-oriented information about MacX 1.1.7.

DISCUSSION ----------

A/UX and MacX now support floppy disks just as Command Shell does: it permits floppies to be used either for Macintosh disk format or for Unix data. When a disk is inserted, a dialog is displayed which is similar to the one presented by Command Shell under similar circumstances. This dialog permits the user to choose between Macintosh format and Unix disk usage, or to eject the disk in case it was inserted accidentally. Floppy disks which are not in Macintosh format will be accepted silently, and disks which have not yet been formatted will result in a dialog which permits the disk to be initialized as a Macintosh disk.

Several new features have been added to MacX 1.1.7 to make the MacX window manager more convenient to use. Three commands have been added to the Window menu to support these new features. Also, while rootless X windows are being resized, the size of the window in client-specified units (normally pixels or, for text-oriented clients like terminal emulators, characters) is displayed in the menu bar.

Circulate Up (Cmd-U)

This command causes the bottom-most window in the collection of MacX windows to be brought to the top of the stack. This is handy for switching between windows easily without removing your hands from the keyboard to use the mouse to do so.

Circulate Down (Cmd-D)

This command causes the top-most window in the collection of MacX windows to be sent to the bottom of the stack. This is handy for switching between windows easily without removing your hands from the keyboard to use the mouse to do so.

Maximize Height / Restore Height (Cmd-M)

This command, which is only enabled when the front-most window is a rootless X client window, can be used to make the front-most window taller by extending its bottom edge to the bottom of the screen. If the front most window has already been extended in this way, the command restores the window's previous height.

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MacX 1.2 Documentation Navigation Aids, Release Notes (4/93)

Revised: 5/18/93
Security: Everyone

MacX 1.2 Documentation Navigation Aids, Release Notes (4/93)

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Article Created: 29 April 1993

TOPIC ----------

If you're already using MacX 1.1.7, you need to read only the MacX 1.2 Release Notes and the documentation it references. You don't have to reread the MacX 1.1.7 Release Notes unless you want to familiarize yourself with its features.

DISCUSSION ----------

The MacX documentation includes the MacTCP Administrator's Guide, version 1.1, and revised installation procedures for system software version 7.x. These procedures are described in the MacX Installation Guide.

To navigate through the MacX documentation, follow these steps:

- If you're new to MacX, read the MacX 1.1.7 Release Notes first, then read the MacX 1.2 Release Notes. If you're already a user of MacX 1.1.7, you need to read only the MacX 1.2 Release Notes.

- Follow the instructions in the MacX Installation Guide to install the MacX application program.

  If you're running MacX on system software version 6.0.x, make sure you read Chapter 3, "Setting Up Communications," in the MacX Installation Guide to learn how to install the Macintosh Communications Toolbox.

- Follow the instructions in the MacTCP Connection Tool Module to install MacTCP and configure the MacTCP driver.

- Read the MacX User's Guide to learn how to use MacX. If necessary, refer back to these release notes for information about MacX 1.2 features not described in the MacX User's Guide.

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Tech Info Library

MacX: Updating to Version 1.2 (4/93)

Revised: 5/18/93
Security: Everyone

MacX: Updating to Version 1.2 (4/93)

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Article Created: 29 April 1993

TOPIC ----------

This section provides instructions about updating your older release of MacX to version 1.2.

DISCUSSION ----------

With the MacX 1.2 Update product, you receive the following items:

- MacX 1.2 Release Notes
- MacX 1.1.7 Release Notes
- MacTCP Administrator's Guide, version 1.1
- MacX Application disk
- MacX Communications disk
- Communications 1 disk
- Network Products Installer disk

To update to MacX 1.2, perform these steps:

- Install the MacX 1.2 application program, located on the MacX Application disk.

  If you're not using A/UX, go to Chapter 2, "Installing MacX," of the MacX Installation Guide. Follow the instructions that apply to your Macintosh computer's hardware and software configuration. You do not have to reinstall the other files on the MacX Application disk (MacX Colors file, Sample, and so on).

  - A/UX users: Replace your version of MacX with the one on your new MacX Application disk. Unless you've moved your MacX program, you'll find it in the /mac/MacX/ directory. As soon as you replace the program, you can begin using it. If you don't have permissions to

access this directory, see your system administrator.

- If you're not using A/UX, install the MacTCP 1.1.1 driver located on the MacX Communications disk.

  Go to the MacTCP Connection Tool Module in the MacX Binder. Follow the instructions that apply to your Macintosh computer's hardware and software configuration to install and configure MacTCP 1.1.1.

  - A/UX users: The version of MacTCP that resides in your Control Panels folder is customized for A/UX only. Do not use the MacTCP 1.1.1 driver that's included on the MacX 1.2 Communications disk. MacTCP 1.1.1 supports the Macintosh Operating System only, not A/UX.

The Communications 1 disk and the Network Products Installer disk are included in your MacX 1.2 Update product in the unlikely event that you need to reinstall the Communications Toolbox on your computer. Read Chapter 3, "Setting Up Communications," in the MacX Installation Guide for instructions about installing the Communications Toolbox on system software version 6.0.5, 6.0.6, or 6.0.7. If you're using version 7.0 or later, or you're using A/UX, you don't need to install the Communications Toolbox; it is built into system software versions 7.0 and later.

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Tech Info Library Article Number:12036

Tech Info Library

MacX Technical Notes (4/93)

Revised: 5/18/93
Security: Everyone

MacX Technical Notes (4/93)

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Article Created: 29 April 1993

TOPIC ----------

This article contains Technical notes from the MacX 1.1.7 Release Notes on:

- Full 256 Color Colormaps and Color Update
- Differences Between MacX and Other X11R4 Servers.

DISCUSSION ----------

Full 256 Color Colormaps and Color Update

MacX no longer requires that black and white colors occupy pixel values #255 and #0 (respectively) in colormaps in order to animate colormaps. Clients that require all 256 colormap entries and set entry #0 and/or entry #255 to colors other than white and black, respectively, will cause the Macintosh user interface to look strange while the client's windows are front-most. This condition is temporary and can be alleviated to make the menu bar and other Macintosh features more visible either by converting such windows to an icon (using Command-I, for example) or by switching to another MultiFinder application.

MacX updates the colors in windows displayed by other applications several seconds after the last X11 colormap operation modifies the color environment. This is to permit "batching together" of colormap operations and updates of other applications' windows to improve MacX's color performance.

Differences Between MacX and Other X11R4 Servers

MacX ignores X11 requests ChangeHosts, SetAccessControl, SetScreenSaver, ForceScreenSaver, SetFontPath, ChangeKeyboardControl. For rootless screens, MacX ignores GrabPointer and GrabButton (with a confine-to

window). In order to live comfortably in both the X11 and Macintosh worlds, MacX must make a few concessions to both worlds' diverse requirements and capabilities. Access control is implemented on MacX solely based on a per-connection go/nogo decision made by the user. The screen saver functionality in X11 is not present in MacX since this would interfere with the Macintosh's other uses. Font path searching is not present — MacX implements a hierarchical font directory scheme that does not require manually updating a master list of available fonts every time a change is made. All X11 requests for changing keyboard and bell sound settings or for confining the mouse pointer to a given portion of the screen are contrary to the Macintosh world and have no effect in MacX.

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Tech Info Library Article Number:12037

Tech Info Library

MacX Troubleshooting (4/93)

Revised: 5/18/93
Security: Everyone

MacX Troubleshooting (4/93)

==========

Article Created: 29 April 1993

TOPIC ----------

This article describes technical troubleshooting information, and covers the following areas:

- MacX and the Macintosh Display Card 8•24 GC
- 32 Bit QuickDraw
- Default Colormap and Colormap Errors from Client
- Remote Command and Ultrix 4.0
- Remote Commands and Sun OS.

DISCUSSION ----------

MacX and the Macintosh Display Card 8•24 GC

Use of MacX with a Display Card 8•24 GC in "millions" mode can cause crashes. This is due to a problem in which the Display Card 8•24 GC fails to properly support color cursors in the Display Card 8•24 GC software version 1.0. Since MacX only supports 8 bits per pixel (256 colors), use of the Display Card 8•24 GC in that mode is a good work-around for this problem until it can be fixed in the Display Card 8•24 GC support software. Also, due to the way MacX and the Display Card 8•24 GC work, it may be faster to use MacX with the Display Card 8•24 GC card's acceleration turned OFF.

32 Bit QuickDraw

MacX requires the presence of 32-bit QuickDraw to support one feature: the conversion of color PICTs to X11 selections. If you do install 32-bit QuickDraw on your machine (or have a machine at least as new as a Macintosh IIci), you will have this capability — MacX will offer to convert clipboard contents to color PIXMAP and COLORMAP style. If MacX can't find the 32-bit

QuickDraw features, MacX will only offer to convert to BITMAP.

Note that 32-bit QuickDraw also adds some performance enhancement and bug fixes on machines older than the Macintosh IIci. Also note that 32-bit QuickDraw is built into System 7.0 and later for all machines that support Color QuickDraw.

Default Colormap and Colormap Errors from Client

Some X11 clients ("xgif", for example) complain when attempting to display a large number of colors simultaneously on MacX color screens. This is because the clients are constructed based on the assumption that there are many free colormap cells in the default colormap. MacX always installs the standard X11 colormaps, created in a manner analogous to those created by the MIT "xstdcmap" client, for both screen #2 and screen #3. If a client attempts to allocate more than the number of colormap entries left unused by the currently-installed colormap, it gets an error. This problem sometimes causes "grainy" color picture displays (in xgif) or may cause error messages issued by some clients. The problem is caused by an invalid assumption the client is making — that it will be able to write all or nearly all of the colormap cells of the default colormap. Clients that do this should be modified so they create their own (initially empty) colormap and set the contents of that colormap instead.

Remote Command and Ultrix 4.0

Users of remote commands with Ultrix 4.0 machines may find that MacX is unable to connect and run remote commands on that system. This is due to a problem with the Ultrix 4.0 rexecd network daemon, which does not occur in older versions of Ultrix. This problem is fixed in Ultrix 4.1 and later.

Remote Commands and Sun OS

Users of remote commands with Sun workstations may find that their remote commands appear to do nothing and there is no output from the Sun workstations. This is due to a feature of the Sun rexecd network daemon which quietly disconnects from requesting machines that are not known to the Sun's network address (/etc/hosts or NIS hosts) database. To successfully use remote commands with a SunOS-based machine, there must be an entry in the network address database for the Macintosh which is running MacX.

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Tech Info Library Article Number:12038

Tech Info Library

Color Classic: Apple File Exchange Error Message (8/93)

Revised: 8/31/93
Security: Everyone

Color Classic: Apple File Exchange Error Message (8/93)

==========

Article Created: 4 May 1993
Article Reviewed/Updated: 30 August 1993

TOPIC ----------

On the Macintosh Color Classic, opening Apple File Exchange sometimes gives a type 1 error or the message "Application unknown has unexpectedly quit." You need to install the Hardware System Update to resolve this.

DISCUSSION ----------

There's a known problem with the Color Classic and Apple File Exchange, where Apple File Exchange will crash or not operate correctly. The problem was fixed in the Hardware System Update. Install the Hardware System Update on a Macintosh Color Classic to fix the Apple File Exchange problem.

Without the update, there were problems when running in both 24- and 32-bit mode. However, a crash normally only resulted when running Apple File Exchange in 24-bit mode. This is why some articles suggested running in 32-bit mode with Apple File Exchange on a Color Classic.

Installing the Hardware System Update resolves this issue, and the Color Classic can then run in either 24- or 32-bit mode.

You can find the Hardware System Update on AppleLink following this path:

Software Sampler
Apple Software Updates
Macintosh
Supplemental System Software

Article Change History:

30 August 1993 - Combined information from a similar article.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12040

Tech Info Library

LaserWriter Select 310: Only Supports PostScript Level I (5/93)

Revised: 5/14/93
Security: Everyone

LaserWriter Select 310: Only Supports PostScript Level I (5/93)

==========

Article Created: 4 May 1993

TOPIC ----------

Why does Apple only support PostScript Level I on the LaserWriter Select 310?

DISCUSSION ----------

Apple used PostScript Level I on our LaserWriter Select 310 because overall it's a less expensive solution. Since the printer was geared as an entry-level solution, there were a couple of major reasons for using PostScript Level I:

- PostScript Level II requires more RAM in the printer, and thus would increase the cost of the printer.
- The features that PostScript Level II provides will most likely not be an issue with entry-level users.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12042

Tech Info Library

LaserWriter: Automatic Setup with Spooled LaserWriter (5/93)

Revised: 5/6/93
Security: Everyone

LaserWriter: Automatic Setup with Spooled LaserWriter (5/93)

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Article Created: 5 May 1993

TOPIC ----------

The SETUP command in the Chooser does not work when my LaserWriter Pro 630 is captured by AppleShare PrintServer 3.0.1. I'm using LaserWriter driver 7.2 and as I understand, SETUP needs to be performed in order to display the paper source and imaging options of the printer in the Print dialog box. How can I "SETUP" my spooled LaserWriter Pro 630?

DISCUSSION ----------

The automatic SETUP feature does not work when a LaserWriter is spooled. To use this feature on a spooled LaserWriter, hold down the OPTION key when selecting SETUP. This is a power-user feature that will enable the user to manually select the type of printer connected and the options installed -- such as the 500-sheet tray. Once this is done, all of the available printer options will show up correctly in the Print dialog box.

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Tech Info Library Article Number:12047

Tech Info Library

Macintosh PC Exchange: Version 1.0.2 Update (5/93)

Revised: 7/2/93
Security: Everyone

Macintosh PC Exchange: Version 1.0.2 Update (5/93)

==========

Article Created: 5 May 1993

TOPIC ----------

This article discusses version 1.02 of Macintosh PC Exchange.

DISCUSSION ----------

Version 1.0.2 resolves several technical problems reported by PC Exchange customers and is available to customers at no charge.

Mac PC Exchange 1.0.2 doesn't include any new features or enhancements over the previous version 1.0.1, but incorporates fixes for the following problems:

- PC Exchange 1.0.1 wouldn't recognize certain brands of pre-formatted PC floppy disks. Instead, PC Exchange asked users if they wanted to initialize the floppy disk. Version 1.0.2 of PC Exchange should now recognize all brands of PC-format floppy disks, regardless of the method used to pre-format the disk.

- Occasionally, the first file that users selected from a locked, PC-format floppy disk wouldn't open, or the content of the document would appear as garbage characters. If users unlocked the floppy disk, all files on the PC-format disk would open without difficulty. With version 1.0.2 of PC Exchange, you can open documents from a locked, PC-format floppy disk without problems.

- When PC Exchange initializes a floppy disk that is damaged, the initialization process can take a long time to update the damaged disk. Version 1.0.2 of PC Exchange displays a new message while a damaged disk is being updated. This message reports the progress of the disk update and gives the option to cancel the disk initialization.

- If there isn't enough free space in the application heap, a format failure or system crash could occur when PC Exchange is formatting a PC floppy disk. This problem shouldn't occur with version 1.0.2 of PC Exchange.

The Macintosh PC Exchange 1.0.2 update kit includes an 800K program disk and a cover letter.

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Tech Info Library Article Number:12048

Tech Info Library

VITAL Technical Architecture Guides (5/93)

Revised: 5/5/93
Security: Everyone

VITAL Technical Architecture Guides (5/93)

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Article Created: 4 May 1993

TOPIC ----------

This article describes the VITAL Technical Architecture Guides for Corporate IS Planning, Design and Development.

DISCUSSION ----------

VITAL Technical Architecture Guides are a comprehensive source of information on VITAL, a platform-independent framework for the planning and development of client/server information systems that integrate the power of desktop technology while preserving existing technology investments.

VITAL Technical Architecture Guides comprise a comprehensive set of six soft-cover guides, one for each VITAL environment, plus introductory and supplemental volumes. The VITAL Technical Architecture Guides contain the full specifications of the VITAL architecture, detailed design templates, guiding principles and information on how corporate IS professionals can implement VITAL within their own organization.

For further information about the Technical Architecture Guides, order part number C1883.

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Tech Info Library Article Number:12049

Tech Info Library

VITAL: Training (5/93)

Revised: 5/5/93
Security: Everyone

VITAL: Training (5/93)

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Article Created: 4 May 1993

TOPIC----------

This article discusses VITAL training.

DISCUSSION ----------

In July, a variety of training options will be available to IS professionals who would like to learn VITAL concepts, guidelines, and techniques, and strategies.

VITAL training providers publish their own dates, costs, and locations of their courses for public classes as well as on-site courses. These schedules will be available July 1, 1993.

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Tech Info Library Article Number:12050

Tech Info Library

Alltech Electronics (5/93)

Revised: 7/2/93
Security: Everyone

Alltech Electronics (5/93)

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Article Created: 05/06/93
Article Reviewed: 07/02/93
Article Updated:

Alltech Electronics
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602 Garrison St.
Oceanside, CA 92054

619-721-7733

619-721-2823 Fax

Company Profile:
Specializing in Apple II systems and surplus software.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12055

Tech Info Library

Educational Resources (5/93)

Revised: 7/8/93
Security: Everyone

Educational Resources (5/93)

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Article Created: 05/06/93
Article Reviewed: 07/08/93
Article Updated:

Educational Resources

1550 Executive Drive
Elgin, IL 60123

800-624-2926

708-888-8499 Fax

Company Profile:
Specializing in software and hardware for the Apple II.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12056

Tech Info Library

Nite Owl Productions (5/93)

Revised: 7/14/93
Security: Everyone

Nite Owl Productions (5/93)

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Article Created: 6 May 1993
Article Reviewed/Updated: 14 July 1993

Nite Owl Productions

5734 Lamar Street
Mission, KS 66202

913-362-9898

913-362-5798 Fax

Company Profile:
Specializing in software, shareware, accessories for the Apple II, and Macintosh and GS batteries

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12057

Practical Computer Technologies (5/93)

Revised: 7/15/93
Security: Everyone

Practical Computer Technologies (5/93)

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Article Created: 6 May 1993
Article Reviewed/Updated: 15 July 1993

Practical Computer Technologies

5407 Port Royal Road
Springfield, VA 22151

Phone: 703-321-3003

Fax: 703-321-3053

Company Profile:
Specializing in consignment and resale of a wide assortment of Macintosh and Apple II software and hardware.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12058

Tech Info Library

Quality Computers (11/94)

Revised: 11/11/94
Security: Everyone

Quality Computers (11/94)

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Article Created: 6 May 1993
Article Reviewed/Updated: 11 November 1994

Quality Computers

P.O. Box 665
St. Clair Shores, MI 48080-0665

Phone: 800-890-8263
313-774-7740

Fax: 313-774-2698

Company Profile:

Specializing in software, accessories, and support for the Apple II family. Publications include "II alive", a magazine devoted to the Apple II, and a magazine and catalog for educators, called "Enhance".

Copyright 1993-94, Apple Computer, Inc

Tech Info Library Article Number:12059

Tech Info Library

Redmond Cable Corporation (5/93)

Revised: 7/16/93
Security: Everyone

Redmond Cable Corporation (5/93)

==========

Article Created: 6 May 1993
Article Reviewed/Updated: 16 July 1993

Redmond Cable Corporation

17371 NE 67th Ct Ste 81
Suite A1
Redmond, WA 98052

206-882-2009

206- 883-1430 Fax

Company Profile:
Specializing in Apple II, Macintosh, and custom cables.

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Tech Info Library Article Number:12060

Tech Info Library

Resource Central (5/93)

Revised: 7/16/93
Security: Everyone

Resource Central (5/93)

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Article Created: 6 May 1993
Article Reviewed/Updated: 16 July 1993

Resource Central

P.O. Box 11250
Overland Park, KS 66207

Phone: 913-469-6502

Fax: 913-469-6507

Company Profile:
Specializing in technical manuals and books, software, and some hardware for the Apple II, aquired all of APDA's Apple II equipment and utilities

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12061

Shreve Systems (5/93)

Revised: 7/19/93
Security: Everyone

Shreve Systems (5/93)

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Article Created: 6 May 1993
Article Reviewed/Updated: 19 July 1993

Shreve Systems
1200 Marshall Street
Shreveport, LA 71101

318-424-9791

800-227-3971

Fax: 318-424-9771

Company Profile:
Specializing in Apple II hardware such as power supplies, logic boards, and cases.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12062

Tech Info Library

TMS Peripherals (5/93)

Revised: 7/20/93
Security: Everyone

TMS Peripherals (5/93)

==========

Article Created: 6 May 1993
Article Reviewed/Updated: 20 July 1993

TMS Peripherals

1120 Holland drive,
Suite 16
Boca Raton, FL 33487-2729

Phone: 800-275-4867

Fax: 407-998-9983

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12063

Tech Info Library

MacX 1.2 and dxsession (5/93)

Revised: 5/18/93
Security: Everyone

MacX 1.2 and dxsession (5/93)

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Article Created: 6 May 1993

TOPIC -----

I am certain that, at one time, MacX did not support dxsession on a DECstation 5000. Does MacX 1.2 work with dxsession?

DISCUSSION -----

DEC Technical Support in Atlanta has tried dxsession with MacX 1.2 and it worked fine.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12064

Tech Info Library

AppleShare 4.0 Not Tested With Centris 650 (5/93)

Revised: 5/18/93
Security: Everyone

AppleShare 4.0 Not Tested With Centris 650 (5/93)

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Article Created: 6 May 1993

TOPIC ----------

Does AppleShare 4.0 run on a Centris 650?

DISCUSSION ----------

AppleShare 4.0 was NOT tested on the Centris 650. The listed computers; Centris 610, Quadra 700, 800, and 950 were the only computers tested. Although there may not be any reason for AppleShare 4.0 not to run on the Centris 650, because it was not tested IT IS NOT SUPPORTED!

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Tech Info Library Article Number:12066

VINES 5.50(1) AFP Problem With Drop Boxes (5/93)

Revised: 5/18/93
Security: Everyone

VINES 5.50(1) AFP Problem With Drop Boxes (5/93)

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Article Created: 6 May 1993

TOPIC ----------

I've been working with Banyan Systems on an AFP and privileges problem. The Banyan VINES server doesn't seem to support drop boxes properly. I've set up each user in a workgroup with a single folder, at the workgroup server's volume root, with owner privileges; then the other user's folders are drop boxes.

The environment is as follows:

- Banyan server is a Banyan CNS, 8MB RAM
- Server SW is VINES 5.50(1)
- 3Com Etherlink II, with thin Ethernet
- ATT StarLan10 and an ICA card
- Macintosh computers varying with System 6.0.8 or 7.0.1

Two problems were uncovered, and I'm wondering if it's AppleShare working as expected or Banyan related.

Here is the scenario, call the users UserA and UserB:

1) UserA has a folder containing files on his hard drive. If this folder is dragged onto their server folder, the data copies successfully.

   If UserA drags this folder onto UserB's server folder (seen as a drop box), part way through the copy a message appears, folder cannot be written because it can't be found. Then a second error is displayed, the (contained) file cannot be copied due to a disk error.

   An unacceptable workaround is to copy the local folder to your own server folder, and then drag it onto the drop box destination. This creates a two step process which also introduces issues related to the privileges of the moved folder.

2) UserA has copied the local folder to UserB's drop box and received the mentioned errors. UserB looks in his folder and sees a "belted" folder. When I Checked "Sharing..." from the File menu for the received folder, it showed Owner=UserA and no privileges for anyone else. This received folder shouldn't have those rights assigned to it. After changing the privileges I found nothing in the received folder.

Any help determining an effective way to create functional drop boxes on VINES 5 would be appreciated.

DISCUSSION ----------

These behaviors are definitely not typical for AFP. Drop boxes should not issue any type of error message when something is "dropped" into them. The contents of the drop box should most definitely be visible to the box owner.

We escalated the issue to Banyan Support and the response from Technical Support and Engineering was as follows:

- The current revision 5.50(1) doesn't support folders dropped into drop boxes.

- The new revision 5.52(5) doesn't support folders dropped into drop boxes.

- There was no time estimate on when this feature will be supported.

You may want to ask Banyan Systems for some possible workarounds to provide "similar" functionality.

To locate a vendor's address and phone number, use the vendor name as a search string.

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Tech Info Library Article Number:12067

Tech Info Library

Printing Differences: Lines Per Inch and Dots Per Inch (5/93)

Revised: 5/14/93
Security: Everyone

Printing Differences: Lines Per Inch and Dots Per Inch (5/93)

==========

Article Created: 11 May 1993

TOPIC ----------

The Apple Color Printer spec sheet says the printer has 360 dots per inch, but it also says the printer has 65 screen lines per inch. Can you explain the difference between lines per inch and dots per inch?

DISCUSSION ----------

Dots per inch (dpi) represent the quantity of dots per inch a printer is capable of putting onto paper. Dots per inch is also known as the resolution of the printer.

Lines per inch (lpi) represent the number of halftone dots (per inch) that a screen contains Lines per inch is also referred to as the screen frequency or screen ruling.

The halftone dot is quite different from the dpi dot. The halftone dot can actually be a variety of shapes: lines, ellipsoids, squares, dots, random flecks, and a variety of other solid black shapes. Typically dots and ellipsoids are used. However, for the more artistic representations other shapes are often used. The number of shapes per inch is measured by lines per inch, that is, shapes per inch equals lines per inch.

With the exception of daisy wheel type printers, output from computers has always been based on a quantity of dots placed together to represent alphanumeric characters and graphics. The first printers of this nature were the dot matrix printers. Laser printers and ink jet printers use this same principal. The laser and ink jet dots are smaller than the dot matrix printers, but they work the same way. The number of dots these printers produce is the measured in the dots per inch (dpi) notation.

Prior to the use of the dot based printers the pre-press/printing industry used various methods of placing solid forms of ink onto paper (gravure, letterpress, offset, and so on.). These methods do not use dots to form the alphanumeric characters. Similar to the daisy wheel printers, the characters are fully formed ink impressions. The problem with using solid ink comes when attempting to print graphic images which consist of more than solid lines or solid blocks (line art). Some method to vary the amount of ink placed on the paper is needed in order to represent various levels of gray. Otherwise, printing photographs and other continuous tone artwork would not be possible.

To address this need, a technique was developed to print various sized black halftone dots on the paper. An area of various sized, solid black halftone dots will trick the eye into thinking it is seeing various levels of gray.

In the traditional technique used to create these various sized dots a screen is placed over the photographic enlargement paper to break the continuous-tone photograph into halftone dots. A screen can best be described as a sheet of plastic which contains the inverse (negative) gray scale pattern of halftone dots. This sheet of semi-transparent plastic allows varying amounts of light to pass through and contact the photographic paper placed beneath it. In the computer technique, there is no physical screen used. The halftone dots are created via computer image processing.

The number of halftone dots in the screen is represented by the lines per inch (lpi) measurement. That is, 65 halftone dots per inch equals 65 lines per inch. The number of halftone dots per inch for a screen can vary. Typical values are 65 lpi for newspaper photograph halftones to 200 lpi (or higher) for art reproduction books.

There is a relationship between dpi and lpi. The relationship exists as a limit. The lpi of a printer will always be less than the dpi of the printer, because the halftone dot is composed of a matrix of the dpi dots. Higher dpi does not directly indicate higher lpi, only the possibility of higher lpi. Both a 300 dpi printer and 600 dpi printer can produce halftone dots of (possibly) 53 lpi, 75 lpi, 83 lpi, 106 lpi, and 150 lpi, but the 600 dpi printer would be able to produce additional, higher lpi.

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Tech Info Library Article Number:12068

Tech Info Library

Personal LaserWriter NTR: Some TrueType Fonts Won't Print 7/93

Revised: 7/19/93
Security: Everyone

Personal LaserWriter NTR: Some TrueType Fonts Won't Print 7/93

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Article Created: 13 May 1993
Article Reviewed/Updated: 12 July 1993

TOPIC ----------

I have a Personal LaserWriter NTR that won't print three of my TrueType fonts: Old English, Oxford, and Zeal (these are fonts that came with my printer). It won't print in Microsoft Works 3.0, Microsoft Word 4.00c or PageMaker 4.2. If a document contains one of these fonts on page two, it only prints page one. I tried turning extensions off, but that didn't work. My printer whirs, the busy light blinks, then stops, then the light blinks again and stops.

The printer prints all other fonts just fine in all my applications.

I'm using a Macintosh LC II running System 7.0.1. No other devices are connected to this printer.

DISCUSSION ----------

This problem can be resolved by upgrading to version 7.1.2 of the LaserWriter driver.

This assumes you are currently using version 7.1.1 of the LaserWriter driver. This is a known problem with version 7.1.1 and is mentioned in an article in the Technical Information Library titled, "LaserWriter Driver 7.1.1 and 7.1.2: Differences."

The article reads:

> "Fix for a very rare bug when printing to a Personal LaserWriter NTR with some TrueType fonts: the printer purges the current job and restarts."

If you have access to AppleLink, you can find a copy of the 7.1.2 driver by following this path:

Software Sampler
  Apple SW Updates
    Macintosh
      Printing Software
        LaserWriter (7.1.2)

NOTE: If you are using a Performa 400, 405, or 430, you may run into the same problem.

Article Change History:
07/12/93 - Revised to include Performa series information.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12069

Tech Info Library

LaserWriter Pro: Error in User's Guide (5/93)

Revised: 5/24/93
Security: Everyone

LaserWriter Pro: Error in User's Guide (5/93)

==========

Article Created: 10 May 1993

TOPIC -----

The LaserWriter Pro User's Guide states (page 36) that "The LaserWriter Pro is designed to work with system software version 6.0.5 or later....".

Is this correct?

DISCUSSION -----

The statement should read "system software version 6.0.7 or later" instead of "system software version 6.0.5 or later".

Future editions of the LaserWriter Pro User's Guide will have corrected information.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12070

Tech Info Library

Stylewriter: Printed Box is Too Short (5/93)

Revised: 5/24/93
Security: Everyone

Stylewriter: Printed Box is Too Short (5/93)

==========

Article Created: 10 May 1993

TOPIC ----------

When I create a 7.5 x 10.0 inch box in any graphics application and print it on my StyleWriter II, the printed box only measures 7.5 x 9.95 inches on the page. In contrast, the HP DeskWriter prints the same image at 7.5 x 10.0 inches.

What causes this?

DISCUSSION ----------

The .5 percent reduction in page length occurs because the StyleWriter II, as well as the original StyleWriter, utilize paper underfeeding to prevent horizontal banding. Paper underfeeding, in effect, overlaps each print head pass to create a "blending effect" of the printed lines. The drawback, however, is that this minute underfeeding has a cumulative effect over the length of the page and thus results in the .5 percent discrepancy in page length.

The HP DeskWriter also utilizes paper underfeeding, but it has a smaller cumulative effect since it is a 300 dpi printer. At 300 dpi, the dot size is correspondingly larger and thus requires fewer print head passes to print an image. This gives less cumulative underfeeding.

Since the original StyleWriter and the StyleWriter II are 360 dpi printers, their dot size is smaller and so requires more print head passes to create a page.

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Tech Info Library Article Number:12071

Tech Info Library

AppleCD 300: SCSI-2 Support (5/93)

Revised: 5/24/93
Security: Everyone

AppleCD 300: SCSI-2 Support (5/93)

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Article Created: 11 May 1993

TOPIC ----------

Is the external AppleCD 300 compatible with the SCSI-2 interface standard?

DISCUSSION ----------

The external AppleCD 300 drive does use the industry standard SCSI-2 interface. This standard addresses both the electrical interface and command protocols to this drive.

NO Macintosh systems, however, support the SCSI-2 standard interface at this time.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12078

Tech Info Library

AppleCD 300: Differences Between Modes and Speed (5/93)

Revised: 5/24/93
Security: Everyone

AppleCD 300: Differences Between Modes and Speed (5/93)

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Article Created: 11 May 1993

TOPIC ----------

In the AppleCD 300 User's Guide, both mode and speed are mentioned. I was under the impression that normal speed was mode 1 and double speed was mode 2.

Can you please explain the difference between mode and speed?

DISCUSSION ----------

In respect to CDs, modes refer to the format of the various fields written on the compact disk (such as sync, header, data, ECC, etc.). The different modes are not a function of different drive speeds, and can be used at both single and double speed.

The AppleCD 300i and the external AppleCD 300 will play the following types of compact disks:

CD-Audio
CD-ROM (modes 1 and mode 2)
CD-ROM XA (mode 2, form 1 and form 2)
CD-I (mode 1 and mode 2)
CD-I Ready
CD-I Bridge
Photo CD (single and multiple sessions)

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Tech Info Library Article Number:12079

Tech Info Library

Retrospect: Error 206 (media failure) (8/93)

Revised: 8/19/93
Security: Everyone

Retrospect: Error 206 (media failure) (8/93)

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Article Created: 13 May 1993
Article Reviewed/Updated: 19 August 1993

TOPIC ----------

Recently I have been involved with a network backup problem involving AppleShare 2.0, Retrospect, and different backup drives: PL/I, and Mac Warehouse DAT (Digital Audio Tape) drives with different tapes. Retrospect reported an error 206 which indicates a media failure.

Will the Apple DAT (Digital Audio Tape) drive work with Retrospect?

DISCUSSION ----------
Yes, the Apple DAT (Digital Audio Tape) drive will work with Retrospect.

Error 206 (media failure) is reported when there is trouble reading from or writing to the media. This error is always generated by the backup device, and is usually due to one of four causes:

- The media is physically defective and needs to be replaced. Try using a different tape or cartridge.

- Another SCSI device is causing interference. If you have a DAT drive immediately next to a Seagate hard disk, try moving the DAT drive to a point further away on the SCSI bus. Try removing one or more devices temporarily to see if there is some other device conflict.

- The heads on the tape drive are dirty and need to be cleaned. Consult the manual that came with your tape drive or contact the drive manufacturer for cleaning recommendations.

- The tape device is failing. Contact the manufacturer.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

..TIL12081-Retrospect-Error_206_media_failure_8-93.pdf

Article Change History:
19 August 1993: Retitled article and added technical information from Dantz Development Corp, maker of Retrospect.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12081

Tech Info Library

AppleTalk Remote Access Instructions (9/94)

Revised: 9/29/94
Security: Everyone

AppleTalk Remote Access Instructions (9/94)

==========

Article Created: 11 May 1993
Article Reviewed/Updated: 29 September 1994

TOPIC ----------

AppleTalk Remote Access lets you communicate with another Macintosh or an AppleTalk network over standard telephone lines. For example, you can log on to your Macintosh at work while you're at home.

This document shows you how to install AppleTalk Remote Access and use it with a call-back system (you call the phone number of the AppleTalk Remote Access server, and it calls you back at a predetermined phone number).

DISCUSSION ----------

What You Need

- An internal or external hard drive.
- System software version 7.0 or later.
- File Sharing turned on. See System 7 File Sharing if you need instructions. Dial 1-800-776-2333 and request document number 20217.
- A modem compatible with AppleTalk Remote Access. Refer to the AppleTalk Remote Access User's Guide for a list of compatible modems. Refer to your modem's manual for setup instructions.
- AppleTalk Remote Access software, comes on 800K disks or 1.44MB disks:
  - Two 800K disks titled Installer Disk 1 and Installer Disk 2.
  - One 1.44 MB (high-density or FDHD) disk titled Installer.
- Phone number from which you'll be calling (give this to the server administrator).

- Remote Access document information (from the server administrator):
  - User name
  - Password
  - Phone number of the server.

Turn Off Virus Software

If you use a virus detection program, follow the instructions in the manual to turn it off.

Install AppleTalk Remote Access

1) Insert the Installer 1 (800K disk) or Installer (1.44MB disk) into the main floppy drive.

2) Double-click the disk icon to open it. A window appears.

3) Double-click the Installer icon. The Welcome screen appears.

4) Click the OK button (or press Return). The Installer screen appears.

5) If the name of your hard disk doesn't appear, click the Switch Disk button until it does.

6) Click the Install button (or press Return). If any applications are open on your hard disk, a message appears.

7) Click the Continue button (or press Return). Messages appear to inform you of the installation's progress. If you're using the 800K disk, messages prompt you for the proper disks. When installation finishes, a message appears.

8) Click the Restart button (or press Return).

9) Reactivate your virus detection software.

Configure Remote Access Setup

1) Double-click the Remote Access icon.

2) Choose Remote Access Setup... from the Setup menu. The Remote Access Setup window appears.

3) Click the pop-up menu next to the word Modem.

4) Select the name of your modem. If your modem doesn't appear in the list, it may not be compatible with AppleTalk Remote Access. Refer to the AppleTalk Remote Access User's Guide for more information.

5) If you connected your modem to the Modem Port, skip to the "Create a Connection Document" section.

6) If you connected your modem to the printer port, click the modem port icon to activate the pop-down menu.

7) Select the printer port icon.

Create a Connection Document
---

1) Click the Untitled window to activate it.

2) Type your user name.

3) Type your password (upper case and lower case letters MUST match).

   NOTE: You can save your password by checking the box titled "Save my password." However, this compromises the security of the computer you're calling, and isn't recommended.

4) Type the server's phone number.

5) Choose Save from the File menu. A dialog box appears.

6) Type the name of the connection document.

7) Click the Save button (or press Return).

Connect with AppleTalk Remote Access
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1) Double-click the Connection document to open it.

2) Type your password. As a security precaution, you won't see it as you're typing -- only dots appear.

3) Click the Connect button. Your modem calls the server's modem. The program compares connection document information to the server's database. If it matches, the server's modem calls you at the predetermined phone number.

4) Select zones and shared volumes from the Chooser. (Your Macintosh at work appears as a server in your zone if you have its file sharing turned on.)

   NOTE: You can quit AppleTalk Remote Access to save memory space while you're connected. Open the application again to disconnect.

5) When you're finished with your session, click the Disconnect button.

6) Choose Quit from the File menu to leave AppleTalk Remote Access.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature).

The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
29 Sep 1994 - Reviewed for consistency and format changes.
24 Feb 1994 - Retitled, edited, made text available.

Support Information Services

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Tech Info Library Article Number:12092

Tech Info Library

QuickTime 1.6: Custom Install with CD-ROM Setup 4.0.2 (5/93)

Revised: 6/16/95
Security: Everyone

QuickTime 1.6: Custom Install with CD-ROM Setup 4.0.2 (5/93)

==========

Article Created: 7 May 1993
Article Reviewed/Updated: 16 June 1995

TOPIC ----------

I want to use QuickTime 1.6. When I try to use the "Easy Install" feature of CD-ROM Setup software version 4.0.2., it prompts me for the QuickTime 1.5 diskette. Can you explain?

DISCUSSION ----------

To use QuickTime 1.6 and avoid having the CD-ROM 4.0.2 installer prompt for the QuickTime 1.5 disk, you should:

1) Perform a "Custom" install of CD-ROM Setup 4.0.2 software (which requires only the CD-ROM Setup 4.0.2 disk).

2) Drag the QuickTime 1.6 extension into your Extensions folder.

Article Change History:
16 June 1995 - Changed security notice.

Support Information Services

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Tech Info Library Article Number:12103

Tech Info Library

Font Character Sets: Standards (5/93)

Revised: 5/14/93
Security: Everyone

Font Character Sets: Standards (5/93)

==========

Article Created: 13 May 1993

TOPIC ----------

I need to know which ISO (International Standard Oganization) standard character set Apple uses in System 7.

DISCUSSION ----------

System 7 uses an extended version of the American Standard Code for Information Interchange (ASCII).

Neither the North American English System 7 or 6 character sets are based on an ISO standard. As a matter of fact, when the Macintosh first came out it used a unique character set where the lower 128 characters were defined by ASCII (as was the case with most 8 bit character sets), but the upper 128 characters were mostly defined by Apple. Adobe futher refined the upper characters and with System Software 6.0.4 we first accepted and used the Adobe character sets.

Unicode, a new ISO international industry standard used to encode written characters makes it possible to encode all of the characters used for written languages throughout the world in one table and is the next major step toward providing a multilanguage Macintosh. Apple was one of the founding contributors to the Unicode consortium and is an active participant. Apple plans to provide support for this ISO standard in future releases of system software.

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Tech Info Library Article Number:12109

Tech Info Library

Apple DAT Drive: Use Media Recognition System Tape Cart. (4/97)

Revised: 4/23/97
Security: Everyone

Apple DAT Drive: Use Media Recognition System Tape Cart. (4/97)

==========

Article Created: 14 May 1993
Article Reviewed/Updated: 23 April 1997

TOPIC ----------

I have an Apple DAT drive and wondered what types of tape cartridges I should use. Please advise.

DISCUSSION ----------

The Apple DAT drive, which currently ships in the WorkGroup Server systems, requires the use of MRS (Media Recognition System) Tape Cartridges. These Tapes can be identified not only my the MRS labeling but also by an insignia followed by 4 bars (IIII). The tape should also be DDS-2 rated.

If you are using a different Tape Cartridge and are experiencing write problems, first check the type of Tape Cartridge being used. If the Tape is not an MRS type that is DDS-2 rated, switch to an MRS Tape that is DDS-2 rated. In most cases this should eliminate write problems.

It is important to note that even though the DAT drive will not write to non-MRS Tapes, it will in fact read them. If you have archived information on a non-MRS tape, the drive should be able to read them. However, non-MRS tape should not be used for writing new data.

IMPORTANT: The only tape that is qualified for use in the Apple DAT drive is the MRS Tape Cartridge that is DDS-2 rated.

Article Change History:
23 Apr 1997 - Updated with DDS-2 information.

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Tech Info Library Article Number:12119

Tech Info Library

4D Server: Quadra 800 Cache Problem & Workaround (5/93)

Revised: 5/20/93
Security: Everyone

4D Server: Quadra 800 Cache Problem & Workaround (5/93)

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Article Created: 19 May 1993

TOPIC --------------------

I'm setting up a 4D Server 1.0.2 on a Quadra 800 with System 7.1. The 4D Server package does not allow users to connect when the Quadra 800 cache is turned on. The error message is "maximum user count exceeded" when in fact no users are logged on. If cache is turned off, the problem disappears.

DISCUSSION --------------------

Acius Technical Support provides a workaround:

1. Disable the cache and restart the Quadra 800.

2. Start up the 4D Server and proceed through the server's initialization routine.

3. Quit the 4D Server.

4. Turn cache back on and restart the Quadra 800.

5. Start up the 4D Server.

The problem involves the hardware "key" device required by the 4D Server product. The key attaches to the ADB bus and the 4D Server accesses the key to determine the number of authorized users.

For further assistance, contact Acius Technical support directly.

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Tech Info Library Article Number:12121

Tech Info Library

Macintosh: Systems Without System Software Disks (7/93)

Revised: 7/16/93
Security: Everyone

Macintosh: Systems Without System Software Disks (7/93)

==========

Article Created: 14 May 1993
Article Reviewed/Updated: 13 July 1993

TOPIC ----------

I have heard that certain Macintosh models come with system software installed on their hard drives, but have no system software disks in the finished goods box. Please clarify.

DISCUSSION ----------

There are two situations when Macintosh systems don't include system software disks.

1) Modular Macintosh computers (IIvx, IIvi, Centris 610, Centris 650, and the Quadra 800) that are ordered with internal CD-ROM drives. Instead, they get a CD-ROM entitled, "CD Install Me First". This bootable CD-ROM can be used to install System Software and it contains disk images of the System disks so the user can create their own disks. The same Macintosh computers ordered without internal CD-ROM drives still include System Software diskettes in the accessory kit.

2) Macintosh Performa system purchasers are encouraged to immediately do a hard disk backup using the Backup & Restore program that is found on the hard disk. This will insure they have a system backup if there is a problem at a later date.

Article Change History:
07/13/93 - Revised to include Performa series in DISCUSSION.

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Tech Info Library Article Number:12123

Tech Info Library

LaserWriter Pro and Select: Printing on Transparencies (5/93)

Revised: 5/14/93
Security: Everyone

LaserWriter Pro and Select: Printing on Transparencies (5/93)

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Article Created: 14 May 1993

TOPIC ----------

There does not seem to be any information on the LaserWriter Pro or Select series printers in regards to printing on transparencies. Please advise.

DISCUSSION ----------

Engineering does not recommend any particular brand or thickness for printing on the LaserWriter Pro and/or the Select series of printers. Make sure to use transparencies that are made for use with laser printers and you should have no problem.

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Tech Info Library Article Number:12125

Tech Info Library

SNA•ps 5250: Configuring to Multiple AS/400 Computers (2/94)

Revised: 2/17/94
Security: Everyone

SNA•ps 5250: Configuring to Multiple AS/400 Computers (2/94)

==========

Article Created: 14 May 1993
Article Reviewed/Updated: 9 February 1994

TOPIC ----------

With SNA•ps 5250 client software is there a way to configure a true passthru so you can connect to two or more different AS/400 computers at the same time? I know that you can have multiple sessions but can they be to multiple AS/400 computers. If so, what needs to be done to configure that?

DISCUSSION ----------

If you have two or more AS/400 computers, you can have sessions to each at the same time using SNA•ps 5250.

First to a short tutorial. If you were using a dumb 5250 terminal and were attached locally (Twinax) to Local400 and wanted to get a session on Remote400, you would request Display Station Passthru (DSPT) to the Remote400. The session on the Local400 would be suspended and a new signon screen presented. A dumb terminal can only do DSPT once! You could not log on to a third AS/400 from Remote400. You would have to return to Local400 and initiate a new DSPT to the third AS/400 (assuming SNA routing, APPN).

Now SNA•ps 5250 does not employ the concept of Local terminal. The connection to the Local400 is done using a DSPT from the SNA•ps 5250 client acting (during the connection time) as an AS/400. Once the connection is made, the SNA•ps 5250 client drops back into dumb terminal mode. These operations are performed in the SNA•ps 5250 Control Panel application. So SNA•ps 5250 has already used its allowed DSPT to get to the local AS/400, and CANNOT request a DSPT to Remote400 using the normal passthru user calls.

Since the SNA•ps Gateway is an APPC LENNODE, it can play in an APPN environment, it just has to be configured completely on all AS/400

computers. It is possible to configure a second Local LU-Remote LU pair on the SNA•ps Gateway which is connected via APPN routing to a second AS/400. This concept is used everyday by users of a third party product over SNA•ps Gateways.

The SNA•ps 5250 product however, cannot do this as simply since the SNA•ps 5250 Control Panel device requires the SNA•ps name for the Local LU to be entered and it applies for all gateway connections. The default name is PASSTHRU. This means SNA•ps 5250 will be able to connect to any and all gateways which have named the SNA•ps name (not the SNA name) of the LU PASSTHRU. If you try to add a second Local LU-Remote LU pair to an existing SNA•ps gateway with a Local LU named PASSTHRU, SNA•ps config objects that a Local LU already exists with that name and will not allow another one.

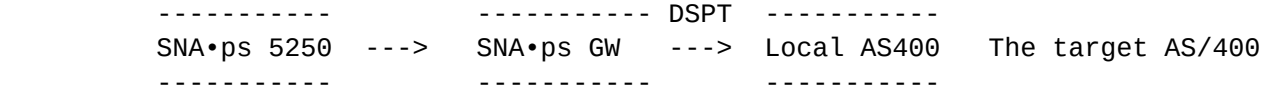
However it is possible to configure the gateway so that SNA•ps 5250 can connect to a second AS/400 through an APPN connection. Instead of trying to create a second local LU, just do the following:

- Create a 2nd remote LU connected to the already existing local LU. The network name of the remote LU should match the default local location name (usually the same as the system name) of the AS/400 that you want to connect to.

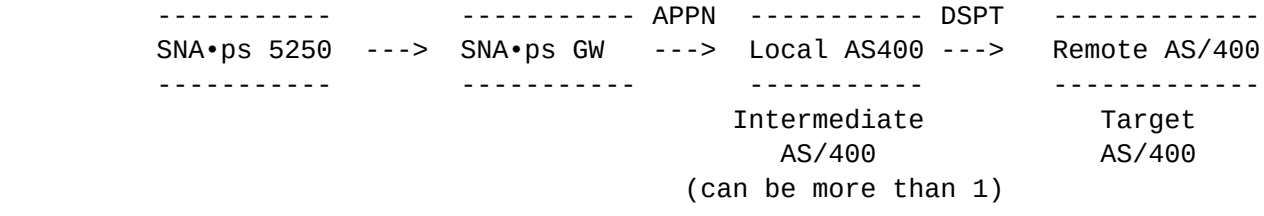
- The mode must exist on the intermediate and the target AS/400.
  What is meant by the intermediate and the target AS/400? The target AS/400 is the actual AS/400 you desire to have a session with. Therefore when the SNA•ps 5250 connection is to be done to the Local AS/400 which has the SNA•ps LEN node attached to it, the target AS/400 is the Local AS/400; or if you want to make a session to another remote AS/400 in the APPN network, the target AS/400 is the remote AS/400 you want a session with. The intermediate AS/400 is any AS/400 (can be more that one) used in APPN routing to get to the target AS/400.

  To illustrate:

  1) Display Station passthru to local AS/400



  2) Display Station passthru to remote AS/400 using APPN routing



  The requirement for the MODE being known is from the IBM APPN routing rules. The Display Station Passthru call carries with it a MODE to be

used. When the DSPT call is to the local AS/400, the MODE has to be known on that computer only. When the DSPT call is to a remote AS/400, you are first setting up an APPC session between the SNA•ps Gateway to the local AS/400 and the MODE used is taken from the DSPT call. The MODE named in the DSPT call has to be defined (known) to the intermediate AS/400. As the DSPT call is APPN routed to the target AS/400, there are additional APPC sessions opened between computers and all along the way the MODE must be defined including the target AS/400.

- If QAUTOCFG is off on the target AS/400, then create a device description for the Macintosh on the target AS/400 - remote LU name is the network name in the PASSTHRU local LU description; attach the device description to the controller description for the intermediate AS/400.

- Vary on the device description on the target AS/400.

That's it - the connection dialog in SNA•ps 5250 will show the two remote LU's (that is intermediate AS/400 & target AS/400). Defining the SNA•ps local LU in the APPN remote location list of the intermediate AS/400 appears not to be necessary for applications like SNA•ps 5250, where the transaction program is initiated from the Macintosh.

A third remote LU can be defined to a third target AS/400. Be sure you have the proper Net ID for the third target (like you needed for the second target above). Then you need to be sure the implemented APPN routing will know how to find the third target and the MODE definition being used by the DSPT call is known to all APPN Nodes along the way.

Another way you could get to two AS/400s from a single SNA•ps APPC gateway is to configure another entire token ring line which makes a direct connection to the target AS/400. The Partner definition would have to be configured but the Local LU can be given a SNA•ps name of PASSTHRU and the Local LU-Remote LU pairs can be configured directly on the remote AS/400. This connection uses the bridging of token ring networks to provide the attachment not APPN. If the connection is via SDLC, then a second Hydra head on the Serial card has to be attached to a second modem to the second AS/400. The MCP cards will probably need a 0.5 Meg RAM upgrade and possibly a 2 Meg upgrade.

Another workaround is to install a second gateway in the same Macintosh as the first gateway or in a separate Macintosh. The second gateway needs another Token Ring card and is free to contact the Local400 but specify a Local LU-Remote LU pair in the Remote400 and use APPN routing to get there. The second gateway can also be setup to attach directly to Remote400 by specifying the token ring address of the Remote400 token ring adapter; token ring bridging provides the connection path.

The only connection limitation of SNA•ps 5250 is connecting to multiple gateways that don't follow a convention in naming the local LU (SNA•ps name) - for example if you have two gateways, one of which calls the local LU "PASSTHRU" and the other "DSPT", you can't use SNA•ps 5250 simultaneously on both gateways. You have to exit SNA•ps 5250 (and SNA•ps Print) and modify the control panel.

Article Change History:
09 Feb 1994 - Included additional information for clarity.

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Tech Info Library Article Number:12127

Tech Info Library

System Software Versions 7.0 and 7.0.1: Removing Fonts (9/94)

Revised: 6/5/96
Security: Everyone

System Software Versions 7.0 and 7.0.1: Removing Fonts (9/94)

==========

Article Created: 17 May 1993
Article Reviewed/Updated: 7 September 1994

TOPIC ----------

This document gives instructions for removing fonts from versions of System 7 earlier than 7.1 for the Macintosh computer. System software version 7.1 stores fonts in the Fonts folder within the System Folder.

DISCUSSION ----------

1) Close all open software applications except the Finder. If you try to remove fonts when applications are open, a message appears. Click OK.

2) Double-click the System Folder to open it.

3) Double-click the System file. A window appears, displaying individual fonts installed in the system.

   Note: To group all fonts together in the list, choose by Kind from the View menu.

4) Select the fonts you want to remove, using one of these methods:

   • Selection Rectangle

     a) Press the mouse button when the pointer is in a blank space in the System window, and continue pressing the button while you move the mouse.

     b) You'll see a selection rectangle form as you drag the pointer over the names of the fonts you want to select.

     c) When you release the mouse button, the names of the selected

fonts become highlighted.

- Shift-clicking

  a) While pressing the Shift key, move the pointer over a font you wish to select, and click the mouse button once.

  b) Continue pressing the Shift key and click on each font you want selected.

  c) Release the Shift key.

5) Move the pointer over one of the highlighted fonts, press the mouse button and hold it while you drag the fonts to the Trash.

6) Choose Empty Trash from the Special menu.

Article Change History:
07 Sep 1994 - Reviewed fax document. Added paragraph on Apple Fax line.
22 Feb 1994 - Made text-only version available.

Support Information Services

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Tech Info Library Article Number:12134

Tech Info Library

cc:Mail On Macintosh and File Level Security (5/93)

Revised: 6/4/93
Security: Everyone

cc:Mail On Macintosh and File Level Security (5/93)

==========

Article Created: 17 May 1993

TOPIC ----------

I'm having a security problem when using cc:Mail in a mixed DOS and Macintosh environment. The server platform is LAN Manager. The problem relates to the lack of file level control under typical AppleShare access.

I believe Macintosh mail users must have access to the cc:Mail directory on a LAN Manager server running as a post office. This allows access to all files if they mount the directory as an AppleShare volume. MS-DOS users are locked out of the other mail files because security is at the file level.

Could you confirm this?

DISCUSSION ----------

cc:Mail Technical Support told us that though they mount the whole AppleShare volume, the administrator can impose security from LAN Manager so the users won't have more access than they should. The two requirements are the cc data directory has to be Read, and Write and Shareable, while the cc:Mail directory is Readable. Other directories on the volume can be set to not accessible by the users.

If you are still not sure on how to do this, contact cc:Mail Tech Support directly. To locate a vendor's address and phone number, use the vendor name as a search string.

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Tech Info Library Article Number:12152

LaserWriter: Checking Hard Drive Capacity (8/95)

Revised: 8/23/95
Security: Everyone

LaserWriter: Checking Hard Drive Capacity (8/95)

==========

Article Created: 19 May 1993
Article Reviewed/Updated: 22 August 1995

TOPIC ----------

How can I check the capacity of a SCSI hard drive attached to an Apple Laserwriter printer?

Can I use the Apple LaserWriter Utility 7.4 to do this?

DISCUSSION ----------

There are two ways to check the capacity of a SCSI hard drive attached to a hard-drive compatible Apple LaserWriter:

- Use a PostScript program (listed at the end of this article) to check the hard drive's capacity. This works with any hard-drive compatible LaserWriter.

- Connect the hard drive to a Macintosh. This only works if your hard drive is formatted in Macintosh-compatible format, as with the LaserWriter IIf, IIg, and the LaserWriter Pro 630.

Unfortunately, there is no option to check the capacity of any Laserwriter printer's hard drive in any version of Apple's LaserWriter Utility. The LaserWriter IINTX, LaserWriter IIf and IIg, and the LaserWriter Pro 630 are all hard-drive compatible, but they use different types of hard disk formatting.

The LaserWriter IINTX uses the LaserWriter Font Utility to initialize attached SCSI hard disk drive(s) as one logical disk device for the PostScript file system. The LaserWriter IINTX regards all attached hard drives as a single logical unit, therefore these drives are not recognized by the Macintosh file system.

The LaserWriter IIf and IIg, and the LaserWriter Pro 630 use the LaserWriter Utility to initialize attached SCSI hard drives. This utility initializes the

hard drive in a Macintosh compatible (HFS) format and supports the PostScript file system.

Here is a simple PostScript program that displays the total and free space available on a LaserWriter's hard drive:

```
/Helvetica findfont 14 scalefont setfont
statusdict begin
30 100 moveto
(A page is 1024 bytes.) show
30 115 moveto
(The total number of pages are) show
diskstatus
10 string cvs show
30 130 moveto
(The number of free pages are) show
10 string cvs show
showpage
```

Cut and paste these 12 lines of code to TeachText and download the file with the appropriate utility.

WARNING:
If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

Article Change History:
23 Aug 1995 - Made minor corrections.
08 Feb 1995 - Made minor technical updates; added PostScript warning.
11 Jan 1995 - Added keyword and made several technical updates.

Support Information Services

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Tech Info Library Article Number:12153

Tech Info Library

LaserWriter Driver 7.2 and Earlier: New York and Geneva Fonts

Revised: 5/19/93
Security: Everyone

LaserWriter Driver 7.2 and Earlier: New York and Geneva Fonts

==========

Article Created: 18 May 1993

TOPIC ----------

There's a known problem with LaserWriter driver versions 7.2 and earlier when used with New York and Geneva fonts and Font Substitution turned ON. The printed underline is about a centimeter short of the full line of text.

DISCUSSION ----------

These LaserWriter driver versions calculate the font metrics incorrectly when Helvetica and Times are automatically substituted for Geneva and New York, with Font Substitution ON. These driver versions measure the underline using the Geneva and New York FONDs, instead of the Helvetica and Times FONDs. Turn Font Substitution OFF when using these LaserWriter driver versions. The best solution is to use LaserWriter driver version 8.0.

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Tech Info Library Article Number:12154

Tech Info Library

LaserWriter Pro 600: PostScript Error Printing Legal Size 5/93

Revised: 5/19/93
Security: Everyone

LaserWriter Pro 600: PostScript Error Printing Legal Size 5/93

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Article Created: 18 May 1993

TOPIC ----------

I'm having a problem printing to my LaserWriter Pro 600. I'm getting: "%%[ERROR:CONFIGUATIONERROR; OFFENDINGCOMMAND: SETPAGEDEVICE; ERROR INFO: PAGESIZE--NOSTRINGVAL --]%%" message while trying to print a Legal size document from the multipurpose tray.

I'm using the Apple PPD (PostScript Printer Description, V2010.130 8), a Quadra 700, and PageMaker 4.2a.

DISCUSSION ----------

To resolve this issue, set the multipurpose tray for Legal size paper via the LaserWriter Utility and choose "Paper Handling" in the "Utilities" menu.

The PostScript error: "%%[ERROR:CONFIGUATIONERROR; OFFENDINGCOMMAND: SETPAGEDEVICE; ERROR INFO:PAGESIZE--NOSTRINGVAL --]%%" is due to a discrepancy between what paper size is selected in the Print dialog as opposed to what paper sizes are currently available at the printer. In other words, if the customer has "Legal" selected in the Print dialog and the printer DOES NOT have a Legal size paper tray installed, or DOES NOT have the multipurpose tray set for Legal size paper, then the error will occur.

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Tech Info Library Article Number:12155

Macintosh LC III: Monitors Supported at 640 x 400 Pixels (5/93)

Revised: 5/24/93
Security: Everyone

Macintosh LC III: Monitors Supported at 640 x 400 Pixels (5/93)

==========

Article Created: 18 May 1993

TOPIC ----------

Which monitors does the Macintosh LC III support at 640 by 400 pixels?

DISCUSSION ----------

The Macintosh LC III can support the Apple 12-inch Monochrome Monitor, Macintosh 13-inch High-Resolution Monitor, and Macintosh 14-inch Color Display at 640 by 400 pixel resolution as well as at the standard 640 by 480 pixel resolution.

Here's how to select 640 by 400 pixel resolution:

1) Open the Control Panel and choose the Monitors option.
2) Hold down the Option key on the keyboard and choose the "Options..." selection in the Monitors dialog box.
3) 640 by 400 will appear as one of the choices under the Select Monitor Type dialog box. Choose 640 by 400 and click OK.

Your screen will now be set to 640 by 400 pixels resolution. To deselect this option, follow the same steps and choose a different option in the Select Monitor Type dialog box.

This information is also provided in the Getting Started manual for the Macintosh LC III.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12156

Tech Info Library

Language Kits: Incompatibility with Now Menus (3/95)

Revised: 3/27/95
Security: Everyone

Language Kits: Incompatibility with Now Menus (3/95)

==========

Article Created: 20 May 1993
Article Reviewed/Updated: 23 March 1995

TOPIC -----

Using NOW Menus 4.0.2 with the standard menu font, the input method has garbled information for the Kotoeri menu selection. Can you provide a workaround?

DISCUSSION -----

One workaround is to upgrade to Now Utilities 5.0. Another "partial workaround" is to select the Osaka font (or *Beijing* or Teipei for CLK) in the Now 4.0.2 Utility control panel and the Kotoeri (Simplified or Traditional Chinese inputs) menu option will display correctly; however, this will corrupt some other menu listings.

Article Change History:
23 Mar 1995 - Updated article title for clarity.
15 Feb 1995 - Added info about Now Utilities version 5.0.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12160

KanjiTalk: Compatible with WorldScript (5/93)

Revised: 5/19/93
Security: Everyone

KanjiTalk: Compatible with WorldScript (5/93)

==========

Article Created: 19 May 1993

TOPIC --

I have a Macintosh with System 6.0.7 and KanjiTalk. Can I exchange documents with a Macintosh running 7.1 and using the Japanese Language Kit (WorldScript)?

DISCUSSION --

There's no problem sharing documents between KanjiTalk systems (such as KanjiTalk system 6.0.7) and the Japanese Language Kit. The only requirement is to use KanjiTalk 7 compatible applications, since this helps ensure compatibility with the Japanese Language Kit. There's a list of localized applications tested with the Japanese Language Kit; it's included in the article "Japanese Language Kit: Overview (4/93)" in the Tech Info Library.

The other key factors are that both Macintosh computers have the same fonts installed and use the same applications. In the case of the KanjiTalk 6.0.7 system, the TrueType INIT is required when using a Kanji TrueType font. As in the US operating system, if different applications and/or fonts are used on the two Macintosh computers, there's the potential for incorrect document formatting and/or character mapping, respectively. Depending on the document contents and format, the specific application that created the document may be required to open it; however, generic files, such as text files, shouldn't have this problem.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12161

Tech Info Library

At Ease 1.1: Gather Applications Address Error (8/95)

Revised: 8/8/95
Security: Everyone

At Ease 1.1: "Gather Applications" Address Error (8/95)

==========

Article Created: 19 May 1993
Article Reviewed/Updated: 08 August 1995

TOPIC ----------

With At Ease 1.1 installed on a Macintosh Classic running system software version 7.1, selecting "Gather applications" gives an address error. This has only been observed on 68000 CPUs such as the Macintosh Plus, SE, and Classic. If you have At Ease 1.1, and are experiencing this problem, obtain version 1.0.

DISCUSSION ----------

The good news is, At Ease 1.0 does not have this problem. We removed At Ease 1.1, installed At Ease 1.0, and again selected "Gather applications," this time with no problems.

The primary change in At Ease 1.1 was to sort the At Ease items correctly for international users. It's likely that this change caused this problem. If you're using an English system, At Ease 1.0 should work just as well as At Ease 1.1 for you.

Article Change History:
08 Aug 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12163

Tech Info Library

Custom Icon: Limited to 34 Colors (5/93)

Revised: 5/20/93
Security: Everyone

Custom Icon: Limited to 34 Colors (5/93)

==========

Article Created: 20 May 1993

TOPIC ----------

When I copy certain colors created in Canvas to custom icons, not all of the colors are copied (particularly, green). The green color created in Canvas appears as white when presented in an icon. I didn't use ResEdit in this sequence.

DISCUSSION ----------

If you use ResEdit, you'll see that only 34 colors are available for icon resources. These colors aren't customizable, they are strictly defined. If you use a custom color (not in the palette of 34 icon colors) while in a graphics program, the system attempts to map the custom color to the icon palette color when you make the image into an icon.

There are specific shades of greens, browns, blues, purples, and grays available. Black, white, yellow, and red are also available. To get predictable results, use the colors from ResEdit's Icon editor when working in Canvas; or use ResEdit's Icon editor.

The 34 colors of the icon color palette are in the following positions on the standard 256 color System palette. The column/row format used matches the ResEdit icon editor's color selector format.

1	8	51	22	146	227	159	165	72	192	236	176	42	84	127	171
19	105	92	0	245	246	43	247	248	249	250	251	252	253	254	255
5	216														

For another way to match colors, follow these steps:

1) Open ResEdit.
2) Open the Icon editor from an icl8 resource.

3) Drag the tear-off color selector onto the desktop.
4) Take a picture of the screen (shift-command-3).
5) In your graphics program:
   a) Open the screen picture file (named Picture 1, or other number).
   b) Use the eyedropper tool to pick up the colors in the color selector.

The 34 colors of the icon color palette can't map directly to the 16 colors in the 16-color System palette. Of the 34 colors not available in the 16-color palette, most are mapped to a gray, white, black or an associated color.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12165

Tech Info Library

LaserWriter IIg: Increase Printing Speed From Photoshop (5/93)

Revised: 5/20/93
Security: Everyone

LaserWriter IIg: Increase Printing Speed From Photoshop (5/93)

==========

Article Created: 20 May 1993

TOPIC ----------

I have a LaserWriter IIg printer with 8MB of RAM connected to a Macintosh Quadra. When printing from Photoshop, some of the print jobs take 10-20 minutes.

What kind of increase in speed can I expect by adding more memory?

DISCUSSION ----------

Complex documents may take 10-20 minutes to print. Increasing the printer's memory will probably have little effect on performance.

I would like to offer a couple of suggestions:

1) Let Photoshop do the grayscale conversion. If the user is working with a RGB (default mode), covert the photo to grayscale and save the modified image to another file. Then, print the modified grayscale file.
   By allowing Photoshop to do the conversion, you eliminate the need for the printer driver (QuickDraw) to convert the color image to grayscale.

2) In the LaserWriter Utility, under "Imaging Options", try experimenting with the frequency/angle slider. The lower the frequency, the faster the processing. However, you give up some resolution.

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Tech Info Library Article Number:12166

Tech Info Library

LaserWriter Driver 8.x: Tray Switching Option (2/96)

Revised: 2/23/96
Security: Everyone

LaserWriter Driver 8.x: Tray Switching Option (2/96)

==========

Article Created: 20 May 1993
Article Reviewed/Updated: 23 February 1996

TOPIC ----------

I'm using the LaserWriter 8.x driver. When I choose "Print" from the File menu, a Print Options Dialog box appears. I get several choices, such as FinePrint, PhotoGrade and, TraySwitch. Can you explain "TraySwitch"?

DISCUSSION ----------

The "TraySwitch" option allows the printer to automatically switch to the other paper trays when the current tray runs out of paper. Thus, between the 250-sheet paper cassette and the 100-sheet multipurpose tray of a LaserWriter Pro, you can print 350 sheets without having to reload paper.

Here are the settings you can select from the TraySwitch pop-up menu:

TraySwitch: Printer's Default
- does not change the current setting in the printer.
TraySwitch: True
- enables trayswitching
TraySwitch: False
- disables trayswitching

By the way, this option is only available if the printer you are using supports it.

Article Change History:
23 Feb 1996 - Corrected minor typographical errors.

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Tech Info Library Article Number:12167

Tech Info Library

Quark XPress: Slower Launch Under System 7.1 (3/95)

Revised: 3/7/95
Security: Everyone

Quark XPress: Slower Launch Under System 7.1 (3/95)

==========

Article Created: 19 May 1993
Article Reviewed/Updated: 7 March 1995

TOPIC ----------

After installing System 7.1, it takes a lot longer to open Quark XPress than it used to under my previous system software.

DISCUSSION ----------

The problem you are experiencing has to do with the way Quark XPress handles the new Fonts folder that came into existence with System 7.1. The only solution is to upgrade your version of Quark XPress to 3.2 or higher.

With Quark XPress version 3.1, the more fonts you have, the longer it will take to open the application. It does not matter how you install the fonts in the Fonts folder in the System Folder (that is, they can be loose in the Fonts folder, in suitcases in the Fonts folder, or you could organize them using Suitcase 2.1.2 or Master Juggler).

This problem would only be noticed by a user who is running a version of Quark XPress prior to 3.2, who has upgraded from System 6.0.x, 7.0, or 7.0.1 to System 7.1 or later.

The slow launch of Quark XPress is a known issue which was fixed by Quark Express version 3.2. The current version is of Quark XPress is 3.3.1. You will need contact Quark for help with this issue.

This issue may also exist in other desktop publishing software like TypeStyler by Broderbund.

This article provides information about non-Apple products. Apple Computer, Inc. is not responsible for its content. Please contact the vendors, Quark and Broderbund, for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
07 Mar 1995 - Added more detailed information about why Quark launches more slowly under System 7.1.
02 Feb 1995 - Changed access privileges of article.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12168

Tech Info Library

LaserWriter Driver 8.0: Overview (5/93)

Revised: 5/20/93
Security: Everyone

LaserWriter Driver 8.0: Overview (5/93)

==========

Article Created: 20 May 1993

TOPIC ----------

This article describes the LaserWriter printer driver, version 8.0.

DISCUSSION ----------

The Apple LaserWriter printer driver, version 8.0, improves the functionality and performance of PostScript-compatible LaserWriter printers, especially those capable of supporting PostScript Level 2.

The driver software combines all of the features of previous LaserWriter printer drivers, including application compatibility, support for TrueType fonts and PostScript Level 1 compatibility, and it adds support for features that are specific to individual printers. Specific PostScript Printer Description files (PPDs) offer finger-tip control for printer features such as multiple paper trays, printer resolution, PhotoGrade and optional envelope trays. This means that a printer with two or more paper trays can easily and efficiently print page one of a document on letterhead and the rest of the document on regular bond paper.

The new driver is designed to improve background printing performance, up to 30% for business graphics. It also provides support for PostScript Level 2 features, including data compression, real-time error reporting, patterns and pattern caching and color.

AVAILABILITY
The LaserWriter printer, version 8.0 is expected to begin shipping the first week in June. It is currently available on AppleLink in both the 800K and the 1.44MB versions under the following path: Apple Products -> Apple Software Updates -> Macintosh -> Printer SW -> LaserWriter 8.0.

The driver was co-developed by Apple Computer, Inc. and Adobe Systems Inc.

Adobe will ship the driver separately under the brand name of PSPrinter version 8.0.

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Tech Info Library Article Number:12170

Tech Info Library

Macintosh: Using Without a Monitor (5/93)

Revised: 5/20/93
Security: Everyone

Macintosh: Using Without a Monitor (5/93)

==========

Article Created: 20 May 1993

TOPIC ----------

This article gives information about what you need to run a Macintosh without a monitor (headless).

DISCUSSION ----------

Remove any screen saver (such as After Dark). When the Macintosh starts up, the screen saver checks to see what kind of monitor is attached so it can size its modules accordingly. If there's no monitor attached, it keeps looking or crashes.

To make a headless server work on a Quadra running System 7.0.1, you need to install Virtual Monitor Switch from Apple. Engineering has confirmed that the Virtual Monitor control panel is only needed when running system software version 7.0.1 on Quadra 700, 900, or 950 systems without a monitor.

System software version 7.1 doesn't require Virtual Monitor Switch.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12171

Tech Info Library

NEC CD ROM: FFA Version Required (6/93)

Revised: 6/4/93
Security: Everyone

NEC CD ROM: FFA Version Required (6/93)

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Article Created: 4 June 1993

TOPIC ----------

To use the NEC CD ROM with a Macintosh, you must install Foreign File Access 4.0.2 or later versions.

DISCUSSION ----------

You can find Foreign File Access on AppleLink posted in Software Updates, or you can obtain it from the vendor directly.

Also, Apple Software Licensing gave NEC and other CD-ROM distributors permission to distribute CD-ROM Setup 4.0.2.

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Tech Info Library Article Number:12173

Tech Info Library

Printer Control Language: HP PCL 4 and 4+ Differences (5/93)

Revised: 5/21/93
Security: Everyone

Printer Control Language: HP PCL 4 and 4+ Differences (5/93)

==========

Article Created: 21 May 1993

TOPIC ----------

What is the difference between HP PCL (Printer Control Language) 4 and 4+ ?

DISCUSSION----------

Hewlett Packard's explanation for the 4+ version was that it's possibly related to added features of the LaserJet IIP printer. The added capabilities include things such as different raster compression modes and the ability to rotate fonts. These features are specific to the HP LaserJet IIP firmware, and are NOT available as part of the generic PCL 4 language. Thus, you can think of PCL 4+ as a superset of PCL 4.

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Tech Info Library Article Number:12174

Tech Info Library

Electronic Repair Company (5/93)

Revised: 7/21/93
Security: Everyone

Electronic Repair Company (5/93)

==========

Article Created: 21 May 1993
Article Reviewed/Updated: 21 July 1993

Electronic Repair Company
5653 Stoneridge Drive #102
Pleasanton, Ca 94588

Phone: 510-416-1113

FAX: 510-416-1133

Company Profile:
Specializing in monitor and video card repair. They are also a distributor for Qume printer service parts.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12177

Tech Info Library

LocalTalk RJ-11 Connector: Description (5/93)

Revised: 5/21/93
Security: Everyone

LocalTalk RJ-11 Connector: Description (5/93)

==========

Article Created: 21 May 1993

TOPIC ----------

This article describes the Apple LocalTalk RJ-11 Connector.

DISCUSSION ----------

The Apple LocalTalk RJ-11 Connector system provides a flexible solution for sharing information, printers and communicating with others over common, unshielded, twisted-pair cabling. Using Apple LocalTalk RJ-11 connectors allows you to build affordable, easy-to-use, easy-to-expand, AppleTalk networks on unshielded, twisted-pair cabling for fast, reliable network communications.

Features

- Connects to Macintoshes with mini DIN-8 or DB-9 connector
- Connects to any network Apple printer
- Uses unshielded, twisted-pair cabling
- Upward migration from simple bus to star-topology with a central hub
- High-speed using built-in LocalTalk found on every Macintosh
- Easy installation

Benefits

- Allows any Macintosh to utilize economical, twisted-pair cabling for LocalTalk communications

- Allows any Macintosh to utilize common, industry-standard, twisted-pair wiring often already found pre-installed in buildings.

- Start with small networks using bus-topology then by adding

additional connectors, create managed networks using star-topology with a central hub available from third parties.

- Easy setup and administration. Installs in minutes.

- Offers 230.4 kilobits per second for network transmission and reception.

Product Details

The AppleTalk network system found in every Macintosh computer allows you to share information, printers and other network devices and easily communicate with others.

Using the Apple LocalTalk RJ-11 Connector system provides an affordable, easy-to-build, easy-to-expand means to create AppleTalk networks over common, unshielded, twisted-pair cabling.

LocalTalk RJ-11 Cabling Specification

- Unshielded twisted-pair cable type: silver satin or phone cable
- Maximum network distance is 550 meters (1800 feet)
- Maximum number of devices per network = 24
- Termination of network required at each end (terminators supplied)
- Compatible with third-party, twisted-pair communications including PhoneNET from Farallon.

System Requirements

Any Macintosh computer with 1MB of RAM or greater on any Apple network printer with one of the following LocalTalk RJ-11 connectors:

- Circular mini DIN-8 connector for use with all Apple CPUs and printers that require them or
- DB-9 connector for use with Macintosh CPUs and network printers that require them (see below).

Technical Specifications

Connector:

- Circular mini DIN-8 connector for use with all Apple CPUs and printers except those listed below
- DB-9 connector for use with Macintosh 128K, 512K, 512Ke, LaserWriter and LaserWriter Plus
- Two RJ-11 connectors for network cable interface

Certification:

- FCC Class A tested
- No other agency approvals required

Software:

- AppleTalk (built-in with System Software); no additional software

required

Environmental requirements:
- Operating temperature: 32° to 131°F (0° to 55°C)
- Humidity: 0% to 90% noncondensing

Ordering Information:

LocalTalk RJ-11 Connector Kit DIN-8: Order No. M1657Z/A

LocalTalk RJ-11 Connector Kit DB-9: Order No. M1661Z/A

With your order, you receive:
- LocalTalk RJ-11 Connector
- 2m unshielded twisted-pair
- One terminating resistor
- Configuration Guide
- One year world-wide limited warranty

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Tech Info Library Article Number:12178

Tech Info Library

QuickTime 1.6: Upgrade and Description (9/95)

Revised: 9/7/95
Security: Everyone

QuickTime 1.6: Upgrade and Description (9/95)

==========

Article Created: 7 May 1993
Article Reviewed/Updated: 7 September 1995

TOPIC----------

This article describes QuickTime 1.6.

DISCUSSION ----------

QuickTime 1.6 Features

- Significantly improved performance, sound and graphics support.

- Movies will play back more than 10 percent faster than the previous version 1.5, delivering smoother playback.

- The new sound manager provides customers using third-party sound cards with the ability to input and play back CD-quality, 16-bit sound from QuickTime movies. The new Sound Manager (version 3.0) completely replaces the existing Sound Manager, and it will work with all versions of QuickTime. If Sound Manager 3.0 is installed, QuickTime 1.6 will take advantage of its new features.

- A Movie Import component is provided which allows you to open Audio CD tracks from QuickTime’s Standard File Preview dialog, just as you could open PICS and AIFF files with QuickTime 1.5. If you have an AppleCD 300 or CD 300i drive, you can use QuickTime 1.6 to convert tracks of your favorite audio CD directly into QuickTime movies.

- By supporting ColorSync, Apple's color-matching technology, QuickTime 1.6 will ensure that colors in a movie played on one color monitor will be the same when played on any other color monitor.

- QuickTime 1.6 requires 90 percent less memory than the previous version when installed, giving Macintosh customers with entry-level machines more flexibility when installing QuickTime.

QuickTime 1.6 is available in the System 7.1 upgrade and update kits, through Apple directly, and via a variety of bulletin boards and users groups. The extension is also included as part of the QuickTime Developer Kit available from APDA, Apple's source for developer tools.

Article Change History:
07 Sep 1995 - Made minor changes.
09 Aug 1993 - Added more detail about improvements to sound.

Support Information Services

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Tech Info Library Article Number:12179

Tech Info Library

System Software Extensions: How They Work (5/93)

Revised: 5/21/93
Security: Everyone

System Software Extensions: How They Work (5/93)

==========

Article Created: 21 May 1993

TOPIC ----------

This article explains how system extensions (formerly called INITs), function and sometimes cause problems.

DISCUSSION ----------

The Trap Dispatch Table

The Macintosh operating system incorporates a feature that allows updating and modifying incrementally, via the Trap Dispatch Table. The Trap Dispatch Table contains the addresses of all the Tool Box routines in the ROMs that actually make the Macintosh work. When a program uses the Tool Box, it drops the address of the trap (listed in the Trap Dispatch Table) into the processor, and this activates the trap.

A programmer changes the system software by editing the Trap Dispatch Table (a process called patching) so that the call goes not to the ROMs, but to a piece of code somewhere in the system heap. A programmer can alter any part of the Tool Box's normal behavior using this method.

Example: The Oscar the Grouch extension patches the normal Empty Trash Traps with one that says, "When empty trash is chosen display this graphic and play this sound," then it calls the normal empty trash traps.

How Extensions Cause Problems

- Old extensions
  Old extensions cause problems because the information they receive or return is out of date. For example, under an older system, the unaltered trap returned "Frank" and the extension was programmed to return "Frank." But under the newer system the trap returns "Fred."

When the extension still returns "Frank," every piece of code expecting "Fred" will have problems. Likewise, if the system returns "Fred" and the extension is still expecting "Frank" the extension itself will crash.

- Coding Issues
  Sometimes an extension has bugs, and crashes whenever it encounters a certain set of circumstances. The circumstances can be very rare or bizarre. Coding errors are a particular problem with shareware.

- Extension Conflicts with other Extensions
  Sometimes two extensions try to patch the same trap. A surprising number of extensions can do this and get away with it. When they don't they cause a crash.

Turn Off Extensions When Troubleshooting

The thing to remember when troubleshooting is that extensions effectively REWRITE THE SYSTEM SOFTWARE. When code makes calls, the Finder and even other extensions don't behave in the same way as they do in the unaltered system.

If you troubleshoot with extensions ON, be aware that the system's behavior may be close to random. Nothing may work as you expect it to. You can't determine with any certainty whether hardware, system software, or an application failure causes the problem as long as extensions are running. So TURN OFF EXTENSIONS at the start of any troubleshooting where it is at all feasible. In cases where it isn't, try to remove or disable all extensions you can.

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Tech Info Library Article Number:12180

Tech Info Library

DAL, Duo 230 With Express Modem, and Protocol Converter 8/93

Revised: 7/7/94
Security: Everyone

DAL, Duo 230 With Express Modem, and Protocol Converter 8/93

==========

Article Created: 21 May 1993
Article Reviewed/Updated: 31 August 1993

TOPIC ----------

I'm having trouble with a protocol converter access to DAL when using a PowerBook Duo 230.

If I make a protocol converter connection from a desktop Macintosh with modem attached, everything works properly. However, I'm not able to get either a PowerBook Duo 230 with an Express Modem, or the Duo in a Duo Dock with an external modem to work.

DISCUSSION ----------

We have done extensive testing and have the answer for you:

1) The Duo cannot be docked if the internal (Express) modem is being used to access a Protocol Converter (pcrv). There was no way that I was able to get DAL to even be able to take that modem "off-hook" when the Duo was docked.

   If the desired access is to a VAX, then the AsyncCTB (CommToolBox) network adapter can be used successfully with a docked Duo and the Express modem.

2) With the Duo docked it is possible to use another, external modem. I used both the Apple Personal (300/1200) modem and a Hayes Optima 96 modem. For this configuration:
   • The Control Panel document for the "EXPRESS MODEM" must be turned OFF

3) With the Duo undocked, you CAN use the internal modem:
   • The Control Panel for the "EXPRESS MODEM" must be ON
   • The Control Panel for the "POWERBOOK" must be set to INTERNAL

Because the Express Modem is more sophisticated than DAL is prepared to handle,

you MUST tell DAL that you are not using a modem and instead send the correct modem strings to reset, dial and hang-up in the DAL connection script. (See sample script below.)

The following is a connection script that has been successfully tested (repeatedly) with the internal Express Modem in a PowerBook Duo 230. The modem strings for this script were originally written for the Hayes Optima 96 and were successful with the Express Modem, so I think that they should work for anyone using the internal Express Modem. (Different external modems may require changes to the modem strings.)

```
rem:: This is a script for a Duo 230/210 with the Express Modem
rem:: The Duo CANNOT be docked !!
rem:: The Control Panel document for the "POWERBOOK" must be set to
rem::    INTERNAL
rem:: The baud rate in the script cannot be set to more than 9600 --
rem::    regardless of the modem's actual max speed supported by other
rem::    apps
rem:: You have to tell DAL it is NOT using a modem.
rem:: The script must send the correct modem strings for your modem.
rem::    This is because the modem in the PowerBook Duo is too advanced for
rem::    DAL's usual approach to a modem.
rem:: The modem strings in this script were for using a Hayes Optima 96 and
rem::    worked with the internal modem in the PowerBook Duo.

duck:pcrv:TSO:7171:com1:9600:No:8data:1stop:Both:128:NoModem:T:9,5551212:
32:1
duck:login:1:\mREADY\slogoff\r\mlogon\w2\s+++\w2\sATZ\r\mOK\sATH0\r:2000:
4000::\sATZ\r\mOK\sAT&FL1 W1 &K0 &W0\r\w2:\sATDT9,5551212\r\w45\mCONNECT
\w2\r\mTYPE\svt100\r\mlogon\stso \u\r\mPassword\p\r\mREADY\x600
```

••• Note: this sample script may contain extra carriage returns if you paste it out of AppleLink into your DAL Preferences file. Please be sure to check that there are only two (2) carriage returns. 1 at the end of each portion that begins with "duck:". (These two are required.) If there is a carriage return "within" the login definition portion (the 2nd "duck:"), the DAL client will think that the connection script is terminated at that point, and will try to send the server launch command. Since it is not truly at the end of the connection script, the connection attempt would fail. So, be sure there are no carriage returns between the 2nd "duck:" and "\x600". •••

The parameter "NoModem" on the first line of the script is what keys the DAL Client to not try to control the modem itself. The phone number information on the first line is just an FYI, the actual phone number used is the one in the ATDT string in the second portion of the connection script.

We think that this script should work for you. However, you will have to change the protocol converter type (7171 in this script) to the name of the file you usually use!

Article Change History:
31 Aug 1993 - Included Note regarding script and extra carriage returns.

..TIL12183-DAL_Duo_230_With_Express_Modem_and_Protocol_Converter_8-93.pdf

Support Information Services

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Tech Info Library Article Number:12183

Tech Info Library

LaserWriter Pro 630 Windows Software: No Standalone DOS Support

Revised: 5/24/93
Security: Everyone

LaserWriter Pro 630 Windows Software: No Standalone DOS Support

==========

Article Created: 25 May 1993

TOPIC ----------

Do the Windows drivers that ship with the LaserWriter Pro 630 support DOS (versions 3.0 and 5.0) machines using Word Perfect version 5.0?

DISCUSSION ----------

The Windows software that ships with the LaserWriter Pro does not support the standalone DOS environment. Apple ships the printer files which inform the Windows PostScript driver of the LaserWriter Pro capabilities. That is, tray options, imageable area, and others.

Apple doesn't ship the Windows PostScript driver. The Windows PostScript driver is automatically included when customers purchase MicroSoft Windows.

Word Perfect Corporation provides printer drivers that work with their applications. To locate a vendor's address and phone number, use the vendor's name as a search string.

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Tech Info Library Article Number:12185

Tech Info Library

APS Technologies (Alliance Peripheral Systems)

Revised: 7/22/93
Security: Everyone

APS Technologies (Alliance Peripheral Systems)

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Article Created: 24 May 93
Article Reviewed/Updated: 22 July 1993

APS Technologies

6131 Deramus Rd.
P.O. Box 4987
Kansas City, MO 64120

816-478-8300

800-645-5401

816-483-3077 Fax

Company Profile:
Allied Peripheral Systems: specializes in hard drive and mass storage technologies for the Macintosh, including accessories and mass storage for PowerBooks.

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Tech Info Library Article Number:12187

Tech Info Library

StyleWriter II: How to Enable or Disable PrinterShare (5/93)

Revised: 5/25/93
Security: Everyone

StyleWriter II: How to Enable or Disable PrinterShare (5/93)

==========

Article Created: 7 May 1993

TOPIC ----------

This article describes how to enable and disable PrinterShare on the StyleWriter II.

DISCUSSION ----------

To enable PrinterShare:

1) Choose the Chooser from the Apple menu.
2) Activate AppleTalk
3) Select the StyleWriter II printer by clicking on StyleWriter II icon.
4) Click Setup, and "Share This Printer" will now appear to be selected with a check in the checkbox.
5) Close the Chooser
6) Restart your computer

To disable PrinterShare:

1) Choose the Chooser from the Apple menu.
2) Activate AppleTalk
3) Select the StyleWriter II printer by clicking on StyleWriter II icon.
4) Click Setup, and "Share This Printer" will now appear to be selected with a check in the checkbox.
5) Click in the checkbox to deselect "Share This Printer".
6) Deactivate AppleTalk
7) Restart your computer

In other words, AppleTalk must be ACTIVE in order to disable the sharing checkbox.

..TIL12196-StyleWriter_II-How_to_Enable_or_Disable_PrinterShare_5-93.pdf

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12196

Tech Info Library

LaserJet 4M Driver: Fonts Not Downloading in System 7.1 (5/93)

Revised: 5/25/93
Security: Everyone

LaserJet 4M Driver: Fonts Not Downloading in System 7.1 (5/93)

==========

Article Created: 25 May 1993

TOPIC ----------

I am using a Hewlett Packard LaserJet and System 7.1. My fonts won't download using the HP 4M driver.

DISCUSSION ----------

To solve the proble move the printer (outline) fonts to the Extensions folder. Version 2.12 of the Hewlett Packard 4M driver does not recognize the Fonts folder in System 7.1.

Version 2.2 of the HP 4M driver does recognize the Fonts folder and is recommended for use with System Software 7.1.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12197

Tech Info Library

DeskWriter and System 7.1: Font Placement (5/93)

Revised: 5/25/93
Security: Everyone

DeskWriter and System 7.1: Font Placement (5/93)

==========

Article Created: 25 May 1993

TOPIC ----------

Where do I place my DeskWriter fonts in System 7.1?

DISCUSSION ----------

According to Hewlett Packard (HP), the DeskWriter fonts which include CS Courier, CS Symbol, CS Times, and CS Triumvirate reside in a folder named "DeskWriter Fonts" at the root level of the System folder, not in the Fonts folder. This applies to HP driver versions prior to 3.1.

Versions 3.1 or latter of the HP software will create a folder named "HP Folder" or "HP Fonts Folder" that resides in the Preferences folder under System 7.x.

HP users can also remove their HP fonts entirely and use the TrueType fonts that are built into System 7. To use TrueType fonts or Adobe Type Manager fonts, change the DeskWriter driver Page Setup options as follows:

Version 2.2: Turn off "Font Substitution" and "Use High-Quality Printer Fonts".
Version 3.1 or latter: Turn off "Font Substitution" and "Use HP Fonts", then select "Save as Default".

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12198

Tech Info Library

Quadra 900, 950: Problem with RAM Disk and 256MB RAM (3/94)

Revised: 3/9/94
Security: Everyone

Quadra 900, 950: Problem with RAM Disk and 256MB RAM (3/94)

==========

Article Created: 24 May 1993
Article Reviewed/Updated: 9 March 1994

TOPIC ----------

A Quadra 950 with 256MB of RAM will not let me use a RAM Disk. A clean install of software didn't help. The computer has no other hardware connected. With the RAM disk turned on, the computer locks up at startup. It will only start up if all extensions are turned off by holding down the shift key. Under System 7.0.1, using the shift key at startup will disable the RAM disk feature. Thus allowing you to boot the machine. Under System 7.1, using the shift key at startup will NOT disable the RAM disk feature. Using either version of System Software, you can turn the RAM disk off by zapping PRAM (hold down the command–option-P-R keys while restarting).

DISCUSSION ----------

The problem exists only when you install 256MB of RAM in a Quadra 900 or 950 and try to turn the RAM disk on. With less than 256MB of RAM, everything will work fine. The maximum RAM size that the built-in RAM disk will work with is 224MB, using twelve 16MB SIMMs and four 8MB SIMMs. The MMU page table was limited to 256K, and when the machine is loaded with 256MB of RAM, it grows a little too much, and overwrites the RAM disk portion of memory. Therefore, if they were to take out four of the 16MB SIMMs, it would work correctly.

Apple does not support 16MB SIMMs in a Quadra, although in most situations they work fine. (Apple does support 16MB SIMMs on the Macintosh IIvx, the Performa 600, and the newer Macintosh systems that use 32-bit SIMMs.)

Third-party solutions such as Maxima from Connectix work with 256MB RAM on the Macintosh Quadra 900 and 950. They also have more features than the built-in RAM disk.

Article Change History:
9 March 1994 - Added information on turning Extensions off under System 7.1

..TIL12199-Quadra_900_950-Problem_with_RAM_Disk_and_256MB_RAM_3-94.pdf

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12199

Tech Info Library

Sound File, CDev: Shouldn't Be Opened Together (5/93)

Revised: 5/26/93
Security: Everyone

Sound File, CDev: Shouldn't Be Opened Together (5/93)

==========

Article Created: 26 May 1993

TOPIC ----------

When I perform the following steps, my Macintosh no longer responds.
Why is this?

1) Put a sound file into the Control Panels folder.
2) Select the sound file and a Control Panel.
3) Open both files at the same time (CMD-O, or double click)

DISCUSSION ----------

This is a known reproducible situation. It isn't clear why these steps are required for operation of the Macintosh. The recommendation is to NOT perform these steps.

To prevent this from happening inadvertently, place any sounds that you need in the Control Panels folder inside another folder. Items in different folders can't be selected and opened together.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12200

Tech Info Library

At Ease 1.0: Shift Down Restart (8/95)

Revised: 8/8/95
Security: Everyone

At Ease 1.0: Shift Down Restart (8/95)

==========

Article Created: 21 May 1993
Article Reviewed/Updated: 08 August 1995

TOPIC -----

What happens with At Ease when I start up with the Shift key down?

DISCUSSION -----

At Ease always loads, but if there's no password or the proper password is entered, At Ease quits and the Finder loads. In the Finder, At Ease won't be available under the Application menu. Here's the startup sequence with the Shift key down:

1) System software loads.
2) Extensions don't load.
3) At Ease loads.
4) At Ease checks for a password and asks for the password if one is installed.
5) At Ease quits.
6) Finder loads.

If you click the Cancel button when At Ease asks for the password, At Ease loads as normal and displays its menus and panels. You still find the password enabled if you go to the Finder. From the Finder, At Ease is available under the Application menu.

Article Change History:
08 Aug 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12201

Tech Info Library

Japanese Font in Finder: Created Folders Use Kotoeri (5/93)

Revised: 5/28/93
Security: Everyone

Japanese Font in Finder: Created Folders Use Kotoeri (5/93)

==========

Article Created: 27 May 1993

TOPIC ----------

Whenever the Finder font is set to a Japanese font, the system always jumps into Kotoeri when changing a file or folder name in the Finder. Is there a way to turn this feature off?

DISCUSSION ----------

In the manual, Apple recommends setting the Views to a Japanese font so that folders will have names properly displayed (not names with garbage characters). Thereafter, when you create folders it makes sense for the Finder to "jump into Kotoeri" since you have a Japanese font selected.

You could select a Roman font from Views, but then you have the "garbage" characters' problem. A more elegant solution is to click on the Roman font option from the Operations Pallet (upper right corner option -- the "A with a down arrow"). To select this option you could also use two short cuts:

- Press "shift option tab" to rotate through the Operations Pallet options, or

- Press "option shift-d"

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Tech Info Library Article Number:12205

Tech Info Library

MacX: XDM-CP Support (6/93)

Revised: 6/16/93
Security: Everyone

MacX: XDM-CP Support (6/93)

==========

Article Created: 9 June 1993

TOPIC ----------

We have an HP X Windows-based information system and X terminals supplied by HP. I would like to access the system from a Macintosh using MacX.

I have demonstrated XWindows connectivity by launching an XTerm window. I connected to HPVue for some of the applications running on the client. However, there is a login window that the X terminal gets from using the XDM-cp. This application launches all the appropriate applications that are set up for a specific user.

What's the best way to approach my XDM problem?

DISCUSSION ----------

The key is to set an entry for a foreign server in your xdm comfiguration files. The xdm daemon will then look for those displays to become available, and, when they do, the daemon will manage them.

If you're using xdm, the file xdm-config (usually located in /usr/lib/X11/xdm) contains an entry for the file containing the name of the server it is supposed to manage. This line looks something like

DisplayManager.servers: /usr/lib/X11/xdm/Xservers

This file contains an entry for each server to manage and looks like:

```
#
# Xservers file, workstation prototype
#
# This file should contain an entry to start the server on the
# local display; if you have more than one display (not screen),
```

```
# you can add entries to the list (one per line).  If you also
# have some X terminals connected which do not support XDMCP,
# you can add them here as well.  Each X terminal line should
# look like:
#       XTerminalName:0 foreign
#
# :0 local /usr/bin/X11/XmacII :0 -v -logo
mac_name:0 foreign
```

Here, mac_name is the name associated to the IP address of the Macintosh where MacX will be running. This name-IP_Adrress association is defined in /etc/hosts or in the Domain Name server or NIS server. If such a name has not been given to the Macintosh, the IP address can be use instead of mac_name.

Depending on how the xdm configuration files are setup, this should present you with the Login dialog from xdm each time MacX is started.

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Tech Info Library Article Number:12206

Tech Info Library

A/UX 3.0: Centris 610/650 (6/93)

Revised: 6/16/93
Security: Everyone

A/UX 3.0: Centris 610/650 (6/93)

==========

Article Created: 10 June 1993

TOPIC ----------

I have A/UX 3.0 and just got a Centris 610 8/230/CD. I want to load A/UX on it instead of on my Macintosh IIci, but I can't install it successfully. Also, can A/UX run from an external drive?

DISCUSSION ----------

A/UX 3.0 does not support the Centris 610, Centris 650, or Quadra 800. However, the more recent release of A/UX, A/UX 3.0.1, supports the Centris 650 and Quadra 800. The Centris 610 lacks an FPU and, therefore, cannot run A/UX (unless there is a FPU upgrade solution from a third party).

Yes, you can install A/UX on an external drive with a supported Macintosh computer like the IIsi and be able to move the installed A/UX drive from one supported machine to another supported machine. A/UX automatically configures and rebuilds a new kernel when it finds a hardware change like a new Ethernet NB card.

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Tech Info Library Article Number:12207

Tech Info Library

At Ease 1.x: Saving Files (8/95)

Revised: 8/8/95
Security: Everyone

At Ease 1.x: Saving Files (8/95)

==========

Article Created: 28 May 1993
Article Reviewed/Updated: 08 August 1995

TOPIC----------

I'm having problems saving my files in At Ease, version 1.x.

DISCUSSION ----------

The only known problem with saving files in At Ease, version 1.x, is that some applications will save to folders on floppies while other applications will only save to the root level of the floppy.

Selecting "Save As" under the File menu will force saving to a floppy. Also, making a document a "stationary pad" by checking the appropriate box in the Get Info window will force saving documents to the floppy disk.

Saving to a hard drive can take place when the "Save to floppy" box is checked AND:
1) The finder is open in the background.
2) A document is already on the hard drive. The document can be opened and saved to the hard drive.

Article Change History:
08 Aug 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12209

Tech Info Library

At Ease : Compressed Applications Not Found (8/95)

Revised: 8/8/95
Security: Everyone

At Ease : Compressed Applications Not Found (8/95)

==========

Article Created: 28 May 1993
Article Reviewed/Updated: 08 August 1995

TOPIC -----

I'm using At Ease version 1.X. My compressed applications do not appear during "gather applications".

DISCUSSION -----

The problem is not with At Ease. Some compression utilities save the compressed applications as documents, therefore At Ease cannot find these as applications. At Ease is able to find documents, but your applications may not launch correctly if they appear as documents to At Ease.

Article Change History:
08 Aug 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12210

System 7: Suitcase Extension and Automounting Hard Drives 8/95

Revised: 8/8/95
Security: Everyone

System 7: Suitcase Extension and Automounting Hard Drives 8/95

==========

Article Created: 28 May 1993
Article Reviewed/Updated: 08 August 1995

TOPIC ----------

I have two Macintosh computers, let's call them Macintosh A and B. Both computers are on the same network and File sharing is turned on. When I start up Macintosh B, the internal hard drive of Macintosh A appears on the desktop of Macintosh B.

DISCUSSION ----------

This problem can happen with any Macintosh using System 7 and any version of Suitcase (a system extension from Fifth Generation Systems, Inc.).

The solution is to remove Suitcase 2.0 from Macintosh B and reinstall it using the original Suitcase diskette obtained from Fifth Generation Systems, Inc.

Here's an explanation of how this situation occurred:

- Suitcase is loaded on Macintosh A (file sharing is on and font or desk accessory suitcases are currently open with Suitcase).
- You copy the Suitcase extension from Macintosh A to Macintosh B.
- When Macintosh B starts up, the Suitcase on Macintosh B attempts to open the Suitcase on Macintosh A since those settings are stored within the Suitcase extension (on Macintosh A).
- If Macintosh A is on the same network as Macintosh B, the hard drive of Macintosh A will appear on the desktop of Macintosh B. Suitcase has connected to Macintosh A as the owner through AppleShare and Personal File Sharing in order to load the suitcase files from Macintosh A.

Article Change History:
08 Aug 1995 - Removed incorrect keyword.
27 Jul 1993 - Company title updated to Fifth Generation Systems, Inc.

..TIL12211-System_7-Suitcase_Extension_and_Automounting_Hard_Drives_8-95.pdf

Support Information Services

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Tech Info Library Article Number:12211

Tech Info Library

Powerbook: Adobe Type Manager 3.0 and Suitcase II 2.0 (5/93)

Revised: 7/27/93
Security: Everyone

Powerbook: Adobe Type Manager 3.0 and Suitcase II 2.0 (5/93)

==========

Article Created: 28 May 1993
Article Reviewed/Updated: 22 July 1993

TOPIC ----------

My Powerbook crashes when I have Adobe Type Manager version 3.0 and Suitcase II, version 2.0 installed at the same time.

DISCUSSION ----------

There is a conflict between these two system extensions. The conflict only occurs on a Macintosh that use a system enabler. Macintosh systems introduced on or after October 19,1992 use enablers. This problem will also happen with the 32-Bit enabler, which customers might use on the Macintosh II, Macintosh IIx, Macintosh IIcx, or the Macintosh SE/30.

Adobe and Fifth Generation Systems, Inc. are aware of the problem and are working on it.Suitcase version 2.1.3 fixes this problem. Contact Fifth Generation Systems, Inc. for an update.

To locate a vendor's address and phone number, use the vendor's name as a search string.

Article Change History:
27 July 1993 - Company title updated from Fifth Generation Systems to Fifth Generation Systems, Inc.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12212

Tech Info Library

A/UX: Memory Control Panel, Caching, and Swap Space (6/93)

Revised: 6/16/93
Security: Everyone

A/UX: Memory Control Panel, Caching, and Swap Space (6/93)

==========

Article Created: 10 June 1993

TOPIC ----------

In trying to understand the interactions of the Memory control panel and the A/UX paging space, I have come up with two questions:

First, what is the relationship between Disk Cache in the Memory control panel and the A/UX swap space?

Second, what is the relationship between Macintosh Virtual Memory in the Memory control panel and the A/UX swap space?

DISCUSSION ----------

To answer the first question, A/UX Disk Cache in the Memory control panel has no particular relationship to the A/UX swap space. Increasing the Disk Cache setting in the Memory control panel allocates more space for the Multifinder handling disk caching for Macintosh applications, while reducing memory available to the Finder. To see this increase, take a look at the size of "System Software" in the "About This Macintosh" dialog. A/UX kernel I/O buffering does the actual disk caching.

As to Virtual Memory in the Memory control panel, it is used to adjust the virtual memory space allocated for the A/UX MultiFinder. It has the same effect as the TBMEMORY environment specifier in .profile or .login. (Virtual memory is created in the A/UX Swap disk partition.)

For best performance, we suggest that you make the maximum virtual memory size no larger than twice the size of the physical RAM in the system. For instance, a system with 16MB of real RAM can enjoy a total of 32MB of virtual memory.

The A/UX virtual memory approach is different than that in the Mac OS.

A/UX virtual memory is handled by the A/UX demand paging system scheme. Pages can be swapped in and out between real memory and the swap space by demand.

Note that the swap space is used by both A/UX Finder and UNIX processes. If a Macintosh application requests virtual memory space exceeding available Finder virtual memory, it acts as it does in the Mac OS; it asks you to close some application, so it can release memory. If a UNIX process needs virtual space exceeding the available swap space, the kernel returns a "run of swap space" message.

In short, depending on what you are doing, you should adjust your swap space and the virtual memory allocation (via the Memory control panel or TBMEMORY) as appropriate to the Macintosh enviornment.

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Tech Info Library Article Number:12214

Tech Info Library

Disk Cache: Saving Files is Slow (5/93)

Revised: 6/1/93
Security: Everyone

Disk Cache: Saving Files is Slow (5/93)

==========

Article Created: 28 May 1993

TOPIC ----------

I have an Excel (4.0) spreadsheet that took forty seconds to save on my Macintosh IIfx. The same spreadsheet takes two minutes and five seconds to save it on my Quadra 900. The software on the Quadra is identical to that on the IIfx. I have removed all my extensions, File Sharing and Virtual Memory settings are off, and I have the disk cache set to 512K.

DISCUSSION ----------

The slowness is caused by the time it takes to search the large disk cache, in this case, 512K. Disk cache is a portion of the computer's random-access memory (RAM) that is set aside for programs to store frequently used instructions. It's function is to speed certain operations, but in some cases, such as this, it can actually slow down an operation when set to large. It takes longer to search the cache than it would to simply read the instructions from the disk.

Apple recommends a default value of 32K of disk cache per 1MB of physical RAM installed in your Macintosh. However, you should experiment with the disk cache settings to find the value which is best for your specific needs.

This behavior is independent of the computer model and System Software versions, System 6.0.x or 7.x.

- In System 6 the disk cache is set in the "General" Control Panel.
- In system 7 the disk cache is set in the "Memory" Control Panel.

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Tech Info Library Article Number:12215

Tech Info Library

PowerBook: Backlight Control CDEV (5/93)

Revised: 7/7/94
Security: Everyone

PowerBook: Backlight Control CDEV (5/93)

==========

Article Created: 28 May 1993

TOPIC -----

This article describes Backlight Control version 1.0.

DISCUSSION -----

Backlight Control is a control panel that monitors the mouse activity, the keyboard activity, and the charger status of the PowerBook. It turns the backlight off when the mouse has been idle for a certain amount of time (user specified) and you are working from the battery. As soon as you move the mouse, click the mouse, start typing, or plug in your power adapter the backlight comes back on.

The Control Panel interface allows you to:

- Turn on or off the Backlight feature
- Select the idle timeout
- Check for a power adapter or not
- Monitor the keyboard or not

Backlight Control should work on any PowerBook with backlighting. Newer PowerBooks and Duos ship with system software that has this same functionality.

Version 1.0 changes only the version number and icons. Version 1.0a3 adds mouse click detection and should work on all backlit portables.

You can distribute this version outside Apple. Bulletin board sysops and developers need to contact Apple Software Licensing for distribution.

Location on AppleLink:
Software Sampler
 Apple SW Updates
  Macintosh
   Utilities

..TIL12216-PowerBook-Backlight_Control_CDEV_5-93.pdf

Support Information Services

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Tech Info Library Article Number:12216

Tech Info Library

SFT Technologies, Inc. (5/93)

Revised: 7/20/93
Security: Everyone

SFT Technologies, Inc. (5/93)

==========

Article Created: 28 May 1993
Article Reviewed/Updated: 19 July 1993

SFT Technologies, Inc.

Junction I70 & Hwy. 23
Concordia, MO 64020

Phone: 816-463-2021

Fax: 816-463-7958

Company Profile:
Software, specializing in FAX SFT software.

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Tech Info Library Article Number:12217

Tech Info Library

NewsWatcher Software: Description (5/93)

Revised: 6/1/93
Security: Everyone

NewsWatcher Software: Description (5/93)

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Article Created: 28 May 1993

TOPIC ----------

This article describes the NewsWatcher software, and tells how to use it.

DISCUSSION ----------

NewsWatcher is used to participate in "USENET news." USENET news (or just "USENET" or "the news" for short) is a worldwide distributed electronic bulletin board system. Anyone on the Internet can post articles to USENET, and anyone on the Internet can read articles and post replies.

USENET is organized as a hierarchical system of several thousand separate "newsgroups" (or just "groups" for short). Each group is devoted to a single topic. The topics range from recreational groups like "alt.archery" to technical groups like "comp.protocols.appletalk".

For best results with NewsWatcher, use a Macintosh with 2MB or more of memory and a hard drive. NewsWatcher requires System 6.0.5 or later. It's compatible with System 7. You must have the Macintosh connected to the Internet, and you must properly install and configure MacTCP. For dialup use, NewsWatcher works with MacSLIP and the other Macintosh SLIP products, and with AppleTalk Remote Access.

NewsWatcher is free. It may not be resold for profit or included with software which is sold for profit, but otherwise you should feel free to use it and redistribute it.

The official anonymous FTP site for NewsWatcher and the documents is ftp.acns.nwu.edu [129.105.113.52], directory pub/newswatcher. If you would like to receive announcements of new NewsWatcher releases, send a request to NW_Info-request@let.ruu.nl.

Apple doesn't support the program. Refer to the program documentation for further assistance.

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Tech Info Library Article Number:12218

Tech Info Library

QuickTime: Saving Audio Sounds as QuickTime Movie (5/95)

Revised: 5/23/95
Security: Everyone

QuickTime: Saving Audio Sounds as QuickTime Movie (5/95)

==========

Article Created: 28 May 1993
Article Reviewed/Updated: 23 May 1995

TOPIC ----------

If you have an AppleCD 300e, 300i, 600e, or 600i and QuickTime 1.6 or later, you can:

1) Open an Audio CD track from within any QuickTime application (like Simple Player or MoviePlayer).

2) Select a track, and save it as a sound file on a hard drive with either 22Khz or 44KHz sampling rate, 8- or 16-bit resolution, and either stereo or mono.

DISCUSSION ----------

Here are the details. Follow these steps:

1) Start the application.
2) Select Open from the file menu.
3) Navigate to the Audio CD (in the drive) and select a track.
4) Select Convert.
5) Select Options to change resolutions and other parameters.

The music will be transferred and saved as a QuickTime movie. You can then use an application like Premiere or SoundEdit 16 to save the track into AIFF format for use elsewhere.

The audio data, instead of just going out the RCA jacks or the headphone jack, gets transferred through the SCSI bus with no loss of fidelity or added signal noise as you get when going "out" of the CD then "in" a sampling card or unit. Of course, you need the disk space (44KHz, 16-bit stereo sound takes a lot of disk space).

Also, because most Macintosh hardware only supports the output of 8-bit sound, samples that are played will sound scratchy, because of the process of

converting 16-bit sound to 8-bit sound. Converting the 16-bit CD Tracks to an 8-bit sound will produce 'scratchy' results, even if later played by 16 bit hardware. For best results, save sounds as 16-bit, and use a third party sound card that supports 16-bit sound. The exception to this are the Quadra and Centris AV models and Power Macintosh models, which support 16-bit output without the addition of a third-party sound card.

Article Change History:
23 May 1995 - Made article more version generic.
11 Aug 1993 - Reordered steps. Added information about 16-bit audio.

Support Information Services

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Tech Info Library Article Number:12219

Tech Info Library

LaserWriter Driver: System 6 and System 7 Environment (5/94)

Revised: 5/13/94
Security: Everyone

LaserWriter Driver: System 6 and System 7 Environment (5/94)

==========

Article Created: 27 May 1993
Article Reviewed/Updated: 12 May 1994

TOPIC ----------

I have a mixed network of Macintosh computers using System 7 and System 6. I just purchased a LaserWriter Pro 630. Am I going to have network printing problems?

DISCUSSION ----------

We suggest you use LaserWriter driver 7.2 in your mixed environment. The 7.2 driver added support for the LaserWriter Pro series.

A bug with PrintMonitor 7.1 and System 6 was found too late in the LaserWriter Pro series development to correct it before shipping. PrintMonitor's "Set Print Time" option will crash on systems prior to 7.0. PrintMonitor 7.1 was shipped with the LaserWriter Pro series, and will automatically install over the previous version. The Installer checks to see what version of system software (System 6 or System 7) is installed so that it places all the resources in their proper places.

LaserWriter driver 7.2 is compatible with PrintMonitor 7.0. Therefore after installing the LaserWriter Pro software, System 6 users need to downgrade to PrintMonitor 7.0. There is NO need to recommend that System 6 users upgrade to System 7 for their printing needs.

Apple recommends using the Installer disk when upgrading printer drivers. However, System 7 users can upgrade their systems by dragging the 7.2 driver to the System Folder. System 6 users can upgrade by dragging the LaserWriter driver, PrintMonitor, Backgrounder, and LaserPrep to their System Folder.

Early versions of the LaserWriter Drivers for System 7 were tested with all System 6 versions. Later LaserWriter Driver versions were only tested with System 6.0.8, and is the only System 6.x version now officially supported by Apple.

Article Change History:
12 May 1994 - Added section on System 6.0.8.

Support Information Services

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Tech Info Library Article Number:12220

Tech Info Library

AppleCD 300: Audio Out Jack Impedance (9/95)

Revised: 9/7/95
Security: Everyone

AppleCD 300: Audio Out Jack Impedance (9/95)

==========

Article Created: 1 June 1993
Article Reviewed/Updated: 7 September 1995

TOPIC ----------

What is the impedance of the audio out jacks on the AppleCD 300?

DISCUSSION ----------

The impedance for the sound out ports of the AppleCD 300 is about 47k Ohms (High Z) . This means that the audio cable connections should be kept as short as possible to avoid high frequency losses in the audio signal.

By industry convention, Low Z (Low Impedance) consists of any impedance below 600 Ohms. High Z (High Impedance) would be in the range of 10k Ohms and above.

Article Change History:
07 Sep 1995 - Made minor correction.

Support Information Services

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Tech Info Library Article Number:12221

Tech Info Library

PowerBook 145B: Specifications (6/93)

Revised: 7/7/94
Security: Everyone

PowerBook 145B: Specifications (6/93)

==========

Article Created: 7 June 1993
Article Reviewed/Updated: 26 August 1993

TOPIC ----------

This article provides technical specifications for the PowerBook 145B computer.

DISCUSSION ----------

Microprocessor

- 68030, clock speed 25 MHz
- 32-bit Address Bus, 32-bit Data Bus

Memory

- 4MB pseudostatic RAM (PSRAM) built-in (on the "daughterboard").
- Expandable to 6MB or 8MB RAM with installation of a 2MB or 4MB PSRAM expansion card in the RAM expansion slot. RAM designed for the PowerBook 100, 140, 145, and 170 works in the PowerBook 145B.

  Note: The PowerBook 145B's RAM expansion slot can accept a 6MB expansion card, for a total of 10MB, but only 8MB will be recognized and used.

Disk Storage

- One built-in 1.4MB SuperDrive uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.
- One internal 40MB or 80MB hard disk

System Software

Ships with System 7.1. Requires System 7.0 or later.

Note: With System 7.0 or 7.0.1, the Finder's "About This Macintosh..." message reports "PowerBook 145" rather than PowerBook 145B.

Display

- 32K VRAM supports one-bit (monochrome) video.
- 10 inch (254 mm) diagonal
- Backlit Supertwist passive-matrix liquid crystal display
- 640 by 400 pixels

Battery

- NiCad, 2.9 ampere-hours, provides 2 to 3 hours of use before recharging is necessary
- Recharge time: 100% recharged after 5 hours; 80% recharged after 3 hours
- Uses same battery and recharger as PowerBook 140, 145, and 170.

Keyboard

- Built-in keyboard with standard Macintosh layout
- Two-level tilt adjustment

Trackball

- Dual-button trackball, 30 mm diameter,

Clock/Calendar

- CMOS custom chip with long-life lithium battery

Interfaces

- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices using a low-speed, synchronous serial bus.
- Two RS-422 serial ports for LocalTalk networking, printers, modems, and other devices. One of these ports is disabled when internal modem is used.
- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices.
- One sound output port for external audio amplifier.
- One sound-in port.

Modem

- Optional internal 2400-baud modem with fax send at 9600 baud; includes fax send software.
- Error correction and compression: MNP 4, 5 and V.42, V.42bis

Sound Generator

- Apple Sound Chip provides 8-bit sound, capable of driving stereo headphones or other stereo equipment through the sound port.

Sound Input

- 8-bit sound, sampled at 11 or 22 kHz

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disability.

ADB Power Requirements

- Maximum current draw for all ADB devices is 200 milliamps (a maximum of three ADB devices is recommended)

Electrical Requirements

- AC Power Adapter II is included
  (do not use any power adapter not designed for PowerBook)
- Line voltage: AC 100 to 240
- Frequency: 50 to 60 Hz

Environmental Requirements

- Operating temperature: 50° F to 104° F (10 to 40° C)
- Storage Temperature: -40° F to 149° F (-40 to 65° C)
- Relative humidity: 20% to 80% noncondensing
- Operating altitude: max. 10,000 ft. (3048 m) This limit does not apply to pressurized aircraft cabin.
- Storage altitude: max. 15,000 ft. (4722 m)

Size and Weight

- Height 2.25 inches (5.7 cm)
- Width 11.25 inches (28.6 cm)
- Depth 9.3 inches (23.6 cm)
- Weight 6.8 lb (3.03 kg)

Noise Level

Noise free except for floppy or hard disk use.

Article Change History

26 August 1993 - Revised article with correct storage temperature

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12223

Tech Info Library

PowerBook 145 and 145B: Differences (6/93)

Revised: 7/7/94
Security: Everyone

PowerBook 145 and 145B: Differences (6/93)

==========

Article Created: 7 June 1993

TOPIC ----------

This article summarizes the differences between the PowerBook 145 and the PowerBook 145B.

DISCUSSION ----------

RAM

• The PowerBook 145's 4MB configuration has 2MB RAM on the logic board and 2MB in the expansion slot. To expand RAM beyond 4MB, the user must replace the 2MB expansion card with a higher-capacity RAM card.

• The PowerBook 145B, on the other hand, comes with 4MB RAM on the logic board, allowing expansion beyond 4MB without having to first remove 2MB from the expansion slot.

	Standard On-board RAM	Maximum RAM
PowerBook 145	2MB or 4MB	8MB
PowerBook 145B	4MB	8MB

Floppy Disk

Only one floppy disk is shipped with the PowerBook 145B: Disk Tools, which includes Restore software. Special backup software for the PowerBook 145B is installed on the hard drive, which customers can use to back up their System software to floppy disks.

Microphone

The microphone is optional, not included with the PowerBook 145B.

..TIL12224-PowerBook_145_and_145B-Differences_6-93.pdf

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12224

Tech Info Library

PowerBook 180c: Specifications (Discontinued)

Revised: 3/22/95
Security: Everyone

PowerBook 180c: Specifications (Discontinued)

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Article Created: 7 June 1993
Article Reviewed/Updated: 22 March 1995

TOPIC ----------

This article provides technical specifications for the PowerBook 180c computer, which was discountinued by Apple on 14 March 1994.

DISCUSSION ----------

Microprocessor

- 68030, clock speed 33 MHz.
- 68882 Math Coprocessor, 33 MHz.
- 32-bit Address Bus, 32-bit Data Bus

RAM

- 4MB pseudostatic RAM on logic board.
- Expandable to 14MB with expansion PSRAM cards (2, 4, 6, 8, and 10MB capacities).
- Contents of RAM saved in Sleep mode, lost at shutdown

Storage

- One built-in 1.4MB Apple SuperDrive disk drive that uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.
- One internal 80MB or 160MB hard disk.

System Software

- Requires System 7.1 or later
- System Enabler specifically for PowerBook 180c

Display

• 8.4 in. (226 mm) diagonal backlit color active-matrix LCD
• 640 x 480 pixels
• Up to 256 colors from a palette of 4096 choices
• 512K VRAM
• External display port (mini-15) supports 8-bit video
• External display options:
  Macintosh 12" Monochrome Display
  Macintosh 12" RGB Display
  AppleColor High Resolution RGB Display
  Macintosh Color Display
  Macintosh 16" Color Display
  Macintosh Portrait Display
  Some VGA and SVGA monitors
• Two video-out modes:
  - Video mirroring for simultaneous display of the same image on two screens.
  - Dual display for full use of both screens.

Battery

• NiCad (nickel-cadmium), provides 1.5 to 2 hours of use before recharging is necessary. (AC power adapter is included.)

Keyboard and Trackball

• Built-in keyboard with standard Macintosh layout and two-level tilt adjustment.
• Dual-button trackball, 30 mm diameter.

Clock/Calendar

• CMOS custom chip with long-life lithium battery.

Microphone

• Built-in omnidirectional; output voltage is 4 mV, peak to peak, at normal volume

Interfaces

• One Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices.
• Two RS-422 serial ports for LocalTalk networking, printers, modems, and other devices.
• One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices.
• One slot for optional modem.
• One video-out port, supporting 8 bit density and 256 colors.
• One stereo sound output port for external audio amplifier or headphones.
• One mono sound-in port.
• Security slot for use with third-party equipment to lock the computer.
• SCSI Disk Mode with optional SCSI Disk Adapter

Modem

- Optional internal PowerBook Express Modem; 14,400 bits per second (bps) data with fax send and receive at 9600 bps; includes Express Fax software.
- Optional internal 2400 bps modem with fax send at 9600 bps; includes fax send software.

Sound Generator

- Apple Sound Chip provides 8-bit sound, capable of driving stereo headphones or other stereo equipment through the sound port.

Sound Input

- 8-bit sound, sampled at 11 or 22 kHz.

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

ADB Power Requirements

- Maximum current draw for all ADB devices is 200 milliamps (a maximum of three ADB devices is recommended)

Electrical Requirements

- Line voltage: 100 to 240 volts, 50 to 60 Hz

Environmental Requirements

- Operating temperature: 50 to 104° F (10 to 40° C)
- Storage Temperature: -40°F to +149°F (-40 to +65° C)
- Relative humidity: 20% to 80% noncondensing
- Altitude: Operating: 3048 m (10,000 ft.) maximum

Shipping (non-operating) 0 to 15,000 ft. (0 to 4,722 m)

Size and Weight

- Height: 2.34 in. (5.9 cm)
- Width: 11.25 in. (28.6 cm)
- Depth: 9.3 in. (23.6 cm)
- Weight: 7.1 lb. (3.2 kg)

Noise Level

Noise free except for disk drive use.

Article Change History:

22 Mar 1995 - Updated altitude information.
14 Mar 1994 - Added discontinued information to title on 14-Mar-94

..TIL12225-PowerBook_180c-Specifications_Discontinued_(151_Mac).pdf

26 Aug 1993 - Updated to reflect correct storage temperature

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12225

Tech Info Library

PowerBook 165c, 180, 180c: Differences (6/93)

Revised: 7/7/94
Security: Everyone

PowerBook 165c, 180, 180c: Differences (6/93)

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Article Created: 7 June 1993

TOPIC ----------

This article summarizes the differences among the PowerBook 165c, 180, and 180c.

Key differences:
- PowerBook 180 is active-matrix gray-scale, 165c is passive-matrix color, and 180c is active-matrix color. The color models have smaller display screens (when measured diagonally), but have more pixels for higher resolution.
- The batteries in the color systems need more frequent recharging.
- The color systems are slightly taller and heavier.
- 160MB hard drive is a PowerBook 180c option.

In addition, the PowerBook 180c has stricter temperature ranges (see the specifications).

DISCUSSION ----------

	180	165c	180c
Built-in Display			
• Display type	active-matrix	passive-matrix	active-matrix
• Display size	10 in. diag.	9 in. diag.	8.4 in. diag.
• Pixels	640 x 400	640 x 400	640 x 480
• Colors	16 grays	256	256
Dimensions			
• Height	2.25 in.	2.29 in.	2.34 in.
• Weight	6.8 lb.	7.0 lb.	7.1 lb.
Misc.			
• Hard drive	80/120MB	80/120MB	80/160MB

• Battery charge	2.5 - 3 hr.	1.5 - 2 hr.	1.5 - 2 hr.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12226

Tech Info Library

Macintosh Access To DEC's InfoServer 150 (6/93)

Revised: 6/4/93
Security: Everyone

Macintosh Access To DEC's InfoServer 150 (6/93)

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Article Created: 1 June 1993

TOPIC ----------

What software is needed for a Macintosh to interact with DEC's InfoServer? I believe it's CD-ROM based.

DISCUSSION ----------

To access InfoServer, you need "InfoServer Client for Macintosh Media and Documentation Kit, part number QA-YSHAE-HB/CJV."

DEC's InfoServer is a network storage server that lets you share software and information. The InfoServer 150 delivers information to up to 100 clients, which can be Macintosh, DOS, RISC workstations, or VAX users. It supports 14 SCSI devices, including CD-ROM, hard disk, tape, and magneto-optical drives.

For more information, call 1-800-DIGITAL, and press 2 for complete information on InfoServer 150 client software. To locate a vendor's address and phone number, use the vendor name as a search string.

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Tech Info Library Article Number:12227

Tech Info Library

Directory Structure: Symptoms of Damage and How to Repair (6/93)

Revised: 6/8/93
Security: Everyone

Directory Structure: Symptoms of Damage and How to Repair (6/93)

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Article Created: 2 June 1993

TOPIC ----------

My PowerBook crashed, and required a restart using the power on button. After restarting, the folder labeled "Applications" was entirely empty. Before the crash it contained various applications in their respective folders. Aliases to the applications still operate correctly, starting the application the same as always. But, if I select the alias, do a Get Info, then Find Original, I receive an error.

DISCUSSION ----------

These are generic symptoms that describe a corrupted directory structure. Don't continue to use this computer as you are in danger of continuing the damage to an unrecoverable situation. Immediately use disk utilities to:

1) Backup what you have, and then

2) Recover what is on the disk.

You can certainly use something such as Disk First Aid to scan the disk. Beyond this, there are a number of excellent utilities to try such as Mac Tools or Norton Utilities.

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Tech Info Library Article Number:12228

CD Remote: Recognizes Lowest SCSI ID Setting Only (5/93)

Revised: 6/2/93
Security: Everyone

CD Remote: Recognizes Lowest SCSI ID Setting Only (5/93)

==========

Article Created: 2 June 1993

TOPIC ----------

I have a Macintosh with two Apple CD-ROM drives connected in the SCSI chain (a CD 300i and a CD SC Plus).

If I put an audio CD in the internal CD 300i, CD Remote works well. However, when I put the same audio CD into the external AppleCD SC Plus, CD Remote does not recognize the audio CD. The audio CD mounts on the desktop fine although I can not control it from CD Remote.

DISCUSSION ----------

CD Remote will only recognize the CD-ROM player with the lowest SCSI ID setting. CD Remote is unable to play audio CDs from the external AppleCD SC Plus because the internal CD 300i has a lower SCSI ID.

The Macintosh will recognize the audio CD as a valid volume to be mounted on the desktop because of Foreign File Access which is installed with the CD-ROM installation software. However, since the file format of the audio CD is unknown to the Macintosh file system there is little that can be accomplished from the desktop.

It is only the CD Remote that does not recognize the audio CDs when they are placed in secondary CD-ROM drives (secondary equals higher SCSI ID number).

There are several audio CD software controllers on the market that have appeared as shareware and freeware. It may be that one of these will allow the selection of which player is to be used for playing audio CDs.

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Tech Info Library Article Number:12229

Tech Info Library

Apple Early Learning Connections: Grady Profile Error T106

Revised: 6/2/93
Security: Everyone

Apple Early Learning Connections: Grady Profile Error T106

==========

Article Created: 2 June 1993

TOPIC ----------

This article discusses a problem when using the Grady Profile in the Apple Early Language Connections.

DISCUSSION ----------

When you record a reading sample in the Grady Profile with a name that's too long, you receive "Error T106" messages. You must keep the title of the reading sample to 31 characters or less (this includes spaces and punctuation).

Example: Naming the sample "The Emperor's New Clothes 12/13/92" it is too long. Shortening the title to "Emperor's New Clothes 12/13/92" corrects the problem.

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Tech Info Library Article Number:12231

Tech Info Library

Macintosh II PMMU Upgrade: No Video (6/95)

Revised: 6/21/95
Security: Everyone

Macintosh II PMMU Upgrade: No Video (6/95)

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Article Created: 28 May 1993
Article Reviewed/Updated: 21 Jun 1995

TOPIC----------

I had a problem with a Macintosh II manufactured in 1988. When I installed a PMMU, there was no video.

DISCUSSION----------

In 1988, a small batch of Macintosh II systems were manufactured with an HMMU-unique socket that does not allow the CPU to function properly if a PMMU upgrade is installed.

The exact serial numbers are not known, but Apple offered a logic board swap to anyone demonstrating this problem.* You can identify the HMMU-unique logic board by removing it and looking at the underside of the board where the HMMU socket is.

- The HMMU-unique socket will have 70 gold contacts soldered through the board in a random pattern.
- The HMMU/PMMU socket will have 132 gold contacts soldered in a 13-by-13 pin pattern.

When a PMMU upgrade is installed in a Macintosh II containing an HMMU-unique socket, many pins do not connect and the system will not start up. If you have the HMMU-unique socket, there is a Repair Extension Authorization for the boards that qualify for an upgrade. Any dealer can contact Tech Support for information about this.

*This Repair Extension has expired as of May 3, 1995.

Article Change History:
21 Jun 1995 - Added expiration information

Support Information Services

..TIL12237-Macintosh_II_PMMU_Upgrade-No_Video_6-95.pdf

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Tech Info Library Article Number:12237

Tech Info Library

At Ease: Icon on Floppy Not Copied to At Ease Screen (8/95)

Revised: 8/8/95
Security: Everyone

At Ease: Icon on Floppy Not Copied to At Ease Screen (8/95)

==========

Article Created: 27 May 1993
Article Reviewed/Updated: 08 August 1995

TOPIC ----------

The icon of an application on a floppy disk won't copy to the At Ease screen; At Ease only shows the generic icon for the application unless I cut and paste the icon to the alias.

DISCUSSION ----------

The icons used by At Ease must be in the desktop file of the hard drive. You can rebuild the desktop file with the application present on the hard drive, then remove the application, or you can cut and paste an icon into the Get Info window for the alias as you have done already. This is the same way the Finder functions.

Article Change History:
08 Aug 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12238

Tech Info Library

INIT-M Virus: Use Disinfectant 3.2 (5/93)

Revised: 6/14/93
Security: Everyone

INIT-M Virus: Use Disinfectant 3.2 (5/93)

==========

Article Created: 28 May 1993

TOPIC --

A virus called INIT-M is designed to trigger on any Friday the 13th. Disinfectant version 3.2 fixes "infected" files.

DISCUSSION --

The virus may infect all kinds of files -- including extensions, applications, preference files, and document files -- causing problems with the proper display of windows. The virus spreads and attacks only under System 7.0 or later. It does not spread or attack System 6.

Disinfectant 3.2, Northwestern University's free Macintosh anti-viral utility, detects files infected by the INIT-M virus. This version also fixes an error in the way Version 3.1 made changes to the damaged file detection code and increases Disinfectant's preferred memory partition from 700K to 1000K. The increased memory corrects a problem scanning some specific applications with very large CODE resources, including PSpice and Intellidraw.

Disinfectant 3.2 is available on electronic bulletin boards as well as AppleLink. The AppleLink path is:

User Groups
User Groups Discussion Board
Virus Information.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12239

Tech Info Library

Quadra 800: Jumper Controls System ID and System Software (2/95)

Revised: 2/15/95
Security: Everyone

Quadra 800: Jumper Controls System ID and System Software (2/95)

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Article Created: 1 June 1993
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

I have a Quadra 800 that generates an error at start up stating that a newer version of System Software must be used on this computer. System Software 7.1 is already installed and has the correct enabler.

The Quadra 800 won't start up from the Install Me First or Disk Tools disks. This began happening after additional RAM was installed, but it has also happened after installation of VRAM and after installation of internal SCSI devices.

DISCUSSION ----------

Connector J25 on the main logic board, which is the connector for the power LED, has a pin jumpered to indicate the computer's ID. If this cable assembly is not attached to the logic board correctly, the Quadra 800 may identify itself as a Quadra 650 or fail to boot with an error about incorrect system software.

Check to see that the cable assembly is in place, and that the wires in the assembly are making the necessary connections. The jumper connects pins 2 and 3 of the Power LED connector. Pin 1 of the connector is closest to the back of the computer.

Article Change History:
15 Feb 1995 - Added info on why Quadra 800 would identify itself as a Quadra 650 in the About this Macintosh box.

Support Information Services

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Tech Info Library Article Number:12240

Tech Info Library

Color Classic, LC 5xx, Performa 5xx: Won't Start From Kbd (2/94)

Revised: 2/24/94
Security: Everyone

Color Classic, LC 5xx, Performa 5xx: Won't Start From Kbd (2/94)

==========

Article Created: 1 June 1993
Article Reviewed 2/24/94

TOPIC ----------

I am unable to start up a Color Classic. I plug it in and turn on the power switch on the back. Nothing happens yet, which I realize is normal. But when I press the power on key on the keyboard, which should start the computer, nothing happens.

DISCUSSION ----------

The Macintosh LC 520, 550, 575 and the Macintosh Performa 500 series use similar power on technology, the following steps apply to those systems also.

Before assuming that there is a hardware problem with this Color Classic, try resetting the Parameter RAM. Under System 7, the procedure for resetting the Parameter RAM is to hold down the Command, Option, P, and R keys immediately upon startup. But since this Macintosh won't even begin to start up, follow an alternative procedure for resetting the Parameter RAM:

- Refer to the User's Manual instructions on how to replace the lithium battery inside the computer.
- Pull the battery out for about 10 minutes, then put it back in and put the computer back together.

The PRAM should then be reset, and, if there are no other problems, the computer should start up successfully.

Unlike previous compact Macintosh models (such as the Classic and the SE), the Macintosh Color Classic, LC 520, and Performa 5XX have a two-step startup sequence. First, you must switch on the power switch on the back of the computer. Then you must press the power key on the keyboard itself (the key with a left-pointing triangle; this is the normal startup method for

Macintosh II-class computers).

Article Change History
2/24/94 - Added LC 520 and Performa 5xx series to article.

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Tech Info Library Article Number:12241

Tech Info Library

Inter•Poll 1.0.1: Read Me File - Discontinued Product (6/94)

Revised: 6/3/94
Security: Everyone

Inter•Poll 1.0.1: Read Me File - Discontinued Product (6/94)

==========

Article Created: 3 June 1993
Article Reviewed/Updated: 3 June 1994

TOPIC ----------

This article is the Inter•Poll 1.0.1 Read Me file. This product is discontinued.

DISCUSSION ----------

Inter•Poll version 1.0 is mostly compatible with System 7, and version 1.0.1 is fully compatible. The Inter•Poll Read Me follows; however, what isn't reflected in this Read Me is that v1.0.1 contains mostly bug fixes, some significant and some minor. Also not reflected in the Read Me is that the Responder functionality is now built into System 7, and installing System 7 removes the Responder extension from a System 6 system.

Inter•Poll Read Me

What's New in Inter•Poll 1.0.1

1) Inter•Poll is now compatible with the Macintosh IIx and the Macintosh SE/30 computers.

2) The version of Responder included on the enclosed disks identifies the Macintosh IIx and the Macintosh SE/30 accurately. Replace prior versions of Responder if necessary.

3) System 6.0.3 has replaced System 4.3.

4) The Inter•Poll network map symbols are included in the PICT format, which will allow the map symbol files to be opened by a wide range of applications, including MacDraw.

General Information

Inter•Poll provides a set of tools that help network administrators to manage their AppleTalk network systems more efficiently and to provide greater network reliability for their users.

Installing and operating Inter•Poll will require the selection of a network administrator who is responsible for maintaining the network. Inter•Poll should be installed on the administrator's workstation and generally operated from that location (although network problems affecting this workstation may at times require Inter•Poll to be run from another location).

Any device on the network can be selected from one of the list windows and targeted for individual testing using loopback tests. This is a method that aids in localizing network faults by enabling test packets to be sent to a device. Three types of test packets can be sent: Echo, Printer (Printer Access Protocol or PAP), and System Information packets. Note that, though Inter•Poll does not prevent the user from sending any type of packet to any device, some device software may be unprepared to accept certain types of packets. It is recommended that only echo packets be sent to devices that are of unknown or unnamed type.

1) Inter•Poll: This is a Macintosh application that finds and displays all active devices connected to an AppleTalk network, or a subset as defined by search criteria. Inter•Poll will run on a Macintosh Plus, Macintosh SE, or Macintosh II computer with System file version 4.1 or later, or on a Macintosh IIx or a Macintosh SE/30 computer with System file version 6.0.3 or later. Inter•Poll will also run in the foreground of an AppleShare File Server version 2.0 or later. (Refer to AppleShare File Server's documentation for installation instructions.)

2) Network Mapping Symbols: This is a folder containing three PICT files with symbols for network devices and sample floor plans that help the network administrator to build an accurate network map and to keep it current. These files can be opened from a variety of graphics applications, including MacDraw.

In the System Folder:

3) Responder: This is the companion Macintosh INIT file to the Inter•Poll application. Inter•Poll works together with Responder to identify all active AppleTalk devices, including Macintosh, Apple // and MS-DOS workstations. Responder is installed into a Macintosh computer workstation by placing a copy of the Responder file into each workstation system folder and restarting. Be sure to remove any old versions that might be present when installing Responder.

Article Change History:
03 Jun 1994 - Updated to show Inter•Poll 1.0.1 is a discontinued product.

Support Information Services

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Tech Info Library Article Number:12242

Tech Info Library

AWS 95: DigiChannel Nu/Xi Card Works (6/93)

Revised: 6/4/93
Security: Everyone

AWS 95: DigiChannel Nu/Xi Card Works (6/93)

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Article Created: 3 June 1993

TOPIC ----------

Has the DigiChannel Nu/Xi card, by DigiBoard, been tested with the AWS 95? What version of the driver do we need?

DISCUSSION ----------

There was a bug report regarding a DigiBoard NuBus card that couldn't be recognized by Apple Workgroup Server (AWS) 95 server. According to the status, and actually talking with an A/UX engineer, the bug has been fixed in the final GM of A/UX 3.0.1 kernel for the AWS 95 server with the latest DigiBoard driver's software patched v 3.1.

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Tech Info Library Article Number:12244

Tech Info Library

AppleCD 300i: Using with Kodak Photo CD Discs (6/93)

Revised: 6/4/93
Security: Everyone

AppleCD 300i: Using with Kodak Photo CD Discs (6/93)

==========

Article Created: 4 June 1993

TOPIC --

If you're having difficulty using Photo CD discs in the AppleCD 300i, here are some things to check.

DISCUSSION --

Apple and Kodak have thoroughly tested the AppleCD 300i for Photo CD disc compatibility. You must use CD-ROM Setup 4.0.2 or later, and QuickTime 1.5 or later.

Photoshop uses its own form of virtual memory to spool in images that are larger than the available RAM can accommodate. Be sure you have sufficient hard disk space for virtual memory. Having plenty of RAM improves performance further.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12245

Tech Info Library

File Assistant: Turning Off Synchronizer Alert Messages (6/93)

Revised: 6/4/93
Security: Everyone

File Assistant: Turning Off Synchronizer Alert Messages (6/93)

==========

Article Created: 7 June 1993

TOPIC ----------

As you synchronize linked pairs, the PowerBook File Assistant displays messages about the synchronization. These alert messages appear to tell you what's happening, and if files can't be synchronized, they tell you why. If you're synchronizing several pairs of files, you may want to turn off the alert messages so they don't appear on the screen.

DISCUSSION ----------

To turn off alert messages, follow these steps:

1) Choose Preferences from the File menu.

2) Click the Warn When Can't Synchronize check box to deselect it.
   If you don't want alert messages to appear when a file or folder is put in the trash, you can click the box next to Warn Before Deleting to deselect it.

   WARNING: Be very careful if you turn off the alert messages when files are put into the trash. The File Assistant puts a file or folder in the trash during synchronization whenever its corresponding file or folder is deleted or renamed. If you turn these alert messages off, the messages notifying you when a file is put in the trash don't appear.

3) Click OK.

To turn off alert messages temporarily, hold down the Option key. While you hold down the Option key, the alert messages for any commands you execute are turned off.

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..TIL12246-File_Assistant-Turning_Off_Synchronizer_Alert_Messages_6-93.pdf

Tech Info Library Article Number:12246

Tech Info Library

PowerBook File Assistant: Automatic Synchronization (7/95)

Revised: 7/20/95
Security: Everyone

PowerBook File Assistant: Automatic Synchronization (7/95)

==========

Article Created: 7 June 1993
Article Reviewed/Updated: 20 July 1995

TOPIC ----------

This article discusses how to turn on automatic synchronization in the Synchronizer of the File Assistant software.

DISCUSSION ----------

To update files you have linked automatically whenever a change is made to either of the linked files, choose Automatic from the Synchronize menu with the pair selected. A message appears whenever files are being updated.

You can set up your PowerBook so files are updated every time you connect with another disk. Follow these steps:

Step 1
Choose Automatic from the Synchronize menu with the pair selected.

Step 2
Use the AutoRemounter control panel to reconnect to shared disks.

Step 3
Drag an alias of the PowerBook File Assistant icon to the Startup Items folder (the PowerBook System Folder).

Article Change History:
20 Jul 1995 - Corrected misspelling; reviewed and reformatted.

Support Information Services

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Tech Info Library Article Number:12247

Tech Info Library

File Assistant: Increasing Battery Life (6/93)

Revised: 7/7/94
Security: Everyone

File Assistant: Increasing Battery Life (6/93)

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Article Created: 7 June 1993

TOPIC ----------

This article discusses the key features of File Assistant that are designed to increase battery life.

DISCUSSION ----------

The PowerBook Display

The backlight is one of the major power consumers on the PowerBooks. Approximately 1/3 of the power is used to illuminate the display with the backlight. Viewing the screen without a backlight however, is difficult and usually impossible. Screen Dimming saves power and allows the user to see the screen during usage.

The Screen Dimming panel of the PowerBook Display control panel provides controls over Automatic screen dimming. This panel displays only if the portable computer is capable of software control over the backlight and/or external monitor.

SCSI Sleep Fkey

With SCSI Sleep, you can put the PowerBook to sleep immediately by pressing the shift, command, and 0 keys simultaneously. When you add the Control key to this sequence, just the hard disk spins down. This gives easier access to system sleep and longer battery life.

Permanent RAM Disk

There's one new feature added to the RAM disk option of the Memory Control Panel. Any files copied to the RAM disk are saved to disk upon shut down or restart, and then copied back to the RAM disk upon startup. This saves rebuilding the RAM disk at every restart.

This first version of the Permanent RAM Disk doesn't support instant booting, so using it as a system volume requires a restart.

Support Information Services

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Tech Info Library Article Number:12248

Tech Info Library

Assistant Toolbox: Description (10/95)

Revised: 10/31/95
Security: Everyone

Assistant Toolbox: Description (10/95)

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Article Created: 7 June 1993
Article Reviewed/Updated: 31 October 1995

TOPIC ----------

What does the Assistant Toolbox extension that comes with most PowerBook computers do?

DISCUSSION ----------

The Assistant Toolbox extension adds several features and functionalities to a PowerBook:

* Battery Management
The Assistant Toolbox adds to the base operating system's ability to better manage battery life.

* Persistent RAM disk
The Assistant Toolbox gives the PowerBook the ability to save RAM disk data to the hard disk when shutting down and read it back in when starting up. Normally, a RAM disk is lost when the PowerBook computer is completely shut down.

* Sleep Fkey
Using the key sequence Command (Apple), Shift, 0 (the number), you can quickly put the PowerBook to sleep.

* Later Laser
Later Laser allows deferred printing of documents when the PowerBook computer is disconnected from a printer or network. When you reconnect, the documents print when the printer is available. Later Laser is only active when a laser printer is chosen.

* SCSI Sleep
SCSI Sleep mounts any previously connected hard drives as a PowerBook comes out of sleep.

* Anti-Submarining Cursor
The Anti-Submarining Cursor feature corrects a software issue that caused the "submarining" cursor effect on gray-scale passive-matrix displays. "Submarining" is when the cursor disappears as it is moved quickly. This is an important feature for all PowerBooks, except the 170 and 180.

* Always AppleTalk
The Always AppleTalk feature lets you activate AppleTalk without restarting the computer.

All of these features are built in to the Assistant Toolbox extension and are loaded automatically when the extension is loaded.

Article Change History:
31 Oct 1995 - Article was completely rewritten for clarity and accuracy.
20 Jul 1995 - Corrected spelling of AutoRemounter; reformatted.
17 Mar 1995 - Added reference to manual.

Support Information Services

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Tech Info Library Article Number:12249

Tech Info Library

PowerBook File Assistant: Requirements for Installing (6/93)

Revised: 6/10/93
Security: Everyone

PowerBook File Assistant: Requirements for Installing (6/93)

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Article Created: 7 June 1993

TOPIC ----------

This article tells you what software File Assistant installs, and what you need to install it.

DISCUSSION ----------

For further information on PowerBook File Assistant, please refer to the article titled "Assistant for PowerBooks: Software Components" also located in the Technical Information Library.

Requirements

To use the PowerBook File Assistant, you need:

- A PowerBook computer with at least 4MB of RAM
- System software version 7.0 or later
- System software version 7.1 or later is required to link files and folders by dragging them into the synchronization window.
- A hard disk drive

Installing

You install File Assistant software on your hard disk using the Installer. Use Easy Install to install all of the software:

- The PowerBook File Assistant
- The Assistant Tool Box, and
- The system software that lets you drag icons from the Finder to the

PowerBook File Assistant Setup window (requires System 7.1 or later).

Use Customize to select specific items you want to install.

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Tech Info Library Article Number:12250

Tech Info Library

File Assistant: Manual Synchronization (6/93)

Revised: 6/4/93
Security: Everyone

File Assistant: Manual Synchronization (6/93)

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Article Created: 7 June 1993

TOPIC ----------

Manual updates allow you to choose when to update a linked pair of items. When you make a change to a file on one disk, the PowerBook File Assistant doesn't update that file on the other disk until you tell it to. This article tells you how to use manual synchronizer with the Synchronizer software of File Assistant.

DISCUSSION ----------

Manually synchronize linked files at any time following these steps:

1) Choose Manual from the Synchronize menu with the pair selected.

2) Click the arrow between the two files in the synchronization window.

3) Continue to click the arrows for all the pairs you want to update.

You can also manually update files that are linked by choosing Synchronize Now from the Synchronize menu with the pair selected.

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Tech Info Library Article Number:12251

Tech Info Library

File Assistant Synchronizer: Types of Updates (6/93)

Revised: 6/4/93
Security: Everyone

File Assistant Synchronizer: Types of Updates (6/93)

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Article Created: 7 June 1993

TOPIC

This article tells you what kinds of updates are possible in two linked items, and what action to expect when you make changes in one of the items.

DISCUSSION

There are three kinds of changes you can make to linked items:

- Modify the file or folder.
- Delete the file or folder, or move it to another place on the disk.
- Replace the file with another file of the same name.

When the PowerBook File Assistant notices these changes, it does the following:

- Modify
  - In a two-way link, the unchanged file or folder is updated.
  - In a one-way link, if the arrow points to the unchanged file, the unchanged file is updated. If the arrow points to the changed file, nothing happens.
- Delete
  - In a two-way link, you get a message asking if you want to delete the other item.
  - In a one-way link, if the arrow points to the deleted item, the deleted item is updated. If the arrow points to the undeleted item, you get a message asking if you want it deleted.

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..TIL12252-File_Assistant_Synchronizer-Types_of_Updates_6-93.pdf

Tech Info Library Article Number:12252

File Assistant Synchronizer: Key Features (7/95)

Revised: 7/20/95
Security: Everyone

File Assistant Synchronizer: Key Features (7/95)

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Article Created: 7 June 1993
Article Reviewed/Updated 20 July 1995

TOPIC ----------

This article describes these key features of the Synchronizer software that is part of File Assistant:

- Drag and Drop Setup
- Smart Merge
- Optional Automatic Operation
- One and Two Way Links

DISCUSSION ----------

Drag and Drop Setup

The first step in setting up a synchronization environment is to establish the link between the documents. Synchronizer assumes that the pair of files already exist. The internal clocks of the two computers must be set to the same time.

To establish the link, drag the icons directly from the Finder into the Synchronizer window. The Synchronizer makes sure that the files are truly a matching pair (same Name, Type, Creator, and Modification Date) before establishing the link. It can link any two folders, except when one is within the other. It can link folders with different names or containing different files using the "Allow non-matching folder names" choice in the Preferences dialog box.

NOTE: You need system software 7.1 or later to use the Drag and Drop Setup feature.

Smart Merge

Most file synchronization packages merge two folders by copying every file that

is in either folder into the other folder. This has the undesirable side effect of creating folders that grow over time unless you manually delete files on both computers simultaneously.

Smart Merge tracks your folders, and if you make a change to one folder, it makes the same change to the linked folder. If you delete a file on your PowerBook, the Synchronizer merge moves the file on your Macintosh into a "deleted files" folder.

Optional Automatic Operation

Once a link is established, you can synchronize any two files or folders by selecting the Synchronize Now item from the Synchronize Menu or by clicking on the arrow between the two links.

Optionally, you can select automatic linking by selecting the Automatic item when a link is selected in the main Synchronizer window.

The uses of the Automatic attribute increase when combined with AutoRemounter. For example, you can plug a PowerBook 160 into a LocalTalk network, and assume that the files on the PowerBook will be updated without interaction.

One and Two Way Links

Ordinarily, when using Synchronizer to maintain the most current sets of files, it establishes a two-way link. However, in situations where a master file is going to be updated to a network of local and remote users, you can establish one-way links by selecting the link and choosing the appropriate direction. This is also the best way to use Synchronizer when mirroring a computer's hard disk to a backup volume.

Article Change History:
20 Jul 1995 - Corrected misspelling; reviewed and reformatted.

Support Information Services

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Tech Info Library Article Number:12253

Tech Info Library

File Assistant Synchronizer: Using with Systems Earlier Than 7.1

Revised: 6/10/93
Security: Everyone

File Assistant Synchronizer: Using with Systems Earlier Than 7.1

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Article Created: 7 June 1993

TOPIC ----------

This article gives you an alternate procedure to use instead of the "Drag and Drop" set up for establishing a link between two documents for the File Assistant Synchronizer. The Drag and Drop feature isn't available to you with system software earlier than 7.1 installed on your computer.

DISCUSSION ----------

Follow these steps:

1) Click the item selection box to select it.

2) Choose Select An Item To Synchronize from the File Menu.

3) Find the file or folder you want to synchronize.

4) Click Select after highlighting the file or folder you want to synchronize.

5) Click the corresponding item selection box in the selected pair.

6) Repeat steps 2 through 4 to link the matching file or folder.

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Tech Info Library Article Number:12254

Tech Info Library

Performa 405: Upgrading Video Beyond 16 Colors (6/93)

Revised: 6/14/93
Security: Everyone

Performa 405: Upgrading Video Beyond 16 Colors (6/93)

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Article Created: 1 June 1993

TOPIC ----------

My new Performa 405 display comes with only 16 colors, making many of the programs I want for my children available only in shades of gray. What's the easiest way to get 256 colors?

DISCUSSION ----------

To get more than 16 colors on the Performa 405, purchase the 512K VRAM SIMM, which gives you the full 256 colors some of your programs need.

To get the VRAM SIMM, contact an Apple service provider. To locate an Apple service provider in your area, call (800) 538-9696 for a referral.

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Tech Info Library Article Number:12255

Tech Info Library

AppleShare 3.0.2 Patch (6/93)

Revised: 6/17/93
Security: Everyone

AppleShare 3.0.2 Patch (6/93)

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Article Created: 4 June 1993

TOPIC --

I just got a flyer from Sonic Systems that says Server Sentry is now shipping with the AppleShare 3.0.2 patch. They also included the full May 17th MacWeek article on AppleShare 3.0.2. Does such a patch really exist? Is it only useful for Server Sentry and Server Manager.

DISCUSSION --

AppleShare 3.0.2 is not a shipping product. It is currently under development and will be available in the future. The MacWeek article and the Sonic Systems flyer are incorrect. There is a current AppleShare 3.0.1 patch "3.0.1 rev. B" that is being sent to customers with specific problems. This patch was not fully tested, contains some bugs, and is not generally available.

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Tech Info Library Article Number:12256

Tech Info Library

PowerBook: Power and Battery Saving Tips (2/97)

Revised: 2/28/97
Security: Everyone

PowerBook: Power and Battery Saving Tips (2/97)

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Article Created: 7 June 1993
Article Reviewed/Updated: 28 February 1997

TOPIC ----------

This article provides suggestions for reducing power consumption, thus extending the life of your PowerBook computer's battery.

DISCUSSION ----------

General Information

Battery voltage varies by PowerBook model, individual battery type, ambient temperature, and other factors. To check battery voltage, use a voltmeter to determine the actual charge. Battery verification can be found within the PowerBook additional procedures of the Service Source. This is the true hardware check and it is the most accurate and helpful troubleshooting tool.

Another tool, Norton Essentials, is a software utility that can handle some of the following battery conservation tips.

Some load items that affect battery discharge:
• Amount of RAM installed
• Screen brightness
• On time for disk drives
• The PowerBook's operating mode
• Peripherals (including internal modem)

The Tech Info Library contains several other articles with further details on batteries, utility software, and other related topics.

Before Using Your PowerBook

• Shut down your PowerBook and charge its battery overnight. This ensures that the battery becomes fully charged.

• Reduce the number of extensions and control panels that load by using an extension manager program.

Settings and Controls

• Turn down the brightness.

• Turn Backlighting down to minimum. Set the shortest delay before dimming (move the slider in the PowerBook Display control panel to the left). Use this dimming feature instead of a screen saver program. Screen savers access the hard drive and keep backlighting turned on (which uses battery power) but dimming does not.

• In bright light, you can even turn backlighting off, greatly increasing battery life. Some people use a booklight with no backlighting, but this is an extra gadget to carry. Also, the PowerBook File Assistant software offers the PowerBook Display control panel that provides controls over automatic screen dimming.

• Avoid desktop patterns with many black pixels or solid dark areas. (These don't consume more power, but they tend to make you turn up the backlighting, which does consume more power. For Color displays it is good to use darker colors, like black, that reduce the use of Red, Green, or Blue pixels. All pixels On make white.

• Use Chooser to turn off AppleTalk. This saves power and lets the PowerBook wake up faster. You may wish to have AppleTalk turned on when you restart and then turn it off. That way you can turn AppleTalk on and off without restarting. If AppleTalk is turned off when you start up a computer, certain system code doesn't get loaded, and a restart is necessary to get it loaded again. If you have the PowerBook File Assistant Toolkit extension installed, AppleTalk is always available, thus avoiding the need to restart the system to load the AppleTalk drivers.

• Turn the sleep wait period down to a minimum using the PowerBook control panel, or set the Battery Conservation slide control to Maximum Conservation in the PowerBook control panel.

• Set system and hard disk sleep to their minimum settings.

• Select Reduced Speed in the Battery Conservation Options section of the PowerBook control panel.

• Use Sleep in the Special menu, or the Battery desk accessory, as often as practical. If the PowerBook File Assistant is installed, you can also use the Sleep Fkey sequence, Shift-Command-0.

• Unless you have a RAM disk you want to preserve, select Shut Down rather than Sleep when you won't be using the computer for more than 30 minutes. Note: This does not apply to the PowerBook 100, whose RAM disk is preserved after shut-down.

• Enable "Allow Processor Cycling" to reduce the power draw of the

microprocessor.

Using Memory

• Use the Memory control panel to set up a RAM disk. Use the Installer to create a minimal System Folder on the RAM disk, and then use it as the startup disk.

WARNING: Except in the PowerBook 100, the contents of a RAM disk are lost when you shut down a PowerBook. In other models, use Sleep to preserve RAM disk contents, or use the Persistent RAM disk feature of the PowerBook File Assistant software.

The Tech Info Library article "PowerBook: Setting Up to Run from a RAM Disk (6/93)" documents how to set up a RAM disk for your PowerBook.

• Use the Memory control panel to turn off Virtual Memory.

• Use third-party RAM cards that contain low-power RAM chips.

Application Software

• Under battery power, don't use applications or features (such as spell checking or QuickTime) that require lots of hard drive access.

• Instead of a full-featured word processor, use TeachText, AppleLink, or a program designed specifically for PowerBooks. Many word processors constantly access the hard drive, which uses battery power.

• When you're near an AC outlet, and you're planning to use battery power later, launch your applications and open data files with AC power, then put the PowerBook to sleep. Your work will be in RAM when you come out of sleep.

Using Peripherals

• Quit any program that uses a modem as soon as you're finished with it.

• Turn off features such as "wake on ring" and "fax receive" for modems.

• Don't use external devices when operating the PowerBook from battery power.

• If any SCSI devices are connected to the computer, make sure they're turned on, even when you're using the AC adapter. Power can drain from your battery through attached power supplies.

• Use the disk drive as little as possible and eject any floppy disks you're not using.

• Use only low-power ADB devices that are designed for PowerBooks.

• Remove any PC (PCMCIA) cards from the PC card expansion slot(s). Some cards

draw power even when they are not in use. (NOTE: Not all PowerBook computers have PC slots. If you're not sure if your's does, you should check the manual.)

Other Tips

- If you're near an electrical outlet, use the AC adapter.

- Travel with a spare battery.

- Regularly "Exercise" the Battery. Warning: this tip does not apply to the PowerBook 100, whose lead-acid battery should not be fully discharged.

To maximize battery life, discharge them completely once every 90 days. Just use the computer as you normally would, but ignore the low-power messages that appear on the screen (make sure to save your work). When the computer goes to sleep automatically, recharge the battery completely before using that battery again.

Article change History:
28 Feb 1997 - Added info about PC cards.
25 Apr 1995 - Revised formatting, clarified wake on ring description.
05 Jul 1994 - Additional power saving tips added, clarification of others.

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Tech Info Library Article Number:12257

Tech Info Library

SNA•ps 5250: Gateway Computer Performance (5/93)

Revised: 6/4/93
Security: Everyone

SNA•ps 5250: Gateway Computer Performance (5/93)

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Article Created: 14 May 1993

TOPIC ----------

Does the speed of the computer that serves as the gateway have an effect on performance or is all the communication taking place on the NuBus card?

DISCUSSION ----------

The speed of the gateway code running on the NuBus card is not affected by the speed of the Macintosh it is installed in. Our gateways run about the same performance in the Quadra 950 as a Macintosh II. There are some issues with multiple NuBus cards in a multi-slot Macintosh and having all the AppleTalk Client traffic running out a single Ethernet card or Token Ring card, for example. Now the speed of processes across the NuBus becomes a factor. If the Ethernet card is dumb, then the AppleTalk conversions are done in the Macintosh and distribution of session data may be delayed. In a single gateway environment, this is not an issue unless you are running say an AppleShare server on the same Macintosh as the SNA•ps Gateway. We have had reported problems with two very high traffic oriented services in the same Macintosh overrunning the Ethernet or Token Ring cards, resulting in very slow performance or freezes. These type of problems are being addressed in future releases of NSI. So to summarize, a single SNA•ps gateway running in a Macintosh will operate about the same in all NuBus Macintoshes. Add more processes which start to stress the AppleTalk distribution and slow downs are possible.

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Tech Info Library Article Number:12258

Tech Info Library

PowerBook: Setting Up to Run from a RAM Disk (9/94)

Revised: 9/29/94
Security: Everyone

PowerBook: Setting Up to Run from a RAM Disk (9/94)

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Article Created: 7 June 1993
Article Reviewed/Updated: 29 September 1994

TOPIC ----------

This article tells you how to set up a PowerBook RAM disk for efficient use of your PowerBook.

DISCUSSION ----------

1) Make sure that you have about 10MB of free space on the PowerBook hard disk (install space), and also about 3MB to 4MB as permanent backup for the RAM disk. Have a current System Folder already installed on your internal hard disk.

2) It's best to have a full 8MB of RAM in your PowerBook. You can use a RAM disk with 6MB, but it's usually too awkward.

3) Use the Memory control panel to create a 4MB RAM disk. Later, you should increase or decrease the RAM disk size depending on your particular circumstances. The trade-off is between the size of the RAM disk and the amount of memory remaining to run system software and applications. A 3.2MB RAM disk seems to be optimal.

4) Install a minimal system on the RAM Disk with your System installation disks.

5) Copy selected items manually back into your System Folder. These items are optional. The more that you copy back, of course, the less space is available on your RAM disk for applications and documents. The objective is to get everything you need onto the RAM disk and avoid powering up the hard disk. You will need to fine-tune your setup to suit your circumstances. You'll at least want to copy back Chooser, Startup Device, Portable or PowerBook, and Battery.

   Examples of what you might copy to the RAM disk System Folder include:

Alarm Clock, LaserWriter, Memory, AppleShare (not File Sharing), and a few fonts. Additional third-party items are: SAM Intercept, SCSI Probe, and the PowerBook File Assistant's Assistant Toolkit extension.

6) Select up to three applications you want to put on the RAM disk. Keep only the application and the accessory files you really need.

7) Leave at least 200K to 300K free for documents and other files. Even better is 400K to 500K, because things like Preference files and other items often take additional space.

8) Once your RAM disk is completely configured, drag the RAM Disk icon over your internal hard disk icon. This creates a folder on your hard disk called "RAM Disk." This copy will serve as a backup of your RAM Disk. Periodically copy the RAM disk to the hard disk when the RAM disk changes.

   If you ever totally lose power, you can quickly restore your RAM Disk by dragging the contents of the RAM Disk folder to a new, but empty, RAM Disk. Frequently back up your RAM disk to your hard disk because you may be continually optimizing it at first. It takes only a few seconds to copy the entire RAM disk to the hard disk, replacing the existing folder.

   NOTE: Having multiple System Folders on your hard disk isn't generally recommended, and System Picker (a utility that allows you to select among System Folders on the same hard disk) may prove useful.

9) In addition, regularly copy documents in progress to the hard disk as a backup. This takes only a second, and the hard disk doesn't stay powered very long. Just after doing such a copy, put the PowerBook to sleep with the Sleep Fkey (available as part of the PowerBook File Assistant software), and then rewake it just so the hard disk will sleep sooner.

10) Leave your PowerBook in sleep mode all the time so that the RAM disk is always around and ready to run. Shutting down erases the RAM disk on many of the PowerBook models. Restarting is OK.

    NOTE: The Persistent RAM disk feature of PowerBook File Assistant software allows information in the RAM disk to be saved between restarts and shutdowns.

    If you switch batteries while your PowerBook is asleep, MAKE SURE THE POWERBOOK IS PLUGGED IN AND GETTING POWER, otherwise your RAM disk will be erased! When on the road and far from a power outlet, back up your entire RAM disk to the hard disk when the first or second (not the third and final!) battery warning comes on. Then shut down, switch the batteries, reboot, copy the RAM disk contents back, and continue computing.

    The RAM disk on the PowerBook 100 survives shutdowns and you can switch the main battery while in sleep mode without the power supply

plugged in, since the 100 has a secondary set of batteries. There's a slight battery drain when in sleep, but a PowerBook seems to be able to last a few weeks in sleep mode.

11) If your PowerBook crashes, use a paper clip to push to the restart button. The RAM disk will usually be intact if you do this. You can use the on/off button to restart the crashed PowerBook if you don't mind losing the contents of your RAM disk and recreating it from your hard disk copy.

12) Use the Startup Device control panel to select which disk to start from (RAM Disk or internal hard disk). Switch between running the System Folder on the hard disk and the minimal System on the RAM disk. Use the RAM disk just when you want to be power conscious.

13) Put your PowerBook to sleep whenever possible. From the Battery control panel of Special menu you can put the PowerBook to sleep. If you have the PowerBook File Assistant installed, use the Sleep Fkey (Shift-Command-0) to instantly put the PowerBook to sleep whenever needed (no need to switch to Finder and select Sleep). Wakeup is instantaneous if you have AppleTalk turned off and are running from a RAM disk.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
29 Sep 1994 - Reviewed for consistency and format changes.

Support Information Services

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Tech Info Library Article Number:12259

Tech Info Library

PowerBook Duo: Sliding Switch on Battery (6/93)

Revised: 7/7/94
Security: Everyone

PowerBook Duo: Sliding Switch on Battery (6/93)

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Article Created: 1 June 1993

TOPIC -----

What is the sliding switch on the side of the PowerBook Duo battery? When it is slid one way, an icon of a full battery shows. When the switch is slid the other way, an empty battery icon is revealed.

DISCUSSION -----

The slider on the left side of the PowerBook Duo battery, visible only when the battery is removed from the PowerBook Duo, is a convenience for the user:

- After charging a battery, the user may slide the switch to indicate that the battery is fully charged.
- When a depleted battery is removed from the PowerBook Duo, the user may slide the switch to show that the battery needs a charge.

When using multiple batteries, this avoids confusion and shows at a glance which batteries are charged and which need to be recharged.

The position of this switch does not affect actual usage of the battery in the PowerBook Duo, and it does not slide automatically; it is merely an indicator for the user, set by the user.

Support Information Services

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Tech Info Library Article Number:12260

Performa 405: Losing Colors in the Finder (7/93)

Revised: 7/16/93
Security: Everyone

Performa 405: Losing Colors in the Finder (7/93)

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Article Created: 2 June 1993
Article Reviewed/Updated: 8 July 1993

TOPIC ----------

Sometimes when I look at the built-in desktop patterns in the General control panel of my Performa 405, the patterns are entirely in gray. At other times the patterns have some color.

Also, sometimes the icons on my Performa 405 are in black and white. I have colors in other places on my desktop, but not in any of my icons.

DISCUSSION ----------

The Performa 405 (like the Macintosh LC II) comes from the factory with 256K of VRAM installed, which allows it to display a maximum of 16 colors at one time. This doesn't mean that it has an absolute set of only 16 colors to choose from; rather, it has millions of colors to choose from, but can display only 16 of them at once. The System polls all color resources of the items being displayed and tries to pick a set of 16 colors that will work as a happy medium. Colors not picked as one of those 16 get displayed as gray.

Some colors have precedence and cannot be bumped. The highlight and window colors (those set in the Color control panel) cannot be bumped from the list of 16 while the Finder is active.

As for the icons, you may have assigned not only highlight and window colors, but labels as well. Each of these choices locks up one of the 16 possible colors. After you assign more than two or three labels, the icons shift from color to black and white.

When an application, extension or control panel takes away colors from the Finder, the Finder tries to replace the colors. Unfortunately, the Finder is not intelligent about this. A "used" color is no longer available to the Finder. This is very noticeable in 4-bit mode, 16 colors. When the Finder doesn't have enough choices, it often defaults to black and white until the

colors are given back. Restarting the computer is one of the actions that restores the colors. It may also be necessary to restore the label colors to their original values. Search on label colors for an article with more information.

The shift to black and white can be accelerated by assigning highlight, window, and labels to different shades of the same color. This assignment reduces the range of colors available as well as the total number, causing the Performa 405 to drop into black and white icons sooner.

The loss of colors can be conclusively identified by a solid black apple over the Apple menu. For copyright reasons, the apple must appear with certain colors. If the system cannot find even one of the six colors, it displays the logo in black rather than making one or more of the color stripes gray. More colors can be freed up by using the color wheel to set all the label colors to black (open the Labels Control Panel to access this). Setting highlight and window colors to black and white (in the Color control panel) should free the maximum number of colors. If you set all the labels to black and white, but the black and white icons remain, try restarting the computer.

To increase the number of colors to 256, you need to install the 512K VRAM SIMM. Contact your local Apple authorized dealer for further details.

Article Change History:
07/08/93 - Updated to include LC II.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12261

Tech Info Library

Paper Dimensions (10/94)

Revised: 10/17/94
Security: Everyone

Paper Dimensions (10/94)

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Article Created: 8 June 1993
Article Reviewed/Updated: 17 October 1994

TOPIC ----------

This article contains the dimensions of paper, in both inches and millimeters, used in Apple printers.

DISCUSSION ----------

Listed below are U.S. and European paper sizes. Note that D= Germany, and DK= Denmark.

Paper Size	Inches	Metric (mm)	
US Letter	8.50 x 11.00	216 x 279	
US Legal	8.50 x 14.00	216 x 336	
Tabloid/Ledger	11.00 x 17.00	279 x 432	
Postcard	3.94 x 5.82	100 x 148	
Statement	5.50 x 8.50	140 x 216	
Folio	8.26 x 13.00	210 x 330	
Executive	7.25 x 10.50	184 x 267	
Comm 10 envelope	4.13 x 9.50	105 x 241	
Monarch	3.88 x 7.50	98 x 191	
DL	4.33 x 8.67	110 x 220	
A3		297 x 420	
A4 Letter		210 x 297	
A5		149 x 210	
A6		105 x 149	(D, DK)
B4		254 x 353	
B5 Letter		176 x 250	
B6		120 x 176	(D)
C4		229 x 324	

C5	162 x 229	(D, DK)
C6	114 x 162	(D, DK)
M5	155 x 220	(DK)
M65	112 x 222	(DK)
DIN long envelope	110 x 220	(D)
DIN long letter	105 x 210	(D)
Oversize	250 x 330	(DK)

Article Change History:
17 Oct 1994 - Added additional paper sizes.

Support Information Services

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Tech Info Library Article Number:12264

Tech Info Library

LaserWriter IIf/IIg: Downloading Files From Hard Drive (6/93)

Revised: 6/10/93
Security: Everyone

LaserWriter IIf/IIg: Downloading Files From Hard Drive (6/93)

==========

Article Created: 8 June 1993

TOPIC ----------

One of the benefits of the LaserWriter IIf/IIg is connecting an external hard drive which gives one the ability to store "background art" at the printer. No details are given in the Owner's Manual as how to download files or how these files are called upon when printing.

DISCUSSION ----------

To utilize this feature of storing and downloading files from a hard drive requires fairly good knowledge of PostScript.

The only way of storing "background art" on a printer's hard disk is through writing (then downloading) PostScript code to access the PostScript file system, along with writing the PostScript code required for the art.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12265

Tech Info Library

AppleDesign Powered Speaker: Additional Specifications (5/93)

Revised: 6/8/93
Security: Everyone

AppleDesign Powered Speaker: Additional Specifications (5/93)

==========

Article Created: 1 June 1993

TOPIC ----------

This article addresses specific technical questions on the AppleDesign Powered Speakers.

DISCUSSION ----------

Q. What type of shielding do the AppleDesign Powered Speakers have?
A. The speakers are fully shielded magnetically to avoid display distortion if used near a computer monitor.

Q. What is the Amp classification? (A, B, C, AB, and so forth.)
A. The amp classification is Class B.

Q. What is the frequency response?
A. Apple suggests listening to the speakers relative to others, it is much more meaningful. The frequency response is: 90-17,000 Hz (+/- 3dB), which is actually quite good for a small and light speaker.

Q. What are the pinouts of the AppleDesign Powered Speakers?
A. 1 - Computer input jack: (standard 3.5mm mini-stereo phono plug) Sleeve=GND, Ring=Right, Tip=Left
1 - CD stereo input jack (dual RCA jacks: left and right)
1 - Speaker to speaker jack (pull-down terminals for stripped and tinned wire)
1 - Front panel headphone jack (3.5mm miniplug, like a computer input jack)

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12266

Tech Info Library

At Ease 1.0: Shut Down Button is Finder from Oregon Trail Game

Revised: 8/8/95
Security: Everyone

At Ease 1.0: Shut Down Button is Finder from Oregon Trail Game

==========

Article Created: 7 June 1993
Article Reviewed/Updated: 08 August 1995

TOPIC ----------

I have a button in the Applications panel of At Ease that looks like a light switch. Whenever I click on the button, the computer shuts down. If I reinstall At Ease, the button may disappear. What is it?

DISCUSSION ----------

The button is an alias for a rewritten Finder that can only shut down a Macintosh.

The game, Oregon Trail, comes with one disk meant to be a bootable disk for systems with no hard drive. Because of space limitations on the floppy disk, both the System and the Finder are severely altered. The only function left in the altered Finder is shutting down the Macintosh.

The Oregon Trail manual says to delete the System Folder after copying the bootable disk to the hard drive. Users sometimes ignore this step. Since the modified Finder's file type is Application, At Ease can add this Finder as a button in the Applications panel when told to "Gather Applications." Clicking the button launches the modified Finder, which shuts the system down.

If you have the light switch button, remove the duplicate System Folder. The System Folder will be on the Macintosh hard disk in a folder called, "Oregon Trail." The Finder may look like a normal Finder icon or a light switch icon. You can conclusively identify it by its version string: "1.0a1 NEC Shutdown Finder."

Sometimes, At Ease can't make a button for the altered Finder. If you reinstall At Ease or remove the altered Finder from At Ease, the button may not reappear after another Gather Application command.

Article Change History:
08 Aug 1995 - Reviewed for technical accuracy and added keyword.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12267

Tech Info Library

A/ROSE: Description (3/95)

Revised: 3/22/95
Security: Everyone

A/ROSE: Description (3/95)

==========

Article Created: 7 June 1993
Article Reviewed/Updated: 22 March 1995

TOPIC -----

What's A/ROSE? The extension is on my computer. Do I need it?

DISCUSSION -----

A/ROSE stands for Apple Real-Time Operating System Environment. It's a system extension that allows communication between the Macintosh main logic board and Macintosh Coprocessor Platform (MCP) based NuBus cards which run the Apple Real-Time Operating System. This means that specific Macintosh NuBus cards, such as the Apple Token Ring cards and the Apple Ethernet NB card, have their own 68000 chip on board.

A/ROSE runs as a driver under the standard Macintosh operating system. It downloads, starts, stops, sets priorities, and communicates with real-time processes that run on any A/ROSE compatible NuBus card.

The only reason to install this extension is to support an MCP-based card. If it's on a PowerBook Duo, it could be that the Duo Dock has an Ethernet NB card installed. When not docked, A/ROSE still loads, but the Duo doesn't use it. Other cards that require A/ROSE include the two Apple Token Ring, the Serial NB, and the Apple Coax/TwinAx NB cards. Note that SNA•ps is a software product which may require A/ROSE in specific configurations. Macintosh computers with built-in Ethernet don't need A/ROSE, and as far as we know, non-Apple Ethernet cards don't use A/ROSE.

Article Change History:
22 Mar 1995 - Corrected wording of Duo Dock.

Support Information Services

..TIL12269-A-ROSE-Description_3-95.pdf

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Tech Info Library Article Number:12269

Tech Info Library

AppleTalk Zone Information Protocol Query (6/93)

Revised: 6/17/93
Security: Everyone

AppleTalk Zone Information Protocol Query (6/93)

==========

Article Created: 8 June 1993

TOPIC -----

I have an AppleTalk protocol question and need help. Here are the requested sniffer traces. There are two vendors in consideration here. One vendor makes an AppleTalk network management package which runs on my Sun workstation. The other vendor is Wellfleet (WF) which makes our backbone routers.

The Network Management Vendor (NMV) creates a Zone Information Protocol (ZIP) query with the count indicated and expects the FIRST packet received from the AppleTalk router to contain a network count reflecting the TOTAL number of replies. In other words, if the WF router intends to reply with 50 networks then packet number '2' below should have a network count of 50, not one.

- Note that the term 'network' refers to an AppleTalk network described by an AppleTalk network number and delimited by AppleTalk routers. An extended network may have multiple zones.

The Wellfleet router says the network count in packet two indicates the number of networks contained in that packet only.

The net effect is the NMV only see's one ZIP reply per ZIP query because the WF put's a count of 'one' in the first packet.

I need from Apple an answer to the question: Given the ZIP query in packet (frame) number 1, what should the network counts in each of the subsequent reply packets be? What should these packets contain? I'm mostly concerned with extended networks.

A summary sniffer trace is as follows. Please note that the line length is longer than 80 chars and may not show up clearly on your screen.

```
SUMMARY  Delta T     Destination   Source        Summary

M    1            Wllflt822696 Sun   0BF80F  ZIP C Query Network Count=50
     2    0.0224  Sun   0BF80F Wllflt822696  ZIP R Extended Reply Network
                                               Count=1
     3    0.0005  Sun   0BF80F Wllflt822696  ZIP R Extended Reply Network
                                               Count=1
     4    0.0004  Sun   0BF80F Wllflt822696  ZIP R Extended Reply Network
                                               Count=1
     5    0.0003  Sun   0BF80F Wllflt822696  ZIP R Extended Reply Network
                                               Count=1


The detailed packet (frame) contents are as follows:

- - - - - - - - - - - - - - - - - - Frame 1 - - - - - - - - - - - - - - - - - -

SUMMARY  Delta T     Destination   Source        Summary
M    1            Wllflt822696 Sun   0BF80F  ZIP C Query Network Count=50

ZIP:----- ZIP header -----
ZIP:
ZIP:  ZIP command   = 1 (Query)
ZIP:  Network count = 50
ZIP:
ZIP:  --- Networks being queried: ---
ZIP:  #1: Net = 0
ZIP:  #2: Net = 380
ZIP:  #3: Net = 379
ZIP:  #4: Net = 378
ZIP:  #5: Net = 377
ZIP:  #6: Net = 376
ZIP:  #7: Net = 375
ZIP:  #8: Net = 374
ZIP:  #9: Net = 372
ZIP:  #10: Net = 371
ZIP:  #11: Net = 367
ZIP:  #12: Net = 366
ZIP:  #13: Net = 365
ZIP:  #14: Net = 364
ZIP:  #15: Net = 363
ZIP:  #16: Net = 362
ZIP:  #17: Net = 361
ZIP:  #18: Net = 360
ZIP:  #19: Net = 359
ZIP:  #20: Net = 357
ZIP:  #21: Net = 356
ZIP:  #22: Net = 352
ZIP:  #23: Net = 351
ZIP:  #24: Net = 350
ZIP:  #25: Net = 349
ZIP:  #26: Net = 348
```

```
ZIP:  #27: Net = 347
ZIP:  #28: Net = 346
ZIP:  #29: Net = 340
ZIP:  #30: Net = 339
ZIP:  #31: Net = 338
ZIP:  #32: Net = 337
ZIP:  #33: Net = 336
ZIP:  #34: Net = 335
ZIP:  #35: Net = 334
ZIP:  #36: Net = 333
ZIP:  #37: Net = 332
ZIP:  #38: Net = 331
ZIP:  #39: Net = 330
ZIP:  #40: Net = 326
ZIP:  #41: Net = 325
ZIP:  #42: Net = 324
ZIP:  #43: Net = 323
ZIP:  #44: Net = 322
ZIP:  #45: Net = 320
ZIP:  #46: Net = 319
ZIP:  #47: Net = 318
ZIP:  #48: Net = 316
ZIP:  #49: Net = 315
ZIP:  #50: Net = 314
ZIP:
ZIP:
ZIP:[Normal end of "ZIP header".]
ZIP:

- - - - - - - - - - - - - - - - - - Frame 2 - - - - - - - - - - - - - - - - - -

SUMMARY  Delta T     Destination   Source        Summary
     2    0.0224  Sun   0BF80F Wllflt822696  ZIP R Extended Reply Network
                                                 Count=1

ZIP:----- ZIP header -----
ZIP:
ZIP:  ZIP command   = 8 (Extended Reply)
ZIP:  Network count = 1
ZIP:
ZIP:  --- Network-zone list ---
ZIP:  #1: Net = 372, Zone = (zone name)
ZIP:
ZIP:[Normal end of "ZIP header".]
ZIP:

- - - - - - - - - - - - - - - - - - Frame 3 - - - - - - - - - - - - - - - - - -

SUMMARY  Delta T     Destination   Source        Summary
     3    0.0005  Sun   0BF80F Wllflt822696  ZIP R Extended Reply Network
                                                 Count=1

ZIP:----- ZIP header -----
```

```
ZIP:
ZIP:  ZIP command   = 8 (Extended Reply)
ZIP:  Network count = 1
ZIP:
ZIP:  --- Network-zone list ---
ZIP:  #1: Net = 366, Zone = (zone name)
ZIP:
ZIP:[Normal end of "ZIP header".]
ZIP:

- - - - - - - - - - - - - - - - Frame 4 - - - - - - - - - - - - - - - -

SUMMARY  Delta T     Destination   Source        Summary
     4    0.0004  Sun   0BF80F Wllflt822696  ZIP R Extended Reply Network
                                                 Count=1

ZIP:----- ZIP header -----
ZIP:
ZIP:  ZIP command   = 8 (Extended Reply)
ZIP:  Network count = 1
ZIP:
ZIP:  --- Network-zone list ---
ZIP:  #1: Net = 364, Zone = (zone name)
ZIP:
ZIP:[Normal end of "ZIP header".]
ZIP:

- - - - - - - - - - - - - - - - Frame 5 - - - - - - - - - - - - - - - -

SUMMARY  Delta T     Destination   Source        Summary
     5    0.0003  Sun   0BF80F Wllflt822696  ZIP R Extended Reply Network
                                                 Count=1

ZIP:----- ZIP header -----
ZIP:
ZIP:  ZIP command   = 8 (Extended Reply)
ZIP:  Network count = 1
ZIP:
ZIP:  --- Network-zone list ---
ZIP:  #1: Net = 356, Zone = (zone name)
ZIP:
ZIP:[Normal end of "ZIP header".]
ZIP:


DISCUSSION -------------------------------------------------

This behavior from the Wellfleet routers is perfectly correct and
acceptable.  I understand why there may be some confusion concerning this
so I'll attempt to clarify this for you.

There are two types of ZIP query reply packets, extended and non-extended.
I'll summarize the differences below.
```

Non-extended ZIP reply:
  Rules:
  - ZIP function type = 2
  - Multiple networks can be included in a single response packet, provided that an entry is completely contained within the packet.
  - The network count field is equal to the number of network/zone pairs included in the packet.
  - Extended and non-extended network mapping can be mixed in a single reply packet.
  - The network number field for extended networks is set to the first network number in the range. For example network 1000-2000 would be resolved using network number 1000 for all zone name mapping.

Extended ZIP reply:
  Rules:
  - ZIP function type = 6
  - Limited to a single network/zone mapping per packet.
  - The response to the query may not fit in one packet and hence is allowed to transverse multiple packets.
  - The network number field has a new meaning. It now represents the total number of zones being returned for the given network. This number will be the same in each packet returned for the network being queried.
  - A router can return an extended reply even if the response will fit in a single packet. In this case the response is limited to a single network per packet.

This last rule in the "extended ZIP rules" is the rule the Wellfleet is using in its response to the query from the network management station. Given this information I think you can now easily work through the vendor of the network management application to resolve this problem.

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Tech Info Library Article Number:12270

Tech Info Library

Language Kit Installers: Crash in 24-bit (2/95)

Revised: 2/17/95
Security: Everyone

Language Kit Installers: Crash in 24-bit (2/95)

==========

Article Created: 10 June 1993
Article Reviewed/Updated: 17 February 1995

TOPIC ----------

If I install one of the Language Kits (with 24-bit addressing ON), the Installer crashes while merging the TrueType fonts. This ONLY happens when installing on Macintosh computers with non 32-bit clean ROMs (Macintosh II, IIx, SE/30, IIcx) that also have the 32-bit System Enabler installed.

Installing with 32-bit addressing turned ON has no problems.

DISCUSSION ----------

This problem has been duplicated and reported to Apple engineering. The only workaround at this time is to turn ON 32-bit addressing while installing the Language Kits with these types of Macintosh computers, (Macintosh II, IIx, SE/30, IIcx) that have the 32-bit System Enabler installed.

Article Change History:
17 Feb 1995 - Updated to include both Language Kits.

Support Information Services

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Tech Info Library Article Number:12273

Tech Info Library

LaserWriter Pro: Darker Courier Font (2/97)

Revised: 2/26/97
Security: Everyone

LaserWriter Pro: Darker Courier Font (2/97)

==========

Article Created: 10 June 1993
Article Reviewed/Updated: 26 February 1997

TOPIC ----------

When we print Courier on our LaserWriter Pro 630, the font comes out lighter looking than previous LaserWriter printers we've owned. I have heard of a new "darker" version of the Courier font for the LaserWriter Pro printers. How can we obtain it?

Also, since Courier is the default font in HP PCL mode and we're using PC compatible computers, is there a way to download the font from our PC compatibles?

DISCUSSION ----------

Previously there was a "darker" version of the Courier font available that could be downloaded to the LaserWriter Pro 600 or LaserWriter Pro 630 printers using the Apple Printer Utility. Now there is a better solution. You should download the Courier TrueType font from a Macintosh (in your System Folder:Fonts) to the printer. Once downloaded, the printer uses that font in printer RAM instead of the lighter version of the font in ROM. The font remains resident in printer memory until the printer is power cycled (powered off, then back on). If this occurs you must download the font again.

Unfortunately, we are unaware of a way to download the font using PC compatible computers. The only workaround is to use a Macintosh to download the font using the Apple Printer Utility.

This article appeared in the 27 February 1997 issue of the Information Alley.

Article Change History:
26 Feb 1997 - Updated entire contents, changed distribution.
23 Dec 1993 - Revised article.
19 Jul 1993 - Change the release date of the ROM.

..TIL12274-LaserWriter_Pro-Darker_Courier_Font_2-97.pdf

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Tech Info Library Article Number:12274

Tech Info Library

LaserWriter Select 300: Photograde and Memory Upgrade (6/93)

Revised: 6/14/93
Security: Everyone

LaserWriter Select 300: Photograde and Memory Upgrade (6/93)

==========

Article Created: 10 June 1993

TOPIC ----------

Service Providers have reported that Photograde cannot be selected after performing the appropriate memory upgrade.

DISCUSSION ----------

This is a known issue. Apple has found no problem with memory. However, initiating a print job causes the Photograde option to become available.

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Tech Info Library Article Number:12277

Tech Info Library

DAL: Work With Microsoft Open EIS Pak (6/93)

Revised: 6/17/93
Security: Everyone

DAL: Work With Microsoft Open EIS Pak (6/93)

==========

Article Created: 10 June 1993

TOPIC ----------

Is there information on Microsoft Open EIS Pak, and does it work with DAL?

DISCUSSION ----------

Yes, Microsoft Open EIS Pak will work with DAL since it supports all Excel functions including Data Access Manager.

We found some information regarding Microsoft Open EIS Pak for the Macintosh in MacWeek Jan 11, 1993. This is a set of Excel-based development tools that aims to help users create corporate information systems based on an Excel spreadsheet, without writing code.

The package includes a variety of tools for creating custom menus, user-prompt dialogs, navigation controls and links to other applications. This package is nearly identical to the Windows version released last November 1992.

Microsoft Open EIS Pak for the Macintosh requires Excel. It will support all Excel functions, including charting and graphing, as well as System 7 features such as publish and subscribe, Apple events, and the Data Access Manager.

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Tech Info Library Article Number:12287

Tech Info Library

A/UX 3.0: Problem With The ruserpass (6/93)

Revised: 6/17/93
Security: Everyone

A/UX 3.0: Problem With The ruserpass (6/93)

==========

Article Created: 10 June 1993

TOPIC ----------

I am working on getting one of my UNIX applications to compile and execute under A/UX. Currently, I'm running into compile errors. This software has been compiled on a Sun workstation successfully.

I looked around inside "libc.a" and found that the "ruserpass" symbol is being referenced in the object file, "rexec.o" in the C library. The "pvm3" (their software) package does call the "rexec()" function, which, I believe, references the "ruserpass" symbol. This symbol does not seem to get defined properly in the C runtime library.

Below is a copy of the compile session:

```
making in AUX/ for AUX
       cc -g -DARCHCLASS=\"AUX\" -DIMA_AUX -DSYSVSIGNAL -o pvmd3 archcode.o
              cruft.o databuf.o ddpro.o frag.o host.o logging.o mesg.o
              myalloc.o nmdclass.o pkt.o pkup.o pvmd.o startup.o task.o
              tdpro.o waitc.o imalloc.o

undefined               first referenced
 symbol                     in file
ruserpass               /lib/libc.a

ld fatal: Symbol referencing errors. No output written to pvmd3
Make: *** Error: Update of `pvmd3' terminated with exit code 13
Make:            [line 47 in /homeb/bpowell/pvm3/src/AUX/Makefile]
```

DISCUSSION ----------

Your indication on the problem is correct, there is a problem with the rexec() function that references ruserpass, which doesn't exist.

The problem exists in the A/UX 3.0-CD distribution, fortunately, the problem was found before A/UX 3.0 went out of door. The fix for this is included in the "A/UX 3.0 Read Me" floppy disk, which includes the ruserpass.o module to be updated with libc.a. Here are the instruction from the Read Me file:

1) Insert the Read Me disk into your system and open the LIBC folder.

2) Drag "xdr.o", "ruserpass.o", and "xdr.h" to the "/tmp" folder on your root volume.

3) Enter these commands:

```
cd /tmp
ar r /lib/libc.a ruserpass.o xdr.o
mv xdr.h /usr/include/rpc/xdr.h
```

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Tech Info Library Article Number:12297

..TIL12299-Personal_LaserWriter_300-Description_6-93.pdf

Tech Info Library

Personal LaserWriter 300: Description (6/93)

Revised: 6/11/93
Security: Everyone

Personal LaserWriter 300: Description (6/93)

==========

Article Created: 14 June 1993

TOPIC

This article describes the Personal LaserWriter 300 printer.

DISCUSSION

The Personal LaserWriter 300 represents Apple’s entry level laser printer and is based on a new, compact Canon 4 page per minute (ppm) xerographic engine. It features improved print quality, an energy saving design, and the ability to share the printer with other users connected to the network.

The printer features GrayShare driver software, an innovative new technology that gives you the ability to share your printer with others across a network. When the printer is connected to a single Macintosh via a serial cable, the GrayShare software driver architecture allows anyone connected to the host Macintosh (using LocalTalk) to print to it.

To simplify printing while maximizing flexibility, the printer uses a 100-sheet Universal cassette tray that supports a variety of paper sizes (U.S. Letter, U.S. Legal, A4, B5, and Executive) and a single sheet manual feed tray.

The Personal LaserWriter 300 is equipped with an automatic on/off feature that conserves energy by keeping the printer in a standby state when not in use. When a document is ready to be printed, the Personal LaserWriter 300 automatically powers up.

FEATURES

Print quality

- 300 dots-per-inch (dpi) resolution
- Grayscale printing for sharp graphics
- 39 scalable TrueType fonts for printing a wide range of styles and sizes

Flexible paper handling

- 100-sheet Universal cassette supports a variety of paper sizes
- Manual feed tray included for printing envelopes and other types of media
- Straight paper path for printing on heavy stock, also minimizes envelope curling

Memory

- Standard 512K of RAM with compression
- Up to 2.5 MB virtual RAM buffer using Apple custom compression algorithms

Interface

- High-speed RS-422 serial interface

Print speed

- Four pages per minute maximum (actual speed varies depending on images printed and computer used)

System requirements

- Any Apple Macintosh personal computer with at least 1 MB of RAM and a hard disk drive
- System software version 6.0.7 or later
- Recommended: 4 MB of RAM or more with System software version 7 or later

Energy efficiency

- Uses minimal power when printing
- Automatic on/off feature conserves energy

Convenience

- Weighs only 15 lbs.
- Easy, one-click installation
- Compact desktop design (about the size of a Macintosh IIci)

Ordering Information

Apple Personal LaserWriter 300
Order No. M2047LL/A

- Apple Personal LaserWriter 300 printer
- Toner cartridge
- Installation software and fonts disks
- Interface cable
- User’s Guide
- Limited warranty statement
- 100-sheet Universal cassette tray

Apple Personal LaserWriter 300 100-Sheet Universal Cassette
(supports A4, U.S. Letter, U.S. Legal, and Executive paper sizes)
Order No. M2079G/A

Apple Personal LaserWriter 300 Series Toner Cartridge
Order No. M2045G/A

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Tech Info Library Article Number:12299

Tech Info Library

Personal LaserWriter 300: Specifications (1/96)

Revised: 1/16/96
Security: Everyone

Personal LaserWriter 300: Specifications (1/96)

==========

Article Created: 14 June 1993
Article Reviewed/Updated: 16 January 1996

TOPIC----------

This article gives the technical specifications for the Apple Personal LaserWriter 300.

DISCUSSION ----------

Marking engine

Canon engine

Controller

Application-Specific Integrated Circuit (ASIC) controller

Print Quality
---
300 dpi for text and graphics

Speed
---
4 pages per minute maximum. Actual speed depends on the images being printed and the computer being used.

System requirements

- Any Apple Macintosh personal computer with at least 1 MB of RAM and a hard disk drive
- System software version 6.0.7 or later
- Recommended: 4 MB of RAM or more with System software version 7 or later

Memory

```
------
512KB of RAM (no memory upgrades available)

Interfaces
----------
8-pin serial port @ 769 Kbits/second, externally clocked

Imageable Area (Minimum Margins)
--------------------------------
Maximum printable line: 208 mm (8.19 in.)
Minimum top margin: 3.6 mm (0.14 in.)
Minimum bottom margin: 6.35 mm (0.25 in.)
Minimum left margin: 3.2 mm (0.12 in.)
Minimum right margin: 5.3 mm (0.20 in.)

Actual imageable area may vary depending on the application program.
The printer senses the cassette size and adjusts to maintain these
margins.

Paper Sizes
-----------
Width:  Minimum - 90mm   (3.54 in)   Maximum - 216mm (8.5 in)
Length: Minimum - 188mm  (7.40 in)   Maximum - 356mm (14.0 in)

Fonts
-----
39 TrueType fonts from the following font families: Helvetica (4 typefaces),
Times (4 typefaces), Courier (4 typefaces), Chicago, Geneva, Symbol, New York,
Monaco, Bookman (4 typefaces), Avant Garde (4 typefaces), Palatino (4
typefaces), Zapf Chancery, Zapf Dingbats, Helvetica Narrow (4 typefaces), New
Century Schoolbook (4 typefaces)

Dimensions
----------
Height: 16.1 cm (6.3")
Width: 38.5 cm (15.2")
Depth (paper tray closed): 37.9 cm (14.9")

Weight
------
Approximately 15.4 pounds (7 kg)

Recommended Duty Cycle
----------------------
8,000 copies per month

Toner Cartridge Life
--------------------
3,000 pages at 4% coverage

Operating Environment
---------------------
Temperature: 10 to 33 deg. C (50 to 90 deg. F)
```

Humidity: 20% to 80%, noncondensing
Toner cartridge transit environment: -20 to 40 deg. C (-4 to 104 deg. F)

Input Electrical Requirements

U.S./Japan: 100 -115 V (+ or - 10%), 50-60 Hz (+ or - 2 Hz)
Europe/Australia: 220-240 V (+ or - 10%), 50 Hz (+ or - 2 Hz)

Power Consumption

Standby: 5 watt hours maximum
Printing: 120 watts average at 115 V
360 watts maximum at 220 V (operating)

Paper Capacity

100-sheet universal cassette
Single sheet manual feed tray

Media Size

Universal cassette feed - Letter, Legal, A4, B5, Executive
Manual feed - Envelope - Legal (single sheet)

Print Materials

Universal cassette feed
- Type: Plain paper
- Weight: 16 - 24 lb.
Manual feed
- Type: Plain, transparency, label, envelope
- Weight: Paper - 16 - 28 lb,
- Weight: Envelope - 28 lb. maximum

Media Output

Single output tray
Capacity - 100 sheets face down

Article Change History:
16 Jan 1996 - Added System requirements.
20 Mar 1995 - Added paper sizes.

Support Information Services

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Tech Info Library Article Number:12300

Tech Info Library

Personal LaserWriter 300 and Select 300: Differences (6/93)

Revised: 6/11/93
Security: Everyone

Personal LaserWriter 300 and Select 300: Differences (6/93)

==========

Article Created: 14 June 1993

TOPIC ----------

What are the key differences between the Personal LaserWriter 300 and the LaserWriter Select 300?

DISCUSSION ----------

Personal LaserWriter 300	LaserWriter Select 300
4 pages per minute	5 pages per minute
100 sheet paper capacity	250 sheets expandable to 800
100K page life cycle	150K page life cycle
512K RAM	512K RAM
No memory options	expandable to 1.5 and 4.5 MB @ 4.5 PhotoGrade enabled
N/A	PhotoGrade capable
N/A	FinePrint
No option for PostScript	PostScript optional
QuickDraw/GrayShare	QuickDraw/GrayShare
Printer sharing via GrayShare	Printer sharing via GrayShare
39 TrueType Fonts	39 TrueType Fonts

2500 page toner life	3000 page toner life
15 pounds	26 pounds
No Option for Windows Compatibility	Windows compatibility optional

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Tech Info Library Article Number:12303

Tech Info Library

Personal LaserWriter 300: Indicator Lights (LEDs)

Revised: 6/11/93
Security: Everyone

Personal LaserWriter 300: Indicator Lights (LEDs)

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Article Created: 14 June 1993

TOPIC----------

What are the functions of the indicator lights on the Personal LaserWriter 300 printer?

DISCUSSION ----------

COLOR	NAME	FUNCTION
GREEN	Ready/In Use	ON when the printer is ready to Print. FLASHES while the controller is preparing data for printing. OFF when the printer is not powered on.
AMBER	Paper Out	ON when printer status indicates paper out in CASSETTE FEED mode or MULTI-PURPOSE TRAY mode. OFF otherwise
AMBER	Paper Jam	ON when printer status indicates paper jam

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Tech Info Library Article Number:12304

Tech Info Library

Personal LaserWriter 300: Pinouts (6/93)

Revised: 6/11/93
Security: Everyone

Personal LaserWriter 300: Pinouts (6/93)

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Article Created: 14 June 1993

TOPIC ----------

This article provides the pinouts for the Personal LaserWriter 300 Mini DIN-8 Serial Connector.

DISCUSSION ----------

Pin	Signal	Description
1	CLK	Receive and Transmit data clock (output)
2	NC	No Connection
3	TxD-	Transmit Data (output)
4	SG	Signal Ground
5	RxD-	Receive Data (input)
6	TxD+	Balanced transmit (output)
7	Vcc	+5 VDC regulated, 300 mA max (output)
8	RxD+	Balanced receive (input)
Shield	PG	Protective Ground

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Tech Info Library Article Number:12305

Tech Info Library

MacX.400: Description (6/93)

Revised: 6/11/93
Security: Everyone

MacX.400: Description (6/93)

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Article Created: 13 June 1993

TOPIC ----------

This article describes the MacX.400 products release in June, 1993.

DISCUSSION ----------

Apple's two new X.400 products: MacX.400 v.1.1 and MacX.400 SD make it possible for Macintosh users to send messages over the Internet and other network environments. Both come with easy to use configuration and administration applications. The v.1.1 product supports large installations with multiple servers, while the SD (for "Small Domain") product is for single-server work groups.

MacX.400 transforms a Macintosh computer into a Message Transfer Agent (MTA) that supports X.400 messaging standards. With MacX running, you can exchange E-mail across any platforms and e-mail systems connected by X.400 networks. When working with an E-mail gateway, MacX.400 can distrubiute X.400 services across an AppleTalk network to everyone in an E-mail workgroup.

MacX.400 supports both TCP/IP and Open Systems Interconnection (OSI) transports. You can also use X.25 and Ethernet (IEEE 802.3) as an underlying network. MacX.400 also conforms with US and European X.400 profiles for interoperation with numerous other X.400 servers and vendors.

Other connectivity features include:

• Routing on any standard X.400 address attribute

• Support for multiple types of X.400 body parts, so you can exchange binary attachments, ODA documents, and Macintosh files.

• End System to Intermediate System (ES-IS) routing protocol support to register OSI addressing information autoamtically

• Easy to use X.400 API (Application Program Interface) for quick implementation of X.400 applications on the Macintosh computer. This makes it easy for developers to create X.400 gateways to existing E-mail systems. You can also develop native X.400 user agents for the Macintosh.

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Tech Info Library Article Number:12306

A/UX 3.0.1: Description (6/93)

Revised: 6/11/93
Security: Everyone

A/UX 3.0.1: Description (6/93)

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Article Created: 11 June 1993

TOPIC ----------

This article describes the A/UX 3.0.1 product.

DISCUSSION ----------

The A/UX 3.0.1 offers the same features as A/UX 3.0 with the addition of asynchronous I/O, multibus SCSI (supported on the Quadra 900, Quadra 950, and Workgroup Server 95) and SCSI DMA driver support (requires additional hardware). A/UX continues to support AppleTalk and TCP/IP networking protocols. The System 7.0 user interface implemented on A/UX 3.0.1 makes it easy to install, use, and manage.

System requirements for A/UX 3.0.1 include a minimum of 8MB RAM. Compatible systems include are Macintosh SE/30, IIx, IIsi, IIcx, IIci, IIfx, Macintosh II (with PMMU upgrade), Macintosh Centris 650 (with FPU), and Macintosh Quadra 700, 800, 900, and 950. (Note: The Centris 610 is supported if it has an FPU; if it lacks an FPU, you need to seek out a third-party upgrade.)

A/UX 3.0.1 also requires at least an 80MB hard disk (160MB or larger recommended for full installation) and an AppleCD SC, AppleCD SC Plus, AppleCD 150, AppleCD 300, or equivalent to install A/UX

Kernel

- AT&T UNIX System V, Release 2, Version 2 with 32-bit addressing, demand-paged virtual memory architecture, pre-emptive scheduling, interprocess communication

- BSD 4.3 extensions including signals, job control, sockets, Berkeley

networking and fast filesystem (UFS)

• Support for SCSI DMA, multiple SCSI buses, and asynchronous input/output

Toolbox

• Macintosh System 7.0.1, optimized for UNIX

• Features: TrueType, AppleEvents & PPC, 32-bit QuickDraw, Balloon Help, Data Access Manager, Aliases, 24-bit and 32-bit addressing

• A/UX File Manager supports transparent access to Macintosh and UNIX filesystems, full asynchronous I/O, and ability to concurrently open up to 5000 files

• A/UX Finder for organizing and locating information on UNIX and Macintosh filesystems

• QuickTime 1.5

Networking and Collaboration

• Berkeley TCP/IP protocol stack and commands, including Telnet, FTP, rlogin, rcp, and remsh

• CSL/IP

• NFS 4.1 and NIS

• AppleTalk protocol stack, including ADSP and AFP

• AppleEvents, AppleShare client, and FileSharing

• MacTCP 1.1 provides interface to kernel TCP/IP services for Macintosh applications

• X Window System 11R4 server, fonts, libraries, and client applications

• MacX 1.2 server

Development Tools

• Bourne shell, Korn Shell, and C Shell

• Text editing and processing tools, including vi, ex, ed, sed, ditroff, nroff, tbl, eqn, and pic

• Assembler, K&R C compiler, and ANSI FORTRAN compiler

- Linker and shared libraries
- Lexx, yacc, and lint
- adb and sdb debuggers
- SCCS, RCS, and make version control

Installation and Configuration

- One-button Easy Install with option for custom installation
- A/UX Apple Hard Disk SC Setup formats, partitions, and creates file systems on Apple and third-party drives
- System administration scripts simplify routine tasks like adding users
- Memory Control Panel for tuning the UNIX buffer cache
- Macintosh-style text editor

Standards Conformance

- Compliant with AT&T System V Interface Definition (SVID) as verified by System V Verification Suite (SVVS)
- Certified by National Institute of Standards and Technology as compliant with FIPS #151 (IEEE POSIX 1003.1-1990, and ISO 9945-1)

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Tech Info Library Article Number:12307

Tech Info Library

Changes from A/UX 3.0 to 3.0.1 (6/93)

Revised: 6/11/93
Security: Everyone

Changes from A/UX 3.0 to 3.0.1 (6/93)

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Article Created: 11 June 1993

TOPIC -----

This article outlines the changes made from A/UX 3.0 to A/UX 3.0.1.

DISCUSSION -----

AppleTalk

- AppleTalk-only network support
- UNIX AppleTalk PAP server routines no longer supported
- UNIX AppleTalk ATP response and request routines not supported

Configuration Changes

- SVFS not configured in kernel by default
- On-board Ethernet driver (ao) configured in kernel by default
- Kernel variables, see tables below
- Default memory footprint of virtual Mac environment (16 MB)

Kernel Enhancements

- Asynchronous I/O
  - asio daemon
  - asioread(2), asiowrite(2), asiowait(2)
- Semaphores
- Memory locking
- Improved kernel bcopy() for 68040s
- Sync daemon

Devices and Peripherals

- Multiple SCSI bus support includes:
  - gdisk and sdisk
  - device nodes, /dev/dsk/cB0Id0sP
  - HD SC Setup
  - Installer
  - devscsi
  - Commando dialog for mount
  - pname
- CD-300
- 500MB and 1GB hard drives
- DAT drives

UNIX Filesystem Enhancements

- Dynamic inode allocation
- catsearch daemon
- Extended (Macintosh) attributes

A/UX Macintosh File Manager Enhancements

- Asynchronous I/O
- Support for more than 500 Open Files
- Environment variables
  - CR-LF mapping for text files, TBTRANSLATEUXONLY
  - file name case insensitivity, TBFMIGNORECASE
  - Pathname separator, i.e., ‘/’ translation, TBTRANSLATESLASHES

Eschatology Not Supported

- No Eschatology partitions
- No more esch, eu, eupdate commands

Installer

- Easy Install server (F/P & DB) packages and partition maps
- Easy Install uses all available space for "Root & User" partition
- Installs alias to A/UX Startup in Startup Items of MacPartition

HD SC Setup

- Multiple SCSI bus support, including Previous & Next buttons
- New Database partition (“raw” partition w/o any filesystem)
- Modified “Free UNIX Partition” now prompts for slice number
- Improved user interface of UNIX filesystem mount point dialog
- Default UFS mount point is “Untitled#” in “/Shared Data”

Other enhancements

- Improved memset() and memcpy()
- Bug fixes
  - UUCP
  - Support for large drives and partitions (2 MB)
  - Support for 1024x768 (19”) third-party monitors
- Auto-login support
- Buffer cache control
  - New Memory CDEV
  - New NBUF value (-1 == 50%)

Integration

- Retrospect Remote bundled
- Doc Viewer and on-line Server
- Applications, Documentation and Shared Data folders in / (root)

Miscellaneous

- Default notification level in CommandShell
- System Folder Alias in /
- lpd(1m) turned off by default in /etc/inittab

Kernel Configuration Parameters Introduced in 3.0.1

Variable	Description	Default
GNOFILE	Global File Table (used by Mac environment)	6144
MSGMAP	Message Map Entries (used by msgop(2))	200
MSGMAX	Maximum Message Size (used by msgop(2))	8192
MSGMNB	Max. Message Queue Size (used by msgop(2))	16384
MSGMNI	Message Queue Identifiers (used by msgop(2))	50
MSGTQL	Number of Message Headers	200
NASIOD	Number of Asynchrounous I/O Daemons	4
NASIOQ	Asynchrounous I/O Request Queue	128
SEMMAP	Semaphore Map Entries (see semop(2))	50
SEMMNI	Semaphore Identifiers (see semop(2))	50
SEMMNS	Total Number of Semaphores (see semop(2))	300
SHMMNI	Shared Memory Segment Identifiers (shmop(2))	100

Kernel Configuration Defaults Modified in 3.0.1

Variable	File & Print	Database	3.0 Defaults
MAXSC	32	32	8
NBLK16	256	256	128
NBLK64	800	800	64
NBLK128	256	256	32
NBLK256	256	256	16

NBLK512	128	128	8
NBLK1024	300	300	8
NBUF	-1	0	0
NCALL	500	150	75
NFILE	7500	1024	256
NINODE	7500	1024	256
NMOUNT	32	32	10
NPBUF	64	64	20
NQUEUE	1200	1200	256
NSTREAM	200	200	32
SBUFSIZE	4096	4096	2048

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Tech Info Library Article Number:12308

Tech Info Library

Network Software Installer 1.3.2: Flaw (6/93)

Revised: 6/15/93
Security: Everyone

Network Software Installer 1.3.2: Flaw (6/93)

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Article Created: 15 June 1993

TOPIC ----------

The Network Software Installer (NSI) version 1.3.2 appears to have a harmless error in the Installer script. When run on a Macintosh Quadra 700 with System 7.1, the message that Enabler 201 is being installed flashes across the installer status window, but after the installation there's no file named Enabler 201.

When installed on a Macintosh Quadra 800 that only has the 68040 enabler, the Installer creates a file in the System Folder called Enabler 201. This file contains a single "lefT" resource containing the string "Lefty’s Magic Gibbly-Duplicating Resource."

When installed on a Macintosh Quadra 800 that has all enablers in the System Folder, the Installer modifies only Enabler 201. the only difference we can see is that it adds a single "lefT" resource containing the string "Lefty's Magic Gibbly-Duplicating Resource."

DISCUSSION ----------

The Network Software Installer 1.3.2 "builds" a System Enabler 201 file on any Macintosh the installer is used on, but then the NSI script is supposed to remove the file from all Macintosh computers except the PowerBook Duos. Unfortunately, an Installer bug leaves a copy of the enabler in the System Folder of some Macintosh computers.

This System Enabler 201 may be safely removed from all Macintosh computers except the Duos. Or you may leave it in the System Folder. This is a benign bug that will be fixed in the next release of the NSI.

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Tech Info Library Article Number:12310

Tech Info Library

CD-ROM Booting: Questions and Answers (5/96)

Revised: 6/4/96
Security: Everyone

CD-ROM Booting: Questions and Answers (5/96)

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Article Created: 14 June 1993
Article Reviewed/Updated: 23 May 1996

TOPIC ----------

1) How can a CD be the startup disk for any system equipped with a CD-ROM drive?

2) Do the CD-ROM drivers have to be loaded first before you can use the CD? Are the drivers in ROM?

3) Can you explain the start up sequence?

4) Why can I not make my own bootable CD-ROM by simply making a duplicate mirror image of my computer's internal HD on a write-only CD?

DISCUSSION ----------

1) Any Apple system (Macintosh IIci or newer) equipped with an Apple compatible CD-ROM drive (that works with Apple’s CD-ROM driver) can startup from the Install Me First CD-ROM. For detailed instructions reference the article, "Macintosh: Starting From Floppy or CD-ROM Disk," Article 0018059 in the Tech Info Library.

2) Yes, the CD-ROM drivers have to be loaded before you can use the CD. The drivers are read from the driver partition locate on the CD-ROM.

3) When the Macintosh starts up it loads in the drivers of the peripherals attached to the SCSI bus. The drivers are located in the driver partition of each peripheral. When the driver is loaded a simple test is performed to check that the driver loaded will access the peripheral as expected.

4) An image copy would not work because the CD driver code on the CD, and the driver code on the HD, are different. The hard drive image has

the hard drive driver code. (Apple considers the technology to create an Apple bootable CD to be proprietary information.)

Article Change History:
23 May 1996 - Changed reference to TIL article.
18 Nov 1993 - Added question 4.

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Tech Info Library Article Number:12312

Tech Info Library

Apple Workgroup Server 95: AppleShare and NFS Server (6/93)

Revised: 6/14/93
Security: Everyone

Apple Workgroup Server 95: AppleShare and NFS Server (6/93)

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Article Created: 11 June 1993

TOPIC ----------

I have an environment with an equal split of Macintosh and DOS computers, with SUN's PCNFS client Software on the DOS computers. A few UNIX computers are used as NFS file servers along with a few AppleShare File servers.

I need to easily share files between all platforms. I want one server that can easily serve all three environments without having to change the client's file sharing software (AppleShare, PCNFS, and NFS).

Is there any technical reason that would exclude the Apple Workgroup Server (AWS) 95 as a multi-platform server in installations where AppleShare and NFS were the filesharing protocols of choice?

DISCUSSION ----------

I don't see any difficulty of an AWS 95 acting as a single platform for both AppleShare and NFS servers.

For PCNFS clients on PC Windows or DOS computers to access files transparently, the AWS 95 must run with "pcnfsd", a special version of NFS server for PCs. The "pcnfsd" daemon is located in the /usr/etc/pcnfsd directory which shipped with the AWS 95. You may have the pcnfsd daemon automatically run from the /etc/inittab file.

For Unix NFS clients to communicate with AWS 95, the AWS 95 server must be configure with "nfs" kernel via the "newconfig nfs" command. The A/UX NFS server /etc/nfsd, will be automatically run by A/UX. The AWS 95 also needs to export the mount points specified in /etc/exports.

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..TIL12313-Apple_Workgroup_Server_95-AppleShare_and_NFS_Server_6-93.pdf

Tech Info Library Article Number:12313

Tech Info Library

Pre-System 7.5 System Folder Files Described (7/96)

Revised: 7/1/96
Security: Everyone

Pre-System 7.5 System Folder Files Described (7/96)

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Article Created: 14 June 1993
Article Reviewed/Updated: 01 July 1996

TOPIC ----------

This article gives brief descriptions of the files you'll find in the System Folder of a Macintosh running system software version 7.0 or 7.0.1. The article indicates how the 7.1 System Folder differs.

DISCUSSION ----------

System Software

The Macintosh stores system software in two types of memory: Read Only Memory (ROM) and Random Access Memory (RAM). Sections of the operating system are contained permanently in ROM. This type of system software, which is built into the hardware, is called firmware.

The system software that you install provides updates (new routines and corrected versions of old routines) between major ROM revisions. System and Finder files, device drivers, and other resources found in the System Folder provide these updates. When a system starts up, it loads the data from the System Folder on the hard disk into RAM, where it is stored until you shut down the system.

System Folder

You can't open many of the files in the System Folder because most of them are resource files, not applications. Their use is restricted to the system, but you can remove or copy them, and you can add files to the System Folder. The exact content of a System Folder depends on the Macintosh model and other equipment used with the Macintosh. At the top level, the System Folder generally contains:

- The System file
- The Finder file

- A System Enabler (System 7.1)
- Clipboard file
- Note Pad File
- Scrapbook File
- Apple Menu Items folder
- Control Panels folder
- Extensions folder
- Fonts folder (with system software version 7.1)
- Preferences folder
- PrintMonitor Documents folder
- Startup Items folder

Here are descriptions of the top-level files in the System Folder.

System File

This is the most important file on a startup volume, and is the first file loaded during the startup process. It contains the RAM-based portions of the Mac ToolBox and operating system, ROM extensions and patches, fonts, and sounds. All applications and the operating system share the System file's collection of resources. Every Macintosh startup disk requires this file to start up and run the Macintosh.

Finder File

The Finder is the application that presents and maintains the Macintosh desktop. The Finder keeps track of what files belong in which folders and where they appear on the desktop. It manages disks and files, and launches other programs. Every Macintosh startup disk requires this file to start up and run the Macintosh.

Ordinarily, the operating system designates the Finder as the startup application -- that is, the application that takes control when you first start the system. With System 7, the Finder stays open while you run other applications.

System Enabler

All new Macintosh models shipping after the release of system software version 7.1 include System Enabler software specific for that model or a particular family of models, like the Macintosh PowerBook family. System Enablers provide compatibility between Macintosh hardware and system software. You add a System Enabler rather than reinstalling a new system. System Enablers are located at the top level of the System Folder -- not in the Extensions folder.

Clipboard File

The Clipboard stores data that you have cut or copied.

Notepad File

The Notepad desk accessory uses resources in this file.

Scrapbook File

The Scrapbook file stores graphics and text for the Scrapbook desk accessory. The Scrapbook retains information even after the system shuts down.

Note: If you delete the Clipboard, Notepad, or Scrapbook files, the system recreates them, but they'll be empty.

Apple Menu Items Folder

You install files in the Apple menu by dragging them into the Apple Menu Items folder. You can put any file or alias that you double-click to open or launch (applications, documents, server volumes) in the Apple menu. When you install System 7, the Alarm Clock, Calculator, Chooser, Key Caps, Note Pad, and Scrapbook desk accessories and a Control Panels folder alias appear in the Apple menu.

Control Panels Folder

The Control Panels folder contains resources that allow you to set features, such as date and time. The system draws upon data and instructions provided in these control panel files, sometimes called Control Panel Device Resource files (cdev files). The specific control panel files included with the Macintosh system depends on configuration requirements and user preferences.

Here are some of the control panels you may find in this folder:

- Color
  If you have a color monitor, you can select highlight and window colors.

- Date & Time
  This is for setting date and time for the computer.

- Easy Access
  This supports features the Macintosh provides for disabled people: Mouse Keys (a substitute for using the mouse), Slow Keys, and Sticky Keys (a way to input complex key sequences more easily).

- File Sharing Monitor
  The File Sharing Monitor control panel lets you monitor file sharing activity. It shows you the name of any connected users, and lets you disconnect any connected users.

- General Controls
  You can change features like desktop pattern, and rate of insertion point blinking.

- Keyboard
  Select keyboard layout, and key repeat and delay rates.

- Labels
  Provides the colors and names for the Finder Label menu. You can

change the colors corresponding to the label names here.

- Map
  Type in a city name to see geographic location information.

- Memory
  You can set the disk cache size, and turn on or off virtual memory and 32-bit addressing.

- Monitors
  You can select monitor characteristics (number of grays or colors). You can also set monitor orientation when you have more than one monitor connected to your computer.

- Mouse
  Select tracking and double-click speeds for your mouse device.

- Network
  The Network control panel shows the available data links (LocalTalk, EtherTalk, TokenTalk). These resources are called adevs (AppleTalk Devices). You select which data link to use for network operations. Switching data links causes a temporary loss of network connections.

- Numbers
  This is where you set the format for displaying numbers.

- Sharing Setup
  You can start File Sharing or Program Linking, and you enter information here to identify your computer on the network.

- Sound
  Specify the type and volume of sound for your computer.

- Startup Disk
  If you have more than one hard disk attached to your computer, you can specify which of them is the startup disk.

- Token Ring
  This is used to set transmission speed of the Apple Token Ring 4/16 NB card, to set other operational timers, and to assign a locally administered address used for network management instead of the default hardware address.

- Users & Groups
  Designate who has access privileges to your computer.

- Views
  Select the font, icon arrangement, and list information shown on the desktop.

Extensions Folder

The Extensions folder contains:

- System extensions, called INITs in System 6, (for example, network drivers)

- Chooser extensions, sometimes called rdevs, which stands for Remote Devices (examples include AppleShare, CD-ROM, and printer drivers)

- System applications (for example, PrintMonitor)

- PostScript fonts.

The Extensions folder is the first place the System looks when loading system extensions at startup time.

Printer Software

Printer drivers, sometimes called printer resources, provide the interface to specific printers. You indicate your choice of printers in the Chooser. When you select a printer with the Chooser, the system draws upon the resources in these files. A system must have the resource files corresponding to the printers used with the system.

Here's a list of some printer drivers included with system software version 7.1:

- AppleTalk ImageWriter
- ImageWriter
- LaserWriter
  This is for all LaserWriters except the LaserWriter Pro series.
- LQ AppleTalk ImageWriter
- LQ ImageWriter
- Personal LaserWriter SC
- Personal LW LS
- StyleWriter
- Laser Prep
  This file works with the LaserWriter driver to provide PostScript, the language most LaserWriters use to print text and graphics. The Laser Prep file is rolled into LaserWriter driver version 6.1 and later. The Laser Prep file is required with LaserWriter driver versions 6.0 and earlier, and with AppleShare Print Server 2.0.
- Printer Share
  Printer Share is part of GrayShare, and the extension allows sharing of the StyleWriter II, LaserWriter Select 300, Personal LaserWriter 300, and the Apple Color Printer.

Other Chooser Extensions

Foreign File Access handles the conversion of File Manager calls to ISO 9660 and High Sierra discs. If you have a CD-ROM drive, you need the appropriate software to access it. In addition to Foreign File Access, you need High Sierra File Access and ISO 9660 File Access files.

Network Software

Network software provides the interface to network data links (for example, EtherTalk or TokenTalk).

- A/ROSE
  A/ROSE stands for Apple Real-Time Operating System Environment. It's a system extension that runs as a driver in the standard Macintosh operating system. It downloads, starts, stops, sets priorities, and communicates with real-time processes that run on any A/ROSE-compatible NuBus card.

- EtherTalk Phase 2
  EtherTalk software allows communication with AppleTalk network services over Ethernet networking interface cards and media.

- Network Extension
  The Network control panel uses resources in this extension.

- TokenTalk Phase 2
  TokenTalk software allows communication with AppleTalk network services over Token Ring networking interface cards and media.

- File Sharing Extension
  This allows you to share your Macintosh on the network.

AppleShare

This rdev, or Chooser extension allows you to connect to any Apple File Protocol (AFP) device such as an AppleShare Server, or a Macintosh running File Sharing.

PrintMonitor

This application runs in the background to send spooled information to the printer when you turn on Background Printing in the Chooser. Spooling means that the computer temporarily stores the file on the hard disk. PrintMonitor communicates with the printer in the background, makes a connection with the printer, and sends the file to the printer. When printing is complete, PrintMonitor empties the PrintMonitor Documents folder. System 6 also requires Backgrounder for background printing.

Fonts Folder

If you install System 7.1, you'll have a Fonts Folder that provides a single location for fonts, including TrueType, Adobe Type 1, and bitmap fonts. System software earlier than version 7.1 stores TrueType and bitmap fonts in the System file.

Preferences Folder

The Preferences Folder stores preference files that keep default or current settings for programs. Examples include Word Settings, MsWorksPref, PM4 Defaults, and Excel Settings. It also contains

Dictionary and Help files. System 7-compatible applications create and maintain these files automatically.

PrintMonitor Documents Folder

With System 7, you can print to a LaserWriter or a StyleWriter while you do other work with your Macintosh. For instance, you can print and continue working on a document at the same time. This is called "background printing."

When you turn on Background Printing for printers in the Chooser, files waiting to be printed are temporarily stored in the PrintMonitor Documents folder until the printer is ready to print them. This is all done in the background.

Startup Items Folder

Place in this folder the aliases of all applications and documents that you'd like to have opened automatically when you start the computer. Don't put system extensions in this folder.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
01 Jul 1996 - Added Fax Doc Word
04 Oct 1994 - Added Note Pad to contents of Apple menu.
07 Sep 1994 - Removed QRG from title, retitled to reflect contents.
18 May 1994 - Added more info about AppleShare.

Support Information Services

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Tech Info Library Article Number:12314

Tech Info Library

Macintosh: SCSI Data Transfer Rates (6/96)

Revised: 6/26/96
Security: Everyone

Macintosh: SCSI Data Transfer Rates (6/96)

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Article Created: 1 June 1993
Article Reviewed/Updated: 26 June 1996

TOPIC ----------

What is the maximum sustained asynchronous data transfer rate for the various Macintosh models? What SCSI chip is used inside the various Macintosh models?

DISCUSSION ----------

Begin_Table

MACINTOSH MODEL	SCSI CHIP	MAX DTR *	NOTES
Macintosh 128K	none	0	
Macintosh 512K	none	0	
Macintosh 512Ke	none	0	
Mac Plus	NCR 53C80	1.25 MB/sec	
Macintosh SE	NCR 53C80	1.25 MB/sec	
Macintosh SE/30	NCR 53C80	1.25 MB/sec	
Macintosh Classic	NCR 53C80	1.25 MB/sec	
Macintosh Classic II	NCR AM85C80	1.25 MB/sec	
Macintosh Color Classic	NCR AM85C80	1.25 MB/sec	
Macintosh LC	NCR AM85C80	1.5 MB/sec	
Macintosh LC II	NCR AM85C80	1.5 MB/sec	
Macintosh LC III	NCR AM85C80	1.5 MB/sec	
Macintosh LC 475	NCR 53C96	5 MB/sec	(1),(2)
Macintosh LC 520	NCR AM85C80	1.5 MB/sec	
Macintosh TV	NCR AM85C80	1.5 MB/sec	
Macintosh II	NCR 53C80	1.25 MB/sec	
Macintosh IIx	NCR 53C80	1.25 MB/sec	
Macintosh IIcx	NCR 53C80	1.25 MB/sec	
Macintosh IIci	NCR 53C80	1.25 MB/sec	
Macintosh IIfx	Apple SCSI DMA	3 MB/sec	

Macintosh IIsi	NCR AM85C80	1.25 MB/sec	
Macintosh IIvi	NCR AM85C80	1.5 MB/sec	
Macintosh IIvx	NCR AM85C80	1.5 MB/sec	
Macintosh Centris 610	NCR 53C96	5 MB/sec	(1),(2)
Macintosh Centris 650	NCR 53C96	5 MB/sec	(1),(2)
Macintosh Quadra 605	NCR 53C96	5 MB/sec	(1),(2)
Macintosh Quadra 610	NCR 53C96	5 MB/sec	(1),(2)
Macintosh 630 Family	Custom IC		(5)
Macintosh Quadra 650	NCR 53C96	5 MB/sec	(1) (2)
Macintosh Quadra 660AV	NCR 53C96	5 MB/sec	(1),(2)
Macintosh Quadra 700	NCR 53C96	5 MB/sec	(1)
Macintosh Quadra 800	NCR 53C96	5 MB/sec	(1),(2)
Macintosh Quadra 840AV	NCR 53C96	5 MB/sec	(1),(2)
Macintosh Quadra 900	NCR 53C96	5 MB/sec	(1),(2),(3)
Macintosh Quadra 950	NCR 53C96	5 MB/sec	(1),(2),(3)
Power Macintosh 6100	Custom IC	5 MB/sec	(2)
Power Macintosh 7100	Custom IC	5 MB/sec	(2)
Power Macintosh 7200	Custom IC	5 MB/sec	
Power Macintosh 7500			(2),(6)
Internal/external	Custom IC	5 MB/sec	
Fast SCSI (internal)	MESH Custom IC	10 MB/sec	
Power Macintosh 7600			(2),(6)
Internal/external	Custom IC	5 MB/sec	
Fast SCSI (internal)	MESH Custom IC	10 MB/sec	
Power Macintosh 8100	Custom IC	5 MB/sec	(2)
Power Macintosh 8500			(2),(6)
Internal/external	Custom IC	5 MB/sec	
Fast SCSI (internal)	MESH Custom IC	10 MB/sec	
Power Macintosh 9500			(2),(6)
Internal/external	Custom IC	5 MB/sec	
Fast SCSI (internal)	Custom IC	10 MB/sec	
Macintosh Portable	NCR 53C80	1.25 MB/sec	
Macintosh PowerBook 100	NCR AM85C80	1.5MB/sec	
Macintosh PowerBook 140	NCR AM85C80	1.5MB/sec	
Macintosh PowerBook 145	NCR AM85C80	1.5MB/sec	
Macintosh PowerBook 145B	NCR AM85C80	1.5MB/sec	
Macintosh PowerBook 150	NCR AM85C80	1.5MB/sec	(4)
Macintosh PowerBook 160	NCR AM85C80	1.5MB/sec	
Macintosh PowerBook 165c	NCR AM85C80	1.5MB/sec	
Macintosh PowerBook 170	NCR AM85C80	1.5MB/sec	
Macintosh PowerBook 180	NCR AM85C80	1.5MB/sec	
Macintosh PowerBook 180c	NCR AM85C80	1.5MB/sec	
Macintosh Duo 210	NCR AM85C80	1.5MB/sec	
Macintosh Duo 230	NCR AM85C80	1.5MB/sec	
Macintosh Duo 250	NCR AM85C80	1.5MB/sec	
Macintosh Duo 270c	NCR AM85C80	1.5MB/sec	
Macintosh Duo 280c	Custom IC	1.5MB/sec	

Macintosh PowerBook 520	Custom IC	1.5MB/sec
Macintosh PowerBook 540	Custom IC	1.5MB/sec

End_Table

Notes
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* This is a theoretical maximum synchronous sustained data transfer rate. The practical data transfer rate varies depending on many factors, such as SCSI chip transfer rate limit, SCSI driver used, hard drive performance, software applications, cables, and other configurations.

Note (1)
The transfer rate of the 53C96 can reach 6MB/sec when using a fast hard drive, provided the cabling is capable of supporting that speed. The cabling and termination of the internal SCSI bus are optimized so that the 53C96 that controls the internal bus can support data transfers at a faster rate (up to 5MB per second with existing faster third-party hard drives). Externally with standard Apple cables, SCSI throughput was rated at 4 MB per second. The improved SCSI performance results in increased system responsiveness when accessing large amounts of data on a fast hard drive.

Note (2)
The internal SCSI channel also supports active termination which improves SCSI bus signal quality and reliability through improved transmission line and terminator design. This means that only one terminator is needed at the end of the external SCSI chain. The external channel's termination also offers a more uniform impedance and cleaner termination scheme. However, because external cabling and termination are less predictable, performance on the external bus could be lower than the internal. Electrically isolating the two channels ensures that changes in external cabling and termination don't impact the performance of the internal devices.

Note (3)
Even though the internal and external SCSI chains are physically different, they are still logically the same, and can therefore, like all Macintosh systems, accommodate up to seven SCSI devices. The added value of the Macintosh Quadra 950 dual-controller design is that the internal hard drive(s) performance won't be affected by problematic devices (like a scanner) attached to the external SCSI connector. Improvements in signal quality on the SCSI bus result in higher SCSI reliability.

Note (4)
The PowerBook 150 only supports external SCSI devices, the internal hard drive is an IDE type drive.

Note (5)
The Macintosh 630 family utilizes an internal IDE hard drive, SCSI is only valid for external drives. The transfer rate external approaches 5 MB/sec.

Note (6)
These computers have dual-channel asynchronous SCSI. There are two completely separate SCSI buses. The Fast SCSI bus is for internal SCSI connections only.

The other SCSI bus is for both internal and external SCSI connections.

Article Change History:
26 Jun 1996 - Added additional PCI computer.
30 Nov 1995 - Added added PCI Power Macintosh computers; made minor revisions.
18 May 1995 - Made minor corrections.

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Tech Info Library Article Number:12315

Tech Info Library

Apple IIe Card: How to Install in Macintosh (10/94)

Revised: 6/5/96
Security: Everyone

Apple IIe Card: How to Install in Macintosh (10/94)

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Article Created: 8 June 1993
Article Revised: 03 October 1994

TOPIC ----------

How do I install an Apple IIe Card in a Macintosh LC-class or Macintosh Color Classic computer?

DISCUSSION ----------

The Apple IIe Card can be installed in any of these computers:
LC, LC II, LC III, LC 475, LC 575, LC 550, Performa 400, 405, 430, 450, 475, 476, 550, 560, 575, Quadra 605, or the Macintosh Color Classic.

Here are instructions for installing the Apple IIe Card in the LC or Performa:

1) Be sure that your Macintosh LC or Performa computer is off. If your computer is not powered off, then select Shut Down from the Finder's Special menu.

Note: Follow preventive measures to avoid ESD damage. When you unwrap, install, or replace modules, observe the appropriate ESD precautions. For complete ESD prevention information, refer to the ESD Prevention Rules in the SERVICE SOURCE CD-ROM.

If the proper ESD procedures are unavailable, then do the following: Turn off the power and remove the cover. Before going near the logic board, touch the metal of the power supply case.

2) Unplug the power cable from the back of the computer and unscrew the Monitor cable from the back of the computer.

3) Remove the monitor from the top of the computer and set the monitor on a flat, stable surface.

4) Lift up on the locking tabs located on the back of the computer case.

The case will lift up at an angle toward the front of the computer.

5) Remove the Processor Direct Slot (PDS) tab from the back left of the computer. Push the tab from the inside by gently squeezing the tab together.

6) Touch the power supply, located in the back right corner of the computer case, with one hand to remove any excess static electricity.

7) Looking at the bottom of the IIe card, insert the white spacer bar into the middle hole on the IIe card. Angle the back of the IIe card toward the PDS tab opening and bring the front of the card down into the PDS. Press card firmly into place.

8) Replace the computer case by inserting the front end first and bringing the back end down into place. You should hear the locking tabs click into place.

9) Replace the monitor to its original position on the top of the Macintosh LC or Performa computer. Plug the monitor cable back into the monitor port in the back of the computer. Plug the power cable back into the back of the computer.

10) Refer to the manual that came with your IIe card on installing the software required by the IIe card.

Here are instructions for installing the Apple IIe Card in the Color Classic:

1) Unplug the power cable then remove the two security screws from the I/O door then push down on the two latches until the I/O door snaps open. Remove the I/O door.
2) Grasp the logic board firmly with two hands and pull it straight out of the computer.
3) Squeeze together the two plastic latches and pull the metal lock plate off the inside of the I/O door. This provides access to the connectors of the IIe card from outside the computer.
4) Connect the IIe Card to the 96 pin PDS connector (location J8) on the logic board.
5) Carefully slide the logic board back into the computer making sure the board is fully inserted.
6) Feed the cable from the card to the I/O door and securely attach.
7) Replace the I/O door and screws.

Article Change History:
03 Oct 1994 - Instructions for installation in Color Classic added.
30 Sep 1994 - Reviewed for technical accuracy.
30 Aug 1994 - Added all computers that can use the IIe Card.

Support Information Services

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..TIL12319-Apple_IIe_Card-How_to_Install_in_Macintosh_10-94.pdf

Tech Info Library Article Number:12319

Tech Info Library

Macintosh Duo: No SCSI Disk Mode When In Duo Dock (3/95)

Revised: 3/14/95
Security: Everyone

Macintosh Duo: No SCSI Disk Mode When In Duo Dock (3/95)

==========

Article Created: 14 June 1993
Article Reviewed/Updated: 14 March 1995

TOPIC ----------

Is there any way to use SCSI Disk mode when the Macintosh Duo is seated inside the Duo Dock? In other words, is it possible to connect a Macintosh Duo inside a Duo Dock to another, separate, Macintosh by using SCSI Disk mode?

DISCUSSION ----------

The Macintosh Duo 210 and 230 support SCSI Disk mode only through the MiniDock. The Duo Dock acts as a desktop Macintosh and thus won't support SCSI Disk Mode.

Article Change History:
14 Mar 1995 - Corrected wording of MiniDock.

Support Information Services

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Tech Info Library Article Number:12320

Tech Info Library

Apple Workgroup Server 95: System error -54 (8/93)

Revised: 8/11/93
Security: Everyone

Apple Workgroup Server 95: System error -54 (8/93)

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Article Created: 15 June 1993
Article Reviewed/Updated: 3 August 1993

TOPIC ----------

Apple Workgroup Server (AWS) 95 AppleShare software attempts to startup and returns an error that says, "Have encountered a configuration problem. Please run AppleShare Admin." When I launch AppleShare Admin I get the normal dialog box that says "Looking for shared volumes..." and then an error dialog box saying a System Error -54 has occurred with only a restart option.

DISCUSSION ----------

There two ways to fix the -54 error:

- The error can be corrected by unlocking the User & Groups Data File in the /mac/sys/System Folder/Preferences folder using the Get Info box on the User & Groups data file.

- The error can be corrected by throwing the Users & Groups data file in the Macintosh System Folder in the trash, and recreating User & Groups from the AppleShare admin program manually.

Article Change History:
3 August 1993 - Include additional solution for -54 error.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12327

Tech Info Library

AppleShare 3.0.2 Patch: Using with AS 3.0.1 Rev. B (9/94)

Revised: 9/27/94
Security: Everyone

AppleShare 3.0.2 Patch: Using with AS 3.0.1 Rev. B (9/94)

==========

Article Created: 15 June 1993
Article Reviewed/Updated: 27 September 1994

TOPIC ----------

The AppleShare 3.0.2 Patch program doesn't upgrade the AppleShare 3.0.1 Rev. B Server. This article tells you what to do to upgrade AppleShare 3.0.1 Rev. B.

DISCUSSION ----------

AppleShare 3.0.3 is the latest maintenance release of the AppleShare 3.0 product. It fixes problems found in the AppleShare 3.0, 3.0.1, and 3.0.2 releases.

Version 3.0.3, also fixes some incompatibilities between AppleShare and AOCE, and AppleShare and AppleSearch. It is recommended that you upgrade your AppleShare server to version 3.0.3 if you will be running either AOCE or AppleSearch on your server.

The AppleShare 3.0.3 patch application will upgrade your AppleShare 3.0, 3.0.1, or 3.0.2 product to AppleShare 3.0.3. It will upgrade the file server and AppleShare Admin to version 3.0.3. It will not upgrade the print server.

These articles can help you locate the AppleShare 3.0.3 update mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Overview

The AppleShare 3.0.2 Patch program provides a simple utility that upgrades your current AppleShare 3.0 or 3.0.1 file and print servers.

Version 3.0.2, besides including all bug fixes made in version 3.0.1, eliminates certain bugs that prevent some backup software from properly saving the Users & Groups Data File (which keeps server security information).

In addition, version 3.0.2 prevents potential incompatibilities with AppleShare server-management software from other companies, such as Server Sentry from Sonic Systems and GraceLAN Server Manager from TechWorks.

Version 3.0.2 also handles more simultaneous user requests, so servers accessed through low-speed network connections, such as AppleTalk Remote Access, may perform better.

For details on using the AppleShare 3.0.2 Patch, please refer to the Read Me file enclosed with the patch.

Won't Upgrade an AppleShare 3.0.1 Rev. B Server

Due to limitations in the patcher application (ResCompare), the patch doesn't distinguish the difference between AppleShare 3.0.1 and 3.0.1 Rev. B, and the patch program will abort. To determine if AppleShare 3.0.1 Rev. B is installed, "Get Info" on the File Server Extension to see if the version string is 3.0.1 Rev. B.

The AppleShare 3.0.1 Rev. B patch was released to Dantz, Jostens Learning Corp. and very few other select customers, so few customers are likely to encounter this problem.

To install the AppleShare 3.0.2 Patch program on an AppleShare 3.0.1 Rev. B server -- PRIOR TO RUNNING THE PATCH PROGRAM -- reinstall the original 3.0 or 3.0.1 File Server Extension replacing File Server Extension 3.0.1 Rev. B. The AppleShare 3.0.2 Patch program will work fine once this in done. All changes in AppleShare 3.0.1 Rev. B are included in the 3.0.2 patch.

No modifications need to be made to an AppleShare 3.0 server prior to running AppleShare 3.0.2 Patch program.

If you run the patch program on a 3.0.1 Rev. B server without replacing the 3.0.1 Rev. B File Server Extension, the patch program aborts. You'll see this error message, or one similar to it:

> "An unrecoverable error occurred while verifying resource CODE 4 (File 10 Code) in the File Server Extension on "hard disk".
>
> "This resource needs to be patched, but its attributes aren't what was expected. Please make sure that you are patching the correct file and version."

After restarting the system, when the server launches a dialog appears stating:

> "Unable to start the server. Please reinstall the AppleShare File Server."

Don't worry if you mistakenly run the AppleShare 3.0.2 Patch Program on an AppleShare 3.0.1 Rev. B server prior to replacing the File Server Extension file. No data loss or corruption will result, Access Privilege and Users & Groups information will remain intact. To recover, reinstall the original (3.0 or 3.0.1) File Server Extension AND AppleShare Print Server file, then run the AppleShare 3.0.2 Patch program again.

Article Change History:
27 Sep 1994 - Added information on AppleShare 3.0.3 Update.

Support Information Services

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Tech Info Library Article Number:12331

Tech Info Library

AWS 95: What Is the PDS Card (5/93)

Revised: 8/9/93
Security: Everyone

AWS 95: What Is the PDS Card (5/93)

==========

Article Created: 28 May 1993

TOPIC ----------

What is the PDS card in the Apple Workgroup Server (AWS) 95 for?

DISCUSSION ----------

Installed in the PDS (Processor Direct Slot) of the AWS 95 is a card designed to provide the fastest possible disk I/O for the system. This PDS card will work in the Quadra 900 and 950, but not in the Quadra 700 or 800. The PDS card enables SCSI DMA. Direct Memory Access (DMA) means that data can be transferred from the SCSI bus to main memory by the SCSI controllers without constant attention from the CPU. This enables the main CPU to go on performing other tasks in parallel. This strategy greatly enhances server performance by effectively increasing disk I/O throughput.

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Tech Info Library Article Number:12332

Tech Info Library

Apple Workgroup Server 95: Documentation On-Line (5/93)

Revised: 6/15/93
Security: Everyone

Apple Workgroup Server 95: Documentation On-Line (5/93)

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Article Created: 28 May 1993

TOPIC ----------

What documentation is available on-line for the Apple Workgroup Server (AWS) 95?

DISCUSSION ----------

The AWS95 ships with an application called the Apple DocViewer, located in the directory:

/Applications/Apple DocViwer v1.0

Documents available for viewing with this application are:

- Apple DocViewer ReadMe
- Apple DocViewer Guide
- Server Admin for A/UX 3.0.1
- Basic Skills

Additionally, AppleShare Pro comes with documentation in DocViewer format. When the AppleShare Software is installed, this documentation will be installed in the Documentation folder in the "/" (root) directory.

The standard UNIX man pages are not loaded on the AWS95 unless a custom install has been done.

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Tech Info Library Article Number:12334

Tech Info Library

Macintosh PC Exchange: Supports 5.25-inch Drives (6/93)

Revised: 6/18/93
Security: Everyone

Macintosh PC Exchange: Supports 5.25-inch Drives (6/93)

==========

Article Created: 16 June 1993

TOPIC ----------

The back of the PC Exchange box says that it "Works with 3.5-inch and 5.25-inch floppy disks formatted using MS-DOS, Windows, and OS/2." Also "Formats 360K or 1.2MB MS-DOS disks on any Macintosh with a third-party 5.25-inch external floppy disk drive."

Does Macintosh PC Exchange work with 5.25-inch PC drives? We've been told repeatedly that it doesn't work with any 5.25-inch drive, including the Apple 5.25-inch drive.

DISCUSSION ----------

Macintosh PC Exchange works with external 5.25-inch low- and high-density drives from these third-party manufacturers:

- Peripheral Land, Inc.
- Dayna Communications
- Kennect Technology

For Macintosh PC Exchange to work properly, you must install the third-party software (that is, driver) that comes with those drives.

Macintosh PC Exchange doesn't work with the "old" Apple 5.25-inch drive (customers will continue to have to use Apple File Exchange), nor with any 5.25-inch Macintosh LC (really, Apple II) drives.

This information should supersede all other information you've seen reported on the compatibility of Macintosh PC Exchange with 5.25 PC drives.

Note that there's one little-known problem when using Macintosh PC

Exchange with Dayna Communications' DOS Mounter. High-density disks aren't supported with the currently shipping version of Macintosh PC Exchange, version 1.0.2. This incompatibility will be fixed in a future version of Macintosh PC Exchange.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:12340

Tech Info Library

ADB Cable Extensions: Third-Party Solutions (1/95)

Revised: 1/6/95
Security: Everyone

ADB Cable Extensions: Third-Party Solutions (1/95)

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Article Created: 4 August 1993
Article Reviewed/Updated: 6 January 1995

TOPIC ----------

Can you tell me if there is any way to increase the Apple Desktop Bus (ADB) cable above the maximum length of 5 meters to 100 feet?

DISCUSSION ----------

Some third party solutions are listed below. To create your own cable you will have to take into consideration the electrical characateristics of the cable and signal, so you may wish to consult with an electrical engineer. If you attempt to build a 100 foot ADB cable, you will have resistance you need to overcome with line drivers or repeaters; you will also have noise, resonance and ringing to deal with, in addition to floating signals (in relationship to ground). Connecting multiple ADB devices compounds these difficulties.

Many of the ADB electrical requirements and characteristics are documented in the Guide to The Macintosh Family Hardware Reference Manual.

Though we do not have a "recipe" for extending an ADB cable beyond our specifications, hopefully this response give you some issues to consider as well as inform you about existing third party solutions.

Kensington Microware, Ltd. sells an Extra Long ADB Keyboard Cable. It is an 8-foot replacement cable, 4-feet longer than the standard Macintosh cable.

Smart Remote, from Sayett, is a wireless, infrared programmable remote control, which can control Macintosh programs up to 35 feet away from the computer. To operate, connect the remote receiver to the ADB bus, and users are ready to use the preset commands, such as forward, inverse and screen blank, which are common to most presentations software. The Smart Remote performs mouse functions and cursor movement, and can be programmed to meet most presentation and training needs.

Display Research Laboratory sells the MR Remote. It includes HyperCard externals and a sample stack. MR Remote is an ADB device for infrared remote control of audio-video equipment, such as TVs, VCRs, LD players, camcorders and. With this product, users no longer need to use equipment with a special computer interface. Instead, they can use a consumer product of their choice, or the one they already have. Users can control the equipment in HyperCard, SuperCard or MacroMind Director. Externals and a sample HyperCard stack for most brands of VCRs and TVs are included.

Switch-Back, from Madenta Communications, Inc., is a powerful interface that enables unique control of the Macintosh computer by any simple switch. When a switch is pressed, Switch-Back makes the Macintosh think a function key on the keyboard was pressed. Desired software tasks may be assigned to the function keys F10 through F15 (for switch 1 through switch 6). Pressing the switch will invoke that task. Any macro program is compatible with Switch-Back. Switch-Back may be connected anywhere on the ADB and accepts input from up to six switches. These switches are plugged into a trio of 3.5mm stereo jacks at the rear of the unit. Other features include: turn on any computer in the Macintosh II family remotely with any push button switch; small, sleek design; FCC Class B certified; switch cable length allowed up to 5,500 feet; and 36 pin Centronics connector for future expansion.

Mac Extend, from Presentation Electronics, Inc., connects to the Macintosh, keyboard and mouse, and to a remote unit up to 1,000-feet away. Mac Extend connects to the Macintosh computer's ADB port, keyboard and mouse, and to a remote unit up to 1,000-feet away via a standard RS-232 cable. The remote unit provides a standard ADB port for a second keyboard, mouse or other ADB device. The system is ideal for presentations, training, multimedia applications and more, where access to a Macintosh at the podium is required, yet the computer must be located at a remote location, such as at a video projector.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Article Reviewed/Updated:
06 Jan 1995 - Reviewed and updated.

Support Information Services

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Tech Info Library Article Number:12341

Tech Info Library

A/UX 3.0.1: Does Not Support Apple Color OneScanner (2/95)

Revised: 3/17/95
Security: Everyone

A/UX 3.0.1: Does Not Support Apple Color OneScanner (2/95)

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Article Created: 15 June 1993
Article Reviewed/Updated: 17 March 1995

TOPIC ----------

Is the Apple Color OneScanner supported under A/UX 3.01?

DISCUSSION ----------

According to A/UX Product Management, the A/UX 3.0.1 SCSI driver does NOT work with he Apple Color OneScanner. As of June 1993, we are unaware of the time frame for the driver to work with the Apple Color OneScanner under A/UX 3.0.1.

NOTE: The Apple Color OneScanner is different from the Apple Scanner and Apple OneScanner. The driver included in the A/UX kernel supports the Apple Scanner and Apple OneScanner, but NOT Apple Color OneScanner.

Article Change History:
17 Mar 1995 - Correct product name.
28 Feb 1995 - Modified article for clarity.

Support Information Services

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Tech Info Library Article Number:12342

Energy Star: Registered Apple Products (9/96)

Revised: 9/17/96
Security: Everyone

Energy Star: Registered Apple Products (9/96)

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Article Created: 17 June 1993
Article Revised/Updated: 17 September 1996

TOPIC --

This article lists the Apple Products that are Energy Star compliant and are registered with the EPA.

DISCUSSION --

Many of these products require the installation of separate software in order to take advantage of the energy saving features. Check with the product user's guide for use, installation and setup of the energy saving features.

COMPUTERS

- Macintosh LC III
- LC 475
- LC 575

- Performa 410
- Performa 460
- Performa 466
- Performa 467
- Performa 475
- Performa 476
- Performa 550
- Performa 575
- Performa 630, 630CD
- Performa 635CD
- Performa 636CD
- Performa 637CD
- Performa 638CD
- Performa 5200CD Series
- Performa 5300CD Series
- Performa 6200CD Series

- Performa 6300CD Series

- Quadra 605
- Quadra 650
- Quadra 840AV
- Quadra 950

- Power Macintosh 5200/75 LC
- Power Macintosh 5300/100 LC
- Power Macintosh 5260/100
- Power Macintosh 5400/120
- Power Macintosh 7100 series
- Power Macintosh 7200 series
- Power Macintosh 8100 series

- PowerBook 150
- PowerBook 520
- PowerBook 520c
- PowerBook 540
- PowerBook 540c
- PowerBook Duo 230
- PowerBook Duo 280
- PowerBook Duo 280c

MONITORS

- AudioVision 14-in. Display
- Macintosh Color Display
- Multiple Scan 15 Display
- Multiple Scan 17 Display
- Multiple Scan 20 Display
- Multiple Scan 14 Display
- AppleVision 1705
- AppleVision 1710
- AppleVision 1710AV

PRINTERS

- StyleWriter II
- Color StyleWriter 2400
- Color StyleWriter Pro
- Color StyleWriter 1500
- Color StyleWriter 2500
- LaserWriter Pro 600 and 630
- LaserWriter Select 360
- Personal LaserWriter 320
- LaserWriter 16/600
- LaserWriter 4/600
- Color LaserWriter 12/600
- LaserWriter 12/640

This article was published in the "Information Alley":
Volume II, Issue 3, Page 13

Article Change History:
17 Sep 1996 - Removed some products.
22 Jul 1996 - Updated product list.
31 May 1995 - Added Info Alley information; updated product lists.

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Tech Info Library Article Number:12345

Energy Star: Description (6/93)

Revised: 6/16/93
Security: Everyone

Energy Star: Description (6/93)

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Article Created: 17 June 1993

TOPIC ----------

This article describes the Energy Star program.

DISCUSSION ----------

Energy Star is a voluntary Environmental Protection Agency program that sets energy use ceilings on computer products. The Energy Star program seeks to identify and promote the use of energy efficient computer equipment to reduce energy use and thereby reduce pollution.

Computers, monitors and printers can meet Energy Star program requirements by always using less power than a specified amount or by going into a low-power or "sleep" state. Printers must also go to a low-power state within a period of time defined by performance category. All computers, monitors and printers that meet these specifications can display the Energy Star logo.

Apple was one of three original companies contacted by the EPA to help design the Energy Star program and has consistently been an enthusiastic supporter of the program. Apple's goal is to make Energy Star products available across the entire Macintosh product line as quickly as possible.

Many Apple products already meet Energy Star specifications. Other Apple products can meet Energy Star specifications with the addition of third-party devices which shut off power when the product is not being used.

Energy Star Specifications

Computers and monitors must be able to go to a low-power state either after a period of inactivity or at a predetermined time selected by the user. For computers, the low-power state can be activated with software that must be specified by the computer manufacturer. This low-power state is defined as

drawing 30 watts or less of power. If the monitor is included in the computer casing and isn't powered directly from a wall outlet, the entire system may qualify by drawing 60 watts or less of power.

Printers must be able to go to a low-power state either after a period of inactivity or maintain a low level of power consumption. For printers that enter a low power state, the printer must activate a low-power state within the times listed below.

Printer Speed (pages per min.)	Default Time to Low Power (minutes)	Max. Power Use in Low Power (watts)
1 to 7	15	30
8 to 14	30	30
15 and above, all color laser printers	60	45

Note that computers, monitors and printers that always consume less than the specified amount qualify for the Energy Star program.

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Tech Info Library Article Number:12346

Tech Info Library

Sequence Electronics

Revised: 6/16/93
Security: Everyone

Sequence Electronics

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Article Created: 17 June 1993

Sequence Electronics creates energy-saving software and hardware products such as the Smartbar I and III.

Sequence Electronics
150 Rosemond Street
Carleton Place
Ontario
Canada K7C 1V2

Phone: (613) 257-4773

Fax: (613) 257-1840

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Tech Info Library Article Number:12347

Tech Info Library

Apple Workgroup Server 95: MacTCP Out the Serial Port (6/93)

Revised: 6/17/93
Security: Everyone

Apple Workgroup Server 95: MacTCP Out the Serial Port (6/93)

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Article Created: 16 June 1993

TOPIC --------------------

How do I change MacTCP to work out of the LocalTalk port, either as well as or in place of the built-in Ethernet port of the Apple Workgroup Server (AWS) 95?

DISCUSSION --------------------

The MacTCP implementation that runs under A/UX does not support the LocalTalk interface. The CDEV is really just a window into the unix based TCP driver and does not offer the same functionality as the Macintosh OS version.

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Tech Info Library Article Number:12349

Tech Info Library

LaserWriter Driver 8.0: PageMarq 15 Printer (6/93)

Revised: 6/21/93
Security: Everyone

LaserWriter Driver 8.0: PageMarq 15 Printer (6/93)

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Article Created: 17 June 1993

TOPIC ----------

I'm having a problem with the Laserwriter 8.0 driver and PageMarq 15 printer (with fax option). Apparently the printer driver does not allow printers with a fax option to tone dial, but forces them into pulse dial.

DISCUSSION ----------

Apple spoke with Compaq technical support. They suggested that the customer use the Compaq Fax Utility v1.09 which builds a Fax driver from the LaserWriter driver. The resulting Fax driver then provides the ability to select tone or pulse dialing.

In terms of the LaserWriter 8.0 driver providing this capability, it would have to be added to the PPD file for the PageMarq printer. Apple notified Compaq technical support regarding this issue. They will be forwarding this information to their engineering department. Since it is the responsibility of the printer manufacturer to supply the PPD files, you might have the customer ask Compaq for a prospective release date for the new PPD.

To locate a vendor's address and phone number, use the vendor's name as a search string.

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Tech Info Library Article Number:12351

Tech Info Library

Apple Workgroup Server 95: Setup For FTP Logins (10/94)

Revised: 10/21/94
Security: Everyone

Apple Workgroup Server 95: Setup For FTP Logins (10/94)

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Article Created: 16 June 1993
Article Reviewed/Updated: 21 October 1994

TOPIC ----------

How do I setup the Apple Workgroup Server (AWS) 95 to accept anonymous FTP "logins" for file transfer?

DISCUSSION ----------

Follow these steps:

1) If the bnet driver is not already in the kernel then add it by doing a "newconfig ao". You can check to see if the bnet driver is installed by doing a "module_dump /unix".

2) Edit the /etc/inittab file and set the "inetd" deamon to "respawn" and "portmap" to "wait". Example:

```
nfs0:2:wait:/etc/portmap        #set to "wait" for networking
net9:2:respawn:/etc/inetd       #set to "respawn" for networking
```

The newconfig command is supposed to do this for you but you'll want to check to make sure since when we ran the script it failed to update the file.

We did more investigation and the way 3.0.1 works is the Ethernet driver and the bnet driver are both included in the base kernel configuration. The AWS 95 manual states that you should run "newconfig ao" to enable TCP/IP services. Unfortunately it only does half the work for you. If you use the "ao" parameter to newconfig you will have to manually edit the /etc/inittab file. If you use the command "newconfig bnet" all the files will be created properly and the inittab file will also be properly modified. We tell you this because the manual tells you to use "ao" as the parameter to "newconfig".

3) Create an ftp user in the /etc/passwd file. Example:

```
     ftp::9:9:ftp user:/usr/spool/ftp:
```

4) Create an ftp group in the /etc/group file. Example

```
     ftp::9:ftp
```

5) Password protect the ftp UID to prevent unauthorized use of the login by console or telnet users. Example:

```
     passwd ftp
     Enter new password of ftp: ...
```

6) Test the configuration by attempting to ftp from another system.

Article Change History:
21 Oct 1994 - Made corrections for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12352

Tech Info Library

Compaq Computer Corportation

Revised: 7/27/93
Security: Everyone

Compaq Computer Corportation

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Article Created: 17 June 1993

Compaq Computer Corporation

P.O. Box 692000
Houston, TX 77269-2000

800-345-1518

713-378-1442 (Product Information Fax)

Company Profile:
Specializes in desktop portables, servers and printers

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12353

Tech Info Library

Apple Workgroup Server 95: A/UX 3.0.1 Information (5/93)

Revised: 6/17/93
Security: Everyone

Apple Workgroup Server 95: A/UX 3.0.1 Information (5/93)

==========

Article Created: 24 May 1993

TOPIC ----------

A/UX 3.0.1 is the native operating system of the Apple Workgroup Server (AWS) 95. A/UX 3.0.1 is an optimized version of A/UX 3.0, Apple's implementation of industry standard AT&T UNIX System V with BSD 4.2 extensions. A/UX uses the full System 7 interface.

DISCUSSION ----------

Performance

Apple has spent considerable effort ensuring that this system runs server applications as fast as possible. The major efforts are detailed below:

- Slimmer code paths
  Apple has gone to great lengths to eliminate any performance bottlenecks in the system. This includes a full rewrite of the AppleTalk code and optimization of most of the file manager and SCSI toolbox.

- SCSI Direct Memory Access (DMA) support
  DMA support is necessary for asynchronous I/O. It means that memory control is off loaded from the main processor. There is a special DMA controller the allows the operating system to move data to and from the disk subsystem without constant attention from the main CPU. In the conventional Macintosh implementation the CPU must explicitly fetch data from the SCSI bus and place it in main memory one block at a time. However, with a DMA architecture the CPU can hand off a large quantity of data to the DMA controller which then takes care of moving the data to or from the hard disk while the CPU can continue on a perform other tasks in parallel. The main CPU doesn't have to wait for the relatively slow hard disk before going to the next task.

The A/UX 3.0.1 SCSI disk driver has been modified to allow selection among the four SCSI busses available on the AWS 95 platform. Referring to disk drives is different on the AWS 95 than under traditional A/UX. Each disk must be identified not only by its SCSI address, but also by the SCSI bus that it is attached to. The SCSI busses are numbered 1 through 4. In previous versions of A/UX a SCSI drive with address 5, drive 0, slice 0 would be specified through the device file /dev/dsk/c5d0s0. Now you must also specify the bus number. The new format is /dev/[r]dsk/cb0ad#s#, where "b" is the SCSI bus (numbered from 1 to 4) and "a" is the SCSI address (numbered from 0 to 6). The SCSI busses are numbered in the order they are searched in the Mac environment: main logic board internal, main logic board external, PDS card internal, and PDS card external. The busses are numbered from 1 to 4 instead of from 0 to 3 to avoid the problem of forcing leading zeros when generating device file names. The old format, /dev/[r]dsk/c#d#s#, where c# is the SCSI address, d# is the logical unit number, and s# is the slice number will continue to work. The c# field will specify both the SCSI bus and the SCSI address of the device. The current device files (/dev/dsk/c[0-6]d#s#) will refer to the device that is visible to the Macintosh OS regardless of what SCSI bus the drive resides on. This is for backwards compatibility.

For example, these path names map in the following way:

Pathname	SCSI ID	SCSI bus
/dev/dsk/c203d0s0	3	main logic board external
/dev/dsk/c403d0s0	3	PDS card external
/dev/dsk/c3d0s0	3	wherever it is found first

- Faster Semaphores
  A/UX allows many processes to run at the same time (in parallel). Often, these processes are interdependent. The database must make sure that the data is wants to write successfully is written before it can process a request to retrieve that data for a different user. Parallel processes can communicate with each other through semaphores. A semaphore is a signal sent from one process to another. In the example above, the database engine will wait for a semaphore from the operating system acknowledging that the data has been successfully written. Semaphores under A/UX 3.0.1 have been optimized for speed because they are used frequently by server processes.

- Intelligent I/O
  Input/Output (I/O), moving data to and from the disk drives and the network, is the primary bottleneck in most server systems. Apple has spent significant effort in the AWS 95 and in A/UX 3.0.1 to optimize the performance of I/O. By using UNIX and a hardware DMA architecture the AWS 95 can perform asynchronous I/O transfers. This is a primitive method of multi-processing. It means that the SCSI or Ethernet controllers can transfer data to or from the network or the disk subsystem at the same time, while the main CPU is performing other tasks. The CPU simply asks the DMA controller to transfer a certain block of data and then goes on to the next task while the transfer takes place in

parallel. When the transfer is complete the system can send a semaphore to the application to mark the completion of the transfer so the application can then access the data from main memory.

- Optimized AppleTalk
  The AppleTalk networking code has been re-written in A/UX 3.0.1 to allow a significant performance speed-up. The network software is now able to transfer clusters of packets together instead of one at a time. Many delay loops have been removed. And network code has been trimmed wherever possible.

- General I/O tuning
  A/UX 3.0.1 has had its I/O performance enhanced wherever possible. The installer will set initial kernel parameters differently depending on which configuration, file/print server or database server, is being installed.

Login

When the AWS 95 is first powered on it will immediately launch A/UX (through an alias in Startup Items). A/UX 3.0.1 will go straight to the Finder, logging in as root if (and only if) there is no password on the root account (the default installation). If the administrator chooses to add a password to the root account, A/UX 3.0.1 will stop at the standard A/UX Login screen and wait for a password. In the File/Print server configuration there is a text file called "Autologin" in the Preferences Folder of the Login System Folder which contains the name of the account for the system to automatically login to. By default it is set to root. This file is not present in the database configuration.

An important note is that the root user must be logged in at the console and running the Macintosh environment for the AppleShare server to run since AppleShare Pro is still a Macintosh application. The Oracle database server can run in the background without having a user logged in at the console.

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Tech Info Library Article Number:12354

Tech Info Library

Apple Workgroup Server 95: Installer Tips (5/93)

Revised: 6/17/93
Security: Everyone

Apple Workgroup Server 95: Installer Tips (5/93)

==========

Article Created: 24 May 1993

TOPIC ----------

This article describes Apple Workgroup Server (AWS) 95 installer tips.

DISCUSSION ----------

Software comes pre-installed, however, customers may wish to add new disk drives to the system, re-configure the installation, or re-install in the event of corrupted software. All software for the AWS 95 is included on one CD-ROM. Therefore a CD-ROM drive is needed for installation. Furthermore, it must be an Apple CD-ROM drive or other CD-ROM drive compatible with A/UX.

By default, the A/UX system that is pre-installed or that is installed when the "Easy Install" option is chosen is a minimal A/UX system. This configuration does not include some UNIX utilities, NFS, compilers, and so on. To install the extra parts of A/UX you must launch the installer and use the Custom Install option.

To perform an installation, simply insert the boot floppy disk into the floppy disk drive, insert the installation CD-ROM into the CD-ROM drive, and power on the machine. The AWS 95 will automatically bring up the Easy Install screen.

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Tech Info Library Article Number:12355

Tech Info Library

WorkStation One for Macintosh (6/93)

Revised: 6/18/93
Security: Everyone

WorkStation One for Macintosh (6/93)

==========

Article Created: 17 June 1993

TOPIC ----------

I'm look for technical & sales informations on WorkStation One for Macintosh from IBM .

DISCUSSION ----------

We were able to get to IBM's InfoLink and we did find an article on WorkStation One for the Macintosh (there is a Windows version as well).

WorkStation One:

- Uses TCP/IP connections to VAX and IBM Hosts.
- Uses Telnet for Terminal emulation.
- Has some IBM scripting language for Autologon.
- Allows keyboard remapping.
- Does TCP/IP FTP file transfers.
- Does back-up and restore to a variety of LAN servers (OS/2, MicroSoft LAN Manager, Novell Netware).
- Runs on Token Ring or Ethernet, so it must depend on MacTCP with Token Ring extension.

A portion of the IBM product document abstract is below:

Workstation One For Macintosh

Abstract

Workstation One for Macintosh is a licensed program which is designed to make it easier for the workstation user to access and run applications residing on certain IBM and DEC host systems. It also includes support to allow file transfers, backup, restore, and local area network (LAN) usage.

All of these functions run under a common, graphic interface. Transparent application access to the IBM or DEC host allows the end user to point-and-click on an application icon in a window without knowing where the application resides. Once an application is selected, the user is automatically logged on to the appropriate host, the correct terminal emulator is loaded, and execution of the application begins. This is accomplished by using a script language which is provided by Workstation One for Macintosh. The product includes a variety of graphic and text emulators as well as an imbedded runtime library for support for Token-Ring and Ethernet protocols. The host system TCP/IP is a prerequisite. The IBM Workstation One product is implemented on multiple vendor operating systems: IBM OS/2, IBM AIX, Microsoft Windows, and Apple Macintosh.

Technical Description

The major functions provided by Workstation One for Macintosh are:

- Application Access - Allows users to access applications on the workstation and hosts running TCP/IP communication software without having to know where the application is or how to invoke it. Application Access provides:

  - Terminal emulation - Users can access TCP/IP hosts and host applications via Telnet terminal sessions. The terminal type and session characteristics are chosen by the user at the start of the terminal session or saved into session profiles (document files) for subsequent use. If the host OS and network allow, the user can connect from the Telnet session to any accessible host (whether or not it is a TCP/IP host), such as with the VM PassThrough facility or the VAX Set Host command.

    Users can copy and paste between PC applications and host display areas. Graphics can be copied from a host display to PC application but not vice versa. Text can be copied to and from a host display. The host display window can be printed using the standard window-printing facility.

  - Script generation and maintenance - Allows the user to create and compile scripts to used to perform logon sequences (passwords are encrypted), application invocation, application operations, or any combination of these interactions.

    The script language consists of commands that an emulator uses to interact with hosts and host applications in the same way that the user would otherwise have to do manually. An executing script program checks the host screen for messages, status, and prompts, and sends strings and keystrokes to the host to navigate through these stages on the host.

    Users can invoke scripts either at terminal session connection time or at any time during an existing terminal session.

  - Keyboard mapping - At any time during active terminal sessions or

before starting terminal sessions, users can view the current mapping of the keyboard for the three terminal types supported (VTxxx, 3270, and Tektronix). The mapping can be changed and made effective for terminal sessions established after restarting the host access function.

- Workstation/Host File Transfer - Allows the workstation user to upload and download files between the user's workstation and hosts running TCP/IP communications software. This function also provides the capability for users to manage files on the workstation and TCP/IP hosts by renaming or deleting them. File Transfer uses the FTP protocol. Its capabilities are totally independent of terminal emulation and, except for data security aspects particular to the host, can be used without respect to existing terminal sessions with the same hosts accessed for file transfer. Various options can be selected before the session starts and saved into a file transfer session profile, or document file, named by the user. These options include a default transmit data type, file extension translation, and the option to receive confirmations before any operation is performed. This document file can be subsequently used any time the user wants to access data on that host. It can be opened from an icon or folder or from the FILE menu.

  The functions available for data on workstations and hosts include:
  - Copying (uploading and downloading)
  - Deleting
  - Renaming
  - Explicit FTP commands for which there are no buttons (such as change directory on host or workstation)

- Backup/Restore - The Backup and Restore (BR) functions provide users with mechanisms for storing and retrieving copies of the workstation files to and from LAN server media as protection against local disk failure or unintentional file deletion. The BR functions operate in a graphical user interface.

  They support source (backup from or restore to) and destination (backup to or restore from) media accessible by the workstation operating system. The user may back up data from or restore data to the workstation hard disk or a virtual disk (a volume or drive located on a LAN server but visible to the workstation as another disk).

  A scheduler or reminder function allows the user to create "profiles" of various types of backups, at differing times or intervals, including differing files, folders, or directories. BR provides the capability to perform:
  - full backups, including every file or directory or folder selected
  - incremental backups, including only those files modified since the last backup
  - differential backups, including all files modified since the date specified, regardless of when they were last backed up
  - individual directory, folder, or file backups

  Backup operations maintain directory or folder structure where

applicable.

Conversely, there is the means for restoring the data in the forms described for backup. Restore operations also maintain directory structure where applicable.

BR functions log information related to each backup and restore operation, indicating which files have been backed up, when the backups were performed, and where the backup was stored.

Users can also specify that old backup storage files on the LAN server are to be deleted at backup time. Old backup storage files may be overwritten (that is, reused) at backup time.

To the extent allowed by the workstation operating system, BR users can execute other functions while a backup or restore operation is running in the background.

Operating Environment

Machine Requirements

Workstation One for Macintosh is designed to operate on a Macintosh workstation configured with the minimum requirements specified below and communicating with one or more of the following hosts and servers:

Workstation Requirements
- Macintosh SE (68000 processor)
- Network adapter (Apple TokenTalk or EtherTalk or equivalent)
- 4MB of hard disk for Workstation One for Macintosh
- Memory and hard disk sufficient for the required software listed, (minimum 4 MB of RAM recommended)

Server Requirements
- IBM PS/2(R) 80386 processor (or equivalent)
- NDIS- or ODI-compliant network adapter (Token-Ring or Ethernet)
- Memory and hard disk sufficient for the required software listed
- Uninterruptible Power Supply (recommended)

Host Environments
- IBM processor capable of supporting VM TCP/IP or MVS TCP/IP with Token-Ring or Ethernet connection and/or
- DEC VAX Processor with Ethernet connection

Programming Requirements

Workstation Requirements
- Macintosh Operating System 6.0.5

Server Requirements
- OS/2 1.3 Standard Edition (P/N 84F7588) or
- OS/2 1.3 Extended Edition (P/N 15F7195)
- Microsoft LAN Manager 2.0 or 2.1

- Microsoft LAN Manager Services for Macintosh 1.0 or
- DOS 4.0 (P/N 6024869) or
- DOS 5.0 (P/N 84F9775)
- Novell NetWare 3.11
- Novell NetWare for Macintosh 3.0
- Novell NetWare NFS 1.1

Host Environments:

- IBM Hosts
  MVS system which supports:
  - MVS TCP/IP Version 1 (5685-061) or
  - MVS TCP/IP Version 2 (5735-HAL)
  VM system which supports:
  - VM TCP/IP Version 1 (5798-FAL) or
  - VM TCP/IP Version 2 (5735-FAL)
- DEC Hosts:
  VAX VMS system which supports:
  - WIN/TCP Versions 5.1 or 5.2, or
  - VAX/UCX Version 1.2.

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Tech Info Library Article Number:12356

Apple Workgroup Server 95: PDS Card Description (5/93)

Revised: 6/18/93
Security: Everyone

Apple Workgroup Server 95: PDS Card Description (5/93)

==========

Article Created: 24 May 1993

TOPIC

Installed in the PDS slot of the Apple Workgroup Server (AWS) 95 is a card designed to provide the fastest possible I/O for the system. There are three major parts to this card. This PDS card will work in the Quadra 900, but not in the Quadra 700 or 800.

DISCUSSION

SCSI DMA

The PDS card in the AWS 95 is equipped with two NCR 53C96A SCSI controller chips running at 33 MHz along with supporting circuitry to enable SCSI Direct Memory Access (DMA). DMA means that data can be transferred from the SCSI bus to main memory by the SCSI controllers without constant attention from the CPU. This enables the main CPU to go on performing other tasks in parallel. This strategy greatly enhances server performance by effectively increasing disk I/O throughput.

The PDS card has three SCSI connectors, two internal and one external. There are two internal connectors so that it is possible to connect disk mirroring or RAID devices that can use two SCSI busses in parallel for better performance. The four SCSI busses are numbered, 1 through 4:

1 Main logic board internal
2 Main logic board external
3 Accelerator card internal
4 Accelerator card external

These numbers will appear in the AWS 95 version of HD SC Setup. These numbers are also important in specifying disk drives inside A/UX.

The total AWS 95 system now has four separate SCSI busses, two on the main logic board and two on the accelerator card. Because each bus can support seven devices the theoretical limit on SCSI devices is 28. However, there is only enough space and connectors for 20 devices. The separation of SCSI busses is available because A/UX 3.0.1's SCSI disk drivers have been written to handle them. The Macintosh OS is unable to distinguish SCSI devices with the same ID, but on different busses. It is also important to note that the I/O acceleration is only provided to SCSI devices attached to the PDS card, not to those attached to the main logic board because the DMA circuitry is only on the card. When adding disk drives to the AWS 95 system it is important to make sure that they are attached to the SCSI connectors on the PDS card, not to the main logic board.

L2 cache

This is high-speed static RAM (SRAM) which decreases access time for data from the disk. Most server applications spend a lot of time reading and writing the same data for different users. By implementing a large secondary cache, the most used data resides in high-speed SRAM instead of the much slower disk drive. The PDS card cache caches both instructions and data.

L2 stands for level 2. This means that the cache is farther away from the processor than the 8K on-chip cache in the 68040, which is considered level 1, L1, or primary cache. On the PDS card in the AWS 95 the L2 cache is direct-mapped write-through cache. This kind of cache is more useful for reads than writes because writes just pass through and go all the way to main memory. Read performance is significantly enhanced because the processor doesn't have to go all the way to main memory for instructions or data that are in the cache. Direct-mapped cache means that the cache occupies a fixed address space. This makes it easier to implement in system software because the cache is invisible to software. All cache management is done transparently in hardware so applications do not need to be re-written to be cache-aware.

- TAG RAM
  The AWS 95 PDS card has 128 K of SRAM built in. It can be optionally upgraded to 256 K or 512 K through three SIMM sockets. When upgrading from 128 K to 256 the user must also install a tag RAM SIMM. When upgrading from 256 K to 512 K there is no need to add more tag RAM.

Parity checking

Most server customers are very concerned about data integrity. By implementing parity checking the operating system can detect any errors in the RAM hardware and flag them immediately. Parity checking insures that data is not lost between the CPU and the system memory. By default, parity checking is turned off in the AWS 95 software. There is a check box within the A/UX Startup application allowing the administrator to turn on or off parity checking in the system. Parity checking may slightly affect overall server performance. AWS 95 systems will be shipped from Apple with 9-bit parity DRAM installed. Standard non-parity DRAM can be installed, however parity checking will no longer work when non-parity DRAM is present.

Upgrade Kit

Apple will offer a kit to upgrade a Macintosh Quadra 900 or 950 to the AWS 95 platform. The upgrade kit includes the PDS card and the software on CD-ROM.

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Tech Info Library Article Number:12358

Tech Info Library

Apple Workgroup Server Product Family (5/93)

Revised: 6/18/93
Security: Everyone

Apple Workgroup Server Product Family (5/93)

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Article Created: 24 May 1993

TOPIC ----------

This article describes the Apple Workgroup Server product family.

DISCUSSION ----------

- Apple Workgroup Server 60
  Low-cost file-and-print server for small "Mac-mainly" workgroups, based on Centris 610 hardware, Macintosh System 7, and AppleShare 4.0.

- Apple Workgroup Server 80
  Midrange file-and-print server for medium "Mac-mainly" workgroups, based on Macintosh Quadra 800 hardware, Macintosh System 7, and AppleShare 4.0. The Apple Workgroup Server 80 comes with integrated DDS tape backup drive and Retrospect Remote backup/administration software.

- Apple Workgroup Server 95
  Powerful file-and-print server and database workgroup server. Based on Macintosh Quadra 950 hardware, PDS upgrade card, and A/UX 3.0.1 operating system.

  File server configuration: AppleShare Pro.

  Database configuration: Oracle 7 database system.

  The Apple Workgroup Server 95 comes with integrated DDS tape backup subsystem, two disk drives, 32 MB RAM, four SCSI channels for up to 28 SCSI devices, and Retrospect Remote backup/administration software.

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Tech Info Library Article Number:12359

Tech Info Library

Apple Workgroup Server 95: Performance Enhancements (5/93)

Revised: 6/18/93
Security: Everyone

Apple Workgroup Server 95: Performance Enhancements (5/93)

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Article Created: 24 May 1993

TOPIC ----------

This article describes the Apple Workgroup Server 95 performance enhancements.

DISCUSSION ----------

Apple has made several enhancements to make the Apple Workgroup Server (AWS) 95 the fastest possible server using today's Macintosh technology. The major pieces are:

- Quadra 950
- Server accelerator card
- A/UX 3.0.1
- AppleShare Pro
- Oracle 7

The Quadra 950 is built around a high-speed 33 MHz 68040 processor and high performance I/O subsystems. The I/O is further improved by the circuitry on the accelerator card. This card specifically speeds disk I/O through the use of a large cache and new high-performance SCSI controllers with full support for Direct Memory Access (DMA). By using A/UX the AWS 95 gains performance by fully supporting asynchronous I/O, increasing both network and disk performance, along with a high level of stability by employing UNIX, a time-tested and extremely robust operating system. AppleShare Pro is the only version of AppleShare fully tuned to take advantage of the features of the AWS 95 including async I/O, faster AppleTalk and filesystem performance. Finally, Oracle 7 for the AWS 95 has also been fully optimized to take advantage of the performance enhancements in the AWS 95.

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..TIL12360-Apple_Workgroup_Server_95-Performance_Enhancements_5-93.pdf

Tech Info Library Article Number:12360

Tech Info Library

Apple Workgroup Server: AppleShare Pro & AppleShare 4.0 (5/93)

Revised: 6/18/93
Security: Everyone

Apple Workgroup Server: AppleShare Pro & AppleShare 4.0 (5/93)

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Article Created: 24 May 1993

TOPIC -----

The AWS 95 comes with AppleShare Pro. This is the highest performance version of AppleShare and has been enhanced to get the most out of the added I/O performance features and tuning of A/UX 3.0.1. For the most part anyone familiar with AppleShare 3.0 will find it extremely easy to switch to AppleShare Pro. There are just a few A/UX related differences that an administrator will have to watch out for. After creating AppleShare Pro the team took much of the code (except for the A/UX-only pieces) and created AppleShare 4.0. The AWS 60 and AWS 80 come with AppleShare 4.0. Any System 7 based system with a 68040 processor can also run AppleShare 4.0. The features described below pertain to both AppleShare Pro & AppleShare 4.0 unless otherwise noted.

DISCUSSION -----

Performance Features explained

- Read-ahead
  This is the single most important performance feature of the new AppleShares. When a client makes a request of the server that requires reading, the server will read more than the client requested, or "read ahead". The server makes an assumption of what the next logical section of disk should be and reads it into RAM. In general, the client will ask for that section in its next network request and receive an immediate response because the data is already in RAM. If the client does note request that data or requests something else, then nothing is lost because the server will read the new data into the same RAM space (overwriting the unnecessary bits).

- Write behind
  The most time consuming operation from a user's point of view is to write

to a file server. This is the order of operation for previous versions of AppleShare:

1) server receives data block from network and stores it in RAM
2) server gives filesystem pointers to data in RAM, requests it be written to disk and waits for reply from filesystem
3) filesystem writes data to disk then verifies the write
4) filesystem replies to server
5) server notifies client of write completion and asks for next data block

In the new AppleShares, the server uses "write behinds". After step 1 above, the server skips to step 5 and informs the client of write completion even though it had not actually been done at the time the server sent the notification. In theory, the writes are lagging behind the messages. Because of the difference in speed between networks and high speed SCSI devices, by the time the user gets the message the write may have actually completed (depending on the filesystem and load).

Since A/UX 3.0.1 has intelligent I/O, whenever multiple writes are pending the filesystem will spool several write requests, organize them in disk order, position the disk head, and then SCSI burst them all onto the disk in one pass. This makes AppleShares Pro the fastest server under heavy load and multiple write conditions.

- File, directory, and icon caching
  The new AppleShares also allow for the use of main memory as a level 3 cache. There are a few parameters that must be set by the administrator in the File Server Cache Preferences window. Following are the general guidelines for setting cache sizes.

  Set the Number of Files to Cache to 20. If many files will be open at the same time, raise this value to 40. Leave the Cache Size for Each File at its default of 64K.

  In determining the Folder Cache Size for a server with random usage patterns (that is, when users are as likely to access one file or folder as they are any other), multiply the number of shared files and folders by 0.2K. A large server (for example, a server with 10,000 folders and files) might allocate 2000K for the Folder Cache Size setting. For a server on which specific folders are used repeatedly and most others are accessed infrequently, multiply the number of shared files and folders by 0.05K (for the same server of 10,000 folders and files, use 500K).

  Leave the Icon Cache Size at its default of 256K.

  Check to make sure that the Total Cache Memory Size should be less than half the value of the Total Available Memory.

- Number of simultaneous users
  AppleShare Pro can support a maximum of 200 simultaneous users; however, the Maximum Number of Connections is set to 100 by default. AppleShare 4.0 can support a maximum of 150 simultaneous users; however, the Maximum

Number of Connections is set to 75 by default.

The administrator can change this value in the File Server Preferences window.

Apple II support, but not booting

Apple II net booting support will not be activated; but, ProDOS will continue to be supported. This will allow Apple II's to continue to log onto AppleShare Pro. For Apple II booting, AppleShare 3.0 will still be available as a product.

Full International Support

All changes that were requested to upgrade AppleShare 3.0 to provide international support have been made to both AppleShare 4.0 and AppleShare Pro .

Anti-Piracy in AppleShare 4.0

Each legitimate AppleShare 4.0 File Server copy will have its own unique serial number assigned at manufacturing time. This serialization will make people more aware of software piracy. This will help honest people stay honest and is not a heavy-handed, fool-proof, copy-protection scheme. It will allow people to demo the software, but will make life annoying for them unless they purchase it. When a duplicate serial number is detected on the network, both servers will display an alert asserting that fact. After several hours the greeting message for clients will show the same alert. The longer the server runs after detection, the more frequently the duplicate detection alert will be displayed to all users. A tool will be produced to allow network administrators and Systems Engineers to discover how many duplicate copies of AppleShare 4.0 are running on an internetwork.

2+ GB disk support in AppleShare Pro

Previous versions of AppleShare were limited to a 1.999 GB volume size because the Macintosh Finder is unable to handle larger volumes. Since the AWS 95 uses the A/UX filesystem, it can handle disks 2 GB and larger; however, the Finder-based AppleShare clients can not. To use a larger disk on the AWS 95 simply share partitions of less than 2 GB each as separate AppleShare volumes.

Mount point considerations in AppleShare Pro

UNIX filesystems are hierarchical with only one root, the startup volume. If there is more than one physical disk (or partition) all volumes must be connected to that startup volume. These connections are made with "mount points". The administrator chooses a folder on the startup volume for each additional volume to connect to. The additional volume then appears as a folder within the chosen folder (this is the "mount point").

Since AppleShare Pro runs atop the A/UX filesystem, there is one special consideration when sharing. Folders with mount points in them can not be

shared. This includes the A/UX startup volume (which has the Mac startup volume mount point in it). Any number of specific folders on the startup volume can be shared as long as they do not have mount points inside them. If an administrator needs to share the entire contents of a folder with a mount point in it, he/she must open the folder and share everything inside it, then select and share the volume that is connected to that mount point. This can become an administration headache; therefore, it is best for the administrator to choose the location of the mount points so that it is not necessary to share the folders that contain them.

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Tech Info Library Article Number:12361

Tech Info Library

macControl: Overview (6/93)

Revised: 6/18/93
Security: Everyone

macControl: Overview (6/93)

==========

Article Created: 16 June 1993

TOPIC ----------

This article gives an overview of macControl, a DAL-based EIS (executive information system) from Germany.

DISCUSSION ----------

macControl is an information system software package that is appropriate for executive information systems (EIS) and decision support systems (DSS) at all levels of management. It provides an intelligent workstation environment in an on-line host relational database system, and a flexible object-oriented tool set for system development. macControl is designed to comply with the information system architecture, VITAL (Virtually Integrated Technical Architecture Lifecycle).

END-USER ADVANTAGES

It gives access to data at different levels, and can on demand summarize and view data in various ways. The graphical user interface allows text, graphics and data to be within the same screen simultaneously even though the information may be coming from separate databases or computers.

It provides a cooperative processing environment. This means that the client isn't limited to just sending queries to the host, and the host isn't limited to just sending data files to the client. Instead, this cooperative processing allows task performance on the computer, or by the software product, that is best suited for the task. And further, it provides two-way communication among users. In other words, you can enter data or update it using either the mainframe or the local computer.

The product platform provides report writing, extensive graphics, complete spreadsheet capability, local multi-dimensional database, functions and

macros, multiple levels of security (through Usernames, Passwords, and User-dependent data access; of course, the host computer's security requirements must also be fulfilled), publish and subscribe, program launching, and so on. You can use all of these facilities interactively with the host. You can automatically generate letter-quality, paper-based reports.

macControl allows data updates, structural changes, screen modification and other maintenance requirements to be centrally administered and automatically distributed.

DEVELOPER ADVANTAGES

macControl is an enterprise computing software package designed to provide the developer with a tool to create an information system in a client-server or cooperative processing environment. macControl itself is an object oriented, multi-dimensional database with an object oriented interface. It operates in a distributed database environment using Data Access Language (DAL). It requires no coding or scripting.

The product can communicate with the host (or hosts) in a read/write mode. You can centrally administer workstations and automatically update them for changes in the database structures. macControl automatically generates the SQL commands necessary to perform user requirements (including commands such as: joins, data summations, minimum/maximum/average, sort, and so on).

The source database or databases can be organized in various ways. macControl can work effectively with databases dedicated as management support systems or inquiry databases. It can work with operational system databases, or directly from a view or series of views. It can also operate with a combination of management support and operational databases, and views. Developers can integrate macControl into existing systems with little or no disruption, or into newly designed systems.

macControl is a Macintosh-based software product, written to Apple Computer standards, and updated for all relevant Apple enhancements. The program makes full use of Macintosh networking capabilities.

macControl uses a graphic and object oriented interface with data driven screens. You give commands through point and click, context sensitive hot spots, and menus. Commands, pictures, objects, sounds, charts, local formulas, and local data are held in macControl's multi-dimensional, object-oriented database. This database, even though on the local workstation, is administrated, updated and centrally stored on the main host.

The automatic SQL commands are produced based on the multi-dimensional structural design of the macControl application. It accommodates highly normalized SQL databases, and macControl does the following:

- Creates commands for the consolidation hierarchies and to reflect their multi-dimensional nature
- Provides the multi-dimensional required views

- Optimizes the command for speed of retrieval and data volume
- Provides means for complex summations
- Allows merging of different time series, and
- Facilitates exception reporting.

In structuring an application, the developer can select from the available, automatically displayed, databases and tables. The selections are then associated with macControl's multi-dimensional groups and attributes. Based on these associations, the screens and worksheets can be rapidly developed.

1) The user selects from the menu buttons the desired data combinations.
2) The menu combinations activate formulas that tell macControl's database manager the type of SQL commands that need to be sent.
3) The data is returned from the host.

At this point, the data is temporarily held in the macControl application structure allowing the data to be presented in a variety of views. (This provides significant advantages over SQL query and query-like tools.) Further, the user has an option, if permitted by the security system, to retain some of the data locally (typically high level data). You can use the data further in portable systems (such as a PowerBook). The operation is totally transparent.

macControl provides ad hoc reporting capabilities and data analysis tools. The developer doesn't have to anticipate all user inquiries, and the user has some degree of freedom in acquiring desired information. Through built-in system commands such as launch, and publish and subscribe, you can use and integrate standard or custom communication programs.

macControl can run in a stand-alone version, network version, run-time version, limited-host version (storage of data on host only), and a full-host version (storage also possible on local computers, that is, PowerBook).

PC platform: Macintosh IIci or larger, including PowerBook; 8MB of RAM recommended.

CLIENT/SERVER ENVIRONMENT

Data for an EIS/DSS is located in a number of places and may exist in many different formats within the computers of an enterprise. Therefore data transfer is of great significance in an EIS/DSS application.

The flexibility of EIS/DSS software in facilitating data transfer and storage is a critical issue in the software selection process. As a rule, software should be able to work with data stored in local networks within individual workstations or multi-workstations, handle ASCII data transfers, and operate on-line with host or multi-host data.

macControl´s Working Environment

- Server - Hardware

    - IBM Mainframes
    - IBM Workstations
    - DEC Vax
    - DEC Ultrix
    - AT&T
    - DG Aviion
    - DG Eclipse
    - HP 9000
    - NCR 3000
    - Sun
    - Apple Macintosh
    - MS-DOS
    - Sun
    - Tandem

- Server - Operating System

    - A/UX
    - VM/CMS
    - MVS/TSO
    - MVS/VTAM
    - DOS/VSE
    - VAX/VMS
    - UNIX SVR4
    - DG/UX
    - ULTRIX
    - HP-UX
    - AIX
    - SunOS
    - MacintoshOS
    - Novell Netware
    - AOS/VS II
    - Guardian C-30
    - OS 400

- Server - DBMS

    - SQL/DS
    - DB 2
    - Teradata DBC/1012
    - CA-Datacom
    - CA-IDMS
    - Ingres
    - Informix
    - Oracle
    - Sybase
    - CA-DB
    - Butler
    - Netware SQL
    - Infos II
    - DG/SQL
    - Nonstop SQL
    - P.ink

- AS 400 SQL

MACCONTROL TECHNICAL DATA

- General Features
  - Rapid prototyping and development
  - Structured data base on entity-relationship principles
  - Automatic SQL-generation
  - Dynamic worksheets with selection menus
  - PC and host oriented - with relational data base communication capabilities
  - Communicates with strategically important standard software
  - Exceptionally good user interface
  - "data" and "structure" driven screens

- EIS/DSS Development Environment
  - Object orientation
  - Time series orientation
  - Selection menus
  - Multiple Drill-down
  - Pull-down Menus
  - Windows
  - Text processing
  - Definable calendar

- Graphic Presentation
  - 46 different graphic types
  - Graphic formats
  - Graphic combination
  - Graphics within graphics

- Functions
  - Mathematical
  - Statistical
  - Print
  - Finance
  - Time
  - Test- and Documentation
  - Reporting

- Data Import
  - Communication with relational data bases with Apple's DAL
  - Reads all ASCII formats

- Technical Aspects
  - 55 Dimensions
  - 32,000 attributes per dimension
  - 32,000 dynamic worksheets

- Client/Server Hardware
  - Client: Apple Macintosh models (Motorola 68030 processor and upward)
  - Host: Hardware from major host, workstation and PC vendors

..TIL12362-macControl-Overview_6-93.pdf

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Tech Info Library Article Number:12362

Tech Info Library

Apple Workgroup Server and Oracle 7 (5/93)

Revised: 6/18/93
Security: Everyone

Apple Workgroup Server and Oracle 7 (5/93)

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Article Created: 24 May 1993

TOPIC ----------

This article describes the Apple Workgroup Server (AWS) 95 and Oracle 7.

DISCUSSION ----------

The database configuration of the AWS 95 is installed with a version of A/UX 3.0.1 optimized for database performance, especially with Oracle 7. The A/UX kernel parameters have been tuned for use with Oracle. The database configuration of the hardware also includes a larger L2 cache because database applications benefit more from a larger cache than other services. Also with the database configuration there are two internal hard disks, a 230 MB which holds the operating system and database software, and another 500 MB or 1 GB drive for storing database files and data. By having two disk drives I/O performance is enhanced because the system can read and write to both drives at the same time.

Oracle is the highest performance relational database management system (RDBMS) available on a PC platform. Oracle is now introducing their new version: Oracle 7. Apple and Oracle engineers have worked together for nearly a year optimizing A/UX and Oracle 7 for performance together. Their efforts have made Oracle version 7 and the AWS 95 a very fast RDBMS system capable of greater than 50 transactions per second (tps).

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Tech Info Library Article Number:12375

Tech Info Library

AWS 95: Performance & Fault Tolerance Drives (5/93)

Revised: 6/18/93
Security: Everyone

AWS 95: Performance & Fault Tolerance Drives (5/93)

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Article Created: 24 May 1993

TOPIC ----------

The Apple Workgroup Server (AWS) 95 will initially be available with internal hard disk drive capacities 230 MB, 500 MB, and 1000 MB. For customers especially concerned with performance and fault tolerance there will be several solutions available from third parties implementing various levels of RAID technology.

DISCUSSION ----------

RAID

Since servers need very fast, very large, and very reliable or fault tolerant disk subsystems the AWS 95 will support a variety of RAID devices. RAID stands for Redundant Array of Inexpensive Disks. RAID devices provide a level of disk mirroring or data redundancy, along with higher performance than conventional disk drives, or SLEDs (Single Large Expensive Disk). RAID devices come in several configurations, numbered 0 through 5. The number indicates the level of striping, or distribution of data across multiple disks.

Below is a brief description of RAID configurations:

- RAID 0 describes a single disk that uses striping redundancy techniques, but is still a single disk.

- RAID 1 describes simple disk mirroring. Disk mirroring means having two separate disk drive mechanisms that appear to the system as a single volume, but all data is written to both disks at the same time. Therefore there is always a backup. In the event that one disk fails, the other disk will contain all of the data and the system can continue to run until the failed disk is replaced and rebuilt. Some

implementations allow the CPU to read from the disks in parallel and therefore reduce seek time, enhancing overall performance.

- RAID 2 uses a large number of disks (10 or more) and uses 30% - 40% of them for checking or parity information. This way when each block is written to the system a checksum (interleaved Hamming code) is generated and stored on one of the check disks. In the event of a failure the data on the failed disk can be reconstructed from the data on the check disks. Because of the large number of disks required and its optimization for large blocks of data RAID 2 is relatively impractical for PC or workgroup solutions. RAID 2 is found primarily on mainframes.

- RAID 3 employs a single check (or parity) disk for several data disks. When a block is written to the volume the data is distributed across the data disks, then a checksum (XOR) is written to the parity disk. Because data is written and read in parallel from many disks, performance is highest for large blocks of data. RAID 3 implementations are not as efficient with lots of small bits of data. However, RAID 3 uses proportionally more disk space for data and less for parity (~20%) than a RAID 1 system.

  It is important to remember that the majority (70-80%) of time taken in reading or writing is seek time. Having multiple disk mechanisms means the drives can seek to different places at the same time. While one drive is writing, other drives can be seeking so when the system gets to the next drive it is ready to read or write immediately. This is true for all multiple disk RAID implementations.

- RAID 4 systems are best for frequent small reads. Here there is only one parity disk for multiple data disks. Check information is written to the parity disk for each sector that is written to a data disk. The data is spread on the data disks a full sector at a time. Since there is only one disk for check data writing is slower than reading, but more disk space is available for data.

- RAID 5 is the most efficient, highest performance, and most reliable implementation. This system spreads the check data across all disks in the array allowing check data to be written in parallel with other data on other disks. RAID 5 also allows "hot-swapping" meaning that a failed disk can be removed and replaced in the array while the system is still running. The data on the failed drive can be rebuilt on the new disk by recombining the check bits on the other disks. This system is completely redundant and extremely fault tolerant. It is also best for reading and writing both large and small blocks of information.

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Tech Info Library Article Number:12376

Tech Info Library

Apple Workgroup Server and Tape Backup System (11/94)

Revised: 11/29/94
Security: Everyone

Apple Workgroup Server and Tape Backup System (11/94)

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Article Created: 24 May 1993
Article Reviewed/Updated: 29 November 1994

TOPIC ----------

This article describes Apple Workgroup Servers (AWS) and its tape backup system.

DISCUSSION ----------

The AWS 80 and the AWS 95 are available with an optional internal tape backup drive. This drive uses digital tapes (the same form factor as DAT (Digital Audio Tape)) of a high grade quality. The tape drive is usually referred to as a DDS-DC drive. This stands for Digital Data Storage - Data Compression. This drive requires that tapes used for recording meet the Media Recognition System (MRS) standard. This restriction ensures that the tapes used are of high enough quality to support large volumes of compressed data reliably.

This tape drive uses special hardware compression to maximize the amount of data that can be reliably stored on a tape. Because of the compression, it is difficult to estimate the exact capacity of a tape. Some data is more compressible than other data. We estimate that a single tape, of 90m in length, will store between 4 and 7 GB of data, depending on compressibility of the data.

Article Change History:
29 Nov 1994 - Added maximum tape length.

Support Information Services

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Tech Info Library Article Number:12377

Tech Info Library

StyleWriter II: Spacing and Margin Errors With ATM (6/93)

Revised: 6/28/94
Security: Everyone

StyleWriter II: Spacing and Margin Errors With ATM (6/93)

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Article Created: 21 June 1993
Article Reviewed/Updated: 28 June 1994

TOPIC ----------

I'm having trouble using Adobe Type Manager (ATM) with a Macintosh Classic and the StyleWriter II.

When printing with Microsoft Word or MacWrite II, the printouts show erratic spacing between words, as well as words falling out of the set margins.

DISCUSSION ----------

The problems encountered are known problems with the StyleWriter II drivers earlier than version 1.2 when used with ATM. This ONLY occurs on 68000-based Macintosh computers (that is, Macintosh Plus, SE, and Classic).

Upgrading to the StyleWriter II printer driver v1.2 or later will solve this problem. A workaround using earlier version is to turn Background Printing OFF, enabling Fractional Character Widths, and/or NOT using "Full Justification" might help a little.

Article Change History:
28 June 1994 - Added StyleWriter II version that fixes the problem.

Support Information Services

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Tech Info Library Article Number:12381

Tech Info Library

StyleWriter II Margins: Word Processor Line Layout Code 6/93

Revised: 6/21/93
Security: Everyone

StyleWriter II Margins: Word Processor Line Layout Code 6/93

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Article Created: 21 June 1993

TOPIC ----------

I am using WordPerfect and printing to a StyleWriter II. I have set each margin (top/bottom/left/right) to exactly one inch.

The application shows everything at the proper margins, however when printed, the top and bottom margins are off. The top margin is off by 1/16th of an inch. I would assume this is within tolerance. The bottom margin however, is 1/4 of an inch off, so the bottom margin is actually 1 and 1/4 inches.

DISCUSSION ----------

On the StyleWriter II, 1/16th of an inch is the acceptable tolerance all the way around (top/bottom/left/right).

The 1/4 of an inch blank space on the bottom (in addition to the margin) occurs because another line of text can't fit in that area. Each application's line layout code determines how tall a line of text is, and then decides whether or not it will fit into the remaining space at the bottom of the page. This can be verified rather easily by changing all of the text in a page to 4 Point text. With 4 Point text, the height of a line is very small, so there should be little or no white space left at the bottom, except for the 1/16th of an inch tolerance from the margin.

Other word processors also demonstrate the same margin problems. It seems that word processors use similar line layout calculations. A possible resolution to this problem can be implemented in the applications themselves by taking into account that the last line of text doesn't need any inter-line spacing below it. With this in mind, the "theoretical" height of the last line would be less, and one more

line could be printed.

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Tech Info Library Article Number:12382

Tech Info Library

Performa 400: Printing to a Citizen Swift 200 (8/96)

Revised: 8/28/96
Security: Everyone

Performa 400: Printing to a Citizen Swift 200 (8/96)

==========

Article Created: 21 June 1993
Article Reviewed/Updated: 27 August 1996

TOPIC -----

Can I connect a Performa 400 to a Citizen Swift 200 centronics printer? Would the Macintosh Print Pack be of any benefit?

DISCUSSION -----

Apple was unable to obtain any information on the Citizen Swift 200 printer since it is a European product. We contacted Citizen USA and they referred us to Citizen Europe Corporation for any questions related to the Citizen Swift 200 printer. Citizen Europe Corporation can be reached (from the USA) by calling at 011-44-753-584-111. They are located in the United Kingdom.

However, if the Citizen Swift 200 printer can emulate an Epson (FX or LQ), Kodak (Diconix 701), or Canon (BJ-10ex) standard then the Macintosh Print Pack will work for your customer. Here are the specific drivers included with the Print Pack and the types of printers they support:

Driver/standard	Printer Type
Epson FX	9-pin dot matrix printers or some line printers
Epson LQ	24-pin dot matrix printers
Canon BJ-10ex	Compact/Portable Ink-Jet printers
Diconix 701	Compact/Portable Ink-Jet printers

These drivers are all selectable in the Chooser. The Print Pack also comes with a serial to parallel cable (din8 to Centronics) for the hardware interface.

Article Change History:
27 Aug 1996 - Correct spelling.

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..TIL12383-Performa_400-Printing_to_a_Citizen_Swift_200_8-96.pdf

Tech Info Library Article Number:12383

Tech Info Library

ABS Tech Note: AUX00 About A/UX Tech Notes (6/94)

Revised: 6/23/94
Security: Everyone

ABS Tech Note: AUX00 About A/UX Tech Notes (6/94)

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Article Created: 23 June 1994

TOPIC ----------

This document accompanies each release of Apple Business Systems Technical Notes.

DISCUSSION ----------

As of this release, A/UX technical notes have been merged with the Apple Workgroup Server technical notes. For reference, the A/UX technical notes have been renamed as follows:

AUX01, SHMAT Limitations is now AWS23
AUX02, Multiple Printers is now AWS24
AUX03, Flushing the data cache is now AWS25

All future technical notes will be released under the Apple Workgroup Server heading.

Support Information Services

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Tech Info Library Article Number:12385

Tech Info Library

DAL For AS/400: View Smaller Table List (6/93)

Revised: 6/22/93
Security: Everyone

DAL For AS/400: View Smaller Table List (6/93)

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Article Created: 21 June 1993

TOPIC ----------

I connected via DAL to SQL/400 on an AS/400. From the client side I used the DAL Tester to send the following command to the DAL server:

```
open sql400 dbms;
open database "daldemo";
```

This statement ran fine.

But when I sent the following command:

```
describe tables; printall;
```

The result was a listing of all the tables of all the libraries.

How do I get only the tables of the current database as described in the DAL reference manual?

DISCUSSION ----------

We can clarify this issue for you.

1) It is not possible to limit the table list to "only" the tables in the database that is open. The AS/400 environment is one whole database to SQL/400 so there is no way to keep it from scanning all the Libraries for File/Table names.

   The only thing that can be done to limit the list of tables is to create a "view". This view will be the same one used by ANY database name you open.

   While the database name is not restrictive in the AS/400 environment, it is useful. When you do the "Open Database" command in DAL you set up that database name as the default library. Then you do not have to prepend the database name in your SQL statements unless the table (file)

chosen is in another library than the default (opened) database.

That is:
```
open database "DALDEMO";
```

gives you access to all the tables within that library without having to say "DALDEMO." before the tablename. That is you can now say:
```
select * from offices; printall;
```

instead of
```
select * from daldemo.offices; printall;
```

If you had opened a database named "MYDATA":
```
open database "MYDATA";
```

to access the data in 'offices' you would now HAVE to say:
```
select * from daldemo.offices; printall;
```

2) The DAL for AS/400 Install Guide was not correct in defining how to create the SQL View (Appendix B). An article was written to explain how to create the view properly as well as how to set up a "limited" list in the view.

Please check the Tech Info Lib on AppleLink. Search for "DAL and AS/400" and you should see an article named: ESD Technical Note: DAL21 AS/400 Install Doc Update (2/93).

That should help you set up a smaller table list. Be aware however, that you can only have one view per user profile (whether their own separate one, or a site-wide one). So you want their "describe tables" list to contain ALL of the tables you would want to have access to through DAL, regardless of whether those tables were in multiple libraries.

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Tech Info Library Article Number:12389

Tech Info Library

Macintosh: SCSI Devices Should Be On at Startup (6/93)

Revised: 6/28/93
Security: Everyone

Macintosh: SCSI Devices Should Be On at Startup (6/93)

==========

Article Created: 16 June 1993

TOPIC ----------

I am having difficulty starting my Performa 450 when it is connected to an external Micronet 30MB SCSI hard drive that is turned off. When I connect the drive to the SCSI port and attempt to boot the computer, it will only boot if the Micronet drive is turned on first. I would like to be able to boot (from the internal hard drive) with the external drive connected but turned off. I want to do this because I will not need the drive turned on all the time and the fan is rather loud.

DISCUSSION ----------

The SCSI bus requires termination power to provide clean SCSI signals. When a SCSI device has its own termination power, the SCSI bus signals are corrupted when the device is off because this leaves the SCSI bus unterminated. A non-terminated SCSI bus can cause startup problems because of noise on the bus.

Sometimes, a SCSI device supplying its own termination power can remain off at startup because it has a relatively clean SCSI bus signal. But there is no guarantee that the bus signals will stay clean and uncorrupted, as it is improperly terminated in this situation.

SCSI devices that use termination power from the Macintosh can be off and still be properly terminated.

Since your external SCSI device only works with the power on, it is a problem with the external device. If another Macintosh starts up successfully when this external hard drive is turned off, it may be because older Macintosh computers were more tolerant regarding SCSI noise and termination issues than are newer models.

..TIL12391-Macintosh-SCSI_Devices_Should_Be_On_at_Startup_6-93.pdf

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Tech Info Library Article Number:12391

Tech Info Library

Macintosh: Generating Unusual ASCII Characters (6/93)

Revised: 6/24/93
Security: Everyone

Macintosh: Generating Unusual ASCII Characters (6/93)

==========

Article Created: 16 June 1993

TOPIC ----------

My newspaper's mainframe requires the use of an ASCII character I've been unable to generate on the keyboard of my new Performa 405. Is there a way to generate ASCII character 152 from a Macintosh keyboard?

DISCUSSION ----------

Any ASCII character number over 128 changes depending on the type of computer you are using. On the Macintosh, character 152 is the ograve. To create the ograve, you need to hold down the option key and press the ` key at the same time, release those keys, then press the letter o. This creates the ograve character, a letter o with an accent (`) on top.

Use the Key Caps desk accessory to preview various key combinations in various fonts.

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Tech Info Library Article Number:12392

Tech Info Library

Performa and System 7.5: Turning Off Layer Hiding (6/95)

Revised: 6/19/95
Security: Everyone

Performa and System 7.5: Turning Off Layer Hiding (6/95)

==========

Article Created: 16 June 1993
Article Reviewed/Updated: 19 June 1995

TOPIC ----------

I have just purchased a Performa 405 computer that uses System 7.1P. I also use a Macintosh that uses regular System 7.1. How can I turn off the feature in System 7.1P that hides all open programs and the Finder when I launch a different program?

DISCUSSION ----------

There is a feature in System 7.x for the Performa and for System 7.5 called layer hiding. This feature hides the background windows, showing only the active window.

System 7.5
==========

Under System 7.5, layer hiding is part of the General Controls control panel. To prevent layer hiding:

Step 1: Open the General Controls control panel.
Step 2: Click the Show Desktop In Background box.
Step 3: Close the Generals control panel.

After you close the General Controls control panel, you need to restart your computer

Older Versions of System 7.xP
==========

System 7.01P, 7.1P, and 7.1P2

Under these versions of the Performa system software, the layer hiding feature is built into the Launcher application.

To prevent layer hiding, remove the Launcher control panel from your Control Panels folder. If you place the Launcher control panel in another location, you can still use it, but the layer hiding feature is disabled.

After you move the Launcher control panel, you need to restart your computer.

System 7.1P3, 7.1P5, and 7.1P6

Under these versions of the Performs system software, the layer hiding feature is built into the Performa control panel. To prevent layer hiding:

Step 1: Open the Performa control panel.
Step 2: Click the Finder Hiding button.
Step 3: Cose the Performa control panel.

After you close the Performa control panel, you need to restart your computer.

Article Change History:
19 June 1995 - Corrected incorrect control panel nomenclature
21 Feb 1995 - Added keyword; made minor technical updates.
16 Dec 1994 - Added information on System 7.1P3 and above.

Support Information Services

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Tech Info Library Article Number:12393

Tech Info Library

Performa: Virus Protection Tips (6/93)

Revised: 6/24/93
Security: Everyone

Performa: Virus Protection Tips (6/93)

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Article Created: 16 June 1993

TOPIC ----------

I have found the nVir A virus on my Performa. I can clear it from everything except the System (which says it is busy) and Finder. The anti-virus program I am using says that I should use a locked system diskette to clear the virus completely, but this computer comes with software already installed, and without system disks. What do I do next?

Also, what would you recommend as a good beginner's anti-virus program for the Performa?

DISCUSSION ----------

Depending on the type of virus detection program you have, you may be able to run after starting up from the Utilities disk that came with your Performa. If your virus program is an application, then start the computer from the Utilities disk (put the Utilities diskette in the drive immediately after turning the computer on). Then run the virus program that is on the hard drive. This allows it to remove the virus from the system on your hard drive. If your virus program is a control panel or an extension, then this solution may not work, and you may need to contact the makers of the virus program to get instructions on removing the virus.

There are too many anti-virus programs to recommend any specific one, but almost all fall into one of two categories:

- The first kind loads into the computer's memory when the computer turns on and checks diskettes and software as they are loaded onto the system. This type of program works best for keeping viruses from getting onto your system, but may cause incompatibility with some of your software.

- The second kind checks the computer only when you tell it to. Since it

does not load into memory when the computer is turned on, it does not conflict with other software. However, because you launch the anti-virus program manually, it will normally find viruses only after they are on your computer.

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Tech Info Library Article Number:12394

Tech Info Library

Performa 405: Computer Speed and FPU Upgrades (6/96)

Revised: 6/18/96
Security: Everyone

Performa 405: Computer Speed and FPU Upgrades (6/96)

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Article Created: 16 June 1993
Article Reviewed/Updated: 18 June 1996

TOPIC ----------

Is the Macintosh Performa 450 faster than the Macintosh Performa 405? If it is, how can I speed up my Macintosh Performa 405?

DISCUSSION ----------

Because of its faster clock speed and 32-bit data bus, the Macintosh Performa 450 is approximately twice as fast as a Performa 405.

You can improve the performance of your Performa 405 by adding an FPU (floating point unit), commonly known as a math co-processor. Math co-processors handle the math computations of a given program, therefore freeing up the processor for other tasks. For math intensive programs there is an improvement in speed.

Apple does not currently offer a math co-processor for the Macintosh Performa 405 (or the Macintosh LC II). However, there are other companies that do offer FPUs for these computers. These computers do not have an FPU slot so you would need to purchase an LC PDS card with an FPU on it.

The drawback is that not all applications use the FPU. The only way to increase speed in all applications would be to purchase a third-party accelerator card for the Macintosh Performa 405.

Article Change History:
14 Jun 1996 - Clarified information.
09 Jul 1993 - Updated to include LC II

Copyright 1993-96, Apple Computer, Inc.

Tech Info Library Article Number:12395

Tech Info Library

Performa: Application Not Found Message (6/93)

Revised: 6/24/93
Security: Everyone

Performa: "Application Not Found " Message (6/93)

==========

Article Created: 16 June 1993

TOPIC ----------

We've been downloading shareware and we keep getting a screen that says that the application program can't be found. This also happens with some stuff that came on the hard drive, like clip art files.

Also, I think I need HyperCard 2.0 for one of my programs. Is this loaded on the Performa 405 or is it shareware or a commercial program?

DISCUSSION ----------

The message "The application program that created it could not be found" will come up in two instances.

The first is when you try to open a document when you do not have the application that created it on your hard drive. Most likely the shareware programs you are downloading are compressed to save space and download time. They require the program that compressed them in order to uncompress them. Some common compression programs and the extensions they add to the end of the name of the documents they create are:

Program	=	Extension Name
Compactor	=	.cmp
StuffIt	=	.sit
PackIt	=	.pit
Disk Doubler	=	.dd

(There are others as well.)

Example: A file named Game.sit is compressed by StuffIt and you will need a copy of StuffIt to uncompress it.

These uncompressing programs will usually be on the same downloading service where you got the file. If you cannot find them, ask the sysop of the board.

When you double-click on clip art files you also get this message, because the graphic program that created these files did not come with your Performa. But you can still use these files. You have a program called ClickArt ClipOut under the Apple menu and it allows you to use these files. Just hit the Open button at the bottom of the tool palette of the ClickArt ClipOut window.

There is another way to use these files. Most programs come with the ability to translate or at least open the files created in other programs. For example, your Performa 405 probably came with ClarisWorks or WordPerfect Works. These applications are capable of reading graphic documents even though they did not create these documents. You do this by opening the document from within the program. Consult the manuals for these programs, or call the vendors for more specific instructions on how to open foreign file formats.

The other time you might get the "application not found" message is when your computer loses track of where the application is located on your computer, though this is rare. You can fix this problem by rebuilding the desktop file. This file keeps track of what applications open what type of documents and the icons that go with these files. Refer to your manual on page 220 for information on rebuilding the desktop.

HyperCard 2.0 is not included with your Performa computer. But you do have HyperCard Player. This version of HyperCard allows you to play stacks, or open them up and view them. If you wish to make stacks or edit them, you need to purchase HyperCard 2.0 from Claris Corporation. This is a commercial program.

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Tech Info Library Article Number:12396

Tech Info Library

Non-Apple Printers: Printing from Performa (6/93)

Revised: 6/24/93
Security: Everyone

Non-Apple Printers: Printing from Performa (6/93)

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Article Created: 16 June 1993

TOPIC ----------

What is the best way to connect my Citizen GSX-140 printer to a Macintosh Performa?

DISCUSSION ----------

If your printer is Macintosh compatible, the only software necessary for communication from your Macintosh Performa to your Citizen printer is the printer driver. The printer driver gives your computer specific information about the piece of hardware that is connected. Once you have a printer driver installed, and your Performa can communicate with your printer, any System 7 compatible application program may be used to construct documents and print them.

If your printer is not Macintosh compatible, and has a standard Centronics parallel port, the Apple Print Pack is your solution. The Print Pack includes special software printer drivers to allow Epson FX and Epson LQ emulation, as well as Kodak Diconix/Canon BJ10EX drivers for compatible ink jet printers. It also includes a special printer cable that allows a Macintosh to connect with virtually any printer having a standard Centronics parallel port.

Before you make a purchasing decision, it will be necessary to contact Citizen, and determine some specifications:

1) Is the Citizen MS-DOS-compatible, Windows-compatible, Macintosh-compatible?

2) Does the Citizen utilize dot matrix, ink jet, or laserjet technology?

3) Does the Citizen employ a standard Centronics parallel port?

4) Does Citizen have a printer driver available for the Macintosh?

By answering these questions, you can determine which course of action (Citizen printer driver or Apple Print Pack) is the best solution for you.

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Tech Info Library Article Number:12397

Tech Info Library

Performa: Connecting a CD-ROM Drive (6/93)

Revised: 6/24/93
Security: Everyone

Performa: Connecting a CD-ROM Drive (6/93)

==========

Article Created: 16 June 1993

TOPIC --

I want to connect an external CD-ROM drive to my Performa 450. Which port on the back of the Performa do I hook it to? Do all CD-ROM drives on the market come with the proper connecting cable for the Performa?

DISCUSSION --

An external drive of any type (hard drive, CD-ROM drive, optical drive) connects to the SCSI port on the back of the Performa. The SCSI port is the long narrow one near the center of the back of the machine.

Some companies include a SCSI cable with Macintosh-compatible drives, and others require that you purchase the cable separately. Check with the drive manufacturer or the dealer and ask them if they "bundle" (include) a cable with the drive. AppleCD drives (Apple's CD-ROM drives) do not come bundled with a SCSI cable.

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Tech Info Library Article Number:12398

Tech Info Library

Performa 450 Compared to Macintosh LC III (6/93)

Revised: 6/24/93
Security: Everyone

Performa 450 Compared to Macintosh LC III (6/93)

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Article Created: 1 June 1993

TOPIC -----

Is the Performa 450 physically different from the Macintosh LC III?

DISCUSSION -----

The hardware differences have to do with configuration, and with architecture. The logic boards, power supplies, and floppy disk mechanisms of the Performa 450 and the Macintosh LC III are identical. However, other components may vary, depending on available configurations:

	Macintosh LC III	Performa 450
RAM (Random Access Memory)	4 or 8MB	4MB
Hard Disk Drive	40, 80, or 160MB	120MB

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12399

Tech Info Library

Performa: Can Use System 7.1 (3/94)

Revised: 7/18/94
Security: Everyone

Performa: Can Use System 7.1 (3/94)

==========

Article Created: 16 June 1993
Article Reviewed/Updated: 8 March 1994

TOPIC ----------

Why does Apple ship Performa computers with a special version of system software instead of standard Macintosh System 7.1? Will regular System 7.1 run on the Performa?

DISCUSSION ----------

Performa System 7.1P contains several enhancements designed to make the Performa products especially easy to use, particularly for first-time users and families with children. These enhancements are not part of standard Macintosh System 7.1 software.

Performa System 7.1P enhancements include:

- Launcher. Allows users to locate and launch applications easily while retaining full Finder access.

- Default Document Folder. Documents are automatically saved and stored in this location.

- Layer Hiding. Allows users to switch to the Finder or another program by clicking on the application menu.

- At Ease. Makes it easy for users to launch applications and open documents while protecting system settings, files and folders, and the hard disk.

  Because Performa computers are likely to be shared by more than one person in the family, At Ease prevents multiple users from inadvertently erasing valuable files.

- Backup and Restore. Provides a simple interface for users to create a

set of backup disks and restore the contents on their hard disk.

If you prefer to run System 7.1, it works fine with Performa computers, though the above enhancements will not be included.

Since most Performas have a CPU equivalent in the traditional Macintosh product line, it is possible to use traditional System 7.1 in many cases, provided the appropriate enabler is installed. Apple's official policy however, is that use of a non-Performa operating system on a Performa is not tested, recommended, or supported by Apple. For that reason, the following chart is provided for informative purposes only.

How to use this chart: If you want to use a traditional Macintosh OS on a Performa, find the Performa on the left. If this Performa has a traditional Macintosh equivalent (as shown in the 3rd column), then you can use regular system 7.1 with the enabler listed in the 4th column. For example, to use traditional 7.1 on a Performa 600, use enabler 001, which is the enabler for the IIvx. Remember: this is not tested, recommended, or supported by Apple.

Performa Model	Performa Enabler	Traditional Macintosh Equivalent	Traditional Macintosh Enabler
Performa 200	n/a	Classic II	n/a
Performa 400	n/a	Mac LC II	n/a
Performa 405	n/a	Mac LC II	n/a
Performa 410	n/a	Mac LC II	n/a
Performa 430	n/a	Mac LC II	n/a
Performa 450	308	Mac LC III	003
Performa 460	308	* none *	* none *
Performa 466	308	* none *	* none *
Performa 467	308	* none *	* none *
Performa 475	364	LC 475/Quadra 605	065
Performa 476	364	LC 475/Quadra 605	065
Performa 550	332	* none *	* none *
Performa 600/CD	304	Mac IIvx	001

Article Change History:
8 Mar 1994 - Included chart of Performa and traditional Macintosh enabler equivalents.

Support Information Services

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Tech Info Library Article Number:12400

Tech Info Library

Performa: Apple Restore Backup Made With MS-DOS Disks (10/94)

Revised: 10/11/94
Security: Everyone

Performa: Apple Restore Backup Made With MS-DOS Disks (10/94)

==========

Article Created: 16 June 1993
Article Reviewed/Updated: 11 October 1994

TOPIC ----------

Sometimes, after backing up your Performa's hard disk with Apple Backup, you may find that you need to restore the hard disk to its original state. If you try performing a Restore, and the Performa does not recognize your set of backup floppy disks, it doesn't mean that your backup is gone.

DISCUSSION ----------

Why the Disks Aren't Being Recognized
==========

Your backup floppy disks may have come preformatted for MS-DOS machines. However, your Macintosh Performa comes with a control panel called PC Exchange that lets you read and write to MS-DOS formatted disks. So, when you made your backup, the Performa was able to read the disk format and write your backup to it. But now, starting up from the Utilities disk, your backup floppy disks are not recognized because the PC Exchange control panel is not present.

Here are two different work-arounds that let you use your current backup. One tells how to create a new Utilities disk which contains PC Exchange, while the other describes how to restore from your backup after formatting your backup disks. There's also a section on reformatting your backup floppies if you do NOT need to restore from your MS-DOS disks.

Workarounds
==========

The first work-around is to put a copy of PC Exchange onto the Utilities disk, then use the backups you made to the MS-DOS disks. To do this, follow these steps:

1) Make a copy of your Utilities disk. Drag every icon on the copy

into the Trash, except the System Folder (including its contents) and Apple Restore.

2) Copy the PC Exchange control panel from your Performa into the Control Panels folder of your Utilities disk copy.

3) Run Apple Restore from the copied Utilities disk as you normally would. You should be able to restore your backup from the MS-DOS formatted disks.

Another work-around is to remove the backup files from your disks, reformat the disks to Macintosh format, then copy the backup files back to the disks. To do this, follow these steps:

1) Insert the first backup disk into your Performa, then open the PC floppy disk icon by double-clicking.

2) Drag the Apple Backup archive file from the floppy disk to your hard disk.

3) Re-initialize the disk to Macintosh format.

4) Drag the Apple Backup archive file from your hard disk to the floppy disk, then eject the floppy.

5) Repeat these steps for each of the MS-DOS formatted backup disks.

6) Remove the Apple Backup archive files from the hard disk by dragging them into the Trash.

If you have problems with either of these workarounds, contact the Apple Assistance Center at 1-800-SOS-APPL (767-2775).

Reformatting the MS-DOS Disks

If you don’t need to do a restore, then you can reformat the DOS disks by selecting Erase Disk from the Special Menu. If PC Exchange is loaded at the time, you are given an option of how you want the disks formatted. Choose the Macintosh disk option. If you have questions about using PC Exchange, read the "Macintosh PC Exchange User’s Guide" that came with your computer.

Article Change History

11 Oct 1994 - Reviewed and updated with current informtion
30 Jun 1994 - Changed the title to better reflect the contents
25 Oct 1993 - Added another diskette recovery method

Support Information Services

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Tech Info Library Article Number:12401

Tech Info Library

Performa 450: PC-Style 72-pin RAM SIMM Socket (6/93)

Revised: 6/24/93
Security: Everyone

Performa 450: PC-Style 72-pin RAM SIMM Socket (6/93)

==========

Article Created: 16 June 1993

TOPIC --------------------

Can I use the same RAM (random access memory) SIMMs with a Performa 450 that DOS personal computers use, or must I use a special SIMM? Does the speed of the SIMMs have to be 70ns or 80ns?

DISCUSSION --------------------

Unlike the Performa 400, the Performa 450 comes with a single 72-pin PC-style SIMM socket. Apple chose to implement the single 72-pin RAM SIMM socket because of the greater availability of these SIMMs. When purchasing SIMMs, be sure you get 72-pin fast-paged mode with 80ns access time or faster. Of course, if your DOS computer uses 72-pin 80ns or faster SIMMs, you are free to use them in your Performa 450.

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Tech Info Library Article Number:12402

Tech Info Library

Performa: Can't Use Apple IIGS Monitor (6/93)

Revised: 6/24/93
Security: Everyone

Performa: Can't Use Apple IIGS Monitor (6/93)

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Article Created: 16 June 1993

TOPIC ----------

Can Macintosh Performa computers work with the old Apple IIGS monitor?

DISCUSSION ----------

No. The Apple IIGS color monitor requires an analog signal. Macintosh computers (including Performas) use a TTL signal.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12403

Tech Info Library

Performa: DOS Compatibility and PC Exchange (3/94)

Revised: 5/24/95
Security: Everyone

Performa: DOS Compatibility and PC Exchange (3/94)

==========

Article Created: 16 June 1993
Article Reviewed/Updated: 25 March 1994

TOPIC ----------

I recently purchased a Macintosh Performa and I understand it is DOS compatible. Please explain the DOS compatibility part.

DISCUSSION ----------

The Performa 430 comes with a software "control panel" called PC Exchange. This control panel enables the Performa to recognize DOS disks when they're inserted into the computer. While this alone does not allow you to run DOS programs on your Performa, it does allow you to insert a DOS formatted disk into the Performa and read the data on the disk. This function is automatic; you don't have to do anything else.

As an example, let's say you have created a WordPerfect document on your IBM PC (or compatible) at work, and you want to bring it home. All you need to do is copy the document (no need to copy the entire WordPerfect application) to a 3.5-inch DOS-formatted floppy disk. When you insert the DOS formatted disk into your Performa computer, the disk icon appears on your desktop with the letters PC on it. You can then double-click the disk icon, and a window opens showing you the WordPerfect document. You can then open the document from any Macintosh program that reads WordPerfect PC files.

If your desire is to run DOS applications on your Macintosh, you can purchase an additional program like SoftPC. For more information, search the Apple Tech Info Library using "SoftPC" as your search string.

Article Change History:
25 March 1994 - Reviewed and updated.

Support Information Services

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Tech Info Library Article Number:12404

Tech Info Library

Kid Pix: When New Software Doesn't Have Enough Memory to Open

Revised: 6/22/93
Security: Everyone

Kid Pix: When New Software Doesn't Have Enough Memory to Open

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Article Created: 22 June 1993

TOPIC ----------

I just bought Kid Pix, and when I try to launch the program I get a message that there isn't enough memory to open it.

DISCUSSION ----------

Memory Requirements for Kid Pix may have been set wrong at the factory. Choose Get Info in the Finder File menu to see if the Minimum and Preferred size are lower than the Suggested size. Set BOTH Minimum and Preferred size to the Suggested size.

The product currently ships through the Educator Advantage program.

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Tech Info Library Article Number:12405

Tech Info Library

Monarch Software

Revised: 4/4/97
Security: Everyone

Monarch Software

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Article Created: 06/22/93
Article Reviewed: 07/13/93
Article Updated: 04/04/97

Monarch Software

P.O. Box 147
112 Husum Street
Husum, Washington 98623

800-647-7997

509-493-1395 Fax

Company Profile:
Sells educational software for K - 9 levels.

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Tech Info Library Article Number:12409

ABS Tech Note: SNA•ps18 V25bis Autodialing (4/93)

Revised: 9/7/93
Security: Everyone

ABS Tech Note: SNA•ps18 V25bis Autodialing (4/93)

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Article Created: 29 April 1993

TOPIC ----------

This technical note describes the use and configuration of the SNA•ps V.25bis autodial feature for both the Hayes Ultra 96 and Codex 2264 modems.

DISCUSSION ----------

Introduction

The SNA•ps gateway has an autodial capability whereby a number specified in the SNA•ps configuration is automatically dialed whenever the gateway line and partner are activated. SNA•ps uses the V.25bis protocol to communicate to the modem the number to dial. V.25bis is a communication standard specifying a means of initiating communications synchronously over switched telephone networks. SNA•ps is specific in that it requires synchronous high level data link control (HDLC), addressed mode, with the EBCDIC character set, and the modem must be configured accordingly.

This technical note describes the use of this feature with both the Hayes Ultra 96 and the Codex 2264 modem.

SNA•ps SDLC line parameters

Differences exist in the way modem manufacturers implement V.25bis. For this reason, it is important to carefully review the documentation for the specific modem being used.

For instance, the Hayes Ultra 9600 modem does not allow dashes in the dial string, while the Codex 2264 does.

With both the Hayes and Codex modems, the SNA•ps SDLC line must be NRZ (no NRZI) setting. SNA•ps supports both half duplex and full duplex operation for either modem.

Modem settings

Set the Hayes dip switch 3 down and 1, 2, and 4 up, V.25bis works fine in this configuration. However, attempting to set register s94=10 using the Hayes AT commands (which according to the documentation and Hayes support staff should be functionally equivalent to setting the dip switches as above) proved unsuccessful.

For the Codex, use the settings outlined in the technical note SNA•ps06 - Modem Configuration.

The Codex modem has a parameter to specify PULSE/TONE dialing when using V.25bis. For the Hayes, use an asynchronous modem connection and send the ATT&W command to the modem in order to specify tone dialing (pulse is the default).

SNA•ps line trace

The SNA•ps line trace facility doesn't show all the V.25bis flows. Some frames returned from the modem (e.g. INV - invalid, VAL - valid, etc.) don't appear. For this reason, it is recommended to use an external line monitor (e.g. HP 4953A or equivalent) when troubleshooting V.25bis.

Other features

SNA•ps sends EBCDIC V.25bis commands. This is not a problem for modems with configurable character sets (Hayes and Codex support both EBCDIC and ASCII).

Full duplex switched connections (V.32) were successfully tested for both modems. However, in the event of problems with full duplex operation (for modems not specifically mentioned in this technical note), try re-configuring the SNA•ps gateway for half duplex operation.

Call failure responses, which the modem will send to the gateway if the call is unsuccessful, are not currently supported. For example, CFIET (busy tone detected) or CFIAB (modem aborted call) when returned from the modem will necessitate restarting the gateway. The symptom is that the SNA•ps line can not be deactivated. Further, deactivating and reactivating the SNA•ps partner will not cause the stored number to be re-dialed. The gateway must be re-started in this instance.

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Tech Info Library Article Number:12410

ABS Tech Note: SNA•ps19 System Heap Fragmentation (5/93)

Revised: 9/7/93
Security: Everyone

ABS Tech Note: SNA•ps19 System Heap Fragmentation (5/93)

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Article Created: 24 May 1993

TOPIC

This Technical Note describes problems which may occur in a system where the system heap cannot grow because of memory fragmentation.

DISCUSSION

Introduction

The SNA•ps Gateway uses the Macintosh system heap to dynamically allocate space for data structures. These data structures are used to manage the connections between the SNA•ps clients and gateway. If the data structures cannot be created, then no new connections can be opened to the gateway, until more memory becomes available.

Memory can become available in two ways. Either memory that was previously in use is released, and can be reused by the SNA•ps Gateway, or the system can increase the size of the system heap.

Under normal conditions, the system heap can grow to handle the increased need for memory space. In some situations it cannot. This can occur even though the machine has memory available. The system heap can only grow into memory that is contiguous with the existing system heap. If an application is occupying memory that is adjacent to the system heap, the heap will not be able to grow. The SNA•ps Gateway will be not be allowed to dynamically allocate memory for new connections until the application exits and frees up contiguous memory space.

Example of the Problem

If the following error message or a similar message is received when trying to make a SNA•ps Gateway connection and there should be more Gateway connections available the problem may be caused by the Macintosh system heap fragmentation.

"Sorry, there are too many clients connected to the gateway already. Please try again, or run SNA•ps Admin on the gateway machine".

If this error is caused by Macintosh system heap fragmentation the solution is to quit the application in low memory. Determining the application in low memory may be difficult, if you are unable to you may have to quit all other applications make the Gateway connection and then start up the applications.

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Tech Info Library Article Number:12411

ABS Tech Note: SNA•ps21 Serial NB Card & Duo Dock (3/95)

Revised: 3/22/95
Security: Everyone

ABS Tech Note: SNA•ps21 Serial NB Card & Duo Dock (3/95)

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Article Created: 24 May 1993
Article Reviewed/Updated: 22 March 1995

TOPIC

This Technical Note describes problems which may occur when using the Serial Nubus Card in a Duo Dock.

DISCUSSION

Introduction

The Macintosh Slot Manager sometimes does not recognize the presence of a Serial Nubus Card in the Nubus expansion slot of the Duo Dock.

For Macintosh Applications

If the Serial Nubus Card is not recognized by the slot manager, applications that use the card will not know that it is present, and users will not be able to configure the software to run on the card.

Example

The SNA•ps Admin will not be able to find the Serial Nubus Card and the SNA•ps Gateway can not be configured and loaded.

Article Change History:
22 Mar 1995 - Corrected wording of Duo Dock.

Support Information Services

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Tech Info Library Article Number:12412

Tech Info Library

Macintosh LC 520: Configurations (6/93)

Revised: 10/8/93
Security: Everyone

Macintosh LC 520: Configurations (6/93)

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Article Created: 28 June 1993

TOPIC -----

At the time of introduction, three configurations of the Macintosh LC 520 will be available. This article describes them.

DISCUSSION -----

The first configuration is an entry-level system targeted for those customers who are buying in large quantities and don't need all of the manuals and disk sets.

The other two configurations are bundled with the standard keyboard, additional RAM, disks, and manuals.

Macintosh LC 520 5/80/CD

5MB RAM (4MB on logic board, 1MB in RAM SIMM)
768K VRAM, 16-bit color
1.4MB SuperDrive
80MB hard drive
AppleCD 300i
Mouse
System software installed on hard drive
• Keyboard, System Software back-up disks, and manuals sold separately

Macintosh LC 520 8/80/CD (Canada Only)

5MB RAM (4MB on logic board, 1MB in RAM SIMM)
768K VRAM, 16-bit color
1.4MB SuperDrive
80MB hard drive
AppleCD 300i
Mouse
System software installed on hard drive

System Software back-up on bootable CD
All manuals
• Keyboard sold separately in USA Education channel

Macintosh LC 520 8/160/CD (Canada and Japan)

5MB RAM (4MB on logic board, 1MB in RAM SIMM)
768K VRAM, 16-bit color
1.4MB SuperDrive
160MB hard drive
AppleCD 300i
Mouse
System software installed on hard drive
System software back-up on bootable CD
All manuals
• Keyboard sold separately in USA Education channel

LC 520 Accessory Kit

Power cable
ADB Mouse II
Packing list
Technical Information for the Macintosh LC 520
Getting Started With Your Macintosh LC 520
Registration card
Apple Resource Guide
Macintosh User's Guide
System Software Installation & Backup
CD Caddy
Install Me First CD
• System Folder (with At Ease)
• Disk First Aid
• Apple HD SC Setup
• Install System Software Folder
• Applications Folder
• Utilities Folder
• Disk Images

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Tech Info Library Article Number:12413

Tech Info Library

Macintosh LC 520: Logic Board Features (6/93)

Revised: 6/24/93
Security: Everyone

Macintosh LC 520: Logic Board Features (6/93)

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Article Created: 28 June 1993

TOPIC ----------

This article is an overview of the Macintosh LC 520's logic board, with references to some other Macintosh models.

DISCUSSION ----------

Like the Macintosh LC III, the Macintosh LC 520 uses a 25 MHz 68030 processor (with an optional 25 MHz 68882 floating point coprocessor) and uses a full 32-bit wide data bus. Combined, these features provide approximately twice the performance of the Macintosh LC II.

The Macintosh LC 520 uses the same 114-pin 68030 Processor Direct Slot (PDS) used by Macintosh LC III. This PDS slot has a special cutout that maintains compatibility with the 96-pin PDS cards designed for the Macintosh LC and LC II.

The Macintosh LC 520 comes with 4MB of RAM soldered on the logic board, plus 1MB in the 72-pin SIMM socket. Additional RAM SIMMs are available in 1MB, 2MB, 4MB, 8MB, 16MB, and 32MB capacities, for RAM expansion up to 36MB. SIMMs must be 72-pin past-paged mode, 80ns or faster.

Expansion is made easy through the use of a slide-out logic board, similar to the Macintosh Color Classic. Upgrading to a larger-capacity hard drive, for example, involves removing the bezel, sliding out the old drive, and sliding in the new drive. (You need the appropriate mounting bracket from the drive's manufacturer.)

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Tech Info Library Article Number:12414

Tech Info Library

Macintosh LC 520: Overview (6/93)

Revised: 6/30/93
Security: Everyone

Macintosh LC 520: Overview (6/93)

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Article Created: 28 June 1993

TOPIC ----------

The Macintosh LC 520 is an all-in-one computer design that combines the Macintosh Color Classic's ease of setup and use with the performance of the Macintosh LC III.

DISCUSSION ----------

Markets

Targeted primarily at the US education market, the Macintosh LC 520 is designed to meet the needs of schools looking for superior ease of setup and use, full-screen color, multimedia capability, and an affordable price.

Memory and Storage

The Macintosh LC 520 comes with 5MB of DRAM, with expansion up to 36MB possible.

Hard drive options include 80MB and 160MB capacities.

Multimedia

The Macintosh LC 520 provides built-in superior multimedia support through the use of a 14-inch Trinitron display, integrated stereo speakers, a standard double-speed AppleCD 300i, and a built-in microphone.

The Macintosh LC 520 features a built-in microphone for easy sound annotation and push-buttons on the front panel to control volume and screen contrast. Software power control, on and off, is supported from the keyboard.

Expansion and Upgrades

Like the Macintosh LC III, the Macintosh LC 520 contains an LC-compatible PDS slot to support cards designed for the Macintosh LC, LC II, and LC III, including the Apple IIe card and the Apple Ethernet LC card.

The main logic board and drives can be accessed or replaced easily by opening a bezel and sliding the part out.

Energy Conservation

The Macintosh LC 520 conforms to Apple Computer's power reduction goals and meets the EPA Energy Star requirements for computers. Similar to the Sleep function on PowerBook computers, when its not in use for a definable period, the Macintosh LC 520 goes into a reduced power mode, dimming the screen and resulting in 50% less power consumption. This feature also doubles as an effective screen saver.

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Tech Info Library Article Number:12415

Tech Info Library

Macintosh LC 520 & LC 575: External Pinouts (6/94)

Revised: 6/27/94
Security: Everyone

Macintosh LC 520 & LC 575: External Pinouts (6/94)

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Article Created: 28 June 1993
Article Reviewed/Updated: 27 June 1994

TOPIC ----------

This article provides pinout information for the Macintosh LC 520 and LC 575 computer systems.

DISCUSSION ----------

Serial Ports (Printer and Modem)
---

1 Handshake Output DTR
2 Handshake Input CTS
3 Transmit Data (inverted)
4 Ground
5 Receive Data (inverted)
6 Transmit Data
7 General-purpose input
8 Receive Data

ADB Port
---

1 ADB Data
2 Power-on signal
3 +5 volts
4 Ground

External SCSI Port
---

1 Request
2 Message
3 Input/Output
4 SCSI bus reset
5 Acknowledge
6 Busy

7 Ground
8 Data bit 0
9 Ground
10 Data bit 3
11 Data bit 5
12 Data bit 6
13 Data bit 7
14 Ground
15 Command/Data
16 Ground
17 Attention
18 Ground
19 Select
20 Data parity
21 Data bit 1
22 Data bit 2
23 Data bit 4
24 Ground
25 Terminator power

Sound-Out Port

- Sleeve Ground
- Ring Right .75 volt peak-to-peak audio signal right channel
- Ring Left .75 volt peak-to-peak audio signal left channel

Sound Input Port

- Sleeve Ground
- Ring +8 volts
- Tip Input

Article Change History:
27 Jun 1994 - Added reference to LC 575.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:12416

Tech Info Library

Macintosh LC 520: Power Controls and Energy Conservation (6/93)

Revised: 6/24/93
Security: Everyone

Macintosh LC 520: Power Controls and Energy Conservation (6/93)

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Article Created: 28 June 1993

TOPIC ----------

This article discusses the power controls on the Macintosh LC 520 computer system.

DISCUSSION ----------

Powering On and Off

Like the Macintosh Color Classic, the Macintosh LC 520 supports both power on and power off from the keyboard. When you first unpack the system, and the power switch on the read is turned on, the system does not start up. You must also press the power key on the keyboard. After that, you'll power-on and -off the system from the keyboard.

The master switch on the back can be left on -- unless the system will be turned off for an extended length of time, or if the logic board is to be removed.

IMPORTANT: Before removing the logic board, turn off the rear power switch, otherwise power will remain active on the board, resulting in danger of a short.

Energy Saving

An energy-saving feature allows users to set the length of time that the Macintosh can be idle before power to the screen is shut off. This feature is activated through the Screen control panel.

When the screen is powered down, total system energy consumption is reduced by approximately 50%. Power to the screen is restored when either the mouse button or a key is pressed. This feature allows the Macintosh LC 520 to meet the EPA's Energy Star conservation standards.

One Outlet Is Enough

Because of its all-in-one design, the Macintosh LC 520 needs only one AC outlet -- for the computer, display, CD-ROM player, disk drives, and loudspeakers.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12417

Tech Info Library

Macintosh LC 520: Specifications (8/95)

Revised: 8/3/95
Security: Everyone

Macintosh LC 520: Specifications (8/95)

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Article Created: 28 June 1993
Article Reviewed/Updated: 03 August 1995

TOPIC ----------

This article gives technical specifications for the Macintosh LC 520 computer.

DISCUSSION ----------

Microprocessor

- MC68030, 25 MHz clock speed; 32-bit data bus
- Built-in memory-management unit
- Socket for optional MC68882 floating-point unit (FPU)

Memory

- 4MB RAM on logic board
- Expandable (by authorized Apple dealer) to as much as 36MB by adding 1MB, 2MB, 4MB, 8MB, 16MB, or 32MB SIMM to a single 72-pin slot. Requirement: 72-pin fast-paged, 80ns or faster.
- 1MB ROM

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 80MB or 160MB hard disk
- Internal AppleCD 300i double-speed CD-ROM drive

Video Display

- Integrated Macintosh Color Display with 14-inch Trinitron CRT
- Resolution: 640 x 480 pixels, 69 dpi
- 768K VRAM supports 32,768 colors (16-bit color)

Interfaces

- Internal expansion slot for one Macintosh LC processor-direct expansion card. Compatible with Apple IIe Card.
- SCSI interface for connecting up to five external peripheral devices
- Two serial (RS-232/RS-422) ports
- One stereo sound-output port for external audio amplifier or headphones
- Two Apple Desktop Bus (ADB) ports for keyboard, mouse, and other devices
- Front headphone jack
- Built-in electret microphone above display
- One sound-input port for four sources: included internal microphone, or external Plaintalk Microphone, internal CD-ROM, or other external audio source

Sound Generator

- Stereo 8-bit digital-analog conversion using 22-kHz sample rate - capable of driving stereo headphones or other stereo equipment through the sound jack and headphone jack
- Built-in stereo speakers

Keyboard and Mouse

- ADB Mouse II
- Keyboard purchased separately only in the K-12 configuration; several ADB keyboards with numeric keypads available

Clock/Calendar

- Custom integrated circuit with long-life lithium battery

Disability Access

- CloseView, Easy Access, and visible-beep software are built in.
- Third-party options provide alternative input and output devices

Power Requirements

- Line voltage: 90 to 264 V AC, RMS single phase, automatically configured
- Frequency: 47 to 63 Hz
- Power: 40 W maximum, not including display
  60 W maximum, including display
- Energy-saving feature reduces power consumption by 50%
- One AC outlet powers computer, display, drives, and speakers

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 mA (three ADB devices maximum is recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA, depending model used

Size and Weight

Main unit:
- Height: 17.9 in. (45.5 cm)
- Width: 13.5 in. (34.4 cm)
- Depth: 16.5 in. (42.0 cm)
- Weight: 40.5 lbs (18.4 kg)

Mouse:
- Height: 1.3 in. (3.3 cm)
- Width: 2.4 in. (6.2 cm)
- Depth: 4.2 in. (10.7 cm)
- Weight: 4.0 oz. (0.10 kg)

Operating Environment

- Operating temperature: 50 to 104° F (10 to 40° C)
- Storage temperature: –40 to 116.6° F (–40 to 47° C)
- Relative humidity: 20% to 85% noncondensing
- Maximum altitude: 15,000 ft. (4,722 m)

System Software Requirements

Requires System 7.1 or later and the System Enabler 403.

Article Change History:
03 Aug 1995 - Added Plaintalk Microphone information.

Support Information Services

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Tech Info Library Article Number:12418

Macintosh LC 520: Video and Sound Features (6/93)

Revised: 6/30/93
Security: Everyone

Macintosh LC 520: Video and Sound Features (6/93)

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Article Created: 28 June 1993

TOPIC ----------

This article introduces the video and sound features of the Macintosh LC 520 computer system.

DISCUSSION ----------

Video

The Macintosh LC 520 includes a built-in 14-inch Trinitron color display, which is functionally equivalent to Apple's standard 14" Macintosh Color Display.

768K of VRAM provides:
• 640 by 480 pixels, at 16 bits per pixel
• 32,768 colors

Contrast is controlled with the front panel pushbuttons, or through the Screen control panel. Screen brightness is controlled through the Screen control panel. It shouldn't be necessary to modify the screen brightness on a new picture tube.

The Macintosh LC 520 does not support external displays.

Sound

The Macintosh LC 520 provides built-in stereo sound output through two amplified speakers in the front of the chassis. There are also two sound output jacks, one in front and one in the rear.

Sounds generated by the computer itself are monaural, but stereo sounds from external sources -- and from the built-in AppleCD 300i -- are stereo.

Sound input is accomplished with the built-in microphone, by plugging a

microphone or other line-input device into the sound input port, or directly from a compact disc in the built-in AppleCD 300i.

To record sound, use the Sound control panel. While the default sound input device is the internal microphone, choosing Options allows users to choose alternative inputs.

Sound volume is controlled from either the front panel pushbuttons, or through the Sound control panel. You can control CD volume from the Apple CD Audio Player, an application that ships with the Macintosh LC 520.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12420

Tech Info Library

Macintosh Color Classic and LC Family Compared (7/93)

Revised: 7/16/93
Security: Everyone

Macintosh Color Classic and LC Family Compared (7/93)

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Article Created: 28 June 1993
Article Reviewed/Updated: 12 July 1993

TOPIC ----------

Because of its all-in-one design, the Macintosh LC 520 resembles the Macintosh Color Classic as much as it resembles the other models in the LC series.

This article compares the key features of four Macintosh models: the Color Classic, LC II, LC III, and LC 520.

DISCUSSION ----------

	Color Classic	LC II	LC III	LC 520
68030 Speed	16 MHz	16 MHz	25 MHz	25 MHz
Data Bus	16-bit	16-bit	32-bit	32-bit
RAM	4-10MB	4-10MB	4-36MB	4-36MB
Display	built-in 10" Trinitron	12" & 14" VGA, RGB	12", 14", 16" VGA, Portrait	Built-in 14" Trinitron
Display	to 16-bit	8-bit on 14"	to 16-bit on 14"	16-bit
Sound Output	mono	mono	mono	stereo
CD-ROM drive	optional external	optional external	optional external	standard internal
Microphone	built-in	optional external	optional external	built-in

NOTE: Use the LC II and LC III columns to compare the Performa 400, 405, and 430 to the Performa 450.

Article Change History:
07/12/93 - Revised to add note about Performa series.

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Tech Info Library Article Number:12421

Tech Info Library

AppleShare Copy Volume Limitation (6/93)

Revised: 6/23/93
Security: Everyone

AppleShare Copy Volume Limitation (6/93)

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Article Created: 23 June 1993

TOPIC ----------

The Copy Volume feature of AppleShare 3.0 Admin doesn't seem to work when the target volume is a server (the copy button turns gray). It works fine when the target is a local hard drive. Is this the way it should work?

DISCUSSION ----------

The "Copy <item> to..." menu item in the Privileges menu won't copy files to non-local volumes. Unfortunately, this isn't made clear in the "AppleShare 3.0 Administrator's Guide."

The purpose of the "Copy <item> to..." menu item is to copy files to another volume while maintaining the access privileges. It isn't possible for the "Copy <item> to..." menu item to do this when copying files to an AFP server. The files copied would be given new privileges.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12422

Tech Info Library

Quadra 950 to Apple Workgroup Server 95 Upgrade (11/94)

Revised: 11/11/94
Security: Everyone

Quadra 950 to Apple Workgroup Server 95 Upgrade (11/94)

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Article Created: 22 June 1993
Article Reviewed/Updated: 11 November 1994

TOPIC ----------

I'm confused about a Quadra 950 to Apple Workgroup Server 95 upgrade.

1) Once I've installed a PDS card into a Quadra 950, can I swap out the memory for parity RAM or do I continue to use regular memory?

2) Is A/UX included with the PDS card? To run AppleShare Pro do I need to buy only AppleShare Pro or AppleShare Pro plus A/UX?

3) Will I have problems using a 3rd Party CD-ROM player to install A/UX? Do I need to use an Apple CD-ROM drive?

DISCUSSION ----------

To answer your questions:

1) You can do either, you can continue to use 8 bit standard RAM or upgrade the system to 9 bit parity RAM.

2) Yes, A/UX 3.0.1 is included with the PDS card updgrade, below is a detailed list of upgrade option information.

   Ordering Information For Upgrade Kits And Accessory Kits

   Apple Workgroup Server PDS Card Upgrade Kit*
   Order No. M6940Z/A
   - Processor-direct slot card for the Macintosh Quadra 900 or 950 (128K second-level memory cache on-board)
   - System software installer CD-ROM (one-button installation of system software, Apple documentation viewer and Retrospect Remote backup software

- Complete documentation
- Limited warranty statement
- CPU labels

Apple Workgroup Server PDS Card/DDS-DC Drive Upgrade Kit*
Order No. M6945Z/A

- Processor-direct slot card for the Macintosh Quadra 900 or 950 (128K second-level cache on-board)
- Internal digital data storage-data compression (DDS-DC) 4mm tape backup drive
- All other features included with the Apple Workgroup Server PDS Card Upgrade Kit for the Macintosh Quadra 900 or 950

* These kits upgrade a Macintosh Quadra 900 or 950 to an Apple Workgroup Server 95. A CD-ROM drive is required to install system software.

Apple Workgroup Server 95 128KB/Tag Second-Level Memory Cache Upgrade Kit Order No. M6810Z/A
Adds an additional 128K and Tag second-level 68040 memory cache to the PDS card, for a total of 256K of second-level memory cache.

Apple Workgroup Server 95 256KB Second-Level Memory Cache Upgrade Kit
Order No. M6815Z/A
Adds an additional 256K of second-level 68040 memory cache to the PDS card for a total of 512K second-level memory (Requires installation of 128KB/Tag kit).

Apple Workgroup Server 95 16MB Parity DRAM Upgrade Kit
Order No. M6820Z/A
Adds 16MB of parity DRAM to the Apple Workgroup Server 95.

Blank DDS Tape 5 Pak
Order No. M2092Z/A
Blank DDS tape for use with internal DDS-DC drive.(Tape uses the Media Recognition System (MRS) standard.)

3) You can use some 3rd party CD-ROM drives to install A/UX and/or the AppleShare Pro software. Although you may be able to install A/UX, you might later run into compatibility issues when attempting to use the drive under the Macintosh environment. Unfortunately there is no complete list of compatible CD-ROM drives, below is some information on "compatible" drives.

Results from A/UX third-party hardware compatibility testing show that the NEC BFU-35 CD-ROM drive does not work under A/UX versions 1.0, 2.0 or 3.0. The NEC 35 CD-ROM does not support the SCSI command "Mode Select".

Chinon CD-ROM CDA 431 drive works fine under A/UX and System 7.x.

Toshiba TXM 3201A1 CD-ROM drive works under A/UX, but not System 7.x.

Most CD-ROM drives that utilize a Sony mechanism will function under both the Macintosh OS and under A/UX.

Article Change History:
11 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12426

Tech Info Library

LaserWriter Utility 7.4: Not Seeing Modified Print Driver 6/93

Revised: 6/24/93
Security: Everyone

LaserWriter Utility 7.4: Not Seeing Modified Print Driver 6/93

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Article Created: 24 June 1993

TOPIC -----

I have set up a color PostScript printer on a network so that only a few users can see it.

I achieved this by setting the "appletalktype" parameter in the printer to something other than "LaserWriter," and modifying the 'STR' resource ID# -4096 in the LaserWriter extension accordingly. After renaming and installing the modified driver, only computers with this modified driver can use the printer.

This works fine, but now my LaserWriter Utility 7.4 no longer sees it. Which resource ID do I need to change to correct this?

DISCUSSION -----

The only resource you need to change in the LaserWriter driver is the 'STR' resource ID# -4096. This is where the Chooser gets the AppleTalk type for the NBP (Name Binding Protocol) lookup. After the printer has been selected, the Chooser writes the printer's name, AppleTalk type, and AppleTalk zone to 'PAPA' resource ID# -8192 in the LaserWriter driver.

There is nothing that needs to be changed in the LaserWriter Utility. The LaserWriter Utility looks at the 'PAPA' resource ID# -8192 in the currently selected LaserWriter driver to determine how to do an NBP lookup for the selected LaserWriter. The contents of the 'STR' resource should like something like this:

Name Some LaserWriter
Type LaserShared
Zone SCV CAM2 2nd W.

If the LaserWriter 8.0 driver is being used, the LaserWriter Utility 7.4.1 must be used or the following error message is displayed:

"The currently selected printer is not a LaserWriter. Please select a LaserWriter with the Chooser."

LaserWriter Utility versions prior to LaserWriter Utility 7.4.1 would not look in the selected printer driver if the creator was something other than 'LWRW'. The LaserWriter 8.0 driver has a creator of 'vgrd'. The LaserWriter Utility 7.4.1 will use printer drivers with creators of 'LWRW' or 'vgrd'.

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Tech Info Library Article Number:12427

Tech Info Library

Apple Media Kit: Description (2/95)

Revised: 6/5/96
Security: Everyone

Apple Media Kit: Description (2/95)

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Article Created: 23 June 1993
Article Reviewed/Updated: 10 February 1995

TOPIC ----------

The Apple Media Kit is a multimedia authoring and digital publishing tool. Products developed with the Apple Media Kit use QuickTime to play back on Macintosh computers and on computers using Microsoft Windows.

DISCUSSION ----------

The Apple Media Kit includes two tools:

• The Apple Media Tool

• The Apple Media Tool Programming Environment

Both tools are designed to work together for cross-platform multimedia development.

The Apple Media Tool

Here are some features of the Apple Media Tool:

• Lets you assemble media elements and add interactive features without writing any code.

• Uses object-based authoring, for rapid creation of prototypes using rough-draft media elements.

• Preserves interactive connections when finished media elements are substituted for rough-draft media elements.

• Optimizes hard disk-based and CD-ROM-based projects.

• Lets you author on Macintosh and simultaneously deliver projects on Macintosh

and Microsoft Windows systems.

Apple Media Tool Programming Environment

Features of the Apple Media Tool Programming Environment:

• Combines the power of an object-oriented programming language with the ease of use of a scripting language.

• Makes project code portable between Macintosh and Intel-standard computers running Microsoft Windows.

• Gives access to both Macintosh and Microsoft Windows toolboxes through a C-language interface.

• Includes both a new programming language and a new application framework.

Article Change History:
10 Feb 1995 - Added keyword; made several technical updates.
28 Sep 1994 - Reviewed for technical accuracy.
26 Aug 1994 - Updated for FAX/TIL/QRG maintenance.

Support Information Services

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Tech Info Library Article Number:12428

Tech Info Library

Peter's Alphabet Adventure: Description (6/93)

Revised: 6/23/93
Security: Everyone

Peter's Alphabet Adventure: Description (6/93)

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Article Created: 23 June 1993

TOPIC --------------------

This article describes Peter's Alphabet Adventure, CD-ROM based entertainment software.
.
DISCUSSION --------------------

Peter's Alphabet Adventure is CD-ROM based entertainment software for young children. It is an exploration-style game in which animal characters help teach the alphabet. It includes games, music and animation.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12429

Tech Info Library

Peter's Magic Adventure: Description (6/93)

Revised: 6/23/93
Security: Everyone

Peter's Magic Adventure: Description (6/93)

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Article Created: 23 June 1993

TOPIC --------------------

This article describes Peter's Magic Adventure, CD-ROM based entertainment software.
.
DISCUSSION --------------------

Peter's Magic Adventure is CD-ROM based entertainment software for young children. It is an exploration-style game where players are part of an interactive story.. It includes games, music and animation.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12430

Tech Info Library

Peter's Numbers Adventure: Description (6/93)

Revised: 6/23/93
Security: Everyone

Peter's Numbers Adventure: Description (6/93)

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Article Created: 23 June 1993

TOPIC --------------------

This article describes Peter's Numbers Adventure, CD-ROM based entertainment software.
.
DISCUSSION --------------------

Peter's Numbers Adventure is CD-ROM based entertainment software for young children. It is an exploration-style game which teach numbers and counting skills. It includes games, music and animation.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12431

Tech Info Library

Travelrama: Description (12/95)

Revised: 12/22/95
Security: Everyone

Travelrama: Description (12/95)

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Article Created: 23 June 1993
Article Reviewed/Updated: 22 December 1995

TOPIC ----------

This article describes Travelrama, CD-ROM based entertainment software.

DISCUSSION ----------

Travelrama is CD-ROM based entertainment software for ages nine to adult. It is a multi-player game where each player "travels" across the US collecting postcards and learning geography at the same time. Each player can adjust their individual level of play.

Travelrama was originally distributed and supported by Apple Computer's StarCore group. Customers that acquired Travelrama from StarCore or received it bundled with an Apple product can still receive up and running technical support from Apple Computer's Applications support group at 800-767-2775 (800-SOS-APPL).

Apple Computer no longer distributes TravelRama, however, customers can purchase it from Zenda Studios. Zenda Studios provides technical support to those customers that purchase the software from them.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
22 Dec 1995 - Added Zenda Studios information.
30 Nov 1995 - Corrected minor typo.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12432

Wacky Jack’s CD Game Show: Description (6/93)

Revised: 6/23/93
Security: Everyone

Wacky Jack’s CD Game Show: Description (6/93)

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Article Created: 23 June 1993

TOPIC --------------------

This article describes Wacky Jack’s CD Game Show, CD-ROM based entertainment software.
.
DISCUSSION --------------------

Wacky Jack’s CD Game Show is CD-ROM based entertainment software for ages eight to adult. It takes the form of a multi-player game show which includes four separate games: picture-matching, tic-tac-toe/trivia, picture-puzzle and hangman.

Players can select their own play levels and have help available at any time.

New games will be included in future editions.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12433

Tech Info Library

System Software Version and NSI Compatibility (6/93)

Revised: 6/23/93
Security: Everyone

System Software Version and NSI Compatibility (6/93)

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Article Created: 15 June 1993

TOPIC ----------

I can't find anything that says it's okay to install new versions of AppleTalk of machines running older systems. Everything I've found vaguely implies that it's okay by saying "Apple recommends using the latest version supplied on Network Software Installer (NSI) version (whatever)".

Are there minimum system requirements for NSI 1.2.3, 1.3, or 1.3.2?

DISCUSSION ----------

Apple currently supports using the N.S.I (all versions of the N.S.I. through 1.3.2.) on Macintosh Operating System versions 6.0.5 and higher. Using N.S.I. to update network components on versions of the operating system previous to 6.0.5 is not supported by Apple.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12434

Tech Info Library

Macintosh LC 520: Using CD-ROM As Startup Volume (6/93)

Revised: 6/23/93
Security: Everyone

Macintosh LC 520: Using CD-ROM As Startup Volume (6/93)

==========

Article Created: 28 June 1993

TOPIC -----

Can I start up my Macintosh LC 520 from a CD-ROM in the built-in AppleCD 300i?

DISCUSSION -----

Technically, yes you can. However, Macintosh system software is not designed to operate properly from a locked volume such as a CD-ROM.

Start up from a CD-ROM only when you're installing or upgrading system software.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12435

Tech Info Library

Apple Workgroup Server 95: NFS Conflict (6/93)

Revised: 6/24/93
Security: Everyone

Apple Workgroup Server 95: NFS Conflict (6/93)

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Article Created: 23 June 1993

TOPIC ----------

Whenever a Macintosh client modifies a file on the Apple Workgroup Server (AWS) 95 the file's UNIX privileges are set to "root". This means that any NFS user not logged in as root will not be able to use the file. In mixed environments of Macintosh, UNIX, and PCs this is a show stopper. No work around has been found since AppleShare Pro must run from the root level in order to operate. Is there a way that we can force the AppleShare Pro to leave the privileges alone?

DISCUSSION ----------

The privileges are not set exactly as you have explained. The UNIX privileges are set up as follows:

directories: drwxr_xr_x
files: _rw_r__r__

The owner is root and the group is root.

This does not allow other UNIX based users to write to these files but it does allow them to open and view the directories and files. The NFS based user would then be able to save a modified copy to any directory to which they have write privileges.

The good news is there is an easy way to modify the way AppleShare Pro sets the UNIX permissions. By modifying the value of the umask you can set up the privileges to a more suitable mode. Since the root account starts a Bourne shell (sh) by default you can modify the umask value in the /.profile file. If you changed the root account to start the C-Shell (csh) you could modify the value of the umask in the /.login file. The umask is an octal value used as a mask to set file privileges when certain system

calls (creat(), mknod(), and open()) are made by a user process.

The umask value controls which bits are used to set the privileges when directories and files are created. A value of 000 would not mask any bits resulting in a file/dir creation with privileges set to 777 (rwxrwxrwx). You need to set this value in the .profile or .login files to the appropriate value for the environment, quit AppleShare (if running), and logout. Login and start the AppleShare server and the new creation privileges will now be exported to the AppleShare application environment.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12437

Tech Info Library

LaserWriter Driver 8.0: A4 errors in LaserWriter PPD (6/93)

Revised: 6/24/93
Security: Everyone

LaserWriter Driver 8.0: A4 errors in LaserWriter PPD (6/93)

==========

Article Created: 24 June 1993

TOPIC ----------

Previously, I had no problem printing to an original LaserWriter with an "A4" cassette using LaserWriter driver 7.1.2. I have since upgraded to LaserWriter driver version 8.0 and now there isn't an "A4" cassette option in Page Setup. I am using the "LaserWriter" PPD (PostScript Printer Description) file.

As a workaround, I manually select the PPD file in the LaserWriter 8.0 driver, and click "Use Generic." I am able to select the "A4" paper size in the Page Setup dialog box, however, if I close the Page Setup dialog box and reopen it, the paper size indicated is "Other" and not "A4". Why?

DISCUSSION ----------

The fundamental problem here is that the "A4" paper size is not included in the "LaserWriter" PPD as an option. We have reported this as a bug to engineering.

We were also able to verify the problem with "A4" switching to "Other" in Page Setup while using the Generic PPD. This has been reported to engineering as a separate bug. Upon speaking with engineering, "Other" is being substituted because of an anomaly between the driver and the PPD on the A4 page specification.

Until these bugs are fixed, a suggestion would be to use the Generic PPD (ignoring that "Other" is substitued) or use the LaserWriter 7.1.2 driver.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12438

Tech Info Library

LaserWriter Pro: Energy Star Software (6/93)

Revised: 6/25/93
Security: Everyone

LaserWriter Pro: Energy Star Software (6/93)

==========

Article Created: 25 June 1993

TOPIC ----------

What is the Energy Star software for the LaserWriter Pro printers?

DISCUSSION ----------

The LaserWriter Pro Software Upgrade, otherwise known as the Energy Star software for the LaserWriter Pro, gives the LaserWriter Pro 600 and 630 printers the energy-saving capability to meet the requirements of the Environmental Protection Agency's Energy Star program. Once users install this upgrade on a LaserWriter Pro 600 or 630 printer, it meets Energy Star requirements.

This software consists of a LaserWriter Utility v7.4.1 and a set of files which put the LaserWriter Pro into "sleep mode" after predetermined lengths of time. Sleep mode is a low-power state in which the LaserWriter Pro will use approximately 70% less power than normal idle mode.

Note that this software ONLY works on the LaserWriter Pro 600 and 630 printers.

You can find the software on Applelink by following this path:

Software Sampler
 Apple SW Updates
  Macintosh
   Printing Software

How to set sleep mode

To set the period of time before the LaserWriter Pro printer goes to sleep, perform the following steps:

1) Select the desired printer in the Chooser.

2) Double-click on the LaserWriter Utility icon.

3) Select “Download PostScript File...” from the “Utilities” menu.

4) Double-click on the sleep mode file corresponding to the length of time you would like the LaserWriter Pro printer to wait before going to sleep. For example, to select 30 minutes, double-click on the file named “30 Minute Sleep Mode.”

5) The next dialog asks you to “Save PostScript output” as a file. For most users, the default name “PostScript Log” is acceptable, so just click on the “Save.” If you have previously set sleep mode, another dialog box will appear asking if you would like to “Replace” or “Cancel”. Click on Replace.

6) After the file is downloaded, you MUST RESTART THE PRINTER for the changes to take effect.

7) If you would like to verify that the file downloaded properly, you can look at the PostScript™ Log file (using something like TeachText) and it should contain a statement similar to: "Engine sleep timeout changed to .5 hours.”

You have now set the sleep mode on the LaserWriter Pro printer. After the printer has not printed for the length of time you have set, the printer will go to sleep. Note that it takes approximately 30 seconds for the printer to warm up, so the first page you send when the printer is sleeping will take approximately 30 seconds longer to print than when not in sleep mode.

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Tech Info Library Article Number:12441

Tech Info Library

Apple Workgroup Server 95: RAID Drives and Mirroring (1/94)

Revised: 1/5/94
Security: Everyone

Apple Workgroup Server 95: RAID Drives and Mirroring (1/94)

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Article Created: 23 June 1993
Article Reviewed/Updated: 5 January 1994

TOPIC ----------

I want to purchase the new Apple Workgroup Server (AWS) 95. I want to use five mirrored hard drives (that's a total of 10 physical hard drives). First is this a problem, and second who makes these drives? I know the drives must be A/UX compatible, and have mirroring capability. Could you please suggest drive vendors making drives to meet my requirements.

Also which version of A/UX is shipped with the AWS 95?

DISCUSSION ----------

As of December, 1993 the AWS 95 is shipped with A/UX 3.0.2.

Yes, it is possible to have five mirrored hard drives (total of 10 physical hard drives) within an AWS 95. In theory, a total of 28 (seven drives for the four SCSI Buses) hard drives can be connected to an AWS 95. However since SCSI ID 0 is reserved for Macintosh, and eight drives are the maximum that can be placed inside the computer via the two internal SCSI Buses, the practical total number of physical hard disk drives is 20 (8 + (6 x 2)).

The AWS 95 is capable of supporting disk mirroring. However, the third-party disk manufactures have to provide drives which implement the Redundant Array of Inexpensive Disks (RAID) level 1 disk mirroring technology in the drive.

Below is a partial list of RAID providers for the AWS 95, you should contact them directly. To locate a vendor's address and phone number, use the vendor name as a search string.

- Ciprico Inc.
  Servers supported: AWS 95, AWS 80, AWS 60
  RAID products: Rimfire Series 6700 Disk Array

- Conley Corporation
  Servers supported: AWS 95, AWS 80, AWS 60
  RAID products: SR1/SR2 Fault-Tolerant SCSI Disk Arrays

- CORE International
  Servers supported: AWS 95, AWS 80, AWS 60
  RAID products: MicroArray 510, MicroArray 840, MicroArray 1300,
  LANArray 2000, LANArray 4000

- FWB Software, Inc.
  Servers supported: AWS 95, AWS 80, AWS 60
  RAID products: SledgeHammer A/UX Disk Arrays

- MegaDrive
  Servers supported: AWS 95, AWS 80, AWS 60
  RAID products: MegaDrive MR-10

The following partial list of RAID providers are for the AWS 80 and AWS 60, you should contact them directly. To locate a vendor's address and phone number, use the vendor name as a search string.

- MASS Microsystems
  Servers supported: AWS 80, AWS 60
  RAID products: MASSterArray

- MicroNet Technology, Inc.
  Servers supported: AWS 80, AWS 60
  RAID products: RAVEN.040 Disk Array

Article Change History:
05 Jan 1994 - Corrected article for technical accuracy and added new vendor.
23 Dec 1993 - Reviewed for technical accuracy.
09 Dec 1993 - Changed the title to better reflect the article.

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Tech Info Library Article Number:12442

Tech Info Library

Breitschwerdt and Partners

Revised: 6/24/93
Security: Everyone

Breitschwerdt and Partners

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Article Created: 06/23/93

Breitschwerdt and Partners

Eichsfelder Strasse 1 W-4000 Disseldorf 13
Germany

49(211)9709140

49(211)9709120 (Fax)

Company Profile:

Produce macControl software, for accessing multiple relational databases on multiple hosts.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12443

Tech Info Library

Ciprico Inc.

Revised: 7/6/93
Security: Everyone

Ciprico Inc.

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Article Created: 06/24/93
Article Reviewed: 07/06/93
Article Updated: 07/06/93

Ciprico Inc.

2800 Campus Drive
Suite 60
Plymouth, MN 55441

612-551-4000

Company Profile:
Provides Redundant Array of Inexpensive Disks (RAID) level 1 disk mirroring technology for the Apple Workgroup Servers.

Article Change History: 07/06/93 Address Information Added

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12444

Tech Info Library

Conley Corporation

Revised: 7/6/93
Security: Everyone

Conley Corporation

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Article Created: 06/24/93
Article Reviewed: 07/06/93
Article Updated: 07/06/93

Conley Corporation
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420 Lexington Ave.
10th Floor
New York, NY 10017

212-979-8824

Company Profile:
Provides Redundant Array of Inexpensive Disks (RAID) level 1 disk mirroring technology for the Apple Workgroup Servers.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12445

Tech Info Library

CORE International

Revised: 7/6/93
Security: Everyone

CORE International

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Article Created: 06/24/93
Article Reviewed: 07/06/93
Article Updated:

CORE International

7171 N. Federal Hwy.
Boca Raton, FL 33487

407-997-6055 x511

Company Profile:
Provides Redundant Array of Inexpensive Disks (RAID) level 1 disk mirroring technology for the Apple Workgroup Servers.

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Tech Info Library Article Number:12446

Tech Info Library

Portable StyleWriter: Description (5/95)

Revised: 5/23/95
Security: Everyone

Portable StyleWriter: Description (5/95)

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Article Created: 28 June 1993

TOPIC ----------

This article describes the Portable StyleWriter printer.

DESCRIPTION ----------

The Portable StyleWriter is the printer that goes anywhere, weighing in at 4.5 pounds. It offers 360 dots-per-inch print resolution, is whisper-quiet, and works with any PowerBook, PowerBook Duo, or Macintosh computer, using a rechargeable battery or a standard power source.

It comes with 39 TrueType scalable fonts and prints on a wide selection of media, including envelopes, labels, transparencies, letterhead, and plain paper . To simplify paper handling, a manual paper feeder is built in and an optional 50-sheet automatic feeder makes it easy to convert your Portable StyleWriter to a full-featured desktop printer.

Everything you need to get started, including a battery, a power adapter/charger, ink cartridge, fonts, drivers, and printer cables come in the box.

FEATURES

Size

• Fits easily on a desktop or in a briefcase
• Weighs just 4.5 pounds

Print quality

- 360 dots-per-inch (dpi) resolution in best mode
- 180 dpi in fast mode
- 39 scalable fonts for printing a wide range of styles and sizes

Fonts

- TrueType fonts included are: ITC Avant Garde Gothic, ITC Bookman, Chicago, Courier, Geneva, Helvetica, Helvetica Narrow, Monaco, New Century Schoolbook, New York, Palatino, Symbol, Times, ITC Zapf Chancery, ITC Zapf Dingbats
- Adobe PostScript fonts when used with Adobe Type Manager software

Print speed

- Up to 1.5 pages per minute (varies with image complexity)

Interface

- One RS-422 serial port (converted to parallel with the supplied cable)

Versatility

- Allows printing on envelopes, labels, transparencies, letterhead or plain paper
- Operates horizontally or vertically, allowing it to be used in confined spaces
- Optional automatic sheet feeder available

Convenience

- Connects easily with any PowerBook, PowerBook Duo, or Macintosh computer
- Six front-panel buttons control basic operations
- Battery and power adapter/charger, ink cartridge, fonts, drivers, and cables included for fast, easy setup

System requirements

- System software version 7.0.1 or later
- Recommended: 4 MB of RAM or more with System software version 7

Paper handling

- Manual paper feeder accommodates all media
- Optional automatic sheet feeder holds up to 50 sheets

Battery

- Nickel-cadmium, rechargeable
- Approximately 60 pages per charge, 10 hour charging time (printer

can not be used during charging)

Ordering Information

Apple Portable StyleWriter
Order No. M1734LL/A
- Apple Portable StyleWriter printer
- Apple Portable StyleWriter ink cartridge
- Printer cable
- Portable StyleWriter accessory kit

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12455

Tech Info Library

Portable StyleWriter: Pinouts (6/93)

Revised: 6/25/93
Security: Everyone

Portable StyleWriter: Pinouts (6/93)

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Article Created: 28 June 1993

TOPIC ----------

This article lists the pinouts for the Portable StyleWriter's parallel connector and the Mini Din-8 Serial connector for the Macintosh.

DISCUSSION ----------

Parallel connector (Printer)

Pin	Description	Pin	Description
1	Data Strobe	19	Ground
2	Data 1	20	Ground
3	Data 2	21	Ground
4	Data 3	22	Ground
5	Data 4	23	Ground
6	Data 5	24	Ground
7	Data 6	25	Ground
8	Data 7	26	Ground
9	Data 8	27	Ground
10	Acknowledge	28	Ground
11	Busy	29	Ground
12	Paper Out	30	Ground
13	(Select Printer)	31	(Input Prime)
14	Signal Ground	32	(Printer reset)
15	(OscExt)	33	ID7
16	Signal Ground	34	(Fault)
17	Shield	35	Ground
18	(+5V)	36	(Line Count)

Mini DIN-8 Serial Connector (Macintosh)

Pin	Signal	Description
1	CLK	Rxd and Txd clock (output)
2	NC	No Connection
3	TxD--	Transmitted Data (output)
4	SG	Signal Ground
5	RxD--	Received Data (input)
6	TxD+	Balanced transmit (output)
7	Vcc	+5 VDC regulated, 300 mA max (output power)
8	RxD+	Balanced receive (input)
Shield	PG	Protective Ground

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Tech Info Library Article Number:12456

Portable StyleWriter: Questions and Answers (3/95)

Revised: 3/22/95
Security: Everyone

Portable StyleWriter: Questions and Answers (3/95)

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Article Created: 28 June 1993
Article Reviewed/Updated: 22 March 1995

TOPIC ----------

This article addresses some commonly asked questions on the Portable StyleWriter.

DISCUSSION ----------

Question: Can I use the power adapter that came with my PowerBook with my Portable StyleWriter?

Answer: No. The power adapters for PowerBooks and Duo Docks are not compatible with the Portable StyleWriter power adapter. While the hardware plugs are the same, please heed the warning on the Portable StyleWriter power adapter and do not mix power adapters, using the wrong power adapter can damage the power adapter, the PowerBook and/or your Portable StyleWriter.

Question: What ink-cartridge does The Portable StyleWriter use?

Answer: The Portable StyleWriter uses the same ink-jet cartridge as the Apple StyleWriter and Apple StyleWriter II (Apple part number M8041G/B).

Question: Can The Portable StyleWriter use ink-cartridges and batteries designed for the Canon BJ-10ex (or BJ-10sx)?

Answer: Yes.

Question: Is The Portable StyleWriter compatible with Windows?

Answer: No. Apple has designed The Portable StyleWriter for use with Macintosh computers.

Question: Why does The Portable StyleWriter have a parallel port and not the Apple-standard serial port?

Answer: As we designed The Portable StyleWriter, our goal was to provide "Plug and Play" simplicity for our customers. We feel that The Portable StyleWriter's interface ports and cables meet our goal of ease of use.

Question: Which printer is recommended, the StyleWriter II or The Portable StyleWriter?

Answer: It depends on how a person will be using the printer. If the printer will remain on your desk, the StyleWriter is a superior solution (less expensive, faster, and with GrayShare). If your need is for a compact, transportable printer that operates with battery power, the Portable StyleWriter will meet your needs.

Question: Will Apple roll GrayShare into the Portable StyleWriter in the future?

Answer: Future revisions of the Portable StyleWriter are being evaluated, and GrayShare is certainly being considered.

Question: What is the cost per page of the Portable StyleWriter?

Answer: The cost of ink and paper should average out to about $0.05 per page.

Question: How fast is the Portable StyleWriter?

Answer: The Portable StyleWriter prints about one page per minute on 68030 equipped Macintosh PowerBooks.

Article Change History:
22 Mar 1995 - Reformatted and added new ink cartridge part number.
27 Apr 1994 - Corrected StyleWriter ink cartridge part number.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12457

Tech Info Library

Portable StyleWriter: Specifications (6/93)

Revised: 10/25/93
Security: Everyone

Portable StyleWriter: Specifications (6/93)

==========

Article Created: 28 June 1993
Article Reviewed/Updated: 25 October 1993

TOPIC ----------

This article gives the technical specifications for the Portable StyleWriter.

DISCUSSION ----------

Print engine

• Canon Thermal Ink Jet

Print quality

• 360 dots-per-inch (dpi) in best mode
• 180 dot-per-inch in fast mode

Print speed

• Up to 1.5 pages per minute (varies with image complexity)

Interface

• RS-422 serial port (converted to parallel with the supplied cable)

System requirements

• System software version 7.0.1 or later
• Recommended: 4 MB of RAM or more with System software version 7

Print materials

- #10 business envelopes
- Most standard labels
- Paper: U.S. Letter, U.S. Legal, A4, and B5
- Most letterhead and colored stock
- Medium-weight photocopier transparencies
- Apple recommends 3M brand CG3480 transparency film

Paper handling

- Manual paper feeder accommodates all media
- Optional automatic sheet feeder (50 page)

Sheetfeeder

- Size: 12.2" x 8.6" x 2.3" (310.0 mm x 217.5 mm x 57.5 mm)
- Weight: 2.9 lb (1.3 kg)
- Bin capacity : 50 sheets @ 17 lbs.
- Paper sizes: Letter, Legal, A4, B5 envelopes

Battery

- Nickel-cadmium, rechargeable
- Approximately 60 pages per charge, 10 hour charging time (printer can not be used during charging)

Power requirements

- U.S./Japan: 100 to 115 V, 50 to 60 Hz
- Europe/Australia: 220 to 240 V, 50 Hz

Power consumption

- 23 W maximum at 120 V or 220 V

Environmental requirements

- Operating temperature: 50° F to 95° F (10° C to 35° C)
- Relative humidity: 20% to 80% noncondensing

Size and weight

- Height: 1.9 in. (4.85 cm)
- Width: 12.2 in. (31.0 cm)
- Depth: 8.7 in. (22.1 cm)
- Weight: 4.5 lbs (2.04 kg)

Article Change History:
25 October 1993- Added more Sheetfeeder information
12 October 1993 - Added Sheetfeeder specifications

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Tech Info Library Article Number:12458

Tech Info Library

Portable StyleWriter: Printing Tips (5/96)

Revised: 5/9/96
Security: Everyone

Portable StyleWriter: Printing Tips (5/96)

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Article Created: 28 June 1993
Article Reviewed/Updated: 9 May 1996

TOPIC ----------

This article discusses how to obtain the best printing results with a Portable StyleWriter.

DISCUSSION ----------

Printing Tips

- Print Quality
  For faster printing and good print quality (180 dpi) select "Faster" in the Print Dialog box. For the best print quality, (360 dpi) but longer printing times, set this selection to "Best."

- Background Printing
  If you have more that 2 megabytes of RAM in your computer, it's a good idea to use background printing. This allows you to continue working on your Macintosh while the Portable StyleWriter is printing. (To turn on Background Printing, choose the Chooser from the Apple menu. In the Chooser window, click the Portable StyleWriter icon, then click the "On" button next to Background Printing.)
  If you do not have at least 2 megabytes of RAM installed in your computer, you should leave the "Background Printing" selection in the Chooser set to "Off."

- PowerBook 100
  If you use the Portable StyleWriter with a PowerBook 100, you must connect it to the Printer port; the Modem port is internal on the PowerBook 100. Be sure to select the Printer serial port in the Chooser after you install the printer driver.

- PowerBook Duo

If you are using a PowerBook Duo computer which is NOT docked while printing to the Portable StyleWriter, the modem port must be selected and AppleTalk must be set to "inactive" in the Chooser. If you have an internal modem installed, you should also verify that the Portable Control Panel (accessible from the Apple menu) has the port set to "external."

NOTE:
Later versions of the software show this option in the PowerBook Control Panel or in the PowerBook Setup control panel. This choice is installed by the Express Modem or Global village modem software. It probably will not be available when using an external modem.

- General
  Close the Chooser after making any printer set-up changes

Article Change History:
09 May 1996 - Note about PowerBook Setup control panel.

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Tech Info Library Article Number:12459

Tech Info Library

ARA and Remote Only In Network Control Panel (6/93)

Revised: 6/25/93
Security: Everyone

ARA and Remote Only In Network Control Panel (6/93)

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Article Created: 25 June 1993

TOPIC ----------

Within AppleTalk Remote Access, the Remote Only option within the Network Control Panel causes a lot of confusion. The discussion below will hopefully serve to clear up some of that confusion.

DISCUSSION ----------

The Remote Only option directs AppleTalk traffic ONLY to the serial port in use by ARA. The other network options allow AppleTalk traffic to go to both the ARA serial port and the network connection defined in the Network Control Panel.

The Remote Only option is needed in two situations. The first, and most likely, is the case where an individual has an ImageWriter, or other local serial device, connected to the Printer serial port and has no networking card installed. When using ARA the Remote Only option must be selected since the default networking option is LocalTalk Built-In. If AppleTalk is made active and the Remote Only option is not selected, the serial device plugged into the Printer port will receive the AppleTalk data packets. The only possible way to use that serial device when using ARA is to use the Remote Only option. If another network option is selected, such as Token Ring, then the AppleTalk traffic is directed to the Token Ring card and the ARA serial port, not the Printer port.

The second situation occurs when a network service on the remote network has the same network identity as a service on the local network. In this case the remote service is not seen, only the local one. In order to see the remote service the Remote Only option must be selected. This will hide all the local network services and allow the ARA client to see everything on the remote network.

Note: It is not possible to change a network connection while using ARA. The ARA session must be disconnected, the network connection changed, and the ARA session re-established.

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Tech Info Library Article Number:12460

Tech Info Library

Portable StyleWriter and StyleWriter II: Differences (6/93)

Revised: 6/25/93
Security: Everyone

Portable StyleWriter and StyleWriter II: Differences (6/93)

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Article Created: 28 June 1993

TOPIC ----------

What are the differences between a Portable StyleWriter, and a StyleWriter II?

DISCUSSION ----------

Here are the primary differences between the Portable StyleWriter, and the StyleWriter II printer.

	Portable StyleWriter	StyleWriter II
Memory	N/A	128K
Speed:		
• Best Mode	3/4 page per minute	Up to 1 page/minute
• Faster/Draft Mode	1.5 pages/minute	Up to 2 pages/minute
Print Quality:		
• Best Mode	360 dpi (dots per inch)	360 dpi
• Faster/Draft Mode	180 dpi (dots per inch)	80 dpi
Grayscale Printing	N/A	Over 130 grayscales with GrayShare software
Paper Capacity	Manual paper feed	100 sheet multipurpose tray, 15 envelopes
Printer Sharing	N/A	Yes, with GrayShare software

Construction	Optional 50 sheet feeder	Sheet feeder and print mechanism in one unit
Interface	RS-422 serial port converted to parallel with the supplied cable	High-speed serial RS-422
Weight	4.5 pounds	6.6 pounds
Portable	Yes, fits in briefcase	Fits on desktop
Battery	Nickel-cadmium rechargeable	N/A

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Tech Info Library Article Number:12461

Tech Info Library

PowerBook Duo Express Modem: Battery Conservation Setting 6/93

Revised: 7/7/94
Security: Everyone

PowerBook Duo Express Modem: Battery Conservation Setting 6/93

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Article Created: 29 June 1993

TOPIC ----------

I am using an Express Modem in my PowerBook Duo. Does the Battery Conservation slider in the PowerBook control panel need to be at Maximum Performance in order to use the Express Modem successfully?

I would like to run with the Battery Conservation slider set to Maximum Conservation, since I am constantly running off of the battery. I have Express Modem software version 1.0.4. When I try to send a fax document, only about half the page gets faxed. When I try to call using Appletalk Remote Access, the modem will not even connect.

DISCUSSION ----------

When your PowerBook Duo is transmitting or receiving data or faxes, make sure that it does not go to sleep. You might want to select "Don't sleep when plugged in" from the Options dialog box in the PowerBook control panel.

When the Express Modem is in use (offhook, online, or when sending or receiving a fax), the PowerBook Duo should not use processor cycling or go into automatic sleep, regardless of the Battery Conservation options set in the PowerBook control panel. The Express Modem should work fine regardless of whether you select Maximum Performance or Maximum Conservation.

When sending or receiving a fax, using AppleTalk Remote Access, or a communications program, you should not close the Duo lid or select "Sleep" from the Finder, thus forcing sleep, as the call will be lost. Unfortunately, some third-party utilities for PowerBook power management may access the Power Manager on their own and may force sleep automatically, without regard to Express Modem activity. Try using the Express Modem with these utilities disabled if you suspect they may be causing the problem.

Support Information Services

..TIL12463-PowerBook_Duo_Express_Modem-Battery_Conservation_Setting_6-93.pdf

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Tech Info Library Article Number:12463

Tech Info Library

SNA•ps 3270 and Adjustable Keyboard (5/93)

Revised: 6/28/93
Security: Everyone

SNA•ps 3270 and Adjustable Keyboard (5/93)

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Article Created: 3 May 1993

TOPIC ----------

I'm trying to use an Apple Adjustable Keyboard with SNA•ps 3270 1.1.1. I get a dialog which more or less says "SNA•ps doesn't recognize your keyboard, so we'll use the regular Apple Keyboard layout". The SNA•ps 3270 1.1.1 release notes I got from AppleLink lists "Resources were added for new Norsi keyboard". However, the Read Me file on the 1.1.1 Install disk omits this entry.

I really don't want to have to use another keyboard, so is there any hope of resolution of this problem in some kind of timely manner?

DISCUSSION ----------

We tested this on my Quadra 950 and we got the same message the you received. SNA•ps 3270 1.1.1 and 1.1.2 worked fine with the Adjustable keyboard, that is, the standard keyboard only displays the basic keys not the function keys or the page up, down, and so on. You can enter data via the main keyboard without trouble. The function keys (located on a separate portion of the overall "keyboard community") did function as the default IBM function keys. The only thing that we noticed is the SNA•ps 3270 keyboard remapping features for the function keys, and others is not possible with the Adjustable keyboard.

The Internal Release notes which the you received stated that the support was added for the Norsi or the Adjustable keyboard. The fixes were at the time of the SNA•ps 1.1.1 engineering release (October 30,1992), was to be sure SNA•ps 3270 did not bomb when the Adjustable keyboard was used by the SNA•ps 3270 client Macintosh. The Adjustable keyboard was not final when SNA•ps 3270 1.1.1 was final. The SNA•ps 3270 1.1.1 product still has an outstanding reported bug for full support of the Adjustable Keyboard. The full support for this keyboard includes supporting several ADB (Apple

Desktop Bus) devices which collectively make up a keyboard. The main keyboard reports an ADB address, the function keyboard reports another ADB address and the sound controls appear to report a third. The standard keyboard remapping logic in just about any emulation product (DEC, HP, IBM, etc.) has had some problems with the Adjustable keyboard.

So in summary, SNA•ps 3270 1.1.1 and 1.1.2 behaves pleasantly with the Adjustable keyboard. SNA•ps 3270 1.1.1 and 1.1.2 will function with the Adjustable keyboard and the function keys will be defined as the mapping default makes them.

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Tech Info Library Article Number:12466

Tech Info Library

Performa and Macintosh: CD Set Limits and Workarounds (6/93)

Revised: 7/2/93
Security: Everyone

Performa and Macintosh: CD Set Limits and Workarounds (6/93)

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Article Created: 24 June 1993

TOPIC ----------

Some of the CDs I received in the wallet pack with my Performa don't work. What can I do to get them to work?

DISCUSSION ----------

There are two explanations for various CDs not functioning as expected:

- 32-Bit Compatibility
  Turn off 32-bit addressing (in the Memory control panel) to eliminate this possibility.

- HyperCard May Need More RAM
  At least one of the CDs includes HyperCard 2.1, with RAM settings of 750K minimum and 3500K preferred. Increase the RAM allocated to HyperCard (using the Get Info dialog box from the Finder) to work around this.

There are two sets of CDs available -- an 8-pack and a 10-pack -- based on different reseller bundles. This article refers only to the 8-pack; however, the same concepts should apply to the 10-pack.

Below is a list of the CDs with reported problems and workarounds (please note that the solutions and workaround apply only to the sections mentioned here; other parts of the CDs weren't tested):

- Chronicles: opening Chronicle QT stack in 32-bit mode will freeze the screen. This appears to work fine in 24-bit mode.

- Compton's: Appears to run fine in 32-bit mode, but the Installer for loading software onto the start-up volume won't run.

- Macintosh Demo Games: This uses an altered version of At Ease. The demo for Anatomist won't run in 32-bit mode; it's okay in 24-bit mode. The demo from Annabel's Dreams of Ancient Egypt also won't run in 32-bit mode, but is fine in 24-bit mode.

- Mozart: Some problems getting sound to function normally. Try using the version of HyperCard (with audio) from the CD. The watch cursor stays on screen for a long time until clicked (it doesn't return to a normal cursor in HyperCard). This CD does work in 32-bit mode.

- Discis: No problems with Cinderella.

- Kodak Photo CD - Photo Sampler: This requires Foreign File Access in the System Folder; otherwise, it asks to initialize the disc. It works fine in 32-bit mode.

- Alice to Ocean: No problems reported.

- Apple CD-ROM Titles Sampler: Problems starting the demo "SVINGA" -- if you click, it flips back to the Home stack. Use "option –>" to start. HyperCard 2.1 on this CD is set to 750K minimum and 3500K preferred. If you have your own version of HyperCard on the hard drive and it's set to use less RAM, many HyperCard-related problems could result.

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Tech Info Library Article Number:12467

Tech Info Library

Performa Monitor: Usable Screen Less Than 14 Inches (1/94)

Revised: 1/28/94
Security: Everyone

Performa Monitor: Usable Screen Less Than 14 Inches (1/94)

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Article Created: 25 June 1993
Article Reviewed/Updated: 24 January 1994

TOPIC ----------

I have a Performa 450 with a 14-inch monitor. However, the actual screen space used is much less than the size of the monitor. Is there anything I can do to reduce the black border around the screen and get a bigger image?

DISCUSSION ----------

It's normal for your Performa Plus Display to have a black border around the displayed picture. If you look at any Apple Macintosh monitor you'll see this. The closer an image gets to the edges of a display, the lower its quality. The black border will vary in size, however the image size should be 9.5" x 7" (240 mm x 180mm +/-3mm.)

Depending on the model number of your Performa display, you can adjust the screen picture. Please refer to the table to determine your Monitor model number and whether that monitor has adjustment knobs

Monitor	Model Number	Adjustment Knobs
Performa Plus Display	M9102LL/D	NO
Performa Plus Display	M9102LL/B	YES
Performa Display	M9101LL/D	NO
Performa Display	M9102LL/A	YES

Adjusting the Picture Size Using Adjustment Knobs

On the front of your Performa Plus Display are two adjustment knobs to change the vertical and horizontal position of the picture. On the back of the monitor, there are two knobs that allow you to distort and stretch the picture to reduce the black border. The knobs don't give you more screen

area to work with; they just stretch out what is already on the screen. They might not allow you to remove the border completely.

Article Change History:
24 January 1994 - Clarified information.

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:12469

Tech Info Library

LW IIf and IIg: Printing from a DOS computer (11/95)

Revised: 11/2/95
Security: Everyone

LW IIf and IIg: Printing from a DOS computer (11/95)

==========

Article Created: 25 June 1993
Article Reviewed/Updated: 2 November 1995

TOPIC ----------

Can you explain how to print from a DOS computer to a LaserWriter IIf or IIg?

DISCUSSION ----------

Follow these steps:

1) Create the following mode statements to the auto exec.bat:

```
mode com1:9600,n,8,1

mode lpt1:=com1:
```

These will redirect the print command to com1.

2) Verify that the thumbwheel (printer select switch) is set to either 0 or 5, this assumes you are going to print PostScript to the LaserWriter IIf. If you are going to print HP emulation, then set the thumbwheel to 1.

3) Verify the proper cable is being used. Here are the pinouts for two different cables:

Begin_Table

IBM RS-232 Serial (DB-25 Female Connector)			LaserWriter (DB-25 Male Connector)	
(SG)	1	----------	1	(SG)
(TXD)	2	----------	3	(RXD)
(RXD)	3	----------	2	(TXD)
(RTS)	4	----------	5	(CTS)
(CTS)	5	----------	4	(RTS)

```
      (DSR)  6      ---------------------------------    8&20(DCD/DTR)
      (GND)  7      ---------------------------------    7   (GND)
      (DCD/DTR)8&20 ---------------------------------    6   (DSR)


       IBM RS-232 Serial              LaserWriter
   (DB-9 Female Connector)      (DB-25 Male Connector)

          (CD)  1   --------------   4  (RTS)
          (RXD) 2   --------------   2  (TXD)
          (TXD) 3   --------------   3  (RXD)
          (DTR) 4   --------------   5&6(CTS/DSR)
          (SG)  5   --------------   7  (SG)
    (DSR/CTS)6&8    --------------   20 (DTR)
          (RTS) 7   --------------   8  (DCD)
          (RI)  9   --------------   not connected
```

End_Table

At this point, the printer is properly configured, has the proper cable, and the PC has the appropriate mode statements to direct printing to the serial port.

Try printing a directory by copying the contents of the directory to lpt1. You can't do a printscreen because "lpt1" is not a PostScript command and the printer will not understand it.

Article Change History:
02 Nov 1995 - Updated pinout table, reformatted for the World Wide Web.

Support Information Services

Copyright 1993-95, Apple Computer, Inc

Tech Info Library Article Number:12470

Tech Info Library

MacX Does Not Support LAT (4/93)

Revised: 6/28/93
Security: Everyone

MacX Does Not Support LAT (4/93)

==========

Article Created: 7 April 1993

TOPIC ----------

Does MacX support the LAT tool? I was told by someone that it did, but I couldn't get it to work. If so, what are the tested configurations?

DISCUSSION ----------

Currently there is no support for LAT in MacX. The only support included is for the AppleTalk/DECNet Tool, DECNet Tool, and MacTCP Tool.

At this time there are no plans to add support for LAT in MacX.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12472

Tech Info Library

PowerBook, One Serial Port, Express Modem, and ARA (5/96)

Revised: 5/8/96
Security: Everyone

PowerBook, One Serial Port, Express Modem, and ARA (5/96)

==========

Article Created: 12 March 1993
Article Reviewed/Updated: 8 May 1996

TOPIC ----------

Users cannot get Apple Remote Access (ARA) to dial out on PowerBook (Duo) 200 and 2300 series when they are _not_ in a dock. They might encounter similar problems with PowerBook 500 series computers which cannot be put in a dock.

DISCUSSION ----------

Macintosh PowerBook computers with only one serial port, except the PowerBook 100 and 150*, require some additional steps when using ARA and/or AppleTalk. Confusion stems from the fact that some PowerBook computers (for example the PowerBook 200, 2300, and 500 series) a single, 'split' serial port. This port is mapped as a modem port, but also handles AppleTalk like a printer port would.

This one serial port is mapped on the logic board as a modem port (that is the default). Most software developers who write software that addresses and uses the Macintosh serial port assume there are two serial ports in all Macintosh computers, not just one.

To successfully use a PowerBook computer that has a split serial port with an internal modem and ARA you need to make sure the following conditions are met:

1) When using an internal modem such as the Apple Express Modem, Express Modem II, or Global Village PowerPort Mercury modem with ARA:

• AppleTalk must be enabled in the Chooser. This may require restarting the computer.

• The Network control panel must be set to LocalTalk, NOT to the ARA icon for "Remote Only."

• The PowerBook Setup control panel changes appearance when the Express Modem is installed, and gives an option for "Internal Modem." Make sure this is

selected.

On System 7.1.1 and higher and Duo 250 and higher this second option applies.

• The PowerBook Setup control panel changes appearance when the Express Modem is installed, and gives an option for "Normal." Make sure this is selected.

Note, if the Global Village PowerPort 2.5.2 or later software is installed, the option "Normal" can be found in the PowerPort control panel by selecting the Configure Port button.

• In the Express Modem control panel, the modem must be set to "on."

• When the ARA software is opened and the computer is docked, it indicates options for communication through the modem port, the printer port, or the internal modem. When the machine is not docked, the options become two: printer/modem and internal. Make sure it is set to "internal."

2) When using an EXTERNAL modem for ARA through the computer's single serial port:

• AppleTalk must be enabled in the Chooser.

• The Network control panel must be set to "Remote Only," NOT "LocalTalk."

• If an Express Modem is installed, make sure the Express Modem control panel is set to "off."

• When the ARA software is opened, make sure it is set to use the combination printer/modem serial port and not the internal modem.

* Note: This does not apply to the PowerBook 100 and 150 because the single serial port is not a 'split' serial port. It is mapped only as a printer port. Therefore, an internal modem would not affect its functionality.

Article Change History:
08 May 1996 - Corrected control panel reference.
21 Feb 1996 - Clarified difference with 100 and 150 serial port.
20 Feb 1996 - Removed PowerBook 150, it is not like the Duos.

Copyright 1993-96, Apple Computer, Inc.

Tech Info Library Article Number:12473

AppleShare 3.0.x: Set Up For Large Group Possibilities (6/93)

Revised: 6/29/93
Security: Everyone

AppleShare 3.0.x: Set Up For Large Group Possibilities (6/93)

==========

Article Created: 29 June 1993

TOPIC ----------

I'm going to install a network and use AppleShare 3.0.2 for file sharing. I need advice on how to create users and groups with proper security for about 40 lawyers and 10 secretaries. When a case is created, two random lawyers are assigned to it with both needing access to the case folder, as do their secretaries. No one else should have access to these files unless they are public. Each lawyer may be teamed up with another lawyer on as many as 50 ongoing cases at a time. This wouldn't be the same pairing of lawyers every time, there is a possible 39 combinations for one lawyer. There are no set groups in this scenario. They handle roughly 700 cases a year with one user belonging to 42 groups.

What is the best way to set up users & groups to accommodate this scenario?

DISCUSSION ----------

If we understand the scenario you describe correctly we recommend the following:

First of all it is essential to remember that a User and a Group are virtually interchangeable in AppleShare 3.x. This fact will give you the flexibility needed to implement a viable solution for your client.

Create a group for each lawyer and secretary pair. Even if each lawyer worked with all 10 secretaries this would still only add up to 400 groups. For each case folder assign one lawyer/secretary pair to the Owner field and the other lawyer/secretary pair to the User/Group field. Give both Owner and User/Group all privileges and set Everyone to no privileges.

At this point you have a maximum of 400 groups, only 40 if each lawyer always uses the same secretary. The case folders can now be assigned to

any combination of lawyer/secretary pairs without worrying about number of users or groups. If a special case requires more than two lawyers then a special group containing the appropriate people could be created. If you start running out of groups in that scenario then delete old groups and assign those case folders to the administrator for archiving.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12476

Control Panel Map: Istanbul Time Zone (6/93)

Revised: 6/29/93
Security: Everyone

Control Panel Map: Istanbul Time Zone (6/93)

==========

Article Created: 29 June 1993

TOPIC ----------

In the Control Panel Map, Istanbul is identified as being three hours ahead of GMT (Greenwich Mean Time.) It's only two hours ahead.

DISCUSSION ----------

According to the National Geographic World Atlas, Istanbul is two hours ahead of GMT, not three as shown in the map. This error will be passed on to software engineering.

In the meantime, there is a workaround. Find Istanbul in the Map Control Panel, select Remove City. Change the Time Zone, then select Add City.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12477

Tech Info Library

System 7.x: Personal File Sharing That Will Not Start (3/95)

Revised: 3/20/95
Security: Everyone

System 7.x: Personal File Sharing That Will Not Start (3/95)

==========

Article Created: 5 May 1993
Article Reviewed/Updated: 20 March 1995

TOPIC ----------

After turning on file sharing with the Sharing Setup control panel, the Status window says, file sharing is starting up, but never changes to, file sharing is on. User can not restart or shutdown because file sharing will not complete it startup sequence.

DISCUSSION ----------

File sharing will not startup because the invisible AppleShare PDS file is corrupt on one or more of the volumes attached to the Macintosh. Follow the steps below to erase the AppleShare PDS file so file sharing can complete the startup sequence:

Step 1
Turn file sharing off using the Sharing Setup control panel.

Step 2
Delete the Users & Groups data file in the Preferences folder.

Step 3
Restart the computer.

Step 4
Open the Sharing Setup control panel, and enter a new Owner Name, Owner Password, and Macintosh Name replacing any previous data. Be sure to use new or different names.

Step 5
Turn File Sharing on.

NOTE: If the first 5 steps above resolve your problem do not proceed any further.

Step 6
Delete the invisible AppleShare PDS file at the root of any volumes that are mounted when sharing. You can delete the PDS file with ResEdit or a third-party utility that can view invisible files. Using the utility, click and deselect the Invisible checkbox of the file to make it visible on the desktop, and then drag the AppleShare PDS file to the trash from the Finder. You need one of these utilities to delete the file.

IMPORTANT: Deleting the AppleShare PDS file removes all access privileges assigned to folders. You will need to reassign access privileges to the folders.

Step 7
Restart the computer.

Step 8
Turn file sharing on. New AppleShare PDS files will be created and file sharing status should change from "starting up" to "on" after a short period of time.

Article Change History:
20 Mar 1995 - Added more information for clarity.
06 Mar 1995 - Reviewed for accuracy and updated format.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12478

ARA: Setting the bps Rate On A Telebit QBlazer (3/93)

Revised: 6/29/93
Security: Everyone

ARA: Setting the bps Rate On A Telebit QBlazer (3/93)

==========

Article Created: 3 March 1993

TOPIC ----------

When trying to connect to AppleTalk Remote Access (ARA) with my Telebit QBlazer, it tells me the modems cannot connect. I try to confirm that it is working by using an application like Microphone II, but all I get is garbage when trying to enter the commands. What do I do?

DISCUSSION ----------

When using different telecommunications products, the QBlazer's S51 register can be set to a different bps rate. Unfortunately just turning the modem off will not reset the modem.

To set the S51 register to a different bps rate, open a communication program such as Microphone II or SmartCom and follow the directions below:

1) If receiving garbage when typing to the application, try the different modem speeds allowed. In Microphone II, this would be in the Settings menu.

2) Once the garbage disappears and the application and modem are talking to one another, type in ats51=n

where n = the desired number listed below:

0 = 300 bps
1 = 1200 bps
2 = 2400 bps
3 = 4800 bps
4 = 9600 bps
5 = 19200 bps
6 = 38400 bps

252 = Automatic speed selection

3) Type atdt to obtain a dial tone. This will confirm the modem and application are talking at the same level.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12479

Tech Info Library

Apple Workgroup Server 95: How To Rebuild Desktop (6/96)

Revised: 6/10/96
Security: Everyone

Apple Workgroup Server 95: How To Rebuild Desktop (6/96)

==========

Article Created: 7 June 1993
Article Reviewed/Updated: 10 June 1996

TOPIC ----------

How do you rebuild the Finder desktop under A/UX 3.01 on the Apple Workgroup Server (AWS) 95?

DISCUSSION ----------

Ideally, the desktop could be rebuilt by holding down CMD-OPTION keys. The problem with this approach is the timing has to be very precise for it to work. To do this, hold this keys down immediately after the empty menu bar is drawn on the screen when you are starting a session. Another way to make sure the timing is correct would be to logout and wait for the empty menu bar to appear and then hold the keys down until the dialog asking "Are you sure you want to rebuild..." appears. The rebuild process could take a long time, depending on the size of the root volume and how many file systems are mounted.

If you are having problems with the above approach, and if you are using the AWS 95, and have autologin to root, and root is using the default system folder, follow this procedure.

1) Restart the system
2) When the "cancel" button appears after the A/UX launch, click it.
3) You will end up at a "startup#" prompt.
4) Type the following:

```
cd "/mac/sys/System Folder"
mv "Desktop DB" "Desktop DB.old"
mv "Desktop DF" "Desktop DF.old"
mv "%Desktop DB" "%Desktop DB.old"
mv "%Desktop DF" "%Desktop DF.old"
launch
```

You will then see A/UX startup. Again rebuilding the desktop may take some time, depending on the amount of local disk space attached.

If the problem is resolved, you can go back and remove the old/renamed files.

1) Restart the system
2) When the "cancel" button appears after the A/UX launch, click it.
3) You will end up at a "startup#" prompt.
4) Type the following:

```
cd "/mac/sys/System Folder"
rm "Desktop DB.old"
rm "Desktop DF.old"
rm "%Desktop DB.old"
rm "%Desktop DF.old"
launch
```

Article Change History:
10 Jun 1996 - Added information about how to remove renamed files.
17 Nov 1993 - Updated information for correctness.

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Tech Info Library Article Number:12480

Tech Info Library

Apple Workgroup Server 95: How To Add Volumes (6/93)

Revised: 6/29/93
Security: Everyone

Apple Workgroup Server 95: How To Add Volumes (6/93)

==========

Article Created: 7 June 1993

TOPIC ----------

How do you add AppleShare volumes to the Apple Workgroup Server (AWS) 95?

DISCUSSION ----------

To add AppleShare volumes to the AWS 95, you need to do the following:

1) Install AppleShare Pro on the AWS 95.

2) Physically install the new disk drive. Remember that for best performance, drives should be attached to a SCSI chain on the PDS card.

3) After restarting A/UX, start up the Apple HD SC Setup program located in the Applications folder on the "/" drive.

4) Select both the SCSI bus number and the SCSI id of the new drive, then click the Initialize button.

5) When done initializing the disk, click on Partition. Select "File Server Data" for the partitioning scheme. Enter the number of equal partitions you want on the disk (from 1 to 12). This will create UNIX file systems, rather than HFS file systems, which are recommended for better performance.

6) Create a mount point for each partition. This is a unique name for each partition. By default, the mount points are located under "/ Shared Data".

7) After creating a mount point for each partition, click Quit to return to the Finder.

..TIL12481-Apple_Workgroup_Server_95-How_To_Add_Volumes_6-93.pdf

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12481

Tech Info Library

AppleShare 4.0 and Pro: 3.0 Client Compatibility (6/93)

Revised: 6/29/93
Security: Everyone

AppleShare 4.0 and Pro: 3.0 Client Compatibility (6/93)

==========

Article Created: 7 June 1993

TOPIC ----------

Will AppleShare 3.0 and System 7 clients be able to use AppleShare 4.0 and AppleShare Pro servers without new workstation software?

DISCUSSION ----------

Yes, however, users will not be able to receive the full range of server messages nor be able to use the extended password security features of AppleShare Pro, unless they specifically upgrade their AppleShare workstation software.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12482

Tech Info Library

Apple Workgroup Server 95: How Mount Points Work (6/93)

Revised: 6/29/93
Security: Everyone

Apple Workgroup Server 95: How Mount Points Work (6/93)

==========

Article Created: 7 June 1993

TOPIC ----------

How do "mount points" work on the Apple Workgroup Server (AWS) 95?

DISCUSSION ----------

UNIX file systems are hierarchical with only one root, the startup volume. If there is more than one physical disk (or partition) all volumes must be connected to that startup volume. These connections are made with "mount points". The administrator chooses a folder on the startup volume for each additional volume to connect to (by default, this is "/ Shared Data"). The additional volume then appears as a folder within the chosen folder (this is the "mount point").

Since AppleShare Pro runs atop the A/UX file system, there is one special consideration when sharing. Folders with mount points in them can not be shared. This includes the A/UX startup volume (which has the Macintosh startup volume mount point in it).

If all mount points are created within the " Shared Data" folder, then you would normally share each folder within the " Shared Data" folder within AppleShare Administrator.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12483

Tech Info Library

AWS 95: Sharing Other UNIX Data Over AppleShare Pro (4/95)

Revised: 4/19/95
Security: Everyone

AWS 95: Sharing Other UNIX Data Over AppleShare Pro (4/95)

==========

Article Created: 7 June 1993
Article Reviewed/Updated: 19 April 1995

TOPIC -----

Can an Apple Workgroup Server (AWS) 95 be used to share data on other UNIX systems with Mac OS systems?

DISCUSSION -----

Yes, the AWS 95 can NFS mount the data from the other UNIX systems, and then the NFS mount points can be shared with AppleShare Pro. However, this is not a recommended configuration. The server software was optimized for performance using AppleShare services only.

Article Change History:
19 Apr 1995 - Made correction of typographical errors.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12484

Tech Info Library

AWS 95: Comparability of Users & Groups Files of OS (6/93)

Revised: 6/29/93
Security: Everyone

AWS 95: Comparability of Users & Groups Files of OS (6/93)

==========

Article Created: 7 June 1993

TOPIC ----------

Is there any connection between A/UX users and groups and AppleShare Pro users and groups files?

DISCUSSION ----------

No. This information is contained in separate data files. AppleShare Pro only knows about users and groups defined within the Users and Groups Data file, located in the Preferences folder in the System Folder (which will normally be located in /mac/sys/System Folder). For UNIX-style logins in A/UX (telnet, ftp, and so on) only knows about users defined in the /etc/passwd file.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12485

Tech Info Library

AppleShare Pro: Access Privileges Stored (6/93)

Revised: 6/29/93
Security: Everyone

AppleShare Pro: Access Privileges Stored (6/93)

==========

Article Created: 7 June 1993

TOPIC --

Where are the access privileges stored for AppleShare Pro?

DISCUSSION ---

The access privileges for AppleShare Pro are stored in the file "/Appleshare PDS"; this file should never be moved, renamed, or modified. These access privileges are different from the UNIX access privileges.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12486

Tech Info Library

AppleShare 3.0, 4.0, and Pro: Technical Differences (4/95)

Revised: 4/18/95
Security: Everyone

AppleShare 3.0, 4.0, and Pro: Technical Differences (4/95)

==========

Article Created: 7 June 1993
Article Reviewed/Updated: 18 April 1995

TOPIC ----------

What are the technical differences between AppleShare 3.0, 4.0, and Pro?

DISCUSSION ----------

AppleShare 4.0 and Pro new features from AppleShare 3.0

• Read Ahead. When a client makes a request of the server that requires reading, the server will read more than the client requested, or "read ahead". The server makes an assumption of what the next logical section of disk should be and reads it into RAM. In general, the client will ask for that section in its next network request and receive an immediate response because the data is already in RAM.

• Write Behind. After the server receives data from the network and stores it to RAM, it informs the client of write completion even though the actual write to disk has not been done at the time the server sent the notification. In theory, writes are lagging behind the messages. Because of the difference in speed between networks and high speed SCSI devices, by the time the user gets the message the write may have actually completed.

• File, directory, and icon caching. AppleShare 4.0 and Pro allow for the use of main memory as a level 3 cache.

• Number of Users. AppleShare 4.0 and Pro support an increased number of users.

• Apple II network booting is not supported.

AppleShare 4.0 and AppleShare Pro differ in the following

• Operating System: AppleShare 4.0 runs under Mac OS, AppleShare Pro runs under

A/UX 3.01.

• Number of Users: AppleShare 4.0 supports a maximum of 150 simultaneous users; AppleShare Pro supports a maximum of 200 simultaneous users.

• Serialization: Each copy of AppleShare 4.0 will have its own unique serial number assigned at manufacturing time.

• Write behind: Since A/UX 3.01 has intelligent I/O, whenever multiple writes are pending the file system will spool several write requests, organize them in disk order, position the disk head, and then SCSI burst them all onto the disk in one pass. This makes AppleShare Pro the fastest server under heavy load and multiple write conditions.

Article Change History:
18 Apr 1995 - Made correction of typographical errors.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12487

Tech Info Library

Energy Star: LaserWriter Sleep Setting (6/93)

Revised: 6/30/93
Security: Everyone

Energy Star: LaserWriter Sleep Setting (6/93)

==========

Article Created: 30 June 1993

TOPIC ----------

I have two questions about the Energy Star software for the LaserWriter Pro.

1) Is the Energy Star sleep setting information saved in PRAM, or is it lost when the printer is turned off (as opposed to restarting it)?

2) After downloading the "30 minute sleep" file to my LaserWriter Pro 630, I viewed the log file to check that the sleep timer had been set to 1/2 hour. I restarted the printer but I didn't notice anything different. Should I?

DISCUSSION ----------

1) The "sleep" setting does in fact get saved in the LaserWriter Pro's NVRAM (Non Volatile RAM), so it is maintained across power cycles. The information gets saved to NVRAM when the printer is restarted or shut down. One important thing to remember is that the new sleep setting doesn't take effect immediately. It takes effect after the printer has been power cycled.

2) You are correct. There seems to be no visual difference when the printer goes to “sleep.” Checking the log file (as you have done) is the only way to verify that the sleep setting has taken effect. It appears that the majority of the energy savings are obtained through the fuser assembly by not having to maintain specific temperatures required during printing.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12491

Tech Info Library

AppleTalk Remote Access Does Not Support Switch 56 (6/93)

Revised: 6/30/93
Security: Everyone

AppleTalk Remote Access Does Not Support Switch 56 (6/93)

==========

Article Created: 30 June 1993

TOPIC ----------

Does AppleTalk Remote Access (ARA) support Switched 56, and if so, what is needed?

DISCUSSION ----------

No. Switched 56 is a synchronous 56Kbps dial-up data link. ARA is an asynchronous modem dial-up data link.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12492

Tech Info Library

LW IIg and Pro 630: LocalTalk and EtherTalk Printer Names 6/93

Revised: 7/6/93
Security: Everyone

LW IIg and Pro 630: LocalTalk and EtherTalk Printer Names 6/93

==========

Article Created: 1 July 1993

TOPIC --

Is the LaserWriter IIg, capable of storing a separate printer name for LocalTalk and EtherTalk?

DISCUSSION --

The LaserWriter IIg, as well as the LaserWriter Pro 630 (which also has an EtherTalk port), has separate areas in NVRAM (non-volatile memory) to store a LocalTalk and an EtherTalk printer name. This functionality is provided since these printers can have all of their ports connected to simultaneously. Thus, one could assign a different name for the printer on a LocalTalk network, and on a EtherTalk network by using the LaserWriter Utility from Macintoshes on the respective networks.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12493

Tech Info Library

AWS 95 - A/UX: Remove File with 8-Bit, Option Characters (5/95)

Revised: 5/11/95
Security: Everyone

AWS 95 - A/UX: Remove File with 8-Bit, Option Characters (5/95)

==========

Article Created: 30 June 1993
Article Reviewed/Updated: 11 May 1995

TOPIC ----------

I have special Macintosh characters in my file names on my Apple Workgroup Server (AWS) 95 Disk, such as "∑rich".

When I try to remove them from the command shell by the command:

rm ∑rich

OR

rm "∑rich"

I am prompted, "Use 'exit' to leave csh". How can I remove these files from the command shell or startup shell?

DISCUSSION ----------

You can create, copy, or rename file names with a special character -- such as the trademark character -- under the A/UX 3.x Finder. Under CommandShell running the default shell, csh, you cannot EXPLICITLY specify the file name with a special character on the command line since this special character cannot be recognized by the CommandShell. Hence, you get the "Use exit to leave csh" message.

Additionally, the option 8, "•" is usually translated into a period in the CommandShell environment, but with the environment variable TBSEEDOTS=1 set in A/UX 3.1.1, this character is translated to "," in the CommandShell environment. If the usual delete commands "rm" or "rmdir" are used to remove one of these files, the CommandShell may report that the file with these characters is nonexistent, even though you can see it both from the Finder and by using the "ls" command in the command shell.

Here is how to remove eight bit characters like Δ, ¥, •, œ, and ø in a file's name under AWS 95 A/UX CommandShell or A/UX Startup Shell.

Under A/UX CommandShell

Option 1

No matter which CommandShell you are using, you can do:

```
ls -li     # To list all files in a directory, and find the inode number
.          # that the 8-bit character file name you are going to delete.

find . -inum inode-number(s) -exec rm {} \;  # This will remove all files
.                                            # with the correspondent
.                                            # inode.
```

NOTE: The inode-numbers(s) are the inode numbers you found with 'ls -li', for example remove files with inode numbers 100, 120, 140, and 155. Below is an example of the command to remove files with inode numbers 100, 120, 140, and 155.

```
find . -inum 100 120 140 155 -exec rm {} \;
```

Option 2

Under Korn Shell (ksh), you can explicitly remove that file, for example, try to remove the ΩabcΔ file.

```
% ls -FC
--> ΩabcΔ
$ ksh
$ rm *abc*
```

or

```
$ rm ΩabcΔ
```

If the file name contains space(s), you may use single quotes to enclose the name. Below is an example:

```
$ rm 'Ω a b cΔ'
```

Under A/UX Startup Shell

Sometime it may necessary to go into the Startup Shell to remove or move files, if the system crashes as a result of a eight bit character file name in the System Folder, and these files need to be removed or moved to some other directory. To get into the Startup Shell, press Command-"." (period) to stop the A/UX start up process while A/UX Startup is launching; you will then get to the

"startup#" prompt. Since the 'find' command is not available in A/UX Startup Shell, use the 'rm -ir' command, and answer no to all the files in the directory except the offending file.

```
startup# cd to-a-directory
startup# rm -ir .
```

NOTE: There is a space and period following the r.

WARNING: This command does a recursive delete of the current directory asking for permission for every file. DO NOT FORGET THE "-i" OPTION because the -r option alone recursively deletes the entire contents of the specified directory, and the directory itself.

Article Change History:
11 May 1995 - Updated article and changed title.

Support Information Services

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Tech Info Library Article Number:12495

Tech Info Library

Macintosh: Non-English Characters (6/93)

Revised: 7/2/93
Security: Everyone

Macintosh: Non-English Characters (6/93)

==========

Article Created: 25 June 1993

TOPIC --

I am trying to add an accent to the word resume. I cannot find a key on the keyboard that will allow me to add the accent mark.

DISCUSSION --

To type a character with a diacritical mark (such as an acute accent or an umlaut), you press an Option key with a specific letter key, then you type the character. Example: type r,e,s,u,m,option-e,e. This will result in resumé appearing on the screen.

DIACRITICAL MARK	KEY COMBINATION
Grave accent (`)	Option-`, then type the character
Acute accent (´)	Option-e, then type the character
Circumflex (^)	Option-i, then type the character
Tilde (~)	Option-n, then type the character
Umlaut (¨)	Option-u, then type the character
The letter c with a cedilla (ç)	Option-c

If the character appears after the diacritical mark (rather than with it), then the marked character is not available in the font you are using.

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Tech Info Library Article Number:12496

Tech Info Library

SCSI Probe: Not Responding After Adding SCSI Drive (6/93)

Revised: 7/1/93
Security: Everyone

SCSI Probe: Not Responding After Adding SCSI Drive (6/93)

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Article Created: 1 July 1993

TOPIC ----------

When I try to run SCSI Probe, I briefly get the wristwatch and the desktop blinks but no SCSI device table comes up. This happened after I added another SCSI hard disk. Before that everything worked fine.

DISCUSSION ----------

You probably have conflicting SCSI device numbers. Check that every SCSI device has a unique number and that none of the external devices have number 0 or 7, which are reserved for the internal hard disk and the Macintosh itself, respectively. Typically, there is a rotary dial on SCSI devices for setting the device number.

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Tech Info Library Article Number:12497

Tech Info Library

Improve Performance of SNA•ps 5250 & DAL For AS/400 (7/93)

Revised: 7/7/93
Security: Everyone

Improve Performance of SNA•ps 5250 & DAL For AS/400 (7/93)

==========

Article Created: 2 July 1993

TOPIC

This article covers two items which can be done to the configuration of an AS/400 which will improve the performance of SNA•ps 5250 and DAL For The AS/400.

DISCUSSION

AS/400 Process Overview

To understand these configuration changes, it is helpful to review how these products are connected externally and internally with the AS/400. Both SNA•ps 5250 and DAL use APPC sessions which are Prebound-Contention Winners that are provided through a SNA•ps Gateway connection. The physical connection to the AS/400 is via a Token Ring or SDLC line attachment. Since this is an APPC connection and the SNA•ps gateway is in a Peer-to-Peer relationship, the Macintosh client applications make a call to a transaction program which is available on the AS/400. SNA•ps 5250 calls the Display-Station Passthru program while DAL for the AS/400 calls the DALSERVER.

The AS/400 is divided up into subsystems which receive and manage work for the system and users. The major subsystems are QBATCH, QINTER and QCMN. QBATCH manages all batch processing jobs running in the AS/400. The QINTER subsystem is used by all interactive jobs such as terminal emulation and print emulation. When SNA•ps 5250 is logged onto the AS/400, an interactive job is running in the QINTER subsystem. The QCMN subsystem is used by the APPC connections to the AS/400. These include DAL for the AS/400, SNA•ps 5250, and PC Support (for IBM PCs). Any client application which makes a program call via an APPC link, has to first be managed by QCMN and have a job assigned to the process.

When SNA•ps 5250 requests the Display Station Passthru request to the AS/400, QCMN deals with the request. Once the user logs on the AS/400, a second job is started in the QINTER subsystem which manages that part of the user process. So with SNA•ps 5250, there are two AS/400 jobs running, one in QCMN for APPC and one in QINTER for the interactive terminal process.

When DAL for the AS/400 requests a connection to the AS/400, a call to the DALSERVER is made and the QCMN subsystem manages the entire job. The DAL client user logs on to the DALSERVER using AS/400 security for validation but a DAL session is always an APPC session on the AS/400 and does not create a second interactive job to support the process like SNA•ps 5250.

So you can see the QCMN subsystem is very important to the operation and performance of both DAL and SNA•ps 5250. There are two entries in the QCMN subsystem which can be altered to better optimize performance: routing entries and prestart job entries.

Based on how QCMN is configured for routing entries, a Class gets assigned to the process. A class contains parameters that control the running of a routing step. The Class defines the overall Run Priority of the job in the AS/400. The rating for Run Priority ranges from 1 (very high availability of the AS/400 resources to the job) to 99 (very low availability of AS/400 resources to the job). The Class also defines the Time Slice of the AS/400 that is assigned to the job. Time Slice is defined as a maximum amount of processor time, in milliseconds, given to the job before other jobs are given the opportunity to run. The time slice establishes the amount of time needed by the job to accomplish a meaningful amount of processing. At the end of the time slice, the job might be put in an inactive condition so that other jobs can become active. The larger that Time Slice value, the more processor time can be assigned to the job before other jobs step in. The range of Time Slice is 1000 to 10,000 milliseconds.

The Prestart job entries allow the QCMN subsystem to be prepared to run a large program, such as, the DALSERVER. A Prestart job can have a Class with a higher Run Priority than the default values given the routing entries in the Subsystem.

Changing Routing Entries Details For SNA•ps 5250

QCMN Routing Entries

If a DSPSBSD AS/400 command is done for the QCMN subsystem, the following screen appears:

```
 Subsystem description:   QCMN           Library:   QSYS
 Status:   ACTIVE


 Select one of the following:
```

1. Operational attributes
2. Pool definitions
3. Autostart job entries
4. Work station name entries
5. Work station type entries
6. Job queue entries
7. Routing entries
8. Communications entries
9. Remote location name entries
10. Prestart job entries

• Select option 7, Routing Entries:

>>>>>>>>>>>>>>>>>>>>>>>>>

Opt	Seq Nbr	Program	Library	Compare Value	Start Pos
	50	*RTGDTA		'QVPPRINT'	37
	100	*RTGDTA		'QTFDWNLD'	37
	150	*RTGDTA		'QMFRCVR'	37
	180	*RTGDTA		'QPAPAS'	37
	200	*RTGDTA		'QMFSNDR'	37
	210	*RTGDTA		'QHQTRGT'	37
	220	*RTGDTA		'QRQSRV'	37
	230	*RTGDTA		'QPCSUPP'	37
	250	*RTGDTA		'QCNPCSUP'	37
	275	*RTGDTA		'#INTER'	1
	300	*RTGDTA		'PGMEVOKE'	29
	325	*RTGDTA		'QPCSUPP'	1
	350	*RTGDTA		'RSCLIB47'	1

>>>>>>>>>>>>>>>>>>>>>>>>>

The Sequence numbers are in order of system searches for a match in the program call to the subsystem. The program call is in the form of a call record which is character start position oriented. The word PGMEVOKE always appears starting in column position 29 followed by the actual name of the program in start position 37. The routing entries shown above have two entries which are found in OS/400 V2R2M0 and important to SNA•ps and DAL. Sequence number 300 is a generalized matching entry, supplied by IBM, for any PGMEVOKE with a name that does not match any of the specific names found starting in position 37. The routing entry with sequence number 180 was added to catch the Display Station Passthru call from SNA•ps 5250 to the QCMN subsystem. Before the addition of sequence 180, the call was routed based on the entry with sequence number 300. Lets look at the differences between these two entries.

Sequence number 300:

```
 Routing entry sequence number . . . . . :   300
 Program . . . . . . . . . . . . . . . . :   *RTGDTA
   Library . . . . . . . . . . . . . . . :
```

```
 Class . . . . . :   QBATCH
   Library . . . . . :     QGPL
 Maximum active routing steps  . . . . . :   *NOMAX
 Pool identifier . . . . . :   1
 Compare value . . . . . :   'PGMEVOKE'

 Compare start position  . . . . . :   29
```

The Class for this entry is QBATCH which is IBM supplied and has a Run Priority of 50. The Time Slice is 5000 milliseconds. This is lower than any PC Support process which runs with Priority 20.

Now lets look at the Sequence number 180 entry:

```
 Routing entry sequence number . . . . . :   180
 Program . . . . . :   *RTGDTA
   Library . . . . . :
 Class . . . . . :   QWCPCSUP
   Library . . . . . :     QGPL
 Maximum active routing steps  . . . . . :   *NOMAX
 Pool identifier . . . . . :   1
 Compare value . . . . . :   'QPAPAS'

 Compare start position  . . . . . :   37
```

The Class for this entry is QWCPCSUP which is IBM supplied and has a Run Priority of 20. This is the same as that of any PC Support process and places the SNA•ps 5250 workstation function at the same performance threshold as PC Support. The Time Slice is 500 milliseconds which is adequate for interactive sessions like SNA•ps 5250.

If the SNA•ps 5250 program call is made to a standard set of entries in QCMN, the results would be to use the QBATCH Class which would perform slower than a PC Support WorkStation Function emulation.

If the user logs on to the AS/400, then a job starts in the Interactive Subsystem or QINTER. All jobs managed by the QINTER subsystem use the QINTER Class. This Class has a Run Priority of 20 and a Time Slice of 2000 milliseconds. From this we can see that a SNA•ps 5250 connection will be running with priority 20 in the QINTER subsystem but then have to wait, on a busy machine, for time to complete the data transfer through the QCMN subsystem since it has a priority of 50 there. PC Support 5250 sessions do not have this delay since both jobs running on their behalf have priority of 20. (Remember 20 is better than 50.)

How to add the Routing entry to QCMN subsystem for SNA•ps 5250:

In order to configure the QCMN routing entries to improve performance on heavily loaded machines do the following steps. Log on as QSYSOPR or QSECOFR. Be sure all users on the QCMN subsystem have been warned with a broadcast message that the subsystem will be going down and all passthru sessions will be terminated. Stop the QCMN subsystem at the AS/400 console. Enter the following command on the command line:

```
ADDRTGE SBSD(QCMN) SEQNBR(180) CMPVAL(QPAPAS 37) PGM(*RTGDTA) CLS(QWCPCSUP)
```

The Sequence number has to be a number which is not currently in use by the subsystem. The compare value is the name QPAPAS which is the name of the Passthru program in the PGMEVOKE call. The class QWCPCSUP is an IBM supplied Class with Run Priority of 20. However, a new Class could be configured with a different Run Priority than 20 but this is not really necessary.

Changing Routing Entries For DAL For The AS/400

The DAL Server call is made to the routing entries of the QCMN subsystem just like the SNA•ps 5250 Passthru call. The DAL call is routed through the generalized PGMEVOKE 29 location and acquires the Class of that routing entry. The IBM default for this routing entry is QBATCH Class which has Run Priority 50. If DAL is compared with a PC Support connection (Run Priority 20 which is higher and therefore providing better service), DAL will come out slower that any PC Support driven process. One fix is to change the Class of the PGMEVOKE 29 routing entry to something with a Run Priority of 20. This may not be the best solution for the overall AS/400 since all program calls which are only qualified by PGMEVOKE will be given an interactive process Run Priority. DAL as an interactive process should be running with at least a Run Priority of 20.

Adding A Prestart Job For DAL In Subsystem QCMN

As an alternative to altering the Class of the PGMEVOKE 29 routing entry, it makes more sense to define a new Class, like DALCLS and define a Run Priority and Time Slice that makes sense. Use the CRTCLS AS/400 command and a Prompt Key and use the following as an example:

```
>>>>>>>>>>>>>>>>>>>>
```

```
                          Display Class Information
                                                          System:  APPLE SR
 Class . . . . . . . . . . . . . . . . . . . . :   DALCLS
   Library . . . . . . . . . . . . . . . . . . :     QGPL
 Run priority  . . . . . . . . . . . . . . . . :   20
 Time slice in milliseconds  . . . . . . . . . :   3000
 Eligible for purge  . . . . . . . . . . . . . :   *YES
 Default wait time in seconds  . . . . . . . . :   30
 Maximum CPU time in milliseconds  . . . . . . :   *NOMAX
 Maximum temporary storage in K bytes  . . . . :   *NOMAX
 Text  . . . . . . . . . . . . . . . . . . . . :   Class for DALServer
```

```
>>>>>>>>>>>>>>>>>>>>
```

Notice the Run Priority of 20 (more like interactive) and Time Slice of 3000 milliseconds (more like a batch process).

Next, a Prestart Job should be added to the QCMN Subsystem. Enter an

ADDPJE command on the AS/400 and the Prompt Key. The example below should be used as a template to fill in the screen:

>>>>>>>>>>>>>>>>>>>

```
                      Display Prestart Job Entry Detail
                                                        System:  APPLE SR
Subsystem description:   QCMN           Status:   ACTIVE


Program  . . . . . . . . . . . . . . . . . . . . :   DALSERVER
  Library  . . . . . . . . . . . . . . . . . . . :     DALLIB
User profile . . . . . . . . . . . . . . . . . . :   QUSER
Job  . . . . . . . . . . . . . . . . . . . . . . :   DALSERVER
Job description  . . . . . . . . . . . . . . . . :   *USRPRF
  Library  . . . . . . . . . . . . . . . . . . . :
Start jobs . . . . . . . . . . . . . . . . . . . :   *YES
Initial number of jobs . . . . . . . . . . . . . :   3
Threshold  . . . . . . . . . . . . . . . . . . . :   2
Additional number of jobs  . . . . . . . . . . . :   2
Maximum number of jobs . . . . . . . . . . . . . :   *NOMAX
Maximum number of uses . . . . . . . . . . . . . :   200
Wait for job . . . . . . . . . . . . . . . . . . :   *YES
Pool identifier  . . . . . . . . . . . . . . . . :   1
Class  . . . . . . . . . . . . . . . . . . . . . :   DALCLS
  Library  . . . . . . . . . . . . . . . . . . . :     QGPL
  Number of jobs to use class  . . . . . . . . . :     *CALC
Class  . . . . . . . . . . . . . . . . . . . . . :   *NONE
  Library  . . . . . . . . . . . . . . . . . . . :
  Number of jobs to use class  . . . . . . . . . :     *CALC
```

>>>>>>>>>>>>>>>>>>>

The most important entries on this screen are:

1) Program name - DALSERVER
2) Library Name - DALLIB is the DAL install default
3) Initial number of Jobs should be kept at the default of 3
4) The Additional number of Jobs should be kept at 2 which is the value used to determine how many additional jobs to start after the initial number are started and used.
5) Maximum number of jobs stays at *NOMAX
6) The Class should be DALCLS which is in library QGPL. This is the Class we just created for the DALSERVER and it will be used with the Prestart Job entry in Subsystem QCMN.

When the DAL process starts now, it will start faster and have a Run Priority of 20 which will place it on the same level as PC Support and Showcase VISTA, an AS/400 database query tool, which is competing with DAL.

Let's test this enhancement for DAL. If we connect a DAL client to the AS/400 and then do a WRKACTJOB on the AS/400, we see that a job has been started for the DALSERVER as a PJ (Prestart Job) in Subsystem QCMN.

```
>>>>>>>>>>>>>>>>>>>

Opt  Subsystem/Job  User        Type  CPU %  Function        Status
     QBATCH         QSYS        SBS      .0                 DEQW
     QCMN           QSYS        SBS      .0                 DEQW
       DALSERVER    QUSER       PJ       .0                 CPCW  <<<DAL
       TKNAXTC      XCOM        EVK      .0  *  -PASSTHRU    EVTW
     QCTL           QSYS        SBS      .0                 DEQW
       QSYSSCD      QPGMR       BCH      .0  PGM-QEZSCNEP    EVTW
     QINTER         QSYS        SBS      .0                 DEQW
       QPADEV02     QSECOFR     INT      .0  CMD-WRKACTJOB   RUN
     QSPL           QSYS        SBS      .0                 DEQW

>>>>>>>>>>>>>>>>>>>
```

If we work with the details for DALSERVER connection (option 5) and then display the run attributes of the Job (option 3), we see that the DALSERVER now has the Class privileges of DALCLS (RP of 20 and TS of 3000 ms):

```
>>>>>>>>>>>>>>>>>>>

Job:   DALSERVER      User:   QUSER          Number:   019163

Run priority  . . . . . . . . . . . . . . . . . :   20
Time slice in milliseconds  . . . . . . . . . . :   3000
Eligible for purge  . . . . . . . . . . . . . . :   *YES
Default wait time in seconds  . . . . . . . . . :   30
Maximum CPU time in milliseconds  . . . . . . . :   *NOMAX
  CPU time used . . . . . . . . . . . . . . . . :     5335
Maximum temporary storage in K bytes  . . . . . :   *NOMAX
  Temporary storage used  . . . . . . . . . . . :     6

>>>>>>>>>>>>>>>>>>>
```

Another DAL For AS/400 Performance Enhancement

It is possible to place the DALSERVER in AS/400 main storage and have it load more quickly at program start time and perhaps program execution time depending on the available RAM space in the selected pool. The AS/400 command is SETOBJACC (Set Object Access). The function of SETOBJACC is shown below from the AS/400 help screen on this command.

> The Set Object Access (SETOBJACC) command temporarily changes the speed of access to an object by bringing the object into a main storage pool or purging it from all main storage pools. An object can be kept main storage resident by selecting a pool for the object that has available space and does not have jobs associated with it. Repeated use of the command can cause a set of objects to be resident in a main storage pool.

The command entry screen for SETOBJACC is shown below filled in with the

default DAL values.

>>>>>>>>>>>>>>>>>>>

Set Object Access (SETOBJACC)

Type choices, press Enter.

```
 Object . . . . . . . . . . . . . > DALSERVER     Name
   Library  . . . . . . . . . . . >   DALLIB      Name, *LIBL, *USRLIBL...
 Object type  . . . . . . . . . . > *PGM          *FILE, *PGM
 Storage pool:
   Shared pool or subsystem name  > *BASE         Name, *JOB, *BASE...
   Pool identifier  . . . . . . . > 2             1-10
```

>>>>>>>>>>>>>>>>>>>

After this command has been done the following appears on line 25 of the 5250 screen:

"3K of DALSERVER brought to pool with 9K unused".

The DALSERVER is now launched by the AS/400 as quickly as possible. It is a Prestart Job in the QCMN subsystem and it is resident in a Main Storage pool. These suggestions should enhance DAL for AS/400 performance on very busy or smaller AS/400s (9402 and 9404 models).

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Tech Info Library Article Number:12498

Tech Info Library

SCSI Terminators: Use at Both Ends of SCSI Chain (7/93)

Revised: 7/2/93
Security: Everyone

SCSI Terminators: Use at Both Ends of SCSI Chain (7/93)

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Article Created: 1 July 1993

TOPIC ----------

I bought an AppleCD 300 drive to use with my Performa 450. The Apple dealer sold me a SCSI cable to connect the two and everything seems to work fine. However, the CD manual says I need a terminator connected to the CD-ROM drive. Is this true?

DISCUSSION ----------

With the proper cables, you need a terminator on the beginning of the SCSI chain, as well as one on the end. The internal hard drive is the beginning of the chain, so it's already terminated. Whatever is the last (or only) external device should be terminated. Failure to do so could possibly cause data integrity issues.

In other words, you should get a terminator for your CD-ROM drive. It may be working fine now, but at some point a CD may not mount successfully, or you may experience errors reading from the drive.

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Tech Info Library Article Number:12500

Tech Info Library

Performa: Backing Up and Restoring (7/95)

Revised: 7/11/95
Security: Everyone

Performa: Backing Up and Restoring (7/95)

==========

Article Created: 21 June 1993
Article Reviewed/Updated: 10 July 1995

TOPIC ----------

This article describes the backup and restore process on Macintosh Performa computers. Many later Performa computers come with the Performa Backup CD. Computers that include the Performa Backup CD are:

Macintosh Performa 550 (later versions)
Macintosh Performa 575, 577, 578
Macintosh Performa 630CD, 635CD, 636CD, 637CD, 638CD
Macintosh Performa 5200 series
Macintosh Performa 6110CD, 6112CD, 6115CD, 6118CD

This disc contains all the software that is pre-loaded on your hard drive including system software and third party programs. If you have this disc, it is not necessary for you to run the Apple Backup program to back up your pre-loaded software. However, you should still back up your personal files and any other software you add later.

DISCUSSION ----------

Using Apple Backup

Before you begin, make sure your computer is turned on and you are in the Finder. Follow these steps:

First, you need to buy high-density 3.5-inch floppy disks. Because Performa computers are bundled with different software at different stores, you need to determine how many disks you need.

To find out how many disks you need:

1) Click on the Apple Backup Icon in the Launcher.

2) Click the Continue button.

3) The screen now tells you how many disks you need to perform the backup of your Performa computer. There are two numbers on the screen, one number is how many disks it takes to back up EVERYTHING on your hard drive. The other number is the number of disks it takes to back up ONLY the System folder. If you choose to backup the entire hard disk, you do not have to backup the System folder by itself.

4) Once you know how many disks you need, click the Quit button.

Steps To Backup
---

1) Click the Apple Backup icon.

2) Click the Continue button.

3) Make sure your disks are high-density floppy disks. The screen indicates how many disks are required to copy everything, or just the system information.

- If you have enough floppy disks to copy everything, click the Copy All Files button.
- If you only have enough floppy disks to copy the System information, click the Copy System Folder button. Copy everything later when you have enough disks for the job.
- If you don't have enough disks for either option, click Quit, and back up later.

4) Insert a high-density floppy disk into the disk drive. (Don't use the utilities floppy disk that came with your computer.)

5) Follow the instructions on the screen until a message tells you that you're finished. As you remove each floppy disk from the computer, the program tells you how to label it.

6) When you're finished, be sure the floppy disks are properly labeled and locked, then store them in a cool, safe place.

7) Remember to back up your hard drive at least once a month.

Additional information on performing Apple Backup is available in the Owner's Manual that came with your Macintosh Performa computer.

Using Apple Restore

If the information on your hard disk becomes lost or damaged by a crash, you can restore the information with the data on the disks you created using Apple Backup. You can also use the Performa Backup CD to restore your system software

or the third party programs that were installed on your hard drive originally.

1) Get the floppy disk labeled Utilities that came with your computer. Also make sure the disks containing the backup copy are available.

2) Make sure the Macintosh is off.

3) Insert the Utilities disk in the floppy drive, then turn on your Macintosh.

4) Locate the Restore icon on the disk.

5) Open Apple Restore by double-clicking its icon.

6) Read the information on the screen, then click Continue.

7) Insert the disk labeled 1.

8) REPLACE newer items with the older ones on your backup disks. This copies older files, but erases newer files which may be corrupted. Saving the newer files may result in another crash.

   Note: You don't want to replace personal files on your hard disk such as word processing documents. If you replace those files, and if you have changed those documents on your hard disk since your last backup, the older version of the document is placed on your hard disk. You generally want to select Keep Newer on personal files.

9) Repeat steps 7 and 8 for the other backup disks.

10) When you are finished, Apple Restore displays One of two messages, depending on the version of Apple Restore you are using:

   A) "Please insert the disk you used to start up your Macintosh". Insert the utilities disk, and it returns you to At Ease or the Finder. Once you are in either the Finder or At Ease, you need to select Restart from the Special menu.
   B) "You have successfully restored your files". Clicking the restart button, restarts your computer.

Additional information on performing Apple Restore is available in the Owner's Manual that came with your Macintosh Performa computer.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
10 Jul 1995 - Added information on Performa Backup CD

28 Sep 1994 - Reviewed for technical accuracy.
30 Jun 1994 - Added information on determining how many disks are
required to backup. Added Restore directions.

Support Information Services

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Tech Info Library Article Number:12501

Tech Info Library

LaserWriter IIg: Won't Print Tilde and Apostrophe (8/95)

Revised: 8/22/95
Security: Everyone

LaserWriter IIg: Won't Print Tilde and Apostrophe (8/95)

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Article Created: 2 July 1993
Article Reviewed/Updated: 22 August 1995

TOPIC ----------

I upgraded my LaserWriter IINT to a LaserWriter IIg. The IIg will not print any apostrophes or tildes. I can replace the printer's logic board with a IINT and it will print the tilde and apostrophe.

DISCUSSION ----------

Try removing New Century Schoolbook font and rebooting. The New Century Schoolbook font that ships with the IIf/IIg is damaged. This font will cause the tilde and apostrophe to fail to print.

Reinstall the font from the Font Pack diskettes rather than from the LaserWriter Pro or LaserWriter IIf disks.

Article Change History:
22 Aug 1995 - Made minor corrections.

Support Information Services

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Tech Info Library Article Number:12503

Tech Info Library

Macintosh PC Exchange 1.0.3: Using with Other Applications

Revised: 7/2/93
Security: Everyone

Macintosh PC Exchange 1.0.3: Using with Other Applications

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Article Created: 1 July 1993

TOPIC ----------

Macintosh PC Exchange lets you use PC-formatted floppy disks on your Macintosh. It lets you transfer files between a Macintosh and a PC-compatible computer by copying the files to and from a floppy disk. This article tells you what you need to install Macintosh PC Exchange 1.0.3, and to use it with other types of programs.

DISCUSSION ----------

What You Need to Install Macintosh PC Exchange

To use Macintosh PC Exchange, you must have Macintosh system software version 7.0 or later. Macintosh PC Exchange doesn't work with system software version 6.

If you've already installed another PC disk mounting utility in your Macintosh, be sure to remove it before installing Macintosh PC Exchange. Then drag the PC Exchange icon into the Control Panels folder of your System Folder, and restart the Macintosh.

Notes on Using Macintosh PC Exchange

If you change the name of a PC-format disk to a name that's longer than 11 characters, the disk name will be truncated when you view it on a PC-compatible computer.

If Macintosh PC Exchange encounters a problem while formatting a disk, an Updating Disk... dialog may appear. This dialog includes a progress bar that shows the status of the updating process. To stop the disk from being updated, click the Cancel button. This cancels the initialization process, and the disk ejects from the disk drive.

In the PC Exchange control panel, you can't create an assignment with a blank DOS suffix.

Sometimes a Macintosh application program can't interpret the file format of a PC document. When this happens, the document's formatting displays incorrectly, and you may see strange characters in the document. When this happens, try using another application, or translate the document into a different file format using one of the file format translation utilities available for the Macintosh (like MacLinkPlus Translators from DataViz).

Paint Programs

Some paint programs, like MacPaint and SuperPaint, save documents onto PC-format disks very slowly. To get around this, always save paint documents onto your computer's hard disk. If you like, you can then copy the document onto a PC-format floppy disk.

ClarisWorks Version 1.0v2 or Earlier

Some versions of ClarisWorks can't read or write files on PC-format disks. To open a PC document in ClarisWorks, you must first copy the document onto the hard disk. Always save ClarisWorks documents onto your hard disk. Contact Claris to obtain version 1.0v3 or later.

AutoDoubler

To use AutoDoubler with Macintosh PC Exchange, you must first open the AutoDoubler control panel and remove the X from the box labeled "Show DD on Compressed Files."

Directory Assistance II

You shouldn't use this program while the Macintosh PC Exchange control panel is open. You can turn off Directory Assistance II from the PC Exchange control panel by holding down the Option key while you click the Add or Change buttons in the control panel window. Using the PC Exchange control panel temporarily disables Directory Assistance, and closing the PC Exchange control panel automatically enables it.

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Tech Info Library Article Number:12505

Tech Info Library

LaserWriter Page Setup: Options Locks Up the Finder (7/93)

Revised: 7/2/93
Security: Everyone

LaserWriter Page Setup: Options Locks Up the Finder (7/93)

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Article Created: 1 July 1993

TOPIC ----------

My Macintosh freezes whenever I select "options" in the LaserWriter Page Set Up dialog box while in the Finder.

DISCUSSION ----------

This happens on Macintosh computers running System 7.0.x or 7.1, when the Network Extension, a third-party extension such as SAM Intercept 3.0.8, is installed, AND 32-bit addressing is turned on. With the Finder in a low-memory configuration (such as when millions of colors are being displayed and/or Finder windows are open), the additional memory required to draw the "Option..." dialog box causes the computer to freeze.

Any ONE of these workarounds will help circumvent the problem:

- Only open Page Set Up options from within an application (not in Finder).
- Turn off 32-bit addressing.
- Turn off extensions.
- Eliminate the causes for the low-memory condition in the Finder (reduce the bit depth of the colors or select "black & white" and close open windows).
- Upgrade to LaserWriter driver 7.2 or later.

We duplicated the problem with LaserWriter driver 7.1.2 (which comes with system software 7.1). However, we also heard that customers were having the problem with system 7.0 drivers (which would be LaserWriter drivers 7.0, 7.1, and 7.1.1).

This problem has been fixed with LaserWriter driver version 7.2 and later. The driver now allocates memory for the options dialog from the system heap instead of the Finder heap IF the free memory in the Finder falls below a

fixed limit (now set at 8K).

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12506

Tech Info Library

SNA•ps Release 2.0 & SNA•ps 5250 Question and Answer (7/93)

Revised: 7/7/93
Security: Everyone

SNA•ps Release 2.0 & SNA•ps 5250 Question and Answer (7/93)

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Article Created: 2 July 1993

TOPIC ----------

This article contains questions and answers about SNA•ps Release version 2.0 and SNA•ps 5250.

DISCUSSION ----------

Q: What is in SNA•ps Release 2.0?
A: The SNA•ps Release 2.0 is a release which contains a new product updated SNA•ps Gateway, SNA•ps Admin, SNA•ps Config and 3270 Manager. There is also an updated SNA•ps 3270 Application.

Q: What is new and different?
A: The new SNA•ps gateways are now sold on the basis of connected AppleTalk User clients, not the number of sessions as with the 1.1.1 release and earlier. The old session limits of 5 (personal gateway), 8, 32 and 64 have been replaced by:

- Personal Gateway (0 external clients), only internal connections in the same machine with coax, Token Ring or SDLC card.
- 10, 35 and 70 connected client limited gateways.

There is no limit to the number of sessions each gateway can support except RAM limitations on the MCP card (Token Ring or SDLC), or 5 sessions maximum for Coax card, or NCP limits in SNA.

The Personal gateway does project a Gateway name on the AppleTalk network but any remote client that tries to attach will be told with a dialog box that "no clients can attach at this time". Also, if a remote SNA•ps Admin tool tries to open a Personal gateway, it will not be

allowed, since the Personal Gateway will not accept any SNA•ps Access clients (3270 Manager, SNA•ps Admin, SNA•ps 3270, SNA•ps 5250, SNA•ps 3287 or SNA•ps Print). The SNA•ps Admin tools will only control a Personal gateway if the tool is run in the same machine as the Personal gateway.

The SNA•ps Admin version 2.0 tools can "see" and manage all versions of the gateway (1.1, 1.1.1 and 2.0). However, the 1.1.1 or 1.1 versions of SNA•ps Admin tools can "see" but cannot manage any 2.0 gateway. 1.0 version gateways, can only be managed by 1.0 SNA•ps Admin tools.

Q: What was fixed?
A: The SNA•ps 2.0 gateways now remember the SNA•ps Preferences when a gateway (most often a Personal gateway) is used in a Duo Dock and a PowerBook Duo. The situation is the Duo is loaded with SNA•ps gateway code and configured as an active gateway. The Duo is then shutdown and ejected from the Dock and restarted. The Duo does not now have a "real" NuBus so the SNA•ps Preferences are kept (in 2.0 gateways) until a "real" NuBus returns. So, if the Duo is re-inserted in a Dock with the same kind of NuBus card in the same slot, the gateway preferences are recalled and gateways will automatically restart. This does not change the SNA•ps Preferences being cleared when a NuBus MCP card is removed from the bus and the Macintosh restarted. The SNA•ps Preferences only clear if the Macintosh has a "real" NuBus and the preferences match a slot which is empty, or filled with a different NuBus card.

Q: What was not fixed or added?
A: The performance issue with high speed SDLC links (19.2Kbps and above) has been tested but was not included in Gateway 2.0. Also the LU Security feature was not included in Gateway 2.0.

Q: What bugs have been discovered?
A: The only bug that has been discovered so far is with System 6.0.X Macintosh computers running DAL client 1.3.7 and the DALnet adapters for SNA•ps APPC. If the System 6.0.X computer tries to make an APPC connection through a 2.0 gateway running APPC to an AS/400, the DALSERVER program call has the AS/400 Library name stripped by the SNA•ps 2.0 gateway. The DAL connection fails with a -4105 error "Open Gateway Connection Failed". The result is that DAL clients on a 6.0.4 system cannot access DAL for the AS/400 through 2.0 gateways. This is a very repeatable problem. DAL 1.3.7 in System 6.0.X computers work just fine to APPC VTAM and all 3270 connections. DAL 1.3.7 in System 7.0 computers work properly everywhere.

Another problem seems to be related to confusion in the SNA•ps gateway client user counting when a DAL connection is made to a host resource which is fully in use. For example, suppose a 3270 gateway has 6 display sessions and 4 printer sessions configured on a 10 user gateway. Also assume that all 6 display sessions are in use with SNA•ps 3270 sessions and no printer sessions are in use. If a DAL attachment is

attempted to the 3270 session pool, the report to the DAL client application has been "no clients available at this time" when in fact clients can still attach to the gateway for printer sessions. This is not unexpected but occasionally, the 2.0 gateway remains confused and continues to report "no clients can attach at this time" even to resources which are available (like to printer sessions). This does not consistently happen but when it does the Gateway Macintosh computer must be restarted. Stopping and starting the gateway with SNA•ps Admin will not result in a recovery from this problem.

This second problem applies to DAL in 6.0.x and 7.0 computers and with 3270 and APPC sessions. It is not solidly repeatable. It looks like a problem with DAL client or DALnet adapters and SNA•ps Access 2.0. The only way to get this to happen is to have DAL try to access an out of session resource (3270 or parallel sessions in APPC) when there is space for a client at the 2.0 gateway. A workaround is to be sure there are more 3270 and/or APPC sessions than the number of client user limits for the gateway 2.0.

Q: What is the SNA•ps 3270 1.1.2 in the 2.0 gateway package?
A: SNA•ps 1.1.1 has a "divide by zero" bug which seems to occur if the user selected "any screen size" (Model 2-5 is fine) in the connection dialog and the host LOGMODE presented an unusual combination (for example, primary screen Mod-3 and alternate screen Mod-4). A parsing error by the SNA•ps 1.1.1 code resulted in the divided by zero bug. This was the only thing fixed in SNA•ps 3270 1.1.2. A code patcher for SNA•ps 3270 1.1.1 should be available in mid-July 1993.

The workaround for this bug in SNA•ps 3270 1.1.1, is to select a specific model terminal (like 2) and then the LOGMODE with either match and BIND or not match and UNBIND. No "divide by zero" will result.

Q: What is SNA•ps 5250?
A: The SNA•ps 5250 product is an AS/400 only terminal emulator, which uses the Display Station Passthru features of the AS/400 to provide 5250 terminal emulation. It uses the parallel session services of a SNA•ps 2.0 (1.1.1 or 1.1) APPC gateway, which can be attached directly to an AS/400 over Token Ring, SDLC, or as a downstream PU on the Token Ring gateway feature of an IBM 5494 mid-range remote controller (SDLC). SNA•ps gateways are LEN nodes, and can be used in APPN networks, common in AS/400 environments.

SNA•ps 5250 is a fully featured workstation emulation similar to that offered by PC Support to DOS and Windows users. It does not use PC Support to make connections to the AS/400. The only major feature which is missing in SNA•ps 5250 is File Transfer. There are no major reported bugs on SNA•ps 5250 version 1.0

Q: What is SNA•ps Print?
A: SNA•ps Print is a multi-purpose printer emulation for both 3270 and 5250

printers. The 3270 mode is similar to SNA•ps 3287 and uses the 3270 API. SNA•ps Print corrected many bugs in SNA•ps 3287 especially all LU1 (SCS) tabbing problems with LaserWriters and ImageWriters. There is now support for defining Characters per Inch across the page.

5250 printers are supported to the AS/400 only as Printer Station Passthru devices over a SNA•ps APPC gateway. Only the 3812 printer is supported. The actual printer name on the Passthru controller must be inserted in the SNA•ps 5250 Control Panel or the SNA•ps Print client will not connect properly. SNA•ps Print for 5250 uses the Apple 3270 API.

There are two major reported bugs in SNA•ps Print. One is a problem with Lines per Inch not working at all in the Custom Format Set-up. The choices are six or eight and SNA•ps Print ignores either setting and prints seven Lines per Inch. This should be fixed in the next maintenance release in the Fall of 1993. The other bug has to do with ImageWriters and properly spacing Characters per Inch. This appears to be an ImageWriter driver bug and the only thing to do as a workaround is to "trick" the driver and give it a smaller CPI and let the print driver expand the line to the desired size. We have experimented and a CPI of 9.2 set in SNA•ps Print results in a CPI of 10 on the printed page. There is no problem with CPI and LaserWriter printers.

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Tech Info Library Article Number:12507

Tech Info Library

LaserWriter IIg: Not Communicating with IBM (8/95)

Revised: 8/23/95
Security: Everyone

LaserWriter IIg: Not Communicating with IBM (8/95)

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Article Created: 7 July 1993
Article Review/Updated: 23 August 1995

TOPIC ----------

I replaced my LaserWriter IINT with a LaserWriter IIg. My IBM is having trouble communicating with the IIg printer. I can send 1 page of PostScript, but anything longer than that gives me an I/O error. I see the I/O error only when I use my communications program.

Do the communication parameters need to be changed? Currently I'm using the same parameters as I did for my LW IINT. How can I set options for different parameters (baud rate, parity, data bits, stop bits, flow control, protocol, mode) on the printer?

DISCUSSION ----------

The printing problem is caused by different communications settings on the IBM and the IIg. The IINT manual recommends serial settings of 9600, N, 7, and 1 (page 113). The IIg manual does not recommend a specific serial setting, but does provide a table of switch configurable settings (page 101). Unfortunately, there is not a switch setting on the IIg that matches the IINT recommended setting. Fortunately, we can bridge the gap:

1) The easiest method is to select one of the user-definable configuration options (page 101 of the LaserWriter® IIf and IIg Owner's Guide) on the IIg that most closely resembles those desired and change the IBM PC to match. Switch position 7 would only require changes to the baud rate and data bits and the following PostScript code could then be used to change those settings:

```
(%Serial_NV2%)
<< /Baud 9600
  /DataBits 7
```

NOTE:
All options available for manipulation are:

/Baud 300, 600,1200, 1800, 2400, 3600, 4800, 7200, 9600, 19200, or 57600
/DataBits 7 or 8
/Enabled /true or false
/FlowControl /XonXoff, Dtr, or EtxAck
/Interpreter /PostScript or LaserJetIIP
/On /true or false
/Parity /Odd, Even, or None
/Protocol /Normal, Raw, or Binary
/StopBits 1 or 2

2) Unfortunately, the IIg does not possess a switch to place the printer in Interactive PostScript mode like the IINT. However, the IIg can be placed in Interactive PostScript mode by opening a terminal session between the IBM PC and the IIg, and then invoking the executive PostScript language procedure. (That is, type ‘executive’ followed by return or line-feed. NOTE: Since the server is still in batch mode, the characters you type are not echoed back to you. Once this is done, a PostScript herald and prompt should appear.) The user can return to batch mode by invoking the quit operator or entering a Control-D.

Article Change History
23 Aug 1995 - Made minor corrections.
07 Dec 1993 - Revised and corrected the PostScript code.

Support Information Services

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Tech Info Library Article Number:12510

Tech Info Library

Portable StyleWriter: Problems Indicated by LEDs (6/93)

Revised: 7/6/93
Security: Everyone

Portable StyleWriter: Problems Indicated by LEDs (6/93)

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Article Created: 6 July 1993

TOPIC ----------

This article describes problems indicated by the Portable StyleWriter lights.

DISCUSSION ----------

Power light	On Line light	Error light	Problem indicated
Off	Off	Off	The power adapter is not correctly connected, or the printer is not turned on.
On	Off	On	(The printer beeps 2 or 3 times.) The printer is out paper.
On	Off	On	(The printer beeps continuously.) Paper is jammed or paper longer than 15 inches has been loaded.
On	Off	Blinks	(The printer beeps continuously.) The ink cartridge has not returned to home position. Turn printer off, wait a few seconds, then turn it on.
On	Blinks	Off	(The printer beeps 5 times.) An error occurred in the printer. Turn off the

			printer, wait a few seconds, then turn it on.
On	Blinks	Off	(The printer beeps continuously.) An error occurred while the printer started up. Turn off the printer, wait a few seconds, then turn it on.
On	Blinks	Blinks	(The printer beeps 3 times) Turn off the printer, wait a few seconds, then turn it on.
Blinks	Off	Off	(The Power light blinks once every second.) The battery is being charged.
Blinks	Off	Off	(The Power light blinks once every half second.) The battery is low.
Blinks	Off	On	(The printer beeps 5 times, and the Power light blinks once every half second. After 5 minutes, the printer beeps again, then turns off automatically.) The battery has run out of power.
Blinks	Off	Blinks	(The printer beeps 5 times, and the two lights blink alternately.) There is a problem with the battery. Charge the battery two or three times. If the problem continues, replace the battery with a new one.

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Tech Info Library Article Number:12514

Tech Info Library

System 7.x: Moving the Cursor with the Numeric Keypad (7/93)

Revised: 7/9/93
Security: Everyone

System 7.x: Moving the Cursor with the Numeric Keypad (7/93)

==========

Article Created: 6 July 1993

TOPIC ----------

I have trouble using the mouse to fine tune a picture I'm drawing. Can I use the keyboard to move the cursor?

DISCUSSION ----------

A feature that is part of the Easy Access control panel is called Mouse Keys. It enables you to use the numeric keypad to move the cursor just as you would with the mouse. To use this feature follow these steps:

1) Make sure Easy Access is installed in the Control Panel folder inside your System Folder.
2) On the keyboard hold down Command-Shift-Clear.
3) The 5 on the numeric keypad now works like the mouse button: press once to click and twice to double click.
4) The eight keys surrounding the number 5 are now directional keys (example: the 4 and 6 keys move the cursor left and right).
5) To click and drag, press the 0 key twice and then use the directional keys. Press the decimal point key twice to release the mouse button.
6) To return the numeric keypad to its normal function, hold down Command-Shift-Clear.

Note: You can find this information in the Owner's Manual that came with your computer.

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Tech Info Library Article Number:12515

Tech Info Library

System 7.x: File Sharing and QuicKeys (7/93)

Revised: 7/9/93
Security: Everyone

System 7.x: File Sharing and QuicKeys (7/93)

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Article Created: 06 July 1993

TOPIC --

The following discussion describes file sharing capabilities using CE Software's Quickeys 2.1.3.

DISCUSSION ---

Two file sharing features of QuicKeys are Start FileSharing and Stop FileSharing. These features allow you to turn the file sharing function of System 7 on and off with a single keystroke, so that it's on only when needed.

Also, if you want to have the file sharing function turned on at certain times, QuicKeys has a QuicKeys Timer Option. For further information contact the vendor directly. To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:12516

Tech Info Library

ARA Through A Mellidyne Phone Switch (7/93)

Revised: 7/8/93
Security: Everyone

ARA Through A Mellidyne Phone Switch (7/93)

==========

Article Created: 6 July 1993

TOPIC ----------

This article describes using AppleTalk Remote Access (ARA) in conjunction with a Mellidyne Phone Switch to utilize the phone switches SecureID capabilities.

DISCUSSION ----------

To provide terminal sessions for PC users and AppleTalk services for PowerBook users without bypassing security, you can utilize the SecureID function that was part of the Mellidyne phone switch. You need to configure the ARA servers to function with a phone switch providing the link between the server box and modems being used. The particular ARA sever that was used in our testing was from Cayman Systems.

The first CCL that had to be modified was the user script. The prompt for valid user name and password (SecureID number) had to be added to the script. Also you need to modify the CCL to send the proper menu selection to direct the Mellidyne phone switch to patch the call to the proper port, provided user name and password are valid.

The Cayman ARA server had to be configured for a direct line hookup because the phone switch handles the configuration of the modems. Even though we only tested the Cayman ARA server we suspect that other server could be used as long as it supports a direct connection.

Another caveat is that auto baud (modem speed matching) did not work, we had to specify the speed in the phone switch as well as the ARA server configuration. We didn't see this as a problem because we want to standardize on one type of modem and speed. If we have to change in the future we can add this selection to the user script and then have specific ports with different speeds.

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..TIL12524-ARA_Through_A_Mellidyne_Phone_Switch_7-93.pdf

Tech Info Library Article Number:12524

Tech Info Library

System 7.x: Map Control Panel (7/93)

Revised: 7/9/93
Security: Everyone

System 7.x: Map Control Panel (7/93)

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Article Created: 06 July 1993

TOPIC ----------

This article describes the uses of the Map Control Panel.

DISCUSSION ----------

Open the Map Control Panel located within the Control Panel folder inside your System Folder. If the map is black-and-white, open up the Scrapbook under the Apple Menu. Locate and copy the color map. Then go back to the Map Control Panel and Paste.

- Scroll around the map by clicking in the map and then dragging outside its boundaries.
- To find a city, type the name of the city and click on the Find button.
- To add a city, type in its name, click on its location, and click on the Add City button.
- The mileage display normally shows the distance between the last location you clicked and the present one. If you always want the distance displayed to be the distance between your home town and the current location, click on your town, then click the Set button.
- The Time Zone shows the difference between your current location and Greenwich mean time. If you wish to know the time difference between your previous and current location, click on the words Time Zone and it will switch to Time Differ.
- To see a more magnified version of the Map, hold the Option key down as you double click to open the Map control panel.

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Tech Info Library Article Number:12527

Tech Info Library

System 7.x: Organizing the Desktop (7/93)

Revised: 7/9/93
Security: Everyone

System 7.x: Organizing the Desktop (7/93)

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Article Created: 07 July 1993

TOPIC ----------

This article describes the way the Clean Up command works in System 7, making it easier to organize your desktop.

DISCUSSION ----------

Here are some tips for organizing the desktop:

- With any window open at the desktop level, hold down the Option key and select Clean Up All from the Special menu. This will arrange all the icons in a neat row in the upper right corner of the window.

- By combining the Clean Up command with the View menu, you can straighten up and organize the window by name, size, kind, label, or date. For example, choose by Name from the View menu. Now switch to by Icon view, hold down the Option key, and select Clean Up by Name from the Special menu. You will see the icons neatly arranged in alphabetical order.

- To sort just a few icons, select the ones you want to organize, hold down the Shift key, and select Clean Up Selection from the Special menu.

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Tech Info Library Article Number:12528

Tech Info Library

Startup Items Folder: Sound Or Control Panel Cause Crash (10/95)

Revised: 10/17/95
Security: Everyone

Startup Items Folder: Sound Or Control Panel Cause Crash (10/95)

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Article Created: 6 July 1993
Article Reviewed/Updated: 17 October 1995

TOPIC ----------

When I place both a sound and a control panel (or aliases to either) in the Startup Items folder, the Macintosh sometimes crashes while booting up. I installed System 7.5 but the problem remains.

DISCUSSION ----------

If a sound file opens at the same time or just prior to opening a control panel, this can cause a system crash. You may want a sound file in the Startup Items folder so the Macintosh plays the sound every time you turn your Macintosh on. The same problem can occur on a Performa if you use the Launcher and want to have a startup sound. This problem was fixed in System 7.5 Update 1.0 which is posted on online services.

This crash will corrupt the system file requiring you to startup from a floppy disk or CD-ROM disc, drag the System suitcase from the System Folder on your hard drive to the trash, and reinstall system software. After reinstalling the system software, remove the control panel and sound file from the Startup Items folder before restarting your computer.

The only solutions are:
- Remove either the sound or the control panel from the Startup Items folder.
- Use a third-party product such as NOW Fun or Sound Master to play the startup sound.
- Install System 7.5 Update 1.0.

These articles can help you locate the System 7.5 Update 1.0 mentioned here:

- "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
17 Oct 1995 - Added System 7.5 Update 1.0 information.
09 Jan 1995 - Added fix with next System Update.

Support Information Services

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Tech Info Library Article Number:12529

QuickTime Movie Exchange Toolkit Formats (7/93)

Revised: 7/7/93
Security: Everyone

QuickTime Movie Exchange Toolkit Formats (7/93)

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Article Created: 6 July 1993

TOPIC --------------------

I work with digitized video and other media on several platforms. I'd like to use QuickTime Movie Exchange Toolkit. What formats does the QuickTime Movie Exchange Toolkit support? What are all the formats that can be read from and written to on each platform?

DISCUSSION --------------------

The QuickTime Movie Exchange Toolkit provides three applications:

- makemoov for Unix systems
- makemoov.exe for MS-DOS systems
- aamoov.exe for MS-DOS systems

The two makemoov applications accept the simplest possible file format, a raw stream of bytes, each representing a single color. It doesn't matter which computer is in use, the following formats are the only ones the makemoov applications support:

- RGB triples, one byte per color; three bytes per pixel
- Gray-scale data, one byte per pixel
- Pseudo-color data, one byte per pixel

You can add sound to a makemoov movie. The sound file needs to contain 22,254 6/11 linear samples per second with 0 as most negative, 128 as speaker at rest, and 255 as most positive.

The aamoov.exe is specifically for converting Autodesk Animator .fli files to QuickTime movies.

For the applications programmer, there's a C++ library (one for Unix and one

for MS-DOS) included with the Exchange Toolkit. Each library contains definitions of seven classes and a number of methods for adding QuickTime movie creation to your own application. If your application is capable of reading other file formats into memory, the library will provide tools for writing out a QuickTime movie.

The Toolkit creates only one type of output file -- a single fork QuickTime movie file format. On the Macintosh either a double fork or single fork QuickTime movie is acceptable to QuickTime.

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Tech Info Library Article Number:12530

Tech Info Library

Serial Printers: Choice of Serial Ports (7/93)

Revised: 7/7/93
Security: Everyone

Serial Printers: Choice of Serial Ports (7/93)

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Article Created: 6 July 1993

TOPIC ----------

I have a choice of serial ports for my StyleWriter II in the Chooser, but my printer will only work in the modem port (with the picture of the phone, and I have my modem hooked up to that one). When I connect to the printer port, it tells me to deactivate AppleTalk. I did this, but it still won't work. Do I have to unhook my modem every time I want to print something?

DISCUSSION ----------

You can use your StyleWriter II printer connected to either serial port in the back of your Macintosh -- printer port or modem port. What's important with the StyleWriter II, or any serial printer that isn't shared, is that the cable connections and the Chooser settings are the same, and that AppleTalk is turned off. You said that your StyleWriter II can print from the modem port, so the problem is either with the setup or with your computer.

Try setting up your StyleWriter II with the printer port again:

1) Connect the StyleWriter II cable to the printer port, and be sure that all of the connections are solid. Loose cable connections are the biggest cause of printer failures.
2) Open the Chooser and click on the StyleWriter II icon.
3) Make sure AppleTalk is Inactive.
4) Select the serial port with the picture of the printer.
5) For the time being, turn off Background Printing. This will cut down troubleshooting time until everything is working fine.

Now close the Chooser and try to print the picture of your hard drive. Open the icon, and then select Print Window... from the File menu. If it doesn't print, watch for any messages that the computer gives you, and follow the

instructions.

If you have done all of this correctly and are still unable to print, you may be running into a conflict with another program, an extension such as a screen saver, or something may be wrong with the printer port on your computer (not likely).

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Tech Info Library Article Number:12532

Tech Info Library

StyleWriter II: Using PostScript Fonts (7/93)

Revised: 7/7/93
Security: Everyone

StyleWriter II: Using PostScript Fonts (7/93)

==========

Article Created: 6 July 1993

TOPIC ----------

Can the StyleWriter II print PostScript fonts if I add them to the Fonts folder in System Folder?

DISCUSSION ----------

Yes, you can print PostScript fonts to your StyleWriter II by using Adobe Type Manager software. For more information, contact the Adobe sales office. You can purchase Adobe Type Manager from your local authorized Apple Dealer, or from mail-order companies such as MacWarehouse and MacConnection.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:12533

..TIL12534-Personal_Computing_Tools_US_distof_DW_Electrochemicals_Ltd-.pdf

Tech Info Library

Personal Computing Tools (US dist. of DW Electrochemicals, Ltd.)

Revised: 2/14/96
Security: Everyone

Personal Computing Tools (US dist. of DW Electrochemicals, Ltd.)

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Article Created: 7 July 1993
Article Reviewed/Updated: 14 February 1996

Personal Computing Tools
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90 Industrial Park Road
Hingham, Mass 02043

Phone: 800-767-6728

Company Profile:
East Coast US Distributor for D.W. Electrochemicals, Ltd., the makers of Stabilant 22A.

For Canada, Europe, and other international locations, contact the manufacturer for local distributor information. For a complete list of U.S. distributors, contact the manufacturer.

Article Change History:
14 Feb 1996 - Added information on Stabilant-22A.
03 Mar 1994 - Added new address info.

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Tech Info Library Article Number:12534

Tech Info Library

MacConnection (7/93)

Revised: 8/5/93
Security: Everyone

MacConnection (7/93)

==========

Article Created: 07/06/93

MacConnection
---
14 Mill Street
Marlow, NH 03456

800-800-2222

Company Profile:
Mail order company.

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Tech Info Library Article Number:12535

..TIL12536-MacWarehouse_7-93.pdf

Tech Info Library

MacWarehouse (7/93)

Revised: 8/5/93
Security: Everyone

MacWarehouse (7/93)

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Article Created: 07/06/93

MacWarehouse

1720 Oak Street
P.O. Box 3013
Lakewood, NJ 08701-9917

800-ALL-MACS

Company Profile:
Mail order company.

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Tech Info Library Article Number:12536

Tech Info Library

Locked Disk: You Can Copy From It But Not To It (7/93)

Revised: 7/7/93
Security: Everyone

Locked Disk: You Can Copy From It But Not To It (7/93)

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Article Created: 6 July 1993

TOPIC ----------

I recently used Apple Restore to successfully restore my hard drive. I later discovered that the floppy disks I used to restore were protected. So I'm curious how a protected disk can be copied.

DISCUSSION ----------

A "protected" or "locked" disk, using the tabs on the back of the disk, means that its contents at that time can't be altered. You can copy information from it, but not to it.

Because you aren't altering the contents of the disk by copying information from it, the disk will allow you to copy. Therefore, your restore was successful because the Apple restore application had no problems getting the information it needed. If you ever tried to copy to the protected disks or use them with Apple Backup, you'd then run into a problem.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12537

Tech Info Library

Soft Solutions (US distributor for D.W. Electrochemicals, Ltd.)

Revised: 2/15/96
Security: Everyone

Soft Solutions (US distributor for D.W. Electrochemicals, Ltd.)

==========

Article Created: 7 July, 1993
Article Reviewed/Updated: February 14, 1996

Soft Solutions
---

115 West 8th Ave. Suite 290
Eugene, OR 97401-2902

Phone: 800-264-2530
Fax: 541-302-4357

Company Profile:
West Coast US Distributor for DW Electrochemicals, Ltd., the makers of Stabilant 22A. Also Macintosh Computer parts sales and component level repairs.

For Canada, Europe, and other international locations, contact the manufacturer for local distributor information. For a complete list of U.S. distributors, contact the manufacturer.

Article Change History:
14 Feb 1996 - Updated phone number and address and added Stabilant-22A.
07 Jul 1993 - New Product Information Added, New Article

Copyright 1993-96, Apple Computer Inc.

Tech Info Library Article Number:12538

Tech Info Library

System 7.x: Removing Stubborn Control Panels (7/93)

Revised: 7/7/93
Security: Everyone

System 7.x: Removing Stubborn Control Panels (7/93)

==========

Article Created: 6 July 1993

TOPIC ----------

I have a control panel that alters my screen layout (colors, screen saver screens, and so on). I've thrown away the control panel, but I still can't get the regular Macintosh screen back. I tried rebuilding the desktop, and reinstalling the system software to no effect.

DISCUSSION ----------

Certain control panels, like MOIRE and AURORA, store information in the PRAM that isn't erased when the extension is thrown away. If you zap the PRAM and reboot, the unwanted information will disappear. This also resets the control panels to their default state, so you'll need to recreate any information you've personalized.

Search in the Tech Info Library for the title, "System 7: How to Reset Parameter RAM (PRAM)" for instructions.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12539

Tech Info Library

Klaus Radio, Inc. (US dist. for DW Electrochemicals, Ltd.)

Revised: 2/14/96
Security: Everyone

Klaus Radio, Inc. (US dist. for DW Electrochemicals, Ltd.)

==========

Article Created:7 July 1993
Article Reviewed/Updated: 14 February 1996

Klaus Radio, Inc.

2400 West Schneidman Drive
Quicy, Ill. 62301

217-223-7560

Company Profile:
Midwest US distributor for DW Electrochemicals, Ltd., the makers of Stabilant 22A.

For Canada, Europe, and other international locations, contact the manufacturer for local distributor information. For a complete list of U.S. distributors, contact the manufacturer.

Article Change History:
14 Feb 1996 - Added information on Stabilant-22A.
08 Mar 1994 - Added new address and new telephone number.

Copyright 1993-96, Apple Computer, Inc.

Tech Info Library Article Number:12540

Tech Info Library

Dow Jones Publishers (a division of Dow Jones and Company, Inc.)

Revised: 7/7/93
Security: Everyone

Dow Jones Publishers (a division of Dow Jones and Company, Inc.)

==========

Article Created: 07/07/93
Article Reviewed: 07/07/93
Article Updated:

Dow Jones Publishers (a division of Dow Jones and Company, Inc.)

P.O. Box 300
Princeton, NJ 08543-0300

609-520-4000
609-452-1511 (News Retrieval Dept.)

Company Profile:
Dow Jones Publishers, software, specializing in electronic and print publishing involving technical analysis, with access to Dow Jones news retrieval, e-mail, and document control for portfolio management.

Copyright 1993, Apple Computer

Tech Info Library Article Number:12542

Tech Info Library

AppleShare Client Software Compatible With System 6.0.x (7/93)

Revised: 7/7/93
Security: Everyone

AppleShare Client Software Compatible With System 6.0.x (7/93)

==========

Article Created: 2 July 1993

TOPIC ----------

I'm trying to make a bootable 800K floppy for my Macintosh Plus that has system 6.0.x and AppleShare client software so I can mount my file server.

AppleShare appears to be working fine until I get to the point of selecting the volume I want to mount. I get the message about the desktop file on the volume needing repair. When I click on "ok" to repair it, I get into a loop with the dialog box saying the desktop file couldn't be created and then there's nothing I can do but reboot.

I am using System 6.0.7 from the Disk Tools disk and tried it with AppleShare from System 7.0.1. What's going wrong?

DISCUSSION ----------

There is a compatibility problem when using System 7.0.x version of the AppleShare client software with System 6.0.x. System 7.0.x AppleShare client software should only be used on System 7.0.x systems.

System 7.1 AppleShare client extension and AppleShare 3.0.x client extension are compatible with System 6.0.x. The installer disks should be used to install one of these versions onto a 6.0.x system.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12543

Tech Info Library

ARA Answer Problem With Dayna EtherPrint (7/93)

Revised: 7/7/93
Security: Everyone

ARA Answer Problem With Dayna EtherPrint (7/93)

==========

Article Created: 2 July 1993

TOPIC ----------

I'm getting the following error message when I try to turn on answering in AppleTalk Remote Access (ARA), "A Remote Access Setup error has occurred. Unable to acquire AppleTalk node on current network."

I'm on LocalTalk, connected to an EtherPrint. When I disconnected the LocalTalk cable from the Macintosh, everything worked OK.

DISCUSSION ----------

We checked with Dayna, and it turns out that they have seen this problem before. It may be due to ROM revisions in the EtherPrint. The best solution is to refer the customer to Dayna. Dayna Tech Support told us this can usually be solved by powering down the computer and the EtherPrint. Then set the EtherPrint to AppleTalk Phase 1, power it up, power it down again, reset it to AppleTalk Phase 2, and then power it back up again.

To locate a vendor's address and phone number, use the vendor name as a search string.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12544

Tech Info Library

SNA•ps 1.1.1 and Macintosh IIvx Problem (7/93)

Revised: 7/8/93
Security: Everyone

SNA•ps 1.1.1 and Macintosh IIvx Problem (7/93)

==========

Article Created: 7 July 1993

TOPIC ----------

I'm having a problem with the SNA•ps 1.1.1 and the Macintosh IIvx.

Configuration:
- Computer: IIvx
- OS: US System 7.1
- RAM: 20MB
- Coax/Twinax card (512K) and SNA•ps 3270 1.1.1.

CUT: Connection can not be established. Error message is "error while communicating w/slot 1". Card was moved to slot 2, and error message is "error while communicating w/slot 2".

DFT: Gateway can not start. Error message is "Failure while starting the gateway. Sorry, not enough memory available on the card to run the gateway."

Notes: The above was tested on two different IIvx computers and two different cards with the same result. The same card was used on a IIci and IIsi with no problems.

DISCUSSION ----------

This is a problem with A/ROSE 1.1.8 which is on the SNA•ps 1.1.1 disks and the Macintosh IIvx. This is a known problem, and there are several fixes to this Macintosh IIvx specific problem:

- Change A/ROSE to 1.1.7 (Drag replace).
- Change A/ROSE to 1.1.9 (Drag replace).
- Use NSI 1.3.2 or higher posted on AppleLink which comes with A/ROSE 1.2 which specifically fixes the Macintosh IIvx problem.

Here is the path on AppleLink:

Software Sampler
  Apple SW Updates
    Macintosh
      Networking & Communications

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12546

Tech Info Library

Adjustable Keyboard Driver: Installation Error (6/94)

Revised: 11/11/94
Security: Everyone

Adjustable Keyboard Driver: Installation Error (6/94)

==========

Article Created: 8 July 1993
Article Reviewed/Updated: 22 Jun 1994

TOPIC ----------

I can't install the driver software for the Apple Adjustable Keyboard on my Macintosh. The Installer gives a message saying that the software to be installed is older than the software on the currently selected system, and it will not proceed further. Is there an updated version of the Apple Adjustable Keyboard Installer?

DISCUSSION ----------

The system software on your Macintosh is already properly configured to support the Apple Adjustable Keyboard.

There's no need to reinstall the Adjustable Keyboard resources unless you are reinstalling the system software on your Macintosh. If this is the case, remember to install the Adjustable Keyboard resources using the Installer.

You can double check that your Adjustable Keyboard has all of its functionality by either trying the volume buttons, or the forward delete key on the key pad.

Article Change History:
22 Jun 1994 - Made the article more generic by eliminating specific models.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:12548

Tech Info Library

LaserWriter Pro: Tray Switching and Manual Feed (4/97)

Revised: 4/14/97
Security: Everyone

LaserWriter Pro: Tray Switching and Manual Feed (4/97)

==========

Article Created: 8 July 1993
Article Reviewed/Updated: 14 April 1997

TOPIC ----------

How do you get a LaserWriter Pro 600/630 to take paper from the multipurpose/manual feed tray and the cassette trays if paper is present in all locations? The LaserWriter II was able to pick up paper from the manual feed tray and the cassette tray.

I have tried the LaserWriter 7.2 and 8.0 driver with the correct PPD and have experimented with the various options with no success.

DISCUSSION ----------

TraySwitching allows users to set up the printer to continue printing from the next available paper tray or stop printing and return an "Out of Paper" message when the tray being used runs out of paper.

We have a LaserWriter Pro 630 configured so that it takes paper from the default tray if there is paper present, and will switch to the other trays when the default tray runs out of paper. Here is how we are achieving it:

1) Use the LaserWriter 8.0 driver with the respective LaserWriter Pro PPD.

2) Download the following PostScript to the LaserWriter Pro (via LaserWriter Utility 7.4.1) to change the default paper tray:

This is PostScript Level 1 code:

```
%============================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin 1 setdefaultpapertray end
```

```
%
% End PostScript Code
%=========================================================
```

Note: Whenever the PostScript code "serverdict begin 0 exitserver" is downloaded to the LaserWriter, any commands that follow will automatically place the results in the printer's non-volatile RAM (NVRAM), meaning that the printer will retain the settings even when powered off.

The integer value before "setdefaultpapertray" corresponds to the various trays as follows:

Value	Tray Selection
0	250 Sheet Cassette
1	Multi-purpose tray
2	500 Sheet Cassette
3	Envelope tray

This is the equivalent PostScript Level 2 code:

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
1 dict dup /InputAttributes 1 dict dup /Priority [2 1 0] put put setpagedevice
%
% End PostScript Code
%=========================================================
```

This sets the paper tray priority to:
1st Priority - Cassette (500 Sheets) - designated by the "2" in the array above.
2nd Priority - Multipurpose Tray - designated by the "1" in the array above.
3rd Priority - Cassette (250 Sheets) - designated by the "0" in the array above.

You can change the paper tray priority order by changing the values in "/Priority [2 1 0]".
For example, /Priority [0 1 2] makes the 250 sheet cassette first priority, then the Multipurpose tray next, then the 500 sheet cassette.

3) Enable TraySwitching via LaserWriter Utility 7.4.1.

Note: Enabling this option through the Print dialog box will only affect the current job. Enabling TraySwitching via the LaserWriter Utility will save the selection for all jobs and will retain the setting even when the printer is powered off.

4) Use AutoSelect when printing.

With LaserWriter II engines, the manual feed slot for paper shares the same

paper pickup roller as the paper cassette. That is why the printer feeds from the cassette when there is no paper in the manual feed slot. The LaserWriter Pro 630 has a separate pickup roller for the multipurpose/manual feed tray.

Article Change History:
14 Apr 1997 - Added PostScript Level 2 code.
05 Aug 1993 - Added notes about non-volatile printer settings and about TraySwitching.

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Tech Info Library Article Number:12549

Tech Info Library

Macintosh QuickTime Movies on PCs (7/93)

Revised: 7/9/93
Security: Everyone

Macintosh QuickTime Movies on PCs (7/93)

==========

Article Created: 07 July 1993

TOPIC ----------

This article describes how to play Macintosh QuickTime movies on PCs running Windows.

DISCUSSION ----------

To make a movie playable on a PC, open it on the Macintosh using the Movie Converter utility (part of the QuickTime Starter Kit), and choose Save As from the File menu. In the dialog box that appears, click the checkbox "Playable on non-Apple computers" and "Make movie self-contained." You must name the file with no more than eight characters, plus the extension .MOV.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12552

Tech Info Library

Opening MS-DOS documents using Macintosh PC Exchange (7/93)

Revised: 7/12/93
Security: Everyone

Opening MS-DOS documents using Macintosh PC Exchange (7/93)

==========

Article Created: 7 July 1993

TOPIC ----------

This article describes how to designate a specific Macintosh application for opening MS-DOS documents by the extension following its file name.

DISCUSSION ----------

Double-clicking an MS-DOS or Windows file like you would a Macintosh file at the Finder level usually doesn't result in the file opening. This is because the document doesn't know which Macintosh application to use. By using the PC Exchange control panel you can assign certain MS-DOS files to certain applications. This is done in the PC Exchange control panel window.

1) Open the PC Exchange control panel located in the Control Panel folder in your System Folder.

2) Click on Add.

3) Type in a period and the three letter extension, for example .TXT.

4) Select which Macintosh application is to be assigned that file type.

So that all members of a Network are consistent, make a master list of assignments on one Macintosh and place a copy of the PC Exchange Preferences folder in the Preferences folder of each licensed user of Macintosh PC Exchange.

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Tech Info Library Article Number:12553

Tech Info Library

Macintosh: How To Take A Snapshot Of Your Screen (5/95)

Revised: 5/25/95
Security: Everyone

Macintosh: How To Take A Snapshot Of Your Screen (5/95)

==========

Article Created: 7 July 1993
Article Reviewed/Updated: 25 May 1995

TOPIC ----------

This article describes a way of capturing a picture of what appears on your screen, including the menu bar, trash can and all open windows that are visible.

DISCUSSION ----------

To take a snapshot of the entire screen, simultaneously press Command-Shift-3 (Command is the open Apple key). You will hear a sound that sounds like a camera snapping a photo. Each screen shot is saved in the PICT file format. It will be created/saved automatically at the top (root) level of your hard drive directory and be labeled "Picture 1". If you keep taking screenshots, you will get "Picture 2", "Picture 3", and so on.

This PICT format document can be opened for viewing and printing. By double-clicking the file icon it will open into SimpleText or TeachText. It can also be opened by most graphics programs such as: ClarisWorks, MacPaint, Adobe Photoshop, Canvas, or many others. You can then use the Copy command to take information out of the shapshot and use the Paste command to place it in other documents or make changes to it.

Support Information Services

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12555

Apple Ethernet Twisted Pair Transceiver (7/93)

Revised: 7/8/93
Security: Everyone

Apple Ethernet Twisted Pair Transceiver (7/93)

==========

Article Created: 7 July 1993

TOPIC ----------

I have a question concerning the Apple Ethernet Twisted Pair Transceiver. I was told that 10BaseT Ethernet only requires 4 conductors (2 twisted pair) which means it could be used with an RJ-11 connector. The Apple Ethernet Twisted Pair Transceiver ships with a cable that has 8 conductors (4 twisted pair) using an RJ-45 connector.

Why ship the cable with 4 extra conductors if they are not used? What are these extra conductors used for? Which colors are used and which are for other purposes in the cable sent from Apple?

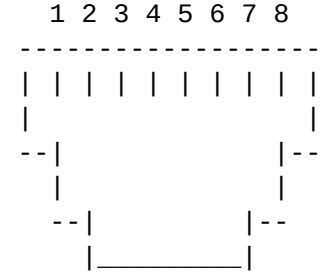
DISCUSSION ----------

You are correct, 10BaseT 802.3 only requires 4 conductors. You could indeed wire up a 10BaseT Ethernet network using RJ-11 connectors. The other 4 conductors are not used.

The reason the Apple Ethernet Twisted Pair Transceiver uses an RJ-45 connector is because the 10BaseT addendum to the 802.3 standard specifies an RJ-45 connector. Here are the pin assignments:

Pin	Signal
1	TD+
2	TD-
3	RD+
4	Not used by 10BaseT
5	Not used by 10BaseT
6	RD-
7	Not used by 10BaseT
8	Not used by 10BaseT

Pinout for RJ-45 connector receptacle:



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Tech Info Library Article Number:12556

Tech Info Library

Serial Switch: Which Macintosh Models Need It (1/94)

Revised: 1/20/94
Security: Everyone

Serial Switch: Which Macintosh Models Need It (1/94)

==========

Article Created: 9 July 1993
Article Reviewed/Updated: 19 January 1994

TOPIC ----------

Why do the Macintosh Quadra 900 and 950 sometimes need Serial Switch installed, which keeps the serial ports from working too fast?

Do the newer Quadra, Centris and AV Series models need the Serial Switch as well? I cannot find a version written for these models.

DISCUSSION ----------

Only the Macintosh IIfx, the Quadra 900 and Quadra 950 need the Serial Switch.

The Macintosh Quadra 900 and 950 incorporated a design originally implemented in the Macintosh IIfx: an intelligent I/O processor (IOP) for controlling serial I/O. The IOP relieves the main processor of handling routine serial I/O tasks which allows the system to perform faster. (Similar IOPs offload ADB and floppy disk functions from the CPU.)

Unfortunately, some programs did not work when using the serial IOP, because they were written to require direct access to the serial controller chip. In order to obtain compatibility with these programs Serial Switch was developed. It places the serial IOP in a special "IOP Bypass" mode which allows programs to access the SCC directly, placing the burden of controlling serial I/O tasks on the CPU.

Other Macintosh Quadra and Centris models do not use IOPs. The CPU handles all serial I/O tasks, so no Serial Switch is required.

Article Change History:
19 January 1994 - specified which models might need the Serial Switch, and excluded other Quadra, Centris and AV models.

..TIL12558-Serial_Switch-Which_Macintosh_Models_Need_It_1-94.pdf

Support Information Services

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Tech Info Library Article Number:12558

Tech Info Library

LaserWriter Pro Energy Star: Setting Engine Sleep Values 7/93

Revised: 7/9/93
Security: Everyone

LaserWriter Pro Energy Star: Setting Engine Sleep Values 7/93

==========

Article Created: 9 July 1993

TOPIC -----

I'm using the LaserWriter Pro Energy Star software that sets the LaserWriter Pros to sleep after a certain period of inactivity.

After downloading the PostScript commands, the PostScript log reads "Engine sleep timeout changed to x hours", where x is .5, 1, 2, or 4 hours.

What PostScript commands can I use to set/change or read the value of "Engine sleep timeout"?

DISCUSSION -----

The PostScript commands in the LaserWriter Pro Energy Star files are proprietary commands which we ourselves were unable to obtain from engineering. Thus, the sleep time files for setting the sleep timeout to .5, 1, 2, or 4 hours are the only ones available.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12559

Tech Info Library

StyleWriter II: Banding w/Grayscale Images (7/93)

Revised: 7/9/93
Security: Everyone

StyleWriter II: Banding w/Grayscale Images (7/93)

==========

Article Created: 9 July 1993

TOPIC ----------

I'm using a StyleWriter II and an LC III. When printing GIFs, PICTs, TIFFs, and other graphics files, I get banding on any grayscale graphic.

Black and white graphics work fine, and the photos are coming out fine, (the grayscale part) but there will be a line of photo, then a white line, then a line of photo, and so on.

DISCUSSION ----------

We're not quite sure what you're seeing. We were not able to duplicate the problem with alternating lines of completely white, and then lines of photo. We printed various grayscale images in Adobe PhotoShop and got the "normal" banding. It seems that this is probably what the customer is seeing since you stated that black and white images print fine. If there was an actual problem, you would see white lines across a black image in black and white mode.

There will be a certain amount of "banding" with grayscale images as this is typical with inexpensive printers. Banding is a result of the physical properties of sprayed ink, as in the StyleWriter II. There should NOT, however, be any completely white lines (pixel size) all the way across an image. If this is the case, you might try selecting the option, "Clean Ink Cartridge before printing" or try a different cartridge altogether. If a new cartridge is used make sure you purge the cartridge. For more information on purging the cartridge reference article "StyleWriter II: Cleaning and Purging the Ink Cartridge."

Copyright 1993, Apple Computer, Inc.

..TIL12560-StyleWriter_II-Banding_w-Grayscale_Images_7-93.pdf

Tech Info Library Article Number:12560

Tech Info Library

LW 8.0 Driver: Compatibility w/Older Driver Versions 6/93

Revised: 7/9/93
Security: Everyone

LW 8.0 Driver: Compatibility w/Older Driver Versions 6/93

==========

Article Created: 9 July 1993

TOPIC ----------

Is the LaserWriter 8.0 driver compatible with older driver versions used on the same network? The LW 8.0 driver doesn't appear to reset printers initialized with, let's say the 7.2 drivers. Is this true, and how far back does compatibility exist?

DISCUSSION ----------

You are correct that LaserWriter driver 8.0 does not reset printers initialized with previous versions of the driver. Starting with LaserWriter driver 6.1, the Laser Prep dictionary is automatically downloaded with each print job to prevent re-initialization of the printer. Thus, as long as there are LaserWriter drivers 6.1 or greater (all the way to LaserWriter driver 8.0) in use on the network, there will be no Laser Prep "compatibility" problems and the printers will not reinitialize.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12561

Tech Info Library

LW Pro: PostScript Commands to Utilize Tray Features (5/95)

Revised: 4/14/97
Security: Everyone

LW Pro: PostScript Commands to Utilize Tray Features (5/95)

==========

Article Created: 9 July 1993
Article Reviewed/Updated: 14 April 1997

TOPIC ----------

How can I utilize the paper tray features (of the LaserWriter Pro) from my UNIX workstation or my PC?

I am accustomed to accessing printer features using control panel buttons (as on an HP LaserJet) and want to know how to get those features on the LaserWriter Pro.

DISCUSSION ----------

A majority of printer functions can be use by sending PostScript code to the printer. The code included below is specific to the LaserWriter Pro.

For UNIX machines, insert "%!" at the very beginning of your PostScript file to designate it as such if you are using "lpr" to print the file.

Note: PostScript IS CASE SENSITIVE.

Here are segments of PostScript code which access most of the printer's features:

Caution:
=========
If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

==========

To enable the printer's STARTUP PAGE. To disable the startup page, use "false setdostartpage" instead of "true setdostartpage".

```
serverdict begin 0 exitserver
statusdict begin true setdostartpage end


==========================================================================
To send a FORM FEED to the printer.

showpage

==========================================================
To enable/disable TRAYSWITCHING:
Value x can be true or false.

serverdict begin 0 exitserver
<</TraySwitch x>> setpagedevice

==========================================================
To change the DEFAULT PAPER TRAY:

If you decide to use the PostScript code below, you need to be very careful in
selecting the default tray. If the multipurpose tray is set as the default and
there is no paper in it, the paper out LED will light for EVERY PRINT JOB until
paper is placed in the tray. This problem has caused some users (others on the
network) to think that the printer is malfunctioning and needs to be repaired.
Please forewarn users about this so they can understand, that the printer's
behavior has changed.

Begin_Table

Value x     Tray Selection
 _____      _______________
   0        250 Sheet Cassette
   1        Multi-purpose tray
   2        500 Sheet Cassette
   3        Envelope tray

End_Table

The integer value before "setdefaultpapertray" corresponds to the various
trays.

This is PostScript Level 1 code:

%==========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin x setdefaultpapertray end
%
% End PostScript Code
%==========================================================

This is the equivalent PostScript Level 2 code:
```

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
1 dict dup /InputAttributes 1 dict dup /Priority [2 1 0] put put setpagedevice
%
% End PostScript Code
%=========================================================
```

This sets the paper tray priority to:
1st Priority - Cassette (500 Sheets) - designated by the "2" in the array above.
2nd Priority - Multipurpose Tray - designated by the "1" in the array above.
3rd Priority - Cassette (250 Sheets) - designated by the "0" in the array above.

You can change the paper tray priority order by changing the values in "/Priority [2 1 0]".
For example, /Priority [0 1 2] makes the 250 sheet cassette first priority, then the Multipurpose tray next, then the 500 sheet cassette.

==========

To change the PRINTER NAME:

```
serverdict begin 0 exitserver statusdict begin (newname) setprintername
```

==========

To print the CONFIGURATION PAGE:

```
/SamplePages/ProcSet findresource/TestPage get cvx exec
```

==========

To enable/disable FINEPRINT & PHOTOGRADE and change DPI (that is 300 to 600 dots per inch.) These changes will persist power cycles.

```
serverdict begin 0 exitserver

/imageoptions
   {
   systemdict/setpagedevice known  % Indicates a level two device
   {
   0 3 index 0 ne{1 add}if
   4 index 1 ne{1 add}if
   5 index 1 ne{1 add}if

   dup 0 gt
   { dup 1 add dict begin/Policies exch dict def
   2 index 0 eq

   {pop pop pop}
   {2 array astore exch pop
    /HWResolution exch def
    Policies/HWResolution 1 put}
```

```
        ifelse

   dup 1 ne
   {2 eq /PreRenderingEnhance exch def
    Policies/PreRenderingEnhance 1 put}
   {pop}
       ifelse

   dup 1 ne
   {2 eq/PostRenderingEnhance exch def
   Policies/PostRenderingEnhance 1 put}
   {pop}
        ifelse

   currentdict end setpagedevice
      }
   {pop pop pop pop pop pop}
      ifelse
   }
   {pop pop pop pop pop}
    ifelse

   } bind def
```

Here is the actual call to the above subroutines that enables/disables FINEPRINT and % PHOTOGRADE, and changes the DPI. The call values are set in the following order:

```
FP PG RF HR VR imageoptions
```

FP = FinePrint, values can be 1 (default, no change), 2 (on), 3 (off)
PG = PhotoGrade, values can be 1 (default, no change), 2 (on), 3 (off)
RF = Resolution Flag, values can be 0 (default, no change), 1 (use HR and VR values)
HR = Horizontal Resolution, values can be 300 or 600 (must match VR)
VR = Vertical Resolution, values can be 300 or 600 (must match HR)

For example, to set FinePrint ON, PhotoGrade OFF, and 300dpi, this is the call:

```
2  3  1  300  300  imageoptions
```

==========

To change the MULTIPURPOSE TRAY for LETTER size paper.

```
serverdict begin 0 exitserver <</InputAttributes
  << 1
    << /PageSize [612 792]
    >>
  >> >> setpagedevice
```

==========

To change the MULTIPURPOSE TRAY for LEGAL size paper.

```
serverdict begin 0 exitserver <</InputAttributes
  << 1
    << /PageSize [612 1008]
    >>
  >> >> setpagedevice
```

Article Change History:
14 Apr 1997 - Added PostScript level 2 code.
23 May 1995 - Added section to notify users about default paper tray change.
08 Feb 1995 - Added PostScript caution.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:12562

Tech Info Library

SNA•ps 3270 Manager, Users Guide, and v25bis Problem (7/93)

Revised: 7/9/93
Security: Everyone

SNA•ps 3270 Manager, Users Guide, and v25bis Problem (7/93)

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Article Created: 7 July 1993

TOPIC ----------

In setting up an SDLC connection using SNA•ps 3270 Manager, I selected "switched" and "v25bis". The phone number field will not accept any special characters (, ; w t) to control dialing. For example, when you move to a new field or try to save the config document you get the error, "invalid value; previous value substituted."

This is contradictory to the manual in Appendix G Configuring and Managing in a 3270 Environment under SDLC of the SNA•ps 3270 Users Guide. What's wrong, is it the manual or software?

DISCUSSION ----------

We tested SNA•ps 3270 Manager v2.0, and found the following:

- It is possible to configure for V25bis with the comma (,)
- Not with the Wait characters (W w :)
- Not with the Pause characters (K k <)
- Not with the Pulse characters (P p)
- Not with the Tone characters (T t)
- Not with the Flash Hook characters (& !)
- Not with the semicolon (;)
- Not with the Special Tone characters (A B C D * #)
- Most of the Presentation characters (- () and space) worked, but the dot (.) did not work.

However, all of these characters worked properly when the SNA•ps Config (version 2.0) was used instead of the SNA•ps 3270 Manager. SNA•ps Config would accept a "space" as a presentation character, but upon closing and reopening the configuration window, all characters behind the space were undisplayed - although they were still "there". (This was shown by an

attempt to reenter the "missing" characters and having the application 'beep' and then display the "missing" characters.)

As you mentioned SNA•ps 3270 Manager, we are assuming you don't have access to SNA•ps config. Even if you did have access to SNA•ps Config, the SNA•ps 3270 Manager can not open a configuration created by SNA•ps Config. SNA•ps Admin would be required to start a gateway configured by SNA•ps Config.

If you have version 2.0 of SNA•ps 3270, the comma (,) and common US presentation characters (- () and space) are functioning with that release. If you need additional characters, then yes SNA•ps 3270 Manager won't handle them.

Our sources tell us, "Anything but the most straight-forward set-ups really need to be done in SNA•ps Config and SNA•ps Admin. Yes, the SNA•ps 3270 Users Guide does not make it clear that 3270 Manager won't handle the complicated phone numbers."

A possible work-around would be to enter the phone number information in the modem itself. When DTR goes up the modem will dial the stored number. This would require a direct cable from the modem to the Macintosh, and an async terminal emulator (like MacTerminal) to set the modem configuration. It isn't hard, but it does require the modem's manual to be sure you get it right.

So, you either need SNA•ps Config and SNA•ps Admin (the Gateway product), or you need to configure the modem itself.

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Tech Info Library Article Number:12563

GS/OS 6.0.1: Shortcuts in Various Dialog Boxes (6/93)

Revised: 7/9/93
Security: Everyone

GS/OS 6.0.1: Shortcuts in Various Dialog Boxes (6/93)

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Article Created: 25 June 1993

TOPIC ----------

System 6 for the Apple IIGS often prompts you with dialog boxes. Dialog boxes are windows containing additional information, warnings, or instructions that ask you to provide additional commands to perform a certain function. This article presents a number of tips for working with the various dialog boxes.

DISCUSSION ----------

Directory Dialog Boxes (Standard File)

You can type one or more beginning letters of an item to select that item. You have to type a key every two-thirds of a second or faster to do this.

Pressing the Tab key no longer selects the next disk. In dialogs where you enter a file name, Tab chooses between the edit line and the file list. Keystrokes go to the one that's active.

Command-Right Arrow or Command-Tab moves to the next disk, and Command-Left Arrow moves to the previous disk.

Command-Period is the Cancel button (Esc isn't).

Esc and Command-Up Arrow are equivalent to the Close button (moving up one level).

Command-Esc, Command-D (for Disks), or Command-Shift-Up Arrow jump to the Disks level (like clicking Close repeatedly or clicking the Disks button).

Clicking on the path item (the triangle in a box, or the text next to it) displays a pop-up menu with one item for every level in the current path,

all the way up to Disks. Choosing an item takes you up one or more levels.

Command-O and Command-Down Arrow do the same thing as the Open button (not always the same as the bold-outlined button).

AlertWindow Dialog Boxes

AlertWindow handles many dialog boxes. There will be some text, one or more buttons, and usually an icon in the top left. In these dialogs:

- Esc and Command-Period do the same thing as the Cancel button, if one is available.
- Return is the bold-outlined button, if there is one.
- For other buttons, you can type the first letter of a button name to go to that button. If two buttons have the same first letter, typing that letter does nothing. This feature works with or without the Command key.

Font Selection Dialog Box

This dialog is the one that appears in Teach when you Choose Font... from the Font menu. Note that the same dialog appears in many other applications, sometimes in response to a menu item with a different name, like Attributes...

Use Tab (or the mouse) to move between the font family list, the size list, and the size box. In the family list, you can use arrows and letters to choose a family. In the size list, you can use the up and down arrows (typing a letter takes you back to the family list automatically).

Command -P, -B, -I, -U, -O, and -S toggle the six Style checkboxes (Plain, Bold, Italic, Underline, Outline, Shadow).

Tabbing Between Controls

Tab advances to the next targetable control. In many dialogs, Command-Tab moves in the opposite direction, to the previous targetable control.

Checkboxes and Radio Buttons

You can almost always toggle a checkbox or select a radio button by clicking in the description beside it. You don't have to click inside the square or circle.

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Tech Info Library Article Number:12564

GS/OS 6.0.1: Finder Shortcuts (6/93)

Revised: 7/9/93
Security: Everyone

GS/OS 6.0.1: Finder Shortcuts (6/93)

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Article Created: 25 June 1993

TOPIC

This article describes the Finder shortcuts you can use when you have GS/OS 6.0.1 installed on your Apple IIGS computer. Also, look under Finder Help for a list of many Finder shortcuts.

DISCUSSION

Icons

Use the arrow keys to move from one icon to another, or use Keyboard navigation commands for selecting icons easily. Here are Keyboard navigation commands and other icon commands:

- Press the Tab key to select the next icon alphabetically.
- Press Shift-Tab to select the previous icon alphabetically.
- Press the Esc key to deselect all icons on the desktop and move the keyboard-select keys to the icons in the front window.
- Press Command-Esc or Command-Shift-Up Arrow to deselect all icons in the front window and move the keyboard-select keys back to the desktop.
- The File menu Put Away command (Command-Y) now works on disk icons as well as files and folders. Putting away a disk ejects the selected disk, or disconnects the selected shared disk. Dragging a disk icon to the trash does the same thing.
- The Finder automatically selects a disk's icon when you insert the disk. Also, when you close a window, the Finder automatically selects the disk or folder icon where the window closed, unless you selected other icons.

The Finder assumes that if you selected icons in another window or on the desktop, it should leave them selected.

- You can double-click on a control panel icon to open that control panel, even if it isn't in your startup disk's System:CDevs folder.

  Note: You must keep control panels that do special things at system startup time in the System:CDevs folder.

- You can drag a control panel icon onto the desktop for convenience. If you drag it from the System:CDevs folder, the system still sees the control panel as though it's stored in the CDevs folder.

Windows

These are keyboard commands for window manipulations:

- Press Command-Keypad-0 to cycle through open windows. Command-Shift-Keypad-0 cycles through the windows the other way.

- Control works with Command-W and Command-Option-W to temporarily reverse the Save Finder information setting.

- Use Command-Period to stop the calculate in Icon Info windows.

- When an Icon Info window is in front and the General card is visible, typing I toggles the Inactive checkbox (if present) and L toggles the Locked checkbox. You can inactivate several kinds of files, including Finder Icon files that you don't want to use. You can also use Command-K to activate the calculate icon.

- Command-1 through Command-4 select various Icon Info cards, left to right. Not all cards are present for all icons. The four cards are: General, Where, Comment, and Access.

- Command-W always closes the front System window (NDAs and Control Panels, for example), even if the application you're in doesn't support the standard Command-W equivalent for Close in the File menu.

- If you already have NDA windows open, you can bring them in front of some dialog boxes (for example, Finder Preferences, and EasyMount Connect As), just by clicking in the NDA window.

Documents

Holding down the Option key while double-clicking a document (or while choosing Open from the Finder's File menu) presents the directory dialog box. You can specify what application to associate with the desired document for a one-time launch. Holding down Option-Control while double-clicking a document does the same thing, but the Finder makes a note to launch that application whenever you open a document of that same kind.

Folders

You can hold down the Option key and choose Control Panels from the Apple menu to open the System:CDevs folder.

You can also drag folders onto the desktop. This wasn't allowed in previous versions of the Finder.

Dialogs

In the Shut Down dialog, you can type S, R, or Q to select the Shut Down, Restart, or Quit radio buttons, and you can use the Up and Down arrow keys to select different buttons.

In the Preferences dialog, 1, 2, 3, and 4 toggle the four checkboxes grouped under List Views, and S, H, W, and C toggle the other four items, which begin with those letters. These work with or without the Command key.

Keyboard Navigation in Lists

Whenever you see a List control with a bold frame, you can use the Up and Down arrows to select various items in the list. You can also type the first one or more letters of an item to select it. When typing the first several letters of an item, you have to type a key every two-thirds of a second or faster. You can also press the Clear or Delete key to clear the existing string of letters instead of waiting two-thirds of a second. Some lists without bold frames work this way too.

Working with Disks

When initializing or erasing a disk (in the Initialize dialog), Command-Return works for the Initialize or Erase button.

When you insert a formatted disk, but not for a file system you can use, you get an alert that identifies the disk's format as best it can and asks "Do you want to initialize it? Eject/Initialize." If you hold down the Option key when you click Initialize, the system offers to erase the disk instead.

Note: Erasing saves time, since it won't physically reformat the media. On the other hand, the system doesn't verify that all blocks on the disk are usable. Use Erase instead of Initialize only if you're sure the disk is properly formatted.

Command-Period now works like Esc to terminate Verify or Validate.

EasyMount

If the EasyMount Finder extension is installed, then "Make Alias..." appears in the Extras menu. Select any disk, folder, or application icon and choose "Make Alias..." from the Extras menu. EasyMount will ask you where to save the EasyMount document.

You can double-click on an EasyMount document to open the original item. That is, double-clicking on an EasyMount document opens a disk window, opens

a folder window, or launches an application.

If the original item is a shared disk, or is on a shared disk, EasyMount automatically connects to the shared disk before opening the item. A "Connect as" dialog will appear if a password is required but not recorded.

If the password is recorded, but you want the "Connect as" dialog anyway, hold down the Option key while double-clicking the alias. You can change the Guest/Registered User setting or enter a different user name. In the "Connect as" dialog, Command-G and Command-R select the Guest and Registered User radio buttons.

To skip opening a disk or folder window, hold down the Control key while double-clicking the EasyMount document.

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Tech Info Library Article Number:12565

Tech Info Library

GS/OS 6.0.1: System Startup Options (6/93)

Revised: 7/9/93
Security: Everyone

GS/OS 6.0.1: System Startup Options (6/93)

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Article Created: 25 June 1993

TOPIC ----------

This article describes how to invoke three options you have when you start your Apple IIGS computer with GS/OS 6.0.1 installed:

- Starting up in ProDOS 8
- Starting up without loading INITs
- Starting up to bypass the Startup application

DISCUSSION ----------

Starting Up In ProDOS 8

When turning on the computer or rebooting, press the 8 key to start up in ProDOS 8.

Bypassing INITs

When turning on the computer or rebooting, hold down the Shift key to inhibit loading of non-system INITS (in the System.Setup folder) and all desk accessories (in the Desk.Accs folder). This can be useful if you've recently added an INIT or DA that prevents the system from booting normally. You can use the Shift key to boot without loading the offending file, and then remove the file once the system displays the Finder.

Bypassing the Startup Application

If you normally have a Startup application selected (with the SetStart control panel), you can temporarily override this setting by holding down the Command key during the startup process. When the SetStart icon appears (the boot), the Control Panel will recognize the keypress, skip setting the Startup application, and then draw a red X through the icon. At this point,

you can release the Command key. The system will start the Finder instead of the selected startup application.

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Tech Info Library Article Number:12566

Tech Info Library

GS/OS 6.0.1: Text Editing Shortcuts (6/93)

Revised: 7/9/93
Security: Everyone

GS/OS 6.0.1: Text Editing Shortcuts (6/93)

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Article Created: 25 June 1993

TOPIC ----------

When editing text (for example, in the Teach application, or in the Comment card of an Icon Info window in the Finder), try these shortcuts.

DISCUSSION ----------

Navigating and Selecting Text

Add the Shift key to this group of key combinations to select the intervening text:

- Command-Left Arrow moves left a word at a time.
- Command-Right Arrow moves right a word at a time.

- Option-Left Arrow moves to the beginning of the line.
- Option-Right Arrow moves to the end of the line.

- Command-Up Arrow moves to the top of the page.
- Command-Down Arrow moves to the bottom of the page.

- Option-Up Arrow moves to the beginning of the document.
- Option-Down Arrow moves to the end of the document.

Clicking the mouse moves the insertion point; dragging selects by character. Double-clicking selects a word; dragging extends the selection by words. Triple-clicking selects a line; dragging extends the selection by lines.

Deleting Text

Delete (or Control-D) removes the current selection. If there's no selection, it removes the character to the left of the insertion point.

Clear removes the current selection.

Control-F removes the character to the right of the insertion point. If there's a selected portion of text, it removes the selection.

Control-Y removes all characters from the insertion point to the end of the line.

Control-X, -C, and -V are Cut, Copy, and Paste. You can use these even in unusual cases where the Edit menu isn't available.

Keyboard Translation

If you choose Standard in the General Control Panel's Translation menu, you can type special characters by holding down the Option key.

Most of the special characters are easily viewable if you have Video Keyboard installed (use the Installer script Special Aids: VideoKeyboard). Choose Video Keyboard from the Apple menu, and then hold down Option, or Option and Shift.

Certain characters begin two-character sequences: Option-e puts an accent over the next letter, Option-` puts an (`) accent over the next character, Option-i puts a caret (^) over the next character, and Option-n puts a tilde (~) over the next character.

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Tech Info Library Article Number:12567

Tech Info Library

GS/OS 6.0.1: Archiver and Easy Access Shortcuts (6/93)

Revised: 7/9/93
Security: Everyone

GS/OS 6.0.1: Archiver and Easy Access Shortcuts (6/93)

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Article Created: 28 June 1993

TOPIC ----------

This article gives hints for working in the Archiver and Easy Access programs.

DISCUSSION ----------

ARCHIVER

- Use "?" for the Identify button.
- Use the Right Arrow key for the Device button.
- Use Command-M for Mark files, and Command-U for Unmark files.

EASY ACCESS

Controlling the Mouse From the Keyboard

On the 1 Megabyte Apple IIGS (ROM 3), and on ROM 1 computers when Special Aids: Easy Access is installed, you can control the mouse from the keypad. Press Command-Shift-Clear to enable keyboard mouse control; press Clear to disable it.

While keyboard mouse control is on, keys on the numeric keypad control the mouse pointer. The 5 key is the mouse button, and the keys surrounding it (1-4 and 6-9) allow horizontal, vertical, and diagonal movement.

To make each press of a direction key move the pointer in larger increments, type * followed by a digit from 1 to 9 (*1 or ** returns to normal).

Press the 0 (zero) key to lock down the mouse button until you press the Period key.

Sticky Keys

On the 1 Megabyte Apple IIGS (ROM 3), and on ROM 1 computers when Special Aids: Easy Access is installed, you can use Sticky Keys to press modifier keys in sequence instead of all at once. The modifier keys are Shift, Command, Option, and Control.

To turn Sticky Keys on or off, press and release Shift five times in a row. When Sticky Keys is on, every modifier key you press and release is considered pressed for the next non-modifier key press. To lock down a modifier for a series of key presses, press and release the modifier twice in a row. (To turn off a locked modifier, press it three times in a row.)

Sticky Keys automatically turns off if you press a modifier and non-modifier key at the same time.

Easy Access requires an ADB keyboard and therefore doesn't work on a converted Apple IIe.

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Tech Info Library Article Number:12568

Tech Info Library

GS/OS 6.0.1: Shortcuts to Use with Control Panels (6/93)

Revised: 7/9/93
Security: Everyone

GS/OS 6.0.1: Shortcuts to Use with Control Panels (6/93)

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Article Created: 28 June 1993

TOPIC ----------

This article discusses shortcuts you can use in control panels when you have GS/OS 6.0.1 installed on your Apple IIGS.

DISCUSSION ----------

The Control Panels Window

Command-Shift-Esc opens the Control Panels window, just like choosing Control Panels from the Apple menu. Command-Option-Shift-Esc opens the System:CDevs folder, if you're in the Finder.

You can use letters and arrow keys to select a control panel icon.

The Return key, Command-O, or double-clicking an icon opens the selected Control Panel(s).

If you hold down the Option key while opening a Control Panel, the main window closes after the Control Panel opens. This is similar to holding the Option key while opening a folder in the Finder.

You can hold down the Command key and click on an icon to select several control panel icons at once, or you can hold down the Shift key to select a whole range of control panel icons.

Command-H or Command-? is the Help button.

AppleShare Control Panel

Use the Tab key to move between the Zone list, Server list, and User Name. If you have a lot of zones or a lot of servers, arrow keys and letter keys

are helpful.

In the "Connect to the file server...as" dialog, Command-G and Command-R select the Guest and Registered User radio buttons.

Sounds Control Panel

The Sounds Control Panel lets you choose what sounds, if any, the computer plays for the System Beep and twenty-two specific events (such as Disk Inserted, Disk Ejected, and Task Completed).

Choose an event from the Event menu, and then choose a sound from the Sounds menu. The Sounds menu contains Not Assigned, Silence, and Standard Beep, plus the sounds in your System:Sounds folder. These sounds are in the same format HyperCard IIGS uses (if you put a HyperCard IIGS stack in the Sounds folder, any sounds in the stack are available). If no sounds are listed, install Control Panel:Sounds using the Installer, to get eleven sounds.

Setting an event to Not Assigned gives any other sound utilities you installed a chance to respond to that event. If no sound utility responds to the event, the result is either silence or the Standard Beep (it depends on the program causing the event, not the event itself).

Pressing Return with the Sounds window in front replays the currently selected sound.

Time Control Panel

Use the Tab key to move between Date and Time controls. Left and right arrows move between fields. The Up and Down arrows change field values.

You can type numbers directly -- there's no need to adjust them with the mouse.

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Tech Info Library Article Number:12569

Tech Info Library

GS/OS 6.0.1: Shortcuts to Use with Desk Accessories (6/93)

Revised: 7/9/93
Security: Everyone

GS/OS 6.0.1: Shortcuts to Use with Desk Accessories (6/93)

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Article Created: 28 June 1993

TOPIC ----------

This article tells you the shortcuts available to use in Desk Accessories when you have GS/OS 6.0.1 installed on your Apple IIGS computer.

DISCUSSION ----------

CLASSIC DESK ACCESSORY MENU (COMMAND-CTRL-ESC)

You can type the first letter of each desk accessory name to move around in the built-in or "classic" desk accessory menu. Each press selects the next line that starts with that letter.

The Esc key takes you to Quit. Command-Up Arrow and Command-Down Arrow take you up and down one screen at a time.

DESKTOP DAS

Calculator Desk Accessory

The Calculator window layout matches the keypad. You can use the main keyboard, the keypad, or click on the buttons in the Calculator window interchangeably.

Every time you use = the Calculator repeats the last operation. For example, to count backwards from 98 by sevens, type "98 - 7 = = = = = = = =".

Typing / followed by = computes the reciprocal (as on many algebraic calculators). For example, 4 / = gives 0.25.

Press H to toggle between decimal and hexadecimal mode. Press Z (or click

the Zoom box) to zoom the window to show or hide the A-F keys. (The keys don't have to be visible to use Hex. "Hex" appears in the display when you're in Hex mode.

Click on the small Apple symbol (or Command-?) to show the About box.

Copy (or Command-C) copies the Calculator display to the Clipboard as text.

Cut (or Command-X) copies the Calculator display to the Clipboard as text, and clears the display to zero.

Paste (or Command-V) lets you paste numbers or calculations from the Clipboard into the Calculator, just as if you were typing the characters on the keyboard. Characters the Calculator doesn't recognize are simply ignored.

Find File Desk Accessory

Find File normally ignores invisible files. If you want to include invisible files in the search, hold down the Option key when you click on the Find File button (or when you press the Return key to begin the search).

You may continue working while Find File searches, but it searches faster while the Find File window is in front. (The system responds to mouse clicks in about one second while Find File is searching.) Press Esc or Command-Period to stop the search.

Command-F opens Find File unless the application is already using that key for a menu item.

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Tech Info Library Article Number:12570

Tech Info Library

GS/OS 6.0.1: How It Differs from 6.0 (6/93)

Revised: 7/9/93
Security: Everyone

GS/OS 6.0.1: How It Differs from 6.0 (6/93)

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Article Created: 28 June 1993

TOPIC ----------

This is a summary of the visible changes in GS/OS 6.0.1 compared to 6.0. There have been many bugs fixed and many features added that aren't immediately visible. This document helps identify those features or changes.

DISCUSSION ----------

FINDER (SEE ALSO FINDER HELP)

You can now click in Name, Size, Kind, or Last Modified at the top of a list-view window to change the view.

To rename an icon, you must now click on its name rather than the icon.

The File Copy Alternatives dialog has been removed. Holding down the Option key now always forces a copy rather than a move.

Dragging certain system-related files to the System folder icon on the boot volume now does "magic routing" much like the Macintosh Finder. Note that this only works when using the folder icon; dragging into a window works as before. The kinds of files that are properly placed in their own folders within the System folder are: Control Panels, Desk Accessories, Drivers, FSTs, Tools, Fonts, Sounds, INITs, and Finder Extensions. Other files are just placed in the System folder.

The Finder now creates the FinderExtras folder for you.

If you open the Icon Info window on an Apple SCSI device, the SCSI ID number appears on the Where card.

The Finder's Clipboard window handles text, pictures, and sounds. If you copy a sound to the Clipboard (using the Sound control panel, for example), you can click on the Speaker icon on the Clipboard to hear the sound. Teach has the same Clipboard window.

EXTENSIONS

EasyMount isn't just for servers anymore. It now handles aliases to any disk, folder, or application. In other words, you don't need to drag the icon onto the desktop anymore -- just keep an alias of it on the desktop. Select the icon of the item you want to alias and choose "Make Alias…" from the Extras menu. EasyMount will ask you where to save the alias. Later, double-clicking the alias opens the real item, disks and folders are opened, and applications (ProDOS 8 or GS/OS) are launched. The Installer automatically installs EasyMount in your System.Setup folder.

CONTROL PANELS

DC Printer Control Panel

This was a change in System 6.0 but not documented: The DC Printer will let you choose LaserWriter, which is potentially useful for "printing" to PostScript files.

Monitor Control Panel

The new checkbox "Smoother Mouse Cursor" sets a new Battery RAM location. It kills the cursor flicker that's especially noticeable with a Video Overlay card or an accelerator.

SetStart Control Panel

The new checkbox "Show icons during startup" provides a way to set the Battery RAM location that disables the display of the startup icons. The Battery RAM location has been there since System 6.0, but there was no Apple-provided way to change it.

The new checkbox "Enable programmer CDAs" provides a way to set the Battery RAM location that allows Visit Monitor and Memory Peeker to show up in the CDA menu. Both ROM 1 and ROM 3 Apple IIGS computers now check this location. This checkbox doesn't show up if the ROM 3 Control Panel disable jumper is present.

STARTUP

During startup, if you have a lot of icons, they no longer keep recycling the bottom row of the screen. They now "wrap up" to the row above.

If you use a Vulcan internal hard drive, you no longer need to copy the Vulcan driver onto the Install disk when installing new system software. You can still use the Vulcan driver for enhanced performance, but you can successfully install without it.

If your ROM 3 Apple IIGS has 8 Megabytes of RAM, the computer fails to create a RAM disk (RAM5) of any size. In this case, System 6.0.1 creates RAM5 and then restarts the system. When you turn on the computer, you will hear an extra beep at the "Apple IIGS ... ROM Version 3" screen.

DRIVERS

The RAM5 RAM disk has a new driver. The Installer automatically installs it if you have the RAM disk enabled when you do an Easy Update. The driver greatly enhances the disk's performance. It also allows you to have a RAM5 disk in GS/OS (but not in ProDOS 8) even when slot 5 is switched to "Your card." On a ROM 1, you must have the Minimum and Maximum sizes set to the same value; otherwise you'll see a message during startup and it won't use the new driver.

The Apple II Memory Expansion Card has a new optional format. If you have a full megabyte of memory on the card, it lets you format it as either 1,024K or 800K. The 800K option blocks out the remaining 224K, but allows faster block copies to and from other 800K disks.

FILE SYSTEM TRANSLATORS (FSTs)

The MS-DOS FST is new. To use it, you need a drive that can read MFM disks, such as the Apple SuperDrive with an Apple II SuperDrive Controller Card.

This version is read-only -- it doesn't let you make changes to MS-DOS disks.

PRODOS 8

The Thunderclock year table in ProDOS 8 has been updated for the years 1993-1998. There's also a Clock.Patch file on the SystemTools2 disk that you may use to update ProDOS 8 (renamed to ProDOS) to include future year groups.

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Tech Info Library Article Number:12571

Tech Info Library

Performa 450: Optional Math Co-processor (4/95)

Revised: 4/25/95
Security: Everyone

Performa 450: Optional Math Co-processor (4/95)

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Article Created: 7 July 1993
Article Reviewed/Updated: 25 April 1995

TOPIC -----

Is there an optional FPU (floating-point unit) for the Performa 450 computer?

DISCUSSION -----

The Performa 450 computer can be upgraded with a math co-processor by installing a standard Motorola 68882 chip rated at 25 MHz (or better). The hardware and software will automatically recognize the chip. No further hardware or software changes are required.

A Motorola MC68882 FPU is usable in the Performa 450 though it is no longer available from Apple at the retail level but is available as a service part.

Article Change History:
25 Apr 1995 - Noted that retail part no longer available from Apple.

Support Information Services

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Tech Info Library Article Number:12572

Tech Info Library

System 7.0.x AppleShare Client and System 6.0.x: Incompatible

Revised: 7/9/93
Security: Everyone

System 7.0.x AppleShare Client and System 6.0.x: Incompatible

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Article Created: 6 July 1993

TOPIC --

I'm trying to make a bootable 800K floppy disk for my Macintosh Plus that has system 6.0.x and AppleShare client software on it so I can mount my file server. AppleShare appears to be working fine until I get to the point of selecting the volume I want to mount. I get a message about the desktop file on the volume needing repair. When I click on OK to repair it, I get into a loop with the dialog box saying the desktop file couldn't be created and then there's nothing I can do but reboot. What's going on?

DISCUSSION --

This problem stems from the incompatibility of the System 7.0.x version of the AppleShare client software with System 6.0.x. The System 7.0 and System 7.0.1 AppleShare client extension is compatible with System 7.0 and System 7.0.1 only.

With System 6.0.x, you can use the version of AppleShare that comes on the AppleShare 3.0.x Workstation Installer disk, or the System 7.1 version of AppleShare. We recommend using the Installers to install the AppleShare client software on System 6.0.x.

You can also use the Installer from System 6.0.x to install the System 6.0.x version of AppleShare workstation software.

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Tech Info Library Article Number:12573

Tech Info Library

QuickTime 1.6.1: What It Fixes (7/93)

Revised: 7/9/93
Security: Everyone

QuickTime 1.6.1: What It Fixes (7/93)

==========

Article Created: 7 July 1993

TOPIC --

This article tells how QuickTime 1.6.1 differs from 1.6.

DISCUSSION --

QuickTime 1.6.1 fixed problems with the Alias Manager, the NOW and HAM utilities extensions, and with Photo CD's decompressor.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12574

Tech Info Library

ROM version 1.707-02 Problem of Supra Fax Modems (6/93)

Revised: 7/9/93
Security: Everyone

ROM version 1.707-02 Problem of Supra Fax Modems (6/93)

==========

Article Created: 17 June 1993

TOPIC ----------

This article describes a ROM problem, version 1.707-02, in Supra Fax Modems.

DISCUSSION ----------

There is a known problem in the ROM, version 1.707-02, of newer V.32bis Supra Fax modems. Two of these modems will not talk to each other over AppleTalk Remote Access (ARA). Older V.32bis Supra Fax modems seem to work fine. Contact Supra Corporation for information.

To locate a vendor's address and phone number, use the vendor name as a search string.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12575

Tech Info Library

Digital Products, Inc.

Revised: 7/9/93
Security: Everyone

Digital Products, Inc.

==========

Article Created: 07/09/93
Article Reviewed:
Article Updated:

Digital Products, Inc.
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411 Waverly Oaks Road
Watham, MA 02154

800-243-2333

617-647-1234

617-647-4474 fax

Company Profile:
Makers of SprintTALK hardware products connecting Ethernet or Token Ring to LocalTalk, enabling Macintosh computers access to AppleTalk printers without the use of a router.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12576

Tech Info Library

System 7.x.x: Corrupt Fonts Constrict the System Heap (4/94)

Revised: 4/22/94
Security: Everyone

System 7.x.x: Corrupt Fonts Constrict the System Heap (4/94)

==========

Article Created: 8 July 1993

TOPIC --

Sometimes launching an application causes the System Software size in "About this Macintosh" to increase anywhere from 250K to 2MB or more, depending on the application. After quitting the application, the System Software memory size doesn't return to its previous, smaller size. The problem could be corruption of the System Heap caused by either an extension, control panel, or a corrupt font suitcase. This article tells you how to troubleshoot this situation.

DISCUSSION ---

Follow these steps to resolve this problem:

1) Make sure the application is compatible with System 7.x.x.
2) Check that it isn't an extension conflict by starting the Macintosh with extensions off and testing the application.
3) If the system doesn't return the memory, test for a corrupt font suitcase:
   a) Drag the Font folder from the System Folder to the Desktop.
   b) Restart the Macintosh.
      This creates a new, empty Fonts folder in the System Folder.
   c) Test the application.
4) If the problem goes away, find the troublesome font by reinstalling each font suitcase one at a time, restarting, and testing.
5) Otherwise, do a clean install of your System Software.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:12577

Tech Info Library

Saved PostScript File: Can't Generate Original Document (7/93)

Revised: 7/9/93
Security: Everyone

Saved PostScript File: Can't Generate Original Document (7/93)

==========

Article Created: 8 July 1993

TOPIC ----------

I saved a print task to a PostScript file, and now I can't print that document in anything other than code. How can I retrieve the file in its original format. The file originated in FileMaker Pro and was saved in PostScript to be placed in a Word document.

DISCUSSION ----------

Once a file is printed to a PostScript file, there's no way to reverse the process and generate the original document. Basically, the PostScript file consists of instructions that just image a page, and doesn't contain any information such as file format or data structures that defined the file.

But you should be able to print the document represented by the PostScript file. Standard PostScript files are in a standard ASCII text format. You can use the LaserWriter Utility to download PostScript files to the LaserWriter.

If the file was saved as an EPS (Encapsulated PostScript) file, then any program that reads EPS files can import the image into a document. Bear in mind that an EPS file doesn't contain modifiable elements. Some programs such as Aldus PageMaker allow you to place the EPS file on a page, crop it, move it, but not modify it.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12578

Tech Info Library

LaserWriters: With No Straight Manual Feed (7/93)

Revised: 7/12/93
Security: Everyone

LaserWriters: With No Straight Manual Feed (7/93)

==========

Article Created: 9 July 1993

Article Change History

07/12/93 - REVISED
• Added the word "family" to the second paragraph in the Discussion

TOPIC ----------

Is it possible to do a straight through manual feed on a LaserWriter Pro?

DISCUSSION ----------

No. There is no possible way to do a straight through manual feed on the LaserWriter Pro. The straight through paper path was changed to an "S" shape paper path with the LaserWriter Select, the Personal LaserWriter and the LaserWriter Pro series.

The original LaserWriter, the LaserWriter Plus and the LaserWriter II family are the ONLY Apple laser printers that have a straight through paper path.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12579

Serial NB Card: Resistor Pack Configuration (7/93)

Revised: 7/12/93
Security: Everyone

Serial NB Card: Resistor Pack Configuration (7/93)

==========

Article Created: 9 July 1993

TOPIC ----------

- I have a Serial NB Card and I've have gotten the impression that the resistor packs (R-paks) are specific to the cable being used. The information that I have states or implies that there is only one type of R-pak and that their use is only if you have and want to use more than two of the connectors on the Hydra, RS-232-C cable.

- The numbers on the R-pak had v.35 and 8950 on the chips with the Apple logo on it. How can I get the R-pak for the RS-232-C. Is there such a thing?

DISCUSSION ----------

The Apple Serial NB Card manual in Chapter 3 (p 23 and 24), spells out what resistor pack configurations and cabling you should use for the Apple Serial NB Card. Remember there are two types of cables, the Hydra cable with four RS-232-C connectors, and the V.35 cable with one RS-232-C connector and one V.35 connector.

The R-paks that ship on the card are removed ONLY when you are using ports 1A or 1B on the Hydra cable. There are no specialized RS-232-C, R-paks. If you use ports 2A or 2B on the Hydra cable leave the R-paks in place. You also leave the R-paks in place when using either connector of the V.35 cable.

Here is some details on configuring the serial card R-paks for products that use the Apple Serial NB card, such as MacX25 and SNA•ps:

MacX25

You must configure MacX25 to use port 1A of either the Hydra cable or V.35 cable. When using the Hydra cable, remove the R-paks.

SNA•ps

Any of the Hydra cable ports or V.35 cable ports may be used. The same R-pak "rule" applies, if ports 1A and/or 1B of the Hydra cable are used the R-paks must be removed.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12583

Tech Info Library

Express Modem: Fax Driver Unable to Display EPS Image (7/93)

Revised: 7/7/94
Security: Everyone

Express Modem: Fax Driver Unable to Display EPS Image (7/93)

==========

Article Created: 12 July 1993

TOPIC ----------

I'm importing an EPS (Encapsulated PostScript) graphic into Word Perfect (v.2.1.1.) using a Duo 230, and an Express Modem. When I attempt to send it (fax), the graphic does not show up. The rest of the document shows up, but the graphic never makes it.

DISCUSSION ----------

To verify the problem, I created an EPS file, opened a PICT in Photoshop and did a "Save As" using the EPS file type. After clicking on the "Save" button I was presented with another dialog box which had an option for specifying a PICT preview. I specified "None" and pasted the EPS file into my word processor. No graphic was displayed on the screen or in a fax created by that document. However, if I selected a PICT preview both the screen and fax versions of the document displayed the graphic.

The fax driver only uses QuickDraw, the same way the video display does, so it's unable to display an EPS image unless the PICT preview is included. If the same document were to be printed to a non-PostScript device (StyleWriter, LaserWriter LS, and so on) that the same thing would happen. In other words, no PICT preview, no graphic.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12584

Tech Info Library

Serial NB Card: RS-232 (Multi-headed cable) Pinouts (7/93)

Revised: 6/23/94
Security: Everyone

Serial NB Card: RS-232 (Multi-headed cable) Pinouts (7/93)

==========

Article Created: 12 July 1993
Article Reviewed/Updated: 23 June 1994

TOPIC ----------

I would like to manufacture my own RS-232 (multi-headed Hydra cable) for the Serial NB card and the V.35 cable. Do you have the pinouts?

DISCUSSION ----------

Apple's RS-232 cable (M0128LL/A) and the V.35 cable (M0145LL/A) have been manufactured to meet our shielding requirements.

Making your own custom RS-232 cable may work, but because of the shielding requirements, Apple cannot recommend the use of custom cables as signal loss may occur.

The V.35 cable contains components in addition to the cable. The information for this cable is considered proprietary information.

Here are the pinouts for the RS-232 (multi-headed) cable for the Serial NB card. This information is provided for its technical content only and the use of this information to make custom cables is not recommended.

Serial NB RS-232C 4 head cable has one 62 pin D connector labeled P1 connected to four 25 pin D connectors labeled P2 through P5.

P1	P2	
2	2	
24	3	A 6.8K ohm resistor is tied to pin 7 (ground)
4	4	
5	5	

43	6	
62	7	
44	8	A 6.8K ohm resistor is tied to pin 7 (ground)
22	15	A 6.8K ohm resistor is tied to pin 7 (ground)
26	17	A 6.8K ohm resistor is tied to pin 7 (ground)
45	20	
46	22	

P1	P3
12	2
13	3
14	4
15	5
53	6
52	7
54	8
38	15
39	17
55	20
56	22

P1	P4	
7	2	
32	3	A 6.8K ohm resistor is tied to pin 7 (ground)
9	4	
10	5	
48	6	
57	7	
49	8	A 6.8K ohm resistor is tied to pin 7 (ground)
30	15	A 6.8K ohm resistor is tied to pin 7 (ground)
34	17	A 6.8K ohm resistor is tied to pin 7 (ground)
50	20	
51	22	

P1	P5
17	2
18	3
19	4
20	5
58	6
47	7
59	8
42	15
40	17
60	20
61	22

The following pins are tied together on the 62 pin connector:

11, 16, 25, 37, 33 are tied together. Pins 21, 23, 29, 31, 41 are also tied together.

Article Change History:
23 Jun 1994 - Revised title to more accurately reflect contents.

Support Information Services

Copyright 1993-94, Apple Computer, Inc

Tech Info Library Article Number:12586

Tech Info Library

Andrew Corporation

Revised: 2/17/97
Security: Everyone

Andrew Corporation

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Article Created: 12 July 1993
Article Reviewed/Updated: 17 February 1997

Andrew Corporation

8313 Highway 71 West
Austin, TX 78735

General: 512 301-8000
Sales: 800 328-2696
Fax: 512 301-8195

Worldwide Web Site: http://www.andrew.com/

Company Profile:
Hardware and Software for connecting Mac OS-based computers to IBM AS/400 systems. Developed the first AS/400 Client Access software for the Mac OS. ODBC driver available for OS/400 and Mac OS.

Article Change History:
17 Feb 1997 - Updated to current information.

Copyright 1993-97, Apple Computer Inc.

Tech Info Library Article Number:12587

Tech Info Library

Andrew Network Products Group

Revised: 7/12/93
Security: Everyone

Andrew Network Products Group

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Article Created: 07/12/93
Article Reviewed: 07/12/93
Article Updated: 07/12/93

Andrew Network Products Group

23610 Telo Ave.
Torrance, CA 90505

310-784-8000

Fax: 310-784-8094

Company Profile:
Hardware and software, specializing as a global communications equipment supplier serving business and government. (Austin address: formerly KMW Systems Corp.), hardware, specializing in protocol converter boxes and mid-range terminal emulation.

Article Change History: 07/12/93 New Article

Copyright 1993, Apple Computer Inc.

Tech Info Library Article Number:12588

Tech Info Library

Apple Workgroup Server 95: Delay In File Management (6/93)

Revised: 7/12/93
Security: Everyone

Apple Workgroup Server 95: Delay In File Management (6/93)

==========

Article Created: 11 June 1993

TOPIC -----

Is there a significant delay in basic file management when renaming an existing folder, moving folders into another folder, or opening folders? It is not acceptable to wait more than a few seconds for a window to display the contents of a folder with approximately 20 files.

DISCUSSION -----

No, improvement is seen over the current use of NFS shared services.

The performance with about 20 files in a folder is about 1-2 seconds to open the folder. This performance can also depend on the CPU being used as the client workstation.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12589

Tech Info Library

Apple Workgroup Server 95: Setting Privileges (6/93)

Revised: 7/12/93
Security: Everyone

Apple Workgroup Server 95: Setting Privileges (6/93)

==========

Article Created: 11 June 1993

TOPIC -----

Is it possible to assign access privileges from any Macintosh using System 7's file sharing utility?

DISCUSSION -----

Privileges are set by the AppleShare Pro Admin function, or by the administrator account using the "Sharing..." item of the "File" menu of the finder on a client station. A User can also change the privileges for an Item that belongs to that user from the workstation via the "Sharing..." item in the "File" menu.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12590

Tech Info Library

AppleShare Pro: Application Incompatibilities (6/93)

Revised: 7/12/93
Security: Everyone

AppleShare Pro: Application Incompatibilities (6/93)

==========

Article Created: 11 June 1993

TOPIC ----------

Are there any incompatibilities between AppleShare Pro on an Apple Workgroup Server (AWS) 95 and the following applications:

- ACIUS' 4th Dimension
- Adobe's PhotoShop
- Aldus' FreeHand
- Aldus' PageMaker
- Apple's MacX
- Claris' CAD
- Claris' FileMaker
- Claris' HyperCard
- Claris' MacDraw
- Claris' MacDraw Pro
- Claris' MacProject Pro
- FormZ
- MacroMedia's ModelShop II
- Microsoft's Excel
- Microsoft's Word
- SuperPaint

DISCUSSION ----------

Based on the fact that the server is not supposed to be used as a workstation, the client system won't see any differences than using any other AFP server. If the question is based on launching applications that reside on the server, then the facilities for copy protection and limited number of launches are implemented.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12591

Tech Info Library

Apple Workgroup Server 95: Customize Windows (6/93)

Revised: 7/12/93
Security: Everyone

Apple Workgroup Server 95: Customize Windows (6/93)

==========

Article Created: 11 June 1993

TOPIC -----

Is it possible to customize the size and appearance of the windows for the "root" level of each volume? We are accustom to viewing folders sorted "by name" rather than "by icon" as the default.

DISCUSSION -----

The Administrator can change the window view, and if a user has write privileges to the volume or folder being mounted, the user could change the view.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12592

Tech Info Library

AppleShare Pro: Display Correct Creator Dates (6/93)

Revised: 7/13/93
Security: Everyone

AppleShare Pro: Display Correct Creator Dates (6/93)

==========

Article Created: 11 June 1993

TOPIC ----------

Will all documents display the correct file size, creation date and modified date for the applications listed above that you have worked with?

DISCUSSION ----------

Yes, files copied to the server will preserver the correct "Created or Modified" dates. Files created on the server will be created with the current date, time of the server. Folders created on the server will be created with the current date, time of the server. Folders copied to the server will have the correct "Created" date and the modified date will be set to the current date, time on the server. This is also the way current AppleShare servers work.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12593

Tech Info Library

Apple 500MB & 1GB Hard Drives: SCSI Pin Configuration (7/95)

Revised: 7/31/95
Security: Everyone

Apple 500MB & 1GB Hard Drives: SCSI Pin Configuration (7/95)

==========

Article Created: 12 July 1993
Article/Revised/Updated: 31 July 1995

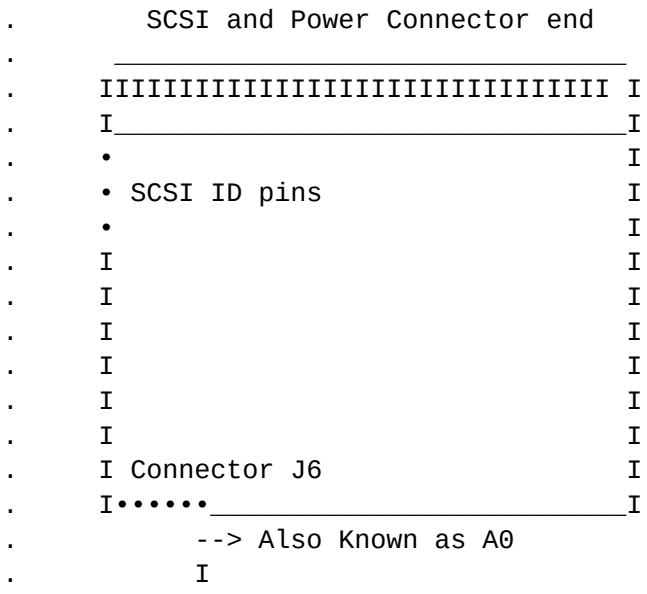
TOPIC ----------

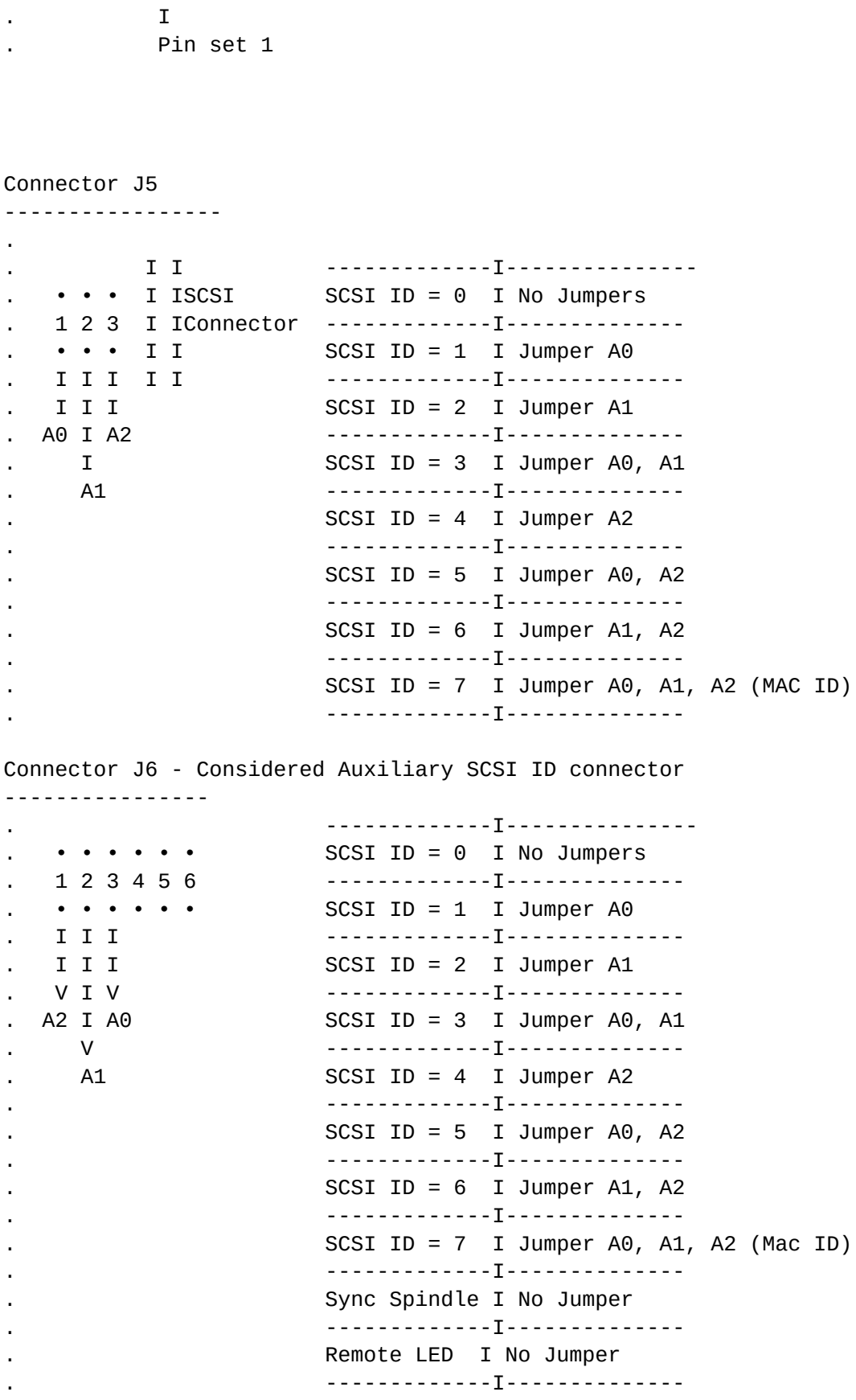
What is the SCSI pin configuration for Apple's 500 MB and 1 GB hard drives?

DISCUSSION ----------

Remember to use Apple drives only in the systems for which they were originally intended. Apple ships hard drives in certain configurations due to availability, pricing, and technical specifications (such as termination power and power draw). It is important to order and use the correct part for the corresponding Macintosh system.

The 500 MB and 1 GB Seagate drive SCSI pin configuration information is as follows:





Both these drives have an additional connector (J2), which is located on the top of the drive printed circuit board (PCB) and contains the following pin sets:

Connector J2

- Pin set 1 - TP - Term. Power from SCSI Bus - Jumper Installed
- Pin Set 2 - TP - Term. Power to SCSI Bus - Jumper Installed
- Pin set 3 - SS - Self Seek - NO JUMPER
- Pin Set 4 - PE - Parity Enabled - Jumper Installed
- Pin Set 5 - WP - Write Protect - NO JUMPER
- Pin Set 6 - ME - Motor Enable Option - NO JUMPER
- Pin Set 7 - DS - Motor Delay Start Option - NO JUMPER
- Pin Set 8 - RS - Reserved (Future Use) - NO JUMPER

Apple only supports drives in configurations for which they were intended. If an internal drive, or any drive for that matter, is installed in an external case, but is not sold by Apple in this configuration, Apple does not support it.

Article Change History:
31 Jul 1995 - Corrected misspellings; reformatted; reviewed for accuracy.
08 Dec 1994 - Specified that information is for Seagate drives.
24 Sep 1993 - Corrected orientation of Pin Set 1 on connector J6.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12594

Tech Info Library

System 7.x: Can't Rename HD & Custom Icons, Shared Items (9/94)

Revised: 9/20/94
Security: Everyone

System 7.x: Can't Rename HD & Custom Icons, Shared Items (9/94)

==========

Article Created: 13 July 1993
Article Reviewed/Updated: 15 September 1994

TOPIC ----------

I can't rename the hard disk on my Macintosh running System 7 or System 7.0.1; or I changed the Macintosh hard disk icon to a custom icon. I chose "Get Info" under the Finder's File menu and pasted in another icon. I couldn't clear or change back to the original icon.

What causes this and what can be done to fix it other than completely reinitializing the hard disk?

DISCUSSION ----------

First ensure that you aren't running File Sharing, and you don't have the hard drive shared. Even if you do not set the sharing permissions for a particular volume, File Sharing still makes all volumes available to the owner for remote access. To change the name of a mounted volume, turn File Sharing off with the Sharing Setup Control Panel, rename the disk, then turning File Sharing back on again.

If an AppleShare File or Print Server software is running and you can't change the name of a mounted volume, then quit the sever software, rename the disk, then start the server software again.

If File Sharing or AppleShare Server software is not on, then the problem is with versions of System 7 prior to 7.0.1 where volume names and icons sometimes can't be changed. If you are a System 7.0 user and are having trouble renaming your hard disk or a folder, you may need Rename Rescue. The problem was corrected in System 7.0.1 and later.

What It Is

Rename Rescue is a small application that unlocks the name of folders and volumes.

How To Use It

If file sharing or AppleShare server software is on, turn it off.

From the Finder, select the items that need to be unlocked and drag them onto the Rename Rescue icon. You may select one or many items at a time. The Finder will automatically highlight Rename Rescue's icon. If Rename Rescue was not already started, it will open at this time, attempt to unlock, present a dialog for each item reporting the results. It will then automatically quit.

The possible results are:

- The item can not be renamed because it is being shared.
- The item can not be renamed because it is a System reserved folder.
- The item was already renameable.
- The item is now renameable.

After Rename Rescue unlocks the items, you should restart your Macintosh so the Finder will recognize the change.

Technical Information (how folders get locked in the first place)

The names of folders or volumes may get inadvertently locked on a computer running System 7.0. For this to happen, several things must occur. Unless all of these things have occurred, you will probably not need Rename Rescue.

- The volume or folder is (or was) used on a drive connected to a computer running System 7.0 (the problem is corrected in System 7.0.1 and newer).
- The volume or folder was shared with a computer running System 6.x (all versions of System 6) and the connection was unexpectedly interrupted (power failure, crash, or improper shutdown).
- Upon restart, the volume and/or folder on the System 7.0 computer may not renameable.

To get Rename Rescue, search on one of the following articles:

Where To Find Apple Software Updates - listing of online services for all "free" Apple software updates.

Obtaining Apple Product Support in the USA - a list of 800#'s and online services for Apple support info, software updates, and a subset of the Apple Tech Info Library.

Article Change History:
15 Sept 1994 - Removed program binary file.
05 April 1994 - Added information about AppleShare software.
29 March 1994 - Added information about the Raname Rescue. Updated enclosure.

..TIL12595-System_7-x-Cant_Rename_HD_and_Custom_Icons_Shared_Items_9-94.pdf

Support Information Services

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Tech Info Library Article Number:12595

Tech Info Library

A/UX 3.0 & Large Monitors Fixed in A/UX 3.0.1 (1/96)

Revised: 1/25/96
Security: Everyone

A/UX 3.0 & Large Monitors Fixed in A/UX 3.0.1 (1/96)

==========

Article Created: 12 July 1993
Article Reviewed/Updated: 25 January 1996

TOPIC ----------

The A/UX versions 1.x.x and 2.0.x both supported monitors running 1024 x 768 resolution. When I upgraded from A/UX 2.0.x to 3.0, an incompatibility occurred with this monitor size. Apple determined the problem was with A/UX 3.0 and the fix would be released in A/UX 3.0.1. I looked in the Tech Info Library and didn't see any information about this problem. Can you tell me if this situation does exist and has it been corrected in A/UX version 3.0.1?

I'm running A/UX on a Macintosh IIfx with a SuperMac 19 inch monitor that only does 1024 x 768 resolution. It's unclear whether the problem occurs with all 1024 x 768 resolution monitors or just SuperMac.

DISCUSSION ----------

Yes, the A/UX 3.0 problem with a 1024 x 768 resolution monitor was a known problem.

According to A/UX engineering, the incompatibility problem with 1024 x 768 resolution monitors in A/UX 3.0 has been fixed in A/UX 3.0.1. It's for all 1024 x 768 resolution monitors in general.

Article Change History:
25 Jan 1996 - Changed to correct product name.

Support Information Services

Copyright 1993-96, Apple Computer, Inc.

Tech Info Library Article Number:12597

Tech Info Library

Portable StyleWriter: Attaching the Sheet Feeder (7/93)

Revised: 10/25/93
Security: Everyone

Portable StyleWriter: Attaching the Sheet Feeder (7/93)

==========

Article Created: 13 July 1993
Article Reviewed/Updated: 25 October 1993

TOPIC ----------

This article discusses how to attach the Automatic Sheet Feeder to the Portable StyleWriter.

DISCUSSION ----------

The Automatic Sheet Feeder (optional attachment) enhances the printer's capability to function as a desktop printer. The sheet feeder can hold up to 50 sheets of paper for automatic feeding to the printer.

The sheet feeder attaches to the back of the printer when the printer is in the vertical position.

To use the Auto Sheet Feeder, position dip switch 1 in the printer to the ON position (up). The dip switch is located under the paper cover on the right side.

Sheetfeeder Specifications:
Size: 12.2 x 8.6 x 2.3
Weight: 2.9 pounds
Bin Capacity: 50 sheets @ 17 pounds
Paper Sizes: Letter, Legal, A4, B5 envelopes
Paper Weight: 17 to 24 pounds

Article Change History:
25 October 1993 - Added sheetfeeder specifications

Copyright 1993, Apple Computer, Inc

..TIL12598-Portable_StyleWriter-Attaching_the_Sheet_Feeder_7-93.pdf

Tech Info Library Article Number:12598

Tech Info Library

Portable StyleWriter: Cleaning the Ink Cartridge (9/95)

Revised: 9/1/95
Security: Everyone

Portable StyleWriter: Cleaning the Ink Cartridge (9/95)

==========

Article Created: 12 July 1993
Article Reviewed/Updated: 01 September 1995

TOPIC ----------

This article describes how to clean the ink cartridge on the Portable StyleWriter.

DISCUSSION ----------

To clean the ink cartridge, follow these steps:

Step 1

Make sure the printer is turned off and has a sheet of paper loaded.

Step 2

Hold down the FWD ADJ and REV ADJ buttons, and press the Power button. The printer beeps.

Step 3

Release the Power button, keeping the FWD ADJ and REV ADJ buttons pressed. The printer beeps again.

Step 4

Immediately release the FWD ADJ and REV ADJ buttons and press the LF/FF button.

The "On Line" light blinks as long as the cleaning process goes on. The cleaning process stops automatically and a test pattern is printed. See the User's Guide for a diagram on how the test pattern should appear.

The lines on the test pattern should all be connected, with no breaks. If any of the lines are missing, repeat the cleaning process.

Note:
To clean the ink cartridge without printing the test pattern, do not press the LF/FF button in step 4.

IMPORTANT: Cleaning the ink cartridge consumes a small amount of ink. If you repeat the procedure unnecessarily, you reduce the life of the cartridge.

Article Change History:
01 Sep 1995 - Revised for technical accuracy.

Support Information Services

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12599

Tech Info Library

Portable StyleWriter: Manual Feed (7/93)

Revised: 7/13/93
Security: Everyone

Portable StyleWriter: Manual Feed (7/93)

==========

Article Created: 13 July 1993

TOPIC ----------

This article discusses how to load envelopes or other material in the Portable StyleWriter.

DISCUSSION ----------

You can load one envelope, transparency, or sheet of stock paper in the printer for a manual feed. The printer should be turned on, with the Power and Error lights lit.

1) Position the printer for vertical operation by rotating the footer on the back of the printer case.

2) Open the top cover.

2) Set the paper thickness adjustment dial in the correct position. The thumbwheel is located on the right bottom of the printer. For example: Set the dial to the envelope icon if you will be printing on an envelope.

3) Align/insert the envelope or sheet into the slot on the back of the printer.

   NOTE: The printer prints on the side of the envelope or sheet that faces up.

4) Press the LF/FF button to feed the material into the printer. The Error light turns off.

5) Press the On Line button to make the printer ready for printing.

..TIL12600-Portable_StyleWriter-Manual_Feed_7-93.pdf

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12600

Tech Info Library

Portable StyleWriter: Paper Thickness Adjustment Dial (7/93)

Revised: 7/13/93
Security: Everyone

Portable StyleWriter: Paper Thickness Adjustment Dial (7/93)

==========

Article Created: 13 July 1993

TOPIC

This article discusses how to set the paper adjustment dial on the Portable StyleWriter.

DISCUSSION

The paper thickness adjustment is a thumbwheel (dial) that is detented in one of the three positions. The positions are "sheet" position, a "center" position (marked with a dot) and the "envelope" position. The thumbwheel is located on the right bottom of the printer.

The paper thickness setting should be set to:
- Sheet position: for sheet paper
- Center position: for sheet paper with graphics and transparencies
- Envelope position: for envelopes and heavy stock paper.

Without the optional sheet feeder the user can load one sheet of paper or envelope at a time into the printer. Paper can be printed while the printer is horizontally or vertically oriented. To print envelopes the printer must be in the vertical position.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12601

Tech Info Library

System 7: Keep Window Active While Selecting Another (7/93)

Revised: 7/16/93
Security: Everyone

System 7: Keep Window Active While Selecting Another (7/93)

==========

Article Created: 8 July 1993

TOPIC -----

This article describes how to select a background window without losing selections in the active window.

DISCUSSION -----

If you select some files and then realize you need to scroll a background window to find a destination folder, just hold down the Command key when clicking on the background window.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12602

AWS 95: Mounting & Sharing Other NFS Volumes (6/93)

Revised: 7/13/93
Security: Everyone

AWS 95: Mounting & Sharing Other NFS Volumes (6/93)

==========

Article Created: 11 June 1993

TOPIC ----------

Can I mount a SUN NFS volume to an Apple Workgroup Server (AWS) 95 in order to access our SUN CADD server and make its data available to all Macintosh users? Also, would you recommend this arrangement (mounting SUN NFS volumes) for re-exporting 12 SUN file systems from one AWS 95? What impact does the NFS keep alive traffic have on AWS 95 performance?

DISCUSSION ----------

You can NFS mount any file system exported by the SUN and then make the mount point a Shared Item in the AppleShare Pro Admin program. We would not recommend this setup unless it was absolutely necessary. The keep alive traffic should have very little effect on the performance of the system. However, the access performance on this kind of shared item would not be as good as the one obtained from local volumes.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12603

Tech Info Library

Apple Workgroup Server 95: Folder Contains Many Files (6/93)

Revised: 7/13/93
Security: Everyone

Apple Workgroup Server 95: Folder Contains Many Files (6/93)

==========

Article Created: 11 June 1993

TOPIC ----------

Our UNIX file systems tend to have large directories. What happens to an Apple Workgroup Server (AWS) 95 when a folder containing 200 files is opened? What happens to the AWS 95 when a folder containing 1500 files is opened? What happens to the Macintosh client in both of these scenarios?

DISCUSSION ----------

We tested the performance of the server opening a folder containing 300 files from a workstation. We tried this form a Macintosh IIfx and a Macintosh Quadra 950. In both cases, the first time we opened the folder it took about 20 seconds. Subsequent access to the same folder only took about 2-3 seconds.

We do not recommend large quantities of files to be stored in one single folder. This kind of organization will tend to run into limitations of some applications as well as some Finder limitations. Attempting to view large amounts of data in one window, something in the range of 500 - 1500 files will create very slow opening times and drop-out viewing problems. The specific number depends on RAM and computer.

This is a real world limitation imposed by the use of the List Manager in the SFGetFile dialog box used for opening files. There's nothing wrong with the directory structure, nor is there anything wrong with the application. Here's a description of what's going on:

> This limitation isn't specific to the AWS 95 System or System 7.x. The same limitation (with a slightly different variation) existed under System 6.0.x. The issue is that the SFGetFile call, which generates the Open dialog box in almost every application, uses the List Manager to display the files in the file list of the dialog box. The List Manager

has a 32K limit on the amount of data stored in a list. However, SFGetFile uses a portion of that 32K for data other than the file names. So you end up with 64 bytes per file if you have the maximum file name size of 31 characters (plus 1 byte for the length byte). We arrived at this number empirically by writing a program that created files with the names:

"000abcdefghijklmnopqrstuvwxyzab" to "999abcdefghijklmnopqrstuvwxyzab"

A good approximation of how many files will display is 32,767 / (file name size + 32). This results in 682 for 16 character names and 819 for 8 character names.

The bottom line beyond all of these calculations is that this is a hard limit. There's no workaround to display more data from a single folder within this dialog box. The list displays alphabetically, and the bottom of the list isn't displayed.

Also, as you increase the number of files in a folder, the performance at the Finder level decreases pretty dramatically. Although the Finder can handle these numbers of files, you'll see slowdowns in opening and closing windows. Another concern is the total number of files you're planning to have on a volume. There are very real limits on this as well, described in other articles posted in the Tech Info Library.

Another thing to keep in mind here is how many levels of nesting are going to be created within a folder.

"Inside Macintosh, Volume IV" states that there is no limit to the number of levels of subdirectories. Because of pathname limitations, it is not always possible to specify a file using its full pathname.

The maximum length of a pathname under the Finder - including the Volume and Folder - is 255 characters, including colons. For example:

InternalHD:Folder1:Folder2:Filename

This limitation has nothing to do with the Finder, it's a limitation of the file system.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12604

Tech Info Library

AppleShare Pro: Installing The Software (6/93)

Revised: 7/13/93
Security: Everyone

AppleShare Pro: Installing The Software (6/93)

==========

Article Created: 11 June 1993

TOPIC ----------

What is involved in setting up the 230MB internal hard drive as an A/UX server? How is AppleShare Pro installed, or is this software and the operating system already installed?

DISCUSSION ----------

The A/UX Operating System will be preinstalled on the Hard Disk. The AppleShare Pro software will need to be installed via the regular installer. A/UX must be running before the installation of AppleShare Pro.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12605

Tech Info Library

AppleShare Pro: Admin Similarities to Prior Versions (6/93)

Revised: 7/13/93
Security: Everyone

AppleShare Pro: Admin Similarities to Prior Versions (6/93)

==========

Article Created: 11 June 1993

TOPIC ----------

Is the basic administration of AppleShare Pro similar to AppleShare version 3.0.x?

DISCUSSION ----------

The basic administration for the server is the same. There are changes with respect to the fact that the root "/" volume can't be shared. Also, you can't share a folder that contains a UNIX mount point, you must share the folder that is the mount point. The Users, Groups and Privileges administration windows will look the same as in previous versions of AppleShare.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12606

Tech Info Library

Microcom

Revised: 4/4/97
Security: Everyone

Microcom

==========

Article Created: 07/13/93
Article Reviewed: 07/13/93
Article Updated: 04/04/97

Microcom
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500 River Ridge Dr.
Norwood, MA 02062-5028

800-822-8224

617-551-1000

617-551-1021 (Sales) Fax

Company Profile:
Hardware, software, and datacomm (mfg.), specializing in remote control programs, error checking data communications protocols, EtherTalk/Ethernet LAN.

Copyright 1993-97, Apple Computer Inc.

Tech Info Library Article Number:12607

Fonts: Different Versions in LaserWriter ROM Change Output

Revised: 7/16/93
Security: Everyone

Fonts: Different Versions in LaserWriter ROM Change Output

==========

Article Created: 14 July 1993

TOPIC -----

When I print out Courier 12 point text on four different Apple printers (LaserWriter IINT, IIg, IIf, and Pro 630), there are clear differences between the printers, although I use the same TrueType system font. The kerning (space, between letters) isn't consistent. I didn't customize the kerning between letters.

Is there any explanation to account for this?

DISCUSSION -----

What you see is the difference between the various font versions of Courier from Adobe that are in the printer's ROM. The printer ROM has the current font version available at the time that the printers were released. Basically, Adobe controls these PostScript font changes and makes these changes to bring all of their fonts more in line with the actual fonts they license from various font foundries.

The Courier font on the LaserWriter Pro printers looks significantly lighter compared to previous LaserWriters. This is due to the version of the font that was built into the printer's ROM, as well as the fact that 600 dpi printers have more precise dot placement and use smaller dots than 300 dpi printers. With this situation, Apple decided to create a special LaserWriter Pro Font Tune-up Disk which contains a different version of the Courier font, and can be downloaded to the printer's RAM via the LaserWriter Utility. You can find this software on AppleLink following this path:

Software Sampler
  Apple SW Updates
    Macintosh
      Printing Software

If you require very consistent output, then a possible solution might be to

obtain a specific version of Courier from Adobe and then download that font to RAM, or a hard disk in all of the printers.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12608

Tech Info Library

Font Substitution: Print Driver Substitutes 4 Fonts (7/93)

Revised: 8/23/93
Security: Everyone

Font Substitution: Print Driver Substitutes 4 Fonts (7/93)

==========

Article Created: 14 July 1993

TOPIC --------------------

Only four specific fonts get substituted when Font Substitution is turned on. The substitutions are as follows:

- New York changes to Times
- Geneva changes to Helvetica
- Monaco changes to Courier
- Seattle changes to a modified version of Helvetica

Is this a feature implemented by the LaserWriter driver?

DISCUSSION --------------------

This feature is implemented by the print driver, which performs the substitution when it senses that one of the four bitmap fonts are being used. Thus, while the print driver is converting the QuickDraw commands to PostScript and Font Substitution is checked, the driver generates the PostScript commands to use a Type 1 font instead of generating the PostScript for a bitmap.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12609

Tech Info Library

LaserWriter Select 310: Printing From Both Ports (7/93)

Revised: 7/16/93
Security: Everyone

LaserWriter Select 310: Printing From Both Ports (7/93)

==========

Article Created: 15 July 1993

TOPIC ----------

I have two questions regarding a LaserWriter Select 310 connected to both a Macintosh and a PC.

1) The Select 310 manual states that you shouldn't have both the serial and the parallel cables connected at the same time. Are there any problems leaving both cables plugged in?

2) I have read that you cannot print from both systems without shutting the printer down. I do in fact print from both at the same time with no problems. Can you explain why it works for me?

DISCUSSION ----------

1) The manual is correct in stating that the serial and parallel port of the LaserWriter Select 310 cannot be used at the same time. Having the ports physically connected at the same time will not cause any damage to the printer, and is just stated to prevent the possible use of both simultaneously.

2) Basically, the LaserWriter Select 310 DOES NOT support port arbitration like the Personal LaserWriter NTR, LaserWriter IIf/IIg, and LaserWriter Pro printers. The printer can get very confused if it is communicating on one port, and suddenly receives some spurious data from another. It is possible that you may be able to print to both ports simultaneously since both ports are in fact active, however, this is neither suggested or supported by Apple.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12610

Tech Info Library

Using the Performa's Launcher (7/93)

Revised: 7/16/93
Security: Everyone

Using the Performa's Launcher (7/93)

==========

Article Created: 14 July 1993

TOPIC ----------

The following article describes the use of the Launcher program installed in all Performa models.

DISCUSSION ----------

The Launcher provides convenient access to the most commonly used application programs, folders, and documents. The Launcher window appears at the bottom left of the screen when the Macintosh Performa is powered on. The application programs that came with the Macintosh Performa automatically appear in the Launcher. Items are opened from the Launcher by clicking on the item's button.

To install an item in the Launcher:

1) Find the desired item and click on it.

2) Next, choose "Make Alias" from the File menu. The alias appears on top of the original. Its name is in italics and ends with the word "alias."

3) Double-click the System Folder to open it and locate the Launcher Items folder.

4) Drag the alias of the item to be installed into the Launcher Items folder.

5) Close the Launcher Items folder and the System Folder by clicking in the close box in the upper left corner of those windows and click on the Launcher to make it the active window. Items in the Launcher are arranged in alphabetical order, so it may be necessary to scroll to locate the button for the program which was installed.

If the Launcher doesn't appear on your screen when your Performa is first turned on:

1) Use the Finder's Find command to locate the Launcher file. It's usually located in the Control Panels folder inside the System Folder.

2) After selecting the Launcher file, select the Make Alias command from the File menu to create an alias for the Launcher file.

3) Drag the Launcher alias into the Startup Items folder inside the System Folder on the hard disk.

To remove an item from the Launcher window:

1) Open the Launcher Items folder inside the System folder.

2) Drag the icon of the item you want to remove from the Launcher Items folder.

If you don't want the Launcher window to appear when you turn on your computer:

1) Open the Startup Items folder in your System Folder.

2) Drag the Launcher alias out of the Startup Items folder.

More information can be found in the manual that came with your computer.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12611

Tech Info Library

VIA Systems, Inc. (U.S. Dist. for Opal Software Ventures Pty.)

Revised: 7/20/93
Security: Everyone

VIA Systems, Inc. (U.S. Dist. for Opal Software Ventures Pty.)

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Article Created: 15 July 1993
Article Reviewed/Updated: 20 July 1993

VIA Systems, Inc. (U.S. Distributor for Opal Software Ventures Pty. Ltd.)
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660 Southpointe Court, Suite 200
Colorado Springs, CO 80906

719-579-6800

719-576-7246 Fax

Company Profile:
Software, specializing in communications software

Copyright 1993, Apple Computer Inc.

Tech Info Library Article Number:12614

Tech Info Library

Apple Print Pack: Supported Drivers (7/93)

Revised: 7/16/93
Security: Everyone

Apple Print Pack: Supported Drivers (7/93)

==========

Article Created: 13 July 1993

TOPIC -----

Does the Apple Print Pack(M7900LL/A) support IBM 4070ij portable printer?

DISCUSSION -----

GDT Softworks, the developer of Print Pack, says that the IBM 4070ij is supported with the Canon BJ10EX driver. The IBM 4070ij is actually a Canon engine. Print Pack currently ships with the following 4 drivers:

- Canon BJ10EX
- Diconix 701
- Epson FX
- Epson LQ

The Print Pack comes with an upgrade coupon for the full blown version of Power Print directly from GDT Softworks which includes a total of 16 print drivers and Background printing capability. The Print Pack doesn't include Background printing capability. Please contact GDT Softworks directly for information on the drivers available in the upgrade. To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12615

Tech Info Library

AWS 95, A/UX 3.0.1 and DEC One GB Drive (7/93)

Revised: 7/20/93
Security: Everyone

AWS 95, A/UX 3.0.1 and DEC One GB Drive (7/93)

==========

Article Created: 15 July 1993

TOPIC --

I purchased A/UX several months ago and ended up returning it because of compatibility problems with a DEC DSP 3105S one GB Hard Drive.

I now want to purchase an Apple Workgroup Server (AWS) 95, but I'm concerned this same problem will be encountered.

Has the incompatibility between A/UX and the DEC DSP 3105S one GB Drive been resolved?

DISCUSSION --

Yes, the problem with the DEC DSP 3105S one GB drive on an AWS 950 has been fixed, and tested with an AWS 95 and A/UX 3.0.1.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12616

Tech Info Library

Macintosh Hardware System Update 2.0: Description (7/93)

Revised: 7/16/93
Security: Everyone

Macintosh Hardware System Update 2.0: Description (7/93)

==========

Article Created: 19 July 1993

TOPIC ----------

This update offers software improvements, and contains software enhancements to address specific problems sometimes encountered. This update requires Macintosh system software version 7.1 and isn't intended for Macintosh Performa users.

DISCUSSION ----------

In general, the update provides system-level improvements to increase overall system reliability on most Macintosh computers. Here are specific features of the update:

- Addresses possible floppy disk and hard disk problems the Macintosh IIsi, IIci, IIvx, IIvi, Centris, Quadra, and PowerBook computers.
- Manages fonts in the computer's memory more efficiently.
- Improves the accuracy of the system's clock in Macintosh LC, LC II, IIsi, IIvx, IIvi, Classic II, Quadra 900, and Quadra 950 computers.
- Corrects problems ejecting floppy disks when the computer is shut down, on Macintosh IIsi, IIci, IIvx, IIvi, Quadra 700, and Quadra 950 computers.
- Corrects color problems users may have with the Apple Basic Color monitor on Macintosh Centris and Macintosh Quadra computers.
- Removes horizontal white lines that may appear while scrolling on Quadra and Centris systems with a Macintosh 16-inch Color Display.
- Improves the reliability of high-speed modems and similar devices connected to Macintosh LC, LC II, IIsi, IIvx, IIvi, Classic II, Quadra 900, and Quadra 950 computers.

- Includes HD SC Setup version 7.2, which gives users more flexibility to format large hard disks between 1 and 2 gigabytes.

- Includes Apple Disk First Aid version 7.1.1, a utility that repairs damaged disks.

- Updates the Macintosh PowerBook Control Panel and Express Modem software to support standard communications software.

- Includes Sound Manager version 3.0, which enhances sound performance on most Macintosh computers.

- Adds software for the Apple Adjustable Keyboard to allow connecting the keyboard to any Macintosh computer without separately installing special keyboard software.

- Updates the Memory Control Panel (version 7.1.1) fixing possible memory problems that occur while using large RAM disks with System 7.1.

- Updates the System Enabler (version 1.0.5) for the Macintosh Color Classic which enables adding the Apple IIe Card and software to the Classic. In addition, the System Enabler improves mouse performance on the Color Classic.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12617

Tech Info Library

QMS Europe BV (QMS, Inc. USA)

Revised: 7/16/93
Security: Everyone

QMS Europe BV (QMS, Inc. USA)

==========

Article Created: 16 July 1993
Article Reviewed/Updated: 16 July 1993

QMS Europe BV (QMS, Inc. USA)

Reactorweg 160 Box 6540
NL-3503 RM Utrecht

Phone: 31 30-420129

Fax: 31 30-431201

Company Profile:
Hardware, specializing in high-performance, non-impact laser printers and printing solutions, including PostScript printers.

Copyright 1993, Apple Computer Inc.

Tech Info Library Article Number:12618

Tech Info Library

Apple Workgroup Server 95: AppleTalk Version Info (7/93)

Revised: 7/16/93
Security: Everyone

Apple Workgroup Server 95: AppleTalk Version Info (7/93)

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Article Created: 12 July 1993

TOPIC -----

This article describes Apple Workgroup Server (AWS) 95 AppleTalk version information.

DISCUSSION -----

The AWS 95 running A/UX 3.0.1 will report that it is running AppleTalk version 56 when queried by applications such as Inter•Poll. AppleTalk version 56 is Phase 2 compliant, is fully compatible with, and can coexist on an extended AppleTalk network with devices running versions 53 or later of AppleTalk. All versions of AppleTalk running on devices located on LocalTalk based (non-extended networks) are completely compatible with, and can inter-operate with, the AWS 95.

The AppleTalk driver used in the AWS 95 is an A/UX based device driver. Installing a Macintosh OS based AppleTalk driver into the System Folder of an AWS 95 will not update the AppleTalk version.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12619

Tech Info Library

AWS 95: Server In Mixed NFS and AppleShare Environment (6/93)

Revised: 7/16/93
Security: Everyone

AWS 95: Server In Mixed NFS and AppleShare Environment (6/93)

==========

Article Created: 11 June 1993

TOPIC -----

Is the Apple Workgroup Server (AWS) 95, A/UX 3.0.1, and AppleShare Pro solution successful as a file server in a mixed NFS and AppleShare environment?

DISCUSSION -----

Yes, both services are supported and if the system is configured correctly, the performance will be very good on both services (NFS and AppleShare). One thing to keep in mind is the A/UX kernel is configured to reserve 50% of the available RAM for kernel buffers. In a 32MB configuration, this leaves about 16MB of RAM free before the system starts to utilize the swap space. The Finder environment where the AppleShare Pro server will run, requests a memory partition of 16MB. If other UNIX processes are started, the system will start swapping and the performance will degrade.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12620

Tech Info Library

AWS 95: Busy Environment & Graphics or Textual Services (6/93)

Revised: 7/16/93
Security: Everyone

AWS 95: Busy Environment & Graphics or Textual Services (6/93)

==========

Article Created: 11 June 1993

TOPIC -----

In a mixed protocol environment (NFS and AppleShare) with 100 computers, is the Apple Workgroup Server (AWS) 95 an industrial strength solution for graphics and textual file service?

DISCUSSION -----

Yes, if the system is configured correctly the performance will be very good. For the usage you mentioned here, we recommend 32MB of RAM and L2 cache upgrade.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12621

Tech Info Library

AWS 95: NFS File Service Direct Mounts From a SUN (6/93)

Revised: 7/16/93
Security: Everyone

AWS 95: NFS File Service Direct Mounts From a SUN (6/93)

==========

Article Created: 11 June 1993

TOPIC ----------

On an Apple Workgroup Server (AWS) 95, is NFS file service supported for direct mounts from a SUN workstations?

DISCUSSION ----------

Yes, the A/UX 3.0.1 Operating System implements NFS 4.1. It can be both a server and a client. It can also make use of the automounter.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12622

Tech Info Library

AWS 95 and A/UX: Filename Character Translations (5/95)

Revised: 5/11/95
Security: Everyone

AWS 95 and A/UX: Filename Character Translations (5/95)

==========

Article Created: 11 June 1993
Article Reviewed/Updated: 11 May 1995

TOPIC ----------

In mixed NFS and AppleShare environments, what are the illegal filename potentials? What happens when illegal file names are encountered by a SUN workstation? What can be done to address these file name problems?

DISCUSSION ----------

A/UX 3.0.1 implements a new environment variable called TBTRANSLATESLASHES. This variable affects how the slash (/) character is translated when it is in the name of a file in the Finder. If the variable is not defined, the "/" is translated and stored as an "_" (underscore) in the file system. If the variable is defined, the "/" will remain in the name and the system will store it as a ":" (colon) in the file system. What this means is that you will see a slash in the name when looking at the file from the Finder and as a colon when viewed from the CommandShell or another UNIX workstation via NFS, telnet, and so on. The files that start with a "." (dot) are stored in the finder with the "•" (bullet) character and in the file system the "." remains a "." (dot). These are the only character translations performed.

Article Change History:
11 May 1995 - Change title to better describe article.

Support Information Services

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Tech Info Library Article Number:12623

Tech Info Library

Apple Workgroup Server 95 and Authentication daemons (6/93)

Revised: 7/19/93
Security: Everyone

Apple Workgroup Server 95 and Authentication daemons (6/93)

==========

Article Created: 11 June 1993

TOPIC -----

Is there a need to run PC/NFS, BWNFSD and/or another authentication daemons on the Apple Workgroup Server (AWS) 95?

DISCUSSION -----

To run AppleShare Pro and have Macintosh Clients you do not need to run either PC/NFSD or BWNFSD. For the AWS 95 to become an NFS server, you have to configure the kernel to have NFS support via a simple newconfig command (newconfig nfs). This will start /etc/nfsd. If the system will also be used as an NFS client, the /etc/biod can also be started.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12624

Tech Info Library

AWS 95 and UNIX Administration (6/93)

Revised: 7/19/93
Security: Everyone

AWS 95 and UNIX Administration (6/93)

==========

Article Created: 11 June 1993

TOPIC -----

On an Apple Workgroup Server (AWS) 95 are basic A/UX administrative commands and syntax similar to Berkeley v. 4.1.3, AT&T, AIX and Solaris? For example:

```
cp
find
grep
ls -lg
mv
passwd
rm
rmdir
```

DISCUSSION -----

The AWS 95 is running the A/UX operating system which is UNIX. All of the basic administration of the system will be the same as on any other UNIX system. It is important to keep in mind that while all the systems you mentioned are based on UNIX, each one has its own idiosyncrasies.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12625

Tech Info Library

AWS 95: Does The Process Table Increase As Users Login (6/93)

Revised: 7/19/93
Security: Everyone

AWS 95: Does The Process Table Increase As Users Login (6/93)

==========

Article Created: 11 June 1993

TOPIC -----

When the number of users login, or volume mounts increases on the Apple Workgroup Server (AWS) 95, does the number of processes listed in the process table increase? If so, what is the process increase ratio? For example: one-to-one, two-to-one as login, mounts increase?

DISCUSSION -----

The number of AppleShare clients will not increase the number of UNIX Processes. The AppleShare Pro software runs inside of the Finder Environment under A/UX. The Finder environment under A/UX is just one UNIX process.

I should mention that there is a big difference between a UNIX style login and an AppleShare style login.

In the UNIX environment, when a user logs in all the commands executed will be executed in the UNIX host where the user logged in. For each user that performs a login, the user will have at least one process attached. In the case of network connected user (using TCP/IP services) there will be more likely two processes. One of these processes is started by the inetd super server to service the connection, the other process is usually a UNIX shell (sh, csh, ksh, tcsh, and so on) which provides the user the interface to the Operating System. If the user executes a command, another process will be started for as long as that command lives.

In the AppleShare environment, the user does not really login in to the server. The user is attaching to the server to obtain access to disk space only.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12626

Tech Info Library

Apple Workgroup Server 95 and File Locking Management (6/93)

Revised: 7/19/93
Security: Everyone

Apple Workgroup Server 95 and File Locking Management (6/93)

==========

Article Created: 11 June 1993

TOPIC -----

What mechanism does an Apple Workgroup Server (AWS) 95 with A/UX and AppleShare Pro use to manage file locking in an inter-networked environment? For example:

- AppleShare volumes
- NFS mounts

DISCUSSION -----

AppleShare Pro will provide file locking mechanism for the finder environment.

Under the Unix environment, the A/UX kernel will provide locking mechanisms like rpc.lockd.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12627

Tech Info Library

AWS 95: How Many NFS Mount Points (6/93)

Revised: 7/16/93
Security: Everyone

AWS 95: How Many NFS Mount Points (6/93)

==========

Article Created: 11 June 1993

TOPIC -----

How many NFS mounts to one Apple Workgroup Server (AWS) 95 would you recommend as the limit? What impact does the NFS keep-alives have on the AWS 95 performance?

DISCUSSION -----

The number of NFS mounts is dependent on kernel memory. Also the number of NFS mounts is restricted by the total maximum size of the mount table. It is configurable via 'kconfig' with the NMOUNT parameter, the default of NMOUNT is 32. The impact of these mount points on the server will depend on how the mount points are created (soft, hard, bg, time out values, NFS cache settings, retry values, retransmission values, and so on).

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12628

Tech Info Library

VideoFusion, Inc.

Revised: 4/4/97
Security: Everyone

VideoFusion, Inc.

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Article Created: 16 July 1993
Article Reviewed/Updated: 4 April 1997

VideoFusion, Inc.

1722 Indian Wood Circle Suite H
Maumee, OH 43537

800-638-5253 (Information)

419-891-1090 (Information)
419-891-1157 (Technical Support)

419-891-9673 FAX

Company Profile:
Develops and markets several QuickTime based video recording and editing products, including FusionRecorder and VideoFusion.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:12629

Tech Info Library

ExperVision, Inc.

Revised: 7/16/93
Security: Everyone

ExperVision, Inc.

==========

Article Created: 16 July 1993

ExperVision, Inc.

3590 North First Street
San Jose, CA 95134

(408) 428-9234 Technical Support

(408) 456-0823 Fax

AppleLink: EXP.SUPPORT
America Online (AOL): OCRBOY
CompuServe (CIS): 71075,113
ExperVision BBS at 408-456-0280 (9600, 8-N-1)

Company Profile:
Develops and markets OCR software products, including TypeReader, OCR scanning software; and ExperFax, which reads fax documents and converts text into a format that can be used with word processing applications.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12630

Tech Info Library

Electronic Studio, The

Revised: 4/4/97
Security: Everyone

Electronic Studio, The

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Article Created: 16 July 1993
Article Reviewed/Updated: 4 April 1997

The Electronic Studio
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7 Fitzroy Square
London W1P 6HJ
England

1 800 892 6834

+44 (0)71 388 0669

+44 (0)71 388 0667 Fax

Company Profile:
Develops and markets ES•F2F, a LAN based videoconferencing (video conference) application that allows any two users on a LAN to connect and see each other.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:12631

Hayes Ultra Modem Back To Back Connect (7/93)

Revised: 7/20/93
Security: Everyone

Hayes Ultra Modem Back To Back Connect (7/93)

==========

Article Created: 17 July 1993

TOPIC -----

Can you provide me with the configuration strings to set up a pair of Hayes Ultra 9600 or 14.4 modems to do back to back connections for demo purposes? The problem is to set the modems up to connect without having to get two phone lines installed when doing demos. I'm looking for a detailed script for setting a demo system up without using an expensive "modem eliminator" box. Any help?

DISCUSSION -----

Sure, you can do that by setting them up in leased line mode and just running a regular phone cord from the line jack on one to the line jack on the other. This will work fine as long as you aren't going more than a few feet. Here's how to setup for leased line mode:

To set two Ultras up for leased line, take the following steps:

1) Designate one modem as "answering" and the other as "originating". It doesn't matter which is which, or where each is placed, but one must generate answer tone while the other is in originate mode.

2) Send the answering modem the following string:
   AT&F&L1S0=1&Y&W

3) Send the originating modem the following string:
   AT&F&L1&Y&W

4) On both modems, set dip switch number 1 to the down position. This should be done *after* you've sent the above setup strings. The remaining 3 switches stay in the up position. You'll find the dip switches on an Ultra underneath the front face plate just to the left of the lights.

That's it. You can test this configuration by hooking the modems up back to back. By that, I mean take the telco cable that came with the modem and run it from the line jack on one modem to the line jack on the other. When you power the modems on, they should sync up and get a carrier with each other.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12633

Tech Info Library

Chinese System Software File Encoding Method (7/93)

Revised: 7/20/93
Security: Everyone

Chinese System Software File Encoding Method (7/93)

==========

Article Created: 16 July 1993

TOPIC --------------------

I need to know what character encoding method is used for simplified Chinese in WorldScript. I'm setting up an office using Chinese system software and I'm trying to develop a standard software set. The two common encoding types are GB and Big 5. I need to know which one Apple uses, or if Apple developed it's own.

DISCUSSION --------------------

We were able to verify the character encoding methods used for Traditional and Simplified versions of Chinese System Software for WorldScript; they are BIG 5 and GB respectively. BIG 5 is used for Traditional Chinese system software, and GB used for Simplified Chinese system software.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12634

Tech Info Library

StyleWriter II: ReadySetGo 4.5 Printing Problem (8/93)

Revised: 8/17/93
Security: Everyone

StyleWriter II: ReadySetGo 4.5 Printing Problem (8/93)

==========

Article Created: 20 July 1993
Article Reviewed/Updated: 17 August 1993

TOPIC -----

I'm using ReadySetGo version 4.5, on a PowerBook 140 with System 7.0.1. When I print to my StyleWriter II, the spacing between the last two characters of every word is joined together.

DISCUSSION -----

ReadySetGo is developed by a company called Manhattan Graphics. They informed us that version 4.5a of ReadySetGo is a very old. The latest version is 5.0 which should resolve the problem you are experiencing.

ReadySetGo 6.0 will be released August 23,1993 . To locate a vendor's address and phone numbers, use the vendor's name as a search string.

Article Change History:
17 August 1993 - Verified release date of ReadySetGo 6.0.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12636

Tech Info Library

PowerBook Fax/Data Modem: There Is No Rev. 1.2 of ROM (7/93)

Revised: 7/7/94
Security: Everyone

PowerBook Fax/Data Modem: There Is No Rev. 1.2 of ROM (7/93)

==========

Article Created: 19 July 1993

TOPIC ----------

On the Fax Sender 1.0.3 disk there is a Read Me document that refers to PowerBook Fax/Data Modem firmware version 1.2.

I have a customer who has version 1.0 of the firmware. He would like to know the difference between version 1.0 and 1.2 of the firmware and how he goes abut getting the updated ROM version.

DISCUSSION ----------

Although at one time there were plans to make a version 1.2 of the Fax/Data Modem ROM, it was never produced. Unfortunately, the Read Me file was included as part of the Fax Sender 1.0.3 software by mistake. Since the 1.2 ROM does not exist, there is nothing to upgrade.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12637

Tech Info Library

Transceiver Without Termination (7/93)

Revised: 7/20/93
Security: Everyone

Transceiver Without Termination (7/93)

==========

Article Created: 19 July 1993

TOPIC -----

I have a wiring plant originally offered by DEC that requires a non-terminated thin Ethernet connection. The wiring is thin coax segments on a DEC DEMPR that allows for eight drops to a wall plate in an office. When I connect a special drop cable to the wall plate it makes a loop from the wall plate to the computer eliminating the need for T connectors and terminators. This cable ends in a BNC and usually connects directly to the Ethernet's coax BNC. This is a standard DEC wiring scheme that is second sourced by AMP.

What exposure will I have if I open the Apple transceiver with an empty BNC connector on one post?

DISCUSSION -----

UNICOM Electric, Inc. is producing an AAUI compatible thinnet (10BASE2) transceiver that has a single non-self terminating female BNC connector interface. We recommend that you don't use a barrel connector to open one side of the Apple thinnet transceiver, because this solution can have significant effects on the reliability of the network. To locate a vendor's address and phone number, use the vendor name as a search string.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12638

Tech Info Library

AWS 95: A/UX Disk Defragmentation (7/93)

Revised: 7/20/93
Security: Everyone

AWS 95: A/UX Disk Defragmentation (7/93)

==========

Article Created: 19 July 1993

TOPIC ----------

I just purchased an Apple Workgroup Server (AWS) 95 for file services. I regularly defragmented the hard drive on my AppleShare 3.0 server and it showed a noticeable speed increase. Will doing this help the AWS 95 UNIX partition?

1) Is it necessary to defragment the UNIX partition of the hard drive of the AWS 95, and will it help keep performance at its maximum?

2) What programs are available to do this on a UNIX partition?

DISCUSSION ----------

As with most file systems it may become necessary to defragment a UNIX based file system from time to time. The UNIX based utility program "fsck" will report the percentage of fragmentation on a per file system basis. You can use the command fsck /dev/rdsk/cx0xdxsx replacing the x's with the appropriate information. For example:

```
macamy.support.apple.com.root # fsck /dev/rdsk/c300d0s0
** /dev/rdsk/c300d0s0
** Last Mounted on /
** Root file system
** Phase 1 - Check Blocks and Sizes
** Phase 2 - Check Pathnames
** Phase 3 - Check Connectivity
** Phase 4 - Check Reference Counts
** Phase 5 - Check Cyl groups
8056 files, 97206 used, 839119 free (1751 frags, 104671 blocks, 0.2%
fragmentation)
```

The only way to defragment a file system is to use a backup utility such as the UNIX utilities dump, cpio, tar, or the Macintosh OS based Retrospect

(version 2.0ai). There is a small section on this topic included in the AWS 95 "Server Administration with A/UX 3.0.1" manual pages 230-231.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12640

Tech Info Library

LaserWriter Pro 630: Disable Sleep Mode? (7/93)

Revised: 7/20/93
Security: Everyone

LaserWriter Pro 630: Disable Sleep Mode? (7/93)

==========

Article Created: 20 July 1993

TOPIC ----------

Is there a way to disable the sleep mode on a LaserWriter Pro? A customer claims that sleep mode is causing his toner to go bad, and he wants to "unsleep" the printer.

DISCUSSION ----------

Once the sleep mode has been enabled on a LaserWriter Pro, there is no way to turn it off. The Energy Star software does not "enable" the sleep option, it allows the user to adjust the sleep timer to meet the requirements of the environmental Protection Agency’s Energy Star program.

The printer has a default value of 4 hours of inactivity before "sleeping." The PostScript files provided with the Energy Star software enable the user to change this setting to 30 minutes, 1 hour, 2 hours, and the default value of 4 hours.

Sleep mode should not cause any difference in toner usage. The only side effect from sleep mode should be a 30 second delay in printing the first page of output after the LaserWriter Pro has entered sleep mode.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12641

Tech Info Library

Manhattan Graphics Corporation (4/97)

Revised: 4/4/97
Security: Everyone

Manhattan Graphics Corporation (4/97)

==========

Article Created: 20 July 1993
Article Reviewed/Updated: 4 April 1997

Manhattan Graphics Corporation
---
250 E. Hartsdale Avenue
Hartsdale, New York 10530

800-572-6533

914-725-2048

914-725-2450 Fax

Company Profile:
Developer of desktop publishing software, ReadySetGo.

Copyright 1993-97, Apple Computer, Inc

Tech Info Library Article Number:12642

Tech Info Library

3M Corp. (Local Sales District)

Revised: 4/4/97
Security: Everyone

3M Corp. (Local Sales District)

==========

Article Created: 20 July 1993
Article Reviewed/Updated: 4 April 1997

3M Corp. (Local Sales District)

6023 S. Garfield Ave.
Los Angeles, CA 90040
213-726-6350

Fax: 213-726-6585

Company Profile:
Hardware Data Storage, Magnetic Media, and Optical Recording Divisions, specializing in disks and tapes for data storage, compact disc and video disc mastering, formatting and pressing LaserDiscs. Audio-Visual Division specializing in printer-compatible transparencies.
Local Sales Office:

Copyright 1993-97, Apple Computer Inc.

Tech Info Library Article Number:12643

Tech Info Library

Monitors: Model Number Versus Marketing Number (7/93)

Revised: 7/20/93
Security: Everyone

Monitors: Model Number Versus Marketing Number (7/93)

==========

Article Created: 20 July 1993

TOPIC -----

What is the difference between the model or family number, M1212, on the back of the Apple Color Monitor (14") and the number on the suggested retail price list, which is M1198LL/A?

DISCUSSION -----

The model number M1212 is stamped on all Macintosh Color Displays (14" Color monitors.) This number is the ID number used for monitor safety and FCC licensing.

The number M1198LL/A is a marketing number (or finished goods number) that describes not only the monitor itself, but also includes the shipping box, packaging material, manuals, and other items that may be contained in the box.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12644

Tech Info Library

Performa 450: Accelerators Versus Power Cache Cards (7/93)

Revised: 7/21/93
Security: Everyone

Performa 450: Accelerators Versus Power Cache Cards (7/93)

==========

Article Created: 20 July 1993

TOPIC -----

Are accelerators and power cache cards the same? Can I run a 40MHz power cache on my Performa 450 (68030 @ 25MHz) or do I need a 40MHz accelerator, too? Will it speed up programs like CAD programs?

DISCUSSION -----

Cache cards and Accelerators are not the same thing. Cache cards contain SRAM; Static RAM. This RAM is used only by the CPU and has a very high transfer rate between the CPU and itself. Cache memory will increase the speed of most applications, because the CPU stores commands in this ram and doesn't have to fetch instructions by way of the CPU BUS. This increases your speed where tasks are repeated. For example, displaying pictures. The application reads the data from the drive, then has to do repetitive processing to display the picture.

Accelerator Cards replace your current CPU (in your case a 25MHz 68030). By increasing the speed of your CPU, you speed up the processing time. An important thing to remember however, is that when comparing speeds of different accelerator cards make sure the CPU is the same. A 25MHz 68040 is MUCH faster than a 25MHz 68030.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12645

Tech Info Library

Performa: Launcher versus Apple Menu (7/93)

Revised: 7/22/93
Security: Everyone

Performa: Launcher versus Apple Menu (7/93)

==========

Article Created: 19 July 1993

TOPIC -----

Which uses more memory,installing items in the Apple Menu or in the Launcher?

DISCUSSION -----

Both take up the same amount of Hard drive space and RAM. The only advantage to having things in the Apple Menu, is that they can be used at anytime without having to switch back to the Finder.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12646

UDS Motorola

Revised: 7/20/93
Security: Everyone

UDS Motorola

==========

Article Created: 20 July 1993

UDS Motorola (Unit of Motorola Information Systems Group)

5000 Bradford Dr.
Huntsville, AL 35805-1953

800-451-2369

205-430-8000

205-430-8208 FAX

205-430-8047 Tech Support

Company Profile:
Maker of networking hardware like DSU/CSU equipment.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12647

Tech Info Library

UNICOM Electric, Inc.

Revised: 7/20/93
Security: Everyone

UNICOM Electric, Inc.

==========

Article Created: 20 July 1993

UNICOM Electric, Inc.

11980 Telegraph Road, Suite 103
Santa Fe Springs, CA. 90670

310-946-9650

310-946-7473 FAX

Company Profile:
Produces an AAUI compatible thinnet (10BASE2) transceiver that has a single non-self terminating female BNC connector interface.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12648

Tech Info Library

Performa: AppleCare Available (7/93)

Revised: 7/21/93
Security: Everyone

Performa: AppleCare Available (7/93)

==========

Article Created: 19 July 1993

TOPIC ----------

Is the AppleCare warranty program available for new Apple products, like the Performa line after the in-home care ends?

DISCUSSION ----------

AppleCare is available for all Apple products including Performa computers. For additional information on AppleCare, including pricing information, you can call (800) 950-2442 extension 200.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12652

Tech Info Library

CD ROMs: Cleaning Your Discs (7/93)

Revised: 7/21/93
Security: Everyone

CD ROMs: Cleaning Your Discs (7/93)

==========

Article Created: 20 July 1993

TOPIC ----------

If there are fingerprints on the CD for my CD-ROM drive, will this impact the performance and if so, how can I clean them?

DISCUSSION ----------

Cleaning Computer CD ROM disks is no different from cleaning Audio CDs. You should only use a soft lint-free cloth and wipe from the center of the CD straight out (not in a circular motion around the disk). Fingerprints can interfere with the drive's ability to read the disk.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12653

Tech Info Library

Performa 450: Converting DOS Files to WP Works (7/93)

Revised: 5/24/95
Security: Everyone

Performa 450: Converting DOS Files to WP Works (7/93)

==========

Article Created: 20 July 1993

TOPIC ----------

I have a Performa 450 with WordPerfect Works and PC Exchange already installed. I have been trying unsuccessfully to convert a DOS Word file (.DOT) into WordPerfect Works. Can I convert this file?

DISCUSSION ----------

WordPerfect Works can only work with a limited number of MS-DOS files. The .DOT file is probably not one of them.

Here are some suggestions for you to try:

- Try loading it back into the DOS application and trying to save as Text Only, Microsoft Word, WordPerfect, or any other common file format.

- Ask your local dealer about products that work in conjunction with PC Exchange and actually translate documents into various types of Macintosh files. Some of them have several different translators that your WordPerfect Works application does not have.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12654

Tech Info Library

Performa: Deleting Items from the Directory (7/93)

Revised: 7/21/93
Security: Everyone

Performa: Deleting Items from the Directory (7/93)

==========

Article Created: 19 July 1993

TOPIC -----

How do I delete items from the directory on my Performa 450? I dragged them to the Trash and emptied the Trash, but they keep showing up.

DISCUSSION -----

Depending on where they show up, this may be normal. If you use At Ease, going to the Finder to delete an item will not delete it from At Ease. If you go back into At Ease, the icon for the item is still on one of the panels. However, if you click on the icon, a dialog box appears explaining that the original item couldn’t be found. The item will be removed from the At Ease panel.

If the item is in the Launcher window, you will need to go into the Launcher items folder located in the System folder and remove the alias for the item.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12655

Tech Info Library

Performa: Desktop Colors and Patterns (7/93)

Revised: 7/22/93
Security: Everyone

Performa: Desktop Colors and Patterns (7/93)

==========

Article Created: 21 July 1993

TOPIC --

I own a Performa 405 and would like to know if there is any way I can change my desktop color. In the control panel only a few pre-made patterns are offered.

DISCUSSION --

You can use a variety of products, both Shareware/PD and commercial, that will allow you to change the background pattern on your desktop. Commercial products like Wallpaper or Shareware/PD products like Deskpic and Desktop Textures allow you change your background.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12656

Tech Info Library

Performa: Generic Launcher Icon (7/93)

Revised: 7/22/93
Security: Everyone

Performa: Generic Launcher Icon (7/93)

==========

Article Created: 21 July 1993

TOPIC --------------------

My Launcher icon has turned into the generic document icon (a piece of paper with a folded corner). Why would this happen, and how can I get my old icon back?

DISCUSSION --------------------

You need to rebuild the desktop file to get your icons back to their original state. To do this, hold the Command and option key down while the computer is starting up. (The Command key is the key with the Apple on it.) Hold both keys down until you get a dialog box that asks if you really want to rebuild the desktop. Once the desktop is rebuilt, your original icon should appear.

However, the Launcher icon will occasionally not reappear after you rebuild the desktop. If it doesn't, the only way to get the original icon back is to copy a new version of the Launcher application into the System folder. You can do this by going to a Performa retailer and copying the Launcher application to a floppy disk. Use the copy to replace the Launcher on your hard drive.

You can also restore your entire hard drive from backup disks, but that may be an extreme measure. On the Performa, you cannot restore single files created using Apple Backup. So unless you backed up another way, you will have to restore everything.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12657

Tech Info Library

Performa: Kensington System Saver (3/94)

Revised: 3/7/94
Security: Everyone

Performa: Kensington System Saver (3/94)

==========

Article Created: 21 July 1993
Article Reviewed/Updated: 7 March 1994

TOPIC ----------

I recently replaced my Apple IIGS with a Macintosh Performa 405. On my IIGS I used a Kensington System Saver. Can I use the Kensington System Saver with the Performa?

DISCUSSION ----------

Kensington doesn’t recommend using this unit on a Macintosh Computer. The System Saver was designed to add a fan and surge protection to the Apple IIgs. The Performa 405, like all newer Apple Macintoshes, has a fan built-in and therefore requires no additional fan. You can purchase a surge protector from most hardware stores and have all the features the System Saver afforded.

Kensington also offered a System Saver for the compact Macintosh computers such as the 128, 512K, 512KE, SE, Plus, SE/30, Classic, Classic II and Performa 200. As with the System Saver for the Apple IIgs, this System Saver will not fit on the Performa 405 or LC platform.

Article Change History:
7 March 1994 - Clarification of what Kensington offers for specific Macintosh and Performa computers.

Support Information Services

Copyright 1993-94, Apple Computer, Inc

Tech Info Library Article Number:12658

Tech Info Library

Personal LW LS: Supports Grayscale (5/94)

Revised: 5/24/94
Security: Everyone

Personal LW LS: Supports Grayscale (5/94)

==========

Article Created: 21 July 1993
Article Reviewed/Updated: 24 May 1994

TOPIC -----

Is there a way to do grayscale printing from a Personal LaserWriter LS? I just bought it, and it works great for text, but most of the graphics don't look very good.

DISCUSSION -----

To print grayscale, you need to use the Personal LaserWriter 300 driver, Chooser v 7.3, and Personal LaserWriter LS Prep. These items areon the Personal LaserWriter 300 installer disk and the GrayShare Update disk.

Extension	Version
Personal LW LS Prep	1.0
LaserWriter 300	1.2
Chooser	7.3

Article Change History:
17 May 1994 - Corrected article to include support for grayscale support.
24 May 1994 - Added GrayShare Update disk to article.

Support Information Services

Copyright 1993-94, Apple Computer, Inc

Tech Info Library Article Number:12660

Tech Info Library

Performa: Using PageMaker 3.0 w/ Sys7.1 (7/93)

Revised: 7/22/93
Security: Everyone

Performa: Using PageMaker 3.0 w/ Sys7.1 (7/93)

==========

Article Created: 21 July 1993

TOPIC -----

I'm having problems with Page Maker 3.0 on my Performa 450. The spacing is wrong when I print even though it looks correct on screen. I'm using an ImageWriter II. When I switch to Claris Works, the spacing is OK. Is it a System 7.1p problem?

DISCUSSION -----

Aldus recommends using PageMaker 4.0 or later with System 7.1. Your version may simply be to old to be compatible. This may also be part or all of the problem.

You may also try choosing "Best" in the Print window. Choosing the "Draft" mode could be the root of the spacing problem.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12661

Tech Info Library

Performa 405: Managing Memory (7/93)

Revised: 7/22/93
Security: Everyone

Performa 405: Managing Memory (7/93)

==========

Article Created: 21 July 1993

TOPIC ----------

I have a Performa 405 with an additional 2MB of RAM. When I have three or more applications open and return to the Finder, I get a message that says there isn't enough memory to mount the Launcher.

DISCUSSION ----------

Even with the additional 2 MB of RAM, you could be running out of RAM with multiple applications open. If you are consistently getting an error message when you are running three applications, try running two of them. Then, go back to the Finder using the Application menu (just to the right of the Balloon Help in the menu bar). Check the "About this Macintosh" area in the AppleMenu items. See how much available memory is left and then check your other applications' memory size by highlighting the applications' icons and using Get Info from the File menu.

In the lower right corner of the Info window for each application, there are memory settings. The preferred size is what you need to really look at closely. Subtract that amount from the available memory.

If you have less than 200 or 300k of RAM left, then you have a memory problem. You can solve it three ways: lower your applications' preferred memory sizes, install additional RAM, don't run all three programs at one time, or turn on Virtual Memory to get additional RAM.

When open and quit applications, you create memory fragmentation, which can also rob you of available memory. If you can open and close applications a few times before you see the error message, then the problem is related to memory fragmentation. To fix this problem, close all your applications and restart. Then restart your applications. Once you open an application, close it (don't quit) and it will not fragment memory the next time you open it.

In either case, when you go back to the Finder from your applications, the

Finder is trying to allocate the required amount of RAM for the Launcher and is unable to do so with your memory constraints.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12662

Tech Info Library

Performa 405: Memory Upgrade Information (3/94)

Revised: 3/15/94
Security: Everyone

Performa 405: Memory Upgrade Information (3/94)

==========

Article Created: 21 July 1993
Article Reviewed/Updated: 15 March 1994

TOPIC ----------

I want to upgrade the memory of my Performa 405 from four to 10MB. Would I add a card rather than replace the existing one? What is the generic name of the card I should look for?

DISCUSSION ----------

Memory upgrades for the Performa 405 are accomplished with SIMMs rather than a memory card.

To perform a 10 MB upgrade, you need two 4MB SIMMs rated at 80ns or better (70, or 60ns).

The only cards you'd use with your Performa to improve performance would be a third-party accelerator card, which could improve the speed of most of your applications, but not increase your memory capacity.

Article Change History:
15 March 1994 - Retitled article to more accurately reflect true content, cleaned up contents.

Support Information Services

Copyright 1993-94, Apple Computer, Inc

Tech Info Library Article Number:12663

Tech Info Library

Performa: How to Use QuickTime Support (7/93)

Revised: 7/22/93
Security: Everyone

Performa: How to Use QuickTime Support (7/93)

==========

Article Created: 21 July 1993

TOPIC -----

I have downloaded the new scrapbook that supports playing QuickTime movies. It plays the QT logo movie, but when I try to cut and paste another movie all that is pasted is a text file of the QT movie title. What am I doing wrong?

DISCUSSION -----

The new clipboard supports QuickTime movies, but in order to get movies to the clipboard, you need to use an application that plays QuickTime movies, like MoviePlayer or Popcorn. With these applications (and others like them), use the Edit menu, choose Select All, then Copy, then Paste the item into the scrapbook.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12664

Tech Info Library

Performa: Sound Problems (7/93)

Revised: 7/21/93
Security: Everyone

Performa: Sound Problems (7/93)

==========

Article Created: 20 July 1993

TOPIC -----

I am not getting any sound out of my Performa 450.

DISCUSSION -----

Check your speaker connection on the back of your Performa 450. A common mistake is plugging the microphone into the speaker port, instead of the microphone port. If this does not solve the problem, contact the Apple Assistance Center at (800) SOS-APPL.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12665

Tech Info Library

Performa: AtEase System Error Type 41 (8/95)

Revised: 8/8/95
Security: Everyone

Performa: AtEase System Error Type 41 (8/95)

==========

Article Created: 21 July 1993
Article Reviewed/Updated: 08 August 1995

TOPIC ----------

I tried to shutdown while in At Ease on my Performa 405, but I repeatedly get a system error message, type 41, saying I would have to restart and either turn off At Ease or shut down from Finder to successfully shutdown. What can I do?

DISCUSSION ----------

Error 41 is a "Can't load Finder" error. When you have At Ease turned on, Finder is not running. First, try reinstalling your system software. That should solve the problem.

To reinstall your system software:

1) Startup with Utilities disk in your floppy drive.

2) Open your hard-drive window.

3) Open your System folder and throw away Finder.

4) Close your System folder.

5) Rename your System folder something like Storage.

6) Close your hard-drive window.

7) Run Apple Restore.

This created a new System folder for you. Any fonts, or additional Control Panels and Extensions are still located in your Storage folder. You will need to move these over to your new System folder to enable them.

If you continue to get the error message on shutdown, your problem is probably either a corrupted Finder, or an extension problem. If you have any disk compression applications like Autodoubler, TimesTwo, or E-Disk you should remove these items and copy the Finder from the Utility disk to your System Folder on your hard drive, then restart.

It is possible that you might have some other extension conflict. The best thing to do would be to remove all of your third-party extensions and control panels (place them in a folder on your desktop), then one by one place them back into the System folder. After you place one into the System folder,try shutting down from within At Ease. As soon as you place one into the extension folder, then try to shut down and receive the error message, you will know which is causing the problem.

Article Change History:
08 Aug 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1993-95, Apple Computer, Inc

Tech Info Library Article Number:12666

Tech Info Library

Personal LaserWriter LS: Memory Upgrades (7/93)

Revised: 7/22/93
Security: Everyone

Personal LaserWriter LS: Memory Upgrades (7/93)

==========

Article Created: 21 July 1993

TOPIC -----

I understand that I can upgrade the memory of my Personal LaserWriter LS to a total of 1MB. Does this require special SIMMS, or can I use SIMMS from my Mac Plus? I'm hoping to improve the quality of my graphics.

DISCUSSION -----

You can upgrade the Personal LaserWriter LS using DRAM chips (not SIMMS). However, this really doesn’t help with quality since all the processing is done on your computer and not in the printer. If you are looking for ways to increase the speed of the printing, you are better off increasing the RAM in your computer. Also any increase in the CPU speed will decrease the time it takes to process the printing.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12667

Tech Info Library

Performa 405: Running 256 Colors (7/93)

Revised: 7/22/93
Security: Everyone

Performa 405: Running 256 Colors (7/93)

==========

Article Created: 21 July 1993

TOPIC -----

I bought game software and tried to run it on my Performa 405, but I got a message saying it could only run with 256 colors. How can I get around this?

DISCUSSION -----

The Performa 405 only handles 16 colors. If you want to run an application which will only work in 256 colors, you need to upgrade your VRAM (Video RAM).

To upgrade your VRAM, you need to contact a local Apple Service Provider. If you need help in locating a service provider, you can call Apple’s dealer locator at (800) 538-9696.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12668

Tech Info Library

Performa: SCSI Problems With Third-Party Drives (7/93)

Revised: 7/22/93
Security: Everyone

Performa: SCSI Problems With Third-Party Drives (7/93)

==========

Article Created: 21 July 1993

TOPIC -----

I have a Syquest drive that works fine on my IIsi. When I attach it to the SCSI port of my Performa 450 I can't boot to the desktop. What can I do?

DISCUSSION -----

There have been some odd SCSI situations with some third-party drives on all types of Macintosh computers. If the drive works on your Macintosh IIsi, then it probably isn’t a drive problem, but you should still check it.

First, make sure that the SCSI ID is not set to either 0 or 7.
Next, try removing the termination of the drive. In some cases, this will fix the problem.

If you still can't boot, try double termination. In other words, try adding another terminator to the drive.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12669

Tech Info Library

System 7.x: Troubleshooting System Errors Type 1, 2, & 3 (8/95)

Revised: 8/15/95
Security: Everyone

System 7.x: Troubleshooting System Errors Type 1, 2, & 3 (8/95)

==========

Article Created: 20 July 1993
Article Reviewed/Updated: 15 August 1995

TOPIC ----------

I sometimes get a message, "Sorry, the application 'untitled' unexpectedly quit because an error of type (1, 2, or 3) occurred." Can you tell me what these numbers refer to?

DISCUSSION ----------

Type 1, 2, and 3 errors are System 7 memory-addressing errors. These are usually caused by two things: non-System 7 compatible software and software conflicts.

System 7 compatibility issues usually occur with older software designed for System 6.x or earlier. If your software falls into this category, contact the software vendor to get an updated version of the software that works with System 7.x.

Software conflicts most often involve problems with Extensions and Control Panels. Depending on which version of System 7 you have, you can troubleshoot these items in the following way:

If you have System 7.0 to System 7.1.2
==========

Step 1

Restart your Macintosh computer with the shift key held down until you see the message "Welcome to Macintosh, Extensions off". This procedure temporarily turns off all non-essential extensions and control panels.

Step 2

Try to recreate the failure. If the failure does not reappear, then you have an extension conflict. Go to Step 3.

If the failure continues to occur it is probably not related to any third party extension or control panel, you may need to contact the software vendor to upgrade your application.

Step 3

To determine which of your extensions or control panels is causing the failure, create a folder on your desktop and place all your non-Apple extensions and control panels in that folder and restart your computer.

Step 4

One by one, place the items back into your System Folder, restarting and attempting to recreate the failure every time you add an item. When the failure reoccurs, then you know that either the last item you added, or a combination of the items you have added is causing your conflict. Contact the vendor of the extension or control panel to see if there is an updated version available.

If you have System 7.5 and later
==========
Step 1

Restart your Macintosh Computer and hold down the Space Bar until the Extensions Manager control panel opens.

Step 2

Use the pull down menu in the Extensions Manager to choose "All Off"

Step 3

Try to recreate the failure. If the failure does not reappear, then you have an extension conflict. Go to Step 4.

If the failure continues to occur, it is probably not related to any extension or control panel, you may need to contact the software vendor to upgrade your application.

Step 4

Restart your Macintosh Computer and hold down the Space Bar until the Extensions Manager control panel opens. Turn on groups of extensions and control panels by clicking to the left of each item to put a check mark by the item. Close the Extensions Manager control panel using the close box in the upper left corner.

Step 5

Try to recreate the failure.

Step 6

Repeat Steps 4 and 5 until you have isolated the conflict to a single extension

or group of extensions.

You can attempt to remedy a conflict by changing the loading order of a given extension or control panel by locating the file in the System Folder and adding a space or spaces to the front of the file's name. There are also third party utilities like Now Startup Manager and Allright Enhancements that allow you to test and manage extensions and control panels.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
15 Aug 1995 - Changed title, updated to include System 7.5 information.

Support Information Services

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Tech Info Library Article Number:12670

Tech Info Library

Performa: Using Japanese System or KanjiTalk (7/93)

Revised: 7/22/93
Security: Everyone

Performa: Using Japanese System or KanjiTalk (7/93)

==========

Article Created: 21 July 1993

TOPIC -----

I own a Performa 450. I understand this machine will only boot from System 7.1. Does that mean I cannot run the Japanese System or KanjiTalk?

DISCUSSION -----

You cannot run the Japanese System or KanjiTalk on your Performa 450 because those applications are incompatible with System 7.1. However, Apple has released the Japanese Language Kit that provides you with the ability to use Japanese applications and Kanji with System 7.1. Complete details of this product can be found by searching under "Japanese Language Kit."

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12671

Tech Info Library

Performa: Using Telecommunication (7/93)

Revised: 7/22/93
Security: Everyone

Performa: Using Telecommunication (7/93)

==========

Article Created: 21 July 1993

TOPIC -----

I have a Performa 450. How can I learn more about using the modem? I'm interested in finding a local user group Bulletin Board Service (BBS).

DISCUSSION -----

To dial a local BBS, you will need to use a terminal program such as Zterm, or the telecommunication portion of the Works package that came on your Performa computer. Since telecommunication is the hardest thing to learn on the computer, it is best to locate a telecommunication “veteran.” A good place to start looking for one is at your local user group.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12672

Tech Info Library

Macintosh: When to use 32-Bit Addressing (1/96)

Revised: 1/4/96
Security: Everyone

Macintosh: When to use 32-Bit Addressing (1/96)

==========

Article Created: 21 July 1993
Article Reviewed/Updated: 4 January 1996

TOPIC -----

When should I use 32-bit addressing on my Macintosh computer?

DISCUSSION -----

32-bit addressing is used by the system software when you have more than 8 MB of RAM. With more than 8 MB of RAM, you must turn 32-bit addressing on or the system software will not recognize the memory above 8 MB. For example, if you have 32 MB of RAM installed and don’t have 32-bit addressing turned on, 24 MB of RAM will be unavailable.

If you have less than 8 MB of RAM, it is best to leave 32-bit addressing turned off. Although most applications today are capbable of being run with 32-bit addressing turned on, some older applications are not 32-bit clean and cannot run with it turned on.

Note that some earlier Macintosh computers may not be able to use 32-bit addressing, and more recent Macintosh computers may run only in 32-bit mode. Check the technical specifications of the specific Macintosh computer for additional information.

Article Change History:
04 Jan 1996 - Changed title and made other stylistic changes.

Support Information Services

Copyright 1993-96, Apple Computer, Inc

Tech Info Library Article Number:12673

Tech Info Library

Performa: Virtual Memory & When To Use It (7/93)

Revised: 7/26/93
Security: Everyone

Performa: Virtual Memory & When To Use It (7/93)

==========

Article Created: 21 July 1993

TOPIC -----

I've heard that not all programs can operate under Virtual Memory. Is this true? What about using Virtual Memory with a CD-ROM instead of upgrading installed memory?

DISCUSSION -----

Virtual Memory, just like 32-bit addressing, cannot be used with all applications. Some older versions of programs don’t know how to work with Virtual Memory turned on. The only way to find out if your programs will work with Virtual Memory is to either call the software vendor, or try turning Virtual Memory on and running the application.

Using Virtual Memory will slow the computer down, so it is not a good idea to have it turned on when you're trying to work with a CD-ROM disk. It should work, but speed and performance suffer badly enough to render some things -- like interactive CDs, animations, and QuickTime movies -- practically unusable.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12674

Tech Info Library

Manzanita Software Systems Corporation

Revised: 4/4/97
Security: Everyone

Manzanita Software Systems Corporation

==========

Article Created: 21 July 1993
Article Reviewed/Updated: 4 April 1997

Manzanita Software Systems Corporation

2130 Professional Dr.
Roseville, CA 95661

916-781-3880

800-447-5700

916-781-3880 (Fax)

Compuserve: flexware

Company Profile:
Software, development of accounting software and database

Copyright 1993-97, Apple Computer Inc.

Tech Info Library Article Number:12675

Tech Info Library

Quadra 950 & Digidesign Pro Tools: Use Serial Switch (7/93)

Revised: 7/27/93
Security: Everyone

Quadra 950 & Digidesign Pro Tools: Use Serial Switch (7/93)

==========

Article Created: 19 July 1993

TOPIC ----------

A Macintosh Quadra 950 is giving frequent Type 1 errors when using Pro Tools from Digidesign. There is a Digidesign Nubus card installed in the Quadra. We have tried reinstalling the system software, which did not solve the problem. Is there a problem with the hardware or software from Digidesign?

DISCUSSION ----------

When using Pro Tools from Digidesign with a Macintosh IIfx, Quadra 900, or Quadra 950, you must set the Serial Switch control panel to compatible mode. This is the case even if the serial ports are not in use at the moment, since the Pro Tools program attempts to configure the ports as soon as you launch it. (Other programs may not configure the serial ports immediately, thus the errors not show up right away. Still other programs won't need Serial Switch set to compatible mode at all.)

After changing the mode in the Serial Switch control panel, you'll need to restart your system.

The most recent version of Serial Switch is 1.1.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12676

Tech Info Library

Disk First Aid: Can't Repair Corrupted Files (7/93)

Revised: 7/22/93
Security: Everyone

Disk First Aid: Can't Repair Corrupted Files (7/93)

==========

Article Created: 22 July 1993

TOPIC ----------

I tried Disk First Aid to find and repair a problem in a text file I was working on. It said everything was fine. Why won't it recognize the problem?

DISCUSSION ----------

If Disk First Aid said the hard disk or floppy disk your file was on was fine, your problem is probably a corrupted data file (such as a word-processing file) or application.

Disk First Aid will check for and correct damage to the directories and catalog files. It cannot check individual files for corruption. The only thing to do is to replace it if you have a backup copy or recreate it, as you will probably need to do with your text file. If it is a corrupted application, reinstall from the master.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12677

Tech Info Library

Disk First Aid: Checking a Floppy (2/95)

Revised: 2/21/95
Security: Everyone

Disk First Aid: Checking a Floppy (2/95)

==========

Article Created: 22 July 1993
Article Reviewed/Updated: 21 February 1995

TOPIC ----------

How do I check a floppy disk with Disk First Aid?

DISCUSSION ----------

Note: Disk First Aid has been included with all Macintosh System software since System 2.0 (Finder 4.1/System 5.5), released in 1986, with the exception of System 5.1.

The location of the Disk First Aid software varies between System software versions, here is a chart showing where to find it for various System Software releases:

Location of Disk First Aid Software
==========

System Version	Disk Name
System 2.0	Utilities
System 5.0	Utilities 1
System 5.1	* Not Included *
System 6.0 - 6.0.8	Utilities 1 (800K System version)
System 6.0.7 - 6.0.8	System Additions (1.4Mb System version)
System 7.0 - 7.5	Disk Tools (if floppy based System, otherwise CD included with System)
Performa Systems	Utilities (or CD included with System)

Floppy Disk Testing Procedure
==========

For Hard Drive Based Systems:

Step 1
Locate the disk or CD containing the Disk First Aid program.

Step 2
Copy Disk First Aid to the hard drive by dragging the icon for Disk First Aid from this disk or CD to the icon for the hard drive.

Step 3
Eject the disk or CD containing the Disk First Aid program by dragging its icon to the Trashcan.

Step 4
Open the hard drive and double-click the Disk First Aid icon.

Step 5
Insert the disk that needs to be scanned.

Step 6
For versions of Disk First Aid prior to 7.2, click the Drive button until the floppy is selected, and click Open, and then click Start. For versions 7.2 and later, select the icon of the floppy, and click Repair.

Step 7
When testing is done, select Quit from the File menu.

For Floppy Based Systems (No Hard Drive):

Step 1
Locate disk containing the Disk First Aid program.

Step 2
Make sure your computer is off.

Step 3
Insert this disk into your floppy drive, then turn on your computer. The disk containing Disk First Aid will be a bootable disk.

Step 4
Double-click on the disk icon, and then double-click on the Disk First Aid program.

Step 5
Click the Eject button to eject the boot disk, and insert the disk that you want to scan.

Step 6
Click the Open button, and then click Start.

Step 7

When testing is done, select Quit from the File menu.

Article Change History:
21 Feb 1995 - Combined with another article and updated information.

Support Information Services

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Tech Info Library Article Number:12678

Tech Info Library

Performa: Forgot At Ease Password (8/95)

Revised: 8/14/95
Security: Everyone

Performa: Forgot At Ease Password (8/95)

==========

Article Created: 22 July 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

I tried what I thought was my password for At Ease and nothing works. I can't make any changes, it seems, without it. What do I do?

DISCUSSION ----------

Place the Utilities disk in the floppy disk drive, and turn the computer on. This starts the computer with the system on the Utilities disk, instead of the hard drive's system folder. This allows you to bypass At Ease and the password.

Next, open the hard-drive window, then open your System folder. Inside the System folder you will find a folder called Control Panels. Open this folder, and then double-click the At Ease Setup icon.

One of the options in the At Ease Setup control panel is Change Password. Enter a new password, or press the DELETE key on your keyboard to remove any type of password protection. After you do this, close the At Ease Setup control panel and restart your computer.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Reviewed for technical accuracy. Added keyword.

Support Information Services

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Tech Info Library Article Number:12679

Tech Info Library

Performa: Partial Restore (7/93)

Revised: 7/26/93
Security: Everyone

Performa: Partial Restore (7/93)

==========

Article Created: 21 July 1993

TOPIC ----------

I Have a Performa 405. Can I restore part of the data, or even just one file, from my backup disks created using Apple Backup, or do I have to restore the entire hard drive?

DISCUSSION ----------

Apple Restore only allows you to restore the entire disk, not just individual parts. As a general rule, Preference files, like a Help file, can usually be thrown away. If you've lost a Preference file, don't restore to retrieve it. The application that created them will recreate them the next time launch the application.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12682

Tech Info Library

Centris 650: Startup Problems (7/94)

Revised: 7/28/94
Security: Everyone

Centris 650: Startup Problems (7/94)

==========

Article Created: 22 July 1993
Article Reviewed/Updated: 28 July 1994

TOPIC ----------

I set up my new Centris 650 just as the manual instructed, but it won't power on. What did I do wrong?

The information in this article relative to the Centris 650 is also relevant to the Quadra 650.

DISCUSSION ----------

Try reseating the power supply. Most of the time, making sure the power cable is plugged in securely to the rear of the unit and to the power source will solve the problem. Also check that the power strip switch is turned on.

If the problem continues, contact your local dealer or call 1-800-SOS-APPL for further assistance.

Article Change History:
28 Jul 1994 - Added reference to Quadra 650 to aid in searching.

Support Information Services

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Tech Info Library Article Number:12683

Tech Info Library

Macintosh IIvx: Startup Problems (7/93)

Revised: 7/26/93
Security: Everyone

Macintosh IIvx: Startup Problems (7/93)

==========

Article Created: 22 July 1993

TOPIC ----------

I just set up my Mac II vx for the first time and tried to turn it on, but nothing happened. Why?

DISCUSSION ----------

Try reseating the power supply. Most of the time, making sure the unit is plugged in securely to the rear of the unit and to the power source will solve the problem. Also check that the power strip switch is turned on.

If the problem continues, contact your local dealer or call 1-800-SOS-APPL for further assistance..

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Tech Info Library Article Number:12684

Tech Info Library

Performa 600: Startup Problems (7/93)

Revised: 7/26/93
Security: Everyone

Performa 600: Startup Problems (7/93)

==========

Article Created: 22 July 1993

TOPIC ----------

I just bought a Performa 600, set it up according to the manual, but it won't start up. What's wrong?

DISCUSSION ----------

Try reseating the power supply. Most of the time, making sure the unit is plugged in securely to the rear of the unit and to the power source will solve the problem. Also check that the power strip switch is turned on.

If the problem continues, contact your local dealer or call 1-800-SOS-APPL for further assistance.

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Tech Info Library Article Number:12685

Tech Info Library

Apple Internet Router 2.0 to 3.0 Upgrade Problem (7/93)

Revised: 7/22/93
Security: Everyone

Apple Internet Router 2.0 to 3.0 Upgrade Problem (7/93)

==========

Article Created: 22 July 1993

TOPIC -----

I'm trying to upgrade from the Apple Internet Router (AIR) 2.0 to 3.0, and want to use my old AIR 2.0 settings. I followed the instructions on pages 11-12 of the manual for upgrading from AIR 2.0, but when I tried to open the settings within AIR 3.0, it didn't show up in his select box. The document did show up in the finder, however. Rebuilding the desktop didn't help.

DISCUSSION -----

Use ResEdit and give your old document the same type and creator as a new AIR 3.0 settings document.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12686

Tech Info Library

AOCE Brief Description (7/93)

Revised: 7/22/93
Security: Everyone

AOCE Brief Description (7/93)

==========

Article Created: 3 August 1993

TOPIC ----------

This article provides a brief describes of the Apple Open Collaboration Environment (AOCE).

DISCUSSION ----------

With AOCE, collaboration services are integrated into the System 7 operating system, enabling users to consolidate many forms of electronic correspondence common today such as voice mail, electronic mail, and faxes. In addition, third-party developers will be able to build on AOCE's foundation to create and deliver new kinds of applications for integrated personal communications, team productivity, and affordable workflow systems, such as forms processing.

The first two versions of AOCE based software products, one that will reside on an individual end user's desktop Macintosh or Apple PowerBook, and one that provides additional server-based collaboration services for AppleTalk networks. The end-user product, PowerTalk, includes collaboration services for the individual, such as a universal mailbox for integrated electronic correspondence, an easy drag-and-drop method of sending documents, a rich catalog capability for easy access to all kinds of information, and a digital signature capability, which enables electronic approval of documents.

The server product, PowerShare Collaboration Servers, provides services for small or large groups of PowerTalk users. These services include a shared store-and-forward facility for electronic messaging, server-based authentication and privacy for secure network communications, and centralized administration of shared catalogs that are distributed across multiserver networks for optimal performance. PowerShare catalogs that are distributed across multiple servers can be replicated and synchronized for reliability.

The PowerTalk and PowerShare products are based on AOCE's architecture, which has open application programming interfaces (APIs) so that third-party developers can easily take advantage of AOCE services from within their products. In addition, Apple and third-party developers can create software modules that provide plug-and-play access from AOCE based applications to existing and future messaging and directory services.

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Tech Info Library Article Number:12687

Tech Info Library

Connectix: No Longer Sells Mac II PMMU (7/93)

Revised: 7/26/93
Security: Everyone

Connectix: No Longer Sells Mac II PMMU (7/93)

==========

Article Created: 15 July 1993

TOPIC -----

Does Connectix still sell a PMMU coprocessor for use in the Macintosh II?

DISCUSSION -----

In the Macintosh Memory Guide from Connectix, the MC73 PMMU chip from Motorola is offered for sale through Connectix. Connectix no longer has the MC73 PMMU chip in stock.

Sonnet Technologies Inc. does have a large stock of PMMU chips available. To locate a vendor's address and phone numbers, use the vendor's name as a search string.

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Tech Info Library Article Number:12689

Tech Info Library

Playback Quality of 16-bit Audio on Macintosh Hardware (1/96)

Revised: 1/31/96
Security: Everyone

Playback Quality of 16-bit Audio on Macintosh Hardware (1/96)

==========

Article Created: 21 July 1993
Article Reviewed/Updated: 31 January 1996

TOPIC ----------

I mounted an audio compact disc and converted one of the tracks to a QuickTime movie sound file using 44.1KHz, 16-bit, Stereo settings in MoviePlayer's Open…/Convert…/ Options… dialog. When I listened over headphones connected to the computer, the playback of the file through MoviePlayer had a hiss or background noise. When I played the track from MoviePlayer before it was converted (the option screen has a play selection) the sound file had the same background noise. However, when I played the same CD track through CD Remote with headphones connected directly to the CD player the sound was great and there was no background noise.

Why is there noise when playing back from MoviePlayer? Shouldn't the playback be equal to the original?

DISCUSSION ----------

The reason for the apparent noise in the playback is due to the lack of 16-bit 44.1KHz audio playback hardware on some Macintosh computers. Using the file settings you indicated, the file will be an identical copy of what is on the audio CD. The QuickTime movie file on disk is a full CD-quality 16-bit, 44.1KHz, stereo sound file. However, to enjoy the full clarity of this file, your Macintosh computer must be capable of 16-bit, 44.1KHz sound output. Starting with the original AV computers released in July 1993, most subsequently released Macintosh computers have 16-bit sound capability. The Power Macintosh 5200, 5300, 6200, and 6300 series computers have 16-bit sound out capability but only at 22.05KHz. You can use this procedure below to determine if your computer supports 16-bit sound:

Step 1

Choose Control Panels from your Apple menu.

Step 2

Open the Sound control panel.

Step 3

Choose "Sound Out" from the "Alert Sounds" pull down menu. If the 16-bit sound radio button is grayed out, you only have 8-bit sound capabilities.

If 16-bit is not grayed out, make sure there is a dot in the radio button next to it.

Step 4

Use the close box in the upper left corner to close the Sound control panel.

Older Macintosh computers that do not support 16-bit sound can be made 16-bit capable by adding an audio card like Digidesign's AudioMedia II card. To use a 16-bit audio card like this will require Sound Manager 3.x and a Sound Manager component (driver) for the card. The driver component will be supplied by the card manufacturer.

Creating a sound file from the audio disc using the method described is actually a file transfer from the audio disc to the Macintosh hard disk. Thus, there is no conversion of the digital audio to analog audio when transferring the track from the audio disc to the hard disk. By keeping the audio track in the digital domain, it is possible to make an identical copy. Using the 44.1KHz, 16-bit, Stereo options provides that identical copy. The reason noise is introduced when playing back the sound through your computer is the limit of the of 8-bit sound only Macintosh audio hardware.

What happens to the recorded sound on 8-bit only sound capable computers
---
When playing back the sound without 16-bit hardware, the Sound Manager must throw away half of the bits in the audio samples and playback only half of the samples that exist. Thus, the actual data being used is only 25% of the original file.

The reason only 25% of the original data is used is because 8-bit sound Macintosh computers only sample at 22.05KHz. Therefore, the 16-bits must be reduced to 8-bits; and the 44.1KHz must be reduced to 22.05KHz. The Sound Manager accomplishes this "dithering" (known as "downsampling") of the sound - much like QuickDraw dithers a 24-bit color image into an 8-bit color image.

As a side note: Sound Manager 3.x uses a more sophisticated method of downsampling than Sound Manager 2.0. This improves the playback quality of the 16-bit, 44.1KHz sound file on an 8-bit, 22.05KHz system; although, it does not come close to playing back the full 16-bit, 44.1KHz recording.

Digital audio engineers would not usually use "noise" to describe what is happening to the sound. It is more correctly called quantization distortion. Unless you are discussing this issue with a digital audio engineer, "noise" is

an acceptable phrase - that is, after all, what it sounds like to the your ear.

In digital audio the main measurement of maximum expressible amplitude to error ratio is called Signal-to-Error (S/E) ratio. This expressible amplitude is also referred to as the "maximum signal" of the recorded sound. The error is what is perceived as noise. The S/E ratio specification of a digital system is closely related to the Signal-to-Noise (S/N) ratio of an analog system, although it is not identical in nature due to differences between digital and analog methods.

The S/E ratio can be expressed specifically by calculating first a maximum signal value, second an error value, and finally creating their ratio. Although there are intervening steps in the math, the final formula to use when calculating the strength of the audio signal above the noise (distortion or error) level looks like this:

```
6.02 * n + 1.76 dB
```

Where n is equal to the number of bits in the sample. The following results are approximate signal above noise ratios for a various number of bits in a sample. Generally, the calculated results will be slightly higher than the measured results. Also, specific implementations of hardware will affect the actual measured ratios in a downward fashion.

```
16-bit samples (number in CD audio)  = 98 dB
12-bit samples                       = 86 dB
 8-bit samples (Macintosh sound)     = 48 dB
```

To relate the quality of these digital recordings to analog recordings, think of the 8-bit recordings as inexpensive cassette recorders with inexpensive tape. The 12-bit recordings correlate to high quality cassette recorders with noise reduction and metal tape. The 16-bit recordings equate to professional studio reel-to-reel tape recorders with noise reduction and professional tape at high tape speeds.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
31 Jan 1996 - Added 8-bit and 16-bit computer information.
26 Jan 1996 - Made minor technical and formatting changes.

Support Information Services

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Tech Info Library Article Number:12693

Tech Info Library

Macintosh AV Series: Technologies Overview (12/93)

Revised: 12/14/93
Security: Everyone

Macintosh AV Series: Technologies Overview (12/93)

==========

Article Created: 29 July 1993
Article Reviewed/Updated: 14 December 1993

TOPIC -----

What does the AV in the Quadra 840AV, Centris 660AV and Quadra 660AV stand for?

DISCUSSION -----

The AV in the product name refers to the audio/visual technologies that are integrated in the Macintosh AV Series computers.

These AV technologies focus in three key areas: telecommunications, speech, and video. At the core of the AV technologies used in the Quadra 840AV and Centris 660AV are the following new features:

- The AT&T DSP3210 Digital Signal Processor (DSP) chip. The DSP which can process modem signals, record and playback up to 16-bit stereo sound, manage speech recognition, and perform text to speech conversions via Apple's PlainTalk software.

- Integrated video input and output capabilities conforming to NTSC, PAL, and SECAM formats via S-Video and Composite Video input/output ports.

- Direct memory access (DMA) for SCSI based peripheral devices, such as hard disks and CD-ROM drives.

- A new integrated telecommunications architecture called GeoPort that will accommodate analog, ISDN, fax, and other signal forms.

Article Change History:
14 December 1993 - Retitled and revised topic to reflect entire AV series.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12694

Tech Info Library

Macintosh AV Series: Differences (12/93)

Revised: 12/23/93
Security: Everyone

Macintosh AV Series: Differences (12/93)

==========

Article Created: 29 July 1993
Article Reviewed/Updated: 23 December 1993

TOPIC ----------

What are the major differences between the Macintosh Centris 660AV, the Quadra 660AV, and the Quadra 840AV?

DISCUSSION ----------

The major differences between the members of the Macintosh AV Series are:

Feature:	Quadra 840AV:	Centris/Quadra 660AV:
Processor	MC68040 @ 40 MHz	MC68040 @ 25 MHz
DSP (Digital Signal Processor)	AT&T DSP3210 @ 66 MHz	AT&T DSP3210 @ 55 MHz
DRAM Expansion	From 8 MB to 128 MB	From 8 MB to 68 MB
DRAM Slots	4 slots	2 slots
DRAM Speed	60 ns (nanoseconds)	70 ns
DRAM SIMM Sizes#	4, 8, 16 and 32 MB SIMMS	4, 8, 16 and 32 MB SIMMS
VRAM	2 MB (1 MB standard)	1 MB (I MB standard)
VRAM Slots	4 slots	none
VRAM SIMM Size	256K	n/a
VRAM Speed	80 ns (nanoseconds)	80 ns
NuBus Slots	3	1*
Power On/Off Control from NuBus cards	Yes	No
PDS Slot	No	Yes - 1
DAV Connector (Digital Audio Visual)	On Logic Board	On Optional NuBus Adapter Card
MUNI Chip (Macintosh Universal NuBus Interface)	On Logic Board	On Optional NuBus Adapter Card

Composite SIMMs are not supported.
* With optional Centris 660AV NuBus Adapter Card installed.

Article Change History:
23 December 1993 - Added all members of the AV Series, changed title.
8 August 1993 - Corrected the number of VRAM Slots on the Centris 660AV and Quadra 840AV. Added the VRAM Size for the Quadra 840AV.

Support Information Services

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Tech Info Library Article Number:12695

Tech Info Library

Macintosh Centris 610: Upgrade Path (7/93)

Revised: 7/26/93
Security: Everyone

Macintosh Centris 610: Upgrade Path (7/93)

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Article Created: 29 July 1993

TOPIC ----------

Can a Macintosh Centris 610 be upgraded to a Centris 660AV?

DISCUSSION ----------

A Macintosh Centris 610 can be upgraded to a Macintosh Centris 660AV by purchasing the Macintosh Centris 660AV Logic Board Upgrade. The Apple product number is M1534LL/A. The upgrade kit includes the Centris 660AV logic board with 8 MB of RAM already installed.

Please refer to the Tech Info Library article: "Macintosh Centris 660AV: Specifications" for details on the Centris 660AV feature set.

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Tech Info Library Article Number:12696

Tech Info Library

AV Technologies: (Centris 660AV & Quadra 840AV) Sound (7/93)

Revised: 7/26/93
Security: Everyone

AV Technologies: (Centris 660AV & Quadra 840AV) Sound (7/93)

==========

Article Created: 29 July 1993

TOPIC ----------

What are the AV Technologies sound capabilities in the Centris 660AV and Quadra 840AV?

DISCUSSION ----------

In addition to the on-board DSP (Digital Signal Processor) chip, the Macintosh Centris 660AV and Quadra 840AV boast a new Custom chip, the Singer ASIC (Apple Single Integrated Circuit).

The Singer ASIC is a new 16-bit stereo coder/decoder (CODEC), used to support very high quality stereo sound input and output. Singer conforms to the IT&T ASCO 2300 Audio-Stereo CODEC Spec.

The implementation is flexible and supports sound digitization rates from 7.2 KHz to 48 KHz. Digitized sound is transmitted through the DMA (Direct Memory Access) controller and is available at the DAV (Digital Audio Video) connector for additional manipulation and processing tasks.

The DSP handles sound processing in addition to other functions such as sample rate conversions, and MACE (Macintosh Audio Compression and Expansion) compression/decompression. As on previous Quadra and Centris models, an audio input pin is available on the logic board that permits direct play through of CD audio coming off the analog output connector on an internal CD-ROM drive.

Both the Quadra 840AV and Centris 660AV contain an internal speaker that automatically mixes audio and system signals. A high quality speech-capable microphone is included with all systems in the USA only. (The microphone is available as a separate item in Europe and Pacific markets.)

The Sound control panel has been improved in order to support the new

sound capabilities of the Quadra 840AV and Centris 660AV. The Sound control panel now has an integrated pull down menu that controls alert sounds, sound in source selection, and sound out options.

For further information on the DSP chip, please search by "DSP" in the Tech Info Library.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12697

Tech Info Library

Macintosh AV Series: Software Enhancements (12/93)

Revised: 12/23/93
Security: Everyone

Macintosh AV Series: Software Enhancements (12/93)

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Article Created: 29 July 1993
Article Reviewed/Updated: 23 December 1993

TOPIC ----------

What are the software enhancements incorporated into the Macintosh Centris 660AV, the Quadra 660AV and the Quadra 840AV?

DISCUSSION ----------

System Software

The Centris 660AV, Quadra 660AV and Quadra 840AV require System Software 7.1 and System Enabler 088 in order to operate.

QuickTime 1.6.1 is included and has been enhanced to support built-in video features, provide better playback performance, and require less memory to run.

System software is shipped on bootable CD-ROMs with those units equipped with an internal CD-ROM drive.

SCSI Manager 4.3

SCSI Manager 4.3 is a new system level manager that extends the capabilities of Macintosh systems both in terms of functionality and performance.

This new SCSI Manager is fully asynchronous, allowing each of several SCSI devices to have multiple requests outstanding. By queuing requests in this manner, overall throughput is improved. Other features such as direct memory access (DMA) support further enhance overall performance. Functionality has been improved through support for multiple buses and hardware configurations, and support for SCSI-2 messages and protocol actions.

Real-Time Manager

The Real-Time Manager is a key part of Apple's Real-Time Architecture (ARTA), providing a uniform API (application programmable interface) to DSP capabilities. These DSPs can reside on the logic board or on NuBus cards and are scalable in that multiple DSPs are supported.

Sound Manager 3.0

Sound Manager 3.0 represents a marked change from past sound manager versions and supports many new features that greatly enhance Macintosh system sound. In addition, the internals of the Sound Manager have been rewritten, resulting in a more flexible tool that can better accommodate new hardware capabilities.

New features provided by the Sound Manager 3.0 include:

- Support for a wider range of data types, including 16-bit stereo sounds, 11 - 48 KHz sounds, MACE (Macintosh Audio Compression and Expansion) 3:1 and 6:1 compression ratios, and MIDI

- Support for Sound Panel components which allow developers to create snap-in control panels for sound devices and algorithms

- Device independence, allowing the Macintosh to support sound chips other than the Apple Sound Chip, and to support output devices other than the Apple internal speaker.

- A uniform API across hardware systems

- More efficient use of the system processor

- Smaller memory footprint

- Improved sound performance

- Backward compatibility with previous sound managers

PlainTalk

PlainTalk is Apple's implementation of speech technology, it refers to two separate parts: speech recognition which responds to verbal commands from the user, and text-to-speech (TTS) that allows the computer to communicate verbally with the user.

While computer speech recognition is still in its infancy, the Macintosh AV Series models introduce the most advanced system ever on a personal computer.

The speech system is unique in that it is speaker independent, accommodates continuous speech, and automatically adapts itself to the environment where it is being used.

Speech activated commands can be programmed through the use of AppleScript

when the application is AppleEvent aware, or through a new version of QuicKeys which supports spoken commands.

Text-to-speech refers to the ability of the Macintosh to interpret textual data and to "read" the data to the user in a near natural voice. Multiple voices at various sound quality levels are supported.

For further information on PlainTalk, please search in the Tech Info Library by the string "PlainTalk."

Article Change History:
23 December 1993 - Revised article, incorporating new title and new models.

Support Information Services

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Tech Info Library Article Number:12698

Tech Info Library

Macintosh Centris, Quadra 660AV: Specifications (Discontinued)

Revised: 6/19/95
Security: Everyone

Macintosh Centris, Quadra 660AV: Specifications (Discontinued)

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Article Created: 29 July 1993
Article Reviewed/Updated: 20 January 1994

TOPIC ----------

This article gives the technical specifications for the Macintosh Centris 660AV and Quadra 660AV computer.

DISCUSSION ----------

Microprocessor

- Motorola 68040, 32-bit architecture, 25 Mhz clock speed
- Integrated floating-point unit (FPU)
- Paged Memory Management Unit (PMMU)
- 8 KB Cache

Digital signal processor (DSP)

- AT&T 3210 running at 55 Mhz
- Used for sound, speech recognition, telecommunications, and other real-time processing tasks.

Memory

- 8 MB of RAM standard: 4 MB of RAM soldered onto the logic board, and one 4 MB SIMM installed in one of memory expansion slots.
- Two memory expansion slots for 70ns 72-pin SIMMs. Supported SIMM sizes are 4, 8, 16, and 32 MB.
- Expandable to 68 MB of RAM by using 32 MB SIMMs in both SIMM slots. (Note: Dealer Installation Required)
- 256 bytes of non-volatile parameter memory (PRAM)
- 2 MB ROM (Two 512k by 16 chips)

Disk Drives

- One Built-in Apple SuperDrive 1.4 MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.
- Support for two internal SCSI devices, one of which may be used for removable media, such as an internal CD-ROM drive.
- One internal hard disk (80 MB, 230 MB, 500 MB options available)
- Optional internal Apple CD-ROM drive (see above)
- Optional external SCSI hard disk drive (many capacities available)

Video Display

- Supports all Apple displays up to 21 in.
- Supports some other non-Apple monitors, including VGA, SVGA, NTSC, and PAL 19" monitors

Video RAM

- 1 MB VRAM. (VRAM is non-expandable)
- VRAM is shared between graphics window and video window
- Maximum video window size at a color depth of 16 bits is 640 X 480

Interfaces

- One internal NuBus expansion slot via NuBus adapter, which includes support for digital-audio video (DAV) connector. (Only 7 inch NuBus cards are supported.)
- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices.
- AAUI-15 Ethernet connector.
- Two serial (RS-232/RS-422) ports. (Printer & Modem/GeoPort)
- Two S-Video ports, one each for input and output.
- Two composite video ports, one each for input and output.
- SCSI interface for connecting up to a total of seven SCSI devices.
- Sound-out port for stereo playback from CDs or Macintosh audio applications
- Stereo sound-input port (supports 16-bit stereo audio)
- One monitor out port.

Networking

- Built-in Ethernet
- Serial port for AppleTalk
- Integrated GeoPort telecommunications architecture for data, fax, and voice connectivity.

Sound Generator

- DSP-based 16 bit stereo audio
- Sample rates: 8 Khz to 48 Khz

Keyboard

- Several Apple Desktop Bus keyboards with numeric keypads available.

Mouse

- Apple Desktop Bus Mouse II; mechanical tracking, optical shaft, or contact encoding.

Clock/Calendar

- Custom integrated circuit with long-life lithium battery.

Apple PlainTalk Microphone

- The microphone is unidirectional and optimized for use with speech recognition. (Microphone bundled with all units sold in the USA, available as a separate item outside the USA.)

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These built-in features and third-party options provide alternative input and output tools for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured
- Frequency: 47 to 63 hertz, single phase
- Power: 86 watts maximum. (Does not include monitor power.)

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 milliamps (a maximum of three Apple Desktop Bus devices is recommended)
- Mouse draws 10 milliamps.
- Keyboard draws 25 to 80 milliamps, depending on the keyboard model used.

Size and Weight

Main unit

- Height: 3.4 inches (8.5 cm)
- Width: 16.3 inches (41.5 cm)
- Depth: 15.6 inches (39.7 cm)
- Weight*: 14.0 pounds (6.4 kg)

*Weight varies based on internal devices installed

Mouse

- Height 1.3 inches (33 mm)
- Width 2.4 inches (61.7 mm)
- Depth 4.2 inches (107.3 mm)
- Weight 4 ounces (0.10 kg)

Operating Environment

- Operating temperature: 50 degrees to 104 degrees F
  (10 degrees to 40 degrees C)
- Storage temperature: -40 degrees to 116.6 degrees F
  (-40 degrees to 47 degrees C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 ft. (3,048m)

System Software Requirements

Requires System 7.1 or later and the System Enabler 088.

Article Change History:
20 January 1994 - Added Quadra 660AV name.
30 July 1993 - added correct name of System Enabler.

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Tech Info Library Article Number:12699

Tech Info Library

Macintosh Centris 660AV: Expansion Slot (7/93)

Revised: 7/26/93
Security: Everyone

Macintosh Centris 660AV: Expansion Slot (7/93)

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Article Created: 29 July 1993

TOPIC ----------

This article describes the expansion slot in the Macintosh Centris 660AV.

DISCUSSION ----------

The Centris 660AV has a expansion slot similar to the Centris 610 expansion slot and can be used in two different ways:

1) You can install a PDS (Processor Direct Slot) card directly into the slot.

2) You can install a 7-inch NuBus card after installing the optional Centris 660AV NuBus adapter card.

PDS Cards

A PDS (Processor Direct Slot) implementation brings the microprocessor address, control, and data lines, along with clock, power, and a few model-specific signals, to a single expansion connector on the main logic board. Apple uses the PDS expansion interface on selected Macintosh models as another option for system expansion.

PDS cards can be designed to work in both the Centris 610 and the Centris 660AV. However, there are some signal changes in the Centris 660AV, so not all current PDS cards will work in both models.

NuBus Cards

The Centris 660AV accepts one 7-inch NuBus card when the optional Centris 660AV NuBus adapter card is installed in the Centris 660AV expansion slot.

The Centris 660AV NuBus adapter card also includes the DAV connector.

This connector provides direct access to audio and video data directly from the logic board. In the Centris 660AV, the DAV connector is located on the optional NuBus adapter. Uses for DAV cards could include a graphics accelerator, audio/visual compression/decompression tasks, or provide PhotoShop plug in enhancements.

NuBus 90 Implementation

This NuBus implementation is based on the NuBus '90 specification. Variances from previous Quadra and Centris models include:

- The ability to control power on and off from a NuBus card (Quadra 840AV only)

- Faster data transfer rates including a 20 MHz card to card transfer rate that provides throughput rates at up to 80 MB per second.

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Tech Info Library Article Number:12700

Tech Info Library

Macintosh AV Series: No A/UX Support (12/93)

Revised: 12/23/93
Security: Everyone

Macintosh AV Series: No A/UX Support (12/93)

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Article Created: 29 July 1993
Article Reviewed/Updated: 23 December 1993

TOPIC -----

Can I use A/UX on the Macintosh Centris 660AV, Quadra 660AV or Quadra 840AV?

DISCUSSION -----

None of the Macintosh AV models support A/UX. Apple has no plans to upgrade A/UX to support these models at this time.

Article Change History:
23 December 1993 - Revised article to include all current AV models

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12701

Tech Info Library

Macintosh AV Series: Bundled Software (12/93)

Revised: 12/14/93
Security: Everyone

Macintosh AV Series: Bundled Software (12/93)

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Article Created: 9 August 1993
Article Reviewed/Updated: 14 December 1993

TOPIC ----------

Is there a list of the software that included with the Macintosh Centris 660AV, Quadra 660AV and the Quadra 840AV?

DISCUSSION ----------

Each member of the Macintosh AV Series ship with a number of sample applications that showcase some of the AV capabilities. Both demo applications and utilities are provided by Apple and third party developers.

- ApplePhone 1.0 from Apple - this application uses the DSP to provide easy-to-use speakerphone/answering machine capabilities. (Requires the Geoport Telecom Adapter.)

- FaxTerminal 1.0 - a data and fax modem application (Included with the GeoPort Telecom Adapter.)

- ExperFax 1.02 from ExperVision - reads fax documents and converts text into a format that can be used with word processing applications. (This version of ExperFax has a limited life, users will able to process 30 conversions at up to 99 pages)

- FusionRecorder 1.0 from VideoFusion - allows users to create QuickTime movies by connecting to a video source, and will create audio files at up to 16 bits with sample rates up to 48 KHz.

- Video Monitor 1.0.1 from Apple - provides a live video window with print and capture capability.

- Script Editor 1.0 from Apple - allows users to create and edit AppleScript scripts.

- Speech Macro Editor 1.0 from Apple - lets users create and edit speech macros using AppleScript or QuicKeys as the engine.

- QuicKeys OSA Component from CE Software - when used with the Speech Macro Editor, the user can create speech macros that use QuicKeys as the script engine.

- QuicKeys Test Drive from CE Software - time limited trial version of the popular macro making utility.

- Sound Effects 1.0 from Apple - an extension that allows various special effects to be applied to any sound/audio output.

- ES•F2F 2.02 from the Electronic Studio - a LAN based video conferencing application that allows any two users on a LAN to connect and see each other, sound is not supported.

To contact third party vendors for further information on bundled software, search the Tech Info Library by the company's name: VideoFusion, ExperVision, CE Software or The Electronic Studio.

Article Change History:
14 December 1993 - Retitled and revised topic to include all members of the Macintosh AV Series.
23 August 1993 - Revised and added additional bundled software information.

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Tech Info Library Article Number:12702

Macintosh AV Series: Monitor Support (12/93)

Revised: 12/14/93
Security: Everyone

Macintosh AV Series: Monitor Support (12/93)

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Article Created: 9 August 1993
Article Reviewed/Updated: 14 December 1993

TOPIC

This article provides information on monitors supported on the Quadra 840AV, Quadra 660AV, and Centris 660AV and on how two frame buffers are used to support both computer graphics and video.

DISCUSSION

Frame Buffers

The members of the Macintosh AV Series are the first Macintosh computers to use two different frame buffers. These are the graphics frame buffer, and the video frame buffer. VRAM can be used in two different ways, either used completely by the graphics frame buffer (standard Macintosh display), or split 50/50 between the graphics frame buffer and the video frame buffer.

To achieve the highest graphics bit depth, the two frame buffers are often used together for graphics. Consequently, video-in is not available when displaying graphics at the highest bit depth for many monitors. When displaying live video, the two frame buffers are merged so the video-input appears as a window on the graphics display.

For example, a Quadra 840AV with 2MB of VRAM can support a 14-inch color monitor at 24-bits in a strictly graphic environment or can provide support for a 16-bit graphics window and a 16-bit video window.

VRAM & Bit Depth

The Quadra 840AV and Centris 660AV come standard with 1 MB VRAM. The Quadra 840AV is expandable to 2 MB VRAM. Upgrading the Quadra 840AV's VRAM to 2 MB permits 24 bit display (millions of colors) on monitors up to 16 inches and 16 bit (thousands of colors) on the 21-inch color monitor.

The machines can drive an NTSC or PAL monitor directly, without the use of an encoder box. In order for that feature to be enabled, the display resolution should be either 512x384 or 640x480 for NTSC, or 640x480 or 768x576 for PAL. Hence the different resolutions available for each display.

Notes:

1) The Macintosh Centris 660AV always has 1 MB of VRAM.

2) The Macintosh Quadra 840AV comes standard with 1 MB of VRAM and may be expanded to 2 MB of VRAM. Four 80 ns (nanosecond) 256K VRAM SIMMs are required.

3) Where multiple resolutions are available, an asterisk (*) indicates the standard resolution. Additional resolutions allow you to display more colors by only using a portion of the monitor. Select the resolution by using the Options dialog of the Monitors Control Panel. You must reboot to change resolutions. The size of the pixels will not change in these alternate modes. Instead, a black border will appear around the smaller active video area.

4) A "Flicker-free" mode (sometimes referred to as Apple Convolution) is available when displaying on a TV. This mode is available at up to 8 bits/pixel and is not available when using video-in.

5) bpp is Bits Per Pixel. A range is given in table below, indicating which of the following are available:

    1 bpp - Black & White
    2 bpp - 4 colors or greys
    4 bpp - 16 colors or greys
    8 bpp - 256 colors or greys (greys only for Video in)
   16 bpp - Thousands of colors (5 bits each of R, G, and B)
   32 (24 plus 8) bpp - Millions of colors (8 bits each of R, G, and B)

6) The maximum visible number of colors is millions. In the past, Apple has labeled this as 24 bit color. However, 24 bpp or 32 bpp are interchangeably used to mean support for millions of colors. When you see 32 bpp listed on the chart below, think 24 plus 8: 24 bpp for displaying millions of colors plus 8 bpp for special uses, such as alpha channel support and chroma key support.

7) Both the video and graphics portions of VRAM are often used together to display graphics at the highest available bit depth. In the table below, the range of graphics bit depths is marked with # when video-in is available at the maximum graphics bit depth. In all other cases video-in is not available when using the highest graphics bit depth.

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	1 MByte VRAM	2 MByte VRAM

		Graphics	Video-in	Graphics	Video-in
Display	Resolution	bpp	bpp	bpp	bpp
12-inch RGB	512x384*	1-32	8-16	1-32	8-16
	560x384	1-32	8-16	1-32	8-16
13-inch, 14-inch RGB	512x384	1-32	8-16	1-32	8-16
& 12-inch Monochrome	640x400	1-32	8-16	1-32	8-16
	640x480*	1-16	8-16	1-32	8-16
15-inch Portrait	512x384	1-8#	8-16	1-8#	8-16
Full-Page Monochrome	640x480	1-8#	8-16	1-8#	8-16
	640x870*	1-8	8-16	1-8#	8-16
15-inch Portrait	640x870*	1-8	8-16	1-16	8-16
Full-Page RGB					
16-inch RGB	512x384	1-32	8-16	1-32	8-16
	640x480	1-16	8-16	1-32	8-16
	768x576	1-16	8-16	1-32	8-16
	832x624*	1-16	8-16	1-32	8-16
19-inch RGB	1024x768*	1-8	8	1-16	8
21-inch Two-Page	512x384	1-8#	8	1-8#	8
Monochrome	640x480	1-8#	8	1-8#	8
	768x576	1-4#	8	1-4#	8
	1152x870*	1-8	8	1-8#	8
21-inch Two Page RGB	512x384	1-16	8	1-16	8
	640x480	1-16	8	1-16	8
	768x576	1-4#	8	1-4#	8
	1152x870*	1-8	8	1-16	8
VGA/SVGA Displays	640x480*	1-16	8-16	1-32	8-16
56Hz	800x600	1-16	8-16	1-32	8-16
72Hz	800x600	1-16	8-16	1-32	8-16
60Hz	1024x768	1-8	8	1-16	8
70Hz	1024x768	1-8	8	1-16	8
Composite and S-Video Output Modes:					
NTSC convolved (flicker-free mode)					
Underscan (Safetitle)	512x384	1-8	NA	1-8	NA
Overscan (Fullframe)	640x480*	1-8	NA	1-8	NA
NTSC non-convolved					
Underscan (Safetitle)	512x384	1-32	8-16	1-32	8-16
Overscan (Fullframe)	640x480*	1-16	8-16	1-32	8-16
PAL convolved (flicker-free mode)					

Underscan (Safetitle)	640x480	1-8	NA	1-8	NA
Overscan (Fullframe)	768x576*	1-8	NA	1-8	NA

PAL non-convolved

Underscan (Safetitle)	640x480	1-16	8-16	1-32	8-16
Overscan (Fullframe)	768x576*	1-16	8-16	1-32	8-16

* Default resolution. See note 3 above.
\# Video-in is availble at the highest graphics bit depth.
See note 6 above.

(Note: Special thanks to Noah Price of Apple's AV Design Team for portions of this article.)

Article Review History:
14 December 1993 - Retitled and revised to include all members of the Macintosh AV Series.
12 August 1993 - Revised definitions of 32 bpp, 24 bpp.

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Tech Info Library Article Number:12703

Tech Info Library

NCR - Teradata Corporation

Revised: 7/28/93
Security: Everyone

NCR - Teradata Corporation

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Article Created: 27 July 1993
Article Reviewed/Updated: 27 July 1993

NCR/Teradata Corp.
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100 North Sepulveda Blvd.
El Segundo, CA 90245

310-524-5000

Fax: 310-524-0015

Mainframes and Servers:
2700 Snelling Ave. N
St. Paul, MN 55113

612-638-7777

Company Profile:
Hardware and software, specializing in banking systems, PCs, and compilers. Also specializing in mainframes and intelligent communication servers (St. Paul address). NCR/Teradata Corp., hardware, software, and networking, specializing in very large database server machines.

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Tech Info Library Article Number:12705

Digital Signal Processor (DSP) - Overview (7/93)

Revised: 7/27/93
Security: Everyone

Digital Signal Processor (DSP) - Overview (7/93)

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Article Created: 29 July 1993

TOPIC ----------

This article gives a overview of the Digital Signal Processor (DSP) chip which is a part of the Macintosh Centris 660AV and Quadra 840AV computers.

DISCUSSION ----------

The Quadra 840AV and Centris 660AV are the first Macintosh computers that include a Digital Signal Processor (DSP) chip integrated on the logic board.

Apple uses an AT&T DSP3210 chip for both models, the only difference being the clock frequency which is 55 Mhz on Centris 660AV and 66.7 Mhz on the Quadra 840AV.

The DSP implementation on the Quadra 840AV and Centris 660AV uses it's own multitasking operating system (the Apple Real-Time Architecture or ARTA) but shares the same memory as the host CPU, the 68040. The Quadra 840AV and Centris 660AV are truly dual processor Macintosh computers, as both the 68040 and the DSP have equal access to system resources.

The DSP on the Quadra 840AV and Centris 660AV is primarily responsible for performing real time processing of tasks such as speech recognition, sound, analog modem signal processing, or any other time-correlated data. The DSP can also be programmed to perform non real-time (also called timeshare) tasks such as image processing.

Real-Time versus Timeshare Processing

The difference between real-time and timeshare processing is that real-time tasks such as speech recognition requires guaranteed processing bandwidth.

Timeshare tasks are processes that don't involve a time dependency such as image manipulation or number crunching. Timeshare tasks are processed whenever there is excess DSP bandwidth not being used by a real-time process.

Please note that real-time tasks will not necessarily execute faster than timeshare tasks. In many cases, timeshare tasks will get more of the processing bandwidth and will complete sooner than real-time tasks. Real-time refers to tasks that need a specific amount of data to be processed during a specific amount of time.

Sound Manager 3.0, Speed Recognition API, and the Communication Toolbox utilize the DSP, but for an application to do more than sound, telecommunications, and speech recognition, it will have to be specifically written to use the Apple Real-Time Architecture manager.

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Tech Info Library Article Number:12706

Tech Info Library

Macintosh Centris, Quadra 660AV: Description (Discontinued)

Revised: 6/19/95
Security: Everyone

Macintosh Centris, Quadra 660AV: Description (Discontinued)

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Article Created: 29 July 1993
Article Reviewed/Updated: 19 June 1995

TOPIC ----------

The Macintosh Centris 660AV & Quadra 660AV incorporate Apple AV Technologies in a high performance form factor.

DISCUSSION ----------

Overview

With an innovative architecture that delivers new capabilities in telecommunications, video, and speech, the Apple Macintosh Centris 660AV & Quadra 660AV computer helps you work and communicate more effectively than ever before.

The Macintosh Centris 660AV & Quadra 660AV combines the horsepower of a 25-megahertz 68040 microprocessor with a 55-megahertz digital signal processor (DSP) to achieve outstanding performance. The DSP handles telecommunications, speech, and audio functions, allowing the 68040 processor to handle other tasks, thereby increasing the total system performance.

The power and built-in features of the Macintosh Centris 660AV let you take full advantage of exciting new audio-visual technologies. For example, with its built-in GeoPort telecommunications architecture, the Macintosh Centris 660AV can connect with telephone systems, so you can use your computer as a telephone, an answering machine, a fax machine, and an electronic mail station. Its video capabilities let you view or capture video from a VCR, laser disc, or camcorder in a window. You can also connect directly to a TV to show your presentations or to a VCR to make videotapes.

Using PlainTalk speech technology from Apple, the Macintosh Centris 660AV can respond to your voice commands. And it generates CD-quality stereo sound, so all your audio applications sound great.

..TIL12707-Macintosh_Centris_Quadra_660AV-Description_Discontinued.pdf

In short, the Macintosh Centris 660AV can serve as your personal communications center. Whether you're in the office or on the go, you can use it to work more efficiently and effectively than ever.

Power and Speed

- 25-MHz 68040 microprocessor
- 55-MHz digital signal processor (DSP)
- 32-bit data bus

Memory

- 8 MB of RAM standard, expandable to 68 MB

RAM note: All 8MM RAM configurations come with 4MB of RAM soldered onto the logic board and one 4MB SIMM installed in one of the two SIMM slots.

Display

- Works with all Apple monitors as well as NTSC, PAL, VGA, and SuperVGA displays
- Supports 16-bit color, allowing for display of thousands of vibrant colors

Expansion

- Twelve built-in ports for peripheral devices, including video (composite and S-Video formats) and audio
- One internal NuBus expansion slot via NuBus adapter, which includes support for digital-audio video (DAV) connector. (Only 7 inch NuBus cards are supported.)
- Optional internal CD-ROM drive (such as AppleCD 300i)

System software

- System 7 with multitasking, file sharing, QuickTime, Balloon Help, TrueType, and more

Networking

- Built-in AppleTalk networking
- File sharing without a dedicated server
- On-board Ethernet networking

Compatibility

- Reads Macintosh, MS-DOS, OS/2, and ProDOS floppy disk formats

What's in the box:

Each unit includes a power cord, keyboard cable, mouse, microphone, system software and a CD Caddy#.

System software includes System 7.1, System Enabler 088, Color Macintosh Basics, QuickTime 1.6, and HyperCard Runtime.

System software shipped on a bootable CD-ROM, the "Install Me First CD" which can double as a rescue disk.

Documentation included with the Centris 660AV:
- Getting Started with your Macintosh Centris 660AV
- Technical Information for the Macintosh Centris 660AV
- Macintosh User's Guide for desktop Macintosh computers
- AppleCD 300i User's Guide#
- Apple Extras User's Guide
  (Located in the Apple Extras folder on the hard disk.)

#(Only for systems with built-in CD-ROM drive.)

Configurations and Ordering Information:

- M1839LL/A: Macintosh Quadra 660AV with 8 MB of RAM, 230 MB hard disk.
- M9043LL/A: Macintosh Quadra 660AV with 8 MB of RAM, 230 MB hard disk, internal CD-ROM drive.
- M9044LL/A: Macintosh Quadra 660AV with 8 MB of RAM, 500 MB hard disk.
- M1840LL/A: Macintosh Quadra 660AV with 8 MB of RAM, 500 MB hard disk, internal CD-ROM drive.
- M9049LL/A: Macintosh Quadra 660AV NuBus adapter
- M1534LL/A: Macintosh Quadra 660AV Logic Board Upgrade
  (Upgrades a Macintosh Centris 610 or Quadra 610 computer to a Macintosh Quadra 660AV computer.)

RAM note: All 8MM RAM configurations come with 4MB of RAM soldered onto the logic board and one 4MB SIMM installed in one of the two SIMM slots.

Article Change History:
05 Jun 1995 - Added discontinued to parts no longer available.
20 Jan 1994 - Added Quadra 660AV model.
27 Aug 1993 - Corrected RAM information.

Support Information Services

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Tech Info Library Article Number:12707

Tech Info Library

Macintosh AV Series: No Memory Interleaving (12/93)

Revised: 12/23/93
Security: Everyone

Macintosh AV Series: No Memory Interleaving (12/93)

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Article Created: 29 July 1993
Article Reviewed/Updated: 23 December 1993

TOPIC -----

Do the Macintosh Centris 660AV, Quadra 660AV and Quadra 840AV use the memory interleaving scheme introduced with the Centris 610, 650 and the Quadra 800?

DISCUSSION -----

No. None of the Macintosh AV Series models use the new highly efficient DMA (direct memory access) based memory architecture. This precludes the need for a memory interleaving design to achieve high performance.

For further information, please review the Tech Info Library article: "Macintosh AV Series: Software Enhancements."

Article Change History:
23 December 1993 - Revised title & article to include all AV models.

Support Information Services

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Tech Info Library Article Number:12708

Tech Info Library

Macintosh AV Series: No CD-ROM Pack (12/93)

Revised: 12/23/93
Security: Everyone

Macintosh AV Series: No CD-ROM Pack (12/93)

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Article Created: 29 July 1993
Article Reviewed/Updated: 23 December 1993

TOPIC ----------

Will a CD-ROM pack (a collection of CD-ROM titles) be bundled with the Macintosh Centris 660AV, Quadra 660AV and Quadra 840?

DISCUSSION ----------

No third party CD-ROM titles will be bundled with Macintosh AV Series models. However, a bootable CD-ROM that provides a permanent archive for all software included on the hard disk is included.

For further information on the bootable CD-ROM, please refer to the Tech Info Library article: "Centris & Quadra Models: Bootable CD-ROM"

Article Change History:
23 December 1993 - Revised article, adding info on all AV models

Support Information Services

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Tech Info Library Article Number:12709

Tech Info Library

AudioVision 14 Display: Comparison w/ Other Apple Monitors 7/93

Revised: 7/28/93
Security: Everyone

AudioVision 14 Display: Comparison w/ Other Apple Monitors 7/93

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Article Created: 29 July 1993

TOPIC ----------

How does the AudioVision 14 Display compare to the Apple Basic Color Monitor and/or the Macintosh Color Display?

DISCUSSION ----------

The AudioVision 14 Display is the basic Macintosh Color Display that has been re-designed to include several key features for sound integration and ease of use. There are major differences between the Apple Basic Color Monitor, which is a VGA type monitor, and the AudioVision 14 Display. For more information on features, use "AudioVision and features and benefits" as your search string.

Here is a comparison of their operational specifications:

Refresh Rate

Apple AudioVision 14 Display - 66.7 hz
Macintosh Color Display - 66.7 hz
Apple Basic Color Monitor (VGA) - 60.0 hz (precisely 59.94 hz)

The AudioVision 14 Display's high refresh rate reduces flicker and eliminates eye strain that accompanies the 60hz rate of the typical VGA monitor.

CRT Flatness

The surface of the AudioVision 14 Display's CRT is considerably flatter than that of Apple Basic Color Monitor.

There is less visual distortion when working in front of a flat screen as opposed to one which has a slightly curved surface.

Dot Pitch

Apple AudioVision 14 Display - 0.26 mm
Macintosh Color Display - 0.26 mm
Apple Basic Color Monitor (VGA) - 0.29 to 0.39 mm

Dot pitch is a specification which describes the distance between CRT pixels. The smaller the dot pitch, the sharper the display. Dot pitches in the 0.29 to 0.39 mm range produce an increasingly grainier look as the dot pitch approaches 0.39 mm. Consequently, the AudioVision 14 Display has a much sharper and cleaner appearance than does the Apple Basic Color Monitor.

CRT Type

Apple AudioVision 14 Display - Sony Trinitron CRT
Macintosh Color Display - Sony Trinitron CRT
Apple Basic Color Monitor (VGA) - conventional CRT

The Sony Trinitron CRT offers the advantages of a brighter and sharper raster with better convergence.

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Tech Info Library Article Number:12710

Tech Info Library

AudioVision 14 Display: Connecting the Monitor (7/93)

Revised: 7/28/93
Security: Everyone

AudioVision 14 Display: Connecting the Monitor (7/93)

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Article Created: 29 July 1993

TOPIC ----------

This article discusses how to connect the AudioVision 14 Display to a Macintosh that:
1) Has a built-in high density connector on the computer.
2) Doesn't have the built-in high density connetor.

DISCUSSION ----------

Connecting the monitor to a computer that has a built-in high density connector:

1) Before you connect any cables, make sure that your computer is turned off.

2) Connect the connector end of the power cord to the monitor and the other end to the back of the computer.

3) If the back of your computer has the high-density connector simply connect the AudioVision cable to the high-density connector on the back of the computer.

4) You are now ready to use the monitor. You do not need to install software if your computer has a built-in high density connector. The software is already installed on the hard drive.

Connecting the monitor to a computer without a built-in high density connector:

1) Before you connect any cables, make sure that your computer is turned off.

2) Connect the connector end of the power cord to the monitor and the other end to the back of the computer.

3) If the back of your computer DOES NOT have the high-density connector, you need to use an adapter cable, a NUBUS video card and will have to install the AudioVision software. (The adapter cable kit part number is M1243LL/A.)

4) Connect the adapter cable plugs (monitor, sound in, sound out, and ADB) to the back of the computer.

5) Connect the AudioVision high-density cable to the high-density connector on the adapter cable by firmly pushing the cable into the connector until you hear a click.

6) Install the AudioVision Software that provides integrated sound and video capabilities by inserting the AudioVision Installer disk into the internal floppy disk drive.

7) Click the Installer icon and install the software on the appropriate hard disk.

8) Once installation is complete, restart you Macintosh.

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Tech Info Library Article Number:12711

Tech Info Library

AudioVision 14 Display: Description (7/93)

Revised: 7/28/93
Security: Everyone

AudioVision 14 Display: Description (7/93)

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Article Created: 29 July 1993

TOPIC ----------

This article describes the Apple AudioVision 14 Display.

DISCUSSION ----------

The Apple AudioVision 14 Display combines superb color graphics with a revolutionary new sound system, so you can not only work with today's multimedia applications, but also take advantage of emerging telephony, videoconferencing, and speech-recognition applications.

The first in an entirely new class of displays, the AudioVision 14 Display integrates high-quality stereo speakers, microphone, and high-contrast display into a single, sleek package. Speakers deliver CD-quality sound because they're specially engineered for near-field listening, sound clarity, and full-frequency response.

Simply speak into the display's built-in microphone when you want to add voice annotations to your documents. Or, when speech-recognition applications become available, use the microphone to dictate instructions to your computer. Some applications will even let you use the microphone as your hands-free speakerphone.

For added convenience, the AudioVision 14 comes with ports that put connections for headphones, exter-nal speakers, CD players, and any Apple Desktop Bus device right on your desktop. So it's a snap to record, listen to, or watch your favorite media.

As for display quality, expect exceptional brightness and clarity, thanks to Apple's unique electronics and the display's advanced Sony Trinitron pic-ture tube. Its fast refresh rate assures flicker-free performance, and the flat, high-contrast screen produces crystal-clear images and color, even at the edges of the screen.

..TIL12712-AudioVision_14_Display-Description_7-93.pdf

The unique integration of hardware and software makes the AudioVision 14 Display simple to use. A single cable en-ables fast, plug-and-play setup. Contrast, brightness, and sound controls are con-veniently located on the front panel. And new software controls let you cus-tomize the way the display handles sound output and input.

FEATURES

Display quality

- 14-inch screen, 640 horizontal by 480 vertical lines (at 70 dots per inch)
- Trinitron color picture tube with improved electronics for higher brightness, high contrast, and uniform color

Ergonomic features

- Tilt-and-swivel base for adjustment to comfortable viewing, speaking, and listening angles
- 66.7-hertz refresh rate and degaussing capability eliminate flicker and distortion
- Meets strict SWEDAC MPR-2 requirements for low-frequency (ELF and VLF) magnetic and electric emissions
- EPA Energy Star rating for power savings (when used with certain Macintosh models)

Audio quality

- Stereo speakers for CD-quality sound output
- Unidirectional microphone for high-quality sound input, capable of speech recognition

Ease of use and flexibility

- Plug-and-play capability with any modular Macintosh computer
- Convenient side ports for CD-ROM drives, CD or audio cassette players, headphones, external speakers, and ADB devices such as keyboard or mouse
- Software control panel for customizing sound and screen settings
- Front panel buttons for easy access to brightness, contrast, volume, mute, and microphone controls

Compatibility

- Hardware compatible with all modular Macintosh computers with on-board video support or any NuBus-capable modular Macintosh computer
- System software 7.0.1 or later

Target Customer

- Customers interested in today's multimedia applications
- Customers interested in emerging voice technology applications (speech recognition, telephony, videoconferencing, and so on)

Ordering Information

Apple AudioVision 14 Display and Adapter Bundle
• Order No. B1247LL/A
  Apple AudioVision 14 Display
  High-density cable
  AudioVision adapter cable
  AudioVision software installer
  User's guide
  Limited warranty

Apple AudioVision 14 Display
• Order No. M5814LL/A

AudioVision Adapter Kit*
• Order No. M1243LL/A
*Required with all modular Macintosh models as of August 1, 1993.

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Tech Info Library Article Number:12712

Tech Info Library

AudioVision 14 Disp:Erratic Video SW Behavior (7/93)

Revised: 7/28/93
Security: Everyone

AudioVision 14 Disp:Erratic Video SW Behavior (7/93)

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Article Created: 29 July 1993

TOPIC --------------------

This article discusses the erratic video slider control (software controlled) behavior.

DISCUSSION --------------------

Pressing the Volume key, Mute button, or Microphone-on button in combination with the Brightness or the Contrast button makes the software slider control (in the video control panel) behave erratically.

For example, if you press and hold the top of the Contrast button to adjust the slider control upward AND press the Mute button at the same time, the slider control continues upward toward the end, even after the buttons have been released.

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Tech Info Library Article Number:12713

Tech Info Library

AudioVision 14 Display: Inaudible Boot Beep (7/93)

Revised: 7/27/93
Security: Everyone

AudioVision 14 Display: Inaudible Boot Beep (7/93)

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Article Created: 29 July 1993

TOPIC ----------

This article discusses the "boot beep" when you turn on the computer.

DISCUSSION ----------

If you use the AudioVision 14 Display with some Macintosh computers, you may not hear the "boot beep" when you turn on the computer. To hear the boot beep, plug the monitor into the wall (not into the computer) AND turn on the monitor before turning on the computer.

The inaudible boot beep occurs when the AudioVision's power cord is plugged into the computer AND the computer beeps before the AudioVision is fully powered up (and able to produce sound.) The inaudible beep is known to occur in the Macintosh IIvx, IIvi, Quadra 700, 800, 900 and 950.

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Tech Info Library Article Number:12715

Tech Info Library

AudioVision 14 Display: Install/Overwriting SW Tip (8/93)

Revised: 8/4/93
Security: Everyone

AudioVision 14 Display: Install/Overwriting SW Tip (8/93)

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Article Created: 29 July 1993
Article Reviewed/Updated: 3 August 1993

TOPIC ----------

If you use the AudioVision 14 Display with other devices that include software, such as the Apple Adjustable Keyboard or third-party ADB devices, install the AudioVision software LAST.

DISCUSSION ----------

Software for some other devices may overwrite your monitor software. For example, if you install software for the Apple Adjustable Keyboard after installing software for the AudioVision 14 Display, the keyboard's Sound control panel may replace the monitor's Sound control panel. The result is that you lose the AudioVision "Volumes" Sound control panel.

Also, with the Apple Adjustable Keyboard, follow these steps after you install the software:

1) Follow the instructions to restart
2) Turn off the computer and monitor
3) Wait 30 seconds before powering up.

If you don't follow these steps, the display won't be recognized.

Article Change History:
3 August 1993 - Added more information about installing the Apple Adjustable Keyboard.
29 July 1993 - Shortened the title

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Tech Info Library Article Number:12716

Tech Info Library

Apple AudioVision 14 Display: New Features and Benefits (7/93)

Revised: 7/28/93
Security: Everyone

Apple AudioVision 14 Display: New Features and Benefits (7/93)

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Article Created: 29 July 1993

TOPIC ----------

What are the new features and benefits of the AudioVision 14 Display?

DISCUSSION ----------

The AudioVision 14 Display is the basic Macintosh Color Display re-designed to include several key features for sound integration and ease of use.

NEW FEATURES	BENEFITS
Built-in stereo speakers	Two full-range stereo speakers built into the display provide high-quality sound output. A dedicated audio circuit board amplifies the sound output from the Macintosh and guarantees excellent bass response, high efficiency, and full dynamic range. The frequency response, dynamic range (100 Hz to 15kHz), signal-to-noise ratio, and lack of distortion will be comparable to some of the finer desktop speakers.
Built-in microphone	A built-in microphone, located at the top of the display’s bezel, will enable much higher quality sound capture than does the Apple microphone today. The built-in microphone is designed to support Apple's voice recognition software, PlainTalk. The microphone features the unique capability to ignore extraneous sound from the sides and back of the display. The display control panel features an LED to alert the customer that the microphone is on.
Integrated Cable	AudioVision is the first display to use a new integrated cable which offers easier plug and

	play setup for customers. This cable will replace the myriad of cables (video, ADB, sound in, sound out) that now run from the display to the CPU.
Adapter Cable	This cable adapter, "breaks out" the cables from the integrated connector and allows AudioVision to be used with Macintosh models with discrete connectors. This guarantees that every modular Macintosh owner can easily use AudioVision.
User Controls (Buttons)	Brightness, contrast, speaker volume, mute, and record controls (buttons) are located on the control panel on the front of the display between the speakers.
Side Ports	Headphone jack, external sound input, ADB (2), and video in (for hookup of camcorder, VCR, or other video input device) offers ease of use.
AudioVision Software	AudioVision software provides a common user interface by which applications can prompt the user for their AudioVision video and audio preferences (brightness, contrast, speaker volume up/down, and speaker mute). Most of the options duplicate the buttons on the front of AudioVision, however, a few preferences can be set in software that cannot be set otherwise (for example, headphone volume). The AudioVision software includes an Installer program, a sound cdev, a video cdev, and the QuickTime component manager extension.

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Tech Info Library Article Number:12717

Tech Info Library

AudioVision 14 Display: Using Multiple Monitors (7/93)

Revised: 7/27/93
Security: Everyone

AudioVision 14 Display: Using Multiple Monitors (7/93)

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Article Created: 29 July 1993

TOPIC ----------

This article discusses connecting multiple monitors.

DISCUSSION ----------

If your Macintosh has expansion slots, you can use more than one monitor with you computer. However, in a multiple monitor setup, include only ONE AudioVision 14 Display. The AudioVision software is designed to control only a single AudioVision monitor per system.

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Tech Info Library Article Number:12718

Tech Info Library

AudioVision 14 Display: High-Density Connector Pinouts (7/93)

Revised: 7/27/93
Security: Everyone

AudioVision 14 Display: High-Density Connector Pinouts (7/93)

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Article Created: 29 July 1993

TOPIC ----------

This article describes the high-density connector pin designations.

DISCUSSION ----------

Pin	Signal Description
1	CPU audio output shield
2	Audio input shield
3	Audio input signal (microphone), left
4	Audio input signal (microphone), right
5	Audio output signal (headphone), left
6	Audio output signal (headphone), right
7	Reserved
8	Monitor sense bit 1
9	Monitor sense bit 2
10	Green video signal shield
11	Green video signal
12	Video input power ground
13	Video input power supply
14-17	Reserved
18	Monitor sense bit 3
19	Video input shield
20	Video input luminance signal
21	Video input chrominance signal
22-25	Reserved
26	Red video signal shield
27	Red video signal
28	Video input control 1
29	Video input control 2
30-32	Reserved
33	Vertical synchronization signal
34	Composite video synchronization signal

35	+5V DC input for ADB interface
36	Logic ground for ADB connection
37	ADB pin 1--bi-directional signal to transfer audio and video control data between CPU and AudioVision
38	ADB pin 2-power on
39-41	Reserved
42	Horizontal video synchronization signal
43	Video synchronization return
44	Blue video signal shield
45	Blue video signal

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Tech Info Library Article Number:12719

Apple AudioVision 14 Display: Q & A (7/93)

Revised: 7/27/93
Security: Everyone

Apple AudioVision 14 Display: Q & A (7/93)

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Article Created: 29 July 1993

TOPIC ----------

This article addresses questions on the AudioVision 14 Display.

DISCUSSION ----------

Q: Why is incorporating sound important?
A: First, Apple has pioneered in the application of sound on personal computers since the advent of the Macintosh. This puts Apple in an excellent position to provide high quality sound output that meets the unique requirements of today’s media-rich computing environment. The Apple AudioVision 14 Display provides a complete integrated solution to computer audio output that conventional speaker systems do not.

Second, Apple believes that high-quality audio output is and will increasingly be a critical part of computing. More software than ever is incorporating CD-quality audio content, and customers are looking for ways to take advantage of the high-quality sound their computers can deliver. With AudioVision, Apple is making high-quality sound output available to all computer users.

Q: Does AudioVision only work with the new AV computers?
A: No. AudioVision will simplify and enhance the sound-in and sound-out of ANY modular Macintosh CPU.

Q: How does AudioVision differ from just adding separate high quality speakers and a high quality microphone?
A: While AudioVision's sound performance is equivalent to many highly priced speaker and microphone alternatives, the all-in-one integrated hardware and software solution offers several advantages you just can't get by adding on separate components. This integration advantage translates into simplicity of purchase and set-up, convenience in usage, and software Flexibility.

Q: What do you mean by Purchase and Set-up Simplicity?
A: With the integrated design from Apple, the whole user experience -- purchase, set-up, and usage -- is made simpler. The AudioVision solution provides a single, uncomplicated purchase option for getting high quality sound in and sound out of your Macintosh. And because it's from Apple you know it works well together. The all-in-one design also means no loose items hanging off your computer or taking up more desk space. It means fewer cables, fewer misconnections, and fewer hassles. The goal of simplicity is witnessed in the sleek and inconspicuous industrial design.

Q: What do you mean by Usage Convenience?
A: With AudioVision, touch buttons for controlling sound and screen settings are now quickly within reach. Brightness, contrast, volume, mute, and microphone controls are right on the AudioVision front panel. Furthermore, when you want to connect other peripherals (headphones, external speakers, CD-players, keyboard) to your computer, you no longer have to reach around to the back of your CPU. All these ports are now conveniently located on your display.

Q: Can you describe the features of the sound-in port?
A: There are three special features.

1) Loop Through: You can loop sound coming in from that port right out to the AudioVision speakers without going through the CPU. Sounds from the CPU will be mixed in automatically. Since most Macintosh CPU's can't process CD-quality sound, this is a big win. In fact, your computer could be turned off and you could still use the AudioVision speakers.

2) Flexible sound-in options: Macintosh computers only have one sound-in port. The AudioVision sound-in port, however, gives you an easy way of swapping between two inputs. For example, you may want to digitize music from a CD player, but when the phone rings you want to use AudioVision as a hands-free speakerphone. With AudioVision you can do both without any plugging and un-plugging. When you want to use the internal microphone, you simply hit the microphone enable button and internal microphone will cut over. Without AudioVision and its alternative sound-in port, you'd have to manually plug and unplug different sound-in devices from the back of your CPU.

3) Built-in pre-amp saves you power and money: For special recordings you may want to plug in a professional stereo microphone. Such a microphone usually requires extra power, but not with AudioVision. AudioVision's built-in pre-amp supplies this power to the microphone. CPU's do not.

Q: What do you mean by Software Control & Flexibility?
A: AudioVision software allows the user to customize their own sound and screen settings.

Q: How does AudioVision differ from the Macintosh Color Display?
A: AudioVision provides the exact same high quality video characteristics as the Macintosh Color Display, plus new sound functionality and

convenience.

Q: What is the Integrated Desktop Cable (IDC)?
A: It's a new high-density cable for plug-and-play set-up. The IDC replaces five cables that would normally have to run from your computer to your display to provide the same AudioVision functionality (sound-in, sound-out, ADB, video-in, video-out). Now with a single "snap" you'll be connected.

Q: When do I need the AudioVision Adapter?
A: It is required on all modular Macintosh models that do not have the high-density connector on the back panel of the computer. The part number is M1243LL/A. Future Apple CPU's will support the new integrated desktop cable and, therefore, will not require the AudioVision adapter.

Q: Why do you refer to the AudioVision as a 14-inch Display?
A: As with the Macintosh Color Display, Apple adopted the 14" specification because most vendors offering monitors with the 640 x 480 pixel viewing area have standardized on the 14" measurement, which actually measures tube size. Whether it's called 13" or 14" doesn't really matter. What does matter is the number of pixels. We've simply tried to conform to the industry norm in order to allow customers to compare monitors accurately.

Q: What does the AudioVision software do?
A: The AudioVision software provides integrated sound and video capabilities that allow you to take advantage of multi-media and voice technology applications.

Q: Who is the target audience?
A: The AudioVision is for customers interested in today's multimedia applications and customers interested in emerging voice technology applications (speech recognition, telephony, videoconferencing, and so on.)

Q: Who makes the speakers?
A: Apple has more than one supplier that meet the very strict proprietary Apple designs.

Q: Does this display conform to low emissions standards?
A: Yes, the Macintosh Color Display is fully compliant with the world's strictest guidelines for magnetic emissions, as are all Apple Macintosh color displays. The Macintosh Color Display along with Apple's 21-inch display are among the only displays in the industry that currently conform with both magnetic and electric ELF/VLF emissions standards, in accordance with SWEDAC MPR-2.

Q: Does this display meet the EPA's Energy Star requirement?
A: Yes. Both the Macintosh Color Display and the Apple AudioVision 14 Display meet the EPA's requirement for power savings when they are used with certain CPU's.

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Tech Info Library Article Number:12720

Tech Info Library

AudioVision 14 Display: Removing AV Software (7/93)

Revised: 7/28/93
Security: Everyone

AudioVision 14 Display: Removing AV Software (7/93)

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Article Created: 29 July 1993

TOPIC --------------------

This article discusses removal of the AudioVision software.

DISCUSSION --------------------

The AudioVision 14 Display software replaces your system's Sound control panel. If you remove the AudioVision software, you'll need to put a Sound control panel back into your system folder by reinstalling system software.

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Tech Info Library Article Number:12721

Tech Info Library

AudioVision 14 Display: Set Up Tips For Speech Recog (5/94)

Revised: 5/3/94
Security: Everyone

AudioVision 14 Display: Set Up Tips For Speech Recog (5/94)

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Article Created: 29 July 1993
Article Reviewed/Updated: 3 May 1994

TOPIC ----------

This article gives set up and troubleshooting tips for the AudioVision 14 Display in regards to speech recognition with the Centris, Quadra, and Power Macintosh AV series computers.

DISCUSSION ----------

The AudioVision 14 Display is compatible with the Centris, Quadra, and Power Macintosh AV series computers, including speech recognition. During monitor set up, two steps are important for speech recognition.

1) When connecting the AudioVision adapter cable, connect the sound-in plug to the external sound input port on the back of the computer.

2) Make sure the AudioVision's built-in microphone is turned on.

Note: The built-in microphone at the top of the display is not as sensitive as the external microphone input on the side of the display.

Troubleshooting Tips

- If speech recognition is not working properly, check the sound input options in the Sound Control Panel. The computer may be looking for sound from the wrong input port.

  If the display is connected to the 45-pin monitor port on the computer, follow these steps:

  1) Open the Sound Control Panel
  2) Choose the Sound In option from the menu in the control panel window.

3) Click on Options
4) Change the input source to AV Connector

If the display is connected to the 15-pin monitor port on the computer and the sound cables are attached to the microphone input and output ports using the AudioVision adapter cable, follow these steps:

1) Open the Sound Control Panel
2) Choose the Sound In option from the menu in the control panel window
3) Click on Options
4) Change the input source to Microphone

- Make sure the microphone is on by pressing the microphone switch on the front of the display until the amber light above the switch is on.

- The Sound In options are ways of choosing the port you want to record sound from. If the monitor is plugged into the microphone jack, you want sound coming from the microphone. If the monitor is plugged into the HD-45 connector (AV Connector), you want to choose that port. The pictures in the control panel can be misleading since they depict the type of microphone or device and not the port you are recording from. The microphone picture is for the mini-stereo sound input port, the AV microphone picture is for the AV Monitor Connector, and the CD is for a CD drive.

Article Change History:
3 May 1994 - Included troubleshooting information.

Support Information Services

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Tech Info Library Article Number:12722

Tech Info Library

AudioVision 14 Display: Using the Turbo Mouse (7/93)

Revised: 7/27/93
Security: Everyone

AudioVision 14 Display: Using the Turbo Mouse (7/93)

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Article Created: 29 July 1993

TOPIC ----------

This article discusses using the Turbo Mouse with the AudioVision 14 Display

DISCUSSION ----------

If you use the AudioVision 14 Display with the Turbo Mouse, the mouse will not work if it is plugged into the ADB port on the monitor. You MUST plug the Turbo Mouse into the back of the computer. If your computer has only one ADB port, you'll need to buy a Y-adapter cable to accommodate both the mouse and the ADB plug on the AudioVision adapter cable.

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Tech Info Library Article Number:12723

Apple AudioVision 14 Display: Technical Specifications (7/93)

Revised: 7/28/93
Security: Everyone

Apple AudioVision 14 Display: Technical Specifications (7/93)

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Article Created: 30 July 1993

TOPIC -----

This article gives the technical specifications for the AudioVision 14 Display.

DISCUSSION -----

Picture Tube

- 14-inch diagonal, 13-in. viewable, Trinitron CRT
- .26-mm stripe pitch
- High-contrast glass

Video

- Resolution: 640 horizontal pixels by 480 vertical lines
- 70 dpi
- Active display area: Adjusted at the factory to produce an active video area described by an ideal rectangle of 9.3 x 6.9 inches (235 by 176 mm)

Input Signals

- Red, green, and blue video signals, negative-going TTL

Scanning and Refresh rates

- 35.0-kHz horizontal scan rate
- 66.7-Hz vertical refresh rate

Microphone

- Directional, optimized for use in speech-recognition and voice-capable applications

Speakers

- Full-range stereo
- Tuned port, bass reflex chamber design
- Maximum loudness: 90-dB sound pressure level (SPL) at 1 kHz at 0.5m
- Frequency response: 100 Hz to 15 kHz +/-3 dB

User controls

- Contrast, brightness, mute, volume, and microphone

Built-in ports

- One stereo line/microphone input port
- One stereo headphone/speaker output port
- One video-in port (for future use)
- Two Apple Desktop Bus ports

Audio input signals

- Accepts audio signal of up to 6 Vpp (line level: low sensitivity) or as low as 20 mVpp (microphone level: high sensitivity)

Headphone jack

- Output level: 1.75 Vpp into 4-W load and 2 Vpp into 10-kW load

Operating environment

- Temperature: 50° F to 104° F (10° to 40° C)
- Humidity: 90% maximum, noncondensing
- Altitude: 0 to 10,000 feet (0 to 3,048 m)

Electrical requirements

- Voltage: 100 to 240 Vrms
- Frequency: 47 to 63 Hz
- Power consumption: 37 W normal operation, 55 W maximum

Physical Measurements

- Height: 15.2 inches (38.5 cm)
- Width: 13.4 inches (34 cm)
- Depth: 16.6 inches (42 cm)
- Weight: 33 pounds (15 kg)

System requirements

- Compatible with modular Macintosh computers with on-board video support or any NuBus-capable modular Macintosh computer
- System software version 7.0.1 or later

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12724

Tech Info Library

Macintosh Finder: Rate of Directory Structure Updates (7/93)

Revised: 8/2/93
Security: Everyone

Macintosh Finder: Rate of Directory Structure Updates (7/93)

==========

Article Created: 28 July 1993

TOPIC ----------

How often is the directory information updated?

I moved files from one folder to another, and then ran an application that crashed. When I restarted, all of the files were back in the original folder.

Is there a way to force the directory information to be updated by a particular Finder event (like duplicating a file) without restarting, shutting down, or rebuilding the desktop?

DISCUSSION ----------

There isn't a simple answer to how often the directory information is updated. Updates don't happen at regular intervals.

When files are moved, causing the directory structure to change, the affected blocks of the catalog are read into the cache and marked dirty. The changes to the directory structure are then made in RAM (to what was read into the cache).

It's only when a FlushVol is performed that the information is written out to the volume in question. If the system crashes before the FlushVol occurs, then the directory will be in its prior state. In this case, no actual damage has occurred, although the user's actions of moving the file have been lost. Of course, when crashes occur regularly, it's a good idea to verify the integrity of your data frequently.

There's no easy answer to the question of how often a FlushVol occurs, as there's no predetermined rate at which they occur. Given normal operation of a computer, this shouldn't be an issue. The problem only arises when a crash occurs.

..TIL12726-Macintosh_Finder-Rate_of_Directory_Structure_Updates_7-93.pdf

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12726

Tech Info Library

HD SC Setup 7.2: Fixes HFS Extents File Bug (8/93)

Revised: 8/26/93
Security: Everyone

HD SC Setup 7.2: Fixes HFS Extents File Bug (8/93)

==========

Article Created: 28 July 1993
Article Reviewed/Updated: 26 August 1993

TOPIC ----------

Is it true that Apple HD SC Setup 7.2 (included with the Hardware System Update 2.0 disk and the Software Utility Update 1.0 disk) fixes the HFS Extents file bug that came to light with PowerBook 120MB drives.

DISCUSSION ----------

HD SC Setup 7.2 does indeed resolve the Extents file bug. To update, follow the procedure below:

1) Launch Disk First Aid 7.1.1 or higher. (Disk First Aid 7.2 is shipped on the Software Utility Update 1.0 disk.)

2) Select the disk you wish to update.

3) Click the Start button (for Disk First Aid 7.2, click Verify.) Disk First Aid will inform you if any repairs are needed.

4) If repairs are needed, click the Repair button.

5) Repeat steps 2 through 4 for any additional hard disks you wish to update.

6) Quit Disk First Aid.

7) Launch HD SC Setup 7.2 or higher.*

8) Click the drive button to select the hard disk you wish to update.

9) Click the Update button. This installs the new version of the SCSI driver.

10) Repeat Steps 2 and 3 for any additional hard disks you wish to update.

11) Click the Quit button to return to the Finder.

*Notes: - Make sure that Disk First Aid and HD SC Setup is not running from any hard disk you wish to update.
- Make sure that none of the hard disk(s) you wish to update is the startup disk.)

Article Change History:
26 August 1993 - Revised article to include proper procedure of running Disk First Aid first, then HD SC Setup. Retitled article to refer to HD SC Setup, which performs the fix.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12727

Tech Info Library

LaserWriter Pro 600 and 630: Maintenance Intervals (7/93)

Revised: 7/28/93
Security: Everyone

LaserWriter Pro 600 and 630: Maintenance Intervals (7/93)

==========

Article Created: 28 July 1993

TOPIC ----------

Are there any parts or modules that should be replaced at regular intervals to maintain optimal print quality on the LaserWriter Pro 600 and 630?

DISCUSSION ----------

There is no refurbishment kit currently available for the LaserWriter Pro 600 and 630, however, several parts should be replaced at regular intervals if a deterioration in print quality or paper handling is noticed. Use the table below as a guide for determining when the consumable parts should be replaced.

Description	Part Number	Expected Life
Fuser assembly	661-0802 (110/115V)	200,000 pages
	661-0803 (220/240V)	200,000 pages
Multi-purpose pickup roller	922-0281	200,000 pages
Cassette pickup roller	922-0280	200,000 pages
Separation pad	922-0286*	200,000 pages
Transfer roller	922-0205	200,000 pages
Fan	922-0202	25,000 hours

* The separation pad is included with the multipurpose tray guide assembly.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12728

GeoPort Telecom Adapter: Description (11/95)

Revised: 11/3/95
Security: Everyone

GeoPort Telecom Adapter: Description (11/95)

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Article Created: 29 July 1993
Article Reviewed/Updated: 3 November 1995

TOPIC ----------

This article describes the GeoPort Telecom Adapter.

DISCUSSION ----------

OVERVIEW
========

GeoPort is a hardware and software communications architecture that has been optimized for computer-telephony integration. It has three main attributes:

• It lets any GeoPort capable computer connect to any telephone (analog or digital, public or private), anywhere in the world. This means that users can connect not just to POTS (analog) lines, but also to the PBX lines typically found in most office environments. Note, the Telecom Adapter does not support digital phone systems, only analog.

• Once connected, it supports an arbitrary number of independent data streams up to a total bandwidth of 2MB/second.

• Unlike traditional asynchronous data communications (such as AppleTalk), GeoPort also supports isochronous data streams (such as real-time data like voice and video), and provides the real-time Application Program Interfaces (APIs) necessary to hide the implementation details (such as which DSP and real-time OS) from both the recipient and the sender of the real-time data.

Examples of Use -- Telephone Applications

• Auto dialing from within an application

• Auto call logging and tracking for account billing purposes

- Call screening and filtering (send some calls directly to voice mail)
- Send and receive a fax over a digital (PBX) line
- Voice and video conferencing -- with multiple users
- One phone number for voice mail, fax, or data connection
- Remote retrieval of email, voice mail, and fax -- from any telephone in the world
- Low cost fax-back machine
- Simultaneous voice and data, using any protocol (such as VoiceSpan or Radish)
- Software upgradeable "modem"
- Echo-canceled speaker phone

THE GEOPORT TELECOM ADAPTER

The GeoPort Telecom Adapter gives you access to one of your Macintosh Quadra 660AV, Quadra 840AV, and Power Macintosh family, except the Power Macintosh 5200/75 LC, Performa 5200 and 6200 (6200 in Europe only), built-in features: a 14.4 kbps (kilo bits per second) modem that uses the GeoPort technology and which includes fax send and receive capabilities.

The GeoPort Telecom Adapter serves as a line interface to standard (analog) telephone lines, and combined with the Quadra 660AV and Quadra 840AV computers' on-board Digital Signal Processor (DSP), it is capable of sending or receiving data at up 14.4 kbps and faxes at up to 9600 bps (bits per second) utilizing the bundled Apple Express Modem/Fax software. The DSP is part of the PowerPC chip itself.

The Apple Express Modem and Express Fax Software is included with the GeoPort Telecom Adapter and supports the same interfaces currently used in conjunction with the PowerBook Express modems. The data/fax transmission standards supported by the GeoPort architecture are listed below.

Data/Fax Transmission Standards Supported*

- Command Set

Extended Hayes AT command set

Begin_Table

- Data communications standards

14400	CCITT V.32 bis
9600, 4800 bps	CCITT V.32
2400 bps	CCITT V.22 bis
1200 bps	Bell 212A

1200 bps CCITT V.22
300 bps CCITT V.21
300 bps Bell 103

• Group 3 Fax communications standards
2400, 4800 bps CCITT V.27 ter
7200, 9600 bps CCITT V.29

End_Table

• Error control
Full CCITT V.42 compliance
MNP Classes 2-4

• Data compression
CCITT V.42 bis (up to 4:1 compression)
MNP Class 5 (up to 2:1 compression)

NOTE: The preceding standards are supported by the GeoPort architecture built into the Macintosh Quadra 660AV, Quadra 840AV, and Power Macintosh except the Power Macintosh 5200/75 LC, Performa 5200 and 6200 (6200 in Europe only).

What's in the box

The GeoPort Telecom Adapter, "Getting Started With Your GeoPort Telecom Adapter" manual, the "Express Fax/Modem User's Guide", a length of telephone cord, and a floppy disk containing the Express Modem/Fax software.

Adapter Models

This table lists the ordering information for GeoPort adapter models, which systems to use them with, and which versions to use outside the United States:

Begin_Table

Model	System	International
M1694LL/A	Quadra 660 AV and 840 AV	NO
M1694LL/B	Quadra 660 AV and 840 AV	YES
M3127LL/A	Power Macintosh	YES

End_Table

Part numbers mentioned in this article are accurate as of this writing. Before ordering, verify that they are still correct as they are subject to change.

This article was published in the "Information Alley": Volume I, Issue 10.

Article Change History:
03 Nov 1995 - Added GeoPort capable to second paragraph.
26 Sep 1995 - Added that Telecom Adapter does not support digital systems.
07 Jun 1995 - Added information on Power Macintosh 5200/75 LC.

..TIL12729-GeoPort_Telecom_Adapter-Description_11-95.pdf

Support Information Services

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Tech Info Library Article Number:12729

Tech Info Library

GeoPort Telecom Adapter: Specifications (10/94)

Revised: 10/24/94
Security: Everyone

GeoPort Telecom Adapter: Specifications (10/94)

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Article Created: 29 July 1993
Article Reviewed/Updated: 20 October 1994

TOPIC ----------

This article gives the technical specifications of the GeoPort Telecom Adapter used with the Macintosh Centris 660AV and Quadra 840AV and Power Macintosh computers.

DISCUSSION ----------

Overview

The GeoPort Telecom Adapter gives you access to one of your Macintosh Quadra 660AV, Quadra 840AV, and Power Macintosh family built-in features: a 14.4 kbps (kilo bits per second) modem with fax send and receive capabilities.

The GeoPort Telecom Adapter serves as a line interface to standard (analog) telephone lines, and combined with the Quadra 660AV and Quadra 840's on-board DSP, (Digital Signal Processor) it is capable of sending or receiving data at up 14.4 kbps and faxes at up 9600 bps (bits per second) utilizing the bundled Apple Express Modem/Fax software. The DSP is part of the PowerPC chip itself.

The Apple Express Modem and Express Fax Software is included with the GeoPort Telecom Adapter, supports the same interfaces currently used in conjunction with the PowerBook Express modems. The data/fax transmission standards supported by the GeoPort architecture are listed below.

Data/Fax Transmission Standards Supported*

- Command Set
  Extended Hayes AT command set

- Data communications standards
  14400 CCITT V.32 bis
  9600, 4800 bps CCITT V.32

2400 bps	CCITT V.22 bis
1200 bps	Bell 212A
1200 bps	CCITT V.22
300 bps	CCITT V.21
300 bps	Bell 103

- Group 3 Fax communications standards

2400, 4800 bps	CCITT V.27 ter
7200, 9600 bps	CCITT V.29

- Error control
  - Full CCITT V.42 compliance
  - MNP Classes 2-4

- Data compression
  - CCITT V.42 bis (up to 4:1 compression)
  - MNP Class 5 (up to 2:1 compression)

* These standards are supported by the GeoPort architecture built into the Macintosh Quadra 660AV, Quadra 840AV, and Power Macintosh.

Software Supported*

Express Modem Software
Express Fax Software

* The Express Modem and Fax software is included with the GeoPort Telecom Adapter

Electrical Requirements

- Operating voltage: 5 Volts, plus or minus 5 percent at less than or equal to 500 milliamps.
- The adapter is powered using the GeoPort/Modem port, via an extra pin. No separate power supply or battery is required.

Size

- Height: 1.57 inches (4 cm)
- Width: 2.8 inches (7.1 cm)
- Length: 5.6 inches (14.3 cm)

Operating Environment

- Operating temperature: 50 degrees to 104 degrees F (10 degrees to 40 degrees C)
- Storage temperature: -40 degrees to 149 degrees F (-40 degrees to 65 degrees C)
- Relative humidity: 20% to 90% noncondensing at a temperature range of 77 degrees to 104 degrees F (25 degrees to 40 degrees C)
- Maximum altitude: 7703 ft. (2135 m)

What's in the box:

- GeoPort Telecom Adapter
- Getting Started With Your GeoPort Telecom Adapter manual
- Express Fax/Modem User's Guide
- Telephone cord
- Floppy disk containing the Express Modem/Fax software

Ordering Information:

M1694LL/B - GeoPort Telecom Adapter for Quadra 660 AV and Quadra 840 AV.
M3127LL/A - GeoPort Telecom Adapter for Power Macintosh and International Use.

Article Change History:
20 Oct 1994 - Revised transmission data and added package contents.
09 Aug 1993 - Updated with correct transmission speed data.

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Tech Info Library Article Number:12730

Tech Info Library

Macintosh: Composite SIMMs Not Recommended (8/93)

Revised: 8/26/93
Security: Everyone

Macintosh: Composite SIMMs Not Recommended (8/93)

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Article Created: 29 July 1993
Article Reviewed/Updated: 17 August 1993

TOPIC ----------

Can I use composite 72-pin SIMMs in my Macintosh?

DISCUSSION ----------

Apple does not recommend or support composite SIMMs in any Macintosh model which uses 72-pin SIMMs. Although composite SIMMs are less expensive than standard 72-pin SIMMs, Apple cannot guarantee reliability or performance when composite SIMMs are installed. Instead, Apple recommends using 16 megabit chip SIMMs.

Composite SIMMs are SIMMs manufactured using a smaller or older memory technology. An example of this would be a 16MB SIMM made of rows of 4MB chips--basically a 16MB SIMM made of 4 4MB SIMMs on one board.

Some reasons why composite SIMMs are not supported include:
- Physically, they may not fit on the logic board.
- Their timing may not be compatible.
- Loading on new SIMMs may cause problems (when booting, the computer may display a sad Mac icon and play a series of tones).

Article Change History:
17 August 1993 - Added more detail about composite SIMMs.

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Tech Info Library Article Number:12731

Tech Info Library

Macintosh AV Series: QuickTime Information (12/93)

Revised: 12/23/93
Security: Everyone

Macintosh AV Series: QuickTime Information (12/93)

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Article Created: 29 July 1993
Article Reviewed/Updated: 23 December 1993

TOPIC ----------

I understand that QuickTime 1.5 is in ROM on the Centris 660AV, Quadra 660AV and Quadra 840AV, but when I check the version by performing a "Get Info", it states version 1.6.1 Can you explain this?

DISCUSSION ----------

QuickTime 1.6 was released after the final production of the Centris 660AV, Quadra 660AV and Quadra 840AV ROM's. Software version 1.6.1 of QuickTime was installed at the factory. The newer version of QuickTime will override the version in ROM.

QuickTime 1.6 provides a smaller memory footprint when not in use and supports converting audio tracks on CD's (with AppleCD 300) directly into QuickTime movies as well as Macintosh Easy Open* support and better 4 bit gray scale dithering. Performance is also improved with faster Photo CD decompression, and smoother movie playback.

* Macintosh Easy Open is part of the "Macintosh Easy Open Developer's Kit" which is essentially an extension to System 7 and a translation manager application programming interface (API). It allows opening and converting of documents even though the applications that created the files aren't available.

Article Change History:
23 December 1993 - Revised article to include all AV Series info.

Support Information Services

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Tech Info Library Article Number:12732

Tech Info Library

Centris 660AV & Quadra 840AV: 2MB ROM Information (7/93)

Revised: 7/28/93
Security: Everyone

Centris 660AV & Quadra 840AV: 2MB ROM Information (7/93)

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Article Created: 29 July 1993

TOPIC ----------

This article provides information on the new 2MB ROM in the Centris 660AV and Quadra 840AV.

DISCUSSION ----------

The Centris 660AV and Quadra 840AV are the first Macintosh computers to implement a 2MB ROM using two 512Kx16 chips. The new ROM is also the first ROM that contains code for portions of System 7 that were able to be moved to the ROM, freeing up RAM for applications and other system use.

The ROM has also been vectorized which allows for easier System patch creation and from a development perspective is much easier to maintain.

The new ROM also includes:

- Support for the Digital Signal Processor (DSP)
- New drivers for DMA based LocalTalk, Ethernet, Floppy disk, and SCSI
- QuickTime 1.5*
- Sound Manager 3.0
- Video input and output drivers
- Speech recognition and text to speech driver
- Apple Events and AppleScript
- Software support for telecom capabilities

* QuickTime 1.5 is installed in ROM, however, the software version of QuickTime 1.6 was installed at the factory and will override the version in ROM.

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Tech Info Library Article Number:12733

GeoPort Telecommunications Architecture (8/95)

Revised: 8/23/95
Security: Everyone

GeoPort Telecommunications Architecture (8/95)

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Article Created: 29 July 1993
Article Reviewed/Updated: 23 August 1995

TOPIC ----------

This article provides a description of the GeoPort Telecommunications Architecture which is found on the following: Quadra 660AV, 840AV, and all Power Macintosh computers except 5200/75LC and Performa 5200 and 6200 series.

DISCUSSION ----------

GeoPort provides the enabling software and hardware technologies that provide easy access to telephony services. Once the appropriate telephony connection has been established with the correct adapter, feature enhancements (OCR capability, FAX send/receive, voice messaging, and so on), can be provided by just adding software.

Third party developers can take advantage of the GeoPort architecture designed into the hardware and software of the computers mentioned above by writing a variety of drivers, tools, and applications in order to provide desired services.

A GeoPort Telecom Adapter, made by Apple, is a simple low cost device that contains a serial communications chip and either a codec (analog and PBX) or digital interface chip (ISDN and PBX) that sits between the 9-pin Modem/Geoport port on the computers mentioned above and the telephone jack. The internal logic of the adapter will differ depending on the particular telephone system it was designed for. The GeoPort Telecom Adapter will connect to standard analog telephone lines. For more information on this adapter, search the Tech Info Library on "GeoPort".

Apple is currently working with third-parties to provide a PBX and a ISDN GeoPort Adapter which should be available in the future. These products will not come from Apple, but from third-parties.

Article Change History:
23 Aug 1995 - Updated for Power Macintosh computers.
30 Jun 1995 - Reviewed and made changes for clarity.

Support Information Services

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Tech Info Library Article Number:12734

Tech Info Library

PlainTalk: Description of Apple's Speech Recognition Technology

Revised: 7/28/93
Security: Everyone

PlainTalk: Description of Apple's Speech Recognition Technology

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Article Created: 29 July 1993

TOPIC ----------

This article provides a description of PlainTalk (Apple's implementation of speech recognition technology).

DISCUSSION ----------

With PlainTalk on the Quadra 840AV and Centris 660AV, Apple is introducing the first personal computers that seamlessly integrate Speech Recognition and Text To Speech technologies. PlainTalk is the speech component of the Audio/Visual Technology suite. For more information on this technology, search the Tech Info Library on "AV Technology".

Speech Recognition

The Speech Recognition component of PlainTalk is based on the Casper technology. It is a continuous-speech system that is independent of the person speaking.

Speech Recognition enables a whole new user experience whereby users will be able to streamline operations by simply invoking commands or complex macros by speaking them.

Text to Speech

Text to Speech gives the computer the ability of reading text based information and synthesizing speech via the computer's speaker.

Multiple voices at various sound quality levels are supported.

This enables new capabilities such as audible proof reading or in combination with the telephony capabilities that GeoPort provides to listen to your E-mail messages from remote locations.

Writing speech commands is accomplished through two different methods:

• AppleEvent enabled applications commands are written using AppleScript.

• Non-AppleEvent enabled applications will use a new version of QuickKeys from CE Software that will support spoken Commands.

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Tech Info Library Article Number:12735

Tech Info Library

Macintosh Quadra 840AV: Specifications (7/93)

Revised: 8/13/93
Security: Everyone

Macintosh Quadra 840AV: Specifications (7/93)

==========

Article Created: 29 July 1993
Article Reviewed/Updated: 9 August 1993

TOPIC ----------

This article gives the technical specifications for the Macintosh Quadra 840AV computer.

DISCUSSION ----------

Microprocessor

- Motorola 68040, 32-bit architecture, 40 Mhz clock speed
- Integrated floating-point unit (FPU)
- Paged Memory Management Unit (PMMU)
- 8 KB Cache

Digital signal processor (DSP)

- AT&T 3210 running at 66.67 Mhz
- Used for sound, speech recognition, telecommunications, and other real-time processing tasks

Memory

- 8 MB of RAM standard (varies depending on model ordered).
- Four memory expansion slots for 60ns 72-pin SIMMs. Supported SIMM sizes are 4,8,16,and 32 MB.
- Expandable to 128 MB of RAM by using 32 MB SIMMs in each of the four SIMM slots. (Note: Dealer Installation Required).
- 256 bytes of non-volatile parameter memory (PRAM).
- 2 MB ROM (Two 512k by 16 chips).

Disk Drives

- One Built-in Apple SuperDrive 1.4MB floppy disk drive that uses

high-density floppy disks and reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.
- Support for three internal SCSI devices, two of which may be used for removable media such as an internal CD-ROM drive. One of the internal SCSI devices may be a full height drive or a drive array. (230 MB, 500 MB, and 1 GIG options available).
- Optional internal Apple CD-ROM drive (see above).
- Optional external SCSI hard disk drive (many capacities available).

Video Display

- Supports all Apple displays up to 21 inches.
- Supports some other non-Apple monitors, including VGA, SVGA, NTSC, and PAL 19" monitors.

Video RAM

- 1 MB VRAM expandable to 2 MB. Upgrading VRAM to 2 MB permits 24 bit display (millions) on monitors up to 16-in. and 16 bit (thousands) on 21-in. color monitor.
- Four memory expansion slots for 80ns 256K SIMMs.
- VRAM is shared between graphics window and video window.
- Maximum video window size at a color depth of 16 bits is 640 X 480.

Interfaces

- Three internal NuBus expansion slots, including one with a digital-audio video connector (DAV)
- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices
- AAUI-15 Ethernet connector
- Two serial (RS-232/RS-422) ports (Printer & Modem/GeoPort).
- Two S-Video ports, one each for input and output.
- Two composite video ports, one each for input and output.
- SCSI interface for connecting up to a total of seven SCSI devices.
- Sound-out port for stereo playback from CDs or Macintosh audio applications
- Stereo sound-input port (supports 16-bit stereo audio)
- One monitor out port.

Networking

- Built-in Ethernet
- Serial port for AppleTalk
- Integrated GeoPort telecommunications architecture for data, fax, and voice connectivity.

Sound Generator

- DSP-based 16 bit stereo audio
- Sample rates: 8 Khz to 48 Khz

Keyboard

- Several Apple Desktop Bus keyboards with numeric keypads available.

Mouse

- Apple Desktop Bus Mouse II; mechanical tracking, optical shaft, or contact encoding.

Clock/Calendar

- Custom integrated circuit with long-life lithium battery.

Apple PlainTalk Microphone

- The microphone is unidirectional and optimized for use with speech recognition. (Microphone bundled with all units sold in the USA, available as a separate item outside the USA.)

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These built-in features and third-party options provide alternative input and output tools for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured.
- Frequency: 50 to 60 Hz, single phase
- Power: 200 watts maximum, not including monitor power

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 milliamps (a maximum of three Apple Desktop Bus devices is recommended)
- Mouse draws 10 milliamps.
- Keyboard draws 25 to 80 milliamps, depending on the keyboard model used.

Size and Weight

Main unit

- Height 14.25 inches (30.6 cm)
- Width 7.75 inches (19.7 cm)
- Depth 16.0 inches (39.6 cm)
- Weight* 24 pounds (10.9 kg)

* Weight varies based on internal devices installed.

Mouse

- Height 1.3 inches (33 mm)
- Width 2.4 inches (61.7 mm)

- Depth 4.2 inches (107.3 mm)
- Weight 4 ounces (0.10 kg)

Operating Environment

- Operating temperature: 50 degrees to 104 degrees F (10 degrees to 40 degrees C)
- Storage temperature: -40 degrees to 116.6 degrees F (-40 degrees to 47 degrees C)
- Relative humidity: 5% to 95 non condensing
- Maximum altitude: 10,000 ft. (3,048m)

System Software Requirements

- Requires System 7.1 or later and the System Enabler 088.

Article Change History:
9 August 1993 - added VRAM SIMM specifications
30 July 1993 - added correct name of System Enabler.

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Tech Info Library Article Number:12736

Tech Info Library

Macintosh Centris 660AV & Quadra 840AV: External Pinouts (3/96)

Revised: 3/5/96
Security: Everyone

Macintosh Centris 660AV & Quadra 840AV: External Pinouts (3/96)

==========

Article Created: 29 July 1993
Article Reviewed/Updated: 5 March 1996

TOPIC

This article gives the pin assignments and functions on the external connectors on the Quadra 840AV and Centris 660AV.

DISCUSSION

External SCSI

Pin	Signal Description
1	Request
2	Message
3	Input/Output
4	SCSI bus reset
5	Acknowledge
6	Busy
7	Ground
8	Data bit 0
9	Ground
10	Data bit 3
11	Data bit 5
12	Data bit 6
13	Data bit 7
14	Ground
15	Command/Data
16	Ground
17	Attention
18	Ground
19	Select
20	Data parity
21	Data bit 1
22	Data bit 2

23	Data bit 4	
24	Ground	
25	Terminator power	

Ethernet port

Pin	Signal Name	Signal Description
1	FN Pwr	Power (+12V @ 2.1W or +5V @ 1.9W)
2	DI-A	Data In circuit A
3	DI-B	Data In circuit B
4	VCC	Voltage Common
5	CI-A	Control In circuit A
6	CI-B	Control In circuit B
7	+5V	+5 volts (from host)
8	+5V	Secondary +5 volts (from host)
9	DO-A	Data Out circuit A
10	DO-B	Data Out circuit B
11	VCC	Secondary Voltage Common
12	NC	Reserved
13	NC	Reserved
14	FN Pwr	Secondary +12V @ 2.1W or +5V @ 1.9W
Shell	Protective Gnd	Protective Ground

Video out Port

Pin	Signal Description
1	Red Video Ground
2	Red Video
3	Composite Sync.
4	Monitor ID, Bit 1
5	Green Video
6	Green Video Ground
7	Monitor ID, Bit 2
8	No Connection
9	Blue Video
10	Monitor ID, Bit 3
11	CSYNC and VSYNC Ground
12	Vertical Sync.
13	Blue Ground
14	HSYNC Ground
15	Horizontal Sync.
Shell	Chassis Ground

Serial Ports (Printer and modem/GeoPort)

Printer Port

```
5     4   3

    2  1
```

Modem/GeoPort

```
  8  7  6

5  9  4   3

    2  1
```

Pin	Signal Description
1	Handshake Output DTR
2	Handshake Input CTS
3	Transmit Data (inverted)
4	Ground
5	Receive Data (inverted)
6	Transmit Data
7	No Connection
8	Receive Data
9	+5 Volts DC (GeoPort only)

ADB port

```
 4  3

2    1
```

Pin	Signal Description
1	ADB Data
2	No Connection - reserved
3	+5 volts
4	Ground

Sound out port

Pin	Signal Description
Sleeve	Ground
Ring	Right .75 volt peak-to-peak audio signal right channel
Ring	Left .75 volt peak-to-peak audio signal left channel

Microphone port

Pin	Signal Description
Sleeve	Ground
Ring	+8 volts
Tip	Input

Article Change History:
05 Mar 1996 - Made minor changes to Ethernet pinouts.

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Tech Info Library Article Number:12737

Tech Info Library

Macintosh AV Series: Video Features & Subsystems (12/93)

Revised: 12/14/93
Security: Everyone

Macintosh AV Series: Video Features & Subsystems (12/93)

==========

Article Created: 29 July 1993
Article Reviewed/Updated: 14 December 1993

TOPIC ----------

This article describes the video features of the Macintosh AV Series computers and their video subsystem.

DISCUSSION ----------

New Video Features of the Macintosh AV Series

Composite and S-video output is supported directly from the logic board. This allows the Centris 660AV, Quadra 660AV and Quadra 840AV to connect directly to presentation equipment, televisions, or a VCR. NTSC and PAL video formats are supported.

Video and graphic acceleration and manipulation is enhanced by the inclusion of a new Digital Audio Visual (DAV) connector. This permits NuBus cards that have DAV connectors to manipulate audio and video signal directly from the main logic board.

Composite and S-video input can be connected directly to the Centris 660AV, Quadra 660AV and Quadra 840AV and can display and process this information in a separate video window. NTSC, PAL, and SECAM formats are supported.

Video Subsystem

DAV

The Digital Audio Video (DAV) connector is a 40 pin DAV connector that lines up with one of the NuBus slots in the Quadra 840AV. It is included as an option when customers purchase the NuBus adapter card for the Centris 660AV and Quadra 660AV. This connector provides access to the video input signals directly from the logic board in a YUV 4:2:2 format and to the digital audio signal input for the Singer CODEC.

This connector allows 3rd party NuBus card developers to access components on the 840AV logic board for audio and video compression, which eliminates the need for redundant components on the card and allows the customer the choice of compression technologies : e.g., MPEG, JPEG, DVI, or H.261 (videoconferencing).

Macintosh Universal NuBus Interface (MUNI)

Supports the full range of NuBus master/slave transactions with single or block moves, including dumps and runs in which the main processor is master and the NuBus is slave , supports faster data transfer rates to and from the CPU bus, and supports NuBus 90 data transfers between cards at a clock rate of 20 MHz.

NOTE: the MUNI is located on the main logic board in the Quadra 840AV and on the optional NuBus adapter card for the Centris 660AV and Quadra 660AV.

Two different Frame Buffers

The Macintosh AV Series computers are the first Macintosh computers to use two different frame buffers. These are the graphics frame buffer, and the video frame buffer. VRAM can be used in two different ways, either used completely by the graphics frame buffer (standard Macintosh display), or split 50/50 between the graphics frame buffer and the video frame buffer.

For example, A Quadra 840AV with 2MB of VRAM can support a 14-inch color monitor at 24-bits in a strictly graphic environment or can provide support for a 16-bit graphics window and a 16-bit video window.

The video subsystem digitizes video input and coverts the image to YUV format which is available at the Digital Audio/Video expansion adapter (DAV Connector). This provides expansion for our third party developers to develop NuBus cards for video compression and decompression, acceleration, image enhancements, etc.

Cyclone Integrated Video Interface Controller (CIVIC)

Manages VRAM; controls data transfer between VRAM, the VDC and Sebastian; provides 32-bit or 64-bit data paths between VRAM and the main processor or aslot card; peforms convolution; provides needed video timing signals; and generates the vertical blanking and video- in interrupt signals.

Video Data Path Chip (VDC)

Performs input video window scaling with horizontal and vertical filtering, accepts YUV 4:2:2 color-encoded input from the Digital Multistandard Decoder or the DAV slot card bus, and produces 16-bit 1:5:5:5 RGB, 8-bit grayscale, or YUV 4:2:2 output.

Sebastian

Sebastian - A video color palette and video digital-to-analog converter

(DAC). It accepts up to 64 bits of digital input, either as one 64-bit port or as two 32-bit ports. Lets one 32-bit port handle digital video while the other processes graphics using the same or different color lookup tables. Supports mixing video with still graphics, uses a convolution filter to minimize flicker in line-interlaced displays, and supports displays with clock speeds up to 100 MHz.

Mickey

Accepts analog video signals from Sebastian, provides the encoding to NTSC or PAL digital formats, and produces S-video, composite, and RGB video outputs.

66 MHZ AT&T DSP3210

This processor is a 32-bit floating point processor that provides real-time processing of modem signals, video, sound, and speech recognition data which releases the 68040 from these tasks.

Video In

The video-in capabilities of the Quadra 840AV support full-motion, full-screen viewing of any video material in the NTSC, PAL, or SECAM format.

The video subsystem is completely independant of the CPU or DSP. One of the features provided by this subsystem is the ability to record a quarter screen* image at 10 to 20 frames per second directly to a hard disk in real-time without data compression.

Video-in provides for on-screen viewing of video materials, 24 bit frame capture, and QuickTime movie recording without additional hardware.

* Quarter Screen defintions: There are two competing definitions of a one-quarter size screen, assuming the standard Macintosh 640 x 480 screen. These two definitions are often used interchangeably:

1) The actual number of pixels on the screen divided by 4, equaling 320 x 240 pixels. This is one-quarter of the standard Macintosh 640 x 480 screen and what the QuickTime development team refers to as a one-quarter size screen.

2) The horizontal number of pixels divided by 4, and the vertical number of pixels divided by 4, equaling 160 x 120 pixels. This is one-eighth of the standard Macintosh 640 x 480 screen and what the VideoFusion application (bundled with the Macintosh AV Series) refers as a one-quarter size screen.

Video Out

The Quadra 840AV provides standard video output in both the NTSC and PAL formats. This allows you to send the video output directly to standard video inputs such as those on TV monitors, VCR's, etc.

The Quadra 840AV also supports convolution, 7 levels of transparency for

blending video and graphics and Chroma-keying.

Article Change History:
14 December 1993 - Retitled and revised article to incorporate entire Macintosh AV series.
12 August 1993 - Revised the Video In portion, adding accurate video capture frame rates and defintion of quarter size screens.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12738

Tech Info Library

Macintosh Quadra 840AV: Description (8/93)

Revised: 8/27/93
Security: Everyone

Macintosh Quadra 840AV: Description (8/93)

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Article Created: 29 July 1993
Article Reviewed/Updated: 27 August 1993

TOPIC ----------

This article describes the Macintosh Quadra 840AV, one of the two new Macintoshes incorporating the AV Technologies in a high performance form factor.

DISCUSSION ----------

Overview

To put it simply, the Apple Macintosh Quadra 840AV computer is the most powerful, feature-rich system Apple has ever built. With an innovative architecture that delivers exciting new capabilities in telecommunications, video, and speech, the Macintosh Quadra 840AV helps you communicate more effectively than ever before.

The Macintosh Quadra 840AV combines the raw horsepower of a 40-megahertz 68040 microprocessor with a 66-megahertz digital signal processor (DSP) to achieve outstanding performance. The DSP handles telecommunications, speech, and audio functions, allowing the 68040 processor to perform other tasks, thereby increasing the total system performance.

The exceptional power and built-in features of the Macintosh Quadra 840AV let you take full advantage of exciting new audio-visual technologies. For example, with its built-in GeoPort telecommunications architecture, the Macintosh Quadra 840AV can be connected with telephone systems, so you can use your computer as a telephone, an answering machine, a fax machine, and an electronic mail station. Its video capabilities let you view or capture video from a VCR, laser disc, or camcorder in a window. You can also connect directly to a TV to show your presentations or to a VCR to make videotapes.

Using PlainTalk speech technology from Apple, the Macintosh Quadra 840AV

can respond to your voice commands. And it generates CD-quality stereo sound, so all your audio applications sound great.

In short, the Macintosh Quadra 840AV can serve as your personal communications center. Whether you're in the office or on the go, you can use it to work more efficiently and effectively than ever.

Features

Power and speed

- 40-MHz 68040 microprocessor
- 66-MHz 3210 digital signal processor
- 32-bit data bus

Memory

- 8MB of RAM, expandable to 128MB
- 1MB of VRAM, expandable to 2MB
- 230MB, 500MB, and 1GB internal hard disks available
- 2MB ROM

RAM Notes:
1) The 8MB RAM configurations come with one 8MB SIMM in one of the four SIMM slots.
2) The 16MB RAM configurations come with two 8MB SIMMs in two of the four SIMM slots.)

Display

- Works with all Apple monitors as well as NTSC, PAL, VGA, and SuperVGA displays.
- With 1MB VRAM upgrade, supports 24-bit color on monitors up to 16inches, allowing for display of millions of vibrant colors, or 16-bitcolor on 21-inch monitors.

Expansion

- Twelve built-in ports for peripheral devices, including video (composite and S-Video formats) and audio
- 3 NuBus slots for expansion cards
- Optional internal CD-ROM drive

System software

- System 7 with multitasking, file sharing, QuickTime, Balloon Help, TrueType, and more

Networking

- Built-in AppleTalk networking
- File sharing without a dedicated server

• On-board Ethernet networking

Compatibility

• Macintosh, MS-DOS, OS/2, and ProDOS disks

What's in the box?

Each unit includes a power cord, keyboard cable, mouse, microphone, system software and CD Caddy#.

System software includes System 7.1, System Enabler 088, Color Macintosh Basics, QuickTime 1.6, and HyperCard Runtime.

System software shipped on a bootable CD-ROM, the "Install Me First CD" which can double as a rescue disk.

Documentation included with the Quadra 840AV

• Getting Started with your Macintosh Quadra 840AV
• Technical Information for the Macintosh Quadra 840AV
• Macintosh User's Guide for desktop Macintosh computers
• AppleCD 300i User's Guide#
• Apple Extras User's Guide
  (Located in the Apple Extras folder on the hard disk.)

#(Only for systems with built-in CD-ROM drive.)

Configurations and Ordering Information

Macintosh Quadra 840AV 8/230

Order No. M9025LL/A

• Macintosh Quadra 840AV personal computer with 8MB of RAM, 1MB of VRAM, built-in 1.4MB Apple SuperDrive, and internal 230MB hard disk drive
• Mouse
• Complete setup, learning, and reference documentation
• System software version 7.1
• Limited warranty

Other Macintosh Quadra 840AV configurations

• With 8MB of RAM, 230MB hard disk, internal CD: Order no. M9028LL/A
• With 16MB of RAM and 500MB hard disk: Order no. M1836LL/A
• With 16MB of RAM, 500MB hard disk, and internal CD: Order no. M1837LL/A
• With 16MB of RAM, 1GB hard disk, and internal CD: Order no. M1838LL/A

RAM Notes:
 1) The 8MB RAM configurations come with one 8MB SIMM in one of the four SIMM slots.
 2) The 16MB RAM configurations come with two 8MB SIMMs in two of

the four SIMM slots.)

Macintosh Quadra 840AV Logic Board Upgrade

Order No. M1848LL/A

- Upgrades a Macintosh Quadra 800 computer to a Macintosh Quadra 840AV computer

Macintosh VRAM Expansion Kit (2-256K SIMMs)

Order No. M5953LL/A

- Provides greater on-screen colors (24-bit display on most monitors). Requires two kits (all four sockets must be filled).

Article Change History:
27 August 1993 - added additional documentation information.
24 August 1993 - added RAM SIMM information for 8MB and 16 MB configurations.
13 August 1993 - added VRAM Expansion Kit information.
30 July 1993 - added correct name of System Enabler.

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Tech Info Library Article Number:12739

Tech Info Library

Macintosh AV Series: No 24 Bit Addressing Support (1/94)

Revised: 1/21/94
Security: Everyone

Macintosh AV Series: No 24 Bit Addressing Support (1/94)

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Article Created: 29 July 1993
Article Reviewed/Updated: 20 January 1994

TOPIC ----------

Can applications that are not 32 bit clean run on the Centris 660AV, the Quadra 660AV and the Quadra 840AV?

DISCUSSION ----------

No. The Centris 660AV, Quadra 660AV and Quadra 840AV's ROM will not permit the Memory Control Panel to be set to 24 bit memory addressing. Applications that are not 32 bit clean will not run. If you encounter software that is not 32 bit clean, you should contact the software developer for upgrade information.

Further, there is an error in the Macintosh User's Guide for Desktop Macintosh Computers (p/n 030-2651-B) regarding 32-bit addressing on page 159 which states:

> "If your Macintosh can use 32-bit addressing, you can turn the feature on or off in the Memory Control Panel (choose Control Panels from the Apple menu and open the Memory control panel)."

The AV Series require that 32-bit addressing be turned on. You cannot turn it to 24-bit addressing.

Article Change History:
20 January 1994 - Added correction to User's Guide regarding 32-bit addressing.
23 December 1993 - Revised to include all AV models.

Support Information Services

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Tech Info Library Article Number:12740

Tech Info Library

Macintosh AV Series: Custom Integrated Circuits (12/93)

Revised: 12/14/93
Security: Everyone

Macintosh AV Series: Custom Integrated Circuits (12/93)

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Article Created: 29 July 1993
Article Reviewed/Updated: 14 December 1993

TOPIC ----------

The Macintosh AV Series of computers* use several new custom Integrated Circuits (ICs). Some of these ICs are grouped to form different subsystems that operate independently within the system. These ICs are:

DISCUSSION ----------

(* The Macintosh AV Series includes the following models:
Macintosh Centris 660AV, Quadra 660AV and Quadra 840AV.)

Digital Signal Processor (DSP)

A separate 32-bit floating point processor used to perform fast, complex real-time data processing tasks such as speech recognition, audio compression, and analog modem signal processing. The DSP contains its own 8KB of internal RAM to minimize its use of system memory.

Memory Controller and Arbiter (MCA)

Supports the bus interface between RAM and ROM memory and the main processor, DSP, MUNI, and PSC; controls access to eight banks of DRAM; controls access to ROM; performs arbitration for control of the CPU bus between the main processor, PSC, MUNI, and DSP; and furnishes the bus time-out signals for the main processor, I/O, MUNI, and DSP buses.

Peripheral Subsystem Controller (PSC)

Provides nine dedicated DMA channels, decodes the I/O memory mapping, handles all internal system interrupts, handles VIA interrupts, and contains the buffers used for sound data to and from the Singer sound encoder and decoder (CODEC).

Macintosh Universal NuBus Interface (MUNI)

Supports the full range of NuBus master/slave transactions with single or block moves, including dumps and runs in which the main processor is master and the NuBus is slave , supports faster data transfer rates to and from the CPU bus, and supports NuBus ‘90 data transfers between cards at a clock rate of 20 MHz. NOTE: the MUNI is located on the main logic board in the Quadra 840AV and on the optional NuBus adapter card for the Centris 660AV.

Cyclone Integrated Video Interfaces Controller (CIVIC)

Manages VRAM; controls data transfer between VRAM, the VDC and Sebastian; provides 32-bit or 64-bit data paths between VRAM and the main processor or a slot card; performs convolution; provides needed video timing signals; and generates the vertical blanking and video-in interrupt signals.

Sebastian

A video color palette and video digital-to-analog converter (DAC). It accepts up to 64 bits of digital input, either as one 64-bit port or as two 32-bit ports. Lets one 32-bit port handle digital video while the other processes graphics using the same or different color lookup tables. Supports mixing video with still graphics, uses a convolution filter to minimize flicker in line-interlaced displays, and supports displays with clock speeds up to 100 MHz.

Video Data Path Chip (VDC)

Performs input video window scaling with horizontal and vertical filtering, accepts YUV 4:2:2 color-encoded input from the Digital Multistandard Decoder or the DAV slot card bus, and produces 16-bit 1:5:5:5 RGB, 8-bit grayscale, or YUV 4:2:2 output.

Mickey

Accepts analog video signals from Sebastian, provides the encoding to NTSC or PAL digital formats, and produces S-video, composite, and RGB video outputs.

New Age

A floppy disk controller that controls the Apple SuperDrive at all of its recording densities, provides MFM and GCR recording formats, supports full asynchronous operation for DMA, and generates an interrupt on disk insertion. NOTE: in previous Macintosh models system software was required to poll floppy drives at frequent intervals to determine if a disk had been inserted, this is no longer necessary.

Curio

A multipurpose I/O chip that contains a media access controller for Ethernet, a SCSI controller, and the Serial Communications Controller (SCC).

Apple Telecom External Clock Synchronizer (ATECS)

Provides the control functions that synchronize the DSP and sound subsystems to an external clock signal received through the Apple GeoPort. In the absence of an external clock, it generates crystal- controlled timing signals.

Cuda

Manages system resets from various commands, turns system power on and off, maintains parameter RAM, manages the ADB, manages the real-time clock, and lets an external signal received through the Apple GeoPort control system power.

Singer

An I/O chip that constitutes a 16-bit digital sound CODEC, conforms to the IT&T ASCO 2300 Audio- Stereo CODEC Spec.

Endeavor

A programmable video clock chip.

Digital Multistandard Decoder

Decodes the color information in NTSC, PAL, and SECAM video formats using a clock synchronized to their line frequency.

Note: Many of these Integrated Circuits are described in more detail in other Tech Info Library articles.

Article Change History:
14 December 1993 - Retitled article and revised topic to reflect entire AV Series.

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Tech Info Library Article Number:12741

Tech Info Library

Newton: How to Beam Information To and From a Sharp OZ (7/93)

Revised: 7/29/93
Security: Everyone

Newton: How to Beam Information To and From a Sharp OZ (7/93)

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Article Created: 30 July 1993

TOPIC --------------------

This article describes how to beam information to and from a Sharp OZ/IQ 9000.

DISCUSSION --------------------

You can beam information to and from any series 9000 Sharp OZ/IQ.

To send a beam from a Newton to a Sharp QZ, send the beam as usual from yourNewton. Set the Sharp to receive any Direct IR transmission (detailed in the Sharp manual).

To send a from a Sharp to a Newton, send the beam as usual from the Sharp (see the Sharp manual for details). Receive the beam on your Newton according to the following instructions even if your Newton is set to receive beams automatically:

1) Tap Extras to open the Extras Drawer, then tap In Box.

2) Tap Receive, then tap Beam.

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Tech Info Library Article Number:12743

Tech Info Library

Newton MessagePad: How to Print (8/94)

Revised: 9/26/96
Security: Everyone

Newton MessagePad: How to Print (8/94)

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Article Created: 30 July 1993
Article Reviewed/Updated: 31 August 1994

TOPIC

This article describes how to print an item from your Newton MessagePad to a printer.

DISCUSSION

To print an item such as a note, name card, or Date Book appointment from your Newton, follow these steps:

1) Connect your printer to your Newton by plugging the printer cable into your Newton's communications port.

2) Go to the item that you would like to print.

3) Tap the Action button; then tap Print. Note that the name of the Print command depends upon what area you're in.

4) Tap Printer to select the printer type. You will see a dialog box that lists the available printers. Tap the name of the printer that you wish to print to, then tap Use Printer to select a printer.

5) Tap Format to see a list of formatting options. These options will change depending upon what item you're printing.

6) Tap Preview to see what the printed document will look like.

7) Tap Print to print the document to the Out Box. The Out Box will appear on your screen.

8) To send a single printed item from the Out Box, tap the item you want to send, then tap Print in the dialog box which appears. The item will now be sent.

9) To send all printed items in the Out Box, tap the Send button in the Out Box, then tap Print in the pop-up menu. All of the printed items will now be sent.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
31 Aug 1994 - Reviewed and added fax document information.

Support Information Services

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Tech Info Library Article Number:12744

Tech Info Library

Newton MessagePad: How to Send and Receive Beams (5/95)

Revised: 5/9/95
Security: Everyone

Newton MessagePad: How to Send and Receive Beams (5/95)

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Article Created: 3 August 1993
Article Reviewed/Updated: 9 May 1995

TOPIC ----------

This article describes how to send and receive beams from another Newton MessagePad.

DISCUSSION ----------

You can transmit information between two Newton MessagePads by using an infrared beam.

You can send information from one Newton to another by using an infrared beam. You must point the beam window on the front of each Newton directly at the other from a range of less than three feet.

Sending a Beam

To beam information to another Newton, follow these steps:

1) Go to the information you wish to beam. This can be any item with an Action button (or envelope icon) - a note from the Notepad, a card from the Name File, an appointment from the Date Book, etc.

2) Tap the Action button, then tap Beam. A dialog box appears which tells you to make sure the other Newton is ready to receive information. When you have aligned the beam windows of both Newtons, tap Beam.

3) Your beam will now be sent. The Out Box will open automatically so you can watch the progress of your beam.

The Newton will try to beam your information for about two minutes. If it cannot send the information, you will see a "timed out" message in the Out Box. If your Newton fails to send a beam:

- Move the Newtons closer together and make sure they're pointed directly at each other.

- Make sure the other Newton is ready to receive a beam.

Receiving a Beam

You can either receive beams individually or set your Newton to automatically receive all beams.

To Receive an individual beam:

1) Tap Extras to open the Extras Drawer, then tap In Box.

2) Tap Receive, then tap Beam. A dialog box appears which asks you to confirm that you want to received beamed information. Tap Receive.

3) Your Newton is now ready to receive a beam. The In Box will open automatically so you can watch the progress of your beam.

4) The new item will appear in the In Box. When you tap the item, a dialog box appears which gives you the option to tap Put Away to put the item away, Delete to delete it, or X to leave it in the In Box. These options will return you to the In Box. Tap X to leave the In Box.

Automatically receiving new beams:

1) Tap Extras to open the Extras Drawer, then tap Prefs.

2) Tap Beam to choose your preferences. Your options are:

   - Confirm before receiving
     This allows you to choose whether to receive beams without being asked.

   - Store beams immediately
     This allows you to choose whether to automatically put beamed information in the appropriate areas.

   - Receive beams automatically
     This will allow your Newton look for incoming beams automatically.

     Note: If your Newton isn't plugged into AC power, this will decrease its battery life.

   - Open In Box while receiving
     If you have checked "Receive beams automatically", this option allows you to choose whether or not to open the In Box while you're receiving a beam.

   - Close In Box after receiving
     This option allows you to choose whether or not to automatically close your Newton's In Box after receiving a beam.

To receive beams automatically, be sure to uncheck "Confirm before receiving" and check "Receive beams automatically". Choose the other options as desired.

Your Newton will now be able to automatically receive beams.

Article Change History:
09 May 1995 - Removed FAX information.
30 Sep 1994 - Updated formatting.
31 Aug 1994 - Reviewed and combined send and receive beam articles.

Support Information Services

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Tech Info Library Article Number:12745

Tech Info Library

Newton: How To Transfer Information To/From a Sharp OZ (3/96)

Revised: 3/15/96
Security: Everyone

Newton: How To Transfer Information To/From a Sharp OZ (3/96)

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Article Created: 30 July 1993
Article Reviewed/Updated: 15 March 1996

TOPIC -----

This article describes how to transfer information to and from an Apple MessagePad and a Sharp OZ/IQ. You cannot use transfer information from a MessagePad device that uses the Newton 2.0 OS. You can only use the Newton 1.x OS for transferring information between these two devices.

DISCUSSION -----

You can transfer information to an Apple MessagePad from any Series 7000, 8000, or 9000 Sharp OZ/IQ with a serial cable. This process is suited for transferring large amount of information or an entire application.

You can also transfer information between an Apple MessagePad and a Series 9000 Sharp OZ/IQ by infrared beam. Beaming, however, is better suited for transferring small amounts of information, such as a single card or appointment.

To transfer information by cable, follow these steps:

Step 1

Connect the Sharp OZ/IQ to your Newton with a RS-422 Level Converter (Sharp part number CE135T).

Step 2

Put the Sharp OZ/IQ into PC LInk Mode. This procedure is discussed in the Sharp manual.

Step 3

On your Apple MessagePad, tap the Extras button, then tap the Sharp button to

open the Sharp dialog box.

Step 4

In the Sharp dialog box, tap the diamond next to Applications. This displays a list of the different Sharp applications available for transfer. Tap the application you wish to transfer.

Step 5

If the Sharp device has a storage card, choose whether you want to copy from the card or from the internal memory. If your Apple MessagePad has a storage card, choose whether you want to copy to the card or to the internal memory. The default for both systems is internal memory.

Step 6

Tap Receive. The Sharp device displays a "Sending" message. When it says "PC Link" again, the copy is finished.

Step 7

Import other applications as desired. To avoid duplication, import each Sharp application only once. Also, not all Sharp OZ/IQ models have every application.

When you are finished, Tap X.

If your Apple MessagePad tells you it could not import the information, it may not have enough memory. Make more memory available and try again.

Article Change History:
15 Mar 1996 - Added Newton 2.0 OS compatibility information.

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Tech Info Library Article Number:12747

Tech Info Library

Newton: How to Print the Names File (7/93)

Revised: 7/29/93
Security: Everyone

Newton: How to Print the Names File (7/93)

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Article Created: 30 July 1993

TOPIC --------------------

I keep my address book on my Newton. How can I print out a copy without printing out each name card individually?

DISCUSSION----------

To print out all or part of your Names file, simply open any file in the Names application. Then:

1) Tap the Action button in the lower-right corner, then tap Print Card. A window, or routing slip in this case, will pop up.

2) Tap Printer and select the printer you'll be using.

3) Tap Format and choose which grouping of files you wish to print.

- Single Card prints only the card you have open or selected.
- Cards prints each card in the Names file as it appears on the Newton.
- Cards and Notes prints each card in the Names file as it appears on the Newton, plus any notes associated with the cards.
- Phone list prints only the names and phone numbers of the people in your Names file.
- Summary prints all the information you entered regarding the people in your Names file, except for the notes.

4) Tap Preview to be certain the information you want will be printed in the correct format.

5) Tap Print.

6) If your Newton is connected to a printer, the Out Box will open. Tap the name of the Names file, then tap Print. Your file will be printed.

7) If you are not connected to a printer, the information will be stored in your Out Box. Connect a printer to your Newton, tap the Extras button, then tap Out Box. Tap the name of the Names file, and tap Print. Your file will be printed.

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Tech Info Library Article Number:12748

Tech Info Library

Newton: System Updates (9/93)

Revised: 9/9/93
Security: Everyone

Newton: System Updates (9/93)

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Article Created: 30 July 1993
Article Revised/Updated: 9 September 1993

TOPIC -----

This article discusses system updates for your Newton.

DISCUSSION -----

Newton will support RAM-based system updates. These updates can be system enhancements or bug fixes. System updates can be factory-installed or downloaded and installed by end-users. Most updates use between 8 and 16K of RAM.

To determine if a update is loaded, check the ROM version in the Startup screen or the Preferences screen. The last digit following the ROM version denote the number of the system update that is installed. For example, 1.02 would mean ROM version 1.0 with update 2. If the last digit is 0, no updates are installed.

RAM-based updates are kept alive by the lithium backup battery. In the special emergency shutdown state, the update can be kept intact for about 26 years. To achieve this state, run your Newton with the backup battery in, no primary battery installed and the Power Adapter plugged in. When you remove the Power Adapter with the unit on, Newton will shutdown virtually everything including the system clock. RAM and RAM-based system updates are maintained, however.

If you restore data to your Newton from a backup, the system update will remain intact.

You can erase the system updates by removing all batteries and all power from your Newton for over 10 minutes

Article Change History

9 September 1993 - corrected the method for erasing system updates and revised the example version numbers for the system update.

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Tech Info Library Article Number:12749

Tech Info Library

Newton: Conflicting Appointments (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Conflicting Appointments (7/93)

==========

Article Created: 30 July 1993

TOPIC--------------------

How do I schedule two or more appointments that have overlapping times?

DISCUSSION--------------------

You can set overlapping appointments by placing them side-by-side on the Calendar:

1) Create the first appointment as usual.

2) Draw a vertical line on the right side of the page to mark the time for the second appointment.

3) Tap the marker you just created to open the appointment slip, and fill it out as you like.

Scheduling conflicts can inadvertently occur when you use the Assist function to put appointments into the Calendar. If you schedule two things for the same time and the same date using Assist, they will appear next to each other at the scheduled time.

When Newton Assistant is used, it will show you the scheduled meeting on that day's Calendar page. Be certain to check the Calendar after using Assist to make sure no meetings conflict. Newton will assume you intended to double-book, and will not warn you of a conflict.

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Tech Info Library Article Number:12750

Tech Info Library

Newton: Conserving Power (9/94)

Revised: 6/5/96
Security: Everyone

Newton: Conserving Power (9/94)

==========

Article Created: 30 July 1993
Article Reviewed/Updated: 28 September 1994

TOPIC ----------

How can I conserve power and and extend battery life on my Newton?

DISCUSSION ----------

Your Newton automatically conserves power by turning off various circuits when they're not in use. To extend battery life, follow these steps:

1) Use the AC power adapter whenever you can.

2) Turn your Newton off when you're not using it.

3) Set a shorter period of time before your Newton goes to sleep.

4) Avoid beaming items and using the communications port when Newton is not plugged into the AC adapter.

5) Avoid setting your Newton to receive beams automatically.

6) Avoid switching on both text recognizers at the same time.

Article Change History:
28 Sep 1994 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12751

Tech Info Library

Newton: How to Backup and Restore (10/94)

Revised: 6/5/96
Security: Everyone

Newton: How to Backup and Restore (10/94)

==========

Article Created: 30 July 1993
Article Reviewed/Updated: 12 October 1994

TOPIC -----

This article describes how to make a backup of your Newton, as well as how to restore backup data.

DISCUSSION -----

There are two ways to backup the data on your Newton:

- Using the Newton Connection Kit
- Using a PCMCIA Type II storage card

Using the Newton Connection Kit
==========

It is easy to use the Newton Connection Kit to backup up your data to a Macintosh. When you synchronize your Newton MessagePad with the Newton Connection Kit, it performs a backup of the data on your Newton to the Macintosh system to which you connect. Follow the procedure described in your Connection Kit documentation to connect and synchronize the Connection Kit. Once you have done this, you will find three files displayed on your Macintosh:

- Newton
- Newton Archive
- Newton Backup

These three files contain information stored on your Newton MessagePad.

Newton

The file named Newton contains the current backup of all of your Newton's data. You can also use this file, along with the Connection Kit, to add data to your Newton. To do this, enter into this file and synchronize your Newton with the

Connection Kit. Your Newton is updated with this new data. Remember that the new data from the Connection Kit replaces all existing data on your MessagePad.

Newton Backup

This file is a copy of the previous synchronization file. When you synchronize, the current synchronization file (the file named Newton) is renamed to Newton Backup, which completely overwrites the old Newton Backup file. Then, a new synchronization file (or Newton file) is created. If you want to keep a copy of the Newton Backup file, you must duplicate it before synchronizing.

Newton Archive

This file contains all information deleted from your Newton since the last time you synchronized. You can use this archive file to recover data that you've inadvertently deleted from your Newton.

During synchronization, the Connection Kit looks at the Newton Backup file to determine which data you've deleted from your Newton since your last synchronization. This data is then copied from the Newton Backup file to the Newton Archive file.

Using a PCMCIA Type II Storage Card

You can keep a backup copy of your Newton's data on a PCMCIA Type II storage card, then restore your data to your Newton from that card.

Making a Backup

These steps describe how to backup to a storage card:

1) Insert a storage card into your Newton. Note that each storage card can only store one backup copy. Existing backup copies are erased to make room for the new one.

2) Tap Extras, then tap Card. When the dialog box appears, tap Backup. When your Newton is finished backp up data, the message box disappears.

Restoring a Backup

These steps describe how to restore information from a storage card:

1) Insert the storage card with your backup copy into your Newton.

2) Tap Extras, then tap Card. You see a dialog box that shows the contents of the storage card.

3) Tap Restore. You see a dialog box that reminds you that you are replacing all of the information in your Newton. This procedure overwrites all data currently in your Newton. Tap OK if you want to continue or Cancel to stop.

Regardless of the method you select, remember to make regular backups!

Article Change History:
12 Oct 1994 - Added steps for backup using Connection Kit.
28 Sep 1994 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12752

Tech Info Library

Newton: How to Dial a Phone Number (7/93)

Revised: 7/29/93
Security: Everyone

Newton: How to Dial a Phone Number (7/93)

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Article Created: 30 July 1993

TOPIC ----------

This article discusses how to dial a phone number from your Newton.

DISCUSSION ----------

Newton can look up phone numbers in the Name File and dial them for you. You can use Newton's external speaker to dial a number or use an optional modem to connect to a telephone.

You can tell Newton to place a call in two ways:

- Open the Names file (by tapping on the Names button) and tap the phone number of the person you want to call.
- Open the Intelligent Assistant (by tapping on Assist) and asking it to call someone. For example, if you wanted to call your mother and she was listed in the Names File as Mom, you would write call Mom in the space.

After you tell Newton to place a call, a dialog box displays the name of the person you are dialing and the phone number you have selected. Follow these steps:

1. If necessary, correct the name and phone number displayed. To choose a different phone number for this card, tap the diamond next to the phone number. This will display all of the phone numbers available for this card.
2. Choose the dialing destination. Tap Speaker to have Newton dial the phone number through its speaker or tap Modem to dial through the modem.
3. Tap the Options button to display the Options dialog box. You can enter the following options:

- Area Code - Enter the area code of the phone that you are using. If the phone number you're calling has a different area code, Newton will dial the number 1, followed by the area code.

- Prefix - Enter any sequence of numbers that must be dialed before the phone number. For example, many office phone require you to dial 9 for an outside line. For a pause in dialing, you can add commas between phone number digits. Each comma gives a two-second pause and you can use as many as you like.

- Access Code - Enter the access code for your preferred long-distance company. If you fill in a number here, Newton will use this number instead of "1" when dialing a long-distance number.

- Credit Card - Enter the calling card number to which you want to bill the call. Newton will pause a few seconds before dialing the credit card number.

Tap X when you have finished entering options.

4. If you're dialing through the speaker, tap Call and hold the mouthpiece of your telephone next to Newton's speaker (near the Apple logo).

   If you're dialing through the modem, make sure the modem and telephone are connected to the same phone line, then tap Call. After the modem has finished dialing, pick up the telephone handset.

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Tech Info Library Article Number:12753

Tech Info Library

Newton: How to Find an Item (7/93)

Revised: 7/29/93
Security: Everyone

Newton: How to Find an Item (7/93)

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Article Created: 30 July 1993

TOPIC -----

This article discusses how to find an item on your Newton.

DISCUSSION -----

You can search for information in all areas of your Newton's data or you can choose to search only the area (Notepad, Date Book, Name File) that you're looking at.

You can search for whole words, partial words, more than one word at a time or dates. If you search for more than one word at a time, your Newton will take you to the first item that has both words whether or not they're next to each other.

Searching all areas

Here's how to find an item by searching all areas at once:

1) Tap the Find button. Write the text you wish to search for into the opened dialog box.

2) Tap All. The Newton will show a list of all places where the word is found. You can go to a particular item in the list by tapping the item. If your Newton finds more information than fits on the screen, tap the down arrow to see more.

   If you don't see the item you're looking for, tap X.

Searching one area

Here's how to find an item by searching only one area at a time:

1) Go to the area you want to search, then tap the Find button. Write the

text you wish to search for into the opened dialog box.

2) Tap Find. Your Newton goes to the first place it finds the word. Tap the down arrow to see the other place or places where Newton found the word.

3) When you've finished searching, tap X.

Searching by date

Here's how to find information created before or after particular date:

1) Tap the Find button, then tap Look For.

2) Tap either "dates before" or "dates after." as desired.

3) Write a date into the blank that appears.

If you are searching all areas, tap All. The Newton will show a list of all places where the word is found. You can go to a particular item in the list by tapping the item. If your Newton finds more information than fits on the screen, tap the down arrow to see more. If you don't see the item you're looking for, tap X.

If you are searching only one area, tap Find. Your Newton goes to the first place it finds the word. Tap the down arrow to see the other place or places where Newton found the word. When you've finished searching, tap X.

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Tech Info Library Article Number:12754

Newton: Built-in Formulas (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Built-in Formulas (7/93)

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Article Created: 30 July 1993

TOPIC ----------

This article discusses how to use the formulas that are loaded into your Newton.

DISCUSSION ----------

Newton has several built-in formulas for your convenience. They are Metric/U.S. Conversion, Currency Exchange, Loan Payment, and Net Present Value. To use these formulas, tap the Extras button, then tap the Formulas icon.

You can enter data by hand or by using an on-screen keypad. To display the keypad, tap twice on the blank that you wish to fill in. Tap the numbers and symbols that you want, then tap X to close the keypad. To move the keypad, holding the pen on the keypad's border and drag it to the desired location.

Here is a description of the formulas:

- Metric/U.S. Conversion - This formula converts from Metric to U.S. or U.S. to Metric measurements. Enter the measurement you know on one side of the chart and the converted value will appear on the other side.

- Currency Exchange - This formula converts from one currency to another, given a particular exchange rate. Tap the button next to the number you want Newton to calculate and fill in the numbers that you know. Newton will calculate the desired value.

- Loan Payment - This formula gives information on loans paid back monthly with a constant interest rate. Tap the button next to the number you want Newton to calculate and fill in the numbers that you know. Newton will calculate the desired value.

- Net Present Value - This formula answers questions about periodic interest

and payments. Tap the button next to the number you want Newton to calculate and fill in the numbers that you know. Newton will calculate the desired value.

Be sure to scrub out any old numbers to erase them. Also note that you must write interest amounts without the percent sign and you must use the same period amount for all blanks.

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Tech Info Library Article Number:12755

Tech Info Library

Apple MessagePad: How to Power On (7/96)

Revised: 9/26/96
Security: Everyone

Apple MessagePad: How to Power On (7/96)

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Article Created: 30 July 1993
Article Reviewed/Updated: 01 July 1996

TOPIC ----------

This article describes how to power on your Apple MessagePad.

DISCUSSION ----------

Here is how to power on your Apple MessagePad for the first time:

1) Insert a fresh set of batteries in your Apple MessagePad.

2) Remove the battery cover and press the reset switch with the tip of your stylus. This resets your Apple MessagePad.

3) Slide the power switch down and let it spring back. The power switch is located on the left side of the Apple MessagePad.

4) Take the Newton's pen and tap the Xs that are displayed on the screen. This will align your Apple MessagePad's screen.

After you have powered on your Apple MessagePad for the first time, you can power it on on and off by sliding the power switch down and letting it spring back.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
01 Jul 1996 - Added Fax Doc Word
05 May 1995 - Changed reference from Newton to Apple MessagePad.

28 Sep 1994 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12756

Tech Info Library

Newton: How to Send a Fax (9/94)

Revised: 6/5/96
Security: Everyone

Newton: How to Send a Fax (9/94)

==========

Article Created: 30 July 1993
Article Reviewed/Updated: 28 September 1994

TOPIC ----------

How do I send a fax document from my Newton?

DISCUSSION ----------

To fax an item from your Newton, such as a note, name card or Date Book appointment, follow these steps:

1) Connect your fax modem to your Newton. Most fax modems connect by plugging a cable into the Newton's communication port.

2) Set your fax preferences by tapping the Modem selection, then tap X to return the Extras drawer. You will be able to choose the following options:

   - Modem volume
   - How long the modem will wait for an answer
   - Pulse or tone dialing
   - Whether the modem will wait for a dial tone

3) Go to the item you would like to send.

4) Tap the Action button, then tap Fax. You will see a dialog box which allows you to:

   - Enter the name and phone number of the addressee
   - Select the fax format - plain, letter, memo, or date summary
   - Select manual dialing
   - Select other dialing options - area code, prefix, access code, and credit card number

5) If you want to see what your fax will look like before printing, tap

Preview.

6) Tap Fax. The Out Box will automatically appear.

7) Tap Send, then tap Fax. Your fax will be sent.

Article Change History:
28 Sep 1994 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12758

Tech Info Library

Newton: How to Set and Change a Password (5/96)

Revised: 5/31/96
Security: Everyone

Newton: How to Set and Change a Password (5/96)

==========

Article Created: 30 July 1993
Article Reviewed/Updated: 31 May 1996

TOPIC -----

This article discusses how to set and change a password on your Apple MessagePad.

DISCUSSION -----

You can protect the data on your Apple MessagePad by setting a password. When you set a password, you have the option of requiring the password each time your Apple MessagePad is powered on, or at certain intervals.

If you set a password and forget it, you will not be able to use your Newton again until you perform a hard reset.

Setting a Password with Newton 1.x OS
==========

Step 1

Tap the Extras button at the bottom of the screen

Step 2

Tap Prefs

Step 3

Tap Personal in the Preferences Menu

Step 4

Tap Set Password.

Step 5

Write your password in the dialog box that appears.

If you use non-alphabetic characters, you will have to use the on-screen keyboard.

Step 6

Tap Set to set your password or tap X to cancel.

Note:
You will be asked to enter your password every time you turn on your Apple MessagePad.

Setting a Password with Newton 2.x OS
=====================================

Step 1

Tap the Extras button at the bottom of the screen.

Step 2

Tap Prefs

Step 3

Tap Security

Step 4

Tap Set PIN

Step 5

Tap the numbers on the keypad you want your PIN to be

Step 6

Tap the ENT

A new keypad appears requesting you enter your PIN again.

Step 7

Tap your PIN numbers on the keypad

Step 8

Tap the ENT

New buttons appear in the Security slip

Step 9

Tap the Ask for PIN button

A list appears with several choices

Step 10

From the list, tap you choice when you want the PIN request to appear.

Changing a Password with Newton 1.x OS

It is a good idea to change your password periodically.

Here is how to change your password:

Step 1

Tap the Extras button

Step 2

Tap Prefs

Step 3

Tap Personal

Step 4

Tap Set Password

You will see a dialog box which has blanks for your old and new password. Write your old password in the blank. To change your password, enter a new password in its blank. To eliminate your password, leave the new password blank empty.

Step 5

Tap Set to set your password, or tap X to cancel.

Changing a Password with Newton 2.x OS

Step 1

Tap the Extras button at the bottom of the screen.

Step 2

Tap Prefs

Step 3

Tap Security

Step 4

Tap Change PIN

Step 5

Enter you old PIN on the keypad

Step 6

Tap ENT

Step 7

Enter you new PIN on the keypad

Step 8

Tap ENT

A new keypad appears requesting you enter your PIN again.

Step 7

Tap your PIN numbers on the keypad

Step 8

Tap the ENT

Step 9

Close the Security slip

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Tech Info Library Article Number:12759

Newton: How to Use the Date Book - Overview (10/94)

Revised: 6/5/96
Security: Everyone

Newton: How to Use the Date Book - Overview (10/94)

==========

Article Created: 30 July 1993
Article Reviewed/Updated: 26 October 1994

TOPIC ----------

This article describes how to use the Newton's Date Book.

DISCUSSION ----------

The Date Book allows you to organize appointments and keep a To Do list in the form of a calendar. When you create an appointment on a calendar page, the bar at the left edge of the appointment is called the activity marker.

To enter the Date Book, tap the Dates button.

Date views

There are several ways of looking at a calendar page.

- To see a date in the previous or next month, tap the arrows next to the month.
- To see a particular day, tap that date.
- To see a two-week agenda of appointments, tap the dot between the two arrows.
- To see appointments for several days at a time, select dates horizontally or vertically.
- To see an appointments for a month at a time, tap the name of the desired month. Note that dark bands will represent appointments.
- To see the calendar eight months at a time, tap the year.

You can always return to today's date by tapping the Today button.

Making an appointment

1) Go the date you want. You will see a standard date card. If you don't see the hours you want, tap the arrows at the bottom of the screen.

2) Write the name of the appointment next to its starting time. You may denote the length of the meeting by drawing a line from the starting time to the ending time.

Adding notes to an appointment

1) Tap the activity marker. You will see a notes box with the name of your appointment, and its starting and ending time.

2) Write or draw notes inside the box, then tap X when you're finished.

Using the Datebook's Alarm

You can use the alarm in the Datebook for meetings as well as events or occasions, like birthdays or anniversaries.

1) Tap the activity marker next to the desired appointment, then tap Alarm.

2) Mark the Alarm On box to turn on the alarm.

3) If you want the alarm to go off ahead of time, write the amount of notice you want in the notice blank, then tap the notice box and choose whether you want the alarm to go off minutes, hours, or days in advance.

4) Tap X.

When the alarm goes off, a message appears on your screen. You will also hear a sound if you have turned on the Sound Alarm Effects selection in the Sound Preferences.

Setting repeating events

1) Tap the activity marker, the tap Frequency.

2) Tap one of the choices of the following list:

   - Don't repeat
   - Every week
   - Every other week
   - Every month
   - Every year
   - Week in month

   The box below the list summarizes your choices.

3) Correct the starting and ending times of the appointments, if necessary.

4) If the meetings only repeat for a limited time, write the date of the last meeting in the No Meetings After blank.

5) Tap X.

Some examples:

- If your meeting occurs on the third Friday of each month, tap the radio button marked "Week in Month," tap the box next to "third."

- If your meeting occurs every Monday and Friday, tap the radio button next to "Every week," and tap the boxes marked "M" and "F."

- If your meeting occurs every day, tap "Every week," and select all the boxes corresponding to days of the week.

Changing an appointment time

To change the starting time, hold the pen on the activity marker until it turns white, then move it to the correct time.

To change the length of the appointment, drag the bottom end of the line to the correct length.

To move an appointment to a different date, you can use multiple-day view mode or normal view mode.

- In multiple-day view mode, select the dates you want to move from and to, then use the pen to drag the activity marker from one date to the other.

- In normal view mode, hold the pen in the middle of the bar and move it to the top of the screen. It will be reduced to a single word at the top of the screen. Then go to the desired date and drag the word from the top of the screen to the desired time on the calendar.

Deleting appointments

To erase an appointment, scrub out the activity marker next to it or tap the activity marker and tap Delete on the appointment slip that appears.

To automatically erase appointments after a certain number of days, tap the Action button, then tap Delete. You'll see a dialog box which is titled "Delete meetings older than _____ days." Scrub out the number in the blank and write the number you want, then tap Delete.

Sending calendar information

You can send calendar information to a printer, Fax, electronic mail service or

another Newton for two, five, seven, or fourteen days at a time.

Go to the beginning date you want to send and tap the Action button. Then choose between Print, Fax, Beam, and Mail options.

Article Change History:
26 Oct 1994 - Reviewed for consistency and updated format.

Support Information Services

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Tech Info Library Article Number:12760

Newton: How to Use the Names File (10/94)

Revised: 6/5/96
Security: Everyone

Newton: How to Use the Names File (10/94)

==========

Article Created: 30 July 1993
Article Reviewed/Updated: 25 October 1994

TOPIC ----------

This article describes how to use the Newton's Names File.

DISCUSSION ----------

The Names File allows you to organize address information in the form of a card file.

To enter the Name's File, tap the Names button.

Card views

There are three ways of looking at a card: Card, Card & Notes, and All Info. You can choose one of these by tapping the Show button at the bottom of the screen in the Names File.

The Card view shows the name, address, and phone number, while the Card & Notes view displays the Card view with an area for you to write notes. The All Info view shows all the information on the card. You must use the All Info view if you want to change or add information.

To change views, tap Show, then tap the view you want. You can go directly to the All Info view by tapping twice on any card.

Making a new name card
---
1) To begin a new card, tap New. A new address card will appear which shows the All Info view.

2) Tap each blank that you want to fill in and write in the box that opens. If there is a diamond in the blank you're filling in, tap it to see choices, then select the appropriate choice.

3) To alphabetize the card, tap Sort By, then tap your choice.

4) To choose how the card should look, tap Card Style, then tap your choice.

5) Return to the card view by tapping Show, then tapping Card.

If you want to use a keyboard to enter information in any card, tap twice in any box.

Editing a name card

1) Tap Show, then tap All Info to display the All Info view.

2) Tap the entry that you want to change. When the box appears, delete and insert text as you wish.

3) Return to the card view by tapping Show, then tapping Card.

Adding notes to a name card

1) Tap Show, then tap Card & Notes to display the Card & Notes view.

2) Write or draw in the note area that appears.

3) Return to the card view by tapping Show, then tapping Card.

Selecting name cards

To scroll through the cards in your Newton, tap the arrows at the bottom of the screen.

To see an alphabetical list of your cards, tap the dot between the arrows. If the list of cards is larger than the screen, you can scroll through the list by tapping the arrows. To go to a particular part of your card list, tap the corresponding letter of the alphabet which is displayed at the bottom of the screen.

To select a particular card, tap its title.

Tap X to close the list of cards.

Sending name cards

You can send notes to a printer, fax, electronic mail service or another Newton in a number of formats, including letter memo and plain text. The Action button controls sending notes.

If you wish to print the entire name card file, tap the Action button (with the envelope icon), then tap Print. When the print dialog appears, tap Format, tap Cards, Cards and notes, Phone list, or Summary, then tap Print. What you choose determines how much information will be printed and the format in which it will

be presented.

If you wish to print a single card, tap the Action button or envelope icon, then tap Print. When the print dialog appears, tap Format, tap Single Card, then tap Print.

Article Change History:
25 Oct 1994 - Reviewed for consistency and updated format.

Support Information Services

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Tech Info Library Article Number:12761

Newton: How To Use The Notepad - Overview (10/94)

Revised: 6/5/96
Security: Everyone

Newton: How To Use The Notepad - Overview (10/94)

==========

Article Created: 30 July 1993
Article Reviewed/Updated: 25 October 1994

TOPIC ----------

This article describes how to use the Newton's Notepad.

DISCUSSION ----------

One of the central features of the Newton is its Notepad. You can create and organize notes, then send them to a variety of destinations. The Notepad is always open although it may be hidden underneath other items.

The Notepad is always open although it may be hidden underneath other times. To close other items on your Newton and view the Notepad, tap X.

Making a new note

To begin a new note, draw a line across the screen. If the line becomes a separator bar, you have created a new note. If this line becomes a plain line, tap Undo and try again.

Adding information to a note

If you need more room, drag down the following note's separator bar with your stylus until you have enough room. If you are writing the last note in the Notepad, tap the down arrow below the screen to add more room.

Using the separator bar

The separator bar at the top of each note give you information about the note. The bar displays an information icon, the day and date, the folder and envelope icons, and displays the folder the note is stored in (if you're viewing all folders).

When you tap the information icon, you'll see the date and time the note was

created and the amount of memory the note takes up.

Selecting notes

To scroll through the notes in your Newton, tap the arrows below the bottom of the screen.

To see a list your notes, tap the dot between the arrows. If the list of notes is larger than the screen, you can scroll through the list by tapping the arrows. To select a particular note, tap its title. Tap X to close the list of notes.

Sending notes

You can send notes to a printer, fax, electronic mail service or another Newton in a number of formats, including letter memo and plain text. The Action button controls sending notes.

Article Change History:
25 Oct 1994 - Reviewed for consistency and updated format.

Support Information Services

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Tech Info Library Article Number:12762

Newton: How to Use the To Do List - Overview (10/94)

Revised: 6/5/96
Security: Everyone

Newton: How to Use the To Do List - Overview (10/94)

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Article Created: 30 July 1993
Article Reviewed/Updated: 25 October 1994

TOPIC ----------

This article describes how to use the Newton's To Do List.

DISCUSSION ----------

Each calendar page of the Date Book has a space for a to-do list. To view the to-do list for a particular date, go to the calendar date that you want and tap the Show To Do List button.

The clear box at the extreme left of each item is the check box, which you can check when you have finished that task.

The black box at the left of each item on the list is the priority marker, which shows the item's importance.

The vertical line between the priority marker and each item is the activity marker. You can use this marker to move, erase, or add space for the item.

To Do List views

The To Do List can be viewed in the same ways as the Date Book. Here are the ways to view the To Do List:

- To see a date in the previous or next month, tap the arrows next to the month.

- To see a particular day's To Do items, tap that date.

- To see an list of scheduled To Do items, tap the dot between the two arrows.

- To see To Do items for several days at a time, select dates horizontally

or vertically.

• You can always return to today's date by tapping the Today button.

Adding items to the list
---
1) From the To Do List, draw a line across the screen to create a new item.

2) Write the new to-do item.

3) Tap the black box to set the priority of the to-do item. The highest priority is 1.

Adding text to an item

Pull down the bottom end of the activity marker to give you more writing space.

Checking off an item

To check off an item, tap the blank check box to mark it to indicate it has been completed.

Deleting items

To erase a To Do List item, scrub out the activity marker next to it.

To automatically erase To Do List items after a certain number of days, tap the Action button, then tap Delete. You'll see a dialog box which is titled "Delete meetings older than _____ days." Scrub out the number in the blank and write the number you want, then tap Delete.

Sending To Do information

You can send To Do list information to a printer, Fax, electronic mail service or another Newton for two, five, seven, or fourteen days at a time.

Go to the beginning date you want to send and tap the Action button. Then choose between Print, Fax, Beam, and Mail options.

Article Change History:
25 Oct 1994 - Reviewed for consistency and updated format.

Support Information Services

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Tech Info Library Article Number:12763

Tech Info Library

Newton: How to Insert Storage/Application Cards (10/94)

Revised: 6/5/96
Security: Everyone

Newton: How to Insert Storage/Application Cards (10/94)

==========

Article Created: 30 July 1993
Article Reviewed/Updated: 24 October 1994

TOPIC ----------

This article describes how to insert storage or application cards into your Newton.

DISCUSSION ----------

Your Newton has a card slot which can accommodate a PCMCIA type II-standard card. This card can be either a storage card, which provides extra memory and user space or an application card, which provides software programs and more features.

Here's how to insert a storage or application card into your Newton:

1) Turn off your Newton.

2) Lift up the latch on the front left side of the Newton. Slide and release the lever underneath this latch.

3) Remove the currently installed card from the slot on the front of the Newton. If you have never put a card into your Newton, you will find a dummy plastic card which occupies the card slot. Keep this card and put it back in the card slot when you do not have a real card.

4) Insert your storage/application card with the arrow on top pointing toward your Newton. Push the card all the way in until you hear a click.

5) Push the latch back down. The storage/application card is now installed in your Newton.

NOTE: You should never use or store your Newton with an empty card slot. After you eject a card, be sure to insert a storage/application card or the protective

plastic card that came with your Newton.

Article Change History:
24 Oct 1994 - Reviewed for consistency and updated format.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:12764

Tech Info Library

Newton: How to Insert/Replace Batteries (8/94)

Revised: 9/1/94
Security: Everyone

Newton: How to Insert/Replace Batteries (8/94)

==========

Article Created: 30 July 1993
Article Reviewed/Updated: 31 August 1994

TOPIC -----

This article describes how to insert and/or replace the batteries into your Newton.

DISCUSSION -----

There are two different batteries in the Newton, the main battery pack and the backup battery. The main battery pack consists of either a battery holder which contains 4 disposable AAA batteries or a rechargeable nickel-cadmium battery pack. The backup battery is a round disposable 3-volt Duracell DL2032 lithium battery.

Warning: If both the main battery pack and the backup battery are exhausted, you will lose the entire contents of your Newton's memory, including any memory-based system updates that have been loaded into your Newton.

Replacing the Main Battery Pack
---

1) Place your Newton screen-side down on a surface that won't damage the screen.

2) Remove the rear battery cover. You will see a large rectangular opening for the main battery pack, a small round opening for the backup battery, an orange switch and a reset switch.

3) Slide the orange switch to the Replace Main position.

4) Insert a small coin in the slot on the left side of the main battery pack, then use the coin to lift the battery pack out of the battery compartment.

5) If you are using a disposable battery pack, open the door on the battery pack, remove any discharged AAA batteries, and insert fresh batteries. Be sure to orient the batteries as shown on the battery holder.

6) Slide the fresh battery pack into the Newton from left to right and and press the battery pack down into place. Be sure not to damage the spring-style power terminals inside the battery compartment.

7) Move the orange switch to the In Use position.

Note: If you are installing batteries in your Newton for the first time ONLY, press the reset switch with the plastic stylus that is included with your Newton.

8) Replace the rear battery cover. You may now use your Newton.

Replacing the Backup Battery
---

1) Place your Newton screen-side down on a surface that won't damage the screen.

2) Remove the rear battery cover. You will see a large rectangular opening for the main battery pack, a small round opening for the backup battery, an orange switch and a reset switch.

3) Slide the orange switch to the Replace Backup position.

4) If a backup battery is already in place, remove it.

5) Pick up the fresh backup battery by its edges and insert it into its opening. Wipe off any fingerprints with a soft cloth.

Warning: BE SURE to insert backup battery with the positive (+) side up. If the battery is inserted incorrectly, it may explode.

6) Move the orange switch to the In Use position and replace the rear battery cover. You may now use your Newton.

Article Change History:
31 Aug 1994 - Reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:12765

Tech Info Library

Newton: Preferences (10/94)

Revised: 9/26/96
Security: Everyone

Newton: Preferences (10/94)

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Article Created: 30 July 1993
Article Reviewed/Updated: 24 October 1994

TOPIC ----------

This article describes your Newton's preferences.

DISCUSSION ----------

You can select a number of your Newton's preferences to tailor your Newton to the way you work.

To open your Newton's Preferences window, tap the Extras button, then tap Prefs. You can select any preference by tapping it in the Preferences window.

The Newton's user-selectable preferences are:

- Personal
  This option allows you to enter your personal information, such as name, company, address, country, fax and home phone.

- Date and Time
  This option allows you to set the current date and time.

- Locate
  This option allows you to choose what country's standards to use, such as country, keyboard and paper size. Do not change the country setting while filling out a form. Be sure to close the form first.

- Sound
  This option allows you to control the types and volume of sound the Newton plays.

- Sleep
  This option allows you to set how long you want your Newton to wait for activity before turning itself off.

- Memory
  This option allows you to control where new items are stored, to see how much memory is available, and to remove software.

- Pen Alignment
  This option allows you to realign Newton's pen.

- Recognizers
  This option allows you to remove word from your vocabulary list and control how the text and shape interpreters work.

- Handwriting Style
  This option allows you to tell Newton about your writing style to improve handwriting recognition.

- Letter Styles
  This option allows you to tell Newton about the way you write specific characters to improve handwriting recognition.

- Handwriting Practice
  This option allows you to see how well Newton can interpret your handwriting.

- Beam
  This option allows you to specify how your Newton receives information by infrared beam.

- Modem
  This option allows you to set options for your modem.

- Mail
  This option allows you to set options for electronic mail.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
24 Oct 1994 - Reviewed for consistency and updated format.

Support Information Services

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Tech Info Library Article Number:12766

Tech Info Library

Newton: Sleep Mode (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Sleep Mode (7/93)

==========

Article Created: 30 July 1993

TOPIC -----

This article discusses how to put your Newton into sleep mode.

DISCUSSION -----

To conserve power, you can set your Newton to turn itself off after a specified period of time. This state is called "sleep mode", in which your Newton shuts itself off and preserves your data.

To set the amount of time before your Newton goes to sleep, follow these steps:

1) Tap the Extras button, then tap Prefs.

2) Tap Sleep. When the dialog box opens, tap the diamond to the left of Sleep. You will see a list of choices for the amount of time delay before Newton goes to sleep. Tap your choice.

3) Tap X to close Prefs, the tap X again to close Extras.

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Tech Info Library Article Number:12767

Tech Info Library

Newton: Deleting Several Items At Once (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Deleting Several Items At Once (7/93)

==========

Article Created: 30 July 1993

TOPIC----------

How do I delete several items on my screen at one time, without deleting the entire page?

DISCUSSION----------

There are two ways to delete more than one item at a time, whether it's a group of words, a group of graphics or a combination of both:

You can:

- Scrub out items that are near one another by using scrub marks that are long enough and tall enough to cover portions of each item you want deleted.

- Select the group of items to be deleted by first moving them together, then drawing a selection box around them. After they are selected, scrub one edge of the box, beginning your stroke outside the selected area. Everything in the selection box will be deleted.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12768

Tech Info Library

Newton: A.M. Appointments Scheduled for P.M. (7/93)

Revised: 7/29/93
Security: Everyone

Newton: A.M. Appointments Scheduled for P.M. (7/93)

==========

Article Created: 30 July 1993

TOPIC----------

I have scheduled several appointments incorrectly, because Newton thinks I'm talking about 10 P.M. rather than 10 A.M. How do I make sure I'm putting the entry next to the correct hour?

DISCUSSION----------

Be sure to check whether the hours on your Calendar are written in plain or bold text. Newton's Calendar writes the A.M. hours are in plain text and the P.M. hours are in bold text. Each day on Newton's Calendar begins at 12 A.M. (midnight) -- written in plain text -- and ends at 11:59 P.M. -- written in bold text.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12769

Newton: Battery Types for MessagePad and Accessories (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Battery Types for MessagePad and Accessories (7/93)

==========

Article Created: 30 July 1993

TOPIC -----

This article lists the batteries included with or required for the Newton MessagePad and Newton Accessories.

DISCUSSION -----

Newton MessagePad

Main: four AAA batteries (included)
Backup: one 3-volt Duracell DL 2032 (or equivalent) lithium disk battery (included)

1 MB Storage Card

One 3-volt Duracell DL 2325 (or equivalent) lithium disk battery (included)

Battery Booster Pack

Eight AA batteries (not included)

External Fax Modem

Two AA batteries (included)

Messaging Card

One AA battery (included)

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Tech Info Library Article Number:12770

Newton: Built-In Help (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Built-In Help (7/93)

==========

Article Created: 30 July 1993

TOPIC----------

Does the Newton MessagePad have built-in Help?

DISCUSSION----------

Yes, Newton has a built-in How-To Library. To use it, follow these steps:

1) Make sure no text is selected, then tap Assist.

2) Tap How Do I?, then tap the topic you need to know about. Subtopics will appear beneath that heading. Tap the most relevant one.

4) Read the information provided, and follow the directions. Newton will show you pictures and guide you step-by-step through specific tasks.

5) If you want to look at more topics, tap Topics. If not, tap the X.

Topics Covered By Newton's How-To Library

How Do I:

- Write
  - Interpret handwriting
  - Correct text
  - Delete and insert text
  - Change text styles
  - Move items to a different area
  - Use the on-screen keyboard

- Draw
  - Interpret drawings
  - Select drawings

- Touch up drawings
- Move items to a different area
- Delete a drawing
- Duplicate items

- Use the Names File
  - Find information
  - Make a phone call
  - Change Names File information
  - See and print the Names File
  - Change a card's appearance
  - Sort cards

- Use the Datebook
  - Move around in the Datebook
  - See today's appointments or To Do items
  - Make an appointment
  - Set an alarm
  - Schedule a repeating event
  - Add a To Do item
  - Delete a To Do item
  - Complete a To Do item

- Work with the Intelligent assistant
  - Use Assist
  - Use Assist from the Notepad
  - Make an Appointment
  - Call someone
  - Print something

- Organize and find information
  - Search everywhere for information
  - Tag (categorize or file) notes and names
  - View names or notes by tag
  - Create or rename a tag
  - Store information on a card

- Print, fax, or exchange information
  - Examples of things you can print or fax
  - Print something
  - Fax something
  - Save something to print or fax
  - Print or fax a saved item
  - Send information to another Newton
  - Receive information from a Newton

- Learn more (Miscellaneous)
  - Investigate the Extras Drawer
  - Use the Calculator
  - Use the World Clock (Time Zones)
  - See the current time and date
  - Find out the status of the battery
  - Set preferences

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Tech Info Library Article Number:12771

Newton: Changing Recognized Text to Handwriting (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Changing Recognized Text to Handwriting (7/93)

==========

Article Created: 30 July 1993

TOPIC----------

Can Newton change recognized text back to handwriting?

DISCUSSION----------

Yes. Make sure the text recognizer button on the bottom left of the screen is darkened. Then, double-tap the word you want changed, and tap the handwritten version in the menu.

Once you change text back into handwriting, it cannot be changed back into text again.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12772

Newton: Can I Convert Handwriting After Writing? (6/94)

Revised: 6/23/94
Security: Everyone

Newton: Can I Convert Handwriting After Writing? (6/94)

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Article Created: 30 July 1993
Article Reviewed/Updated: 23 June 1994

TOPIC -----

If I write a note on the Newton MessagePad with the text recognizer turned off, can I turn on the recognizer and convert the handwriting to text?

DISCUSSION -----

With the original Newton MessagePad, you can only convert your handwriting to text if the text recognizer button is darkened while you write. Whatever you write while the button is turned off cannot be converted into text later.

The Newton MessagePad 100 and 110 can convert handwriting to text at any time with a feature called Deferred Recognition. To utilize this feature, simply tap twice on each word you wish to convert. You may also convert several words at once by first highlighting them and then tapping twice on the words.

Article Change History:
22 June 1994 - Updated to include information on Deferred Recognition feature of the MessagePad 100 and 110.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12773

Tech Info Library

Newton: Deleting A Single Character (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Deleting A Single Character (7/93)

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Article Created: 30 July 1993

TOPIC--------------------

I keep trying to scrub out a single character in a word, but Newton always thinks I'm adding a new letter. Do I scrub out the whole word and start over, or can I scrub out one character at a time?

DISCUSSION--------------------

Yes, you can scrub out a single letter within a word or even a single blank space. Simply draw at least four lines vertically through the character without lifting the stylus. For best results, use short, precise strokes.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12774

Newton Messaging Card: Description (7/93)

Revised: 11/15/93
Security: Everyone

Newton Messaging Card: Description (7/93)

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Article Created: 30 July 1993
Article Reviewd/Updated: 15 November 1993

TOPIC ----------

This article descibes the Newton Messaging Card.

DISCUSSION ----------

The Newton Messaging Card allows Newton to work like a pager. It connects to existing wide-area paging systems, allowing numeric and text messages to be received. With the Messaging Card, Newton can receive information such as meeting confirmations, news and other services.

The Messaging Card is a PCMCIA type II card, like Newton's RAM storage cards.

Hardware

The Messaging Card measures 0.2" x 2.2" x 3.4" (5 x 55 86 mm) with a 0.6" x 2.2" a 1.1" (15 x 55 x 28 mm) extension. It fits just over the top of Newton, and slides into the PCMCIA slot.

The card has 128 KB of static RAM (SRAM) storage space.

The Messaging Card is a single-frequency receiver in the 929-932 MHz frequency band and features a built-in antenna.

The card is compatible with all standard POCSAG protocols including both 7-bit and 8-bit messaging formats and will be available with 512, 1200, or 2400 baud code speeds.

The card comes with a AAA battery which will supply power for more than 21 days. The internal backup battery protects data when the main battery is low or being replaced. The backup battery should be replaced once a year. When the main battery is low, the user receives audio and visual notice to replace it.

The card has an On/Off switch, a transducer, and a multicolor status indicator. A flashing green LED indicates unread messages, and a flashing red LED indicates a low battery. An audible alert indicates that radio-frequency (RF) information has been received or a low-battery condition has been detected. The card will also alert you when you are out of paging range.

You can set the kind of audible alert you want the card to give you upon receiving messages.

Software

The Messaging Card supports 512, 1200, and 2400 baud POCSAG signaling. The card can detect as many as four POCSAG addresses. Each address is capable of responding to four functions, and each function has a total of 32 subaddresses. There are 16 combinations of addresses and functions, each referred to as a source. Since each source has 32 subaddresses, the Messaging Card will respond to a total of 512 individual subaddresses.

The information supplied after the address can be either tone-only, 4-bit numeric, or 7-bit or 8-bit data. The card will also support OTA programming so the paging service provider can enable and disable the card's functions.

You can program different Messaging Cards with the same address and functions and thereby accomplish group call and subgroup call to send identical messages to each Newton with a Message card with that address.

Persistence is a new feature that defines how long a message can stay in the Message Card's memory. You can define a message's priority (persistence) and it will not be overwritten until all lower persistence messages have been erased.

There is no imposed restriction on the length or number of messages. The limit is defined by the available RAM.

A real-time clock can provide time-stamped messages.

Article Change History -
15 November 1993 - Corrected typographical errors

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Tech Info Library Article Number:12775

Tech Info Library

Newton Connection Kit 1.0: Description (Discontinued)

Revised: 6/20/94
Security: Everyone

Newton Connection Kit 1.0: Description (Discontinued)

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Article Created: 30 July 1993
Article Revised/Updated: 2 December 1993

TOPIC -----

This article describes the Newton Connection Kit for Macintosh.

DISCUSSION -----

With the Newton Connection Kit for Macintosh v 1.0, you can connect your Newton to a Macintosh and view, edit, back up and synchronize information created on the MessagePad.

Version 2.0 will add the ability to share information between Macintosh desktop applications and a Newton MessagePad. You will be able to share MessagePad information such as notes, letters, names cards with common Macintosh desktop applications, and use these Macintosh applications to edit your MessagePad information.

The kit comes complete with software, a serial cable, and a handbook. The cable is the same as the Mini DIN-8 peripheral cable, but is black instead of gray.

You can connect your Newton to the Macintosh either through the Macintosh's serial port, or via LocalTalk over a network.

Synchronization

The Connection Kit automatically synchronizes information between the Newton and the computer. The information is stored by files and includes both data and applications.

The information in the Macintosh can be viewed and edited, then downloaded back to the Newton. Templates are used to view and edit the information, so you can do text-intensive work with a keyboard and move it directly to your Newton.

Synchronization creates three files. One is the Macintosh's view of Newton's

memory. An archive file keeps an accumulative copy of all files synchronized. A backup file keeps only those files which changed from the last synchronization. Any files created during synchronization can be restored back into Newton.

Install Package

This option allows Newton applications (packages) to be downloaded from the Macintosh into the Newton. Newton software can be distributed on Macintosh floppy disks, installed on the computer and then downloaded. The packages can be removed just as easily, using the Newton Memory preference button labeled "Remove Software."

Minimum Requirements

• A Macintosh SE/30 or later computer with at least 4 MB of RAM.

• Macintosh System 7 (version 7.0 or later)

• An Apple SuperDrive floppy disk drive

• A hard disk drive

Article Change History -
2 December 1993 - deleted references to Newton Connection Kit Pro and added information about Newton Connection Kit v 2.0

Support Information Services

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Tech Info Library Article Number:12776

Tech Info Library

Newton MessagePad Power Accessories: Description (7/93)

Revised: 7/29/93
Security: Everyone

Newton MessagePad Power Accessories: Description (7/93)

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Article Created: 30 July 1993

TOPIC -----

This article describes the Newton MessagePad power accessories.

DISCUSSION -----

Newton Power Adapter

The Newton Power Adapter is 3.5 watt, wall-mounted AC to DC power supply. It can be used to power a Newton MessagePad or the optional Newton Fax Modem.

The cable is 2 meters long and the plug blades are available to conform to the outlet demands of the country to which it is shipped. The U.S./Canada/Japan version has prongs projecting from the end, while the European version has prongs projecting from the back.

Newton Rechargeable Battery Pack

The Newton Rechargeable Battery Pack consists of four AAA Ni-Cd (Nickel-Cadmium) batteries connected in series, all enclosed in a plastic case. The terminal voltage will be 4.8 volts nominal and the cells should have a minimum capacity of 220 mAH.

The case will be keyed so the Newton MessagepPad knows that it is a Ni-Cd pack and so discharge appropriately.

A plastic cover is included with the Rechargable Battery Pack to cover the contacts and protect the terminals from shorting out when the pack is outside the Newton.

Newton Recharger

The Newton Recharger is an external, outlet-mounted, Ni-Cd battery recharger. The recharging time is at a "quick charge" rate as defined By the battery

manufacturer's specification.

The input power is universal 85-264V AC, 47-66 Hz for all versions. The wall plug (AC blade) is mounted for all versions:

- U.S./Japan/Canada
- European
- United Kingdom
- Australian

The recharger can quick-change four AAA Ni-Cd batteries which have a nominal capacity of 220 mAH. Quick charge rate is 66mA for these cells. Charge time should be approximately 5 hours.

A rechargeable battery pack and safety cover are included with the charger.

Newton Battery Booster Pack

The Newton Battery Booster Pack is an external case which holds eight size-AA alkaline batteries. The pack provides more than twice the battery capacity of the internal batteries. It has a flexible cord which connects the Booster Pack to Newton MessagePad's power port. A clip on the back allows for easy portability.

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Tech Info Library Article Number:12777

Newton 1 MB and 2 MB Storage Cards: Description (2/96)

Revised: 2/12/96
Security: Everyone

Newton 1 MB and 2 MB Storage Cards: Description (2/96)

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Article Created: 30 July 1993
Article Reviewed/Updated: 12 February 1996

TOPIC ----------

This article describes the Newton 1 MB and 2 MB Storage Cards.

DISCUSSION ----------

The 1 MB Static RAM (SRAM) card and the 2 MB Flash Storage card allow users to backup Newton data or extend their Newton's on-line storage.

Write Protection

Like floppy disks, the storage card is equipped with a write-protect tab, which is a slide switch on top of the card. You will need a small pointed object, such as your Newton's stylus, to slide the switch.

To write-protect your card, slide the write-protect switch towards the outer edge of the card.

Capacity

The 1 MB card can hold up to 1,250 name cards (including the name, company, title, address and three phone numbers), 1,000 notes of up to 50 characters, and 2,500 calendar appointments at 20 characters, or 400 screens of uninterpreted text and drawings. It has about four times the capacity of Newton's built-in memory.

The 2 MB card can hold up to 2,500 name cards (including name, title, company, address, and three phone numbers), 2000 notes of up to 50 characters, and 5,000 calendar appointments at 20 characters, or 800 screens of uninterpreted text and drawings. It has about eight times the capacity of Newton's built-in memory.

When the card is in use, its available capacity can be monitored on Newton by tapping Memory under Prefs in the Extras drawer. You can also choose to have

items stored automatically to the card instead of Newton's built-in memory. To do so, check that box in the Memory Preferences window.

A new card will require initialization by Newton.

Note: The Newton Operating System automatically flattens and compresses all data, so capacity will vary.

Battery (for 1 MB card)

As a Static RAM card, the 1 MB card requires a battery to maintain the contents when it is not installed in Newton. A small, 3 volt lithium disk battery (Panasonic and Rayovac BR-2325) is installed in a sliding tray in the top of the card. A battery is included with the card.

The 2 MB card utilizes Flash memory technology, and so does not require a battery to maintain data when not installed in a Newton.

Article Change History:
12 Feb 1996 - Revised battery part number.
25 Jan 1996 - Added battery part number.

Support Information Services

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Tech Info Library Article Number:12778

Tech Info Library

Newton: Disappearing To Do List Items (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Disappearing To Do List Items (7/93)

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Article Created: 30 July 1993

TOPIC----------

I put several items on my To Do List and some of them have disappeared. Why did this happen?

DISCUSSION----------

You may have put some items on your Calendar instead of your To Do List. To Do List items do not appear on the Calendar page, just as Calendar items do not appear on the To Do List. To see the To Do List for a particular date, tap the To Do List button at the bottom of the screen.

Here's how to move any or all To Do items into the Calendar so you can see them at the same time as your scheduled appointments:

1) Select the items you want to move.

2) Drag them to the far left, right, or top of the screen, until they shrink.

3) Tap the button marked Calendar.

4) Drag the items to where you want them displayed.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12779

Tech Info Library

Newton: Duplicating Words and Shapes (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Duplicating Words and Shapes (7/93)

==========

Article Created: 30 July 1993

TOPIC----------

Is there a way to duplicate words or shapes I've drawn without writing or drawing them over again?

DISCUSSION----------

To duplicate words or shapes, select the items you wish to repeat. Tap the selected item twice, holding the stylus down on the second tap. Drag the duplicate item where you want it to go. You can do this as often as you wish.

Note that the Duplicate option under the Action button will only let you copy an entire page.

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Tech Info Library Article Number:12780

Newton: Handwriting Recognition Tips (10/94)

Revised: 6/5/96
Security: Everyone

Newton: Handwriting Recognition Tips (10/94)

==========

Article Created: 30 July 1993
Article Reviewed/Updated: 24 October 1994

TOPIC ----------

Here are some handwriting tips to help your Newton to recognize your handwriting.

DISCUSSION ----------

These handwriting tips will help your Newton to recognize your handwriting:

- Write capital letters and tall letters (such as t and l) so they are about as tall as the width between solid lines on Newton's screen. Lowercase letters should be about half as tall.

- Put a full character's width of space between words, but not too much; Newton may assume you want it to insert a tab.

- Write in straight lines. Use the lines on the screen as a guide.

- When dotting your i's, keep the dot close to the i.

- When crossing letters, make sure the cross is straight, not slanted, and that it does not cross any other tall letters that should not be crossed (such as h).

- Make parentheses taller than your tallest letters.

- Don't go back to a letter after you've written it to try to improve its legibility. Newton only understands a letter as it's written originally.

- Don't write too near the edge of the screen. Newton cannot sense the stylus on the screen's edges.

- Don't pause in the middle of a word.
- Write from left to right.
- Use thicker ink. Newton recognizes bold lines better. To change the thickness of the lines your stylus produces, go to the Extras drawer and tap Styles. Tap one of the bottom two squares on the far-right side.
- Keep punctuation close to the word it follows.
- Write colons and semicolons as tall as capital letters. Draw them from top to bottom.

Article Change History:
24 Oct 1994 - Reviewed for consistency and updated format.

Support Information Services

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Tech Info Library Article Number:12781

Newton: How to Capitalize a Word (7/93)

Revised: 7/29/93
Security: Everyone

Newton: How to Capitalize a Word (7/93)

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Article Created: 30 July 1993

TOPIC--------------------

Will my Newton capitalize a word that it's recognized without opening the keyboard and retyping the whole word?

DISCUSSION--------------------

Newton will automatically capitalize words at the beginnings of sentences, but it can't automatically capitalize proper names, or sense when you intend an whole word to be spelled with all capital letters. You can, however, capitalize words or change their case after they have been recognized by your Newton.

To tell Newton to change the case of a letter:

1) Select the word.

2) Draw a vertical line (not with the selecting gesture) up through a letter you want uppercase, down through a letter you want lowercase.

To tell Newton to capitalize all the letters in a word or words:

1) Select the word or words.

2) Draw a line through the middle of the word; up for all caps, down for lowercase.

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Tech Info Library Article Number:12782

Tech Info Library

Newton: How to Setup Handwriting Recognition (10/94)

Revised: 6/5/96
Security: Everyone

Newton: How to Setup Handwriting Recognition (10/94)

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Article Created: 30 July 1993
Article Reviewed/Updated: 24 October 1994

TOPIC -----

How do I setup my Newton to recognize my handwriting?

DISCUSSION -----

Your Newton will learn to recognize your handwriting gradually, but you have to teach it your handwriting style both letter by letter and word by word.

These steps will help your Newton recognize your handwriting:

- Teach the Newton to better understand your handwriting style.
- Teach the Newton how you write individual letters.
- Teach the Newton how you write entire words.
- Review the words in your vocabulary list.
- Review the Recognizers Preference list.

Be sure that the text recognizer button is turned on. The text recognizer button is at the bottom-left side of your Newton's screen, marked with an A. When it is on, it appears as a white A on a black background.

Handwriting Style

To teach the Newton to better understand your handwriting style, follow these steps:

1) Tap the Extras drawer icon at the bottom of the screen, then tap Prefs.

2) Tap Handwriting Style in the Preferences Menu.

3) Tap the button that best describes your handwriting under "My handwriting style is". You may find that "Mixed Cursive & Printed

works best, unless you exclusively use all-printed or all cursive writing.

4) Adjust the other preferences so they reflect your writing style. Drag the diamonds with the stylus to move them.

5) Make sure that the box at the bottom marked "Configure for guest user" is unselected.

Individual Letters

To teach Newton how you write individual letters, follow these steps:

1) Tap the Extras drawer at the bottom of the screen, then tap Prefs.

2) Tap Letter Styles in the Preferences Menu. You will see a dialog box which displays a particular letter, number or symbol written in several different styles. You can select which character to view at the bottom of the dialog box.

3) Select each character, then tap each of the samples and carefully watch how Newton draws the letter. Tell your Newton which style or styles you use most often, and which you use rarely. When you finish, tap the next letter, number or symbol you wish to train Newton to learn to recognize, and continue.

Entire Words

To teach Newton how you write entire words, follow these steps:

1) Tap the Extras drawer at the bottom of the screen, then tap Prefs.

2) Tap Handwriting Practice in the Preferences Menu. In this dialog box, your Newton will ask you to write a particular word and try to recognize it. The more words you practice, the more the Newton learns.

Reviewing your Personal Word List

To review the words in your personal word list, follow these steps:

1) Tap the Extras drawer at the bottom of the screen, then tap Prefs.

2) Tap Recognizers in the Preferences Menu, then click on "Review my word list".

- You may choose to delete words you rarely or never use, so Newton has fewer words to compare your writing to before it interprets.

- Add often-used words which don't appear in a dictionary, such as proper names, abbreviations and slang terms.

Recognizers

There are other choices in the Recognizers Menu that will aid handwriting recognition.

- For the best speed and accuracy, select the box next to "words in word lists" and deselect "words not in word lists." This limits the number of words Newton considers when recognizing text.

- Also, deselect as many of the other options such as "names," "telephone numbers," "dates," and "times of day" as possible. This will improve word recognition, particularly when writing in the Notepad and not using numbers.

  If you need to write a number in the Notepad and these options are deactivated, tap the screen where you want the number to appear, then tap the keyboard icon at the bottom of the screen, and type the number in.

Article Change History:
24 Oct 1994 - Reviewed for consistency and updated format.
31 Aug 1994 - Reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:12783

Tech Info Library

Newton: Using the Newton Assistant (10/94)

Revised: 6/5/96
Security: Everyone

Newton: Using the Newton Assistant (10/94)

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Article Created: 30 July 1993
Article Reviewed/Updated: 24 October 1994

TOPIC -----

How do I use the Newton Assistant?

DISCUSSION -----

The Newton Assistant is the intuitive part of Newton. You may ask it to do things for you using various key request words. These words may or may not be capitalized, and each has several acceptable synonyms. Here is a list of the request words, along with the action they take:

Request Word	Action
• call, ring, dial	Dial a phone number
• fax, fax it	Send the item on your screen as a fax (requires a Newton fax modem)
• find, find it, look for, search for, locate, locate it	Search for text
• mail, link, e-mail, mail this, send this	Send the item on your screen as electronic mail
• print, print it	Print the item on your screen (requires a printer)
• remember, remind, remind me, to do, don't forget to, don't let me forget, don't let me forget to do	Add a reminder to your to do list
• schedule, meet, meet me,	Add an appointment to your calendar

see, talk to,
breakfast (implies 7 a.m.),
lunch (implies noon),
dinner (implies 7 p.m.),
holiday (implies day note instead
of appointment); birthday, bday,
b-day, anniversary (all imply
a day note that repeats every year)

- time, time in, the time in, what time is it, what time is it in, what time, what is the time, what is the time in — Look up the time in another city

NOTE: You will often ask Newton to do something involving another person. For instance, you may write "lunch with Eric Tuesday." Newton will scan your Names File for Eric, and schedule lunch with him on the following Tuesday. The more complete your Names File, the more helpful the Assistant will be.

Requests in the Assist Drawer
---

1) Tap the Assist button on the bottom-right of your screen.

2) Tap Please, and choose the appropriate request word. After the request word, write as much information as you can -- such as where, when and with whom -- to direct Newton's action.

3) Tap the Do button.

4) In the confirmation slip that pops up, make any additions or adjustments to the information displayed.

5) Tap the confirmation button at the bottom of the window to tell Newton to follow through on your request (schedule, print, fax, mail, etc.).

Requests Outside the Assist Drawer
---

1) Write at least one word of your request, beginning with the request word.

2) Select your request, using the select motion.

3) Tap Assist. If Newton is able to decipher your entry, confirmation slip will pop up.

4) Make any additions or adjustments to the confirmation slip.

5) Tap the confirmation button.

Confirmation Slips

Each request, except for Time, has a confirmation slip. Here are some tips on using them:

• Tap the diamonds for suggestions for filling in blanks.

• Fill out all required information, then tap the confirmation button.

NOTE: The more information you offer Newton in the Assist drawer, the more complete the call confirmation slip will be.

Using the Assistant to Dial the Phone
---

1) Tap Assist.

2) Tap Please, then tap Call, or write an accepted synonym for Call (as listed above) in the blank. Write the name of who you want to call, and the person's number. Tap Do.

3) If you cannot remember the person's number, Newton will fill in the first number listed under that name in its file. If there is more than one number for that person, choose the number you want Newton to dial by tapping the diamond by the word phone. (Hint: If you include the word "home," "work," or "beeper," Newton will look up the proper number. For instance, if you write "call Elaine's beeper" or "call Elaine home," Newton will fill in the proper number in the blank.)

4) Tap Speaker to have Newton dial through its speaker or tap Modem to have Newton dial through the modem.

5) Tap Options to set the calling options, such as your access code for your electronic mail server or a credit card number to charge long-distances costs to.

4) Tap Call.

5) If you tapped Speaker in step 3, hold your Newton to the speaker of the phone. If the call does not go through, try turning the sound volume up under Preferences in the Extras drawer.

Using the Assistant to Fax
---

1) Tap Assist.

2) Tap Please, then tap Fax, or write an accepted synonym for Fax (as listed above) in the blank. Write the name of the person to whom you want to fax. Newton will look in the Names File for the person you list. Tap Do.

3) If the names card for that person has a fax number, Newton will fill in that blank on the confirmation slip. If not, fill it in yourself.

4) Select the box next to cover page if you want one. Tap Notes to write comments on the cover sheet.

5) Tap Options to enter a credit card number to charge any long-distance

costs.

6) Tap Preview to view the fax as it will be sent. Tap Fax if everything is correct.

Using the Assistant to Mail
---
1) Tap Assist.

2) Tap Please, then tap Mail, or write an accepted synonym for Mail (as listed above) in the blank. Write the name of the person you want to mail the item to. Newton will look in the Names File for the person you list. Tap Do.

3) If the Names card for that person includes a electronic mail address, it will fill in that blank on the confirmation slip. If not, fill it in yourself.

4) Fill in the subject blank.

5) Tap the diamond next to format and choose a style.

6) Tap Preview to view the message as it will be sent.

7) Tap Mail to mail the message now.

8) Tap Mail Later to mail the message later. The item will wait in the Out Box in the Extras drawer until you tap it later to send it.

Using the Assistant With the To Do List
---
1) Tap Assist.

2) Tap Please, then tap Remember, or write and accepted synonym for Remember (as listed above) in the blank. Write what you want to remember to do. Tap Do.

3) Scrub out the date and time on the confirmation slip, and write in the date on which you want the reminder to appear.

4) Tap Do.

Using the Assistant to Print
---
1) Tap Assist.

2) Tap Please, then Tap Print. Tap Do.

3) Tap Printer to select a printer.

4) Tap Format to choose a style.

5) Tap Preview to view how the item will be printed.

6) Tap Print.

7) If your Newton is hooked to a printer, the item will be printed. If not, It will be put into the out box. When your Newton is hooked up to a Printer, go to the out box and print the item from there by tapping it.

Using the Assistant to Schedule an Appointment

1) Tap Assist.

2) Tap Please, then tap Schedule, or write an accepted synonym for Schedule (as listed above) in the blank. Be as specific with the synonym for Schedule as you can; for instance, if you want to schedule a lunch date, write lunch. You may write who you want to schedule the appointment with in the blank, or the date of the appointment.

   Remember, the more you write in the blank, the more fully Newton can complete the confirmation slip.

3) Scrub out the date on the when line of the confirmation slip and enter the correct date and time. Tap the diamond to see how Newton interpreted what you wrote. You may need to double tap the when line to use a keyboard to write the date and time.

4) You may fill in any or all of the other blanks for the location and subject of the appointment or with whom you are having the meeting.

5) Tap Schedule.

Using the Assistant to Determine the Time or Time Zone

1) Tap Assist.

2) Tap Please, then tap Time, or write an accepted synonym for Time (as listed above) in the blank. Write the name of the city you want to know about. Tap Do.

3) Newton will open the time zone map and show you the date and time in the city you've chosen. If the city you write in the blank is not in Newton's list, Newton will tell you it is unable to decipher your request.

Note: There is no confirmation slip for time requests.

Article Change History:
24 Oct 1994 - Review for consistency and updated format.

Support Information Services

..TIL12784-Newton-Using_the_Newton_Assistant_10-94.pdf

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Tech Info Library Article Number:12784

Tech Info Library

Newton: What to Do When Newton Crashes (7/93)

Revised: 7/29/93
Security: Everyone

Newton: What to Do When Newton "Crashes" (7/93)

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Article Created: 30 July 1993

TOPIC -----

My Newton froze and won't let me do anything. I can't even turn it off. What do I do?

DISCUSSION -----

If your Newton freezes or "hangs," take your stylus and press the Reset button in the battery compartment on the back of your Newton. This should allow you to restart your Newton.

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Tech Info Library Article Number:12785

Tech Info Library

Newton: Learning Your Handwriting (7/93)

Revised: 8/12/93
Security: Everyone

Newton: Learning Your Handwriting (7/93)

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Article Created: 30 July 1993
Article Reviewed/Updated: 11 August 1993

TOPIC----------

How does Newton learn my handwriting?

DISCUSSION----------

Newton learns to recognize your handwriting by understanding the individual characters that you write. Newton examines the way you move your pen to form each character, then uses the Text Recognizers settings in the Preferences Menu to determine how to interpret them.

- If you have only selected "Words In word lists" in the Text Recognizers settings, Newton will only recognize words that are written in its word list. When you write a word, Newton will examine it and check the combination of letters against its word list; the best match is displayed on the screen. This option will provide the fastest and most accurate handwriting recognition.

- If you have only selected "Words not in word lists," Newton will attempt to recognize any letter or groups of letters that are written. In this case, Newton will not compare them to the word list.

- If you have selected both of these choices, Newton will interpret written characters, check them against the word list and display the best match.

Newton will continue to learn your handwriting as you continue to use it.

Article Change History:
11 August 1993 - Article rewritten to better reflect how Newton learns handwriting.

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Tech Info Library Article Number:12787

Tech Info Library

Newton: Maximizing Memory Capacity (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Maximizing Memory Capacity (7/93)

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Article Created: 30 July 1993

TOPIC-----

This article discusses Newton's memory capacity and how to use it efficiently.

DISCUSSION-----

As you work with your Newton MessagePad, the items you enter will use space. To determine how much memory you have remaining, Check the "user data" in the Memory area in the Preferences menu area. If you fill up Newton's available memory, you cannot write anything new in Newton until you delete some of the old information, or install a storage card.

It is also best to store information as interpreted text. Text-only notes take an average of 0.2K each, and the average Names card takes about 0.4K. Handwriting that is not converted uses a third again as many bytes.

Another suggestion is to remove software applications that you rarely use and only reinstall them when you need to.

To remove software applications:

1) Insert a storage card to copy the software onto.

2) Tap the Extras button, then tap Prefs.

4) Tap Memory.

5) Tap Remove Software and follow the instructions on the screen.

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Tech Info Library Article Number:12788

Newton MessagePad: Description (7/93)

Revised: 7/29/93
Security: Everyone

Newton MessagePad: Description (7/93)

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Article Created: 30 July 1993

TOPIC ----------

This article describes the functions and capabilities of the Newton MessagePad.

DISCUSSION ----------

The Newton MessagePad uses Newton intelligence and communications technologies to help you do the following:

- Take notes
- Make a quick sketch
- Format and print letters
- Share and synchronize information with your personal computer
- Send a fax
- Receive pages and messages
- Tap into on-line services or electronic mail
- Exchange business cards with a colleague via built-in infrared technology

Newton weighs less than a pound, and is smaller than a VHS videocassette.

You can leave your notes handwritten or let Newton read your handwriting and transform it into typed text. If you prefer, you can type words using an on-screen keyboard. Drawings, handwriting and printed text can all be displayed on the same screen.

The Newton MessagePad can find a phone number and dial the phone for you, fax a note, format a letter, and even set up a lunch appointment.

The Newton MessagePad comes with built-in applications that include a notepad, to-do list, datebook, and name file to get you started. You can customize your Newton MessagePad to include Apple and third-party software and hardware additions.

FEATURES

Built-in Applications

- Let you capture, organize, and communicate information
- Allow free-form notetaking
- Track tasks via a to-do list that helps you assign priorities
- Let you create name files with a business-card look for hundreds people
- Help you plan monthly, weekly, and daily calendars
- Include information and productivity tools (such as time-zone maps, calculator, and currency-exchange formulas)

Communications Capabilities

- Send notes or messages, schedule appointments, or exchange business cards with other nearby Newton users via built-in, infrared beaming technology
- Print formatted letters and notes to serial and parallel printers
- Send faxes anywhere with an optional compact fax modem
- Receive and store wireless paging messages with the optional Newton Messaging Card
- Share information and keep files synchronized and updated with personal computers running Microsoft Windows or with Macintosh computers (requires Newton Connection Kit)
- Tap into electronic mail and on-line services with an optional compact fax modem

Intelligent Assistance

- Knows how you work and actively assists you in completing tasks
- Assists you in making phone calls, faxing, finding information, sending electronic mail, printing, scheduling meetings, and completing to-do lists

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Tech Info Library Article Number:12789

Tech Info Library

Newton MessagePad: Technical Specifications (7/93)

Revised: 7/29/93
Security: Everyone

Newton MessagePad: Technical Specifications (7/93)

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Article Created: 30 July 1993

TOPIC -----

This article discusses the technical specifications of the Newton MessagePad.

DISCUSSION -----

Newton Recognition Architecture

- Recognizes handwriting: printed, cursive, or mixed-word recognition
- Recognizes graphics and the inherent symmetry in objects

Newton Information Architecture

- Object-oriented data storage optimized for storing, finding, and linking small pieces of information
- Easy creation of custom forms applica tions via the flexible graphical view toolbox
- Easy data sharing using standard tags
- Object-oriented database provides flexible view of data

Newton Communications Architecture

- Provides single interface for all communication services
- Integrated to support easy communications with minimum setup requirements
- Designed in modules to support new communications capabilities

Intelligent Assistance Architecture

- Assists users in completing repetitive tasks done in multiple categories, including communications, scheduling, finding, and reminding functions
- Contains smart defaults to reduce complexity
- Functions across applications transparently
- Allows extensions by third-party developers

Newton Hardware Architecture

- ARM 610 processor at 20 MHz
- Apple custom system ASIC
- Low-power, reflective LCD display (336 x 240 pixels)
- Transparent tablet with passive pen
- 4MB of ROM
- 640K of RAM
- One PCMCIA Type II card slot
- LocalTalk-compatible serial port
- Low-power, half-duplex, infrared transceiver (9600 baud at 1 meter)

Communications Capabilities

- Print to Apple LaserWriters and StyleWriters with serial cable and to popular parallel printers using Newton Print Pack
- Fax with optional fax modem (9600 baud fax send, automatic cover-page generation, post-formatting)
- Beam via infrared technology (send notes, name cards, appointments at 9600 baud with 1-meter range)
- Handle telephony needs with assistance for intelligent auto dialing (DTMF or modem dialing)
- Receive and store wireless messages using optional Messaging Card
- Send and receive NewtonMail to other Newtons, PCs and Macintosh computers with optional modem (this service will be available in the fall of 1993.)

Size and Weight

- Height: 7.25 in. (184.75 mm)
- Width: 4.50 in. (114.3 mm)
- Depth: 0.75 in. (19.05 mm)
- Weight: 0.9 lb. (0.4 kg)

Operating Environment

- Temperature: +0 to +40 C
- Storage temperature: -20 to +60 C
- Humidity range: 20 percent to 95 percent RH noncondensing

Power Requirements

- Power adapter:
  - -- Universal, 100 to 240 VAC, 50/60 Hz
  - -- Four plug configurations: U.S., U.K., Europe, and Australia
- Battery type: alkaline or nickel-cadmium
  - -- Alkaline output: 6.0V DC, 1.1 WH (nominal)
  - -- Nickel-cadmium output: 4.8V DC, 200 mAh (nominal)
- Lithium cell: DL2032
- Operating range: 3 V (nominal)
- Power source: AC adapter (included) or four AAA batteries (included) and optional Rechargeable Battery Pack

Connecting Kit System Requirements

- Works with personal computers running Microsoft Windows; requires connector cable and version 3.0 or later
- Works with Macintosh personal computers; requires connector cable and system 7.01 or later

Printer Support

- Built-in printer support for the Apple StyleWriter and StyleWriter II, Personal LaserWriter LS and Personal LaserWriter 300 printers, and Apple PostScript laser printers from the LaserWriter Plus and up
- Works with most popular PC printers, including the Hewlett-Packard LaserJet, Hewlett-Packard DeskJet, Canon BubbleJet, and Epson LQ and FX using the Print Pack option

Fax Machine Support

- Supports Group 3 fax machines

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Tech Info Library Article Number:12790

Tech Info Library

Newton: Can I Modify Graphics Without Redrawing? (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Can I Modify Graphics Without Redrawing? (7/93)

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Article Created: 30 July 1993

TOPIC--------------------

Can I modify or move graphics without redrawing them?

DISCUSSION--------------------

To change the shape of a graphic you have already drawn, put a selection box around it. Now you have several options for changing the appearace of the drawing:

- To move or change a line, drag it with the stylus.
- To move the entire drawing, place the stylus in the middle and drag it to a new location.
- To shrink, enlarge, or distort a drawing, drag the corners of the selection box.
- To change the thickness of the lines of the whole graphic, you may either box select the whole drawing, or just the lines you want to change. Then tap the Styles icon in the Extras drawer and choose the line thickness from the four examples on the right side of the Styles window.

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Tech Info Library Article Number:12791

Tech Info Library

Newton: Moving Items Between Applications (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Moving Items Between Applications (7/93)

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Article Created: 30 July 1993

TOPIC-----

How do I move items between applications in my Newton?

DISCUSSION-----

You will often need to move items you've written from the original application to another. For instance, if you written a note titled "call Mike," you may want to move it into the Calendar or the To Do List.

To move a item to another application:

1) Select the item you want to move.

2) Hold the pen inside the selection and drag it to the top, left, or right edge of the screen. The item should shrink when you let go, indicating it is ready to be transferred.

3) Open the application to which you want to move the item.

4) Drag the item to where you want it stored, and let go. The item should expand to its previous size.

Note: To move notes from the Notepad into the Names file, it is a good idea to move each element separately. For instance, move the first name, then the last, then the phone number, and so forth. This way, you won't have to select and move parts of the item within the destination application.

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Tech Info Library Article Number:12792

Newton: Scrubbing and Deleting (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Scrubbing and Deleting (7/93)

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Article Created: 30 July 1993

TOPIC----------

How do I delete items by scrubbing on my Newton?

DISCUSSION----------

You can delete items on your Newton by writing over them with a zigzag scrubbing gesture, like a W. This is called scrubbing.

Here are some hints to improve the effectiveness of your scrubbing:

- Newton prefers scrub marks to be in neat, horizontal or vertical zig-zag back-and-forth horizontal lines that cover the characters, words, or drawings you want to erase.

- Your zig-zags or horizontal lines must have at least four lines, as in a W. The bigger the thing you erase, the more lines you should use in your zig-zag or back-and-forth gesture.

- Do not draw zig-zags that loop or that cross over themselves.

- Wait a moment after you write something before you attempt to scrub it out.

- Make sure you begin scrubbing outside the item you want to erase to avoid moving it.

Deleting an Entire Page

Your deleting options will vary depending on which application you are using.

In the Notepad and the Names file:

1) Tap the Action button, located in the upper-right corner of the screen in

the Notepad and in the bottom-right corner of the Names File.

2) Tap Delete and the page will crumple up and be thrown away.

In the Datebook:

- You can scrub out all the appointments on a single date. You may also want to scrub out the vertical meeting-length line next to the appointment, if there is one.

- If you want to delete records of past days' meetings:

1) Tap the Action button, then Tap Delete. A dialog box will appear asking you to indicate how old the meetings you wish to delete are.

2) Write in the number of days back you wish Newton to begin deleting your appointments. Note that Newton will delete everything from the earliest records up to the date you indicate.

Deleting a Single Item in the Datebook

You may delete a single item from the Datebook by scrubbing, as described above, or by tapping the meeting-length bar and tapping Delete on the form that pops up.

Deleting a Single Character

To delete a single letter within a word or even a single blank space, draw at least four lines vertically through the character without lifting the stylus. For best results, use short, precise strokes.

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Tech Info Library Article Number:12793

Tech Info Library

Newton Fax Modem: Description (4/97)

Revised: 4/22/97
Security: Everyone

Newton Fax Modem: Description (4/97)

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Article Created: 30 July 1993
Article Reviewed/Updated: 22 April 1997

TOPIC ----------

This article describes the External Newton Fax Modem.

DISCUSSION ----------

The External Newton Fax Modem is an external 2400 baud data/9600 baud send fax/4800 receive fax modem for the Newton MessagePad.

The data modem is Hayes AT command set compatible. The fax modem conforms to a Group 3 standard.

Domestic and International Models

There are two models: A U.S./Canada/Japan model and an European model.

The U.S/Canada/Japan model has a RJ-ll plug built into the modem.

The European model has a country-specific cable with a male RJ-11 plug on one end and the appropriate country telephone connector on the other. The data access arrangement (DAA) pods which are typically seen on other Apple modems are integrated into this cable.

Power

The Newton External Fax Modem is powered by two AA batteries or by a Newton power adapter. The adapter is plugged into the fax modem, so the fax modem never draws power from the Newton MessagePad.

Features

The Newton OS has built-in send fax software that allows you to personalize

cover sheets to include your name, phone and fax numbers, notes, and destination information.

From your Newton, you can control the modem sound volume, the time for the modem to wait for another fax machine to answer, and the time to wait for a dial tone. You can also select between pulse or tone dialing.

Dialing options allows the user to set the area code, prefix (to get an outside line in a PBX phone system), access code for a long-distance carrier, and your credit-card number.

Newton OS 2.x includes receive fax capabilities. The in/out box contains an integrated fax viewer, which provides zoom in/out views, rotate, and printing.

Article Change History:
22 Apr 1997 - Reviewed for technical accuracy.

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Tech Info Library Article Number:12794

..TIL12795-Newton-How_to_File_Items_In_Folders_7-93.pdf

Newton: How to File Items In Folders (7/93)

Revised: 7/29/93
Security: Everyone

Newton: How to File Items In Folders (7/93)

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Article Created: 30 July 1993

TOPIC----------

This article discusses how to use Newton's filing system to file items in folders.

DISCUSSION----------

You may file any Notepad or Names File item you've written in a folder. If you don't file an item, it is saved in the folder marked "Unfiled" or "None." You may file an item in more than one folder.

Filing Items

To file notes and file cards:

1) Tap the folder icon at the top-right of the note or bottom of the card you want filed.

2) Tap the name of the folder in which you'd like to store the item.

3) Tap File.

Note: When you are viewing All Folders, each item's separator bar will indicate which folder it is in. On Name cards, the folder it resides in is indicated at the top of the card.

If you see a triangle in the folder icon, it means that the item you are viewing is stored on a memory card.

Creating New Folders

You may create new folders and title them yourself. To do this:

1) Tap the folder icon at the top-right of any note or bottom of any card.

2) Tap Edit Folders.

3) Write the name of the folder you want to create in the blank.

4) To create another new folder, tap the hyphens below the existing folders in the list under Edit Folders. You may have as many as 12 folders.

Deleting Folders

When you delete a folder, the items inside are moved to the Unfiled folder. To delete a folder:

1) Tap the folder icon at the top-right of any note or bottom of any card.

2) Tap Edit Folders.

3) Tap the folder you want to delete.

4) Scrub out the folder's title.

Changing the Names of Existing Folders

You may change the names of some folders in Newton's list. Newton comes with four named folders (Business, Important, Miscellaneous, and Personal). Newton also has two categories for tracking notes and cards: one for notes or cards that you haven't yet assigned to a folder (Unfiled or None) and one for viewing all filed and unfiled notes or names simultaneously (All Notes or All Names). You cannot change the names of these categories.

To change the name of any other existing folder:

1) Tap the folder icon at the top-right of any note or bottom of any card.

2) Tap Edit Folders

3) Tap the name of the folder you want to retitle.

4) Scrub out the name and write in a new one.

Putting Several Related Items in A Folder At Once

You can use the Find button at the bottom of Newton's screen to file related items together:

1) Tap Find.

2) Tap key words that link the items together, such as a company name, meeting notes, etc.

3) You can search everywhere by tapping All or only the application you are in by tapping Find.

4) Newton will show a list of all the items containing the words you searched for.

5) Tap the folder icon at the top-right of the list and tap the appropriate folder.

To View Contents of a Folder, All Notes, or All Names
---

1) Tap the folder tab with the diamond at the top-center of the screen.

2) Tap the folder you want to view. If you want to view the contents of all folders, tap All Notes or All Names. To view all unfiled notes or names, tap that option.

Note: If you create an item while inside a folder, the new item will automatically be stored in that folder. If you create a new item while viewing All Notes, All Names, Unfiled Notes, or Unfiled Names, the new item will go into the Unfiled folder.

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Tech Info Library Article Number:12795

Tech Info Library

Newton: Using the On-Screen Keyboards (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Using the On-Screen Keyboards (7/93)

==========

Article Created: 30 July 1993

TOPIC--------------------

This article explains the functions of Newton's various on-screen keyboards.

DISCUSSION--------------------

Newton uses several keyboards to allow you to enter information that Newton can't interpret through your handwriting, or words that you have not added to your Personal Word List.

Some Newton users may find it easier to use the keyboards to enter information such as dates, times, phone numbers, abbreviations or acronyms.

There are six keyboards on Newton: a standard keyboard, a correction keyboard, your Personal Word List keyboard, a phone number keyboard, a time keyboard, and a calculator.

Finding the Right Keyboard

You may access the standard, phone number, time, and calculator keyboards by tapping the keyboard icon at the bottom of Newton's screen in the Notepad. To look through the available keyboards, keep tapping the keyboard icon.

If you only want the standard keyboard, you may also tap the Extras button, then tap the keyboard icon there.

For the correction keyboard, double-tap the word you want corrected.

There are two ways to access the Personal Word List keyboard:

1) Tap the Extras drawer.

2) Tap Preferences.

3) Tap Recognizers.

4) Tap the button marked "Review my word list."

Or you may find the Personal Word List by opening the standard or correction keyboard and tapping the book icon in the bottom-left corner of the keyboard.

How to Write Using the Keyboards

- On the standard, phone, and time keyboards:
  Tap the area you want to place the cursor to begin writing. As you type, the characters will appear where the cursor is blinking.

- On the correction keyboard:
  The characters you type will replace what you double-tapped.

- On the Personal Word List keyboard:
  This keyboard allows you to modify your Personal word list to help Newton understand you better. Write a word and tap Add, or tap a word in the list and tap Remove.

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Tech Info Library Article Number:12796

Tech Info Library

Newton MessagePad: What Causes a Cloud on Screen (7/93)

Revised: 7/29/93
Security: Everyone

Newton MessagePad: What Causes a " Cloud" on Screen (7/93)

==========

Article Created: 30 July 1993

TOPIC----------

Whenever I delete something on my Newton MessagePad, I see something like a billowing cloud appear on my screen. Does that mean something's wrong?

DISCUSSION----------

No. The graphic representation of a billowing cloud is confirmation that you have successfully deleted an item.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12797

Tech Info Library

Newton: Changing Text Styles (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Changing Text Styles (7/93)

==========

Article Created: 30 July 1993

TOPIC--------------------

How do I change the font and point size that my Newton MessagePad uses to display my interpreted words?

DISCUSSION--------------------

Newton will allow you to change the styles of any words you have stored. You have a choice between two slightly different fonts, and point sizes ranging from 9 to 18. Anything larger or smaller would be impractical on the small screen.

To change the style of something displayed on your screen:

1) Select the words you want to change.

2) Tap the Extras button, the tap the Styles icon.

3) Tap your desired text font and sizes.

You may also set the text styles of new entries before you write them. Make sure nothing is selected when you tap your text style preferences. All new text you enter will appear in this new style.

If the Styles box blocks your view of the text you are working with, you can move the box by dragging it by its gray border.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12798

Tech Info Library

Newton: Using Time Zones (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Using Time Zones (7/93)

==========

Article Created: 30 July 1993

TOPIC -----

What does the Time Zones function do and how do I use it?

DISCUSSION-----

The Time Zones function allows you to set your current time zone in your Newton MessagePad and to check the time zones around the world.

To tell Newton the time zone you are in:

1) Tap the Extras button at the bottom of the screen.

2) Tap "Time Zones."

3) Tap the circle between the up and down arrows at the bottom of Newton's screen. A list of cities appears.

4) Tap the nearest city to your own.

5) Tap the "I'm Here" button, and Newton will place the circle locator there, and list the time and date.

To determine the time in another city:

1) Tap the Extras button at the bottom of the screen.

2) Tap "Time Zones."

3) Tap the circle between the up and down arrows at the bottom of Newton's screen. A list of cities appears.

4) Tap the city you want to know about.

5) Newton will place the square locator there and list the city's name, time, and date. Just below the map, Newton displays the distance between your location and the city you chose.

You may tell Newton when you change your time zone while traveling by following the steps above, choosing your destination from Newton's list and tapping the "I'm Here" button.

Remember to change the time zone back when you return to your home time zone after your travels. If you do not change your time zone, but change the date and time instead, Newton's time zone settings for the rest of the globe will be off.

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Tech Info Library Article Number:12800

Tech Info Library

Newton: Notes Can Be Larger Than One Screen (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Notes Can Be Larger Than One Screen (7/93)

==========

Article Created: 30 July 1993

TOPIC--------------------

When using Newton's Notepad, can a note be larger than one screen?

DISCUSSION--------------------

A single note can be any size from a fraction of the screen size to several screens long.

Here are two ways of getting more writing space after you fill a Notepad screen with information:

1) If you've made a new note between two other notes, drag downward the separator bar below your note.

2) If you are writing on the last note in the Notepad, tap the down arrow below the bottom of Newton's screen.

You can continue either of these methods until your Newton runs out of memory.

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Tech Info Library Article Number:12801

Tech Info Library

Newton: Numbers Converted to Words (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Numbers Converted to Words (7/93)

==========

Article Created: 30 July 1993

TOPIC--------------------

When I write numbers, Newton converts them into words. How can I change this?

DISCUSSION--------------------

Make sure you have the "numbers," "telephone numbers," "dates," and "times of day" options checked in the Recognizers Preferences area. To get there, tap the Extras button, tap Preferences, then tap Recognizers.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12802

Tech Info Library

Newton: Interpreting Punctuation As Letters (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Interpreting Punctuation As Letters (7/93)

==========

Article Created: 30 July 1993

TOPIC----------

When I write a sentence with a period at the end or a comma in the middle, Newton interprets the punctuation mark as the letter "l" or as an accent mark or hyphen. How can I make it differentiate between these marks?

DISCUSSION----------

To help Newton understand your punctuation marks better, particularly commas and periods, make certain you have placed them close to the word they follows. If Newton interprets them incorrectly, you are probably leaving too much space between punctuation and the words associated with it.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12803

Tech Info Library

Newton MessagePad: Out of Memory (7/93)

Revised: 7/29/93
Security: Everyone

Newton MessagePad: Out of Memory (7/93)

==========

Article Created: 30 July 1993

TOPIC -----

My Newton MessagePad gave a message saying it was out of memory. What do I do?

DISCUSSION -----

If you got an out of memory message while adding text to a paragraph, you may not actually be out of memory. Try copying the paragraph and deleting the original.

If not, you need to provide more memory for Newton with a storage card, or delete some of the information in Newton's memory that you no longer need.

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Tech Info Library Article Number:12804

Tech Info Library

Newton MessagePad: Screen Problems (7/93)

Revised: 7/29/93
Security: Everyone

Newton MessagePad: Screen Problems (7/93)

==========

Article Created: 30 July 1993

TOPIC -----

This article discusses remedies to some Newton MessagePad screen problems.

DISCUSSION -----

Here are some remedies for common Newton screen problems:

- If the screen on Newton is too light or dark, you can adjust the contrast. To do this, open the Extras drawer and slide the gauge at the bottom marked "Contrast."

- If you are getting a reflection on the screen, move somewhere where there isn't a light source directly overhead.

- If you are getting long, spidery lines on your screen, you may be resting your hand too heavily on the screen.

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Tech Info Library Article Number:12805

Tech Info Library

Newton: How To Select (7/93)

Revised: 7/29/93
Security: Everyone

Newton: How To Select (7/93)

==========

Article Created: 30 July 1993

TOPIC----------

This article discusses how to select, or highlight, items on Newton's screen.

DISCUSSION----------
Selecting on the Newton is different from selecting on a computer, since there is no mouse.

To select on the Newton, hold the stylus down on the screen (you don't have to press hard) until you see a heavy dark spot beneath it. Then, drag the point of the stylus across the screen over the items you want highlighted. To deselect, tap the screen away from the selection.

Detail selection is the selection of individual items. Here's how to detail select:

- To select text that covers more than one line, drag the stylus from the first word to the last using the highlighting mark.

- To select several lines of text, drag down through the lines you want highlighted.

- To select shapes, drag through the shape in a straight line using the highlighting gesture. To select a portion of a shape, drag only along the lines you want highlighted.

Box selection is the selection of a group of objects. Here's how to box select:

- Using the same highlighting motion as mentioned above, draw a box around the items you want to select.

- You may also select more than one thing. If they are far apart, you may select one at a time. Other items remain selected when you select a new

item.

Note: If two or more items are selected, Newton will place a highlight box around them. Other objects which you have not selected may appear within the borders of the box. However, only those that appear highlighted (whites letters or lines on a black background) have been selected.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12806

Tech Info Library

Newton: How to Set the Date and Time (7/93)

Revised: 7/29/93
Security: Everyone

Newton: How to Set the Date and Time (7/93)

==========

Article Created: 30 July 1993

TOPIC----------

This article discusses how to set the date and time on your Newton.

DISCUSSION----------

To set the date:

1) Tap the Extras buttonat the bottom of Newton's screen, then tap Prefs.

2) Tap Date and Time.

3) To set the month and year, use the arrows at the top of the calendar to scroll through.

4) To set the day, tap the current date on the calendar.

To set the time:

1) Tap the Extras button at the bottom of Newton's screen, then tap Prefs.

2) Tap Date and Time.

3) Draw a long hand and a short hand in the proper positions on the analog clock shown. Be sure your long hand reaches the border of the clock, and your short hand is about half the radius of the clock face.

4) Tap the Set button.

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Tech Info Library Article Number:12807

Tech Info Library

Newton: Slowing Text Interpretation (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Slowing Text Interpretation (7/93)

==========

Article Created: 30 July 1993

TOPIC--------------------

My Newton begins interpreting what I have written while I'm still writing. Is there a way to slow this feature down so I can finish a thought before Newton starts converting it to text?

DISCUSSION--------------------

If Newton is interpreting your handwriting too quickly, here's how to slow it down:

1) Tap the Extras button, then tap Prefs.

2) Tap Handwriting Styles in the Preferences Menu.

3) Select one of two ways to slow down handwriting interpretation. Either:

- Slide the diamond on the second guage to the left toward "slowly, more accurately."

or

- Slide the diamond on the third guage to the right toward "after a delay."

The longer you give Newton to think about what you write, the more accurate its interpretation will be.

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Tech Info Library Article Number:12808

..TIL12810-Newton-Text_and_Graphics_Recognizers_7-93.pdf

Newton: Text and Graphics Recognizers (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Text and Graphics Recognizers (7/93)

==========

Article Created: 30 July 1993

TOPIC--------------------

This article discusses using the text and graphics recognizers.

DISCUSSION--------------------

The text recognizer button is the one at the bottom-left side of Newton's screen, marked with an A. When it is on, it appears as a white A on a black background.

The shapes recognizer button is beside it, marked with a curlicue and a triangle.

Generally, you should only have one recognizer on at a time. If you need to use both text and graphics at the same time, turn on the text recognizer when you are writing, and turn it off when you are drawing. Keeping both recognizers on will slow Newton, and make it interpret more items incorrectly.

If either or both recognizers are turned off, you will still be able to see any text or graphics on the screen.

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Tech Info Library Article Number:12810

Tech Info Library

Newton: How Does Undo Work? (7/93)

Revised: 7/29/93
Security: Everyone

Newton: How Does Undo Work? (7/93)

==========

Article Created: 30 July 1993

TOPIC--------------------

How does Newton's Undo function work?

DISCUSSION--------------------

You can Undo your last two actions if you were writing any item or performing a function, such as Delete or Duplicate. You cannot Undo more than your last two actions.

If you tap the Undo button once, you reverse the last action you made. Tapping twice will reverse the last two actions. If Newton cannot Undo your action, you will have to cut and paste or otherwise re-enter your data to restore or correct it.

Newton will notify you when you attempt to Undo something that cannot be undone. Some examples are:

- You cannot use Undo to close from an application you have opened. If you accidentally open an application, you must hit the X button in the lower-left corner or the screen.

- You cannot use Undo to close a window that Newton has opened for you if you change your mind.

- You also cannot Undo to undo a Restore.

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Tech Info Library Article Number:12811

Newton: Removing Unwanted Carriage Returns (7/93)

Revised: 7/29/93
Security: Everyone

Newton: Removing Unwanted Carriage Returns (7/93)

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Article Created: 30 July 1993

TOPIC----------

When I write paragraphs in the Notepad, I end up with spaces and carriage returns where I don't want them. How do I fix that?

DISCUSSION----------

To remove unwanted carriage returns and spaces, box select the entire paragraph and tap once on the border.

To adjust the margins of your paragraph, box select the paragraph and drag the right or left side of the box until your margins are satisfactory.

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Tech Info Library Article Number:12812

Tech Info Library

Newton MessagePad: Won't Turn On (7/93)

Revised: 7/29/93
Security: Everyone

Newton MessagePad: Won't Turn On (7/93)

==========

Article Created: 30 July 1993

TOPIC -----

I can't turn on my Newton MessagePad. What should I do?

DISCUSSION -----

- If it's the first time you've tried to power on, try hitting the reset button in the battery compartment on the back of the Newton. You should only have to do this once, and subsequent start-ups should be possible by pulling down the spring-loaded switch on the side of the Newton.

- If you have the power adapter plugged in and can't start up, make sure it's plugged into a working outlet. If it's plugged into a power strip, make sure the power strip is turned on.

- If you are using batteries, try a fresh set.

- Make sure the switch in the battery compartment is set to "In Use."

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Tech Info Library Article Number:12813

Tech Info Library

LW Pro: Which Fonts are PostScript and/or TrueType ? (7/93)

Revised: 7/29/93
Security: Everyone

LW Pro: Which Fonts are PostScript and/or TrueType ? (7/93)

==========

Article Created: 28 July 1993

TOPIC ----------

The LaserWriter Pro ships with 35 in ROM and 29 fonts on disk. Which fonts are PostScript and which are TrueType?

DISCUSSION ----------

The 35 fonts stored in ROM on the LaserWriter Pro are PostScript fonts. Those contained on disk are TrueType and bit-mapped fonts.

35 Fonts in ROM (PostScript)	29 Fonts on Disk Only (TrueType & Bit-mapped)
Avant Garde (4 Styles)	Chicago
Bookman (4 Styles)	Delphian
Courier (4 Styles)	Garamond Narrow (4 Styles)
Helvetica (4 Styles)	Geneva
Helvetica Narrow (4 Styles)	Helvetica Compressed (2 Styles)
New Century Schoolbook (4 Styles)	Helvetica Black (2 Styles)
Palatino (4 Styles)	Lubalin Graph (4 Styles)
Symbol	Lucinda Bright (4 Styles)
Times (4 Styles)	Machine
Zaph Chancery	Nadienne (2 Styles)
Zaph Dingbats	New York
	Old English Text
	Onyx
	Oxford
	Swing
	Zeal

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Tech Info Library Article Number:12814

Tech Info Library

Macintosh LC 520: LC III System Disks Won't Work (7/93)

Revised: 7/29/93
Security: Everyone

Macintosh LC 520: LC III System Disks Won't Work (7/93)

==========

Article Created: 28 July 1993

TOPIC ----------

If the system on an LC 520 crashes, can I use the system disk set from an LC III accessory kit? Are the system enablers the same?

DISCUSSION ----------

No, the Macintosh LC 520 won't work with the Macintosh LC III system disk set, because the 003 enabler is what the Macintosh LC III uses and the 403 enabler is what the LC 520 uses. Even though the Macintosh LC III and the 520 are similar in design the 003 enabler won't drive the Macintosh LC 520.

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Tech Info Library Article Number:12815

Tech Info Library

Evergreen Software, Inc. (7/93)

Revised: 7/30/93
Security: Everyone

Evergreen Software, Inc. (7/93)

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Article Created: 29 July 1993

Evergreen Software, Inc.

15600 NE 8th Street, Suite A3126
Bellevue, WA 98008

206-483-6576

Company Profile:
Software, specializing in security software.

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Tech Info Library Article Number:12817

Tech Info Library

Globus Systems, Inc. (7/93)

Revised: 7/30/93
Security: Everyone

Globus Systems, Inc. (7/93)

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Article Created: 28 July 1993

Globus Systems, Inc.

1447 McAllister Street
San Francisco, CA 94115

415-292-6744

415-292-6531 (Fax)

Company Profile:
Software, specializing in security software.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12818

Tech Info Library

Information Security Corp. (7/93)

Revised: 7/30/93
Security: Everyone

Information Security Corp. (7/93)

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Article Created: 28 July 1993

Information Security Corp.

1141 Lake Cook Road, Suite D
Deerfield, IL 60015

708-405-0500

708-405-0506 (Fax)

Company Profile:
Software, specializing in security software.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12819

Tech Info Library

New Visions (7/93)

Revised: 7/30/93
Security: Everyone

New Visions (7/93)

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Article Created:29 July 1993

New Visions
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600 NW 44th Street, Suite 314
Oklahoma City, OK 73102

405-523-1639

Company Profile:
Software, specializing in security software.

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Tech Info Library Article Number:12820

Tech Info Library

Praxitel, Inc. (7/93)

Revised: 7/30/93
Security: Everyone

Praxitel, Inc. (7/93)

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Article Created: 29 July 1993

Praxitel, Inc.

P.O. Box 452
Pleasanton, CA 94566

510-846-9380

510-846-2681 (Fax)

Company Profile:
Software, specializing in security software.

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Tech Info Library Article Number:12821

Tech Info Library

Software Brewing Company (7/93)

Revised: 7/30/93
Security: Everyone

Software Brewing Company (7/93)

==========

Article Created: 29 July 1993

Software Brewing Company
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270 Apricot Lane
Mountain View, CA 94040

415-940-1946

Company Profile:
Software, specializing in security software.

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Tech Info Library Article Number:12822

Tech Info Library

Laserwriter Pro 630: Using with a SUN Workstation (8/93)

Revised: 8/9/93
Security: Everyone

Laserwriter Pro 630: Using with a SUN Workstation (8/93)

==========

Article Created: 3 August 1993

TOPIC ----------

I have the following problems when trying to use a Laserwriter Pro 630 from a SUN.

1) When printing a job in PCL mode, a control-D (often occurring in PCL downloadable font) terminates the print job. It appears from looking at a PDL file for the Laserwriter 8 drivers that this is reconfigurable. I would appreciate some more information on how to do this.

2) When using the switch 9 position and reconfiguring the serial port baud rate from 9600 to 19200 (non-volatile PRAM) the patch changes the baud rate, but upon restart defaults back to 9600. This isn't true in switch position 6. Is this a bug?

DISCUSSION ----------

Here are the answers to your questions:

1) We assume you're talking about the PPD files for LaserWriter 8.0. Reconfiguring CTRL-D in the PPD file isn't possible. The section we believe you're referring to in the PPD file is the section for starting/stopping the emulator (that is, *StopEmulator_hpcl: "<1B7F>0"). This specific line of code executes an ESC-DEL-0 (hex 1B = ESC, hex 7F = DEL) which only stops the emulator, and not the print job. A CTRL-D is still required to end the print job, and CTRL-D is specifically what the PostScript interpreter looks for. We are currently unaware of a way to "reconfigure" the CTRL-D string.

   As for the problem at hand, the print job should NOT be terminating with the CTRL-D character if the printer is configured for HP PCL 4 and the "RAW" protocol. The "RAW" protocol is defined as follows:

 * Raw: Lets all data pass through unfiltered. Control characters such as

End-of-file (CTRL-D) and status queries (CTRL-T) are passed through and not acted upon.

On page 125-126 of the LaserWriter Pro 600/630 manual, all of the switch settings for HP PCL on the various ports show "RAW" as the protocol, so we are a little confused why the print job is terminating. The only thing we can think of is that you are entering PCL mode via PostScript, as opposed to using one of the ports specifically configured for HP PCL. In this case, the protocol used would be Normal and not RAW.

2) We tried to reproduce this problem and were unable to. We used the LaserWriter Utility v7.4.1 to change the baud rates to 19200 on the Serial ports for switch positions 6 and 9, and the values persisted across power cycles. If you're changing the baud rates via PostScript code, then you want to be certain you're writing to the nonvolatile parameter set (that is, %Serial_NV4 as opposed to %Serial4). Thus, if you want to change the baud rate to 19200 for switch position 9 on the serial 25-pin port, then the following code will do this:

```
%%Begin
(%Serial_NV4%) <</Baud 19200>> setdevparams
%%End
```

By the way, the default baud rates for switch positions 6 and 9, are 19200 and 9600 respectively, so it appears that the problem lies in how the baud rate is being changed.

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Tech Info Library Article Number:12824

Tech Info Library

Columbo's Mystery Capers: Description (7/93)

Revised: 7/30/93
Security: Everyone

Columbo's Mystery Capers: Description (7/93)

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Article Created: 30 July 1993

TOPIC --------------------

This article describes Columbo's Mystery Capers, a Newton software application.

DISCUSSION --------------------

Columbo's Mystery Capers is a Newton-based software application which includes more than 40 mysteries complete with graphics and text-based clues. Each scenario opens with a text introduction and an illustration of the scene of the crime. Players use the stylus to uncover potential clues and solve the mystery.

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Tech Info Library Article Number:12825

Tech Info Library

Dell Crossword Puzzles & Other Games: Description (7/93)

Revised: 7/30/93
Security: Everyone

Dell Crossword Puzzles & Other Games: Description (7/93)

==========

Article Created: 30 July 1993

TOPIC ----------

This article describes the Newton software application Dell Crossword Puzzles & Other Games.

DISCUSSION ----------

Dell Crossword Puzzles & Other Games is a Newton-based software application. It contains hundreds of word games such as crossword puzzles, cryptograms and word searches with on-line help features. An abbreviated version of this product also comes in a diskette-based version.

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Tech Info Library Article Number:12826

Fodor's 94 Travel Manager-Top U.S. Cities: Description (7/93)

Revised: 7/30/93
Security: Everyone

Fodor's 94 Travel Manager-Top U.S. Cities: Description (7/93)

==========

Article Created: 30 July 1993

TOPIC --------------------

This article describes Fodor's 94 Travel Manager-Top U.S. Cities, a Newton software application.

DISCUSSION --------------------

Fodor's 94 Travel Manager-Top U.S. Cities is a Newton-based travel guide to eight major cities in the United States. It details up to 500 locations per city, including restaurants, hotels, sights of interest, airport information, and other travel information and business services. Fodor's 94 Travel Manager covers Atlanta, Boston, Chicago, Dallas, Los Angeles, New York City, San Francisco and Washington DC with detailed interactive maps highlighting destinations and routes.

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Tech Info Library Article Number:12827

Tech Info Library

Fortune 500 Guide to American Business: Description (7/93)

Revised: 7/30/93
Security: Everyone

Fortune 500 Guide to American Business: Description (7/93)

==========

Article Created: 30 July 1993

TOPIC --------------------

This article describes the Newton software application Fortune 500 Guide to American Business.

DISCUSSION --------------------

Fortune 500 Guide to American Business is a Newton-based software application that provides information on all aspects of the Fortune 500 and Service 500.

This information includes a general description of each company and financial information on topics including sales per employee, market value and price to earnings ratio. Also included are five-year financial performance histories for sales, profits and earnings per share. You can use search, comparison, calculation and charting functions to compare companies.

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Tech Info Library Article Number:12828

Tech Info Library

Money Magazine Business Forms: Description (7/93)

Revised: 7/30/93
Security: Everyone

Money Magazine Business Forms: Description (7/93)

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Article Created: 30 July 1993

TOPIC ----------

This article describes Money Magazine Business Forms, a Newton software application.

DISCUSSION ----------

Money Magazine Business Forms is a Newton-based software application. It has 12 templates which contain often-used financial forms, including expense reports, project plans and loan calculations.

Money Magazine Business Forms is delivered on diskette. With the optional Newton Connection Kit, you can download individual forms to your Newton from your personal computer.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12829

Money Magazine Financial Assistant: Description (7/93)

Revised: 7/30/93
Security: Everyone

Money Magazine Financial Assistant: Description (7/93)

==========

Article Created: 30 July 1993

TOPIC --------------------

This article discusses Money Magazine Financial Assistant, a Newton software application.

DISCUSSION --------------------

Money Magazine Financial Assistant is a Newton-based software application. It includes calculation templates for a number of the most common financial decisions. The templates include investments, loans, budgets, and property transactions.

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Tech Info Library Article Number:12830

Tech Info Library

Print Dialog Box: Select Color/Grayscale to Change Default

Revised: 8/9/93
Security: Everyone

Print Dialog Box: Select Color/Grayscale to Change Default

==========

Article Created: 3 August 1993

TOPIC -----

We want to modify the Print Dialog box and change the default to Color/Grayscale rather than the default Black & White. Can you provide us with the details? We're running System 7 and have LaserWriter driver 7.2 for the LaserWriter Pro 630.

DISCUSSION -----

The feature of selecting the default printing mode as either Black & White or Color/Grayscale is built-in on LaserWriter driver 7.2. Once either mode is selected in the Print dialog box and you print something, the mode "sticks" and becomes the default printing mode.

By the way, this feature is also present in LaserWriter driver 7.1.2 and 8.0.

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Tech Info Library Article Number:12833

Tech Info Library

Quadra 950: MicroNet Raven•040 Disk Array (9/95)

Revised: 9/21/95
Security: Everyone

Quadra 950: MicroNet Raven•040 Disk Array (9/95)

==========

Article Created: 2 August 1993
Article Reviewed/Updated: 21 September 1995

TOPIC ----------

MicroNet has several models called Raven•040. MicroNet Raven•040 Disk Array is model number Q9i/i-1030R.

This article tells you what to do if you turn on a Macintosh Quadra 950, see the happy Mac, but it doesn't boot and there's no "Welcome to Macintosh."

DISCUSSION ----------

Insert the Disk Tools disk. If it loads or boots, is the MicroNet hard disk icon visible below the Disk Tools Disk?

- If yes, then reinstall system software.

- If no, then you may need to reinstall the MicroNet drivers or reinitialize the disk. The Apple HD SC Setup program WON'T work. You must use the MicroNet Utility disk supplied with your system. The utility is too large to fit on a single floppy disk with enough system software to create a bootable floppy disk.

  You have two choices:

  - Connect another hard disk drive to the external SCSI port. Restart with the Disk Tools disk and then copy the Disk Tools to the hard disk. Restart, letting the system reboot from the hard drive. Run MicroNet's Utilities from the disk or copy them to the hard disk. See MicroNet's manuals for instructions on using their utilities.

  - You can run the utilities and the system from two separate disks (20 or more disk swaps may be necessary). This isn't recommended, but will work in an emergency when no external disk drive is available.

IMPORTANT: Close the Disk Tools window before choosing eject from the Finder Menu (an open window may keep the disk from ejecting without requesting the same disk back).

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
21 Sep 1995 - Made minor changes and formatting corrections.

Support Information Services

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Tech Info Library Article Number:12834

Tech Info Library

Quadra 950: Blank Screen with SuperMac Thunder II Light (8/93)

Revised: 8/2/93
Security: Everyone

Quadra 950: Blank Screen with SuperMac Thunder II Light (8/93)

==========

Article Created: 2 August 1993

TOPIC ----------

When I power up my system, my monitor is blank.

DISCUSSION ----------

There are several things to check with SuperMac Thunder II Light when your screen is blank or displays garbage:

- Your monitor may be connected to the internal board (on-board connector), and not to the SuperMac board installed in one of the NuBus slots.

- Also, remove the cover and ensure that the SuperMac video card is properly seated in the NuBus slot.

- Hold down the option key and restart your Quadra 950. This will trigger SuperMac's system for cycling through all monitor sizes supported. When the image of the keyboard on the screen is clear and/or the name of your monitor appears on the screen, press the space bar. Your Macintosh will restart with the right screen settings.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12835

Tech Info Library

Quadra 950 Publishing Configuration: Description (10/93)

Revised: 10/18/93
Security: Everyone

Quadra 950 Publishing Configuration: Description (10/93)

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Article Created: 2 August 1993
Article Reviewed/Updated: 18 October 1993

TOPIC ----------

This article describes the enhanced features of the Macintosh Quadra 950 Publishing Configuration.

DISCUSSION ----------

This configuration has SuperMac and MicroNet components built in. The SuperMac Thunder II 1152 card is in one of the NuBus slots, leaving four slots available for other cards. MicroNet built the Raven040 disk array specifically to use the Quadra's dual SCSI channel.

SuperMac Thunder II 1152 Card

The SuperMac card provides accelerated 24-bit graphics support on 21-inch monitors. It also accelerates QuickDraw to manipulate large color images more easily. The SuperMac Thunder II Light card also has dual Digital Signal Processors (DSPs) built in, enabling up to five times performance improvements on many Adobe PhotoShop functions.

SuperMac's Image Processing Accelerator also gives special acceleration to Adobe Photoshop. Other accelerated functions include Image Size, Rotate, Blur, Blur More, Sharpen, Sharpen More, Sharpen Edges, Despeckle, Find Edges, Emboss, Fragment, Feather, High Pass, Custom, Skew, Perspective. SuperMac also provides its own accelerated Motion Blur.

MicroNet1 Gigabyte Disk Array

The Quadra 950 has two on-board SCSI channels that provide a high-speed path for advanced disk drive systems called arrays. The Raven040 disk array combines the two 500MB drives into a single virtual drive. While one drive queues up data, the other one can send

data. This increases the transfer rate over 6MB per second, which is much faster than one drive operating alone.

Quadra 950 Standard Features

You get the following standard features of the Macintosh Quadra 950 in the Publishing Configuration:

- 33MHz Motorola 68040
- 256MB of memory expansion (no DRAM installed)
- 5 NuBus slots (one occupied by the SuperMac card)
- Built-in Ethernet connector
- Built-in video for a second monitor (ideal for 14-inch Macintosh Color Display)
- Room inside to add a 5.25-inch half-height drive, AppleCD 300i, or Syquest cartridge.

Service and Support for Bundled Third-Party Products

SuperMac will provide service and support for the Thunder II Light card and MicroNet Technology will provide service and support for its Raven 040 SCSI hard disk array.

Order Number

Macintosh 4MB Memory Exp. Kit (4-1MB SIMMs) M2499LL/A
AppleCD 300i Internal Drive Kit (Quadra 900 and 950) B1328LL/A

Article Change History:
18 October 1993 - Added DSP information to the SuperMac section and added a Service and Support section.

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Tech Info Library Article Number:12836

Tech Info Library

Macintosh System Software 7.1: List of Software Included (8/93)

Revised: 8/30/93
Security: Everyone

Macintosh System Software 7.1: List of Software Included (8/93)

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Article Created: 29 July 1993

TOPIC -----

System 7.1 includes the following software components on the named FDHD disk set, which is included in the Personal Upgrade Kit or the MultiPack Upgrade Kit.

DISCUSSION -----

Product	Version	Disk Name	Notes
Disk First Aid	7.1	Disk Tools	
HD SC Setup	7.1	Disk Tools	
Installer	3.4	Install	
Install FDHD	7.1	Install	Installer document
System	7.1	Install	
AppleTalk	57.0.4	Install 2	
A/ROSE	1.1.7	Install 2	
EtherTalk Phase 2	2.3.1	Install 2	
EtherTalk	1.0.3	Install 2	Built-in Ethernet
EtherTalk Prep	1.0.2	Install 2	Ethernet NB Card
Finder	7.1	Install 2	
Finder Help	7.1	Install 2	
Network	2.3.3	Install 2	
Network Extension	7.1	Install 2	
Token Ring	1.0.1	Install 2	
TokenTalk Phase 2	2.4.1	Install 2	
TokenTalk Prep	2.4.1	Install 2	
AppleTalk ImageWriter	7.0.1	Printing	
ImageWriter	7.0.1	Printing	
Installer	3.4	Printing	
LaserWriter	7.1.2	Printing	All but LaserWriter Pro series

LQ AppleTalk ImageWriter	7.0.1	Printing	
LQ ImageWriter	7.0.1	Printing	
Personal LaserWriter SC	7.0.1	Printing	
Personal LW LS	7.2	Printing	
Printer Update	7.1	Printing	Installer document
Print Monitor	7.1	Printing	
StyleWriter	7.2.3	Printing	
Backgrounder	1.3	Printing	Only for System 6.x
Laser Prep	7.1.2	Printing	Only with System 6.x, LaserWriter Driver 6.0 and earlier, and AppleShare Print Server 2.0

Product	Version	Disk Name:Folder Name
Athens	N/A	Fonts:Apple Classic Fonts
Cairo	N/A	Fonts:Apple Classic Fonts
London	N/A	Fonts:Apple Classic Fonts
Los Angeles	N/A	Fonts:Apple Classic Fonts
Mobile	N/A	Fonts:Apple Classic Fonts
San Francisco	N/A	Fonts:Apple Classic Fonts
Venice	N/A	Fonts:Apple Classic Fonts
Chicago	N/A	Fonts
Courier	N/A	Fonts
Geneva	N/A	Fonts
Helvetica	N/A	Fonts
Monaco	N/A	Fonts
New York	N/A	Fonts
Palatino	N/A	Fonts
Symbol	N/A	Fonts
Times	N/A	Fonts
Alarm Clock	7.1	Tidbits:Apple Menu Items
Battery	7.1.1	Tidbits:Apple Menu Items
Calculator	7.1	Tidbits:Apple Menu Items
Chooser	7.2	Tidbits:Apple Menu Items
Control Panels(alias)	N/A	Tidbits:Apple Menu Items
Key Caps	7.1	Tidbits:Apple Menu Items
Note Pad	7.1	Tidbits:Apple Menu Items
Puzzle	7.1	Tidbits:Apple Menu Items
Scrapbook	7.1	Tidbits:Apple Menu Items
Apple File Exchange	7.0	Tidbits:Apple Utilities
DCA-RFT/MacWrite	1.0.1	Tidbits:Apple Utilities
LaserWriter Font Utility	7.4	Tidbits:Apple Utilities
Read Me	N/A	Tidbits:Apple Utilities
TeachText	7.0	Tidbits:Apple Utilities
CloseView	7.1	Tidbits:Apple Utilities
Brightness	7.0.1	Tidbits:Control Panels
Cache Switch	7.0.1	Tidbits:Control Panels
Color	7.1	Tidbits:Control Panels
Date & Time	7.1	Tidbits:Control Panels
File Sharing Monitor	7.1	Tidbits:Control Panels

General Controls	7.1	Tidbits:Control Panels
Keyboard	7.1	Tidbits:Control Panels
Labels	7.1	Tidbits:Control Panels
Map	7.1	Tidbits:Control Panels
Memory	7.1.1	Tidbits:Control Panels
Monitors	7.0	Tidbits:Control Panels
Mouse	7.1	Tidbits:Control Panels
Numbers	7.1	Tidbits:Control Panels
PowerBook	7.1.1	Tidbits:Control Panels
Sharing Setup	7.1	Tidbits:Control Panels
Sound	7.1.1	Tidbits:Control Panels
Startup Disk	7.0	Tidbits:Control Panels
Users & Groups	7.1	Tidbits:Control Panels
Views	7.1	Tidbits:Control Panels
Easy Access	7.0	Tidbits
AppleShare	7.1	Tidbits:Extensions
Caps Lock	7.1.1	Tidbits:Extensions
File Sharing Extension	7.1	Tidbits:Extensions
Scrapbook	N/A	Tidbits

Article Change History:
30 August 1993 - Added information to the note on Laser Prep.

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Tech Info Library Article Number:12837

Tech Info Library

CD-ROM Setup 4.0.5: Software Components (9/93)

Revised: 9/24/93
Security: Everyone

CD-ROM Setup 4.0.5: Software Components (9/93)

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Article Created: 29 July 1993
Article Reviewed/Updated: 24 September 1993

TOPIC ----------

This article discusses the software components found on CD-ROM Setup 4.0.5, and other CD-related topics.

DISCUSSION ----------

Files on the Macintosh CD-ROM Setup Disk

File Name	Version #	Created	Modified
AppleCD 300 Read Me		6/21/93	6/21/93
CD Remote	1.3	11/23/92	11/23/92
Apple CD-ROM	4.0.2	11/23/92	11/23/92
Apple Photo Access	1.0.2	11/23/92	11/23/92
AppleCD Speed Switch	1.0.3	5/17/93	5/17/93
Audio CD Access	4.0.2	11/23/92	11/23/92
CD Remote INIT	1.3	11/23/92	11/23/92
Foreign File Access	4.0.2	11/23/92	11/23/92
High Sierra File Access	4.0.2	11/23/92	11/23/92
ISO 9660 File Access	4.0.2	11/23/92	11/23/92
Installer	3.4	8/17/92	8/17/92
Installer Script	4.0.5	7/1/93	7/1/93
TeachText	7.1	11/24/92	11/24/92

QuickTime 1.6.1

The QuickTime system extension, version 1.6.1, is included with CD-ROM Setup 4.0.5. You must install the QuickTime system extension, version 1.5 or later to use Photo CD discs.

You must also install 32-Bit QuickDraw to use QuickTime. If you're

using System 6, install 32-Bit QuickDraw into your system software before installing QuickTime.

To install QuickTime 1.6.1:

1) Insert the QuickTime disk into the floppy disk drive.
2) Double-click the QuickTime disk icon.
3) Drag the QuickTime system extension onto your System Folder icon.
4) Click OK.
5) Restart your Macintosh.

Older Macintosh Models

The QuickTime system extension doesn't work on Macintosh models that contain a 68000 microprocessor (the Macintosh Plus, Macintosh SE, Macintosh Classic, Macintosh Portable, and Macintosh PowerBook 100). This system extension won't be installed with Easy Install. Apple Photo Access and Slide Show Viewer require QuickTime support, and therefore, doesn't work on the Macintosh models that contain a 68000 microprocessor as noted above. Apple doesn't recommend that you install these system extensions on these models.

AppleCD Speed Switch

The AppleCD 300i User's Guide incorrectly states that the AppleCD Speed Switch is a desk accessory. The AppleCD Speed Switch is actually a control panel. To open the Speed Switch Control Panel, choose Control Panels from the Apple menu and double-click the AppleCD Speed Switch icon.

Using Large Photo CD Images

Photo CD images are stored in folders according to their image size. For most work, images of 768 x 512 pixels or smaller will be suitable. For more detailed work, or for very high quality reproductions, you may want to use larger images.

You should open larger images with application programs designed to handle large PICT files. TeachText will have difficulty opening these large files.

New Version of TeachText

TeachText, version 7.1, is available on the CD Set-Up 4.0.5 disk. It will be installed on your computer if you install system software using Easy Install.

Using the Viewer With Several CD Discs in System 6

In System 6, if you want to view photos from more than one Photo CD disc, you shouldn't launch the Slide Show Viewer from the CD disc. Instead, copy the viewer to your hard disk, and use that copy to view photos. If you launch the viewer from the CD disc, you will experience

problems when you insert the next disc.

Color Icons and Low System Memory

Your Macintosh may have problems displaying color icons for the pictures on a Photo CD disc when the system is low on memory. When not enough memory (usually less than 200K) is available, some of the color icons for Photo CD documents may appear as plain document icons. This problem only affects the appearance of the icons; the actual Photo CD images themselves aren't affected. If this problem appears, you can restore the normal color icons by restarting the computer.

Article Change History:
24 September 1993 - Added sections that further explained use of the software.

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Tech Info Library Article Number:12838

Tech Info Library

Network Software Installer 1.4.1: Software Components (11/93)

Revised: 11/19/93
Security: Everyone

Network Software Installer 1.4.1: Software Components (11/93)

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Article Created: 29 July 1993
Article Reviewed/Updated: 19 November 1993

TOPIC ----------

This article lists the software components for the Network Software Installer (NSI) 1.4.1.

DISCUSSION ----------

Product	Version	Notes
AppleTalk	58.1.1	
Network Control Panel	3.0.2	
AppleTalk Internet Router	2.0	Requires Router installation disk
EtherTalk	2.5.5	
Ethernet driver	1.0.4	For the Apple Ethernet NB Card
Ethernet driver	6.0.3	For the Apple EtherTalk NB Card
Ethernet driver	1.0.7	For the Apple Ethernet Twisted-Pair NB Card
Ethernet driver	1.0.7	For the Apple Ethernet LC Card
Ethernet driver	1.0.7	For the Macintosh Quadra 700, 900, 800, 950, Centris 610, 650 built-in Ethernet port.
Ethernet driver	1.0.1	For the Macintosh Quadra 840AV and Centris 660AV.
TokenTalk	2.5.5	
Token Ring Control Panel	1.0.1	
Token Ring driver	2.5.2	For the TokenTalk NB Card and Token Ring 4/16 NB Card.
A/Rose	1.2	

This installer works on either System 6 or System 7 Macintosh computers.

The Network Software Installer v.1.4.1 process correctly handles the installation of AppleTalk v58.1.1 and related software components on

Macintosh 840AVs and Centris 660AVs..

Restrictions

This software should not be installed with AppleTalk Internet Router and AppleShare client on a Macintosh with only 1 Megabyte of memory.

If this release of the Network Software Installer is being used in conjunction with an Apple Internet Router v. 3.0 Installer, Router 3.0 MUST be installed first. This will ensure that the Router installation does not overwrite the newer AppleTalk software contained on NSI 1.4.1.

Release notes for each item follows

- AppleTalk version 58.1.1
  Changes were made to the workstation's Best Router Table maintenance when talking to Routers that use a zero hop count.

- Ethernet for Ethernet NB Twisted Pair Card
  Support was added for the 1.0.7 Ethernet driver for the Ethernet NB Twisted Pair card.

- EtherTalk for EtherTalk NB
  Fixed a slowdown that occurred with EtherTalk NB cards while using DECNet.

- EtherTalk and TokenTalk version 2.5.5
  A change was made to the AMT table maintenance for supporting Router 3.0 (which uses 0 hop counts).

Article Change History:
31 Aug 1993 - Updated for NSI 1.4
19 Nov 1993 - Updated for NSI 1.4.1

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Tech Info Library Article Number:12840

Tech Info Library

PowerBook Companion: Software Components (7/93)

Revised: 8/2/93
Security: Everyone

PowerBook Companion: Software Components (7/93)

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Article Created: 29 July 1993

TOPIC -----

The PowerBook Companion includes the following software components. The table provides the following information:

- Version The current version number.
- 32-bit? Whether the product is 32-bit compatible.
- 7.1? Whether the product is compatible with System 7.1.
- Notes Additional information on the product, such as where it can be obtained

DISCUSSION -----

Product	Version	32-bit?	7.1?	Notes
Macintosh PC Exchange	1.0.1	YES	YES	Apple File Exchange is bundled with all PowerBooks (Tidbits disk:Apple Utilities folder)
MacLinkPlus/PC	7.0	YES	YES	From DataViz, Inc.
PowerPrint	N/A	YES	YES	From GDT Software, Inc. - A collection of printer drivers is included.

Also includes the MacVGA cable from James Engineering and the MacLinkPlus/PC cable from DataViz, Inc.

Posted to:
Support
  Problem Resolution
    Tools & Utilities
      Apple Compatibility Tools

and Posted to:
Support

Problem Resolution
Install & Compat
Compatibility Info by Product
System Software/Other Apple Software

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Tech Info Library Article Number:12841

Tech Info Library

Newton Connection Kit for Macintosh: Installing Packages (7/93)

Revised: 8/2/93
Security: Everyone

Newton Connection Kit for Macintosh: Installing Packages (7/93)

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Article Created: 30 July 1993

TOPIC -----

This article explains how to install a package onto Newton using the Newton Connection Kit for Macintosh.

DISCUSSION -----

A package is a file that adds features to your Newton. They may be applications, fonts, forms, collections of information or other software.

To install a package:

1) Connect your Newton to the Macintosh that has the package on it.

2) On your Macintosh, double-click the Newton Connection icon to open it.

3) Click the Install Package button.

4) In the box that appears, choose the package you want to install, and click Open.

5) Open the Extras drawer on the Newton.

6) Tap the Connection button.

7) In the box that appears, choose serial or AppleTalk to reflect the mode of connection you used when linking the Newton and Macintosh.

8) Tap Connect.

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Tech Info Library Article Number:12842

Tech Info Library

Newton Connection Kit for Macintosh: Restoring Data (7/93)

Revised: 8/2/93
Security: Everyone

Newton Connection Kit for Macintosh: Restoring Data (7/93)

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Article Created: 30 July 1993

TOPIC -----

This article discusses restoring information to your Newton from files saved to your Macintosh.

DISCUSSION -----

If you lose some or all of the information on your Newton, you can restore from the files created during synchronization with your Macintosh.

Note: Using the Restore function erases everything on your Newton and replaces it with the file from the Macintosh.

To restore:

1) Connect your Newton to your Macintosh.

2) Double-click the Newton Connection icon on the Macintosh.

3) Click the Restore button.

4) In the dialog box that appears, choose the file you want to restore, and click Open.

5) On your Newton, tap the Extras button.

6) In the box that appears, choose serial or LocalTalk.

7) Tap Connect to initiate restoration.

Restoring Specific Items

You may want to retrieve certain items from past synchronizations that no

longer exist in the latest synchronized file. You may use the Archive file to amend the latest synchronized file on the Macintosh, then synchronize again to transfer those changes to the Newton.

To do this:

1) On the Macintosh, choose Open from the Newton Connection File menu.

2) Open the latest synchronized file (It will be called either Newton or bear your name).

3) In the window that appears, click the application where you want to put the recovered information.

4) Choose Open from the File menu.

5) Open the archive that contains the information you want to recover.

6) In the window that appears, open the application that contains the information you want.

7) In the archive window, select the information you want to put back into your Newton. Choose Copy from the Edit menu.

8) Click the window of the synchronized file, then choose Paste from the Edit menu.

9) Synchronize with your Newton.

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Tech Info Library Article Number:12843

Tech Info Library

Newton Connection Kit for Macintosh: Installation (7/93)

Revised: 8/2/93
Security: Everyone

Newton Connection Kit for Macintosh: Installation (7/93)

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Article Created: 30 July 1993

TOPIC -----

This article discusses installing the Newton Connection Kit for the Macintosh and connecting your Newton to your Macintosh.

DISCUSSION -----

The Newton Connection Kit allows your Macintosh to communicate with your Newton. You can backup and restore Newton data, examine the data on your Macintosh and download Newton software applications to your Newton.

Installing the Connection Kit

Here's how to install the Newton Connection kit onto your Macintosh:

1) Insert the disk entitled, "Newton Connection Kit Install 1" into the floppy drive of your Macintosh.

2) Double-click the Installer icon.

3) Click OK in the welcome dialog box that appears.

4) In the Installer box, click Install.

5) Follow the instructions on the screen. Insert the disk entitled "Newton Connection Kit Install 2" when the program requests it.

Connecting to a Macintosh

There are two ways to connect the Newton to the Macintosh: via a serial cable or an LocalTalk network. The network connection is more complicated, but enables faster communication.

Here's how to connect with a serial cable:

1) Plug one end of the serial cable into your Newton.

2) Plug the other end into the printer port on your Macintosh.

Here's how to connect over a LocalTalk Network:

1) Make sure your computer is turned off.

2) Follow the instructions that accompanied your Apple LocalTalk kit to connect your Macintosh to a network if it is not already connected.

3) Plug the LocalTalk cable into the communications port on the lower-right side of your Newton.

4) Turn on your Macintosh and choose the Chooser from the Apple menu.

5) Make sure AppleTalk is active in the window that appears.

When you want to disconnect your Newton, remove the cable from the Newton communications port and leave everything else connected. When you want to re-establish the connection between your Macintosh and Newton, plug the cable in again.

Note: If you connect Newton to a PowerBook that has an internal modem, you need to open the PowerBook control panel and select the External Modem button to complete the serial connection.

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Tech Info Library Article Number:12844

Tech Info Library

Newton Connection Kit for Macintosh: Synchronizing (7/93)

Revised: 8/2/93
Security: Everyone

Newton Connection Kit for Macintosh: Synchronizing (7/93)

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Article Created: 30 July 1993

TOPIC -----

This article discusses synchronizing files between the Newton and Macintosh.

DISCUSSION -----

The first time the Newton Connection Kit synchronizes your Newton with your Macintosh, all the information from your Newton will be copied onto your Macintosh's hard drive. After the first time, synchronizing will copy only new or changed information from Newton to your Macintosh or vice versa. When synchronization is completed, the identical information exists both in the Newton folder on your Macintosh's hard drive and in your Newton.

When you synchronize, all information you deleted since the previous synchronization is stored in an Archive file on the Macintosh. The entire file left by the previous synchronization will be stored as a file called "Backup."

How to Set Up For Synchronization

To prepare the Macintosh for communication with the Newton:

1) Double-click the Newton Connection icon.

2) Choose Preferences from the Edit menu.

3) In the dialog box that appears, click on the method you used to connect your Newton and Macintosh. Click OK to save your preferences, and close the box. (You only need to do this the first time you use the Connection software, unless you change the setup.)

4) Click the Synchronize button. A message will appear to confirm that the Macintosh is ready.

To prepare the Newton for connection:

1) Tap the Extras button on Newton's screen.

2) Tap the Connection button.

3) Tap "Macintosh serial" or "Macintosh LocalTalk" to indicate how you are set up. (If you are using a serial cable, skip to the next section, titled Synchronizing.)

4) If you chose Macintosh LocalTalk, tap the Choose Macintosh button that appears.

5) A list of Macintoshes that are running Newton Connection appear. If the one you want is not listed, tap Change Zone and choose the proper zone (if your network doesn't have zones, this button will not appear). If the Macintosh you want does not appear, make sure the Connection software is launched on that computer.

6) Tap the Macintosh you want.

7) To begin synchronizing, tap Connect. To stop at any time, tap Stop.

The process will copy all the information that has changed since the last synchronization from your Newton onto the Macintosh's hard drive in a file that bears your name. If you haven't entered your name in your Newton, the file will be called Newton.

If you want to synchronize automatically, choose Preferences from the Edit menu and click "Always ready to synchronize."

Setting Up a Synchronization Station

If you use Newton Connection on a network with other Newton users, you may want to establish one Macintosh where everyone can synchronize and store their Newton files. To do this:

1) Make sure the chosen Macintosh is hooked into the network.

2) Open Newton Connection.

3) Turn on "Always ready to synchronize" in the Preferences box (in the Edit menu).

4) Always leave the station Macintosh on.

5) Make sure everyone who uses the station has his or her name entered in Newton's Personal area under Preferences in the Extras drawer. This ensures that everyone's synchronization files will be stored separately.

Newton Changes Take Precedence

Immediately after you complete synchronization, the information in the Newton

folder on your hard drive and on your Newton are identical. If you change the same piece of information in both places, when you next synchronize, the changes you made on the Newton will take precedence.

For instance, if you change Bob's address in the Names File on Newton, and Bob's title in the Names File on your Macintosh, both files will reflect Bob's new address, but not his new title. The changes you made on the Macintosh -- Bob's title -- will be saved into the Newton archive folder on the Macintosh.

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Tech Info Library Article Number:12845

Tech Info Library

At Ease 2.0: Description (8/95)

Revised: 8/9/95
Security: Everyone

At Ease 2.0: Description (8/95)

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Article Created: 2 August 1993
ARticle Reviewed/Updated: 9 August 1995

TOPIC ----------

At Ease 2.0 software is an extension to Macintosh System 7 that gives everyone who uses a Macintosh the resources they need without disrupting the files or applications of other users.

DISCUSSION ----------

Features

After you install At Ease 2.0, you can use the setup program to designate, for each user, which applications they can and can't access. You can also grant or deny permission for users to delete and copy files, make folders, and rename items. This gives each user privacy and prevents novice users from accidentally deleting files or applications or damaging the hard disk.

You can assign an individual password for each user. When the user enters the password, At Ease 2.0 displays all of the authorized applications as large buttons. A single click on these buttons launches the application or opens a document.

You can maintain a more orderly hard disk with At Ease 2.0. It stores all new files in a single document folder. You can also block saving files on the hard disk and require saving files on a floppy disk.

Components

At Ease creates many of these files and folders at run time:

• Documents
  - At Ease - provides the code for running the At Ease desktop, and is located at the root level of the System Folder.
  - Users - stores user information, and is located in the At Ease Users

folder.
  - User Profile - stores profile information for a particular user. It's in the At Ease Users folder.
• Extensions
  - At Ease Startup - provides the boot process and network code for At Ease. It prevents disabling At Ease (holding down the Shift key at start up).
  - Speech Manager - allows text-to-speech on the file names as the cursor passes over an icon. The default setting for this function is off.
• Applications
  - At Ease Setup - provides owners with the ability to customize At Ease folders for each user.
  - Mouse Practice - instructs a novice Macintosh user to navigate using a mouse to click and drag.
• Folders
  - At Ease Items - contains internal information, such as At Ease folders and the Preference file. If information is kept on an AppleShare server, this folder is created on the root of the server volume.
  - At Ease Movies - contains optional QuickTime movies for the At Ease buttons, and is in the At Ease Items folder. There's no provision for easily adding movies in this version of At Ease.
  - At Ease Receive - is in the At Ease Items folder, and may contain a temporary holding folder called At Ease Temp, used during remote administration.
  - At Ease Setups - is in the At Ease Items folder, and contains the Setups document and folders assigned to each setup.
  - At Ease Sounds - contains the sounds played when items are selected.
  - At Ease Users - is in the At Ease Items folder and contains At Ease folders.
  - Documents - located at the root of the At Ease Disk volume, it contains all the documents shown in the user's At Ease panels; kept in folders by user.
  - Mouse Practice - contains the Mouse Practice application (Macromind Player 3.0) and supporting movie and sound clips.

System Requirements

To run At Ease 2.0, you need a Macintosh computer with 2MB of RAM (4MB recommended), and a hard disk with at least 1.5MB of free disk space. You also must have system software version 7.0 or later installed.

Order Number

M1859LL/A

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:12846

Tech Info Library

At Ease and At Ease for Workgroups 1.0 and 2.0: Differences

Revised: 8/8/95
Security: Everyone

At Ease and At Ease for Workgroups 1.0 and 2.0: Differences

==========

Article Created: 2 August 1993
Article Reviewed/Updated: 08 August 1995

TOPIC ----------

This article outlines the differences between:

- At Ease 1.0 and 2.0
- At Ease for Workgroups 1.0 and 2.0
- At Ease 2.0 and At Ease 2.0 for Workgroups

DISCUSSION ----------

How At Ease 2.0 Differs from 1.0

At Ease 2.0 no longer saves memory over the Finder. In 1.0, it was reported that using At Ease would add another 100-200K of free memory for applications. Due to the increase of code size, this statement is no longer valid in 2.0. The memory footprint is about the same.

In 1.0, for each file a user saved, At Ease had an option to automatically create an alias (button) for the file. In 2.0, a button is only created if the user saves a document inside the user's documents folder. As this folder is the default location to save documents, this will be the standard case. However, if the user has the capability to move outside of the user's folder, the document may be "lost" and won't show up in the At Ease user's panel. The administrator can turn on the "Save documents only in user's panel" option to prevent the user from moving out of the user's folder.

When you start up your computer as a single user, you now see a splash screen that shows an administrator-defined greeting. However, a major feature of At Ease 2.0 is the ability to support multiple users, and in multi-user mode the login screen shows a list of names in a scroll box.

The new product now provides customers with the flexibility to share a single system with up to 10 named users, providing each user with customized

and private At Ease folders. The At Ease Setup control panel was removed and replaced by a standalone application called At Ease Setup. The setup application features enhanced file management, security and privacy capabilities, providing owners with the ability to customize At Ease folders for each user.

You can choose to see Minimal or All menu items, and with the Speech Manager installed, At Ease 2.0 can use text-to-speech to read the icon names as the pointer passes over them. You can also attach a sound to a button that will play when the cursor passes over the button.

At Ease 2.0 allows an owner of a single Macintosh system to specify whether users can open and save documents anywhere, only in the user's folder, only on a floppy disk, or start up directly in the Finder. Owners also can allow other At Ease users to have basic file management capabilities, such as the ability to create new folders, and delete, rename, and copy their own documents without going to the Finder.

How At Ease for Workgroups 2.0 Differs from 1.0

The features in At Ease 2.0 for Workgroups are designed specifically for administrators who manage multiple Macintosh systems in workgroup settings. Using a single setup program, administrators can specify a number of options for up to 1,000 users and 200 groups on each Macintosh system. This capability allows administrators to determine which applications and files are available to specific groups of users, while preserving customized individual user settings.

The setup program in At Ease 2.0 for Workgroups also gives administrators the ability to specify password requirements and provide users with simple file management capabilities, such as creating folders and renaming files. In addition, administrators can change and update At Ease settings on multiple Macintosh computers over an AppleTalk network, further increasing management flexibility. The networking features of At Ease 2.0 for Workgroups also allows administrators to establish servers for storage of users' documents or applications.

How At Ease 2.0 for Workgroups Differs from At Ease 2.0

At Ease for Workgroups has all the features described for At Ease 2.0, plus these additions and exceptions.

In At Ease 2.0 for Workgroups, there's an additional category for log in called At Ease Setup, to group users into common setup categories. And the setup for Menus allows much more customization than At Ease 2.0. It provides the ability to launch directly into the Finder and open Startup items, and there's a menu item to have users save documents on an AppleShare volume.

An administrator can arrange to have a set of Macintosh computers configured over a network. Logging the activity of users is also a feature of At Ease 2.0 for Workgroups that isn't available in At Ease 2.0.

You can lock the volume so that when a user boots from another disk, the At Ease disk won't mount. This prevents the unauthorized user from copying or changing the contents of the drive. The Workgroup Security Setup Screen also allows choices for the user to change password, log out idle user after a specified number of minutes, allow applications used from floppy disks, and allow remote administration.

Article Change History:
08 Aug 1995 - Reviewed for technical accuracy and added keyword.

Support Information Services

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Tech Info Library Article Number:12848

Tech Info Library

At Ease 2.0 for Workgroups: Description (8/95)

Revised: 8/9/95
Security: Everyone

At Ease 2.0 for Workgroups: Description (8/95)

==========

Article Created: 2 August 1993
Article Reviewed/Updated: 9 August 1995

TOPIC ----------

At Ease 2.0 for Workgroups manages shared Macintosh computers in multiuser environments.

DISCUSSION ----------

Features

The setup program allows the administrator to designate which applications and files are available to specific groups of users. You can also grant or deny permission for users to access folders, open documents, delete and copy files, make folders, and rename items. You can also change and update At Ease settings on multiple Macintosh computers over an AppleTalk network.

For security, you can assign each user an individual password to protect against unauthorized access to documents and applications. You can lock the At Ease disk to prevent users from starting up with a floppy disk, which would allow circumventing the program's other security features. And you can require users to save documents on floppy disks or AppleShare servers.

You can monitor user activity, checking who uses applications, how often, for how long, and more. This information allows decision-making about the use of a computer.

Users see large buttons that launch applications or open documents with one click. And users can access their applications and documents from any Macintosh on the network.

Components

At Ease 2.0 for Workgroups has all the components listed for At Ease 2.0 (except the At Ease Setup application). See the article "At Ease 2.0: Description" for

those components. In addition, At Ease 2.0 for Workgroups has the following components:

- Documents
  - At Ease Log is generated by the Setup application. The command is selected under the File menu. It lists logins, security risks, and applications used. It can print for all or selected users over a specified time. This file is normally invisible.
  - Setups stores setup configuration information.
- Applications
  - At Ease Setup for Workgroups allows an administrator to establish and configure At Ease setups and optionally manage setups over a network.
  - Unlock resets the administrator's password to null, and requires a password to use.

System Requirements

To run At Ease 2.0 for Workgroups, you need a Macintosh computer with 2MB of RAM (4MB recommended), a hard disk with at least 1.5MB of free disk space, and system software version 7.0 or later.

Order Number

M1860LL/A

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12849

Tech Info Library

Modem Standard Terms Defined (8/95)

Revised: 8/10/95
Security: Everyone

Modem Standard Terms Defined (8/95)

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Article Created: 30 July 1993
Article Reviewed/Updated: 10 August 1995

TOPIC ----------

What do the terms MNP, V.xx and bis stand for? I know that there are several standards, but what do they mean? Which standards do the Apple Express Modem and 2400 internal modem have?

DISCUSSION ----------

For a complete discussion of the topic, an Introduction to Data Communications book will give more information. A book by Andrew S. Tanenbaum is a good one.

Terms Defined

V.xx is a standard created and maintained by CCITT which is an International standards body for networking communication. There are a number of V.xx standards and some correspond to older US standards. For example:

- V.21 same as Bell 103 (a 300 bps (bits per second) standard)
- V.22 same as Bell 212A (a 1200 bps standard)
- V.24 same as RS-232 (a 2400 bps standard)
- V.34 is the 28,800 bps standard

The term bis refers to the second release of a standard, or rev 2. For example:

- V.22 is a 1200 bps standard
- V.22bis is a 2400 bps standard
- V.32 is a 9600 bps standard
- V.32bis is a 14,400 bps standard

MNP stands for Microcom Networking Protocol and is used to define a number of levels of data compression and/or error correction standards for modems when they are communicating. The modems have to have compatible standards

(MNP level) to work properly together.

Standards for Apple Products

For the Express Modem the following are the features:

- Hayes standard AT command set support
- V.32 and V.32bis (that means transfer rates of: 7200, 9600, 12000, 14400)
- V.42 error control - Supports MNP 2-4 as well
- V.42bis data compression - Supports MNP 5 as well

For the Internal 2400 Modem:

- Supports the following standards:
  - Bell 103 -- 300 bps
  - V.21 -- 300 bps
  - Bell 212A -- 1200 bps
  - V.22 -- 1200 bps
  - v.22bis -- 2400 bps
- Error control -- MNP 3-4, same as V.42 for Bell 212A, V.22 and V.22bis only
- Data Compression -- MNP 5, same as V.42bis for Bell 212A, V.22 and V.22bis only

What about MNP 10?

This is an error correction standard designed for really noisy lines such as cellular connections. To use MNP 10 both modems must support MNP 10 and at this time there are few modems that do. No Apple modems support MNP 10 at this time.

Do Apple modems support 28.8?

At this time there are no Apple modems that support v.34 or 28.8 kbps connections. All Apple modems should be able to connect with v.34 modems at lower speeds.

What is V-Fast?

V-Fast is what 28.8 class modems were called before the v.34 standard was set. Modems that say V-Fast may not work will with true v.34 standard modems.

Article Change History:
10 Aug 1995 - Update article with current information.

Support Information Services

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Tech Info Library Article Number:12851

SCSI Termination and Quadra 800 Performance (7/93)

Revised: 8/10/93
Security: Everyone

SCSI Termination and Quadra 800 Performance (7/93)

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Article Created: 27 July 1993

TOPIC ----------

A Macintosh Quadra 800 with a single 500MB internal SCSI drive displays intermittent problems starting up and mounting.

DISCUSSION ----------

Two anomalies can affect Macintosh Quadra 800 models, as well as other models which use the 53C96 SCSI chip, if proper SCSI cabling and termination specifications are not followed.

The first anomaly involves which internal SCSI cable connector on the Quadra 800 is used to attach to the internally terminated hard drive. Some units may have the drive connected to the second SCSI connector (the connector below the CD). This leaves the remaining SCSI cable in an unterminated state. The proper configuration is for the internal SCSI drive to be connected to the last connector on the internal SCSI Bus. If the Quadra refuses to boot or has trouble mounting the internal hard drive when no external drive is connected, simply reconnecting the internal drive to the last SCSI connector may solve the problem. Remember to re-initialize the drive after reattaching the cable, as the boot disk's directory may be damaged.

The second anomaly is related to the SCSI specification of the external cables, as well as the termination state of the external devices. If the Quadra 800 has a variety of different external SCSI cables attached, the performance of devices on the SCSI bus may be erratic and unreliable. All Macintosh systems should use cables with properly matched impedance (90 - 130 ohm), shielding, all data lines twisted and paired with ground, and a properly terminated SCSI bus.

If the Quadra at one time had mismatched external SCSI cables attached, future system problems may occur due to damage to the boot disk directory code. The Quadra may appear to work fine for some time and then fail with the same symptoms. Even though the cables have been replaced, the disk directory could

still possibly be damaged. Once the drive directory is damaged, the failures could periodically appear even though the root cause of the problem (defective or mismatched cables) has been removed .

To make troubleshooting these problems confusing, every piece of equipment, including the cables and termination (both Apple and third-party), may work fine when tested individually. But once the products are combined into a system, the problems appear.

In these higher performance systems, with SCSI speeds reaching 5MB per second, the overall configuration is much less forgiving of any deviation from the designed impedance and termination requirements of Apple SCSI cables and the SCSI bus.

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Tech Info Library Article Number:12852

Tech Info Library

HP DeskWriter: Resolving Macintosh Print Problems (8/93)

Revised: 8/3/93
Security: Everyone

HP DeskWriter: Resolving Macintosh Print Problems (8/93)

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Article Created: 2 August 1993

TOPIC ----------

Here's some information to assist in the troubleshooting of printing problems for the Hewlett-Packard DeskWriter and DeskWriter C in serial or AppleTalk modes with any Macintosh computer.

DISCUSSION ----------

The DeskWriter operates in either AppleTalk or serial modes. When you power on the Macintosh, the DeskWriter senses line signals to determine which mode of operation to use.

Failure to Print in AppleTalk Mode

If the unit fails to print in AppleTalk mode, make sure the setup has LocalTalk connectors instead of an 8-pin DIN serial cable. It's important to have correct impedance matching for the DeskWriter. Check for AppleTalk active, and the selection of the DeskWriter(AT) in the Chooser. It's important to turn on the DeskWriter after powering on the Macintosh for proper mode sensing for AppleTalk mode.

Failure to Print in Serial Mode

If the unit fails to print in serial mode, make sure AppleTalk is inactive and the DeskWriter(serial) is selected in the Chooser. If the unit was just switched from an AppleTalk setup, then cycle power on the DeskWriter or DeskWriter C for proper mode sensing to convert to serial mode.

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Tech Info Library Article Number:12853

Tech Info Library

Kensington Turbo Mouse and PowerBook Duo Dock (8/93)

Revised: 7/8/94
Security: Everyone

Kensington Turbo Mouse and PowerBook Duo Dock (8/93)

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Article Created: 3 August 1993

TOPIC -----

Are Kensington trackballs compatible with the PowerBook Duo Docks? I am using an old Turbo Mouse, as well as a standard Apple mouse, with my Duo Dock. Sometimes the Turbo Mouse trackball does not work; sometimes the mouse does not work; sometimes neither of them work.

DISCUSSION -----

Kensington trackballs are compatible with the Macintosh PowerBook Duo computers.

The Turbo Mouse ADB 3.0, which was discontinued by Kensington last year, may have problems working with the PowerBook Duo and other new, fast Macintosh models. While most people can use it with the Duo, some have reported freezing and hesitant movement. Because of indiviual variations from unit to unit, replacing the trackball base ususally solves the problem.

The Kensington Turbo Mouse 4.0 is the currently shipping trackball model. There are no known problems using the Turbo Mouse 4.0 with the PowerBook Duo, Duo Dock, or any other model of Macintosh computer.

Kensington trackballs have a five year warranty. To locate a vendor's address and phone numbers, use the vendor name as a search string.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12854

Tech Info Library

Floppy Disks: Unreadable or Won't Initialize (7/93)

Revised: 8/4/93
Security: Everyone

Floppy Disks: Unreadable or Won't Initialize (7/93)

==========

Article Created: 3 August 1993

TOPIC ----------

My 800K disk is suddenly, for no apparent reason, unreadable. I can't initialize any blank floppy disks, either. What's going on?

DISCUSSION ----------

You could have dirty heads in your drive. You can buy cleaning disks at most computer retailers. They look like ordinary disks, but they have a felt, moistened disk inside, instead of the plastic ones you normally use. You simply insert one of these cleaning disks and wait as long as the accompanying literature recommends.

You may also have a loose ribbon cable. If you have a modular, Macintosh II-series computer, turn the machine off, then take the cover off. Make sure the cable connecting the floppy disk drive to the main logic board is firmly seated. If you aren't comfortable doing this, or can't identify the ribbon cable, take your Macintosh to an Apple-authorized service center and have them check it for you. It shouldn't cost much, if anything, if a loose cable is the only problem.

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Tech Info Library Article Number:12856

Tech Info Library

PowerBook: Using a Modem with a Public Phone (7/93)

Revised: 8/4/93
Security: Everyone

PowerBook: Using a Modem with a Public Phone (7/93)

==========

Article Created: 3 August 1993

TOPIC --------------------

I want to have modem and fax capability from a public phone when I travel. I have a PowerBook 160 with an internal modem.

DISCUSSION --------------------

A few public telephones now have RJ11 jacks for connecting modems, but probably not enough to count on finding one when you need it. It may just be a matter of time before all public telephones are equipped with modem jacks to accommodate mobile computing.

Until then, determine if your modem can be configured to use an acoustic coupler. This device, the means by which all modems worked ten years ago, serves as a microphone and speaker for the handset.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12857

Tech Info Library

PowerBook 100: Creating and Using a RAM Disk(7/93)

Revised: 7/7/94
Security: Everyone

PowerBook 100: Creating and Using a RAM Disk(7/93)

==========

Article Created: 3 August 1993

TOPIC ----------

How can I use a RAM disk to maximize the power of my PowerBook 100?

DISCUSSION ----------

The PowerBook 100 is uniquely suited to the use of a RAM disk, because it's the only PowerBook with batteries that supply power to RAM even when the computer is shut down. On all other PowerBooks, the RAM is erased upon shut down.

Since PowerBooks are set to turn off their hard drives after several minutes of inactivity, simple tasks like saving or opening new documents require that the hard disk spin up again. This takes time and battery power. However, you can allow the hard disk to spin down and stay there if you use a RAM disk.

However, RAM disks are only efficient if you have 6MB or more of memory on your hard disk.

An ideal RAM disk has a System Folder, applications, documents and anything else you'd store on any disk. But for safety, it's a good idea to back up the information on the RAM disk to your hard drive periodically.

You will find, while using a RAM disk, that your battery life improves significantly.

Creating a RAM Disk
---
1) Choose Control Panels from the Apple menu.

2) Open the Memory control panel.

3) Click the On button beneath the words "RAM disk."

4) Drag the slider to choose the percentage of available memory you want to

use for your RAM disk. The default size is 100 percent of available memory over 2 MB; that is, the largest RAM disk you can have. The size appears in the "RAM Disk Size" box.

5) Close the control panel.

6) Choose Restart from the Special menu. A RAM disk appears on the desktop.

Making a RAM Disk Your Startup Disk
---

1) Insert the Install 1 floppy disk that came with your PowerBook.

2) Open the Installer program.

3) Click the Switch Disk button until the RAM disk is displayed.

4) Click Customize.

5) Scroll through the list of items until you see "Min System for Macintosh PowerBook 100.

6) Click Install, and follow the instructions on the screen.

7) Click Quit.

8) Choose Control panels from the Apple menu.

9) Open the Startup Disk control panel.

10) Select the RAM disk as your Startup disk.

11) Choose Restart from the Special menu.

Make a backup copy of the disk a soon as you can, and back up its contents regularly to the hard drive.

Removing the RAM Disk

If you later decide to remove the RAM disk:

1) Throw its contents away and empty the trash.

2) Choose Control Panels from the Apple menu.

3) Choose the Memory control panel.

4) Move the slider in the memory control panel to 0 percent.

Support Information Services

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Tech Info Library Article Number:12858

Tech Info Library

Express Fax Modem: Fax Icon Crossed Out (8/93)

Revised: 7/8/94
Security: Everyone

Express Fax Modem: Fax Icon Crossed Out (8/93)

==========

Article Created: 3 August 1993

TOPIC ----------

When I boot up on my PowerBook Duo, the Fax INIT for my Apple Express Fax Modem appears with an X through it. The modem INIT still works fine, but I can't send faxes.

DISCUSSION ----------

It sounds like an earlier system crash corrupted the Express Fax Preference file. You can fix it by throwing away the Fax Terminal Preference file in the System Preferences folder. You can restore it from the original software disks.

This problem was common to early versions of Apple Express Fax software, but has since been corrected in the 1.0.4 version.

Support Information Services

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12859

Tech Info Library

HyperCard Virus: Merryxmas Virus (11/94)

Revised: 11/1/94
Security: Everyone

HyperCard Virus: Merryxmas Virus (11/94)

==========

Article Created: 3 August 1993
Article Reviewed/Updated: 01 November 1994

TOPIC --------------------

The Merry Christmas (merryxmas) virus is written in HyperTalk, the HyperCard scripting language. It can't affect any files other than HyperCard stacks and does not destroy or damage data. The most common indication of the merryxmas virus is that stacks launch and run much slower.

DISCUSSION --------------------

Many stacks can function properly when infected, but the Service Source won't function properly with this virus present. When the Service Source CD-ROM is built, every stack on the CD is checked for the virus, which is eliminated if found.

Basically, the virus traps these messages:

openbackground
closebackground
idle

Then it looks in the Home stack script for itself, and if it isn't there it copies itself. From the Home stack it checks the currently active stack for itself, and if it isn't there it copies itself.

You can obtain the merryxmas vaccine and documentation on AppleLink.

The first thing you need to do is read the information about the merryxmas vaccine. Follow the instructions to ensure you don't infect the stack!

Then run the Virus prevention installer. The documentation is built into the stack. This will install the built-in script to prevent infection.

Merryxmas Vaccine HyperCard Stack Requirements

This stack requires HyperCard v2.1. This is to handle System 7 aliases. System 7 isn't required. Color monitors will display "activity colors."

If you use a compression utility such as AutoDoubler, be sure to have adequate free space on the volume being checked. Stacks have a way of expanding as they are being examined.

What The Stack Will Do

This vaccine stack will quickly locate all the stacks on the volume of your choice; peek at the stack scripts (without opening the stacks); and replace the infected scripts without the virus code. A bonus feature is the option to let it compact those stacks that have free space available for compacting. Don’t worry about locked stacks —- this stack will unlock and relock them.

How to Use The Stack

1) Make a backup of all your stacks, if not your whole drive.
2) Click the Disinfect button.
3) Select the volume you wish to disinfect.

If you wish to test the stack first, use it to scan a floppy disk. It will scan locked volumes without making changes.

Script Segment That Will Prevent Infection

As an alternative to the vaccine stack, you can add the following script segment to the script of your Home stack and all your commonly used stacks. This should prevent the stacks from becoming infected. Copy it exactly as it appears below:

```
--this must be here to prevent the merryxmas virus from
--infecting this stack
--  on idle --merryxmas
--  on openbackground --merryxmas
--  on closebackground --merryxmas
```

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
01 Nov 1994 - Changed title to exact name of virus.
19 Sep 1994 - Added script segment info on how to prevent infection.

..TIL12860-HyperCard_Virus-Merryxmas_Virus_11-94.pdf

15 Sep 1994 - Moved binary from TIL to Apple SW Updates.

Support Information Services

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Tech Info Library Article Number:12860

Tech Info Library

Printing Grayscale: Requires at Least a 68020 Processor (7/93)

Revised: 8/4/93
Security: Everyone

Printing Grayscale: Requires at Least a 68020 Processor (7/93)

==========

Article Created: 3 August 1993

TOPIC --------------------

Can I print grays from a PowerBook 100 to a StyleWriter II? In the Print window, the Print Grays option is grayed out. That option is available on my Classic II, so why won't my PowerBook offer it?

DISCUSSION --------------------

The StyleWriter II requires Color QuickDraw, which needs at least a 68020 processor to run. Therefore, it is unavailable to the Macintosh Classic, Plus, SE and PowerBook 100s. On these systems, only black and white printing is possible. The Classic II, as you discovered, has a 68030 processor, so it can handle Color QuickDraw and grayscale printing.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12861

Tech Info Library

Run Disk First Aid 7.1.1 or Later Before HD SC Setup (12/93)

Revised: 12/13/93
Security: Everyone

Run Disk First Aid 7.1.1 or Later Before HD SC Setup (12/93)

==========

Article Created: 4 August 1993
Article Reviewed/Updated: 10 December 1993

TOPIC ----------

I received the message "Unable to unmount drive, file may be in use." This happened when I tried to update the hard disk drivers with the new Apple HD SC Setup from the Hardware System Update 2.0 as explained in the ReadMe file. When I rebooted the Macintosh, the hard drive wouldn't mount, and it displayed a flashing question mark.

DISCUSSION ----------

Most likely, the system had already run into the problem resolved in the updated drivers. You must run Disk First Aid 7.1.1 or later to ensure that the problem isn't present on the disk prior to updating the drivers with HD SC Setup 7.2. If this order isn't followed, then updating the drivers will fail.

HD SC Setup version 7.2.2 fixes this problem.

Article Change History:
10 December 1993 - Added information about HD SC Setup version 7.2.2.
23 August 1993 - Revised to include Disk First Aid versions later than 7.1.1.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12862

Tech Info Library

Disk First Aid 7.1.1 and HD SC Setup 7.2 (8/93)

Revised: 8/9/93
Security: Everyone

Disk First Aid 7.1.1 and HD SC Setup 7.2 (8/93)

==========

Article Created: 4 August 1993

TOPIC -----

What are the differences between Disk First Aid 7.1 and Disk First Aid 7.1.1 and Apple HD SC Setup 7.1 and Apple HD SC Setup 7.2? The Readme file advises to update the Disk Tools disks to these versions. It just says that the Apple HD SC Setup 7.2 allows greater flexibility in formatting large disks.

DISCUSSION -----

Disk First Aid (DFA) 7.1.1

DFA 7.1.1 has two changes from 7.1:

- To set the Volume OK bit when a volume passes all tests
- To change the default device that's checked by DFA to be other than the volume containing DFA.

The first of these helps resolve the Extents File problem found with 120MB drives. This was the case where a drive would fail to be mounted even though the drive was actually Okay. The computers that most commonly saw this problem were PowerBooks with 120MB drives.

The second of these was purely a convenience feature. If you run DFA from a floppy disk (this is the usual way), the default drive listed used to be the floppy disk which wasn't very useful. Now it will pick a hard drive in the SCSI chain.

HD SC Setup 7.2

HD SC Setup has two changes as well. Once again, the first has to do with the 120MB drive issue. If you update a drive's drivers with version 7.2, then you'll prevent this problem from occurring. Note that if your drive

has run into this problem, you first need to run Disk First Aid 7.1.1 to clear out the invalid bit.

The second change is simply larger volume support. Older versions of HD SC Setup didn't contain support for 1GB+ size drives.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12863

A/UX: Visual Editor Set To TextEditor (8/93)

Revised: 8/5/93
Security: Everyone

A/UX: Visual Editor Set To TextEditor (8/93)

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Article Created: 3 August 1993

TOPIC -----

I'm using A/UX 3.0 and I'm having problems using the visual editor feature of mailx. In my .mailrc file, I have:

```
set VISUAL=/mac/bin/TextEditor
```

When creating a mail message, using mailx, I issue the "~v" command, and TextEditor comes up, showing a filename of /tmp/Re####, where #### is some random number. After typing some text, I save it, and then get the following error message: "Can't write onto file 'Re####' with an okay button." When I quit, I get a "save changes?" dialog, but I still get the same error. I have plenty of free disk space on "/" when this is occurring. Any suggestions as to what is going wrong?

DISCUSSION -----

We are able to reproduce this problem in A/UX 3.0, it's a TextEditor bug in A/UX 3.0. However, it worked under A/UX 3.0.1 and an Apple Workgroup Server (AWS) 95.

We suggest you upgrade to A/UX 3.0.1.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12864

AudioVision Installer Disk: Software Components (8/93)

Revised: 8/4/93
Security: Everyone

AudioVision Installer Disk: Software Components (8/93)

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Article Created: 3 August 1993

TOPIC --------------------

This article lists the software files found on the AudioVision Installer disk.

DISCUSSION --------------------

AudioVision Installer disk contents:

- AudioVision Installer Script
- AudioVision Read Me (contains compatibility notes, will go in root)
- Installer
- QuickTime (will go into Extensions folder, not installed under 7.1)
- Sound (will go into Extensions folder, into Control Panels under 7.1)
- Video (will go into Control Panels folder)
- ~AudioVision (will go into Extensions folder)

The tilde in ~AudioVision means that it will load after most other extensions for compatibility. The tilde shouldn't be removed.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12865

Tech Info Library

AudioVision 14 Display: Compatibility (7/95)

Revised: 7/14/95
Security: Everyone

AudioVision 14 Display: Compatibility (7/95)

==========

Article Created: 3 August 1993
Article Reviewed/Updated: 14 July 1995

TOPIC ----------

This article gives some compatibility information about the AudioVision 14 Display.

DISCUSSION ----------

The AudioVision 14 Display has been tested on the following Macintosh computers:

- Quadra 700, 900, 950, 800, 840AV
- Centris 610, 650, 660AV
- LC, LC II, LC III
- Performa models (NOTE: some of the audio/visual features of the monitor will only work with the AV computers.)
- II, IIx, IIcx, IIsi, IIci, IIfx, IIvx, IIvi
- PowerBook Duo 210, 230
- PowerBook 160, 165c, 180, 180c
- PowerBook 500 Series

The previous Apple Microphone does not work with the AudioVision Display. Be sure to use the PlainTalk Microphone.

Article Change History:
14 Jul 1995 - Added PowerBook 500 series
29 Nov 1993 - Added Performa to the list

Support Information Services

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Tech Info Library Article Number:12866

Tech Info Library

usrEZ Software, Inc.

Revised: 6/2/94
Security: Everyone

usrEZ Software, Inc.

==========

Article Created: 4 August 1993
Article Reviewed/Updated: 2 June 1994

usrEZ Software, Inc.

18881 Von Karman AVe., Suite 1270
Irvine, CA 92715

Telephone: 714-756-5140

Fax: 714-756-8810

Company Profile:
Software, specializing in security software for the Macintosh.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12867

Tech Info Library

Apple Backup: Type 1 Error (8/93)

Revised: 8/4/93
Security: Everyone

Apple Backup: Type 1 Error (8/93)

==========

Article Created: 3 August 1993

TOPIC ----------

This article describes a possible cause of a type 1 error when running Apple Backup.

DISCUSSION ----------

If the hard drive has any file names that begin in a period (for example,.newsrc), you'll get an error. Rename the file so that it doesn't begin with a period.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12868

Tech Info Library

LaserWriter Pro 630: Word Perfect & HP IIp Emulation (8/93)

Revised: 8/9/93
Security: Everyone

LaserWriter Pro 630: Word Perfect & HP IIp Emulation (8/93)

==========

Article Created: 6 August 1993

TOPIC --

I have a LaserWriter Pro 630 that is configured for Hewlett-Packard LaserJet IIp emulation. When I print WordPerfect's printer test, most of it prints properly, but the text is printed in the same size no matter whether Large, Bold, and Extra Large are selected.

Why?

DISCUSSION --

With the information we have, we believe that the problem lies in the HP PCL code (Printer Control Language used in Hewlett-Packard LaserJet IIP printers) produced by WordPerfect.

The "Large, Bold, and Extra Large" commands are not part of HP PCL, and are application-specific. To provide larger or "bolded" characters, there are corresponding HP PCL commands (escape codes) to change character height and stroke weight attributes. We suggest calling the application developers for further information.

You may also want to investigate how HP emulation is being invoked. In addition to enabling emulation via the printer thumbwheel switch, you can also invoke HP emulation via PostScript and thus a PostScript driver would be required. MS-DOS applications provide their own PostScript drivers. In the case of Windows applications, Microsoft ships various PostScript drivers with its Windows package.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12870

Tech Info Library

LaserWriter Pro TraySwitching: LW Utility vs Print Dialog (7/93)

Revised: 8/6/93
Security: Everyone

LaserWriter Pro TraySwitching: LW Utility vs Print Dialog (7/93)

==========

Article Created: 5 August 1993

TOPIC ----------

What is the difference between turning on the LaserWriter Pro's TraySwitching feature through LaserWriter Utility 7.4.1 and the Options button in the actual Print dialog of LaserWriter driver version 8.0?

DISCUSSION ----------

Enabling this option through the Print dialog box will only affect the current job.

Enabling TraySwitching via the LaserWriter Utility will save the selection for all jobs and will retain the setting even when the printer is powered off.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12871

Tech Info Library

PerFit: Provides Support for Outbound Systems Laptops (8/93)

Revised: 8/6/93
Security: Everyone

PerFit: Provides Support for Outbound Systems Laptops (8/93)

==========

Article Created: 5 August 1993

TOPIC ----------

Where can I get support or service for my Outbound laptop, now that Outbound Systems has gone out of business?

DISCUSSION ----------

PerFit Inc. supplies hardware and software support, as well as service and upgrades for all Outbound Systems Macintosh-compatible laptops.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12873

Tech Info Library

Macintosh: No RTS Signal (8/93)

Revised: 8/9/93
Security: Everyone

Macintosh: No RTS Signal (8/93)

==========

Article Created: 6 August 1993

TOPIC -----

I'm having a serial communications problem with the Macintosh. I'm trying to access a Lecroy Digital oscilloscope over the RS-232-c line, and I need to know if there is a way to read a signal on the rts pin, similar to calling ibwait in gpib communication. I'm writing a program in Fortran on the Macintosh, and need to find an analogous command to the ibwait command, so that my program will wait until the signal comes and then transmit a command following the signal.

DISCUSSION -----

The Mac uses RS-422, rather than RS-232, for signaling. The RTS signal of the SCC in the Macintosh does not appear on the serial connectors. The DTR line does appear as HSKo (Pin 1) and can be set by calling the Serial driver with csCodes 16, 17 & 18 as described on page 226 in Inside Macintosh IV.

Another reference, which explains the connections of a Mac serial port somewhat, is the "Guide to the Macintosh Family Hardware" 2nd edition, published by Addison-Wesley. Chapter 10 is all about the serial ports on the Macintosh.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12874

Electronic Devices: Use on Airplanes (8/93)

Revised: 7/7/94
Security: Everyone

Electronic Devices: Use on Airplanes (8/93)

==========

Article Created: 9 August 1993

TOPIC ----------

I've heard that using a PowerBook on an airplane disrupts radio frequencies. Is that true?

DISCUSSION ----------

A number of pilots have reported that passenger use of portable electronic devices in some cases may have interfered with the aircraft's flight navigation or communications systems. In response, many airlines are restricting or managing the use of electronic equipment during flights.

The International Air Transport Association (IATA) recently recommended that its member airlines prohibit passengers from using electronic devices during takeoffs and landings.

It's probably best to check with your airline to find out specific rules for your flights.

Some of the pilot-reported incidents of interference have involved PowerBook computers, but it is unclear whether those computers indeed disrupted airplane communication or, if they did, how. Apple is aiding an investigation into these incidents to prevent them in the future.

Based on what is known now about the effects of electronics on airplane communications, the U.S. Federal Communications Commission (FCC) and the International Special Committee on Radio Interference have established very strict regulations for radio frequency emissions from personal computers. All Apple products are designed to conform to these standards.

The in-flight use of cellular phones, radios, and other devices with antennas that transmit or receive radio signals have been long prohibited because they could interfere with ground communications. But the effects of passive electromagnetic emissions from equipment such as laptop computers are not

clear.

Support Information Services

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Tech Info Library Article Number:12875

Tech Info Library

PowerBook 100 and StyleWriter II: No Grayscale Support (8/93)

Revised: 7/7/94
Security: Everyone

PowerBook 100 and StyleWriter II: No Grayscale Support (8/93)

==========

Article Created: 9 August 1993

TOPIC ----------

I am trying to buy a StyleWriter printer and am considering which model to buy. The StyleWriter II supports GrayShare but I'm sure I read somewhere that the PowerBook 100 has Classic QuickDraw -- which means it doesn't support grayscale printing.

DISCUSSION ----------

This is true. To enable grayscale printing, you must have Color QuickDraw installed on your hard drive. Color QuickDraw requires at least a 68020 CPU, and a PowerBook 100 has only a 68000 CPU. Therefore, it can only support Classic QuickDraw.

Support Information Services

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12878

Tech Info Library

Duo and PowerBook: Batteries Not Interchangeable (8/93)

Revised: 7/7/94
Security: Everyone

Duo and PowerBook: Batteries Not Interchangeable (8/93)

==========

Article Created: 9 August 1993

TOPIC --------------------

Can I use the batteries from my Duo in my PowerBook? They seem to last longer than the ones in my PowerBook.

DISCUSSION --------------------

No. Members of the PowerBook line all have different batteries, and they are not meant to work across models.

Battery types for the PowerBook line:

PowerBook 100	lead-acid
other non-Duo PowerBooks	Nickel-Cadmium (NiCad)
PowerBook Duo	Nickel-Hydride (NiHy)

The Duo's batteries may last longer than batteries used in other PowerBooks if you properly maintain and recharge them. However, the two battery types are not interchangeable. In fact, the batteries for one model will not fit in the battery slots for another.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12879

AWS 95: How To Attach Disks For Best Performance (5/93)

Revised: 8/9/93
Security: Everyone

AWS 95: How To Attach Disks For Best Performance (5/93)

==========

Article Created: 28 May 1993

TOPIC ----------

How should disks be attached for best performance on the Apple Workgroup Server (AWS) 95?

DISCUSSION ----------

I/O acceleration is only provided to SCSI devices attached to the PDS card. When adding disk drives to the AWS 95 system it is important to make sure that they are attached to the SCSI connectors on the PDS card, not to the main logic board; this will insure the best disk I/O performance from the system.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12880

Tech Info Library

Fax/Modems: Disabling Call-Waiting (8/93)

Revised: 8/19/93
Security: Everyone

Fax/Modems: Disabling Call-Waiting (8/93)

==========

Article Created: 6 August 1993

TOPIC -----

I'm using an AppleFax modem on a Performa 405. I have call-waiting, and sometimes and incoming call interferes while I'm using my fax/modem, corrupting or blocking the message. Most of the time, I get an "RTF" message. What does that mean, and how can I get around this?

DISCUSSION -----

An RTF message indicates the fax modem is asking for retraining. That means the information was indeed corrupted by noise on the phone line.

In most cases, preceding the number you are dialing with *70 should do the trick.

If you are using a rotary dial modem, precede the number with 1170.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:12881

Tech Info Library

Duo: Cure for Screen Flicker (8/93)

Revised: 7/7/94
Security: Everyone

Duo: Cure for Screen Flicker (8/93)

==========

Article Created: 6 August 1993

TOPIC --------------------

Why is my Duo's screen flickering?

DISCUSSION --------------------

This occasionally happens when the screen is set to display the maximum number of grays. You may be able to stop the flickering by adjusting the contrast control. If that doesn't work:

1) Open the Control Panels folder (it's in the Apple menu).

2) Open the Monitors control panel.

3) Select a smaller number of grays.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12882

AWS 95: L2 Cache On The PDS Card (5/93)

Revised: 8/9/93
Security: Everyone

AWS 95: L2 Cache On The PDS Card (5/93)

==========

Article Created: 28 May 1993

TOPIC -----

What is the L2 cache on the Apple Workgroup Server (AWS) 95 PDS card?

DISCUSSION -----

This is high-speed static RAM which decreases access time for data from the disk. Read performance is significantly enhanced because the processor doesn't have to go all the ay to main memory for instructions or data that are in the cache. All cache management is done transparently in hardware so applications do not need to be re-written to be cache aware.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12883

Tech Info Library

Duo: If Processor Cycling Slows Applications (8/93)

Revised: 7/8/94
Security: Everyone

Duo: If Processor Cycling Slows Applications (8/93)

==========

Article Created: 9 August 1993

TOPIC ----------

Why do some of my application run extremely slow on my Duo, but not on my desktop Macintosh?

DISCUSSION ----------

The Duo has several settings for battery conservation that ration power to different areas of the computer.

The Duo is set to reduce the power supply to the microprocessor when the computer is inactive for a few seconds. Most applications will not be affected significantly by this feature, but if you find certain applications perform unacceptably slowly, turn Processor Cycling off:

1) Choose Control Panels from the Apple menu.

2) Click the Options menu.

3) Click "Don't allow cycling."

Support Information Services

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12884

Tech Info Library

Macintosh: System Error Type 15 (8/93)

Revised: 8/19/93
Security: Everyone

Macintosh: System Error Type 15 (8/93)

==========

Article Created: 9 August 1993

TOPIC ----------

I keep getting the message "Sorry, an error of type 15 occurred" when my PowerBook 170 hard disk spins up while I'm on battery power.

DISCUSSION ----------

A Type 15 System Error is a segment loader error. The segment loader is a portion of the operating system that loads pieces of a program into memory. These pieces contain program instructions. Programs on the Macintosh can be split into many small pieces (with a usual maximum size of 32,768 bytes) so that not all the program is required to be in memory at once. The segment loader is used to load a piece of a program when it is needed. If it can't load that piece, then the program can no longer run, and a System Error 15 is reported.

Try reinstalling your system software from the disks that came with your computer, or a backup copy if you have one.

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Tech Info Library Article Number:12885

Tech Info Library

PowerBook 200 & 2300 Series: Memory Card Not Recognized (10/95)

Revised: 10/9/95
Security: Everyone

PowerBook 200 & 2300 Series: Memory Card Not Recognized (10/95)

==========

Article Created: 6 August 1993
Article Reviewed/Updated: 6 October 1995

TOPIC ----------

I bought the largest memory card available for my Macintosh PowerBook (Duo) computer, but my machine does not seem to be recognizing or accessing it. I tried it in my friend's PowerBook Duo computer and it worked fine. Does this mean there is a faulty card slot on my computer's logic board?

DISCUSSION ----------

All Macintosh PowerBook Duo computers have memory controllers on their logic boards designed to understand up to a certain maximum amount of RAM. Therefore, the amount of memory that your Duo can read depends on which model you have. The Maximum amount of RAM and the largest card that it can accept is shown in the following table.

Begin_Table

Macintosh PowerBook (Duo) Model	Maximum Amount of RAM	Largest Memory Module
PowerBook 210, 230, and 250	24 MB	20 MB
PowerBook 270c	32 MB	28 MB
PowerBook 280 and 280c	40 MB	36 MB
PowerBook 2300c*	56 MB	48 MB

*Note: All of the models have 4 mb on the motherboard except the 2300c which has 8 mb on the motherboard.

End_Table

One other possible reason that your RAM card works in your friend's PowerBook computer but not yours is probably due to the range of RAM tolerance specifications allowable for Apple Macintosh computers. Because the tolerance is defined within a range it can vary from unit to unit. The third-party companies

that manufacture memory cards for Apple's Macintosh computers may design them at the very limits (high or low) of the PowerBook computer's tolerance. Apple makes no guarantee that third-party products will work with Apple products.

To test whether or not your machine falls within the Apple-specified tolerance parameters you (or an authorized Apple Service technician) should see how it performs with the Apple 4 MB or 8 MB card. If that functions properly in your computer, there is nothing wrong with your PowerBook computer, but the RAM card may not have been manufactured within the computer's tolerances. If this is the case, you will need to contact the manufacturer of the card for more information.

Article Change History:
06 Oct 1995 - Added new computers.

Support Information Services

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Tech Info Library Article Number:12886

Tech Info Library

PowerBook: Disabling Processor Cycling/System Rest (5/96)

Revised: 5/8/96
Security: Everyone

PowerBook: Disabling Processor Cycling/System Rest (5/96)

==========

Article Created: 9 August 1993
Article Reviewed/Updated: 8 May 1996

TOPIC ----------

Every once in a while my PowerBook computer slows down for no apparent reason. I tried to determine if there was a pattern, but it seems to happen in just about any application.

DISCUSSION ----------

The pattern you might have noticed is that the slow down occurs after you have left your PowerBook computer inactive for a certain period of time. The PowerBook drops the power consumption of its microprocessor to save battery power during periods of inactivity.

Inactivity is defined by the PowerBook as no user interaction, and no interaction with a peripheral device, such as a modem or disk drive.

If your PowerBook is running System 7.0.1 (which came installed on the PowerBook 100, 140, and 170), this feature is known as "system rest". If your PowerBook is running System 7.1 or later (which came installed on all other PowerBook computers to date), this feature is known as "processor cycling".

You can disable system rest or processor cycling if it becomes an annoyance. However you should keep in mind that your battery life will not be as good, especially if you often must divert your attention away from your PowerBook during use.

Portable Control Panel
==========

To disable system rest (on PowerBook computers that have the Portable control panel):

Step 1

Choose Control Panels from the Apple menu, and open the Portable control panel.

Step 2

Hold down the Option key and click on the words "Minutes Until Automatic Sleep."

Step 3

In the window that appears, click Don't Rest.

Step 4

Click OK to disable Rest Mode, or click Cancel.

PowerBook Control Panel
=======================

To disable processor cycling (on PowerBook computers running System 7.1, which use the PowerBook control panel):

Step 1

Choose Control Panels from the Apple menu, and open the PowerBook control panel.

Step 2

Hold down the Option key on the keyboard and click the Options button.

Step 3

Under Processor Cycling in the next window, click "Don't allow cycling".

Step 4

Click OK for your new settings to take effect, click Cancel to leave the settings as they were before, or click Use Defaults to return to the original settings.

PowerBook Control Panel
=======================

(PowerBook 500 series and System 7.5.x)
To disable processor cycling (on PowerBook computers running System 7.1.x, 7.5.x or later, which use the PowerBook control panel):

Step 1

Select Control Panels from the Apple menu, and open the PowerBook control panel.

Step 2

Slide the select switch to "Easy".

Step 3

While holding the option key down select "Custom". A new choice, named Options, will appear.

Step 4

Put an "X" in the box to turn off processor cycling.

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Tech Info Library Article Number:12887

Tech Info Library

PowerBook: If You Have Trouble Re-establishing AppleTalk 8/93

Revised: 7/7/94
Security: Everyone

PowerBook: If You Have Trouble Re-establishing AppleTalk 8/93

==========

Article Created: 5 August 1993

TOPIC --------------------

My PowerBook is generally hooked to the AppleTalk network in my office, However, after I took my PowerBook on a trip I tried to reconnect to the network, I couldn't use the network services. What happened?

DISCUSSION --------------------

AppleTalk employs something called node-addressing. Each AppleTalk device will choose a network node number on start-up when first connected to the network. When the computer is turned off, then on again, it automatically chooses the same node number.

When you took the PowerBook off the network, you made the node number it had been using available to other devices on the network. Chances are, another device chose that number while you were away.

Normally, if a device returns to the network to find its node number taken, it chooses a new one. However, a PowerBook connected to a network while it is in Sleep mode will try to use its old node number, even if it has been reassigned.

To resolve your problem, you may do one of two things:

- Connect the sleeping PowerBook to the network and restart; or
- Wake the PowerBook, open the Chooser in the Apple menu and turn off AppleTalk, connect to the network, and turn AppleTalk back on.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12888

Tech Info Library

PowerBook: Clicking Sound on Startup (9/94)

Revised: 9/26/94
Security: Everyone

PowerBook: Clicking Sound on Startup (9/94)

==========

Article Created: 9 August 1993
Article Reviewed/Updated: 26 September 1994

TOPIC ----------

I keep hearing an unnerving clicking or popping sound around the same time as the chime when I turn on my PowerBook. Sometimes it happens while I'm working in an application, too.

DISCUSSION ----------

Actually, nothing is wrong. The PowerBook comes equipped with power-management circuitry that automatically cuts power to features that are not in use.

This circuitry controls the sound feature, among others. Thirty seconds after the PowerBook last played a sound, power is cut to the sound chip. Each time it must be accessed anew (for instance, when you power up) the power has to be revived, which creates that clicking noise.

A freeware extension called Shhh! was written to force the PowerBook to maintain power to the sound circuitry thus preventing the clicking noise. Shhh! is freeware and is not supported by Apple.

Article Change History:
26 Sep 1994 - Removed binary attachment.

Support Information Services

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Tech Info Library Article Number:12889

Tech Info Library

AWS 95: Maximum Number of Macintosh Volumes (5/93)

Revised: 8/9/93
Security: Everyone

AWS 95: Maximum Number of Macintosh Volumes (5/93)

==========

Article Created: 28 May 1993

TOPIC ----------

What is the maximum number of Macintosh volumes that can be attached to an Apple Workgroup Server (AWS) 95?

DISCUSSION ----------

The Macintosh OS sees all four SCSI buses as one; this makes it unable to distinguish SCSI devices with the same id, but on different SCSI buses. Each HFS volume must have a unique SCSI id between 0 and 6, for a maximum of 7 HFS volumes.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12890

AWS 95: Maximum Number of SCSI Devices (5/93)

Revised: 8/9/93
Security: Everyone

AWS 95: Maximum Number of SCSI Devices (5/93)

==========

Article Created: 28 May 1993

TOPIC ----------

What is the maximum number of SCSI devices that can be attached to the Apple Workgroup Server (AWS) 95?

DISCUSSION ----------

The total AWS 95 system has four separate SCSI busses, two on the main logic board and two on the PDS SCSI accelerator card. Because each bus can support 7 devices the theoretical limit on SCSI devices is 28. However there is only enough space and connectors for 20 devices.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12891

Tech Info Library

AWS 95: Numbering For Multiple SCSI Buses (5/93)

Revised: 8/9/93
Security: Everyone

AWS 95: Numbering For Multiple SCSI Buses (5/93)

==========

Article Created: 28 May 1993

TOPIC ----------

How does the numbering for the multiple SCSI busses work on the Apple Workgroup Server (AWS) 95?

DISCUSSION ----------

The AWS 95, with the PDS accelerator card installed, has 4 SCSI busses available for general use. They are numbered in the order they are searched in the Mac environment:

1 - main logic board internal
2 - main logic board external
3 - accelerator card internal
4 - accelerator card external

The PDS card has an additional internal SCSI connector so that it is possible to connect disk mirroring or RAID devices in parallel.

With this bus numbering scheme, the slice 0 of the drive attached to the internal PDS card connector and set to SCSI id 0 is referred to as:

/dev/dsk/c300d0s0

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Tech Info Library Article Number:12892

Tech Info Library

AWS 95: SCSI Devices Referenced Under A/UX 3.0.1 (5/93)

Revised: 8/9/93
Security: Everyone

AWS 95: SCSI Devices Referenced Under A/UX 3.0.1 (5/93)

==========

Article Created: 28 May 1993

TOPIC ----------

How are SCSI devices referred to under A/UX 3.0.1?

DISCUSSION ----------

The A/UX 3.0.1 SCSI disk driver has been modified to allow selection among the four SCSI busses available on the AWS 95 platform. Referring to disk drives is different on the AWS 95 than under traditional A/UX. Each disk must be identified not only by its SCSI address, but also by the SCSI bus that it is attached to.

The SCSI busses are numbered 1 through 4 (see the accelerator card section of this document). In previous versions of A/UX a SCSI drive with address 5, drive 0, slice O would be specified through the device file /dev/dsk/c5dOsO. Now you must also specify the bus number.

The new format is /dev/[r]dsk/cbOad#s#, where b is the SCSI bus (numbered from 1 to 4) and a is the SCSI address (numbered from O to 6). The SCSI busses are numbered in the order they are searched in the Mac environment: main logic board internal, main logic board external, PDS card internal, and PDS card external. The busses are numbered from 1 to 4 instead of from O to 3 to avoid the problem of forcing leading zeros when generating device file names.

The old format, /dev/[r]ds/c#d#s#, where c# is the SCSI address, d# is the logical unit number, and s# is the slice number will continue to work. The c# field will specify both the SCSI bus and the SCSI address of the device. The current device files(/dev/dsk/c[O-6]d#s#)will refer to the device that is visible to the Macintosh OS regardless of what SCSI bus the drive resides on. This is for backwards compatibility.

For example, these path names map in the following way:

Pathname	SCSI ID	SCSI Bus
/dev/dsk/c203dOsO	3	Mother Board External
/dev/dsk/c403dOsO	3	PDS Card External
/dev/dsk/c3dOsO	3	Wherever it is found first

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12893

Tech Info Library

AppleTalk v58.02: Conflicts with Shiva Products (8/93)

Revised: 8/10/93
Security: Everyone

AppleTalk v58.02: Conflicts with Shiva Products (8/93)

==========

Article Created: 9 August 1993

TOPIC --

I'm having problems using a Shiva EtherGate after I installed AppleTalk v58.02 from the NSI 1.3.3. It can now take five minutes for the Network Control Panel to open when selecting the Shiva driver. When I ran the standard System 7.1 Network C-Dev it opened fine. I'm using 58.02 for Shiva's Ethernet box to work. What could possibly be causing this?

DISCUSSION --

We checked with Shiva Tech Support who confirmed that Shiva EtherGate (and NetModem), produce the symptoms you describe above when used with any Macintosh running AppleTalk v58.02. When you loggon with the EtherGate they are hearing complaints that it may take 5 or more minutes to make the connection, (and 2 or more minutes when using the NetModem), during which time it appears that the Macintosh has hung. Once the connection is made everything else works fine at expected performance levels. Nevertheless, they recommend dropping back to an earlier version of AppleTalk prior to v58.02, such as v58, to avoid these long loggon times, until they are able to revise their drivers. The current version of the EtherGate software is 1.6.1, and is posted on AppleLink in the third party bulletin board.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12894

Tech Info Library

Express Modem and Cellular Phone With No Dial Tone CCL (8/93)

Revised: 8/10/93
Security: Everyone

Express Modem and Cellular Phone With No Dial Tone CCL (8/93)

==========

Article Created: 9 August 1993

TOPIC -----

I can't dial out with a cellular phone with my Express Modem in a PowerBook Duo. I have the appropriate hardware needed with a data jack, but I need help rewriting the CCL to work with no dial tone (NDT). What do I need to do?

DISCUSSION -----

In order to disable dial tone detection use the Xn command in the dialing command. For example ATX3DT 18005551212. X0, X1, and X3 are the commands to use for blind dialing (no dial tone needed). The difference in the three commands is the result codes that they enable. The description of the result codes and the Xn command is documented in the Express Modem AT Commands file that comes with the Express Modem Software.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12895

Tech Info Library

Language Kits: Express Modem & WorldScript Compatibility (7/95)

Revised: 7/6/95
Security: Everyone

Language Kits: Express Modem & WorldScript Compatibility (7/95)

==========

Article Created: 10 August 1993
Article Updated/Reviewed: 6 July 1995

TOPIC ----------

One of the Language Kits is installed on my computer. I tried to Fax a document using Apple's PowerBook Express Modem and Fax Sender 1.5.x. I had the following problems:

Fax Phone Book Window Will Not Scroll

In the Fax Send "Fax Phone Book" window, the window refuses to scroll, despite the fact that the scroll bar is dark (the scroll bar box can be moved with the mouse but the contents of the window won't scroll). However, the arrow keys on the keyboard still function correctly.

Fax Does Not Include Cover Page

The cover page does not transmit even though it is selected in the Fax Sender dialog box.

DISCUSSION ----------

These issues have been resolved with GeoPort 2.1. Users should upgrade to Apple Telecom 2.1 or later software.

If you are using earlier version of software, there is a conflict between the Express Modem software, Fax Sender, and the WorldScript II extension which comes with the Language Kits.

The problem disappears when the WorldScript II extension is removed from the System Folder and the computer is restarted. The Fax Phone Book window then scrolls correctly, and a cover sheet is Faxed. However all Japanese or Chinese characters in the document are unintelligible.

Apple has been able to reproduce this problem. The scroll bar is active, but

does not do anything. This is true of the scroll bars for both the "Fax Phone Book" and "Send To" lists.

Workarounds

Until this conflict is resolved in future versions of the software, try these workarounds:

Scrolling Problem

Use the arrow keys on the keyboard to scroll through the windows.

Cover Page Problem

Embed a cover sheet within the Fax document. In other words, do not use the Fax Cover application to create a cover sheet, but instead, add the information you want to be on the cover page as Page 1 of the document you are sending as a fax.

Article Change History:
06 Jul 1995 - Added GeoPort 2.1 fixes these issues.
22 Feb 1995 - Changed article to include all Language Kits.
28 Mar 1994 - Included cover page issue and Express Modem.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12896

Macintosh Standard DAs: Documented in Balloon Help (8/93)

Revised: 8/16/93
Security: Everyone

Macintosh Standard DAs: Documented in Balloon Help (8/93)

==========

Article Created: 12 August 1993

TOPIC --------------------

Some recent Macintosh manuals don't describe how to use the standard desk accessories (DAs), the small programs that appear under the Apple menu and are included with every Macintosh system. In some cases, the Scrapbook DA contains the text "See your owner's guide for more information" but the owner's guide doesn't have more information about the Scrapbook.

DISCUSSION --------------------

There are several versions of the Macintosh User's Guide, and they differ in the information they provide about desk accessories. If this information is missing from your manual, simply turn on Balloon Help. (This applies to Macintosh systems with System software version 7.0 or later.)

1) Choose "Show Balloons" from the "?" menu.

2) Choose a desk accessory from the Apple menu.

3) As you move the mouse pointer around the DA, help balloons will describe the DA's functions.

4) To turn off Balloon Help, choose "Hide Balloons" from the "?" menu.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12897

Tech Info Library

PowerBook 145B: Incorrect About This Macintosh... Info (8/93)

Revised: 7/7/94
Security: Everyone

PowerBook 145B: Incorrect "About This Macintosh..." Info (8/93)

==========

Article Created: 12 August 1993

TOPIC -----

When I choose "About This Macintosh..." from the Finder's Apple menu, my PowerBook 145B reports itself as follows:

System 7.0.1: "PowerBook 140"
System 7.1: "PowerBook 145"

DISCUSSION -----

What you've discovered with your PowerBook 145B is normal.

Why System 7.1 Reports PowerBook 145

The PowerBook 145 and 145B have almost identical hardware, the only difference being the amount of RAM soldered to the logic board. According to APDA's Developer Notes, the PowerBook 145B returns the same gestaltMachineType value as the PowerBook 145 when it is queried by software. Thus, there is no way for software to differentiate between the two models.

Why System 7.0.1 Reports PowerBook 140

System 7.0.1 was released before the PowerBook 145 and 145B were introduced. It doesn't have the information with which to identify these models correctly, and calls them PowerBook 140 instead.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12898

Tech Info Library

PowerBook 165: Description (8/93)

Revised: 7/8/94
Security: Everyone

PowerBook 165: Description (8/93)

==========

Article Created: 16 August 1993

TOPIC ----------

This article describes the PowerBook 165.

DISCUSSION ----------

The Apple PowerBook 165 is an all-in-one notebook computer. Featuring a 33 megahertz 68030 microprocessor, the PowerBook 165 supports up to 14 megabytes of RAM, so you can work with multiple applications simultaneously.

The PowerBook 165's 10-inch (254-millimeter) backlit passive-matrix display supports 16 levels of gray. You can connect the PowerBook 165 to any Apple color display (up to 16-inch) or some VGA/SVGA displays. In dual-display mode, you can display one image on the built-in screen and a different image or even another application on an external monitor at the same time.

The PowerBook 165 includes a standard-size keyboard, full-page-width display, built-in trackball, and seven built-in ports for access to peripheral devices. It fits in a briefcase and weighs just 6.8 pounds (3.03 kilograms).

AppleTalk networking is built into the PowerBook 165, so you can connect to an AppleTalk net-work, such as electronic mail, printers, and file servers. With an optional modem and AppleTalk Remote Access software, the PowerBook 165 can access AppleTalk networks practically anywhere in the world.

PowerBook 165 Features

Power and speed

• 33-MHz 68030 microprocessor

Memory

• 4 MB of RAM, expandable to 14 MB

Display

• Supertwist backlit passive matrix, 640 by 400 pixels
• Full-page-width, 10-in. (254 mm) diagonal; 16-level gray scale
• Adjustable brightness and contrast controls

Expansion

• Seven built-in ports for peripheral devices, including a video-out port for an external color display
• Slots for internal modem and RAM

System software

• System software version 7, with multitasking, file sharing, Balloon Help, TrueType fonts, and more

Networking

• Built-in AppleTalk networking
• File sharing without a dedicated server

Compatibility

• Reads and writes Macintosh, MS-DOS, OS/2, and ProDOS floppy disk formats

Ordering Information

PowerBook 165 4/80
Order No. M1641LL/A

• PowerBook 165 personal computer with 4 MB of RAM, one built-in 1.4-MB Apple SuperDrive, and one internal 80-MB hard disk
• Battery and AC adapter
• Video-out cable
• System software version 7.1
• Complete setup, learning, and reference documentation
• Training software
• Limited warranty statement

PowerBook 4-MB Memory Expansion Kit
Order No. M4664LL/A

PowerBook Fax/Data Modem (U.S., Canada, Japan)
Order No. M0970LL/A

PowerBook Fax/Data Modem(Europe, Australia, South America)
Order No. M0980LL/A

PowerBook Express Modem Kit (U.S., Canada, Japan)

Order No. M1366LL/A

PowerBook Express Modem Kit (Europe, Australia, South America)
Order No. M1365LL/A

PowerBook Rechargeable Battery
Order No. M5545LL/C

PowerBook AC Adapter
Order No. M4662LL/A

PowerBook Battery Recharger
Order No. M1027LL/A

Apple HDI-30 SCSI Disk Adapter
Order No. M2539LL/A

Apple HDI-30 SCSI System Cable
Order No. M2538LL/A

PowerBook File Assistant
Order No. M1813Z

PowerBook/DOS Companion
Order No. M9400LL/A

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12899

Tech Info Library

PowerBook 165: Expansion Board Differences (3/95)

Revised: 3/31/95
Security: Everyone

PowerBook 165: Expansion Board Differences (3/95)

==========

Article Created: 16 August 1993
Article Reviewed/Updated: 31 March 1995

TOPIC ----------

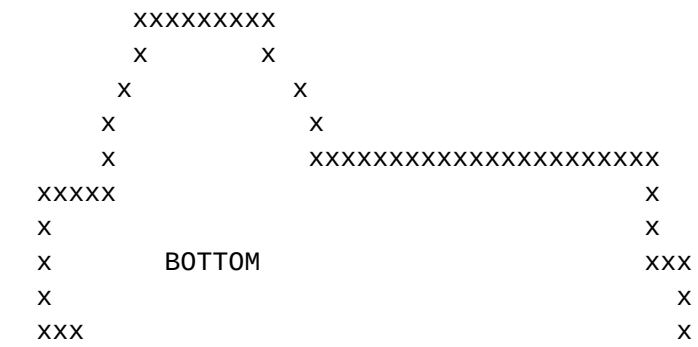
How can I distinguish between a PowerBook 160 and PowerBook 165 expansion board?

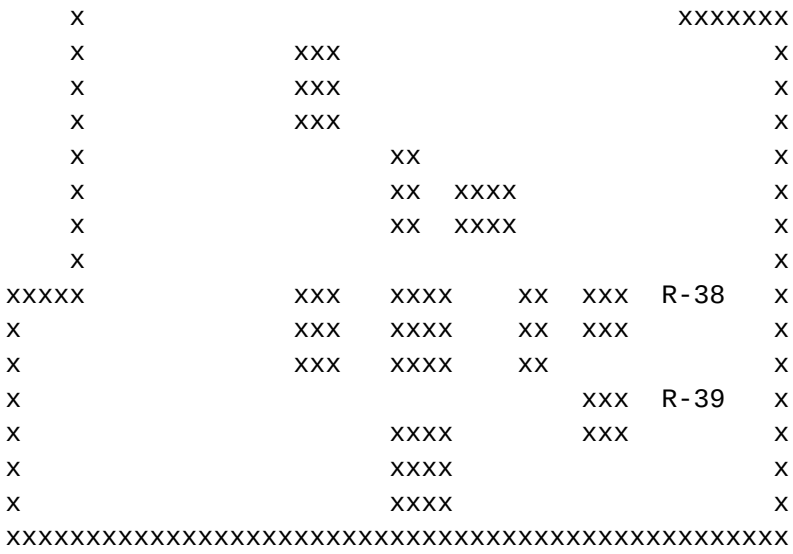
DISCUSSION ----------

You can distinguish between or identify the PowerBook 160 and 165 expansion boards by checking the R38 and R39 resistors, and the speed of the crystal. Here is a simple guide along with a drawing of the expansion board to show the placement of the resistors:

PowerBook 160 expansion board
- R38 resistor in place
- R39 resistor not in place
- 25 MHz oscillator

PowerBook 165 expansion board
- R38 resistor not in place
- R39 resistor in place
- 30 MHz oscillator





PowerBook 160/165 expansion board

Article Change History:
31 Mar 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12900

Tech Info Library

PowerBook 165: Technical Specifications (3/95)

Revised: 3/22/95
Security: Everyone

PowerBook 165: Technical Specifications (3/95)

==========

Article Created: 16 August 1993
Article Reviewed/Updated: 22 March 1995

TOPIC ----------

This article provides the technical specifications for the PowerBook 165 computer.

DISCUSSION ----------

Microprocessor

- Motorola 68030, running at 33 MHz

Memory

- Comes with 4 MB of pseudostatic RAM (PSRAM)
- Expands to 14 MB of RAM with the addition of third-party PSRAM cards

Disk storage

- One built-in 1.4-MB Apple SuperDrive disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks
- One internal 80 or 160 MB hard disk

Display

- 10-in. (254-mm) diagonal
- Backlit supertwist passive-matrix display, 640 by 400 pixels
- 16 shades of gray
- Two video-out modes:
  - Video mirroring for simultaneous display of the same image on two screens
  - Dual display for full use of both screens with different images or different applications at the same time

- Built-in support for up to 256 colors on a variety of external displays
- External display options
  - Macintosh 12-inch Monochrome Display
  - Macintosh 12-inch RGB Display
  - AppleColor High-Resolution RGB Display
  - Macintosh Color Display (14 in.)
  - Macintosh 16-inch Color Display
  - Macintosh Portrait Display (15 in.)
  - Some VGA and SVGA monitors

Battery

- Nickel-cadmium which provides 2.5 to 3 hours of computer use before recharging is necessary.

Keyboard

- Built-in keyboard with standard Macintosh layout
- Two-level tilt adjustment

Trackball

- 30-mm (approx. 1.25-in.) diameter, two buttons

Clock/calendar

- CMOS custom-integrated circuit with long-life lithium battery

Microphone

- Built-in omnidirectional; output voltage of 4 mV, peak-to-peak, at normal volume

Interfaces

- One power adapter port
- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other input devices
- Two RS-422 serial ports for LocalTalk networking, printers, modems, and other devices
- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices
- One slot for optional modem
- One video-out port that supports 8-bit density and 256 colors
- One sound-out port for external audio amplifier or headphones
- One sound-in port
- Security slot for use with third-party equipment to lock the computer

Modem

- Optional internal PowerBook Express Modem; sends and receives data at 14,400 bps and sends and receives faxes at 9600 bps. Includes Express Fax software.

• Optional internal 2400-bps modem; sends faxes at 9600 bps.
  Includes fax-send software.

Sound generator

• Apple Sound Chip provides 8-bit sound and is capable of driving stereo headphones or other stereo equipment. These devices connect to the Apple Sound Chip through the sound port.

Sound input

• 8-bit sound, sampled at 11 or 22 kHz

Disability access

• CloseView, Easy Access, and visible-beep software are included with system software. These built-in third-party options provide alternative means of input and output for people with disabilities.

ADB power requirements

• Maximum current draw for all ADB devices is 200 mA (milliamps). A maximum of three ADB devices is recommended.

Power requirements

• Line voltage: 110 to 220 V
• Frequency: 50 to 60 Hz

Environmental requirements

• Operating temperature: 50 F to 104 F (10 C to 40 C)
• Storage temperature: -40 F to +149 F (-40 C to +65 C)
• Relative humidity: 20% to 80% noncondensing
• Operating altitude: 0 to 10,000 ft. (0 to 3048 m)
• Maximum storage altitude: 15,000 ft. (4722 m)

Size and weight

• Height: 2.25 in. (5.7 cm)
• Width: 11.25 in. (28.6 cm)
• Depth: 9.3 in. (23.6 cm)
• Weight: 6.8 lb. (3.03 kg)

Article Change History
22 Mar 1995 - Added letter "s" in title.
26 Aug 1993 - Revised article with correct storage temperature

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12901

Tech Info Library

PowerBook 165 and PowerBook 160 Compared (8/93)

Revised: 7/7/94
Security: Everyone

PowerBook 165 and PowerBook 160 Compared (8/93)

==========

Article Created: 16 August 1993

TOPIC -----

This article describes the differences between the PowerBook 160 and PowerBook 165 computers.

DISCUSSION -----

The PowerBook 160 is identical to the PowerBook 165 except for the following differences:

	PowerBook 160	PowerBook 165
Processor	25 MHz 68030	33 MHz 68030
Storage Options	40, 80 and 120 MB	80 and 160 MB

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12902

Tech Info Library

Centris 660AV & Quadra 840AV: Speech Recognition Settings (8/93)

Revised: 8/19/93
Security: Everyone

Centris 660AV & Quadra 840AV: Speech Recognition Settings (8/93)

==========

Article Created: 10 August 1993
Article Reviewed/Updated: 19 August 1993

TOPIC ----------

What settings must I check to enable speech recognition on the Macintosh Centris 660AV and Quadra 840AV?

DISCUSSION ----------

For speech recognition to work, the Sound control panel settings must be:

• Sample rate: 24.000 kHz (This is the preset rate)

To set the sample rate:
1) Open the Sound control panel
2) Choose Sound Out from the pop-up menu
3) Choose 24.000 kHz from the Rate pop-up menu

• Input Source: Microphone (This is the default setting.)

1) Open the Sound control panel.
2) Choose Sound In from the pop-up menu.
3) Click on the Options button.
4) Click the radio button marked Microphone.
5) Click the OK button to return to the Sound control panel.

• Playthrough: off (This is the default setting.)

1) Open the Sound control panel.
2) Choose Sound In from the pop-up menu.
3) Click on the Options button.
4) Make sure the checkbox marked Playthrough is unchecked.
5) Click the OK button to return to the Sound control panel.

Article Change History:

..TIL12903-Centris_660AV_and_Quadra_840AV-Speech_Recognition_Settings_8-93.pdf

19 August 1993 - Added Microphone as input sound source information.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12903

Tech Info Library

Centris 660AV & Quadra 840AV: Speech Recognition & RAM (8/93)

Revised: 8/10/93
Security: Everyone

Centris 660AV & Quadra 840AV: Speech Recognition & RAM (8/93)

==========

Article created: 10 August 1993

TOPIC ----------

Can I reduce the amount RAM needed to use Speech recognition on the Macintosh Centris 660AV and Quadra 840AV??

DISCUSSION ----------

Speech recognition requires a lot of memory. To reduce the amount of RAM used for speech, select a compressed voice for feedback to spoken commands, or set feedback to None rather than having voice feedback.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12904

Tech Info Library

Centris 660AV & Quadra 840AV: Speech Recog & GeoPort Use (8/93)

Revised: 8/10/93
Security: Everyone

Centris 660AV & Quadra 840AV: Speech Recog & GeoPort Use (8/93)

==========

Article created: 10 August 1993

TOPIC -----

Can I use speech recognition while I'm using the GeoPort Telecom Adapter on the Macintosh Centris 660AV and Quadra 840AV??

DISCUSSION -----

When speech recognition is turned on, your Centris 660AV or Quadra 840AV may not be able to establish a modem connection using the GeoPort Telecom Adapter.

This may occur when the DSP (Digital Signal Processor) is attempting to perform the demanding work of both speech recognition and establishing a modem connection.

If this problem occurs, turn off speech recognition in the Speech control panel and attempt the modem connection again.

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Tech Info Library Article Number:12905

Tech Info Library

Centris 660AV & Quadra 840AV: Sound Sample Rates (8/93)

Revised: 8/10/93
Security: Everyone

Centris 660AV & Quadra 840AV: Sound Sample Rates (8/93)

==========

Article created: 10 August 1993

TOPIC ----------

What are the sound sample rates on the Macintosh Centris 660AV
and Quadra 840AV??

DISCUSSION ----------

The preset sound sample rate for your computer is 24 kilohertz (kHz).
This sample rate is required for speech recognition and for
telecommunications.

If you are not using either speech or telecommunications, you can change the
sound sample rate (in the Sound Out section of the Sound control panel) to
22.05 kHz, 44.1 kHz, or 48 kHz.

These three sample rates generally offer better sound quality if the sound
source is a compact disc (CD) or digital audio tape (DAT). (If you use speech
and telecommunications capabilities frequently, it's probably a good idea to
keep the sample rate set at 24 kHz.)

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12907

Tech Info Library

Centris 660AV & Quadra 840AV: S-video ports (8/93)

Revised: 8/10/93
Security: Everyone

Centris 660AV & Quadra 840AV: S-video ports (8/93)

==========

Article created: 10 August 1993

TOPIC --

This article provides details on the Macintosh Centris 660AV
and Quadra 840AV S-video ports.

DISCUSSION ---

Connecting Cables to the S-video ports

Take care to connect only S-video cables to the S-video port:
Your computer will not start up if the cable for a serial device,
such as a printer or modem, or an Apple Desktop Bus (ADB) cable is
plugged into the either of the S-video ports.

Power Requirements

Devices connected to the Camera/S-video input port use power as follows:

Camera/S-video device	+12 volts	500 milliamperes	6 watts

This updated information supersedes the requirements for the S-video input
port in the Technical Information manual which comes with the Centris 600AV
and Quadra 840AV computers.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12908

Tech Info Library

Macintosh AV Series: Recording To Videotape (12/93)

Revised: 12/23/93
Security: Everyone

Macintosh AV Series: Recording To Videotape (12/93)

==========

Article Created: 10 August 1993
Article Reviewed/Updated: 23 December 1993

TOPIC ----------

Can I record computer images and sounds on videotape with the Macintosh Centris 660AV, Quadra 660AV and Quadra 840AV??

DISCUSSION ----------

To record the computer's images and sounds on videotape, you must use a television as the monitor. Follow these steps to record on videotape:

1) Connect a videocassette recorder (VCR) to the computer's video output port (either composite or S-video, depending on the VCR you have) and sound output port.
2) Connect a television to the VCR's video out port and sound out port(s).
3) Switch to the television as monitor, using the Monitors control panel (See separate instructions below).
4) Begin recording by pressing the Record button on the VCR.

To switch to the television as monitor, follow the steps below:

1) Make sure that a television is connected to the composite video output port and is turned on.
2) Open the Monitors control panel.
3) Click the Options button. The Options dialog box appears.
4) In the Select Monitor Type section of the dialog box, choose one of the resolution types listed:

   - For USA and Japan, choose 512x384 Resolution (NTSC standard)
   - For Europe and Australia, choose 640x480 Resolution (PAL standard)

5) Click OK. The Options dialog box closes.
6) Choose Restart from the Special menu in the Finder.
7) Once the computer has restarted, open the Monitors control panel.

8) Click the Options button. The Options dialog box appears.
9) In the Video Display Options section, click the button labeled Display Video on Television.
10) Click either the NTSC Standard (USA and Japan) or the PAL Standard (Europe and Australia) button
11) Click the Use Flicker-free format checkbox.
12) Click the OK button. A dialog box appears, asking you to confirm your changes.
13) Click the Switch button to change from the monitor to the television.

The computer's image is displayed on the television.

Article Change History:
23 December 1993 - added info for all AV models.
23 August 1993 - added correct name of Quadra 840AV to title.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12909

Tech Info Library

Quadra 660AV & 840AV: Floppy Drive Rejects 800K Disks (2/95)

Revised: 2/7/95
Security: Everyone

Quadra 660AV & 840AV: Floppy Drive Rejects 800K Disks (2/95)

==========

Article Created: 10 August 1993
Article Reviewed/Updated: 7 February 1995

TOPIC

The floppy disk drive on the Macintosh Centris/Quadra 660AV and Quadra 840AV may occasionally reject some of your 800K floppy disks.

DISCUSSION

Both the Macintosh Centris 660AV and Quadra 840AV use a new floppy disk controller that reads and writes data more precisely than the one used in most other Macintosh computers. For this reason, the computer may not be able to read some 800K floppy disks that were created by mass-duplication equipment, or other non-AV Macintosh computers. If you experience this problem, check with the software vendor for another copy of the disk.

Some versions of copy protection for 800K floppy disks are not compatible with your computer. If you have a problem with a copy-protected disk, check with the software vendor for an upgraded or unprotected copy of the disk.

ProDOS 800K Disks Created on an AV Series Macintosh

This problem can also appear when formatting a disk on an AV series Macintosh as a ProDOS 800K disk, inserting it into an Apple IIgs, saving an AppleWorks file onto it, and re-inserting it into the AV Macintosh. This often results in the AV Macintosh reporting that disk was unreadable.

Troubleshooting and Workarounds

Zap the parameter RAM

Restart your Macintosh, holding down the Command-Option-P-R keys. The smiling Macintosh icon appears and shortly after, the computer restarts once again. Release the keys and insert your 800K floppy disk once the Finder appears.

Restart your Macintosh with extensions off

Restart your Macintosh and hold down the Shift until the Welcome to Macintosh dialog box appears with the additional message Extensions Off. Release the Shift key and insert your 800K floppy disk once the Finder appears.

Turn off Speech Recognition

Open the Speech Setup control panel and click the OFF button. Restart your Macintosh and insert your 800K floppy disk once the Finder appears.

Make sure you do not have composite SIMMs (RAM) installed

Apple does not recommend using composite SIMMs for RAM expansion in any Macintosh computer. For further information, search by COMPOSITE in the Technical Information Library.

Regenerate Macintosh-generated disks on another Macintosh

If Macintosh-generated 800K disks are unreadable on your Macintosh AV, copy the contents to a 1.4MB floppy disk using another Macintosh and its internal hard disk.

Copy a mass-duplicated disk to 1.4MB disk

If mass duplicated 800K disks are unreadable on your Macintosh AV, copy the contents to a 1.4MB floppy disk using another Macintosh and its internal hard disk OR call the software vendor to see if they can send you another copy on 1.4 MB floppy disk.

Perform a network install

Perform a network install or copy the software from another Macintosh over an AppleTalk network onto the Macintosh AV.

Contact the supplier of copy-protected disks

If 800K copy protected floppy disks are not readable, contact the supplier to obtain either a more stringently written floppy, or see if they will provide a non copy protected version.

Article Change History:
07 Feb 1995 - Added keyword; made several technical updates.
04 Oct 1994 - Combined other similar article with this one.
21 Jul 1994 - Problem is with Macintosh 800K or ProDOS 800K floppy disks.

Support Information Services

..TIL12910-Quadra_660AV_and_840AV-Floppy_Drive_Rejects_800K_Disks_2-95.pdf

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12910

Tech Info Library

Quadra 840AV: On & Off Switch (8/93)

Revised: 8/10/93
Security: Everyone

Quadra 840AV: On & Off Switch (8/93)

==========

Article created: 10 August 1993

TOPIC ----------

This article explains the on and off switch on the Macintosh Quadra 840AV.

DISCUSSION ----------

Under most conditions, you should use the Power key on the keyboard and the Shut Down command from the Special menu in the Finder to turn your Quadra 840AV on and off. If a program locks or hangs but you can still move the pointer, you can press and hold the on/off switch for 2 to 3 seconds to turn off the machine.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12911

Tech Info Library

Centris 660AV & Quadra 840AV: Adj Keyboard Buttons (8/93)

Revised: 8/10/93
Security: Everyone

Centris 660AV & Quadra 840AV: Adj Keyboard Buttons (8/93)

==========

Article created: 10 August 1993

TOPIC --------------------

Why aren't the Mute and Record buttons on the Apple Adjustable Keyboard not working with the Macintosh Centris 660AV and Quadra 840AV?

DISCUSSION --------------------

The Mute and the Record buttons on the Apple Adjustable Keyboard do not work with the Macintosh Quadra 840AV or Macintosh Centris 660AV at the present time.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12913

Tech Info Library

AV Series: Instlng Adj Kybrd & Audiovision 14 Dsply (1/94)

Revised: 1/7/94
Security: Everyone

AV Series: Instlng Adj Kybrd & Audiovision 14 Dsply (1/94)

==========

Article Created: 10 August 1993
Article Reviewed/Updated: 7 January 1994

TOPIC ----------

What software do I install if I want to use the Apple AudioVision 14 Display and Apple Adjustable Keyboard with the Macintosh Centris 660AV, Quadra 660AV or Quadra 840AV?

DISCUSSION ----------

If you use both the Apple Adjustable Keyboard and the Apple AudioVision 14 Display with your computer, do not install the software supplied with the Apple Adjustable Keyboard. This software is already installed on your Macintosh Centris 660AV and Quadra 840AV computer.

To use this keyboard and this monitor with your computer, install only the software for the AudioVision 14 Display. (The reason for not installing the keyboard software is that it overwrites some necessary software for the monitor.)

If you have already installed the keyboard software, you should reinstall the Macintosh system software (included with your computer, on floppy disks or on a compact disc) to restore the files you need.

Article Change History:
7 January 1994 - Revised title and topic to add all AV models.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12914

Tech Info Library

QuickTime for Windows: Version 1.1 Description (8/93)

Revised: 8/10/93
Security: Everyone

QuickTime for Windows: Version 1.1 Description (8/93)

==========

Article Created: 10 August 1993

TOPIC ----------

This article describes the improvements made in version 1.1 of QuickTime for Windows.

DISCUSSION ----------

QuickTime for Windows extends Windows 3.1 to integrate compressed video, graphics and sound in cross-platform file formats. The latest release, QuickTime for Windows 1.1, offers improved performance, easier integration with existing Windows applications, and open extensibility for third-party developers.

QuickTime for Windows 1.1 provides significantly improved performance through support for Apple Compact Video, the advanced software compression technology introduced in QuickTime 1.5 on the Macintosh. Integration into existing Windows applications has been made easier through support for Windows 3.1 MCI (Media Control Interface) and OLE (Object Linking & Embedding) release 1.0. Support for customized add-in products enable third-party developers to add features such as custom decompression technology. Like QuickTime for Windows 1.0, version 1.1 includes the same QuickTime Movie file format, human interface, image decompression capabilities and programming interface as the Macintosh version of QuickTime, making it easier for developers to implement direct support of QuickTime in Windows applications.

Increased Performance

QuickTime for Windows 1.1 supports the advanced Apple Compact Video codec (compressor/decompressor), introduced in QuickTime 1.5 for Macintosh, that enables Movies to play either at twice the frame rate (up to 30 frames per second) or across four times the screen area (up to 320x240 screen size, software only) as supported by the earlier release. QuickTime for Windows 1.1 supports playback through video acceleration hardware, when used with display drivers that directly support QuickTime for Windows.

Windows Integration

Integration of QuickTime Movies into existing Windows applications is now easier with the support for MCI and OLE 1.0 in QuickTime for Windows 1.1. The new support for MCI integrates QuickTime for Windows into authoring and presentation applications for precise playback control. With OLE support, QuickTime Movies can be easily integrated into business applications that support OLE, adding impact with video footage, animation sequences and sound clips to documents, spreadsheets and presentations. Microsoft's Visual Basic 2.0 is also supported for creation of custom Windows multimedia applications using QuickTime.

Third-Party Software Extension Support

Support for add-in decompressors will allow third-party developers to add their own compression technologies to those already included with QuickTime for Windows. Intel is using this method to bundle its Indeo video decompressor with QuickTime for Windows 1.1.

Third-Party Hardware Support

Additional audio and video cards are supported in QuickTime for Windows 1.1, giving more Windows customers access to QuickTime technology. Digital video in QuickTime Movies is optimized for playback on display cards capable of showing from 256 colors (8-bit) to 16 million colors (24-bit).

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Tech Info Library Article Number:12916

Tech Info Library

VGA Monitors: Which Macintosh Models Are Compatible (4/96)

Revised: 4/23/96
Security: Everyone

VGA Monitors: Which Macintosh Models Are Compatible (4/96)

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Article Created: 6 August 1993
Article Reviewed/Updated: 22 April 1996

TOPIC ----------

I want to hook a VGA monitor to my Macintosh. Will this work, and do I need a special adapter?

DISCUSSION ----------

Most recent Macintosh models support video output to a VGA monitor. These models include:

Macintosh Model:
==========
LC
LC II
LC III
LC 475
LC 630

Performa 400, 405, 410, 430
Performa 450
Performa 460, 466, 467
Performa 600
Performa 630 series

IIvx/IIvi
Centris/Quadra 610
Centris/Quadra 650
Centris/Quadra 660AV

Quadra 605
Quadra 700
Quadra 800
Quadra 900

Quadra 950
Quadra 840AV
Quadra 630

Power Macintosh 5200 series
Power Macintosh 6100 series
Power Macintosh 6200 series
Power Macintosh 6300
Power Macintosh 7100 series
Power Macintosh 7200 series
Power Macintosh 7600
Power Macintosh 8100 series
Power Macintosh 8500 series
Power Macintosh 9500 series

PowerBook 160
PowerBook 165c
PowerBook 180
PowerBook 180c
PowerBook 190 Series - Must have external video upgrade
PowerBook 500 Series

PowerBook Duo 210 & 230 (with MiniDock or Duo Dock)

To connect a VGA monitor to the Macintosh video port, an adapter cable is required. Third-party cable vendors should have these cables available for purchase.

VGA monitors may have variances when purchased from different VGA monitor vendors. It is best to test a particular monitor for compatibility with the Macintosh before making a purchase decision.

VGA monitors also have different image quality specifications. There may be significant differences between Apple monitors and various VGA monitors. A side-by-side review of the monitors should be done before deciding which monitor to buy.

When a VGA monitor is connected, the resolution is 640x480. The bit-depth supported depends on the amount of VRAM installed in the computer.

Article Change History:
22 Apr 1996 - Added individual Power Macintosh models.
08 Jan 1996 - Updated list of Macintosh computers supporting VGA.
09 Jan 1995 - Noted that all Power Macintosh computers support VGA.

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Tech Info Library Article Number:12917

Tech Info Library

Macintosh IIx: 4MB SIMM RAM Upgrades (8/93)

Revised: 8/10/93
Security: Everyone

Macintosh IIx: 4MB SIMM RAM Upgrades (8/93)

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Article Created: 6 August 1993

TOPIC ----------

We are trying to upgrade a Macintosh IIx to 20MB of RAM. We can't find any information about Apple selling the special 4MB SIMMs that are required for this upgrade.

Also, when I upgrade the RAM on the IIx, do I need to add a PMMU chip, as with the Macintosh II?

DISCUSSION ----------

The Macintosh IIx has a 68030 microprocessor which has a PMMU built into it.

Apple does not sell 4MB SIMMs with PAL chips, as needed by the Macintosh IIx. You will need to contact a third-party memory vendor to obtain the proper SIMMs.

Standard 4MB SIMMs won't work on the Macintosh IIx because JEDEC, the committee overseeing the standardization of new solid-state devices, added an additional built-in test mode to high-density DRAMs. The test mode is invoked by a sequence of electrical signals which was ignored by earlier-generation DRAM. This specification for 4MB SIMMs was changed after the Macintosh IIx was developed. At the time the Macintosh IIx was developed, in theory, 4MB SIMMs should have worked. It wasn't known at the time that the specification would be changed.

The result is that standard 4MB SIMMs won't work on the Macintosh IIx. The special 4MB SIMMs available from third-party vendors have a PAL chip and can be used in either the Macintosh II or IIx.

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Tech Info Library Article Number:12918

Tech Info Library

Hardware System Update 2.0 & Display of Control Panels (8/93)

Revised: 8/10/93
Security: Everyone

Hardware System Update 2.0 & Display of Control Panels (8/93)

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Article Created: 6 August 1993

TOPIC -----

I recently installed the Hardware System Update 2.0 on my Macintosh. Now, some of the control panels (like NOW Menus, Remote Access Setup, and Startup Manager) have their top lines cut off. Also, the text displayed in the pop-up menus of the control panels was 12 point instead of the usual, smaller size.

DISCUSSION -----

A possible solution in this situation is to reset the Parameter RAM (PRAM) of your system. Do this by holding down the four keys Command, Option, P, R immediately upon startup until you hear the startup chime for the second time.

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Tech Info Library Article Number:12919

Tech Info Library

PowerBook Duo: Battery Charging Only Halfway (8/93)

Revised: 7/7/94
Security: Everyone

PowerBook Duo: Battery Charging Only Halfway (8/93)

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Article Created: 11 August 1993

TOPIC --------------------

The battery on my PowerBook Duo 230 will no longer charge more than halfway.

I tried to hold in the power button (on the back) for 5 seconds. I did this two times, both with the unit off and with it asleep, and nothing changed.

DISCUSSION --------------------

The battery may not be getting fully seated when it is inserted. Make sure it is firmly locked into position.

Holding in the power button on the back resets the Power Manager chip, and may not affect a problem with the battery specifically. It is possible that the battery itself is bad. Take the unit to a dealer for service.

Support Information Services

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Tech Info Library Article Number:12921

Tech Info Library

Quadra: Where to Find Brackets for Drives (8/93)

Revised: 8/11/93
Security: Everyone

Quadra: Where to Find Brackets for Drives (8/93)

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Article Created: 11 August 1993

TOPIC -----

I bought a third-party tape drive for my Quadra and it didn't come with the proper size bracket or a faceplate for the front of the computer. Can I order these items from Apple?

DISCUSSION -----

Apple does not sell these parts individually.

You'll need to contact the vendor who sold the storage device to obtain the correct bracket and front template for your Quadra.

If you have any problems, contact your local authorized Apple dealer or call Apple's Customer Assistance Center for further help.

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Tech Info Library Article Number:12922

Tech Info Library

Macintosh Classic: External Pinouts (4/93)

Revised: 8/11/93
Security: Everyone

Macintosh Classic: External Pinouts (4/93)

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Article Created: 28 April 1993

TOPIC ----------

This article gives the pin assignments and functions for the external connectors on the Macintosh Classic.

DISCUSSION ----------

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	PWRON	Power on
3	+5v	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 5 m (16 ft.)

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -

4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	NC	General purpose input*
8	RXD+	Receive data +

- Connector type: 8-pin minicircular

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Common/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground

19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1
22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	TPWR	Terminator power

- Connector type: DB-25

- Total length of all cables not to exceed 6 m (20 ft.)

WARNING: The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the Macintosh Classic.

Disk Drive Port

Pin	Signal name	Signal description
1	GND	Signal ground
2	GND	Signal ground
3	GND	Signal ground
4	GND	Signal ground
5	-12v	-12 volts DC
6	+5v	+5 volts DC
7	+12v	+12 volts DC
8	+12v	+12 volts DC
9	NC	No connection
10	NC	No connection
11	PH0	Register select CA0
12	PH1	Register select CA1

13	PH2	Register select CA2
14	PH3	Register write strobe LSTRB
15	WRREQ/	Write request
16	SEL	Register select line SEL
17	ENBL/	Drive enable
18	RD	Read data
19	WR	Write data

- Connector type: DB-19

Audio Jack

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Middle)	AUDIO	1 volt peak-to-peak audio signal, right channel
(Tip)	AUDIO	1 volt peak-to-peak audio signal, left channel

- Connector type: Miniature stereo phone plug (computer's sound output is two-channel monophonic)

- The internal speaker is disabled when this port is in use.

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Tech Info Library Article Number:12923

Tech Info Library

Macintosh Classic II and Performa 200: External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

Macintosh Classic II and Performa 200: External Pinouts (5/93)

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Article Created: 2 June 1993

TOPIC --------------------

This article gives the pin assignments and functions for the external connectors on the Macintosh Classic II and Performa 200.

DISCUSSION --------------------

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	PWRON	Power on
3	+5v	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 5 m (16 ft.)

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -

4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	NC	General purpose input*
8	RXD+	Receive data +

- Connector type: 8-pin minicircular

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Common/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground

19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1
22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	TPWR	Terminator power

- Connector type: DB-25

- Total length of all cables not to exceed 6 m (20 ft.)

WARNING: The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the Macintosh Classic.

Disk Drive Port

Pin	Signal name	Signal description
1	GND	Signal ground
2	GND	Signal ground
3	GND	Signal ground
4	GND	Signal ground
5	-12v	-12 volts DC
6	+5v	+5 volts DC
7	+12v	+12 volts DC
8	+12v	+12 volts DC
9	NC	No connection
10	NC	No connection
11	PH0	Register select CA0
12	PH1	Register select CA1

13	PH2	Register select CA2
14	PH3	Register write strobe LSTRB
15	WRREQ/	Write request
16	SEL	Register select line SEL
17	ENBL/	Drive enable
18	RD	Read data
19	WR	Write data

- Connector type: DB-19

Audio Jack

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Middle)	AUDIO	1 volt peak-to-peak audio signal, right channel
(Tip)	AUDIO	1 volt peak-to-peak audio signal, left channel

- Connector type: Miniature stereo phone plug (computer's sound output is two-channel monophonic)

- The internal speaker is disabled when this port is in use.

Sound Input Port

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Middle)	MicPWR	Microphone power, +8 volts ±5% @ 1mA
(Tip)	SND.IN	Sound input signal, 1.6K ohm ±10% impedance, 4 mV maximum signal without clipping.

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Tech Info Library Article Number:12924

Tech Info Library

Macintosh Color Classic: Internal SuperDrive Connector

Revised: 5/17/94
Security: Everyone

Macintosh Color Classic: Internal SuperDrive Connector

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Article Created: 21 May 1993

TOPIC --------------------

This article gives the pin assignments and functions for the internal 20-pin internal connector for the high-density floppy disk drive (Apple SuperDrive).

DISCUSSION --------------------

Floppy Disk Drive

The Macintosh Color Classic computer supports one internal high-density floppy disk drive (Apple SuperDrive). The drive is connected to the logic board by a 20-pin connector. Table 1-2 shows the pin assignments for the floppy disk connector.

Table 1-2 Pin assignments for the internal floppy disk connector

Pin number	Signal name	Signal description
1	GND	Ground
2	PH0	Phase 0: state-control line
3	GND	Ground
4	PH1	Phase 1: state-control line
5	GND	Ground
6	PH2	Phase 2: state-control line
7	GND	Ground
8	PH3	Phase 3: register write strobe

9	n.c.	Not connected
10	/WRREQ	Write data request
11	+5V	+5 volts
12	SEL	Head select
13	+12V	+12 volts
14	/ENBL	Drive enable
15	+12V	+12 volts
16	RD	Read data
17	+12V	+12 volts
18	WR	Write data
19	+12V	+12 volts
20	n.c.	Not connected

Support Information Services

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Tech Info Library Article Number:12925

Tech Info Library

Macintosh Color Classic: External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

Macintosh Color Classic: External Pinouts (5/93)

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Article Created: 21 May 1993

TOPIC ----------

This article gives the pin assignments and functions for the external connectors on the Macintosh Color Classic.

DISCUSSION ----------

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	PWRON	Power on
3	+5v	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 5 m (16 ft.)

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -

4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	NC	General purpose input*
8	RXD+	Receive data +

- Connector type: 8-pin minicircular

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Common/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground

19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1
22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	TPWR	Terminator power

- Connector type: DB-25

- Total length of all cables not to exceed 6 m (20 ft.)

WARNING: The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the Macintosh Classic.

Sound Input Jack

There is a sound input jack on the back of the computer for connecting an external microphone or other sound source. The sound input jack accepts a standard 1/8-inch phone plug, either monophonic or stereophonic (two signals plus ground).

The sound input jack accepts either the external microphone for the Macintosh Color Classic or a pair of line-level (amplified) signals. When the user selects the corresponding input device in the Sound control panel, the computer sets the gain appropriately. The internal circuitry mixes the pair of stereophonic signals into a monophonic signal.

Note: The Macintosh external microphone requires power from the main computer, which it obtains by way of an extra-long plug that makes contact with a 5-volt pin inside the sound input jack.

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Tech Info Library Article Number:12927

Tech Info Library

PowerBook Duo 210, 230, 250, 270c: External Pinouts (6/94)

Revised: 6/24/94
Security: Everyone

PowerBook Duo 210, 230, 250, 270c: External Pinouts (6/94)

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Article Created: 27 May 1993
Article Reviewed/Updated: 24 June 1994

TOPIC ----------

This article gives the pin assignments and functions for the external connectors on the Macintosh PowerBook Duo 210, Duo 230, Duo 250, and 270c.

DISCUSSION ----------

ADB connector signal assignments

Pin number	Signal name	Description
1	ADB	Bidirectional data bus for I/O
2	/POWER ON	Key on ADB keyboard grounds this pin-to-pin 4 to turn on power supply
3	+5V	+5 V power.
4	GND	Ground

Serial port connector signal assignments

Pin	Signal name	Description
1	HSKo	Handshake output. Connected to the Request to Send (RTS) pin on the Combo chip. Tristated when the Data Terminal Ready (DTR) signal is inactive.
2	HSKi	Handshake input. Connected to the Transmit Receive Clock (TRXC) pin on the Combo chip.

3	/TXD	Transmit data (inverted). Connected to the Transmit Data (TXD) pin on the Combo chip. Tristated when DTR is inactive
4	SG	Signal ground. Connected to logic and chassis ground.
5	/RXD	Receive data (inverted). Connected to the Receive Data (RXD) pin on the Combo chip.
6	TXD	Transmit data. Connected to the Transmit Data (TXD) pin on the Combo chip. Tristated when DTR is inactive
7	GPi	General purpose input. Connected to the Data Carrier Detect (DCD) pin on the Combo chip.
8	RXD	Receive data. Connected to the Receive Data (RXD) pin on the Combo chip.
9, 10, 11	GND	These pins are connected to chassis ground

PowerBook Duo Floppy Adapter

The drive is connected through a custom HDI-20 high-density connector.

Pin number	Signal name	Description
1, 2, 3, 4	GND	Ground
5, 10, 20	nc	No connection
6, 7, 8, 9	+5V	+5 V power for floppy drive
11	PH0	State-control line 0
12	PH1	State-control line 1
13	PH2	State-control line 2
14	PH3	State-control line 3
15	/WRREQ	Write data request
16	HDSEL	Head select
17	/ENBL	Floppy drive enable
18	RD	Read data
19	WR	Write data

..TIL12928-PowerBook_Duo_210_230_250_270c-External_Pinouts_6-94.pdf

Article Change History:
24 Jun 1994 - Added Duo 250 and 270c.

Support Information Services

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Tech Info Library Article Number:12928

Tech Info Library

Duo Dock/Duo Dock II: External Pinouts (3/95)

Revised: 3/22/95
Security: Everyone

Duo Dock/Duo Dock II: External Pinouts (3/95)

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Article Created: 27 May 1993
Article Reviewed/Updated: 22 March 1995

TOPIC ----------

This article gives the pin assignments and functions for the connectors on the Duo Dock and Duo Dock II.

DISCUSSION ----------

Main Expansion Connector (Processor-Direct Slot)

A 152-pin main expansion connector, JAE part number JX20-152BA-D1LTH, provides the interface between the PowerBook Duo computer, and the Duo Dock. It mounts directly to the Duo Dock's main logic board, and plugs into the matching connector on the PowerBook Duo rear panel, giving the Duo Dock direct access to the microprocessor's 32-bit address bus, 32-bit data bus, and control signals. It also provides access to power, control, and status signals in other parts of the computer, and allows the Duo Dock to provide power to the PowerBook Duo.

The table below lists the subset of signals used for the Duo Dock interface. A slash before a signal name (/AS) indicates an active-low signal.

Pin number	Signal name	Description
1, 2, 77, 78, 79	PR +24V EXT	Raw +24 V from AC adapter
3	/PLUG IN	Power surge control (grounded in the expansion device)
4, 19, 20, 30, 38, 39, 51, 61, 65, 66, 80, 81, 115, 141, 142	GND	Logic ground

7	/ON/OFF OUT	On/off button
9	/STERM	Synchronous termination
10	/DS	Data strobe
11	/AS	Address strobe
12, 29, 42,	+5V MAIN OUT	+5 V regulated power
13	/HALT	Halt
14	/BERR	Bus error
15	/BGACK	Bus grant acknowledge
21	ADDR[0]	Address bit 0
22	ADDR[2]	Address bit 2
23	ADDR[4]	Address bit 4
24	ADDR[6]	Address bit 6
25	ADDR[8]	Address bit 8
26	ADDR[10]	Address bit 10
27	ADDR[12]	Address bit 12
28	ADDR[14]	Address bit 14
31	ADDR[18]	Address bit 18
32	ADDR[20]	Address bit 20
33	ADDR[22]	Address bit 22
34	ADDR[24]	Address bit 24
35	ADDR[26]	Address bit 26
36	ADDR[28]	Address bit 28
37	ADDR[30]	Address bit 30
40	IOCLK	15.6672 MHz I/O clock
41	SIZ[1]	Transfer size bit 1
43	DATA[0]	Data bit 0

44	DATA[1]	Data bit 1
45	DATA[2]	Data bit 2
46	DATA[3]	Data bit 3
47	DATA[4]	Data bit 4
48	DATA[5]	Data bit 5
49	DATA[6]	Data bit 6
50	DATA[7]	Data bit 7
52	DATA[17]	Data bit 17
53	DATA[18]	Data bit 18
54	DATA[19]	Data bit 19
56	DATA[20]	Data bit 20
57	DATA[21]	Data bit 21
58	DATA[22]	Data bit 22
59	DATA[23]	Data bit 23
62	/SCC IRQ	SCC interrupt request
63	SERVEE	-5 V for SCC transceivers
67	+8V SOUND	Special "clean" +8 V power for sound output
68	+5V MODEM	+5 V power for modem
69	LINET/R	Modem DAA line talk/receive
70	+5V SOUND	+5 V power for sound output
72	SND OUT L	Sound output left channel
73	EXT MIC FILT R	Right input signal from external microphone
74	EXT MIC FILT L	Left input signal from external microphone
75, 76, 151, 152	DAA GND	Modem ground
83	ADB DATA	Apple Desktop Bus data

84	/ADBPWRON	ADB power-on key
86	/CBREQ	Cache burst request
87	/DSACK1	Data size acknowledge bit 1
88	/DSACK0	Data size acknowledge bit 0
89	/BR	Bus request
90	/BG	Bus grant
91	/SLEEP	Sleep-state signal
92	FC[1]	Function code bit 1
93	FC[0]	Function code bit 0
94	/RMC	Read-modify-write cycle
95	CPUCLK	CPU bus clock
96	/CPURESET	CPU reset (bus invalid)
97	ADDR[1]	Address bit 1
98	ADDR[3]	Address bit 3
99	ADDR[5]	Address bit 5
100	ADDR[7]	Address bit 7
101	ADDR[9]	Address bit 9
102	ADDR[11]	Address bit 11
103	ADDR[13]	Address bit 13
104	ADDR[15]	Address bit 15
105	ADDR[16]	Address bit 16
106	ADDR[17]	Address bit 17
107	ADDR[19]	Address bit 19
108	ADDR[21]	Address bit 21
109	ADDR[23]	Address bit 23
110	ADDR[25]	Address bit 25

111	ADDR[27]	Address bit 27
112	ADDR[29]	Address bit 29
113	ADDR[31]	Address bit 31
114	/SLOT IN	Expansion device plugged in grounds pin
116	RD	Read/Write
117	SIZ[0]	Transfer size bit 0
118	DATA[8]	Data bit 8
119	DATA[9]	Data bit 9
120	DATA[10]	Data bit 10
121	DATA[11]	Data bit 11
122	+5VEXTSENSE	+5 V external sense
123	DATA[12]	Data bit 12
124	DATA[13]	Data bit 13
125	DATA[14]	Data bit 14
126	DATA[15]	Data bit 15
127	DATA[16]	Data bit 16
128	DATA[24]	Data bit 24
129	DATA[25]	Data bit 25
130	DATA[26]	Data bit 26
131	DATA[27]	Data bit 27
132	DATA[28]	Data bit 28
133	DATA[29]	Data bit 29
134	DATA[30]	Data bit 30
135	DATA[31]	Data bit 31
137	/SWIM CS	SWIM chip select
138	/SLOT E IRQ	Pseudo-NuBus expansion slot E interrupt

139	/PFW	Power fail warning (shutdown bit)
140	/IO RESET	Reset output to I/O systems
143	DAA CNTLF	Modem DAA control
144	DAA ID IN	ID input from 152-pin connector to modem card
145	/RING DET	Ring detect signal from the modem DAA
146	/RB DVR	Modem relay B driver
147	/RA DVR	Modem relay A driver
148	EXT MIC SEL	External microphone plugged in

Video Port

The video connection is made through a standard DB-15 connector.

Pin number	Signal name	Description
1	RED GND	Red ground
2	RED VID	Red video signal
3	/CSYNC	Composite sync
4	SENSE0	Monitor sense bit 0
5	GRN VID	Green video signal
6	GRN GND	Green ground
7	SENSE1	Monitor sense bit 1
8	mc	No connection
9	BLU VID	Blue video signal
10	SENSE2	Monitor sense bit 2
11	C&VSYNC GND	Ground for CSYNC and VSYNC
12	/VSYNC	Vertical sync
13	BLU GND	Blue ground
14	HSYNC GND	HSYNC ground

15	HSYNC	Horizontal sync

HDI-30 SCSI Connector

Pin number	Signal name	Description
1	nc	Reserved for SCSI disk mode.
2	/DB0	Bit 0 of SCSI data bus
3, 8, 10, 12, 13, 15, 17, 20, 22, 24	GND	Ground
4	/DB1	Bit 1 of SCSI data bus
5	TPWR	Termination power
6	/DB2	Bit 2 of SCSI data bus
7	/DB3	Bit 3 of SCSI data bus
9	/ACKS	Handshake signal. When low acknowledges a request for data transfer
11	/DB4	Bit 4 of SCSI data bus
14	/DB5	Bit 5 of SCSI data bus
16	/DB6	Bit 6 of SCSI data bus
18	/DB7	Bit 7 of SCSI data bus
19	/DBP	SCSI data bus parity bit
21	/REQ	Request for a data transfer
23	/BSY	When active (low) indicates that the SCSI data bus is busy
25	/ATN	When active (low) indicates an attention condition
26	/C/D	When active (low) indicates that data is on the SCSI bus. When high, indicates that control signals are on the bus
27	/RST	SCSI bus reset
28	/MSG	Indicates the message phase

29	/SEL	SCSI select
30	/I/O	Controls the direction of data output. When high, data is input

Modem and Printer Ports

Pin number	Signal name	Description
1	HSKo	Handshake output. Connected to the Request to Send (RTS) pin on the Combo chip. Tristated when the Data Terminal Ready (DTR) signal is inactive.
2	HSKi	Handshake input. Connected to the Transmit Receive Clock(TRXC) pin on the Combo chip.
3	/TXD	Transmit data (inverted). Connected to the Transmit Data (TXD) pin on the Combo chip. Tristated when DTR is inactive.
4	SG	Signal ground. Connected to logic and chassis ground.
5	/RXD	Receive data (inverted). Connected to the Receive Data (RXD) pin on the Combo chip.
6	TXD	Transmit data. Connected to the Transmit Data (TXD) pin on the Combo chip. Tristated when DTR is inactive.
7	GPi	General purpose input. Connected to the Data Carrier Detect (DCD) pin on the Combo chip.
8	RXD+	Receive data. Connected to the Receive Data (RXD) pin on the Combo chip.
10, 11, 12	GND	These pins are connected to chassis ground.

Apple Desktop Bus Interface

Pin number	Signal name	Description

1	ADB	Bidirectional data bus for input and output
2	POWER ON	Key on ADB keyboard (if connected) grounds this pin to pin 4, enabling power to be turned on from the keyboard
3	+5V	+5 V power
4	GND	Logic ground
5, 6, 7	GND	Chassis ground

Sound Ports

Two monaural mini phone jacks provide connections for sound input and output.

Modem Adapter Card (optional)

When the PowerBook Duo computer is housed in the Duo Dock, you cannot access the integral modem via the RJ-11 connector on the PowerBook Duo's rear panel. A modem adapter card provides the connection. It plugs into the side of the Duo Dock's main logic board, using a 10-pin header connector. The card supplies the RJ-11 hook up, which is accessed on the rear panel of the Duo Dock. The adapter card interfaces with the modem card in the PowerBook Duo computer via its 10-pin connector, printed circuit traces, and the 152-pin expansion connector. The table below lists the signal assignments for the connector.

Modem Adapter Connector Signal Assignments

Pin number	Signal name	Description
1	LINET/R	Line/talk receive
2, 3, 4	DAA GND	Modem DAA ground
5	/RA DVR	Modem relay A driver
6	DAA ID IN	ID input
7	/RING3 DET	Ring detect signal
8	/RBDVR	Modem relay B driver
9	DAA CNTL	Modem DAA control
10	+5 V MODEM	+5 V power

Built-In Ethernet Connector (Duo Dock II only)

Pin	Signal Name	Signal Description
1	FN Pwr	Power (+12V @ 2.1W or +5V @ 1.9W)
2	DI-A	Data In circuit A
3	DI-B	Data In circuit B
4	VCC	Voltage Common
5	CI-A	Control In circuit A
6	CI-B	Control In circuit B
7	+5V	+5 volts (from host)
8	+5V	Secondary +5 volts (from host)
9	DO-A	Data Out circuit A
10	DO-B	Data Out circuit B
11	VCC	Secondary Voltage Common
12	NC	Reserved
13	NC	Reserved
14	FN Pwr	Secondary +12V @ 2.1W or +5V @ 1.9W
Shell	Protective Gnd	Protective Ground

AAUI signals have the same description, function, and electrical requirements as the AUI signals of the same name, as detailed in IEEE Standard 802.3-1990 CSMA/CD, section 7.

Article Change History:
22 Mar 1995 - Corrected wording of Duo Dock.
24 Jun 1994 - Added Duo Dock II information, revised formatting.

Support Information Services

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Tech Info Library

Duo MiniDock: External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

Duo MiniDock: External Pinouts (5/93)

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Article Created: 27 May 1993

TOPIC ----------

This article gives the pin assignments and functions for the connectors on the Duo MiniDock.

DISCUSSION ----------

Main Expansion Connector (Processor-Direct Slot)

A 152-pin main expansion connector, JAE part number JX20-152BA-D1LTH, provides the interface between the PowerBook Duo computer, and the Duo MiniDock. It mounts directly to the Duo Dock's main logic board, and plugs into the matching connector on the PowerBook Duo rear panel, giving the Duo Dock direct access to the microprocessor's 32-bit address bus, 32-bit data bus, and control signals. It also provides access to power, control, and status signals in other parts of the computer, and lets the Duo MiniDock provide power to the PowerBook Duo.

The table below lists the subset of signals used for the Duo MiniDock interface. A slash before a signal name (/AS) indicates an active-low signal.

Pin number	Signal name	Description
1, 2, 77, 78, 79	PR +24V EXT	Raw +24 V from AC adapter
3	/PLUG IN	Power surge control (grounded in the expansion device)
4, 19, 20, 30, 38, 39, 51, 61, 65, 66, 80, 81, 115, 141, 142	GND	Logic ground

7	/ON/OFF OUT	On/off button
9	/STERM	Synchronous termination
10	/DS	Data strobe
11	/AS	Address strobe
12, 29, 42,	+5V MAIN OUT	+5 V regulated power
13	/HALT	Halt
14	/BERR	Bus error
15	/BGACK	Bus grant acknowledge
21	ADDR[0]	Address bit 0
22	ADDR[2]	Address bit 2
23	ADDR[4]	Address bit 4
24	ADDR[6]	Address bit 6
25	ADDR[8]	Address bit 8
26	ADDR[10]	Address bit 10
27	ADDR[12]	Address bit 12
28	ADDR[14]	Address bit 14
31	ADDR[18]	Address bit 18
32	ADDR[20]	Address bit 20
33	ADDR[22]	Address bit 22
34	ADDR[24]	Address bit 24
35	ADDR[26]	Address bit 26
36	ADDR[28]	Address bit 28
37	ADDR[30]	Address bit 30
40	IOCLK	15.6672 MHz I/O clock
41	SIZ[1]	Transfer size bit 1
43	DATA[0]	Data bit 0

44	DATA[1]	Data bit 1
45	DATA[2]	Data bit 2
46	DATA[3]	Data bit 3
47	DATA[4]	Data bit 4
48	DATA[5]	Data bit 5
49	DATA[6]	Data bit 6
50	DATA[7]	Data bit 7
52	DATA[17]	Data bit 17
53	DATA[18]	Data bit 18
54	DATA[19]	Data bit 19
56	DATA[20]	Data bit 20
57	DATA[21]	Data bit 21
58	DATA[22]	Data bit 22
59	DATA[23]	Data bit 23
62	/SCC IRQ	SCC interrupt request
63	SERVEE	-5 V for SCC transceivers
67	+8V SOUND	Special "clean" +8 V power for sound output
68	+5V MODEM	+5 V power for modem
69	LINET/R	Modem DAA line talk/receive
70	+5V SOUND	+5 V power for sound output
72	SND OUT L	Sound output left channel
73	EXT MIC FILT R	Right input signal from external microphone
74	EXT MIC FILT L	Left input signal from external microphone
75, 76, 151, 152	DAA GND	Modem ground
83	ADB DATA	Apple Desktop Bus data

84	/ADBPWRON	ADB power-on key
86	/CBREQ	Cache burst request
87	/DSACK1	Data size acknowledge bit 1
88	/DSACK0	Data size acknowledge bit 0
89	/BR	Bus request
90	/BG	Bus grant
91	/SLEEP	Sleep-state signal
92	FC[1]	Function code bit 1
93	FC[0]	Function code bit 0
94	/RMC	Read-modify-write cycle
95	CPUCLK	CPU bus clock
96	/CPURESET	CPU reset (bus invalid)
97	ADDR[1]	Address bit 1
98	ADDR[3]	Address bit 3
99	ADDR[5]	Address bit 5
100	ADDR[7]	Address bit 7
101	ADDR[9]	Address bit 9
102	ADDR[11]	Address bit 11
103	ADDR[13]	Address bit 13
104	ADDR[15]	Address bit 15
105	ADDR[16]	Address bit 16
106	ADDR[17]	Address bit 17
107	ADDR[19]	Address bit 19
108	ADDR[21]	Address bit 21
109	ADDR[23]	Address bit 23
110	ADDR[25]	Address bit 25

111	ADDR[27]	Address bit 27
112	ADDR[29]	Address bit 29
113	ADDR[31]	Address bit 31
114	/SLOT IN	Expansion device plugged in grounds pin
116	RD	Read/Write
117	SIZ[0]	Transfer size bit 0
118	DATA[8]	Data bit 8
119	DATA[9]	Data bit 9
120	DATA[10]	Data bit 10
121	DATA[11]	Data bit 11
122	+5VEXTSENSE	+5 V external sense
123	DATA[12]	Data bit 12
124	DATA[13]	Data bit 13
125	DATA[14]	Data bit 14
126	DATA[15]	Data bit 15
127	DATA[16]	Data bit 16
128	DATA[24]	Data bit 24
129	DATA[25]	Data bit 25
130	DATA[26]	Data bit 26
131	DATA[27]	Data bit 27
132	DATA[28]	Data bit 28
133	DATA[29]	Data bit 29
134	DATA[30]	Data bit 30
135	DATA[31]	Data bit 31
137	/SWIM CS	SWIM chip select
138	/SLOT E IRQ	Pseudo-NuBus expansion slot E interrupt

139	/PFW	Power fail warning (shutdown bit)
140	/IO RESET	Reset output to I/O systems
143	DAA CNTLF	Modem DAA control
144	DAA ID IN	ID input from 152-pin connector to modem card
145	/RING DET	Ring detect signal from the modem DAA
146	/RB DVR	Modem relay B driver
147	/RA DVR	Modem relay A driver
148	EXT MIC SEL	External microphone plugged in

HDI-20 Floppy Drive Connector

Pin	Signal Name	Signal Description
1	GND	Signal ground
2	GND	Signal ground
3	GND	Signal ground
4	GND	Signal ground
5	NC	No connection
6	+5V	+5 volts DC
7	+5V	+5 volts DC
8	+5V	+5 volts DC
9	+5V	+5 volts DC
10	NC	No connection
11	PH0	Phase 0
12	PH1	Phase 1
13	PH2	Phase 2
14	PH3	Phase 3
15	WREQ/	Write request

16	HDSEL	Head select
17	ENBL2/	External drive select
18	RD	Read data
19	WD	Write data
20	NC	No connection

Video Port

Pin number	Signal name	Description
1	RED GND	Red ground
2	RED VID	Red video signal
3	/CSYNC	Composite sync
4	SENSE0	Monitor sense bit 0
5	GRN VID	Green video signal
6	GRN GND	Green ground
7	SENSE1	Monitor sense bit 1
8	mc	No connection
9	BLU VID	Blue video signal
10	SENSE2	Monitor sense bit 2
11	C&VSYNC GND	Ground for CSYNC and VSYNC
12	/VSYNC	Vertical sync
13	BLU GND	Blue ground
14	HSYNC GND	HSYNC ground
15	HSYNC	Horizontal sync

HDI-30 SCSI Connector

Pin number	Signal name	Description
1	nc	Reserved for SCSI disk mode.
2	/DB0	Bit 0 of SCSI data bus

3, 8, 10, 12, 13, 15, 17, 20, 22, 24	GND	Ground
4	/DB1	Bit 1 of SCSI data bus
5	TPWR	Termination power
6	/DB2	Bit 2 of SCSI data bus
7	/DB3	Bit 3 of SCSI data bus
9	/ACKS	Handshake signal. When low acknowledges a request for data transfer
11	/DB4	Bit 4 of SCSI data bus
14	/DB5	Bit 5 of SCSI data bus
16	/DB6	Bit 6 of SCSI data bus
18	/DB7	Bit 7 of SCSI data bus
19	/DBP	SCSI data bus parity bit
21	/REQ	Request for a data transfer
23	/BSY	When active (low) indicates that the SCSI data bus is busy
25	/ATN	When active (low) indicates an attention condition
26	/C/D	When active (low) indicates that data is on the SCSI bus. When high, indicates that control signals are on the bus
27	/RST	SCSI bus reset
28	/MSG	Indicates the message phase
29	/SEL	SCSI select
30	/I/O	Controls the direction of data output. When high, data is input

Modem and Printer Ports

Pin number	Signal name	Description
1	HSKo	Handshake output. Connected to the Request to Send (RTS) pin on the Combo chip. Tristated when the Data Terminal Ready (DTR) signal is inactive.
2	HSKi	Handshake input. Connected to the Transmit Receive Clock(TRXC) pin on the Combo chip.
3	/TXD	Transmit data (inverted). Connected to the Transmit Data (TXD) pin on the Combo chip. Tristated when DTR is inactive.
4	SG	Signal ground. Connected to logic and chassis ground.
5	/RXD	Receive data (inverted). Connected to the Receive Data (RXD) pin on the Combo chip.
6	TXD	Transmit data. Connected to the Transmit Data (TXD) pin on the Combo chip. Tristated when DTR is inactive.
7	GPi	General purpose input. Connected to the Data Carrier Detect (DCD) pin on the Combo chip.
8	RXD+	Receive data. Connected to the Receive Data (RXD) pin on the Combo chip.
10, 11, 12	GND	These pins are connected to chassis ground.

Apple Desktop Bus Interface

Pin number	Signal name	Description
1	ADB	Bidirectional data bus for input and output
2	POWER ON	Key on ADB keyboard (if connected) grounds this pin to pin 4, enabling power to be turned on from the keyboard
3	+5V	+5 V power

4	GND	Logic ground
5, 6, 7	GND	Chassis ground

Sound Ports

Two monaural mini phone jacks provide connections for sound input and output.

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HDI-20: External Floppy Drive Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

HDI-20: External Floppy Drive Pinouts (5/93)

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Article Created: 27 May 1993

TOPIC ----------

This article gives the pin assignments and signals for the external connectors on the HDI-20 floppy drive connector.

DISCUSSION ----------

HDI-20 floppy drive connector

Pin	Signal Name	Signal Description
1	GND	Signal ground
2	GND	Signal ground
3	GND	Signal ground
4	GND	Signal ground
5	NC	No connection
6	+5V	+5 volts DC
7	+5V	+5 volts DC
8	+5V	+5 volts DC
9	+5V	+5 volts DC
10	NC	No connection
11	PH0	Phase 0

12	PH1	Phase 1
13	PH2	Phase 2
14	PH3	Phase 3
15	WREQ/	Write request
16	HDSEL	Head select
17	ENBL2/	External drive select
18	RD	Read data
19	WD	Write data
20	NC	No connection

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Tech Info Library Article Number:12931

Macintosh II, IIfx, IIx: External Pinouts (5/93)

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Security: Everyone

Macintosh II, IIfx, IIx: External Pinouts (5/93)

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Article Created: 29 April 1993

TOPIC --------------------

This article gives the pin assignments and functions for the connectors on the Macintosh II, IIfx, and IIx computers.

DISCUSSION --------------------

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	PWRON	Power on
3	+5v	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 16 feet (5 meters)

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -

4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	GPi	General purpose input*
8	RXD+	Receive data +

*Modem port only. Can be set in software to be a second external clock.

- Connector type: 8-pin minicircular

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Common/Data
16	GND	Signal ground
17	ATN/	Attention

18	GND	Signal ground
19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1
22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	TPWR	Terminator power

- Connector type: DB-25

- Total length of all cables not to exceed 20 feet (6 meters)

WARNING: The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the Macintosh LC.

Audio Jack

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Ring)	RIGHT	1.5 volt peak-to-peak audio signal, right channel
(Tip)	LEFT	1.5 volt peak-to-peak audio signal, left channel

- Connector type: Stereo miniature phone plug

- The internal speaker is disabled when this port is in use.

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Tech Info Library Article Number:12932

Tech Info Library

Macintosh IIci: External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

Macintosh IIci: External Pinouts (5/93)

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Article Created: 29 April 1993

TOPIC ----------

This article gives the pin assignments and functions for the connectors on the Macintosh IIci.

DISCUSSION ----------

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	PWRON	Power on
3	+5v	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 16 feet (5 meters)

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -

4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	GPi	General purpose input*
8	RXD+	Receive data +

*Modem port only; can be set in software to be a second external clock.

- Connector type: 8-pin minicircular

Disk Drive Port

Pin	Signal name	Signal description
1	GND	Signal ground
2	GND	Signal ground
3	GND	Signal ground
4	GND	Signal ground
5	-12v	-12 volts DC
6	+5v	+5 volts DC
7	+12v	+12 volts DC
8	+12v	+12 volts DC
9	NC	No connection
10	+5v	Motor speed control
11	PH0	Register select CA0
12	PH1	Register select CA1
13	PH2	Register select CA2
14	PH3	Register write strobe LSTRB
15	WRREQ/	Write request
16	SEL	Register select line SEL
17	ENBL/	Drive enable

18	RD	Read data
19	WR	Write data

- Connector type: DB-19

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Common/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground
19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1

22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	TPWR	Terminator power

- Connector type: DB-25

- Total length of all cables not to exceed 20 feet (6 meters)

WARNING: The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the Macintosh LC.

Video Port

Pin	Signal name	Signal description
1	RED.GND	Red video ground
2	RED.VID	Red video
3	CSYNC/	Composite sync
4	MON.ID1	Monitor ID, bit 1
5	GRN.VID	Green video
6	GRN.GND	Green video ground
7	MON.ID2	Monitor ID, bit 2
8	NC	No connection
9	BLU.VID	Blue video
10	MON.ID3	Monitor ID, bit 3
11	C&VSYNC.GND	Composite & vertical sync ground
12	VSYNC/	Vertical sync
13	BLU.GND	Blue video ground
14	HSYNC.GND	Horizontal sync ground
15	HSYNC/	Horizontal sync
Shell	CHASSIS.GND	Chassis ground

- Connector type: DB-15

Audio Jack

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Ring)	RIGHT	1.5 volt peak-to-peak audio signal, right channel
(Tip)	LEFT	1.5 volt peak-to-peak audio signal, left channel

- Connector type: Stereo miniature phone plug

- The internal speaker is disabled when this port is in use.

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Tech Info Library Article Number:12933

Tech Info Library

Macintosh IIcx: External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

Macintosh IIcx: External Pinouts (5/93)

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Article Created: 29 April 1993

TOPIC --------------------

This article gives the pin assignments and functions for the connectors on the Macintosh IIcx.

DISCUSSION --------------------

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	PWRON	Power on
3	+5v	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 16 feet (5 meters)

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -

4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	GPi	General purpose input*
8	RXD+	Receive data +

*Modem port only. Can be set in software to be a second external clock.

- Connector type: 8-pin minicircular

Disk Drive Port

Pin	Signal name	Signal description
1	GND	Signal ground
2	GND	Signal ground
3	GND	Signal ground
4	GND	Signal ground
5	-12v	-12 volts DC
6	+5v	+5 volts DC
7	+12v	+12 volts DC
8	+12v	+12 volts DC
9	NC	No connection
10	+5v	Motor speed control
11	PH0	Register select CA0
12	PH1	Register select CA1
13	PH2	Register select CA2
14	PH3	Register write strobe LSTRB
15	WRREQ/	Write request
16	SEL	Register select line SEL
17	ENBL/	Drive enable

18	RD	Read data
19	WR	Write data

- Connector type: DB-19

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Common/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground
19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1

22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	TPWR	Terminator power

- Connector type: DB-25

- Total length of all cables not to exceed 20 feet (6 meters)

WARNING: The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the Macintosh LC.

Audio Jack

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Ring)	RIGHT	1.5 volt peak-to-peak audio signal, right channel
(Tip)	LEFT	1.5 volt peak-to-peak audio signal, left channel

- Connector type: Stereo miniature phone plug

- The internal speaker is disabled when this port is in use.

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Tech Info Library Article Number:12934

Tech Info Library

Macintosh IIsi: External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

Macintosh IIsi: External Pinouts (5/93)

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Article Created: 29 April 1993

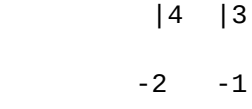
TOPIC ----------

This article gives the pin assignments and functions for the external connectors on the Macintosh IIvsi.

DISCUSSION ----------

Apple Desktop Bus (ADB)

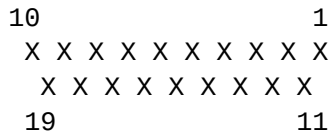
Pin	Signal	Description
1	DATA	ADB Data
2	PO	Power On
3	+5 V	+5 Volt
4	GND	Ground



DB-19 External Drive Connector

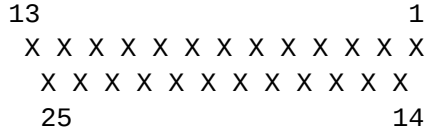
Pin	Signal	Description
1, 2, 3, 4	GND	Ground
5	-12 V	-12 Volt Supply
6	+5 V	+5 Volt Supply
7	+12 V	+12 Volt Supply
8	12 V	+12 Volt Supply
9	nc	(Not Connected)
10	+5 V	+5 Volt Supply
11	PHASE0	Motor Phase 0 Output
12	PHASE1	Motor Phase 1 Output

13	PHASE2	Motor Phase 2 Output
14	PHASE3	Motor Phase 3 Output
15	W/REQ	Write Request
16	SEL	Register Select Line
17	ENABLE2	Drive Enable
18	RD	Read Data Input
19	WR	Write Data Output



SCSI Port (25-pin)

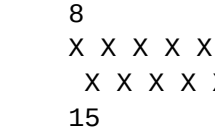
Pin	Signal	Description
1	REQ~	Request
2	MSG~	Message
3	I/O~	Input/Output
4	RST~	SCSI Bus Reset
5	ACK~	Acknowledge
6	BSY~	Busy
7	GND	Ground
8	DB0~	Data bit 0
9	GND	Ground
10	DB3~	Data bit 3
11	DB5~	Data bit 5
12	DB6~	Data bit 6
13	DB7~	Data bit 7
14	GND	Ground
15	C/D~	Command/Data
16	GND	Ground
17	ATN~	Attention
18	GND	Ground
19	SEL~	Select
20	DBP~	Data parity
21	DB1~	Data bit 1
22	DB2~	Data bit 2
23	DB4~	Data bit 4
24	GND	Ground
25	TPWR	Terminator power



WARNING: The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the Macintosh LC.

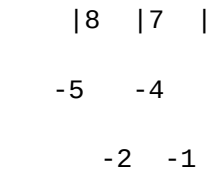
DB-15 Monitor Video Connector

Pin	Signal	Description
1	RED.GND	Red Video Ground
2	RED.VID	Red Video
3	CSYNC~	Composite Sync.
4	MON.ID1	Monitor ID, Bit 1
5	GRN.VID	Green Video
6	GRN.GND	Green Video Ground
7	MON.ID2	Monitor ID, Bit 2
8	nc	(Not Connected)
9	BLU.VID	Blue Video
10	MON.ID3	Monitor ID, Bit 3
11	C&VSYNC.GND	CSYNC & VSYNC Ground
12	VSYNC~	Vertical Sync.
13	BLU.GND	Blue Ground
14	HSYNC.GND	HSYNC Ground
15	HSYNC~	Horizontal Sync.
Shell	CHASSIS.GND	Chassis Ground



Modem and Printer Ports

Pin	Signal	Description
1	HSKo	Handshake Output DTR
2	HSKi	Handshake Input CTS
3	TxD-	Transmit Data (inverted)
4	SG	Signal Ground
5	RxD-	Receive Data (inverted)
6	TxD+	Transmit Data
7	GPi	General Purpose Input DCD
8	RxD+	Receive Data



Microphone Input Jack

Contact	Signal	Description

(Tip)	+8V	+8V for powering electret microphone
(Ring)	Right	Audio input with max amplitude of 20 mV at 600 Ohms impedance.
(Sleeve)	GND	Signal ground

Audio Output Jack - Stereo

Contact	Signal	Description
(Sleeve)	GND	Signal ground
(Tip)	Left	1-volt peak-to-peak audio signal; imped 47 Ohms
(Ring)	Right	1-volt peak-to-peak audio signal; imped 47 Ohms

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Tech Info Library Article Number:12935

Tech Info Library

Macintosh LC, LC II, and Performa 400: External Pinouts (2/96)

Revised: 2/28/96
Security: Everyone

Macintosh LC, LC II, and Performa 400: External Pinouts (2/96)

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Article Created: 29 April 1993
Article Reviewed/Updated: 28 February 1996

TOPIC ----------

This article provides the pin assignments and functions for the connectors on the back panels of the Macintosh LC, LC II, and Performa 400 computers.

DISCUSSION ----------

Begin_Table

Apple Desktop Bus (ADB)		
Pin	Signal name	Signal description
1	ADB	Data
2	PSW	Reset Key*
3	+5v	+5 volts DC
4	GND	Signal ground

Notes:
* Reset signal used to generate Reset and Interrupt Key combinations

Connector type: 4-pin minicircular

Total length of all cables not to exceed 5 m (16 ft)

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -
4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	GPi	General purpose input*
8	RXD+	Receive data +

* Notes:
Not connected. The chip combines the functions of the 8550 (SCC) and the 53C80/53C96 (SCSI) into a single chip. This chip does not have GPi capabilities, so the computers that use it have no GPi functionality.

Connector type: 8-pin minicircular

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0

9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Common/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground
19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1
22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	TPWR	Terminator power

WARNING:
The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the Macintosh computer.

IMPORTANT:
Total length of all cables not to exceed 6 m (20 ft)

Connector type: DB-25

Video Port

Pin	Signal name	Signal description
1	RED.GND	Red video ground
2	RED.VID	Red video
3	CSYNC/	Composite sync
4	MON.ID1	Monitor ID, bit 1
5	GRN.VID	Green video
6	GRN.GND	Green video ground
7	MON.ID2	Monitor ID, bit 2
8	NC	No connection
9	BLU.VID	Blue video
10	MON.ID3	Monitor ID, bit 3
11	C&VSYNC.GND	Composite & vertical sync ground
12	VSYNC/	Vertical sync
13	BLU.GND	Blue video ground
14	HSYNC.GND	Horizontal sync ground
15	HSYNC/	Horizontal sync
Shell	CHASSIS.GND	Chassis ground
Connector type: DB-15		

Sound Output Port		
Pin	Signal name	Signal description
Sleeve	GND	Signal ground
Middle	AUDIO	1 volt peak-to-peak audio signal, right channel
Tip	AUDIO	1 volt peak-to-peak audio signal, left channel

NOTES: The internal speaker is disabled when this port is in use.
Connector type: Stereo miniature phone plug

Sound Input Port

Pin	Signal name	Signal description
Sleeve	GND	Signal ground
Middle	MicPWR	Microphone power, +8 volts +/- 5% @ 1mA
Tip	SND.IN	Sound input signal, 1.6K ohm +/- 10% impedance, 4 mV maximum signal without clipping.

End_Table

Article Change History:
28 Feb 1996 - Added additional notes on GPI pin.

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Tech Info Library Article Number:12936

Tech Info Library

Macintosh LC III and Performa 450: External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

Macintosh LC III and Performa 450: External Pinouts (5/93)

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Article Created: 21 May 1993

TOPIC ----------

This article gives the pin assignments and functions for the external connectors on the Macintosh LC III and Performa 405, 430, and 450:

DISCUSSION ----------

Apple Desktop Bus (ADB)

Pin number	Signal name	Signal description
1	ADB	Bidirectional data bus used for input and output. An open-collector signal pulled up to +5 volts through a 470 ohm resistor on the main logic board.
2	PSW	Power-on signal.
3	+5V	+5 volts from the computer. Maximum current draw is 200 mA. A 1-amp fuse at the output satisfies safety requirements.
4	GND	Ground from the computer.

Modem and Printer Ports

Pin number	Signal name	Signal description
1	HSKo	Handshake output
2	HSKi	Handshake input
3	TxD-	Transmit data -

4	SG	Signal ground
5	RxD-	Receive data -
6	TxD+	Transmit data +
7	GPi	General-purpose input
8	RxD+	Receive data +

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Common/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground
19	SEL/	Select

20	DBP/	Data parity
21	DB1/	Data bit 1
22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	TPWR	Terminator power

- Connector type: DB-25

- Total length of all cables not to exceed 6 m (20 ft.)

WARNING: The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the computer.

External Video Connector Pinout

Pin	Signal name	Description
1	RED.GND	Red video ground
2	RED.VID	Red video signal
3	/CSYNC	Composite synchronization signal
4	SENSE0	Monitor sense signal 0
5	GRN.VID	Green video signal
6	GRN.GND	Green video ground
7	SENSE1	Monitor sense signal 1
8	n.c.	Not connected
9	BLU.VID	Blue video signal
10	SENSE2	Monitor sense signal 2
11	GND	CSYNC and VSYNC ground
12	/VSYNC	Vertical synchronization signal
13	BLU.GND	Blue video ground

14	HSYNC.GND	HSYNC ground
15	/HSYNC	Horizontal synchronization signal
Shell	SGND	Shield ground

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Tech Info Library Article Number:12938

Tech Info Library

PowerBook 100 : External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

PowerBook 100 : External Pinouts (5/93)

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Article Created: 27 May 1993

TOPIC -----

This article gives the pin assignments and functions for the external connectors on the PowerBook 100.

DISCUSSION -----

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	PWRON	Power on
3	+5v	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 5 m (16 ft.)

Printer Port

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -

4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	NC	General purpose input*
8	RXD+	Receive data +

- Connector type: 8-pin minicircular

HDI-30 SCSI Connector

Pin number	Signal name	Description
1	nc	Reserved for SCSI disk mode.
2	/DB0	Bit 0 of SCSI data bus
3, 8, 10, 12, 13, 15, 17, 20, 22, 24	GND	Ground
4	/DB1	Bit 1 of SCSI data bus
5	TPWR	Termination power
6	/DB2	Bit 2 of SCSI data bus
7	/DB3	Bit 3 of SCSI data bus
9	/ACKS	Handshake signal. When low acknowledges a request for data transfer
11	/DB4	Bit 4 of SCSI data bus
14	/DB5	Bit 5 of SCSI data bus
16	/DB6	Bit 6 of SCSI data bus
18	/DB7	Bit 7 of SCSI data bus
19	/DBP	SCSI data bus parity bit
21	/REQ	Request for a data transfer
23	/BSY	When active (low) indicates that the SCSI data bus is busy

25	/ATN	When active (low) indicates an attention condition
26	/C/D	When active (low) indicates that data is on the SCSI bus. When high, indicates that control signals are on the bus
27	/RST	SCSI bus reset
28	/MSG	Indicates the message phase
29	/SEL	SCSI select
30	/I/O	Controls the direction of data output. When high, data is input

HDI-20 Floppy Drive Connector

Pin	Signal Name	Signal Description
1	GND	Signal ground
2	GND	Signal ground
3	GND	Signal ground
4	GND	Signal ground
5	NC	No connection
6	+5V	+5 volts DC
7	+5V	+5 volts DC
8	+5V	+5 volts DC
9	+5V	+5 volts DC
10	NC	No connection
11	PH0	Phase 0
12	PH1	Phase 1
13	PH2	Phase 2
14	PH3	Phase 3
15	WREQ/	Write request
16	HDSEL	Head select

17	ENBL2/	External drive select
18	RD	Read data
19	WD	Write data
20	NC	No connection

Audio Output Connector

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Tip)	Left	0.75-volt peak-to-peak audio signal with an impedance of 47 Ohms; left channel
(Ring)	Right	0.75-volt peak-to-peak audio signal with an impedance of 47 Ohms; right channel

Connector type: Stereo miniature phone plug (3.6 mm)

Note: The PowerBook 100 outputs a monaural signal on both channels.

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Tech Info Library Article Number:12939

Tech Info Library

PowerBook 140, 145, and 170: External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

PowerBook 140, 145, and 170: External Pinouts (5/93)

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Article Created: 27 May 1993

TOPIC -----

This article gives the pin assignments and functions for the external connectors on the PowerBook 140, 145, and 170.

DISCUSSION -----

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	PWRON	Power on
3	+5v	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 5 m (16 ft.)

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -

4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	NC	General purpose input*
8	RXD+	Receive data +

- Connector type: 8-pin minicircular

HDI-30 SCSI Connector

Pin number	Signal name	Description
1	nc	Reserved for SCSI disk mode.
2	/DB0	Bit 0 of SCSI data bus
3, 8, 10, 12, 13, 15, 17, 20, 22, 24	GND	Ground
4	/DB1	Bit 1 of SCSI data bus
5	TPWR	Termination power
6	/DB2	Bit 2 of SCSI data bus
7	/DB3	Bit 3 of SCSI data bus
9	/ACKS	Handshake signal. When low acknowledges a request for data transfer
11	/DB4	Bit 4 of SCSI data bus
14	/DB5	Bit 5 of SCSI data bus
16	/DB6	Bit 6 of SCSI data bus
18	/DB7	Bit 7 of SCSI data bus
19	/DBP	SCSI data bus parity bit
21	/REQ	Request for a data transfer
23	/BSY	When active (low) indicates that the SCSI data bus is busy

25	/ATN	When active (low) indicates an attention condition
26	/C/D	When active (low) indicates that data is on the SCSI bus. When high, indicates that control signals are on the bus
27	/RST	SCSI bus reset
28	/MSG	Indicates the message phase
29	/SEL	SCSI select
30	/I/O	Controls the direction of data output. When high, data is input

Audio Output Connector

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Tip)	Left	0.75-volt peak-to-peak audio signal with an impedance of 47 Ohms; left channel
(Ring)	Right	0.75-volt peak-to-peak audio signal with an impedance of 47 Ohms; right channel

Connector type: Stereo miniature phone plug (3.6 mm)

Audio Input Connector (Stereo)

Pin	Signal name	Signal description
(Tip)	+8V	+8 volts for powering electret microphone
(Ring)	Right	Audio input with a maximum amplitude of 20 mV at 600 ohms impedance
(Sleeve)	GND	Signal ground

Connector type: Stereo miniature phone plug (3.6 mm)

Warning: Don't connect any device other than the Macintosh microphone. Doing so could damage the device or the computer.

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Tech Info Library Article Number:12940

Tech Info Library

PowerBook 160, 165c, 180 and 180c : External Pinouts (6/94)

Revised: 6/24/94
Security: Everyone

PowerBook 160, 165c, 180 and 180c : External Pinouts (6/94)

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Article Created: 27 May 1993
Article Reviewed/Updated: 24 June 1994

TOPIC ----------

This article gives the pin assignments and functions for the external connectors on the PowerBook 160, 165c, 180, and 180c.

DISCUSSION ----------

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	PWRON	Power on
3	+5v	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 5 m (16 ft.)

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -

4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	NC	General purpose input*
8	RXD+	Receive data +

- Connector type: 8-pin minicircular

HDI-30 SCSI Connector

Pin number	Signal name	Description
1	nc	Reserved for SCSI disk mode.
2	/DB0	Bit 0 of SCSI data bus
3, 8, 10, 12, 13, 15, 17, 20, 22, 24	GND	Ground
4	/DB1	Bit 1 of SCSI data bus
5	TPWR	Termination power
6	/DB2	Bit 2 of SCSI data bus
7	/DB3	Bit 3 of SCSI data bus
9	/ACKS	Handshake signal. When low acknowledges a request for data transfer
11	/DB4	Bit 4 of SCSI data bus
14	/DB5	Bit 5 of SCSI data bus
16	/DB6	Bit 6 of SCSI data bus
18	/DB7	Bit 7 of SCSI data bus
19	/DBP	SCSI data bus parity bit
21	/REQ	Request for a data transfer
23	/BSY	When active (low) indicates that the SCSI data bus is busy

25	/ATN	When active (low) indicates an attention condition
26	/C/D	When active (low) indicates that data is on the SCSI bus. When high, indicates that control signals are on the bus
27	/RST	SCSI bus reset
28	/MSG	Indicates the message phase
29	/SEL	SCSI select
30	/I/O	Controls the direction of data output. When high, data is input

Video Port

The video connection is made through a standard DB-15 connector.

Pin number	Signal name	Description
1	RED GND	Red ground
2	RED VID	Red video signal
3	/CSYNC	Composite sync
4	SENSE0	Monitor sense bit 0
5	GRN VID	Green video signal
6	GRN GND	Green ground
7	SENSE1	Monitor sense bit 1
8	mc	No connection
9	BLU VID	Blue video signal
10	SENSE2	Monitor sense bit 2
11	C&VSYNC GND	Ground for CSYNC and VSYNC
12	/VSYNC	Vertical sync
13	BLU GND	Blue ground
14	HSYNC GND	HSYNC ground

15	HSYNC	Horizontal sync

Audio Output Connector

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Tip)	Left	0.75-volt peak-to-peak audio signal with an impedance of 47 Ohms; left channel
(Ring)	Right	0.75-volt peak-to-peak audio signal with an impedance of 47 Ohms; right channel

Connector type: Stereo miniature phone plug (3.6 mm)

Article Change History:
24 Jun 1994 - Added 180c.

Support Information Services

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Tech Info Library Article Number:12941

Tech Info Library

Macintosh Plus: External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

Macintosh Plus: External Pinouts (5/93)

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Article Created: 29 April 1993

TOPIC ----------

This article gives the pin assignments and functions for the external connectors on the Macintosh Plus.

DISCUSSION ----------

Mouse Connector

Pin	Name	Description, Notes
1	CGND	Chassis ground
2	+5V	See hardware Description, Notes for power limits
3	CGND	Chassis ground
4	X2	Horizontal movement line (connected to VIA PB4 line)
5	X1	Horizontal movement line (connected to SCC DCDA- line)
6	N-C	Not connected
7	SW-	Mouse button line (connected to VIA PB3)
8	Y2	Vertical movement line (connected to VIA PB5 line)
9	Y1	Vertical movement line (connected to SCC DCDB- line)

Keyboard Connector

Pin	Name	Description, Notes
1	CGNB	Chassis ground
2	KBD1	Keyboard clock
3	KBD2	Keyboard data
4	+5V	

External Drive Connector

Pin	Name	Description, Notes
1	CGNB	Chassis ground
2	CGND	Chassis ground
3	CGND	Chassis ground
4	CGND	Chassis ground
5	-12V	
6	+5V	
7	+12V	
8	+12V	
9	N-C	Not connected
10	PWM	Regulates speed of the drive
11	CA0	Control line to send commands to the drive
12	CA1	Control line to send commands to the drive
13	CA2	Control line to send commands to the drive
14	LSTRB	Control line to send commands to the drive
15	WrReq-	Turns on the ability to write data to the drive
16	HdSel	Control line to send commands to the drive
17	Enbl2-	Enables the Rd line (else Rd is tristated)
18	Rd	Data actually read from the drive
19	Wr	Data actually written to the drive

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -
4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	NC	General purpose input*
8	RXD+	Receive data +

- Connector type: 8-pin minicircular

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request

2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Common/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground
19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1
22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	NC	No connection

- Connector type: DB-25

- Total length of all cables not to exceed 6 m (20 ft.)

WARNING: The SCSI port uses the same type of connector as a standard RS-232,

DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the Macintosh Classic.

Audio Output Port

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Tip)	AUDIO	.5 volt peak-to-peak audio signal

- Connector type: Miniature mono phone plug

- The internal speaker is disabled when this port is in use.

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Tech Info Library Article Number:12943

Tech Info Library

Macintosh Portable: External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

Macintosh Portable: External Pinouts (5/93)

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Article Created: 29 April 1993

TOPIC ----------

This article gives the pin assignments and functions for the connectors on the Macintosh Portable.

DISCUSSION ----------

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	NC	Reserved
3	+5 V	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 5 meters (16 feet).

Disk Drive Port

Pin	Signal name	Signal description
1	GND	Signal ground
2	GND	Signal ground
3	GND	Signal ground

4	GND	Signal ground
5	NC	No connection
6	+5 V	+5 volts DC
7	+12 V	+12 volts DC
8	+12 V	+12 volts DC
9	NC	No connection
10	PWM	Mode select
11	PH0	Register select CA0
12	PH1	Register select CA1
13	PH2	Register select CA2
14	PH3	Register write strobe LSTRB
15	WRREQ/	Write request
16	SEL	Register select line SEL
17	ENBL/	Drive enable
18	RD	Read data
19	WR	Write data

- Connector type: DB-19

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground

8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Command/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground
19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1
22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	NC	No connection

- Connector type: DB-25

- Total length of all cables not to exceed 6 meters (20 feet).

WARNING: The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the Macintosh LC.

Video Port

Pin	Signal name	Signal description
1	FPDATA(0)	Flat panel display data bus (bit 0)
2	FPDATA(1)	Flat panel display data bus (bit 1)

3	+5 V	+5 volts DC
4	FPDATA(2)	Flat panel display data bus (bit 2)
5	FPDATA(3)	Flat panel display data bus (bit 3)
6	FPDATA(4)	Flat panel display data bus (bit 4)
7	GND	Ground
8	+5 V	+5 volts DC
9	GND	Ground
10	FPDATA(5)	Flat panel display data bus (bit 5)
11	FPDATA(6)	Flat panel display data bus (bit 6)
12	FPDATA(7)	Flat panel display data bus (bit 7)
13	BATT_ VOLTAGE	Direct connect to main battery
14	FLM	Flat panel new frame sync
15	CL2 /	Flat panel display data clock

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -
4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	GPi	General purpose input*
8	RXD+	Receive data +

*Modem port only: Can be set in software to be a synchronous external clock.

- Connector type: 8-pin minicircular

Audio Jack

Pin	Signal name	Signal description
Sleeve	GND	Signal ground
Ring	Right	0.75 volt peak-to-peak audio signal, right channel
Tip	Left	0.75 volt peak-to-peak audio signal, left channel

- Connector type: Stereo miniature phone plug

- The internal speaker is disabled when this port is in use.

Power Adapter Port

Pin	Signal name	Signal description
Sleeve	GND	Ground
Tip	CHGR PWR	Power adapter, +7.5 volts

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Tech Info Library Article Number:12944

Tech Info Library

Macintosh Quadra 700: External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

Macintosh Quadra 700: External Pinouts (5/93)

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Article Created: 28 May 1993

TOPIC -----

This article gives the pin assignments and functions for the external connectors on the Macintosh Quadra 700.

DISCUSSION -----

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	PWRON	Power on
3	+5v	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 5 m (16 ft.)

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -

4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	NC	General purpose input*
8	RXD+	Receive data +

- Connector type: 8-pin minicircular

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Common/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground

19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1
22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	TPWR	Terminator power

- Connector type: DB-25

- Total length of all cables not to exceed 6 m (20 ft.)

WARNING: The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the computer

Video Port

Pin	Signal name	Signal description
1	RED.GND	Red video ground
2	RED.VID	Red video
3	CSYNC/	Composite sync
4	MON.ID1	Monitor ID, bit 1
5	GRN.VID	Green video
6	GRN.GND	Green video ground
7	MON.ID2	Monitor ID, bit 2
8	NC	No connection
9	BLU.VID	Blue video
10	MON.ID3	Monitor ID, bit 3
11	C&VSYNC.GND	Composite & vertical sync ground
12	VSYNC/	Vertical sync

13	BLU.GND	Blue video ground
14	HSYNC.GND	Horizontal sync ground
15	HSYNC/	Horizontal sync
Shell	CHASSIS.GND	Chassis ground

- Connector type: DB-15

Ethernet Connector

Pin	Signal Name	Signal Description
1	FN Pwr	Power (+12V @ 2.1W or +5V @ 1.9W)
2	DI-A	Data In circuit A
3	DI-B	Data In circuit B
4	VCC	Voltage Common
5	CI-A	Control In circuit A
6	CI-B	Control In circuit B
7	+5V	+5 volts (from host)
8	+5V	Secondary +5 volts (from host)
9	DO-A	Data Out circuit A
10	DO-B	Data Out circuit B
11	VCC	Secondary Voltage Common
12	NC	Reserved
13	NC	Reserved
14	FN Pwr	Secondary +12V @ 2.1W or +5V @ 1.9W
Shell	Protective Gnd	Protective Ground

AAUI signals have the same description, function, and electrical requirements as the AUI signals of the same name, as detailed in IEEE Standard 802.3-1990 CSMA/CD, section 7.

The AAUI (Apple Attachment Unit Interface) connector is a 14-position, 0.050-inch-spaced ribbon contact connector.

..TIL12945-Macintosh_Quadra_700-External_Pinouts_5-93.pdf

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Tech Info Library Article Number:12945

Tech Info Library

Macintosh Quadra 900/950 and WorkGroup 95: External Pinouts

Revised: 8/11/93
Security: Everyone

Macintosh Quadra 900/950 and WorkGroup 95: External Pinouts

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Article Created: 28 May 1993

TOPIC --------------------

This article gives the pin assignments and functions for the external connectors on the Macintosh Quadra 900, Quadra 950, and WorkGroup 95.

DISCUSSION --------------------

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	PWRON	Power on
3	+5v	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 5 m (16 ft.)

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -

4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	NC	General purpose input*
8	RXD+	Receive data +

- Connector type: 8-pin minicircular

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message
3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Common/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground

19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1
22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	TPWR	Terminator power

- Connector type: DB-25

- Total length of all cables not to exceed 6 m (20 ft.)

WARNING: The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any RS-232 device to this connector. Doing so can result in damage to both the device and the computer

Video Port

Pin	Signal name	Signal description
1	RED.GND	Red video ground
2	RED.VID	Red video
3	CSYNC/	Composite sync
4	MON.ID1	Monitor ID, bit 1
5	GRN.VID	Green video
6	GRN.GND	Green video ground
7	MON.ID2	Monitor ID, bit 2
8	NC	No connection
9	BLU.VID	Blue video
10	MON.ID3	Monitor ID, bit 3
11	C&VSYNC.GND	Composite & vertical sync ground
12	VSYNC/	Vertical sync

13	BLU.GND	Blue video ground
14	HSYNC.GND	Horizontal sync ground
15	HSYNC/	Horizontal sync
Shell	CHASSIS.GND	Chassis ground

- Connector type: DB-15

Ethernet Connector

Pin	Signal Name	Signal Description
1	FN Pwr	Power (+12V @ 2.1W or +5V @ 1.9W)
2	DI-A	Data In circuit A
3	DI-B	Data In circuit B
4	VCC	Voltage Common
5	CI-A	Control In circuit A
6	CI-B	Control In circuit B
7	+5V	+5 volts (from host)
8	+5V	Secondary +5 volts (from host)
9	DO-A	Data Out circuit A
10	DO-B	Data Out circuit B
11	VCC	Secondary Voltage Common
12	NC	Reserved
13	NC	Reserved
14	FN Pwr	Secondary +12V @ 2.1W or +5V @ 1.9W
Shell	Protective Gnd	Protective Ground

AAUI signals have the same description, function, and electrical requirements as the AUI signals of the same name, as detailed in IEEE Standard 802.3-1990 CSMA/CD, section 7.

The AAUI (Apple Attachment Unit Interface) connector is a 14-position, 0.050-inch-spaced ribbon contact connector.

Line Input Connectors

Pin	Signal description
(Sleeve)	Digital ground
(Tip)	Audio input

Connector type: RCA phono plug

The back panel has two connectors--right and left channel. Stereo information is internally mixed to yuield a monaural signal.

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Tech Info Library Article Number:12946

Macintosh SE and SE 30: External Pinouts (5/93)

Revised: 8/11/93
Security: Everyone

Macintosh SE and SE 30: External Pinouts (5/93)

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Article Created: 29 April 1993

TOPIC ----------

This article gives the pin assignments and functions for the connectors on the back panels of the Macintosh SE and SE/30. The pinouts are the same with the exception of the audio output ports. The Macintosh SE provides a monaural signal and the Macintosh SE/30 a stereo signal. Appropriate information appears below.

DISCUSSION ----------

Apple Desktop Bus (ADB)

Pin	Signal name	Signal description
1	ADB	Data
2	NC	Reserved
3	+5v	+5 volts DC
4	GND	Signal ground

- Connector type: 4-pin minicircular

- Total length of all cables not to exceed 16 feet (5 meters)

SCSI Port (25-pin)

Pin	Signal name	Signal description
1	REQ/	Request
2	MSG/	Message

3	I/O/	Input/Output
4	RST/	SCSI bus reset
5	ACK/	Acknowledge
6	BSY/	Busy
7	GND	Signal ground
8	DB0/	Data bit 0
9	GND	Signal ground
10	DB3/	Data bit 3
11	DB5/	Data bit 5
12	DB6/	Data bit 6
13	DB7/	Data bit 7
14	GND	Signal ground
15	C/D/	Common/Data
16	GND	Signal ground
17	ATN/	Attention
18	GND	Signal ground
19	SEL/	Select
20	DBP/	Data parity
21	DB1/	Data bit 1
22	DB2/	Data bit 2
23	DB4/	Data bit 4
24	GND	Signal ground
25	TPWR	Terminator power

- Connector type: DB-25

- Total length of all cables not to exceed 20 feet (6 meters)

WARNING: The SCSI port uses the same type of connector as a standard RS-232, DB-25 serial interface, but it is different electrically. Do not connect any

RS-232 device to this connector. Doing so can result in damage to both the device and the Macintosh LC.

Modem and Printer Ports

Pin	Signal name	Signal description
1	HSKo	Handshake out
2	HSKi	Handshake in/external clock
3	TXD-	Transmit data -
4	GND	Signal ground
5	RXD-	Receive data -
6	TXD+	Transmit data +
7	GPi	General purpose input*
8	RXD+	Receive data +

*Modem port only. Can be set in software to be a second external clock.

- Connector type: 8-pin minicircular

Disk Drive Port

Pin	Signal name	Signal description
1	GND	Signal ground
2	GND	Signal ground
3	GND	Signal ground
4	GND	Signal ground
5	-12v	-12 volts DC
6	+5v	+5 volts DC
7	+12v	+12 volts DC
8	+12v	+12 volts DC
9	NC	No connection
1	PWM	Motor speed control

11	PH0	Register select CA0
12	PH1	Register select CA1
13	PH2	Register select CA2
14	PH3	Register write strobe LSTRB
15	WRREQ/	Write request
16	SEL	Register select line SEL
17	ENBL/	Drive enable
18	RD	Read data
19	WR	Write data

- Connector type: DB-19

Audio Jack for the Macintosh SE

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Tip)	AUDIO	.5 volt peak-to-peak audio signal

- Connector type: Miniature mono phone plug

- The internal speaker is disabled when this port is in use.

Audio Jack for the Macintosh SE/30

Pin	Signal name	Signal description
(Sleeve)	GND	Signal ground
(Ring)	RIGHT	.75 volt peak-to-peak audio signal, right channel
(Tip)	LEFT	.75 volt peak-to-peak audio signal, left channel

- Connector type: Stereo miniature phone plug

- The internal speaker is disabled when this port is in use.

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Tech Info Library Article Number:12947

Tech Info Library

JPEG: Where to Get Specifications (8/93)

Revised: 8/12/93
Security: Everyone

JPEG: Where to Get Specifications (8/93)

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Article Created: 11 August 1993

TOPIC -----

Where can I get JPEG specifications?

DISCUSSION -----

JPEG stands for Joint Photographic Experts Group and is a standard for compression of images.

For information on how to get the JPEG specs, write to this address:

ANSI
11 West 42nd. Street
New York City, NY 10036
212 642-4900

Ask for document ISO-CD10918-1 and include a check or money order for $75 ($69 for the documents and $6 shipping).

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Tech Info Library Article Number:12949

Tech Info Library

PowerBook External Monitor Freeze-up & Connectix Utils (8/93)

Revised: 7/8/94
Security: Everyone

PowerBook External Monitor Freeze-up & Connectix Utils (8/93)

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Article Created: 12 August 1993

TOPIC ----------

I have Connectix PowerBook Utilities (CPU) version 1.0 installed on my PowerBook with external monitor port.

When the PowerBook 160 or 180 (or other models with the video out feature) display dims after the set amount of time, and if a second monitor is attached, the display will not refresh when a key is depressed. Both the internal display and the external monitor light up but remain blank, except for the cursor. The only way to recover is to restart the computer.

DISCUSSION ----------

This version of CPU is not compatible with the video out feature of the new PowerBooks. Connectix does have a compatible version of the utility, 1.0j.

Version 2.0 of Connectix PowerBook Utilities also is available, with enhanced features as well as compatibility with all PowerBooks to date.

Call Connectix for the latest information and to obtain the current release of the software. To locate a vendor's address and phone numbers, use the vendor name as a search string.

Support Information Services

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Tech Info Library Article Number:12950

Tech Info Library

LaserWriter: Emulator Font (8/93)

Revised: 8/16/93
Security: Everyone

LaserWriter: "Emulator Font" (8/93)

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Article Created: 13 August 1993

TOPIC --------------------

What is the "Emulator Font" found in some Apple LaserWriters?

Also, when a fonts list from a LaserWriter is printed, why is there no sample of text beside the listing for "Emulator Font"?

Finally, why is it not found in the LaserWriter IINTX (which has Hewlett-Packard emulation)?

DISCUSSION --------------------

From results of our tests, the "EmulatorFont" found in some of our LaserWriter printers is directly associated with HP PCL emulation.

Using PostScript commands to specifically select and use the "EmulatorFont", we were unable to get any output for that font while in PostScript mode.

With regard to why "EmulatorFont" does not show up in the LaserWriter IINTX, we believe that it is related to the different ROM versions in the printers, and how the Type 1 fonts in ROM are utilized in HP PCL mode.

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Tech Info Library Article Number:12952

Tech Info Library

Newton: How to Add Words to the Word List (8/93)

Revised: 8/12/93
Security: Everyone

Newton: How to Add Words to the Word List (8/93)

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Article Created: 12 August 1993

TOPIC -----

How do I add words to Newton's word list?

DISCUSSION -----

You can add words to Newton's word list with Newton's on-screen keyboard. Here are two ways to do that:

1) Double-tap words that Newton misinterprets. This will display the on-screen keyboard. Type in the correct word with your stylus, then tap Yes when Newton asks you if you want the word added to your personal word list.

2) Tap the keyboard icon inside the Preferences Menu or on the bottom left of the Note Pad to display. When the keyboard is displayed, type in the desired word with your stylus, then tap Add to add your word to the word list.

Only add words to your personal word list that you use often. Try not to add many short words, abbreviations or acronyms to the list, because it will slow down Newton's interpretive process and increase the likelihood of future mistakes.

If Newton seems to continuously misinterpret specific letters or words, you may want to go back to Letter Styles in the Preferences Menu and narrow or expand the styles you want Newton to recognize.

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Tech Info Library Article Number:12953

Startup Items Folder: Items Don't Always Launch (9/93)

Revised: 9/14/93
Security: Everyone

Startup Items Folder: Items Don't Always Launch (9/93)

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Article Created: 13 August 1993
Article Reviewed/Updated: 13 September 1993

TOPIC ----------

Sometimes when starting up a Macintosh, the system seems to ignore anything placed in the Startup Items folder (inside the System Folder). None of the items in the folder get launched on startup. As far as we can tell, this only happens when a piece of software -- an application, extension, or control panel -- puts up a dialog box during the startup process and waits for a user response. For instance, when AppleTalk Remote Access asks for a password during startup (if set up to require one, as with a Security Zone implemented) to enable answering calls, no other items in the Startup Items folder get opened or launched. (The ARA password is only requested when the Security Zone has been implemented.)

DISCUSSION ----------

The Macintosh handles instructions through what is called an event queue. All commands line up in the order they are received until the computer can respond to or take action on them. A piece of software should look at events as they are coming in, take action on the events meant for it, and leave events meant for other software intact in the queue.

But some software doesn't handle this event queue properly. Instead of ignoring a command not meant for it, the software -- such as the type that asks for user input on startup -- accepts, and promptly loses, all commands in the queue. The result is that commands not meant for that particular application or extension aren't acted upon.

If startup items aren't loading properly, watch the startup process for any dialog boxes that force interaction from the user. If not written properly, the software displaying the dialog box may be preventing items in the Startup Folder from running.

AppleTalk Remote Access version 1.0 behaves in this way when it's set to require a password on startup, as do some other programs. This characteristic will be fixed in a future version of AppleTalk Remote Access.

If you determine that another program is causing items in the Startup Items folder not to launch, then they may need to be modified as well. Contact the vendor of that software to find out if they are aware of the problem and if a more recent version of the program is available.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
13 September 1993 - To add a note about when an ARA password is requested.

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Tech Info Library Article Number:12954

Tech Info Library

Macintosh LC 520 Server: Power Conservation (8/93)

Revised: 8/19/93
Security: Everyone

Macintosh LC 520 Server: Power Conservation (8/93)

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Article Created: 16 August 1993

TOPIC --

I want to use a Macintosh LC 520 as an AppleShare 3.0 server. Will there be any adverse effect on server performance as a result of the power conservation feature? Is screen dimming the only energy-saving feature of the Macintosh LC 520?

DISCUSSION --

The Macintosh LC 520's only energy-saving feature is screen dimming. There are no performance-related issues when the computer is in this mode.

When the screen is powered down, total system energy is reduced by approximately 50%:

- Regular power consumption for the Macintosh LC 520 is 60 watts (40 watts not including monitor)
- Power consumption reduces to approximately 30 watts in energy-saving mode.

Power to the screen is restored when you either press the mouse button or a key on the keyboard.

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Tech Info Library Article Number:12956

Tech Info Library

PowerBook Screens: Active vs. Passive Matrix Comparison (12/95)

Revised: 12/12/95
Security: Everyone

PowerBook Screens: Active vs. Passive Matrix Comparison (12/95)

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Article Created: 13 August 1993
Article Reviewed/Updated: 12 December 1995

TOPIC ----------

I noticed that there are several types of PowerBook screens. How do they differ?

DISCUSSION ----------

Comparison of Active vs. Passive Matrix Displays

All PowerBook screens employ LCD (liquid crystal display) technology. Liquid crystals are electrically polarized - one end is more positive than the other, and thus the crystals tend to orient themselves along the lines of an electric field. When no such field is present, they orient themselves randomly.

Liquid crystals are transparent to light, but they also polarize the light, constraining the vibrations of the light to a single orientation.

An LCD uses a combination of a fixed polarizing screen, and an electrically controlled liquid-crystal polarizer to make light and dark areas. When the liquid crystals are subjected to an electric field, all of the light passing through them becomes polarized with the same orientation.

The orientation of the fixed polarizing screen is exactly 90 degrees off, which effectively blocks the passage of any light. So when a liquid crystal display region or pixel is on, it appears to be dark.

When an LCD pixel is off, quite a bit of the randomly polarized light from the crystals is able to make it through the fixed polarizing screen, so the pixel appears to be light.

Passive matrix screens apply the electric field voltages along the edges of the screen, so that pixels appear light and dark at the intersection of rows and columns. Each pixel is passively responding to voltage differences applied along

the horizontal and vertical edges of the screen. It is difficult to get a large number of crystals to line up quickly, and completely. So passive matrix screens are relatively slow and provide less precise definition.

Active matrix screens use a single transistor at every single pixel location. This provides a good strong source of electric field, and it only has to act on a very tiny region of liquid crystals. So they are quite fast and every crystal in a pixel is lined up perfectly.

The merits of the passive screen are lower cost and lower power usage. But the angle at which you can view the screen undistorted is smaller than for an active-matrix screen. Also, a passive-matrix screen is not as bright as its active-matrix counterpart.

You may experience submarining on a passive-matrix screen, meaning the pointer tends to disappear momentarily when you move it quickly across the screen until it catches up with the trackball. You may also notice speed trails, or shadowy, comet-like trails following the pointer or other objects you drag around the screen. They disappear as quickly as they appear, but some users find them distracting.

An active-matrix screen is brighter and provides better definition. The screen is also less likely to distort when viewed at more extreme angles.

The following charts which PowerBook models have Active or Passive Matrix Displays:

Begin_Table

PB Model	B&W/Color/Grayscale	Active/Passive Matrix
100	B&W	Passive
140	B&W	Passive
145	B&W	Passive
145B	B&W	Passive
150	Grayscale (4 Grays)	Passive
160	Grayscale (16 Grays)	Passive
165c	Color (256 Colors)	Passive
170	B&W	Active
180	Grayscale (16 Grays)	Active
180c	Color (256 Colors)	Active
190	Grayscale (16 Grays)	Passive
190cs	Color (256 Colors)	Passive
520	Grayscale (16 Grays)	Passive
520c	Color (256 Colors)	Passive
540	Grayscale (64 Grays)	Active
540c	Color (256 Colors*)	Active
5300	Grayscale (16 Grays)	Passive
5300c/100 8/500	Color (256 Colors**)	Active
5300c/100 16/750	Color (thousands of colors**)	Active
5300cs	Color (256 Colors)	Passive
5300ce	Color (thousands of colors)	Active

Duo 210	Grayscale (16 Grays)	Passive
Duo 230	Grayscale (16 Grays)	Passive
Duo 250	Grayscale (16 Grays)	Active
Duo 270c	Color (256 Colors*)	Active
Duo 280	Grayscale (16 Grays)	Active
Duo 280c	Color (256 Colors*)	Active
Duo 2300c	Color (256 Colors*)	Active

* Thousands of colors in 640 by 400 mode
** The PowerBook 5300c computer is available in two configuartions.
One model has 512K of built-in VRAM, while the other has 1 MB.

End_Table

NOTE:
The descriptions in this table apply only to models sold in the United States. Europe and Asia have models that differ slightly from these configurations.

For more information and details about the amount of internal VRAM, number of colors available, and specific model numbers of the PowerBook 190 and 5300 series computers see the TIL article titled "PowerBook 5300 & 190 Series: Internal & External Video".

Article Change History:
12 Dec 1995 - Added PowerBook 190, 5300 series, and 2300.
15 Feb 1995 - Reviewed for technical accuracy, revised format.
13 Oct 1994 - Added PowerBook 150.

Support Information Services

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Tech Info Library Article Number:12958

Tech Info Library

Fax/Modems: What to Look For (8/93)

Revised: 8/19/93
Security: Everyone

Fax/Modems: What to Look For (8/93)

==========

Article Created: 13 August 1993

TOPIC -----

What should I look for in an external fax/modem for my Performa computer?

DISCUSSION -----

Any external Hayes-compatible fax/modem will work with your Performa.

Your first considerations are price, speed and output quality. The rest is just a matter of what you think you need or want.

Here are some suggestions:

1) Look for background operation so the computer can receive a fax without forcing you to stop what you're working on.

2) Determine whether you need send-only or send-receive capability. Send-only can be significantly less expensive, but you will sacrifice the ability to receive incoming faxes at your desktop.

3) Some fax/modems feature an automatic redial function which you can configure to attempt to send your fax (in the background) multiple times at specific time increments. For instance, you could configure it to retry a busy receiver every five minutes for 50 minutes, or until successful transmission.

4) If you opt for a send/receive model, look for one with a View function. View allows you to read and manipulate faxed information on your screen. Models without this feature require you to print out received faxes in order to read them.

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Tech Info Library Article Number:12959

Tech Info Library

Macintosh: Using High-Density Disks in 800K Drives (01/95)

Revised: 1/13/95
Security: Everyone

Macintosh: Using High-Density Disks in 800K Drives (01/95)

==========

Article Created: 12 August 1993
Article Reviewed/Updated: 13 January 1995

TOPIC ----------

This article describes how to use a 1.4MB high-density disk in an 800K drive.

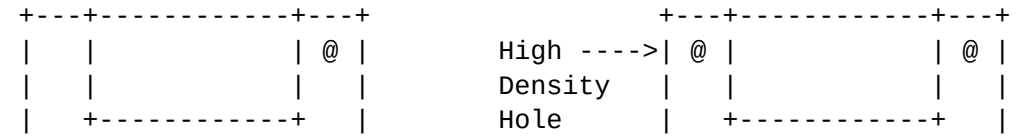
DISCUSSION ----------

If you take brand new high-density, “preformatted for Macintosh” floppy disks and copy some files off an earlier model Macintosh (such as a Macintosh Plus) to transfer them to a newer model Macintosh (such as a Performa). When you insert the disk in the newer model’s drive, you get the message “This disk is unreadable. Do you want to initialize it?”

This happens because you are using high-density disks to perform your file transfer, but the earlier Macintosh and the newer Macintosh do not use the same type of disk drive. The earlier models, along with most original Macintosh II models and some Macintosh SE systems do not have the high-density SuperDrive (or FDHD – floppy drive, high density) necessary to read and format a high-density disk.

So, if you insert a blank high-density disk in a double-density (800K) drive like the one in a Macintosh Plus, it does not know the difference between a double- density and a high-density floppy, and happily formats your expensive 1.4MB disk as an 800K disk.

When you move this disk to a Macintosh with a SuperDrive, the newer drive recognizes the disk as a high-density floppy by its extra hole. Since the disk has been formatted as 800K instead of as 1.4MB, the SuperDrive misreads it and asks you if you want to initialize it.



As a temporary workaround, place a small piece of tape over both sides of the extra hole (the one on the upper left when looking at the diskette from the front, as shown in the above diagram) on the high-density disk to trick the Macintosh into treating the disk as a double-density disk. This is a temporary solution, and the tape should be removed and the disk reformatted to the proper size as soon as possible.

Article Change History:
13 Jan 1995 - Added keyword, retitled, and made several technical updates.

Support Information Services

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Tech Info Library Article Number:12960

Tech Info Library

Quadra, Centris: Drawback of Switching Caches On the Fly 8/93

Revised: 9/22/93
Security: Everyone

Quadra, Centris: Drawback of Switching Caches On the Fly 8/93

==========

Article Created: 16 August 1993

TOPIC -----

When I:
1) Change my Quadra 800's cache switch from "faster" to "more compatible" using the Option key, then
2) insert a disk, use it, eject it, and put it back in,
the disk is unreadable. I've seen this happen on a Centris 650 as well.

I tried this on a Quadra 700:
1) Holding option key, changed cache switch from "faster" to "more compatible."
2) Closed Cache control panel.
3) Inserted a disk.
4) Moved some files around, copied, or did nothing.
5) Ejected disk.
6) Re-inserted disk. The disk mounted fine

When I tried the same thing on a Quadra 800, the disk was unreadable. I then:
7) Reformatted the disk. When the format was complete, the disk would not mount.
8) Ejected disk (Command-Shift-1), and reinserted it. Still unreadable.

DISCUSSION -----

This sounds like a classic example of toggling the 68040 processor caches on/off on the fly.

Whenever the Quadra 700, Quadra 800, Quadra 840AV, Centris 650, or Centris 660AV -- or any other Quadra that doesn't contain Peripheral Interface Controllers (PIC chips) -- starts up, the system determines its effective processor speed (this has nothing to do with the 040's clock speed but with the mode of the processors caches) and sets certain internal timings according to this effective processor speed. Two of the more important

timings are for the floppy drive and LocalTalk. Therefore, when these Quadras' caches are switched without a restart, the timings set at startup are no longer valid and the floppy and LocalTalk may not work... or won't work reliably.

The Quadra 900 and 950 feature the PIC chips of the IIfx. These Quadras having these I/O processors seem to work fine after having the caches switched on/off on the fly.

Recommendation

On Quadras not having PICs, our recommendation is not to switch the 040 processor caches on/off on-the-fly.

Workaround

Alysis Software Corporation and others distribute cache switches they claim do not require users to restart to change the cache settings safely.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12961

Tech Info Library

Retrospect A/UX: Supported Storage Devices (8/93)

Revised: 8/30/93
Security: Everyone

Retrospect A/UX: Supported Storage Devices (8/93)

==========

Article Created: 16 August 1993

TOPIC ----------

This article describes which storage devices Retrospect A/UX supports.

DISCUSSION ----------

Although Retrospect running under the Macintosh operating system supports a variety of storage devices with high reliability and performance, some devices are not suitable for use in an A/UX environment. In particular, the older or less standard SCSI tape drives can cause problems in the high-performance environment of the Workgroup Server 95.

The recommended, optimal storage drive for the Workgroup Server 95 is the Hewlett-Packard DS-DC DAT drive that may have come installed in your server. (This drive's capacity is between 1GB and 5GB.) For more information on this drive, see the Basic Skills document provided with the Apple Workgroup Server 95.

Macintosh Disk StorageSets are acceptable for data storage, but storing a large quantity of data on floppy disks is impractical. Also, the performance of large File StorageSets is slower in the A/UX environment because of the necessity of translating the file between Macintosh and A/UX formats.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12962

Tech Info Library

Retrospect A/UX: Mixing A/UX & Macintosh Backups (8/93)

Revised: 8/30/93
Security: Everyone

Retrospect A/UX: Mixing A/UX & Macintosh Backups (8/93)

==========

Article Created: 16 August 1993

TOPIC -----

Can you mix A/UX & Macintosh backups using Retrospect A/UX?

DISCUSSION -----

You can mix Macintosh volumes and A/UX volumes in the same StorageSet. Retrospect's SnapShots keep track of volumes as usual. If you perform a StorageSet transfer to move A/UX files between StorageSets, Retrospect also copies the corresponding A/UX information for these files.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12963

Tech Info Library

TCP/IP Connection for the Macintosh v. 2.0.2 (8/93)

Revised: 8/16/93
Security: Everyone

TCP/IP Connection for the Macintosh v. 2.0.2 (8/93)

==========

Article Created: 16 August 1993

TOPIC ----------

TCP/IP Connection for the Macintosh 2.0.2 supports SNMP, adds several features, and fixes several bugs.

DISCUSSION ----------

Installation

The TCP/IP software can now be installed using an Installer script. This script installs the MacTCP control panel, the MacTCP Token Ring Extension (if an Apple Token Ring NB card is available) and the software required to use SNMP on the Macintosh.

Note to PowerBook Duo Users with NSI 1.3

The MacTCP Easy Install option does not work on a PowerBook Duo 210 or 230. MacTCP can be installed on PowerBook Duos with the Custom Install option, although the SNMP portions will not work with the AppleTalk version running on the PowerBook Duo. This does not affect MacTCP's ability to communicate with other systems running TCP/IP nor will it affect TCP/IP applications such as telnet, ftp, mail, etc.

SNMP and Shared Library Manager cannot be easily installed onto a PowerBook Duo 210 or 230. An installer dialog will state that installation can only be done on systems with AppleTalk 58 (Network Software Installer 1.3) and higher. However, re-installing AppleTalk 58 using NSI 1.3 will not solve this installation problem. This is because NSI 1.3 does not properly install AppleTalk 58 on PowerBook Duos.

Network Software Installer 1.3.2 and higher solves the AppleTalk problem, allowing full SNMP functionality. TCP/IP Connection for Macintosh will be updated to include NSI 1.3.2, and the update will be freely available to registered users of TCP/IP Connection for Macintosh. Please contact your

Apple dealer for information on the latest NSI disk.

Do not attempt to install or use the Shared Library Manager or any SNMP component on a PowerBook Duo until NSI 1.3.2 or later has been successfully installed.

SNMP Support

After installing and starting your Macintosh, the system can be queried by SNMP for variables in the MIB-II specification (RFC 1213). Sets are allowed on only two variables, the default TTL field and the state variable in the TCP connection table. Sets are not allowed in either the address translation table or the net to media table. Sets in the state variable in the TCP table will cause a TCPAbort on the associated stream.

Additional Features

Additional features that have been added in this release are as follows:

- The MacTCP Control panel now shows the version number of MacTCP in the lower left corner of the control panel screen.

- When MacTCP is opened and its set IP address is in use by another system, MacTCP will display a notification alert giving the current IP address and the link address of the host that is using this IP address. This feature only works with the token ring and ethernet interfaces that are provided with MacTCP. MDev developers please see the section Developer changes and features in these release notes.

- MacTCP now ships with an ICMP Ping application.

Bugs that have been addressed

In this release bugs that have been addresed are as follows:

- MacTCP Token Ring Extension does not fail if token ring is not present.
- MacTCP control panel performance is improved for displaying large zone lists.
- MacTCP Token Ring Extension MTU value is interpreted unsigned.
- OpenResolver will not write to nil if given a filename.
- MacTCP now sends ICMP port unreachables.
- MacTCP Token Ring Extension default MTU is 2002 bytes.
- MacTCP DNR will not leak memory on repeated queries.
- Nonstandard addresses (see RFC 1122 page 30) using network number 0 are accepted (i.e. 192.0.0.0 and 128.0.0.0).
- MacTCP BootP hops set to 0.

Some issues to be aware of

- Since MacTCP installation will replace the SNMP Preferences file, save a copy of your modified file first.
- To reinstall the Shared Library Manager, use Custom Install.
- If you want to install the MacTCP Token Ring Extension on a machine with

no token ring card, Custom Install must be used.

- In the SNMP Trap table IP addresses must be specified with a trailing null character.

Developer changes and features

Two resources have been added to the MacTCP control panel file. The first resource is the 'arps' resource. This resource contains an integer that is the default ARP table size used by both the ethernet and token ring MacTCP MDevs. Applications that need to query a large number of local hosts (same wire) can set this value to improve the performance of MacTCP and the applications. The system must be restarted for this value to take effect. If you are developing MDevs that have address translation tables, use this value to adjust the size of the address translation tables. The resource is described as follows:

```
type 'arps' {
   unsigned longint;
   };

resource 'arps' (0) {
   20
   };
```

The other resource that has been added to the MacTCP control panel is as follows:

```
resource 'STR ' (130) {
   "Another device, which has the physical address ^1, is currently using
    the IP address ^0."
   };
```

The string displayed in this dialog is available to MDev developers to use. The IP Address of the associated offender should be placed in the ^0 position and the hardware address should be in the ^1 position. This string is provided so that localized versions of MacTCP will allow MDevs to use the appropriate string to notify users of IP address conflicts.

MacSNMP Release Notes (v 1.0.2)

In order to preserve the setting of communities, password, trap table, etc., the SNMP Preferences file has to be dragged outside the Extensions Folder before installing a new version of MacSNMP, and dragged back inside that folder upon completion of the installation.

Bug Fixes

- MacSNMP Admin and MacSNMP Client:

  Closing the community window sometimes crashed the MacSNMP Admin and MacSNMP Client.

- SNMP Macintosh Agent:

GetNext on the last element of one of the SystemFileTable's columns did not return the first element of the ApplTable.

SNMP Macintosh Agent now returns an INTEGER instead of a COUNTER for SystemFileTable.FileEntry.fileSize.

SNMP Macintosh Agent now returns an INTEGER instead of a COUNTER for ApplTable.ApplEntry.applSize.

- Macintosh System MIB:

  SystemFileTable.FileEntry.fileSize is now defined as INTEGER.

  ApplTable.ApplEntry.applSize is now defined as INTEGER.

  TrapTable.trapProtocol is now defined as Macintosh Display String.

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Tech Info Library Article Number:12964

Tech Info Library

Retrospect A/UX: Special Features (8/93)

Revised: 8/30/93
Security: Everyone

Retrospect A/UX: Special Features (8/93)

==========

Article Created: 16 August 1993

TOPIC ----------

This article describes the special features of Retrospect A/UX.

DISCUSSION ----------

Retrospect A/UX provides some special commands and options for choosing files with custom selectors and displaying information within browsers.

In Retrospect A/UX Selector windows, the pop-up menu of condition types contains an additional choice: file and folder selection by A/UX mode. You can use this additional condition type to select files by file type and privileges.

Within the A/UX window, the file type popup menu provides a variety of A/UX file types that you can apply to the Selector, including Named Pipe, Block Special, Symbolic Link, and Hard Linked File.

In addition, the Name (Sharing) condition window provides four new options for selecting files: A/UX owner name, A/UX group name, A/UX owner id, and A/UX group id.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12965

Tech Info Library

Retrospect A/UX: Browser Options (8/93)

Revised: 8/16/93
Security: Everyone

Retrospect A/UX: Browser Options (8/93)

==========

Article Created: 16 August 1993

TOPIC --------------------

This article describes the browser options in Retrospect A/UX.

DISCUSSION --------------------

Retrospect A/UX browser options

Retrospect browsers showing the contents of A/UX volumes and StorageSets provide an additional view option: Display A/UX information.

When a browser is displayed, the Get Info command shows A/UX-specific information and includes node numbers for any multiply-linked files. In addition, the browser's Cross Reference command allows you to find all of the files that are linked to the highlighted file or files. See Chapter 6, "Customizing Backups," in the Retrospect User’s Guide for more information on using browsers.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12966

Tech Info Library

Retrospect A/UX: Multiple Hard Disks & NFS Volumes (8/93)

Revised: 8/16/93
Security: Everyone

Retrospect A/UX: Multiple Hard Disks & NFS Volumes (8/93)

==========

Article Created: 16 August 1993

TOPIC --------------------

This article provides technical information on backing up multiple hard disks and NFS volumes under A/UX 3.0.1 with Retrospect A/UX.

DISCUSSION --------------------

Retrospect treats each A/UX file system separately, whether it is another hard disk or an NFS volume. As it scans files within the hierarchy, Retrospect will not descend within a mount point to cross a device boundary. This is also true for backing up or erasing files.

To back up or erase a mounted device or mounted NFS volume, you must define that device's mount point as a Retrospect subvolume, then back it up or erase it separately.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12967

Tech Info Library

Retrospect A/UX: Special Considerations (8/93)

Revised: 8/30/93
Security: Everyone

Retrospect A/UX: Special Considerations (8/93)

==========

Article Created: 16 August 1993

TOPIC ----------

This article describes some special considerations for backing up A/UX volumes with Retrospect A/UX

DISCUSSION ----------

Because Retrospect A/UX uses the A/UX-Macintosh file translation features of the operating system, there are several factors that may affect the validity of a backup. Almost all limitations are inherent in the operating system and affect only the most esoteric configurations:

- Because standard Macintosh file systems are case-insensitive, Retrospect considers files that differ only in their case as referring to the same file. If A/UX settings are changed so that its file system is case-sensitive, it is possible for users to create two files in the same folder that differ only in case. Retrospect may fail to properly backup and restore such files.

- It is important that the operator ensure that toolbox translation option settings are consistent between backup and restore. For example, the toolbox environment variable TBTRANSLATEUXONLY controls the conversion of control characters within text files. If this option is changed between backup and restore, some files may be incorrectly translated. If you change them, you must make sure that they are set the same for backup and restore.

- Macintosh file and folder names are limited in length to 31 characters. It is possible to create A/UX files that are longer, but the additional characters will not be backed up or restored and no A/UX information will be stored for those files. (A warning is reported.)

  Also, A/UX files that are non-unique within the first 31 characters are invisible to the Macintosh environment and will silently be omitted from backups.

- Unlike most busy files, hybrid applications such as CommandShell are not accessible through the Macintosh environment when they are in use and will not be backed up; an error is reported instead.

- Current versions of the Macintosh A/UX environment use a synthetic Desktop Folder instead of a real directory to store files that appear on the desktop. This prevents access to the A/UX information for files on the desktop, but can also result in strange behavior. Do not store critical files on the desktop.

- Although Macintosh files restored by Retrospect are identical to the originals from a Macintosh point of view, the underlying A/UX file(s) will often be different from an A/UX point of view. These files are isomorphic instead of identical because the Macintosh resource forks and Finder information can be stored in a different order within the A/UX file. Therefore, A/UX's diff utility may report differences between two files while MPW's equal utility claims that they are identical. Pure A/UX files are always identical.

- Retrospect does not follow symbolic links when backing up files. Instead, it backs up only the link itself. In addition, files with multiple hard links are optimized to be copied only once, although all links are fully backed up.

- The A/UX creation and modification dates cannot be set for symbolic link files upon restore. Once the symbolic link file is created, any attempt to modify its information is redirected to the link's target. This means that symbolic link files are not incrementally restored -- they are copied even though they may already exist on the destination volume. Also, if a file is selected to be restored using a SnapShot, all hard links to that file are automatically selected for restore.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12968

Tech Info Library

Macintosh: Cure for Jumpy Pointer (8/93)

Revised: 8/19/93
Security: Everyone

Macintosh: Cure for Jumpy Pointer (8/93)

==========

Article Created: 16 August 1993

TOPIC -----

My mouse pointer jumps all over the screen now, but it used to glide smoothly. What happened?

DISCUSSION -----

A jumpy mouse pointer probably means you have a loose ADB cable (the one that connects your mouse to your keyboard or your keyboard to your Macintosh). To check it:

1) Shut down.

2) Turn the power off.

3) Secure the cable's connections.

If this doesn't help, you may be victim of a prank extension that intentionally makes the mouse jump around. Check in the Extensions folder for extensions you don't recognize or don't need, throw them in the trash, and restart your computer.

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Tech Info Library Article Number:12970

Macintosh: If It Crashes or Hangs While Saving (4/94)

Revised: 4/8/94
Security: Everyone

Macintosh: If It Crashes or Hangs While Saving (4/94)

==========

Article Created: 16 August 1993
Article Reviewed/Updated: 8 April 1994

TOPIC ----------

I get error messages when I try to save files to my hard drive. What's the problem?

DISCUSSION ----------

If your computer crashes or hangs while saving, chances are you have a conflict with an extension or Control Panel. In this case, you should try removing non-Apple additions to your extensions folder or Control Panels as the first step towards resolving the problem.

However, crashes specifically when saving may also indicate that:

• The disk you are trying to save to is damaged

• The application you are using has been corrupted

In any of these cases, first try saving to another diskette before attempting to troubleshoot your problem.

If the Macintosh offers you a Continue button, click it and select Save As from the File menu. Save the file to a different disk, preferrably a floppy. If you do not get a Continue button, there are two ways to escape:

1) Try a force-quit by pressing the Command, Option, and Escape buttons on your keyboard simultaneously to quit the application you're in. You won't be able to save open documents, however.

2) Press the reset button on the programmer's switch on the side or back of the computer. The button is marked with a left-pointing triangle.

• If you suspect that the disk is damaged, try running Disk First Aid (on the

Utilities disk included with your computer). If it cannot be repaired by the utility software, you may need service.

- If you suspect that the application you are using has become corrupted, reinstall the application from the master disks.

Article Change History:
8 April 1994 - Reviewed for technical accuracy.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12971

Tech Info Library

Performa: Saving Data When the System Hangs (8/93)

Revised: 9/20/93
Security: Everyone

Performa: Saving Data When the System "Hangs" (8/93)

==========

Article Created: 16 August 1993
Article Reviewed/Updated: 16 September 1993

TOPIC ----------

My Performa 450 just stopped. The screen looks normal, but I can't move the pointer. I checked the ADB connection between the mouse, the keyboard, and the computer. Now I'm afraid I'll lose what I was working on.

DISCUSSION ----------

If there is no problem with your mouse or keyboard, you are probably experiencing a system "hang" or "freeze-up." It's a kind of quiet crash that doesn't provide you a failure notification or an error message.

There is a chance that your Performa is still able to communicate with the keyboard. Press Command-S to try to save what you were working on. Quit the application by pressing the Option, Command, and Shift keys simultaneously to quit the application you are in.

Then restart either by pressing the restart button on the side or back of your Performa (marked with a triangle), or by turning your Performa off, then on again. In either case, you will probably lose any information or documents you have not saved yet.

Unless you were in the process of saving a document when the system hung, the portions of what you were working on that you saved are safe. If you were saving when it happened, there is a good chance that the save was not successful and you will lose everything since the previous save.

Crashes or hangs while saving may indicate that:

1) the disk you are trying to save to is damaged; or

2) the application you are using has been corrupted (If you determine that this is the case, try reinstalling the software from the master disks);

3) the application is buggy or incompatible with the system software on your Macintosh.

In any of these cases, first try saving to another disk before attempting to troubleshoot your problem.

Article Change History:
16 September 1993 - UPDATED for technical accuracy.

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Tech Info Library Article Number:12972

Tech Info Library

Canon Computer Systems, Inc.

Revised: 8/16/93
Security: Everyone

Canon Computer Systems, Inc.

==========

Article Created: 16 August 1993

Canon Computer Systems, Inc.

Canon Computer Systems, Inc. (subsidiary of Canon, Inc.)
PO Box 5048,
123 E. Paularino Ave.
Costa Mesa, CA 92628-5048

800-848-4123
714-438-3000
714-438-3099: Fax
800-423-2366: Technical Support

Company Profile:
Canon Computer Systems produces computer peripherals.

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Tech Info Library Article Number:12973

Tech Info Library

Retrospect A/UX: Troubleshooting & Support (8/93)

Revised: 8/30/93
Security: Everyone

Retrospect A/UX: Troubleshooting & Support (8/93)

==========

Article Created: 16 August 1993

TOPIC ----------

This article gives an overview of how to solve problems when using Retrospect A/UX with the Apple Workgroup Server 95.

DISCUSSION ----------

Always try to isolate the problem area as much as possible so that you can refer to the proper documentation. Don't forget to check for any "Read Me" files provided with your server product package. These files describe last-minute changes or information. For answers to commonly asked questions about Retrospect as well as error message explanations, search the Tech Info Library by "Retrospect: Error" for a listing of articles.

Memory or Disk Space Problems

Problems can occur with Retrospect and the A/UX operating system itself when available memory or free disk space are exhausted. If you suspect that this is the cause, take steps to correct the problem and try again.

It is important that Retrospect's application size be set large enough to complete the desired operations. See the memory size table below for a listing of appropriate memory settings for both backups and restores.

A/UX may show symptoms when free disk space drops below 10 percent of the total device capacity. Extensive disk operations performed with little disk space may also increase fragmentation of data, permanently reducing server performance. Additionally, printer spooling may be affected.

It's always worth trying the backup or restore again. Because backup and entire disk restores work incrementally, they will automatically resume where they left off when restarted.

Memory Size Table

Increase the memory you have allocated to Retrospect by using the Get Info command from the File menu in the Finder. The following is a guide for how much memory Retrospect will need to back up large volumes:

1,700K for 3,500 files/folders (this is the default)
4,000K for 10,000 files/folders
6,000K for 20,000 files/folders
8,000K for 32,000 files/folders

If you are backing up volumes that contain a large number of files, you may need more than the recommended amount of memory.

Damaged A/UX Installations

Proper A/UX operation depends on the behavior of a large number of files stored in specific locations within the directory hierarchy. Improper modifications to A/UX configuration files can cause file problems within the A/UX environment. If you suspect that important files have been corrupted, you should consider reinstalling A/UX and/or restoring from a backup.

Technical Support

Technical support for this version of Retrospect is provided only by Apple Computer, Inc. If you require assistance, please contact Apple Computer at 1-800-SOS-APPL. Outside the United States, please contact your local authorized Apple Service Provider.

Additionally, the Tech Info Library has a large number of articles on Retrospect and Retrospect A/UX. Search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12974

Tech Info Library

Retrospect: Backing Up Only Changed Files (8/93)

Revised: 9/2/93
Security: Everyone

Retrospect: Backing Up Only Changed Files (8/93)

==========

Article Created: 17 August 1993

TOPIC --------------------

How do I back up only those files that have changed?

DISCUSSION --------------------

Retrospect does this automatically when you use Normal (Incremental) Backup. The first time you perform a backup, Retrospect copies all selected files; on subsequent backups, it copies only the selected files that are new or changed.

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Tech Info Library Article Number:12975

Tech Info Library

Retrospect: Backing Up Multiple Volumes to Same Tape (8/93)

Revised: 9/2/93
Security: Everyone

Retrospect: Backing Up Multiple Volumes to Same Tape (8/93)

==========

Article Created: 17 August 1993

TOPIC --------------------

How do I back up multiple volumes to the same tape using Retrospect?

DISCUSSION --------------------

Retrospect allows you to do this automatically. Just select each volume you want to back up in the Volume Selection window. You may select a range of volumes using the Shift key, or make a non-contiguous selection using the Command key.

When you execute the backup, Retrospect will back up each of the selected volumes, one after another.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12976

Tech Info Library

Retrospect: Deleting Files from a StorageSet (8/93)

Revised: 8/17/93
Security: Everyone

Retrospect: Deleting Files from a StorageSet (8/93)

==========

Article Created: 17 August 1993

TOPIC --------------------

How do I delete files from a Retrospect StorageSet?

DISCUSSION --------------------

You cannot delete files from a StorageSet because most types of storage devices do not allow it. If you want to keep only selected files from a StorageSet, you can copy these files to a different StorageSet using StorageSet Transfer.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12977

Tech Info Library

Retrospect: If It Won't Use Inserted Tape (8/93)

Revised: 9/3/93
Security: Everyone

Retrospect: If It Won't Use Inserted Tape (8/93)

==========

Article Created: 17 August 1993

TOPIC -----

Why won't Retrospect use the tape I have inserted?

DISCUSSION -----

Retrospect has a system for recognizing tapes and for adding tapes to a StorageSet. If Retrospect is not using a tape that you think it should be using automatically, one of the following situations typically applies:

- You are not inserting the tape Retrospect requires.

  Check that the name of the tape you are inserting matches the name Retrospect is requesting. If the name is the same and Retrospect does not proceed with the backup when you insert the tape, you probably have two tapes with the same name and are inserting the wrong one.

- Retrospect requires a new tape.

  Insert the tape you want Retrospect to use, wait for the tape to appear in the window, and then click Proceed. Retrospect will not use a tape that is part of a known StorageSet. It will automatically use any tape that is erased or correctly named.

- Retrospect cannot communicate with your tape drive.

  If a message says that no SCSI tape devices are visible, see the question "Why is my tape drive not showing up in Retrospect's Tape Devices window?" on page 171 of the Retrospect User's Guide.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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..TIL12978-Retrospect-If_It_Wont_Use_Inserted_Tape_8-93.pdf

Tech Info Library Article Number:12978

Tech Info Library

Retrospect: What is a StorageSet Catalog (8/93)

Revised: 9/2/93
Security: Everyone

Retrospect: What is a StorageSet Catalog (8/93)

==========

Article Created: 17 August 1993

TOPIC --------------------

What is a Retrospect StorageSet Catalog and why do I need it?

DISCUSSION --------------------

A Catalog keeps track of which files are stored on the StorageSet, and where these files are located on the media. Do not delete the Catalog file. The Catalog is required to retrieve files from a StorageSet or make subsequent backups to it. If you lose a Catalog accidentally, you can rebuild it from your backup media. See "Recreating a Catalog" on page 163 for details. Rebuilding a Catalog may take several hours if you have a large amount of data.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

Copyright 1993, Dantz Development Corp.

Tech Info Library Article Number:12979

Tech Info Library

Retrospect: One StorageSet Per Tape (8/93)

Revised: 9/3/93
Security: Everyone

Retrospect: One StorageSet Per Tape (8/93)

==========

Article Created: 17 August 1993

TOPIC --------------------

How do I put more than one Retrospect StorageSet onto a single tape?

DISCUSSION --------------------

You cannot have more than one StorageSet on a single tape. However, there is little need to do this, since you can back up as many volumes as you want to a single StorageSet.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12980

Tech Info Library

At Ease 1.0: Setting Up (8/95)

Revised: 8/8/95
Security: Everyone

At Ease 1.0: Setting Up (8/95)

==========

Article Created: 17 August 1993
Article Reviewed/Updated: 08 August 1995

TOPIC ----------

This article discusses how to get started with At Ease, including turning it on, adding applications, and setting up documents.

DISCUSSION ----------

At Ease is designed for new users of the Macintosh and for children. It makes using the computer easier by making the applications and documents you use often more accessible. All the changes you make in the At Ease Setup box will take effect after you restart your Performa.

Turning On At Ease
---

1) Choose Control Panels from the Apple menu.

2) Double-click on the At Ease Setup icon.

3) Click the button marked On.

Adding Applications to At Ease
---

1) Click Select Items in the At Ease Setup window.

2) Click Gather Applications.

3) Click Add in the dialog box that appears.

4) Click on the items you don't want available in At Ease, then click Remove.

Setting Up Documents

You can control how other people can save their documents when using At Ease. You can decide whether each saved document will become a button in the At Ease Documents folder, or whether the user will have to save the document to a floppy disk.

To adjust these controls:

1) Click Set Up Documents in the At Ease Setup box.

2) Click your preference for saving: "Add a button to At Ease" or "Require a floppy disk."

Setting a Password

If you set a password, anyone who uses your Performa will need to know it to have access to anything that's not in At Ease, such as the Finder or the Performa's control panels. You don't have to set a password, but its a good idea if children will be using the computer.

To set a password:

1) Click Set Password in the At Ease Setup box.

2) Fill out the Set Password dialog box.

Article Change History:
08 Aug 1995 - Reviewed for technical accuracy, added keyword.

Support Information Services

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Tech Info Library Article Number:12981

Tech Info Library

Macintosh: Troubleshooting a Rejected Disk (9/95)

Revised: 9/14/95
Security: Everyone

Macintosh: Troubleshooting a Rejected Disk (9/95)

==========

Article Created: 17 August 1993
Article Reviewed/Updated: 14 September 1995

TOPIC ----------

I keep getting a message saying, "This is not a Macintosh disk: Do you want to initialize it?" or "This disk is damaged: Do you want to initialize it?"I know the disk had already been formatted for a Macintosh and I have not had problems with it before. What is wrong now?

DISCUSSION ----------

When you get these messages and you are certain the disk is properly formatted, click No. If you click Yes, all the data on the disk is overwritten by the Macintosh and lost.

Immediately lock the disk. This protects your data in case the problem is a damaged directory or misaligned drive; both of these problems can cause your data to be erased from an unlocked disk.

What to Look For
==========

If you are using a Macintosh Quadra 660AV or Quadra 840AV, your disks could be rejected because these models use a different floppy disk controller which reads and writes data more precisely than the one in most other Macintosh computers. It may not be able to read your disk, especially if it was manufactured by a mass-duplication process. If this occurs with software installation floppy disks, contact the vendor for another copy of the software.

NOTE: This problem can occur if composite SIMMs are installed in your machine. Confirm that any additional RAM added is non-composite. Apple only supports non-composite SIMMs. If you are not sure whether you have composite SIMMs, read the Technical Information Library article titled, "Composite SIMMs: How to Identify."

1.4 MB High-Density Disks

If the disk is a 1.4 MB high-density disk and the drive can only read 400K or 800K disks (Macintosh computers before and including the Macintosh Plus, the original Macintosh II models, and some Macintosh SE models), it cannot be read by anything other than a SuperDrive (FDHD, or floppy drive, high density).

High-Density Disks

If the disk is a high-density disk that was formatted as an 800K disk, your drive gives you a message like "This disk is improperly formatted for this drive. Do you want to initialize it?"

The best option in this case is to remove the disk and reinsert it in an 800K drive. However, if no 800K drive is available, you can trick the drive by putting tape over the hole in the upper-left corner of the disk (be sure to cover both sides of the hole).

Save any information you need from the disk onto the hard drive, eject the disk, remove the tape, and reformat the disk as soon as possible.

NOTE: Use this technique only for emergencies.

Putting tape or any other item that could come off in the floppy drive can damage your computer.

Try the disk in another drive

If it works properly, this may indicate that one of the drives is misaligned or broken. When a disk that was written on by one drive cannot be read by another, the heads on one of the drives is out of alignment. The drive that is misaligned or broken may not be the drive that cannot read the disk; try the disk in three or four drives to identify the drive with the problem.

Warm or Cold Disks

If the disk is too warm or too cold, the drive may not be able to read it properly.

You can warm up a cold disk safely by setting it on top of your monitor for a few minutes. An overly warm disk can be cooled by placing it in a shady, cool place. DO NOT attempt to heat or cool a disk in an oven or refrigerator.

Damaged Disks

If none of these resolves or identifies the problem, the disk is damaged. You can attempt to make a copy of unreadable or damaged disks using a disk recovery software program (like MacTools FastCopy by Central Point Software), then try fixing the problem using a repair utility.

The first utility to try would be Disk First Aid which is included on one of the System disks (Utilities or Disk Tools) that came with your Macintosh computer. If it does not completely repair the problem, try running Disk First Aid several

times. If Disk First Aid cannot fix the problem, there are many other recovery utilities you can try.

Other repair or recovery utilities may do more complex repairs than Disk First Aid. You might try one of these utilities for severely damaged disks. You might at least be able recover some of your data. Some examples of these utilities include Norton Utilities by Symantec or MacTools Deluxe by Central Point Software.

Other Disk Formats

If you are using MS-DOS or ProDOS formatted disks, you must have the PC Exchange control panel installed and have a High-Density drive installed in your Macintosh computer. While your macintosh computer can read both ProDOS and MS-DOS disks, you should still use only Macintosh formatted disks if you are not exchanging files between Apple II or MS-DOS computers.

There is an additional step you may have to perform if you are using MS-DOS or ProDOS formatted floppies. You may have to throw away the PC Exchange Preferences file. It is located in the Preferences folder within the System Folder. If this file has become damaged, you may no longer be able to mount MS-DOS and ProDOS formatted disks. Once you have removed the PC Exchange Preferences file, a new one is created the next time you start your computer.

This article provides information about some non-Apple products. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
14 Sep 1995 - Added information on ProDOS and MS-DOS disks.
11 May 1995 - Corrected information about location of Disk First Aid.
08 Feb 1995 - Added keyword; made several technical updates.

Support Information Services

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Tech Info Library Article Number:12982

Tech Info Library

Retrospect: Managing Large Catalog Files (8/93)

Revised: 9/3/93
Security: Everyone

Retrospect: Managing Large Catalog Files (8/93)

==========

Article Created: 17 August 1993

TOPIC --------------------

What's the best way to manage large Retrospect catalog files?

DISCUSSION --------------------

Catalogs typically contain about 170K for each one thousand files that you back up. Keep Catalogs that you use regularly on your hard disk. If you do not have room on your hard disk, here are several options:

- Compress the Catalogs.
  Catalog compression is only available for Catalogs created with Retrospect 2.0 or later.

  To turn Catalog compression on, click the Configure icon in the Retrospect Directory, then click Catalog. Select the StorageSet and click OK. Then click the Compression button and choose the compression option you want.

- Store infrequently used Catalogs on a file server.

- Archive old Catalogs to their own StorageSet.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12983

Tech Info Library

Retrospect: Purpose of Retro.SCSI Extension (8/93)

Revised: 9/2/93
Security: Everyone

Retrospect: Purpose of Retro.SCSI Extension (8/93)

==========

Article Created: 17 August 1993

TOPIC ----------

What is the purpose of Retro.SCSI? Do I need it?

DISCUSSION ----------

The Retro.SCSI extension speeds tape operations on some Macintosh computers. Retro.SCSI is not required on Quadra, Centris, and PowerBook Duos, as they do not utilize Retro.SCSI.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12984

Retrospect: Streaming Tape Capacities Explained (6/96)

Revised: 6/6/96
Security: Everyone

Retrospect: Streaming Tape Capacities Explained (6/96)

==========

Article Created: 17 August 1993
Article Reviewed/Updated: 5 June 1996

TOPIC ----------

This article answers the question, "Why do my tapes fill up sooner than expected?"

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

DISCUSSION ----------

Dantz Tech Note No. 19

Streaming Tape Capacities Explained

Description

People often call us and ask "Why do my tapes fill up sooner than expected?" This technical note explains why.

Unlike 'block addressable' devices such as hard drives, cartridge drives, and some DC2000 tape drives, 'streaming' tape drives, such as DAT and 8mm drives, format the tape as they write to it, so the capacity varies, sometimes dramatically. Here are the five factors that influence streaming tape drive capacity:

1) Tape Condition

Streaming tape drives automatically verify data by reading each 'frame' of data immediately after writing it. If the data does not verify, the tape drive moves to the next part of the tape and attempts to write the frame again. As long as the drive successfully writes the data before trying too many times, it will not report a media failure and the backup will continue. This 'error rewrite'

process, which can be caused by dirty heads on the tape drive, deteriorating media, temperature changes, or a host of other issues, reduces tape capacity invisibly to Retrospect or the user.

2) Media Failure

Retrospect writes to a streaming tape until the tape drive reports that it has reached the end of the tape or that it has encountered a media failure. Then Retrospect logs the media failure, if appropriate, and requests a new tape to continue the backup. So if a tape drive is not achieving expected capacity, the first step should be to look in the log to see if any media failures are reported. (See Dantz Technical Note #12 "Media Failures".)

3) Speed of the Source

The speed of the source volume is the single most important factor in determining streaming tape capacity. Each time the buffer in the drive runs out of data to copy, an "underrun" occurs and the drive goes through a process that uses up raw tape capacity. The more underruns, the greater the reduction in capacity.

A fast SCSI hard disk on the same SCSI bus as the backup drive will tend to result in fewer underruns and therefore allow the tape to hold more user data. Copying files over a network tends to be slower, resulting in more underruns and lower capacities, especially if that network is LocalTalk speed.

The size of files being copied has a dramatic influence on the source speed. The same Macintosh and hard disk may take four times as long to transfer 100 MB of small files as it does to transfer a few large ones also totaling 100 MB. CPU speed matters, too. A faster Macintosh may transfer files at twice the rate of a slower one, even though the hard disk and file sizes are the same.

4) Hardware Compression

In order to boost capacity and speed, many streaming tape drives contain a chip to compress the data coming into the drive before it is written to tape. The amount of extra capacity achieved, if any, is dependent upon how well the incoming data compresses, and this varies widely. Here, from best to worst, is a listing of approximate file compressibility: database, text, spreadsheet, graphics, applications, System files, previously compressed files. Some files will reduce to 25% of their original size while some will not diminish in size at all.

It is impossible to know how much compression will be achieved until the data is actually copied to the tape drive. For display purposes, Retrospect assumes that using hardware compression doubles capacity, which is somewhat optimistic. A 50% increase in capacity is a good and more conservative rule of thumb. However, we must emphasize the broad variation that makes any prediction suspect.

5) Tape Length

With a given tape format, a longer tape will achieve proportionally higher capacity. For example, most DDS DAT drives support both 60 and 90 meter tapes.

Inadvertently using a 60 meter tape reduces capacity by approximately one third. DDS-2 DAT drives require specially formulated 120 meter tapes in order to write in their new format. Shorter tapes use the less dense DDS format causing an even more dramatic reduction in capacity.

Capacity Display

Retrospect displays an estimate of tape capacity to aid in managing the backup. Because DAT drives usually do not tell Retrospect what size of tape is inserted in them, and for all the reasons discussed above, Retrospect's assumptions of tape capacity may be inaccurate. Experience may indicate a more accurate number, at which time the capacity display may be changed by clicking the Set Capacity button in Configure:Catalogs. Note: no matter what tape capacity is displayed, Retrospect continues to write to the very end of the tape unless a media failure occurs.

Raw Capacity

We have performed extensive testing of DAT drives, and our experience is summarized in the following table. Note that these are typical ranges, and that it is perfectly normal, and expected, that any particular experience may be outside these ranges in either direction.

DDS DAT Drive Capacity (no compression)

Backup Source • Capacity (60 meter tape) • Capacity (90 meter tape)

600 MB Local SCSI Hard Disk • 900 to 1250 MB • 1350 to 1850 MB
AppleShare server over LocalTalk • 600 to 900 MB • 900 to 1350 MB
Retrospect Remote over LocalTalk • 600 to 1000 MB • 900 to 1500 MB
Retrospect Remote over EtherTalk • 800 to 1100 MB • 1200 to 1600 MB

DDS-2 DAT Drive Capacity (no compression)

Backup Source • Capacity (120 meter tape)

600 MB Local SCSI Hard Disk • 3000 to 3700 MB
AppleShare server over LocalTalk • 2800 to 3300 MB
Retrospect Remote over LocalTalk • 2800 to 3400 MB
Retrospect Remote over EtherTalk • 2900 to 3600 MB

These capacities will be increased by the amount of compression achieved, with the following caveat: if the source data compresses well, more of it is required in any given period of time. Therefore, the effective speed of the drive goes up and more underruns can occur, tending to reduce capacity.

Summary: Nominal vs. Actual

Tape drive manufacturers must provide a nominal capacity for the tape drives they sell. Yet there is no single accurate number for all users because so many

factors influence drive capacity. Typically, drive manufacturers will choose the highest number that is reasonably achievable under some conditions: large, compressible files on a fast drive.

While it may not be possible to come up with a single capacity figure for everyone, we do know that all users with a correctly operating and configured streaming tape drive will achieve some of the most economical storage available.

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Tech Info Library Article Number:12985

Tech Info Library

Retrospect: If Tape Drive Not Visible in Devices Window 8/93

Revised: 9/3/93
Security: Everyone

Retrospect: If Tape Drive Not Visible in Devices Window 8/93

==========

Article Created: 17 August 1993

TOPIC ----------

Why is my tape drive not showing up in Retrospect's Tape Devices window?

DISCUSSION ----------

To troubleshoot the problem:

1) Be sure the tape drive is turned on and properly connected and terminated.

2) Be sure the tape drive has a unique SCSI ID number.

If the drive still does not appear in the Tape Devices window, check the SCSI status. See "Checking SCSI addresses" on page 156 of the Retrospect User's Guide for details. If a "driver" appears installed for your tape drive, some other software has loaded itself inappropriately. Try running with fewer extensions to determine which extension is preventing Retrospect from accessing your tape drive.

Retrospect may be set to ignore the SCSI address your tape drive is set to. See "Checking SCSI addresses" on page 156 of the Retrospect User's Guide for details.

If you have a new type of tape drive, the tape drive may not be supported by the version of Retrospect you are using. To find out if a newer version of Retrospect is required for this tape drive, contact Technical Support and describe what information appeared in the SCSI Status dialog box for this drive.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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..TIL12986-Retrospect-If_Tape_Drive_Not_Visible_in_Devices_Window_8-93.pdf

Tech Info Library Article Number:12986

Tech Info Library

Retrospect: Empty Folders Restored from Snapshot (8/93)

Revised: 8/17/93
Security: Everyone

Retrospect: Empty Folders Restored from Snapshot (8/93)

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Article Created: 17 August 1993

TOPIC --------------------

When I restore a Retrospect SnapShot, will empty folders be restored?

DISCUSSION --------------------

Yes. SnapShots keep track of all folders, even empty ones that are not marked for backup in the Browser.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:12989

Tech Info Library

LaserWriter: Different Helvetica Fonts (8/93)

Revised: 8/17/93
Security: Everyone

LaserWriter: Different Helvetica Fonts (8/93)

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Article Created: 16 August 1993

TOPIC --------------------

When I print documents with Helvetica fonts, a few characters (such as the paragraph mark, bullet, and vertical bar) print differently on a LaserWriter IINTX than on a LaserWriter Pro 630.

Why does this occur?

DISCUSSION --------------------

There are slight differences in how the Helvetica fonts are printed on the LaserWriter IIf and IIg and LaserWriter Pro family as compared the earlier LaserWriter printers such as the LaserWriter IINTX. The LaserWriter IINTX has version '001.002' of the Helvetica PostScript font while the LaserWriter IIf/IIg and LaserWriter Pro family have version '001.006S'.

Adobe has changed how their Helvetica PostScript fonts print. They made these changes to bring their fonts more in line with the actual fonts they license from the various font foundries.

Note that if you download the Helvetica font from the Adobe Type Library CD (version 001.006) to a LaserWriter IINTX, the printed documents will be similar to those from the LaserWriter IIf and IIg and LaserWriter Pro family.

If you want to use the older version of Helvetica, we recommend you contact Adobe and find out if the Helvetica version '001.002' is still available. You can download the this version to the LaserWriter Pro family or the LaserWriter IIf and IIg; the characters will print the same as those from the LaserWriter IINTX.

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Tech Info Library Article Number:12991

Tech Info Library

Adding an Application to the Launcher (7/95)

Revised: 7/19/95
Security: Everyone

Adding an Application to the Launcher (7/95)

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Article Created: 17 August 1993
Article Reviewed/Updated: 19 July 1995

TOPIC ----------

This article describes how to add new programs to the Launcher.

DISCUSSION ----------

Launcher Version 2.7 (included with System 7.5 Update 1.0)

Simply drag the icon of the application you want to add to the Launcher window. To create new Launcher folders, follow these steps:

Step 1
Open the Launcher Items folder (in the System Folder).

Step 2
Create a new folder.

Step 3
Rename the new folder. The fist character of the name MUST be a bullet (Option-8) followed by the name you want to call the folder.

Previous Launcher Versions

Step 1
Insert the disk that has the application on it in the floppy drive. If there is a disk labeled Installer, put it in the floppy drive instead of the application (or program) disk.

Step 2
Double-click on the Installer icon and follow the instructions on the screen. If there is no Installer, follow the instructions in the software’s installation manual.

Step 3
When installation is complete, find the application on your hard disk. It is not in the same Applications folder that holds the applications that came with your system. It is probably in a folder with the same name as the application.

Step 4
Click once on the program icon and select Make Alias from the File menu.

Step 5
An alias of the program appears on your screen next to the original item.

Step 6
Open the System Folder on your hard drive and drag this new alias into the Launcher Items folder to add it. The new item then appears in the Launcher.

This article was published in the "Information Alley":
Volume II, Issue 5, Page 12

Article Change History:
19 Jul 1995 - Retitled, added System 7.5 steps, added Info Alley information.
10 May 1995 - Added step 6 and revised step 5.

Support Information Services

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Tech Info Library Article Number:12992

Tech Info Library

Performa: Switching Between Finder and At Ease (8/95)

Revised: 8/14/95
Security: Everyone

Performa: Switching Between Finder and At Ease (8/95)

==========

Article Created: 17 August 1993
Article Reviewed/Updated: 14 August 1995

TOPIC -----

How can I switch quickly between the Finder and At Ease?

DISCUSSION -----

To easily switch between At Ease and the Finder, you can use the Go To commands under the File menu, or create a Finder button in At Ease.

To create a Finder button:

1) Open the System folder.

2) Click once on the Finder Icon.

3) Select Make Alias from the File menu.

4) Drag the Finder alias into the At Ease Items folder.

This creates a Finder button on the At Ease desktop to switch you instantly to the Finder. However, when you switch to the Finder, aliases continue to be made for your documents in At Ease.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:12993

Tech Info Library

Performa: Finder and At Ease Compared (8/93)

Revised: 8/19/93
Security: Everyone

Performa: Finder and At Ease Compared (8/93)

==========

Article created: 17 August 1993

TOPIC -----

This article explains the difference between At Ease and the Finder.

DISCUSSION -----

The Finder is the basic program that all Macintosh computers use to generate "the desktop." When you are "in" the Finder, the desktop is what you see. Commonly, the Macintosh hard drive icon appears in the upper-right corner of the Finder screen. Any floppy disk you insert is represented by an icon that appears on the desktop, below the hard drive's icon.

At Ease is an application program that runs "on top of" the Finder to make the Performa easier to use. With At Ease on, applications appear in an application folder on the screen, and documents are represented as buttons in a Documents folder. There is no trash can, so nothing can be thrown away.

How Can I Tell whether I'm in At Ease or in the Finder?

Open the File menu.
- If you see Go To At Ease, you're in the Finder.
- If you see Go To the Finder, you're in At Ease.

In both the Finder and At Ease, a menu bar runs along the top of the screen, enabling you to perform certain tasks. The menu bar almost always displays an Apple menu and a File menu on the left.

The menu at the far right end of the menu bar is represented by:
- a small picture of a Macintosh, if you're in the Finder, or
- a little Macintosh next to a larger one in At Ease.

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Tech Info Library Article Number:12994

Tech Info Library

At Ease: Turning Off, Bypassing, Removing (8/95)

Revised: 8/14/95
Security: Everyone

At Ease: Turning Off, Bypassing, Removing (8/95)

==========

Article Created: 17 August 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

How do I turn off, bypass, or remove At Ease?

DISCUSSION ----------

To turn off At Ease
==========

Step 1

Select Control Panels in the Apple menu.

Step 2

Double-click At Ease Setup.

Step 3

Click the Off button.

To Bypass At Ease
==========
To bypass At Ease on startup, hold the shift key down as you turn on the Performa.

To Remove At Ease Permanently:
==========

Step 1

Select Control Panels from the Apple menu.

Step 2

Double-click At Ease Setup.

Step 3

Click the Off button.

Step 4

Select Find from the File menu.

Step 5

Click More Choices, and check the box marked all at once.

Step 6

Click the arrows on the first two boxes until they say Name and Contains. Type At Ease in the third box. Click Find.

Step 7

Click an hold on the first highlighted item you see and drag all of them to the trash. All of the items will be put in the trash.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:12995

Tech Info Library

Macintosh: Color Startup Icon (8/93)

Revised: 8/20/93
Security: Everyone

Macintosh: Color Startup Icon (8/93)

==========

Article Created: 18 August 1993

TOPIC ----------

I have a Quadra 700 running System 7.0.1 connected to a third party color monitor. When I turn the computer on, the Macintosh icon in the "Welcome to Macintosh" window appears in black and white instead of color.

I zapped the parameter RAM (random-access memory) and have changed the Monitors control panel from millions of colors to display 256 colors. When I restarted the Macintosh icon returned to color. Can you explain this?

DISCUSSION ----------

This behavior is probably due to the color settings being partially stored in PRAM (parameter RAM) and partially in the Finder Preferences file. Some color information may have been restored on the first restart after zapping PRAM but the settings for the startup screen need to be explicitly set by using the Monitors control panel. You essentially performed the procedure outlined below and were successful.

Start with the system running with color on and the startup icon appears in color. Reset PRAM by holding down the Command-Option-P-R keys during the startup process. The Welcome to Macintosh screen and all the desktop icons will appear in black and white only. Without doing anything else restart the system again. The Welcome to Macintosh screen will still be in black and white but the desktop icons will be in color again.

Open the Monitors control panel and change the color/gray scale settings to something else and then back again to the desired setting and restart. The Welcome to Macintosh screen should now appear in color.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12996

Tech Info Library

Performa: If Apple Backup Rejects Disks (10/94)

Revised: 10/11/94
Security: Everyone

Performa: If Apple Backup Rejects Disks (10/94)

==========

Article Created: 18 August 1993
Areticle Reviewed/Updated: 11 October 1994

TOPIC ----------

I am trying to run Apple Backup on my Performa, but I keep a message that my disk cannot be used. This occurs no matter what type of disk I insert.

DISCUSSION ----------

If you have Stuffit 3.0.6 installed, and have the SpaceSaver option enabled, Apple Backup cannot use any of your disks.

To get around this, you must disable Stuffit when you are backing up. To do this, start up your Performa with extensions turned off: hold down the Shift key as you turn on the computer. Stuffit is not loaded, and Apple Backup should function properly.

Article Change History:
11 Oct 94 - Reviewed for technical accuracy -- made minor changes.

Support Information Services

Copyright 1993-94, Apple Computer, Inc

Tech Info Library Article Number:12997

Tech Info Library

Performa: Type 1 Error in Apple Backup (8/93)

Revised: 8/20/93
Security: Everyone

Performa: Type 1 Error in Apple Backup (8/93)

==========

Article Created: 18 August 1993

TOPIC --------------------

I recently bought a Performa 450 and have been running Apple Backup weekly. Suddenly, I'm getting a Type 1 error message when trying to run Apple Backup. Why?

DISCUSSION --------------------

Check your hard drive for a file that has a name beginning with a period (.), like ".newsrc". Rename the file so that it does not begin with a period, and Backup will run with no problems.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:12998

Tech Info Library

Retrospect: Execution Errors Browser (8/93)

Revised: 9/2/93
Security: Everyone

Retrospect: Execution Errors Browser (8/93)

==========

Article Created: 18 August 1993

TOPIC --------------------

What is the Retrospect Execution Errors Browser?

DISCUSSION --------------------

When Retrospect detects compare errors while backing up, write errors while retrieving, or read errors while retrieving or verifying, it creates a Browser displaying the files involved. This Execution Errors Browser may be printed for reference, or copied and pasted into another Browser for easy re-selection.

What to do if Retrospect reports errors: Look in the Detail Log for the error message associated with each file.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

Copyright 1993, Dantz Development Corp.

Tech Info Library Article Number:13000

Tech Info Library

Retrospect: Catalog Out Of Sync Error (8/93)

Revised: 9/2/93
Security: Everyone

Retrospect: Catalog Out Of Sync Error (8/93)

==========

Article Created: 18 August 1993

TOPIC --------------------

What is the "Catalog out of sync" error message in Retrospect?

DISCUSSION --------------------

Each time Retrospect performs a backup to a StorageSet, it updates the information in the Catalog.

- A "Catalog out of sync" error indicates that Retrospect was unable to update the Catalog the last time it copied data to this StorageSet -- possibly because of equipment failure or power failure.

- This error may also be caused by a full disk error (error -34) or by an out of memory error (error -108). (Both of these errors are explained in separate articles in the Tech Info Library.)

What to do: Repair the Catalog. For instructions, see "Updating a Catalog" on page 162 of the Retrospect User's Guide. If updating the Catalog does not eliminate the "Catalog out of sync" error, the Catalog cannot be repaired. You have three options:

- Perform a Full Backup, resetting the Catalog and erasing the tape.

- Select Catalogs from the Configure icon. Choose the StorageSet and select Media Control. Click Skip, forcing Retrospect to use a new piece of media for the next backup.

- Create a new StorageSet and begin a new backup.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

Copyright 1993, Dantz Development Corp.

Tech Info Library Article Number:13001

Tech Info Library

Retrospect: Bad StorageSet Header Error (8/93)

Revised: 9/2/93
Security: Everyone

Retrospect: Bad StorageSet Header Error (8/93)

==========

Article Created: 18 August 1993

TOPIC ----------

What is a "Bad StorageSet header" error in Retrospect?

DISCUSSION ----------

Each file in your StorageSet is preceded by a header that contains information such as its name and size. A bad StorageSet header error will appear if Retrospect reads a header that is obviously damaged or invalid.

What to do: If the error appears immediately while you are recreating a Catalog file, it means you forgot to tell Retrospect that the StorageSet was encrypted. If the error appears during backup or retrieving, it can indicate SCSI communication problems. See "SCSI problems" on page 180 of the Retrospect User's Guide for details.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

Copyright 1993, Dantz Development Corp.

Tech Info Library Article Number:13002

Tech Info Library

Retrospect: Content Unknown Error (8/93)

Revised: 9/2/93
Security: Everyone

Retrospect: Content Unknown Error (8/93)

==========

Article Created: 18 August 1993

TOPIC --

What is a "Content Unknown" error in Retrospect?

DISCUSSION ---

A "Content Unknown" error means that Retrospect can see data on your media, but the data is not recognized as Retrospect-formatted data. For tapes, this usually means that the tape was damaged or used by a different backup program.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

Copyright 1993, Dantz Development Corp.

Tech Info Library Article Number:13003

Tech Info Library

Retrospect: Content Damaged Error (8/93)

Revised: 9/2/93
Security: Everyone

Retrospect: Content Damaged Error (8/93)

==========

Article Created: 18 August 1993

TOPIC ----------

What is the "Content Damaged" error in Retrospect?

DISCUSSION ----------

The "Content Damaged" error message appears if you change the name of a disk or cartridge that is part of a Disk StorageSet.

What to do: If you want to preserve this data, rename the disk to the original name it was given by Retrospect. The original disk uses the format "1-The StorageSet." If you do not want to save the data and want to use the disk for other purposes, erase the disk using the Erase Disk command from the Special menu in the Finder.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

Copyright 1993, Dantz Development Corp.

Tech Info Library Article Number:13004

Tech Info Library

Retrospect: Compare Error (8/93)

Revised: 8/18/93
Security: Everyone

Retrospect: Compare Error (8/93)

==========

Article Created: 18 August 1993

TOPIC ----------

What is a "Compare Error" in Retrospect?

DISCUSSION ----------

A compare error appears if a backup file does not match the file from which it was copied. Retrospect will try to back up the file again during the next backup session. The following messages in Retrospect Log indicate a compare error:

- File "Home": different modify date/time
- File "My File": didn’t compare at data offset 263,078
- File "My File": didn’t compare at resource offset 731,429

What to do: If you know the file was in use at the time the backup occurred, a compare error is usually nothing to worry about. It simply means the file changed between backup and verification. Compare Errors that mention data or resource offsets usually indicate SCSI communication problems. See "SCSI problems" on page 180 of the Retrospect User's Guide for details.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

Copyright 1993, Dantz Development Corp.

Tech Info Library Article Number:13005

Tech Info Library

Retrospect: Error 34 (volume full) 8/93

Revised: 8/31/93
Security: Everyone

Retrospect: Error 34 (volume full) 8/93

==========

Article Created: 18 August 1993

TOPIC ----------

What is an "Error 34 (volume full)" error in Retrospect?

DISCUSSION ----------

Error 34 (volume full) means that a volume has run out of free storage space. You will see this error in the following situations:

- If you are restoring more files to a volume than will fit.

  Solution: Try restoring fewer files, or restore to a larger volume.

- When Retrospect is updating a StorageSet Catalog during a backup and the volume where the Catalog is located runs out of room.

  Solution: Check your hard disk to see if it is full, or close to full.

- If you are backing up to a Macintosh File StorageSet and the destination volume runs out of free space.

  Solution: Check the hard disk containing the Catalog file, to see if it is full.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:13006

Tech Info Library

Retrospect: Error -35 & Error -53 (8/93)

Revised: 8/31/93
Security: Everyone

Retrospect: Error -35 & Error -53 (8/93)

==========

Article Created: 18 August 1993

TOPIC --------------------

What do the following Retrospect errors mean?
• Error -35 (volume doesn't exist)
• Error -53 (volume off-line)

DISCUSSION --------------------

The Errors -35 and -53 (volume doesn't exist, volume off-line) mean that Retrospect cannot find a volume when it is time to perform a backup.

What to do: Make sure the volume is actually connected to the Macintosh and that it is mounted on the Desktop. If it is, click the Immediate icon in the Retrospect Directory, then click View to scan the volume and display the Browser.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:13007

Tech Info Library

Macintosh Software Utility Update 1.0: Description (8/93)

Revised: 8/18/93
Security: Everyone

Macintosh Software Utility Update 1.0: Description (8/93)

==========

Article Created: 18 August 1993

TOPIC --------------------

The Macintosh Software Utility Update 1.0 disk is an update of Apple utilities shipped with Macintosh computers running System 7.1. The Update includes MacCheck 1.0.4, Disk First Aid 7.2 and HD SC Setup 7.2.

DISCUSSION --------------------

This system update delivers a number of software enhancements to Macintosh users. Following are brief descriptions of the enhancements found in the Macintosh Software Utility Update 1.0.

The update consists of the following applications:

• Apple HD SC Setup version 7.2, which gives you more flexibility to format large Apple hard drives between 1 and 2 gigabytes.

• Apple Disk First Aid 7.2, a utility that repairs damaged drives. This version contains a brand-new user interface, which differs greatly from the last version Disk First Aid, 7.1.1.)

• MacCheck 1.0.4, a support utility that has previously been placed only on Performa and LC 520 computers at the factory.

- MacCheck creates a profile of your Macintosh computer, including:
  • The processor, memory, expansion cards, SCSI drives, keyboard, monitor, etc.
  • The installed applications and system software on your startup drive
- MacCheck performs a number of tests, including:
  • A general logic board test
  • File system and System files test
  • Duplicate System Folders test

Apple strongly recommends that Macintosh and Macintosh Performa owners update any previous copies of Disk First Aid, HD SC Setup and MacCheck to the versions included in Macintosh Software Utility Update 1.0 disk:

- For Macintosh owners: update your Disk Tools disk, which contains older versions of Disk First Aid and HD SC Setup.

- For Macintosh Performa owners update your Utilities disk, instead of "Disk Tools". The "Utilities" disk contains which contains older versions of Disk First Aid and HD SC Setup.

The Macintosh Software Utility Update 1.0 disk is available from 40 different online services, including AppleLink.

The AppleLink path is:
Software Sampler
 Apple SW Updates
  Macintosh
   Utilities

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13008

Tech Info Library

LaserWriter: Supported Network Protocols (8/93)

Revised: 8/18/93
Security: Everyone

LaserWriter: Supported Network Protocols (8/93)

==========

Article Created: 18 August 1993

TOPIC ----------

This article discusses which network protocols are supported by Apple LaserWriters.

DISCUSSION ----------

Apple LaserWriters only support the AppleTalk network protocol and do not directly support other network protocols, whether over LocalTalk or Ethernet.

If you wish to send data from another network protocol to a LaserWriter, you must convert it to the AppleTalk protocol with software or a hardware device.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13009

Tech Info Library

Retrospect: Error -36 (I/O error) (2/95)

Revised: 2/27/95
Security: Everyone

Retrospect: Error -36 (I/O error) (2/95)

==========

Article Created: 18 August 1993
Article Reviewed/Updated: 27 February 1995

TOPIC ----------

What is an Error -36 (I/O error) in Retrospect?

DISCUSSION ----------

When an Error –36 (I/O error) is reported by Retrospect, a media problem has occurred on a source volume.

What to do: Try verifying the media on your source disk using a disk utility or the formatting program that came with your hard drive. If you are using an Apple hard disk, try using the Test command in the Apple HD SC Setup utility or MacCheck (MacCheck is included with Macintosh computers after July 1993, and on the Macintosh Software Utility Update 1.0 disk).

If you have a Power Macintosh with the native version of Retrospect 2.1i installed, and while Retrospect displays a dialog that says "Scanning...." you encounter this error, contact Dantz. The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

Article Change History:
27 Feb 1995 - Added Power Macintosh and scanning.

Support Information Services

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Tech Info Library Article Number:13010

Tech Info Library

Retrospect: Error -43 (file not found) (8/93)

Revised: 8/31/93
Security: Everyone

Retrospect: Error -43 (file not found) (8/93)

==========

Article Created: 18 August 1993

TOPIC --------------------

What is an Error -43 (file not found) in Retrospect?

DISCUSSION --------------------

Error -43 (file not found) in Retrospect means that someone moved or deleted one or more files and folders on the target Macintosh while a backup or compare operation was in progress.

What to do: Try backing up again. If this error continues to occur, run Apple’s Disk First Aid, or another commercial disk checking utility on the disk in question.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:13011

Tech Info Library

Retrospect: Error –54 (file busy/locked) (8/93)

Revised: 8/18/93
Security: Everyone

Retrospect: Error –54 (file busy/locked) (8/93)

==========

Article Created: 18 August 1993

TOPIC --------------------

What is "Error –54 (file busy/locked)" in Retrospect?

DISCUSSION --------------------

There are two causes for Error –54 (file busy/locked):

- You are trying to back up System files using System 7 file sharing or AppleShare.
- Another application, such as FileMaker or 4th Dimension, had the files open, preventing Retrospect from accessing them.

What to do: Back up the busy files from the local Macintosh, quit the application that owns the busy file, or install Retrospect Remote and back up the files.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:13012

Tech Info Library

Retrospect: Error 102 (trouble communicating) (8/93)

Revised: 8/31/93
Security: Everyone

Retrospect: Error 102 (trouble communicating) (8/93)

==========

Article Created: 18 August 1993

TOPIC --------------------

What is "Error 102 (trouble communicating)" in Retrospect?

DISCUSSION --------------------

Error 102 (trouble communicating) occurs when the Macintosh loses contact with the backup device. The most common cause is improper SCSI termination.

What to do: Refer to the following information on SCSI problems below:

Troubleshooting SCSI Problems

If the Macintosh SCSI chain is not set up properly, communication errors may occur that can cause data corruption or system failures during backup operations. This following information is designed to give you guidance when encountering SCSI problems.

Some devices such as scanners, CD-ROM drives, or external SCSI floppy drives can cause problems on the SCSI bus, especially if they are turned off. If you are experiencing SCSI communication problems, make sure that all of your SCSI devices are powered ON when you start your Macintosh.

The following sample errors can indicate communication errors on the SCSI bus:

• File "Home" didn’t compare at resource offset 10,750

• File "Tech Note" didn’t compare at data offset 3,253

• Trouble writing: "1-Office Backup 2" (0), error 102 (trouble communicating)

• Trouble reading: "1-Office Backup 2" (0), error 102 (trouble communicating)

The above errors can usually be traced to some failure in the SCSI

configuration, whether it is termination, a particular device, cabling, or device order. The most common cause of communication problems is improper termination or bad SCSI cables.

Termination

The general rule for termination is to have only two terminators on the SCSI bus, one at the beginning and one at the end. If you have only a single device on the SCSI bus, then only one terminator is needed. Most Macintosh computers purchased with internal hard disks are internally terminated. Some SCSI peripherals come with internal termination built-in, and must be placed at the end of a SCSI chain.

For more information, refer to your Macintosh user's guide and the manual that came with your hardware device.

SCSI Cables

Communication problems can be caused by bad or loose-fitting SCSI cables. Check all cables for proper seating in each connector. The entire length of your SCSI bus should not exceed 20 feet. Whenever possible, avoid using cables over six feet in length.

Device Order and Device Conflicts

To avoid problems caused by device order or device conflicts, make sure that each device has a unique SCSI address. If problems occur, try changing the order of SCSI devices or temporarily removing unneeded devices.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:13013

Tech Info Library

Macintosh: Multiple Monitors via NuBus Expander (8/93)

Revised: 8/19/93
Security: Everyone

Macintosh: Multiple Monitors via NuBus Expander (8/93)

==========

Article Created: 19 August 1993

TOPIC ----------

I want to connect multiple monitors to a Mac II or IIfx (via a NuBus expander) to give me as many NuBus slots as possible.

Is there is a limit to how many monitors that can be handled by:
a) the monitors control panel?
b) the Macintosh hardware?

DISCUSSION ----------

Using an 8 slot expansion chassis such as the one from Second Wave, Inc., you could connect up to 13 monitors to a Macintosh II or IIfx. That is, the expansion chassis uses one of the NuBus slots in the Macintosh, leaving 5 NuBus slots available in the Macintosh for video cards. The expansion chassis can house 8 cards. Second Wave informs us that video cards used in their expansion chassis must have 32-bit clean drivers. Video cards that are 24-bit will not work in the expansion chassis (but will in the Macintosh).

Second Wave's chassis is able to provide 130 watts and additional chassis' cannot be daisy chained off of the first chassis. They recommend you request, at no additional charge, the highest volume fan they distribute in their chassis for this application.

Apple has tested the connection of 6 monitors to a Macintosh and Second Wave has tested 13. It will vary from Macintosh-to-Macintosh slightly as the memory map and other managers varies somewhat. If you are able to connect a greater quantity of monitors to a Macintosh, please let us know.

The Pallet Manager could begin to have problems above 32 monitors unless you use a bit depth of 8 or less. The parameter RAM on a Macintosh II family machine only has support for 6 NuBus slots, and the VIA chips have specific interrupts for the six slots. Many of the issues that may arise depend on how the NuBus expansion chassis manufacturer handled the

technical issues surrounding the slot manager, parameter RAM, multiplexing multiple slots through one slot, and the VIA interrupts.

To locate a vendor's address and phone number, use the vendor's name as a search string.

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Tech Info Library Article Number:13014

Tech Info Library

Newton MessagePad: Scheduling Birthdays w/Assistant (8/93)

Revised: 8/19/93
Security: Everyone

Newton MessagePad: Scheduling Birthdays w/Assistant (8/93)

==========

Article Created: 19 August 1993

TOPIC --------------------

How can I schedule a birthday as a repeating appointment based on the information in my Newton MessagePad's Names file?

DISCUSSION --------------------

To schedule a birthday as a repeating appointment based on the information in your Newton's Names file, do the following:

In the Notepad, write "Birthday", followed by the person's name and their birth date, then tap Assist.

For instance, if Lisa is in your Names File and her birthday is 6/27, write "Birthday Lisa 6/27", then tap Assist.

This will fill out a schedule slip for an appointment with Lisa's name in the Who blank that repeats every year on 6/27. Also, an alarm will be set for 10 days prior to the birthday date.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13015

Tech Info Library

Newton MessagePad: Changing Letter Styles

Revised: 8/19/93
Security: Everyone

Newton MessagePad: Changing Letter Styles

==========

Article Created: 19 August 1993

TOPIC -----

My lower case t's look like the plus symbol (+) when I write them on my Newton MessagePad. I would like to teach Newton to not recognize the plus symbol by selectimg Rarely in the Letter Styles Preferences Menu for that character.

When I click the Rarely button, it always goes back to Sometimes. Why is this?

DISCUSSION -----

There is only one choice for the plus symbol in the Letter Styles Preferences Menu. Whenever there is only one choice for a particular character or symbol in the Letter Styles Menu, you cannot set that choice to Rarely.

This was a design decision, since you have to be able to write each character in a form that Newton's recognizer can understand.

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Tech Info Library Article Number:13019

Tech Info Library

Retrospect: Error 108 (out of application memory) (8/93)

Revised: 8/31/93
Security: Everyone

Retrospect: Error 108 (out of application memory) (8/93)

==========

Article Created: 19 August 1993

TOPIC ----------

What is "Error 108 (out of application memory)" in Retrospect?

DISCUSSION ----------

Error 108 (out of application memory) means that Retrospect needs more memory.

What to do: Increase the memory you have allocated to Retrospect by using the Get Info command from the Finder's File menu. The following is a guide for how much memory Retrospect will need to back up large volumes:

1,700K for 3,500 files/folders (This is the default setting.)
4,000K for 10,000 files/folders
6,000K for 20,000 files/folders
8,000K for 32,000 files/folders

If you are backing up volumes that contain a large number of files, you may need more than the recommended amount of memory.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:13020

Tech Info Library

Retrospect: Error 203 (hardware failure) (8/93)

Revised: 9/1/93
Security: Everyone

Retrospect: Error 203 (hardware failure) (8/93)

==========

Article Created: 19 August 1993

TOPIC --------------------

What is "Error 203 (hardware failure)" in Retrospect?

DISCUSSION --------------------

Error 203 (hardware failure) means that the tape drive is having problems because of a bad tape, a SCSI problem, or a mechanical error.

What to do:

- If the error only occurs when you use a particular tape, that tape is probably damaged. Try using a new tape.

- If the error occurs when you use any tape, you may have a problem with your SCSI chain or device. Try turning off the tape drive and computer for two minutes and then turning them back on again. See the Tech Info Library article "Retrospect: Troubleshooting SCSI Problems" for more information.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:13021

Tech Info Library

Retrospect: Troubleshooting SCSI Problems (8/93)

Revised: 9/2/93
Security: Everyone

Retrospect: Troubleshooting SCSI Problems (8/93)

==========

Article Created: 19 August 1993

TOPIC ----------

This article describes how to troubleshoot SCSI problems when using Retrospect.

DISCUSSION ----------

SCSI Problems

If the Macintosh SCSI chain is not set up properly, communication errors may occur, when using Retrospect, that can cause data corruption or system failures during backup operations. This section is designed to give you guidance when encountering SCSI problems.

Some devices such as scanners, CD-ROM drives, or external SCSI floppy drives can cause problems on the SCSI bus, especially if they are turned off. If you are experiencing SCSI communication problems, make sure that all of your SCSI devices are turned on when you start your Macintosh.

The following sample errors can indicate communication errors on the SCSI bus:

• File "Home" didn't compare at resource offset 10,750

• File "Tech Note" didn’t compare at data offset 3,253

• Trouble writing: "1-Office Backup 2" (0), error 102 (trouble communicating)

• Trouble reading: "1-Office Backup 2" (0), error 102 (trouble communicating)

The above errors can usually be traced to some failure in the SCSI configuration, whether it is termination, a particular device, cabling, or device order. The most common cause of communication problems is improper termination or bad SCSI cables.

Termination

The general rule for termination is to have only two terminators on the SCSI bus, one at the beginning and one at the end. If you have only a single device on the SCSI bus, then only one terminator is needed. Most Macintosh computers purchased with internal hard disks are internally terminated. Some SCSI peripherals come with internal termination built-in, and must be placed at the end of a SCSI chain. For more information, refer to your Macintosh user's guide and the manual that came with your hardware device.

SCSI Cables

Communication problems can be caused by bad or loose-fitting SCSI cables. Check all cables for proper seating in each connector. The entire length of your SCSI bus should not exceed 20 feet. Whenever possible, avoid using cables over six feet in length.

Device Order and Device Conflicts

To avoid problems caused by device order or device conflicts, make sure that each device has a unique SCSI address. If problems occur, try changing the order of SCSI devices or temporarily removing unneeded devices.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:13022

Tech Info Library

Retrospect: Error 205 (lost access to storage media) (8/93)

Revised: 8/31/93
Security: Everyone

Retrospect: Error 205 (lost access to storage media) (8/93)

==========

Article Created: 19 August 1993

TOPIC ----------

What is "Error 205 (lost access to storage media)" in Retrospect?

DISCUSSION ----------

Retrospect Error 205 (lost access to storage media) usually indicates that the SCSI bus was reset during a backup, causing Retrospect to lose contact with the tape. Usually this error indicates a SCSI problem and may be accompanied by an Error 102 (trouble communicating).

What to do: If Error 102 accompanies Error 205, see the Tech Info Library article: "Retrospect: Troubleshooting SCSI problems".

If Error 102 does not accompany Error 205 and SCSI communication problems have been ruled out, the next step is to check for media failure on the source volume. Some hard disks reset the SCSI bus when they sense they are experiencing a media failure. Try testing the drive with the software that was originally used to format it.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:13023

Tech Info Library

Retrospect: Errors -24201 & -25040 (8/93)

Revised: 8/31/93
Security: Everyone

Retrospect: Errors -24201 & -25040 (8/93)

==========

Article Created: 19 August 1993

TOPIC ----------

What is the meaning of the following Retrospect errors?
-24201 (chunk checksum failed)
-25040 (Catalog invalid or damaged)

DISCUSSION ----------

Errors -24201 (chunk checksum failed) and -25040 (Catalog invalid or damaged) mean that a Catalog or other Retrospect 2.0 format file is corrupted.

What to do: If the error occurs when you are trying to back up to a particular StorageSet, you need to rebuild the Catalog for that StorageSet. After the recatalog, reselect this StorageSet in your scripts. If the error occurs when you launch Retrospect, the Retro.Configuration file may be corrupted. Remove this file from the Retrospect Preferences folder and launch Retrospect again. After you do this, you will need to recreate your scripts and other settings.

Alternatively, restore a previous copy of your Retro.Configuration file from one of your StorageSets.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:13025

Tech Info Library

Retrospect: Error –24062 (limited to 32000 files/folders)(8/93)

Revised: 9/2/93
Security: Everyone

Retrospect: Error –24062 (limited to 32000 files/folders)(8/93)

==========

Article Created: 19 August 1993

TOPIC --------------------

What is "Error -24062 (limited to 32000 files/folders)" in Retrospect?

DISCUSSION --------------------

This error occurs if you:
• try to back up a volume that contains more than 32,000 files and folders, or
• perform a search request which finds more than this number of items.

What to do: Partition your hard disk into two or more partitions, keeping less than 32,000 items in each partition. Or define each of the top level folders of the volume as a Subvolume.

Note: Dantz strongly recommends that you store fewer than 32,000 files on any single volume, both for Retrospect compatibility and because the Macintosh file system becomes less stable with this many files on a single volume.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:13026

Tech Info Library

Retrospect: Internal Consistency Check Error (8/93)

Revised: 9/2/93
Security: Everyone

Retrospect: Internal Consistency Check Error (8/93)

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Article Created: 19 August 1993

TOPIC --------------------

What is an "internal consistency check error" in Retrospect?

DISCUSSION --------------------

An internal consistency check error occurs if Retrospect experiences a major problem during operation not due to normal errors or circumstances.

When this happens, Retrospect creates an error log, in the Retrospect preferences folder, named "Retrospect.error.log.n" where n is a long number.

What to do: If you experience one of these errors, contact Dantz Technical Support and send us the error log along with a brief description of the circumstances surrounding the failure.

For further information on working with Retrospect and Retrospect A/UX, search the Tech Info Library by "Retrospect" or "Remote."

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Tech Info Library Article Number:13027

Tech Info Library

Software Utility Update 1.0 vs. HW System Update 2.0 (8/93)

Revised: 8/23/93
Security: Everyone

Software Utility Update 1.0 vs. HW System Update 2.0 (8/93)

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Article Created: 19 August 1993

TOPIC --------------------

What are differences between
• the Software Utility Update 1.0 Disk, and
• the Hardware System Update 2.0 Disk?

DISCUSSION --------------------

The Software Utility Update 1.0 introduces new Apple support utility program, MacCheck. It also includes a newer version of Disk First Aid (version 7.2) than is on the Hardware System Update 2.0 disk. The version of HD SC (version 7.2) included on the Software Utility Update 1.0 disk is identical to that on the Hardware System Update 2.0 disk.

The Hardware System Update 2.0 disk, in addition to HD SC Setup 7.2 and Disk First Aid 7.1.1, provides a set of system software enhancements that improve performance on selected Macintosh computers running System 7.1. (These enhancements are not intended for Performa computers.) The Software Utility Update 1.0 disk does not include the enhancements.

For additional information on the Hardware System Update 2.0 disk, search the Tech Info Library by the search string "Hardware System Update."

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Tech Info Library Article Number:13028

Tech Info Library

MacCheck: Operating Tips and Hints (8/93)

Revised: 8/19/93
Security: Everyone

MacCheck: Operating Tips and Hints (8/93)

==========

Article Created: 19 August 1993

TOPIC -----

This article describes some operational tips and hints to consider when using MacCheck 1.0.4 and higher.

DISCUSSION -----

Software Bundles

A Software Bundle ID = xxx-xxxx message may appear at the bottom of the launch splash screen. The Software Bundle ID is a unique number that identifies what system software (7.0, 7.1, US, France, etc.), applications, or additional software was installed on the drive at the factory. MacCheck displays this information if the bundle information is detected during launch.

MacCheck running on a Performa

If MacCheck is running on a Macintosh Performa, it reports only that it is running on a Performa; it does not report the Performa model name.

Large Hard Disks

On large hard disks, the Gathering Miscellaneous Boot Volume Statistics section of the launch process often takes the most time, as MacCheck searches for bad file creation dates.

Dimmed Menus During Tests

While tests are running, the File and Help menus and Help, Test, and Quit buttons are dimmed (not available).

No Printer Selection

If no printer is selected or if no log is currently selected, the Print

and Page Setup menu items are dimmed (not available).

Status Bar Updates

When the file system test is in progress, the status bar is updated only after each volume has been checked. For large volumes, this may mean that the status bar is frozen for a minute or two.

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Tech Info Library Article Number:13029

Tech Info Library

MacCheck: Common Warnings Reported (8/93)

Revised: 8/23/93
Security: Everyone

MacCheck: Common Warnings Reported (8/93)

==========

Article Created: 19 August 1993

TOPIC ----------

This article describes the common warnings reported by MacCheck, as well as steps you can take to correct any problems.

DISCUSSION ----------

File System Test Reports Volume Is Busy

MacCheck should be the only application running while it performs the file system test. The results are not valid if other applications, extensions (including File Sharing), or Control Panels are running at the same time as MacCheck's file system test.

File System Test Can't Test This Kind of Volume

MacCheck only tests for file system and System file corruption on volumes that are not locked. In other words, MacCheck only tests volumes that you can repair. MacCheck considers CD-ROM drives and file server volumes locked.

Bad File Creation Dates

The "Additional Systems Info" log lists all files with bad creation file dates (a creation date later than the last modification date). This usually means that some time in the past the system clock was not set up correctly. This warning is not fatal, and since it is time consuming to reset file dates, you may not wish to repair these files. Apple's ResEdit application and some third-party applications allow you to reset file dates.

MacCheck Gives a Log Full Warning

You have too many files with bad creation dates, or too many aliases that are unresolved. For example, if you double-click on the alias, the Finder gives you a "Document/file cannot be found" error. MacCheck may not be able

to record all of the standard profile information into the Additional System Info log. If you have a large number of fonts or applications, MacCheck may not be able to record all of the application and font information in the "Application and Font Info" log.

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Tech Info Library Article Number:13030

Tech Info Library

MacCheck: Multiple System Folders Detected (8/93)

Revised: 8/23/93
Security: Everyone

MacCheck: Multiple System Folders Detected (8/93)

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Article Created: 19 August 1993

TOPIC ----------

I ran MacCheck on my Macintosh and it detected several System Folders. What should I do?

DISCUSSION ----------

MacCheck detects multiple System Folders and displays their pathname in the "Additional System Info" log.

Although you can safely store multiple System Folders on your drive, many problems can be traced to additional System Folders inadvertently placed on drives. Ignore the warning if you intend to have multiple System Folders; otherwise, Apple recommends only one System Folder per hard disk.

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Tech Info Library Article Number:13031

Tech Info Library

MacCheck: Directory Corruption Detected (8/93)

Revised: 8/23/93
Security: Everyone

MacCheck: Directory Corruption Detected (8/93)

==========

Article Created: 19 August 1993

TOPIC ----------

MacCheck has detected Directory Corruption on my hard disk. What should I do?

DISCUSSION ----------

If MacCheck detects directory corruption during its file system test, locate the Disk First Aid program on your Utilities disk (Performa owners) or Disk Tools disk (Macintosh owners.)

Follow the procedure detailed below:

1) Shut down your Macintosh from the Finder's Special menu.

2) Insert your Utilities or Disk Tools disk and turn on your Macintosh.

3) When the Finder appears, run the Disk First Aid * program. (Note: Be careful to designate the drive that MacCheck detected the problem on, as the drive that needs to be fixed.

4) Choose Quit to return to the Finder and choose Restart from the Special menu to restart your Macintosh.

* Apple recommends Disk First Aid v7.2, found on the Software Utility Update 1.0 disk, available from AppleLink and other online services.

Occasionally, Disk First Aid versions prior to version 7.2 will not find or fix the problems that MacCheck has detected. If you run MacCheck after running Disk First Aid, MacCheck may still detect file system problems. If this occurs or if MacCheck tells you that it detected problems that Disk First Aid cannot fix, the problems can be corrected by reinitializing your hard drive using Apple HD SC Setup. Please make sure that you have backed up your drive (using Apple Backup if you are a

Performa user) before reinitializing your drive.

Some third-party utilities may be able to repair problems that Disk First Aid cannot repair. However, reinitializing your drive is the only way to be sure that problems that MacCheck detects are corrected.

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Tech Info Library Article Number:13032

Tech Info Library

MacCheck: System File Corruption Detected (8/93)

Revised: 8/23/93
Security: Everyone

MacCheck: System File Corruption Detected (8/93)

==========

Article Created: 19 August 1993

TOPIC ----------

MacCheck has detected System File Corruption on my hard disk. What should I do?

DISCUSSION ----------

Macintosh and Performa Users

If MacCheck detects corruption problems in your System, Finder, System Enabler, or Launcher (Performa) files, replace these files using your original Apple installation disks using the Apple installer.

Performa Users

- If you have backed up your Performa with Apple Backup, you can restore a backup of your System files with the Apple Restore program.

- If you have not created a backup of your system, please contact the Apple Assistance Center.

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Tech Info Library Article Number:13033

Tech Info Library

MacCheck: Logic Board Failure Detected (8/93)

Revised: 8/23/93
Security: Everyone

MacCheck: Logic Board Failure Detected (8/93)

==========

Article Created: 19 August 1993

TOPIC ----------

MacCheck just detected a logic board failure on my Macintosh. What should I do?

DISCUSSION ----------

If MacCheck detects a logic board failure:

1) Shut down your Macintosh by selecting Shut Down from the Finder's Special menu.

2) Hold down the Shift key while restarting your Macintosh. This lets the computer start up without loading any system extensions.

3) Run MacCheck again. If MacCheck still detects a logic board error, contact the Apple Assistance Center or your Authorized Apple Service Provider.

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Tech Info Library Article Number:13034

Tech Info Library

AppleShare 4.0 and Macintosh Computers Supported (8/93)

Revised: 8/19/93
Security: Everyone

AppleShare 4.0 and Macintosh Computers Supported (8/93)

==========

Article Created: 18 August 1993

TOPIC ----------

1) Is AppleShare 4.0 supported on a Quadra 900 and 950? I have conflicting information regarding the Quadra 950.

2) Also, will AppleShare 4.0 be supported on the new Centris 660AV, or Quadra 840AV?

DISCUSSION ----------

1) AppleShare 4.0 was tested on only four hardware platforms. These platforms are the Centris 610 (AWS 60), Quadra 700, Quadra 800 (AWS 80), and Quadra 950. As a result these are the only "officially supported" AppleShare 4.0 platforms.

   Given the similarity between the Centris 610 and 650, and the Quadra 900 and 950, it's quite likely that AppleShare 4.0 will run on those two platforms, but they are NOT SUPPORTED.

2) AppleShare 4.0 was not tested on the Centris 660AV and Quadra 840AV. The differences between the supported platforms (Centris 610, Quadra 700, Quadra 800, and Quadra 950) and the new Centris 660AV and Quadra 840AV platforms are greater than the two unsupported computers (Centris 650, and Quadra 900) mentioned above. The Centris 660AV and Quadra 840AV MAY, OR MAY NOT be tested in the future, but they are strongly NOT SUPPORTED with AppleShare 4.0.

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Tech Info Library Article Number:13035

Tech Info Library

Newton MessagePad: Changing Fonts in To Do List (8/93)

Revised: 8/20/93
Security: Everyone

Newton MessagePad: Changing Fonts in To Do List (8/93)

==========

Article Created: 20 August 1993

TOPIC -----

If I change the default font or style by opening the Styles icon in the Extras drawer, the font or style is changed everywhere except the To Do List. Why?

DISCUSSION -----

The Newton MessagePad's To Do List does not use the default font settings as chosen in Styles; it defaults to plain 12 point text. After you have entered text in the To Do List, you can select this text, and change its style by opening the Styles icon.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13036

Tech Info Library

Macintosh: How to Copy a Floppy Disk (8/93)

Revised: 8/20/93
Security: Everyone

Macintosh: How to Copy a Floppy Disk (8/93)

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Article Created: 20 August 1993

TOPIC ----------

How do I copy a floppy disk?

DISCUSSION ----------

If your Macintosh has two floppy-disk drives:

1) Insert the disk to be copied in one drive, and the disk you want to copy to in the other drive.

2) Drag the icon of the original disk onto the icon of the "target" or destination disk.

3) You'll be asked if you want to completely replace the contents of the target disk with the contents of the original. Click Yes to continue.

   This will replace, not add to, everything that was on the disk you are copying to.

If your Macintosh has only one floppy-disk drive:

1) Insert the disk to be copied in the floppy disk drive.

2) Press Command-E to eject the disk. Its icon will remain on the desktop, but as a dimmed, or grayed-out shadow.

3) Put the disk you want the new copy on in the floppy disk drive. It may be a disk you have used before, or a new, uninitialized disk. If it is uninitialized, click Initialize.

4) Drag the icon of the dimmed floppy disk over the icon of the disk you just inserted in the drive.

5) You'll see a warning dialog box that asks if you want to completely replace the contents of the new disk with the contents of the original. Click Yes to continue. Note: This will replace, not add to, everything that was on the disk you are copying to.

6) You'll be asked to insert disks as needed as the computer makes your copy.

Note: You can stop the copying process at any point by pressing "Command-." (Command-period). You may have to press this key combination more than once.

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Tech Info Library Article Number:13037

Tech Info Library

MacCheck: Software Profiler Reports (8/93)

Revised: 8/23/93
Security: Everyone

MacCheck: Software Profiler Reports (8/93)

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Article Created: 19 August 1993

TOPIC ----------

This article details the information that MacCheck's software profiler collects and reports.

DISCUSSION ----------

The software profiler inside MacCheck collects and reports information on the following. (Note: state refers to active or inactive.)

- System version
- Finder version
- AppleTalk version, state, and (if Ethernet is installed), Phase 1 or 2.
- System Enablers
- Communications Toolbox (CTB) version, along with names and versions of any CTB tools installed.
- QuickDraw version
- Debugger name and version
- Memory Addressing mode (24-bit, 32-bit, or not capable of 32-bit mode)
- Virtual Memory state and location of the VM Backing Store file
- Disk Cache state and size
- User Name
- Machine Name

- Default AppleTalk Zone
- File Sharing state
- Chosen Printer
- Startup Device
- Volume (hard disk) information including: name, type, format, attributes, SCSI ID, Total Capacity, Free Space, Number of Files, Number of Folders, Last Backed Up, bootable, available for File Sharing, and has or should have boot blocks
- System Heap size
- Apple Menu Items: name and version of files.
- System Files: name, version & state for the following: System Extensions, Control Panels, Chooser Extensions, and Startup Items
- Fonts Installed: name, font family ID, type, sizes Installed, location
- Application Info: name, minimum memory required, preferred memory, 32-bit clean and location.
- Miscellaneous Startup (Boot) Volume Statistics:
  - Duplicate System Folders
  - Creation Date/Last Modified Date In The Future
  - Deepest Path
  - Longest Path

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Tech Info Library Article Number:13038

Tech Info Library

MacCheck: Volume & Directory File Reports (8/93)

Revised: 8/20/93
Security: Everyone

MacCheck: Volume & Directory File Reports (8/93)

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Article Created: 19 August 1993

TOPIC -----

This article details the information MacCheck's Volume & Directory File Checker reports.

DISCUSSION -----

HFS Directory Structure Checking:

- Volume checks
  - Every block allocated to a file on a volume is marked in the volume bitmap.
  - Every block not allocated to a file on a volume is not marked in the volume bitmap.
  - Every file on the volume has a unique set of blocks. No file claims blocks that are allocated to another file.

- Directory checks
  - Each directory has the same number of files and directories allocated to it that is claimed in the directory record.
  - The number of directories on the volume is the same as the number of directories found in the volume header.

- BTree checks
  - Each node in the catalog and extent trees has the proper valence.
  - Each node in the catalog and extent trees is properly marked in the volume bitmap.
  - Each node in the catalog and extent trees is referenced only once.

Resource File Checks:

The Resource File Check performs an analysis of the System files, testing for the following:

- The resource fork is at least the minimum size.

- There is no overlap or space between the header, the resource data list, and the resource map.
- There are no bytes between the End Of File (EOF) and the end of the resource map.
- Each record in the resource data list is used once and only once. The last data item ends exactly where the data list ends.
- Each item in the resource type list contains at least one reference; each sequence of referenced items starts where the previous resource type item's reference list ended; and each item in the reference list is pointed to by one and only one resource type list item.
- There are no duplicates in the resource type list.
- Each name in the name list has one and only one reference, and the last name doesn't point outside the name list.
- Each reference list item points to a valid data item and either has a name list offset of –1 or points to a valid name list offset.
- All names have a non-zero length.

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Tech Info Library Article Number:13039

Tech Info Library

MacCheck: Hardware Profiler Report (8/93)

Revised: 8/23/93
Security: Everyone

MacCheck: Hardware Profiler Report (8/93)

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Article Created: 20 August 1993

TOPIC -----

This article details what information the MacCheck's hardware profiler collects and reports.

DISCUSSION -----

Macintosh Hardware Attributes:

- Macintosh model and machine ID.
- Processor (CPU) and clock speed (in MHz)
- Co-processor (FPU)
- Memory manager (MMU)
- Physical memory size in MB
- Logical memory size in MB
- Battery status (Portables and PowerBooks only)
- Hardware attributes
- Keyboard type
- ROM size in K
- ROM version
- ROM sub-version (Macintosh IIci and above)
- ROM checksum
- Docking information for PowerBook Duo

NuBus cards:

- Slot number in hexadecimal
- Card name
- Board ID
- Board version

LC-compatible PDS slot (Reported under NuBus slot $E):

- Card name

• Board ID

SCSI devices:

• SCSI ID (0 to 6)
• Device type (hard drive, CD-ROM drive, tape, printer, etc.)
• Device name (if a mounted block-device)
• Device size (if known)
• Vendor ID (if applicable)
• Product ID (if applicable)
• Revision (if applicable)
• Device serial number (if applicable)

Floppy Drives:

• Drive ID (1 internal, 2 second or external, 3 if applicable)
• Drive type (800K, Apple SuperDrive, HD20, etc.)

External Monitors:

• Screen size (pixels)
• Grays/colors (same as in the monitors CDEV)
• Horizontal and vertical resolution
• Location of monitor (built-in, attached to built-in video, or attached to a video card in a NuBus slot); if monitor is the main screen.

Global Village Modems:

• Global Village modem is found (attached to modem port)
• Modem is found, but not recognized as a Global Village modem
• No modem is found

(Note: the search for a Global Village modem is primarily for Performa systems that are bundled with Global Village modem and a Club Performa America OnLine account.)

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Tech Info Library Article Number:13040

Tech Info Library

MacCheck: Operational Overview (8/93)

Revised: 8/23/93
Security: Everyone

MacCheck: Operational Overview (8/93)

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Article Created: 20 August 1993

TOPIC -----

This article is an operational overview of Apple's MacCheck software.

Several other articles in the Tech Info Library describe how you should respond to specific messages from MacCheck.

DISCUSSION -----

Launching MacCheck

When you launch MacCheck, a splash screen appears detailing the initialization processes that MacCheck performs while launching. MacCheck's primary task during launch is gathering profile information and checking for multiple System Folders.

Launch time can vary greatly. For example, on a new Macintosh LC III, MacCheck takes about 1 minute to launch. On a Macintosh Quadra 950 with 400MB hard disk and 8,000 files, MacCheck takes approximately 5 minutes to launch.

If you want to speed up the launch process by approximately 20 seconds, press the Space bar when the splash screen first appears. This tells MacCheck not to profile modems or check "slower" SCSI devices, such as DAT tape drives. MacCheck will then display a "•QuickBoot•" message.

If you want to quit MacCheck during the launch process at any time, type Command-period.

Accessing Profile Information

MacCheck stores the collected profile information in three log files:

- System Info Log
- Additional System Info Log
- Application and Font Info Log

To view the profile information placed into these logs, select the log you want from the Windows menu.

Starting Logic Board and File System Tests

To begin the logic board and the file system tests, click the Test button or choose Test (Command-G) from the Diagnostics menu. When testing is completed, MacCheck stores the results in a file named "Test Results-1". You may rename this file by choosing "Save Results As" from the File menu.

Getting Help

Consult the Help menu or click the Help button if you have questions about the information in the System Info, Additional System Info, or Application and Font Info logs. Help also provides suggestions and troubleshooting tips for any problems MacCheck finds.

Balloon Help is also available. Choose "Show Balloons" from the ? (Balloon Help) menu.

Using MacCheck Menus

- The File Menu: MacCheck logs are saved as individual documents, so the File menu items behave in similar ways as the File items in other applications, such as TeachText. As with TeachText, there can be only one open document at a time. Below are the menu items for the File menu:

  - New Results: Clears all the logic board and file system test information stored in the results file; does not clear the profile information after the bullets ("•••…") that MacCheck gathered during the launch process.

  - Open Results: Opens an existing "Test Results-1" log. MacCheck reads the contents in the four logs that were saved into that results file.

  - Save Results: Saves the results log, System Info log, Additional System Inf" log, and Application and Font Info log to "Test Results-1").

  - Close: Hides the front-most log or closes the "Help-Topics" window, if it was the front-most window. To make a log the front-most window, use the Windows menu and select the log you wish to view.

  - Print Results: Prints the front-most log. You also can choose to print any of the other three logs from the print dialog box.

- Diagnostics Menu:

  - Test:. Starts the logic board, file system, and System file checking tests. MacCheck performs the check for multiple System Folders only when first launched. Once MacCheck begins testing, the "Test…" item is dimmed.
  - Stop Testing: Enabled when testing is in progress.

- Windows Menu: When you select an log window in the Windows menu, MacCheck

will bring that log forward, making it the front-most window. If you have viewed Help, but not yet closed the "Help-Topics" window, you can also select the "Help-Topics" item from the Windows menu.

- Help Menu and Help Window: When you click the Help button in the main MacCheck window, or select "Topics" from the Help menu, MacCheck displays a window containing eight Help topics; each topic consists of one or more pages.

Note: When running MacCheck on a Macintosh Plus, SE, Classic, or Classic II, the "Help-Topics" window becomes a "modal" dialog box due to screen space constraints.

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Tech Info Library Article Number:13041

Tech Info Library

SNA•ps 3287 and LaserWriter Driver 8.0 Problem (1/94)

Revised: 1/4/94
Security: Everyone

SNA•ps 3287 and LaserWriter Driver 8.0 Problem (1/94)

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Article Created: 19 August 1993
Article Reviewed/Updated: 4 January 1994

TOPIC ----------

I'm encountering a problem between SNA•ps 3287 1.1.1 and LaserWriter driver 8.0. When I attempt to receive a print job from an IBM host I get errors with the PrintMonitor and my Macintosh locks up. I changed settings to receive the job as a text file and it worked fine.

I then installed LaserWriter driver 7.1.2, which comes with System Software 7.1, and receive a print job file and it printed properly. Is there a problem when using SNA•ps 3287 1.1.1 and LaserWriter driver 8.0?

I just recently purchased SNA•ps 3287, if I need to upgrade to SNA•ps Print what is the procedure and the cost if any?

DISCUSSION ----------

We did some testing with the new LaserWriter Driver 8.0 and SNA•ps. Here is what we found:

1) SNA•ps Print worked fine with LaserWriter 8.0 or 7.1.2 in both AS/400 and 3287 mainframe printer emulation.

2) SNA•ps 3287 worked fine with LaserWriter 7.1.2.

3) SNA•ps 3287 failed very badly with LaserWriter 8.0. It hung the PrinterMonitor and required a 'Stop Printing', dropping the PrintMonitor Document folder in the Trash (One document was X-ed out), and manually restarting the Macintosh with the Programmer switch. Menu Restart just hung in PrintMonitor.

So it looks like the workaround is to use LaserWriter Driver 7.1.2 with SNA•ps 3287 and if the LaserWriter 8.0 Driver is needed, LaserWriter 810, then you have to upgrade to SNA•ps Print.

Upgrades from SNA•ps 3287 to SNA•ps Print software are available; there is no charge for the upgrade. For more information on upgrades use the search string of "SNA•ps 3287 and upgrade" in the Tech Info Library.

Article Change History:
4 Jan 1994 - Updated article with testing information.

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Tech Info Library Article Number:13042

Tech Info Library

Centris 660AV: Deskwriter Driver 3.9 Incompatibility (8/93)

Revised: 8/23/93
Security: Everyone

Centris 660AV: Deskwriter Driver 3.9 Incompatibility (8/93)

==========

Article Created: 23 August 1993

TOPIC -----

I have a DeskWriter printer (using DeskWriter driver version 3.9) connected to the Centris 660AV computer. The computer hangs with a blank screen (when doing a print job) unless I select the gray scale checkbox in the print dialog box.

DISCUSSION -----

We (Apple) tested the HP DeskWriter driver version 3.9 (both serial and AppleTalk) on the Centris 660AV and 840AV. As you stated, the 660AV required the gray scale option (checkbox) to be selected in order to print. The Centris 840AV had no difficulty printing.

As a workaround with the 3.9 driver, if you need the DeskWriter to print on the Centris 660AV computer, you will have to select the gray scale checkbox in the print dialog box.

We spoke with Hewlett Packard. They do not have a solution at this time.

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Tech Info Library Article Number:13044

Tech Info Library

Video Technologies: Composite vs. S-video (6/96)

Revised: 6/27/96
Security: Everyone

Video Technologies: Composite vs. S-video (6/96)

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Article Created: 24 August 1993
Article Reviewed/Updated: 27 June 1996

TOPIC ----------

What is the difference between composite video and S-video? Also, which Macintosh computers support these video technologies?

DISCUSSION ----------

The following Macintosh computers support both composite video and S-video input and output:

- Macintosh Quadra 660AV
- Macintosh Quadra 840AV
- Power Macintosh 6100AV series
- Power Macintosh 7100AV series
- Power Macintosh 8100AV series
- Power Macintosh 7500 series
- Power Macintosh 7600 series
- Power Macintosh 8500 series

The Macintosh Quadra 660AV and 840AV and the Power Macintosh 7500, 7600, and 8500 series computers have separate connectors for composite and S-video. The Power Macintosh 6100AV, 7100AV, and 8100AV series computers have S-video input and output connectors but require an adapter for composite video input and output.

Following are descriptions of composite video and S-video.

Composite Video

A composite video signal is one in which the luminance, chrominance, and sync information have been combined into a single signal using one of the coding standards: NTSC, PAL, SECAM, and others. This is the form the signal must take before it can be broadcast or recorded by standard means. Composite video is

more common than S-video, as televisions, most video- cassette recorders (VCRs), and laser disc players (LDPs) use the composite format.

Chrominance

The color part of a signal, relating to the hue and saturation but not to the luminance (brightness) of the signal. Any colored signal has both chrominance and luminance.

Luminance

The aspect of the video signal carrying information about the brightness of an image.

Sync

Short for synchronous. Refers to signals used to synchronize the horizontal and vertical scans of a video signal. This signal is derived from a composite or combination of horizontal and vertical drives, with some slightly narrowed and delayed pulses as well as the addition of equalizing pulses. When used, is usually accompanied by subcarrier.

S-video
===
An S-video signal is a consumer form of component video. It is used primarily with Super8 (Hi8 video or 8 mm tape) camcorders and S-VHS recorders (S-video on VHS tape). S-video is a less common -- but higher quality -- video format than composite video.

Component video

Component video is a recording system that does not require NTSC encoding of RGB signals, but uses a means of recording and routing the luminance and color signals separately. This method does not reduce bandwidth nor compromise the RGB components and results in images of higher resolution and better color quality than composite video. Though designed for high-end television production, similar recording methods have recently become available to the consumer market.

Article Change History:
27 Jun 1996 - Added 7600.
12 Dec 1995 - Updated information. Added additional computers.

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Tech Info Library Article Number:13045

Tech Info Library

Macintosh: Sound Effects Extension (8/93)

Revised: 8/26/93
Security: Everyone

Macintosh: Sound Effects Extension (8/93)

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Article Created: 23 August 1993

TOPIC ----------

What is the Sound Effects extension? How do I use it? It's bundled with the Macintosh Centris 660AV and Quadra 840AV.

DISCUSSION ----------

The Sound Effects extension adds sound effects options to the Sound control panel. Follow these steps to use Sound Effects:

1) Locate the Sound Effects file and drag it to the icon of the System Folder of your startup disk. A message asks you to confirm that you want this file in the Extensions folder.

2) Choose Restart from the Special menu. The new options aren't available until the computer restarts.

3) Open the Sound control panel and choose Effects from the pop-up menu. The Effects section of the control panel appears, showing another pop-up menu.

4) Choose an effect from the pop-up menu. When you choose an item, the current alert sound plays with that effect. The effect you choose remains active for all sounds the computer plays until you restart the computer. At restart, the effect choice reverts to None. If you want to keep using a sound effect, you must choose it again.

Important Note: When a sound effect is active, you can't change the sample rate in the Sound Out section of the control panel.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13046

Video Monitor Software: Options (8/93)

Revised: 8/26/93
Security: Everyone

Video Monitor Software: Options (8/93)

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Article Created: 23 August 1993

TOPIC ----------

Video Monitor software displays a live video image in a window on the screen and can capture one frame of the video image. It is bundled with Macintosh Centris 660AV and Quadra 840AV.

Basic instructions for this program are included in Chapter 6 of Getting Started With Your Macintosh, which came with your computer. This article describes some additional options in the Video Monitor application.

DISCUSSION ----------

Additional Video Monitor options:

- Preferences: Choose Preferences from the File menu to change the captured frame from a PICT file to an image on the Clipboard or to turn off compression of the captured frame.

- Printing a frame: Choose Print from the File menu to print one frame of the video image in the Monitor window.

- Capturing a frame: Choose Copy from the Edit menu to capture one frame of the video image in the Monitor window. (A message is displayed if the memory available is not sufficient to capture a frame.) The preset choice for frame capture saves the frame as a PICT file. The file is named PICT 0 (or the lowest number not already used) and stored on the desktop. You can use the Preferences dialog box to change frame capture from a PICT file saved on the desktop to an image stored on the Clipboard.

- Turning off sound: Choose Mute from the Monitor menu to turn off the sound accompanying the video displayed in the Monitor window.

- Resizing the Monitor window: Choose a size from the Monitor menu to resize the window displaying video. Or drag from the lower right corner of the

window. Hold down the Shift key while dragging to maintain the horizontal and vertical proportions of the image as the window is resized.

- Changing video settings: Choose Video Settings from the Monitor menu to adjust options for the video image.

- Changing sound settings: Choose Sound Settings from the Monitor menu to adjust options for sound accompanying the video displayed.

Important Notes
---

1) When the Video Monitor program is open, you can't give spoken commands.

2) When you quit Video Monitor, you may need to change the Sound In device setting to Microphone (under the Options button in the Sound control panel) before you can begin or resume using speech recognition.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13047

Tech Info Library

Macintosh AV Systems: Displaying Video on Monitor (8/93)

Revised: 8/26/93
Security: Everyone

Macintosh AV Systems: Displaying Video on Monitor (8/93)

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Article Created: 23 August 1993

TOPIC ----------

Can I display video from my VCR or video camera on my Macintosh Centris 660AV or Quadra 840AV?

DISCUSSION ----------

Yes, you can. Below is the standard method for setting up the ability to display video a video signal, from a VCR, on the Macintosh monitor:

1) Assemble the VCR and cables you need to connect it to the Macintosh.

2) If the Macintosh and VCR are powered on, turn them off.

3) Plug one end of the single-RCA-plug cable into the Video Out socket on the VCR.

4) Plug the other end of the single-RCA-plug cable into the composite input port on the Macintosh.

5) Plug the dual-RCA-plug end of the other cable into the left and right Audio Out sockets on the VCR.

6) Plug the stereo-miniplug end of this cable into the sound input port on the Macintosh. You can use a Y-shaped adapter to convert a dual RCA-plug cable to one that has a stereo miniplug at one end.)

7) Turn on the computer and the VCR.

8) Open the Apple Extras folder on your hard disk and locate the Video Monitor application.

9) Double-click on the Video Monitor icon to launch the application. A black window titled "Monitor" will appear.

10) Turn on the VCR and press the play button. A video image will appear inside the monitor window.

Troubleshooting:

If a video image does not appear, try the following:

1) Choose Source from the pop-up menu at the top left side of the Video window.

2) In the dialog box which appears, review the choices selected in the Input and Format pop-up menus:

   - The Input choices indicate the input port for the video device. The preset choice is composite video, which is the standard for most VCRs.

   - The Format choices indicate the format, or standard, of the video signal. The preset choice is NTSC, which is used in the U.S. and Japan.

3) Make sure all of the cables are securely connected between the video device and the computer.

4) Make sure the video device is turned on.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13048

Tech Info Library

MacCheck: What It Is (8/93)

Revised: 8/23/93
Security: Everyone

MacCheck: What It Is (8/93)

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Article Created: 23 August 1993

TOPIC ----------

This article describes the MacCheck application from Apple.

DISCUSSION ----------

MacCheck is a diagnostic application from Apple Computer, Inc.

At this writing, MacCheck is bundled with the following systems:
- Macintosh Performa
- Macintosh LC 520
- Centris 660AV
- Quadra 840AV

It is also included on the Software Utility Update Disk, which is distributed free of charge on AppleLink and other online services.

MacCheck assists Macintosh owners by providing the following diagnostic tests:

1) MacCheck creates a profile of your Macintosh computer, including:

- The processor, memory, expansion cards, SCSI drives, keyboard, monitor, etc.
- The installed applications and system software on your startup drive

2) MacCheck performs a number of tests, including:

- A general logic board test
- File system and System files test

- Duplicate System Folders test

For further information on MacCheck, search by the string "MacCheck" in the Tech Info Library.

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Tech Info Library Article Number:13049

Tech Info Library

Get Info Command: File Size Differences (8/93)

Revised: 8/26/93
Security: Everyone

Get Info Command: File Size Differences (8/93)

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Article Created: 25 August 1993

TOPIC ----------

I used the Get Info command on each folder on my hard drive to find the size, and added those numbers up. Then I used the Get Info command on my hard drive icon to find the size. The size difference is huge -- almost 30MB.

Why is this?

DISCUSSION ----------

It isn't surprising to see a large size difference between the hard drive itself and the total folders on the hard drive. Here are factors that explain the difference:

- The invisible files (such as AppleShare PDS, Desktop DB, Desktop DF, and Desktop Folder) aren't counted in Get Info size for folders.

- The size shown in the Get Info box for folders is the actual file size, which includes data and resource forks. For example, a text file which contains only 30 bytes, showed Size: 3K on disk (480 bytes used); 480 bytes (30 bytes for data, 450 bytes for resource) will be added to the folder Get Info size, and 3K will be added to the hard drive Get Info size.

  Since the hard disk is a block device, any file created must reside on the block factor boundary -- 3K, in this case, is the size that the disk drive allocates for this file. This accounts for a lot of differences, especially if you have a lot of small files on the drive.

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Tech Info Library Article Number:13050

Tech Info Library

LaserWriter IIg: Downloading Macros in PCL Mode (8/93)

Revised: 8/25/93
Security: Everyone

LaserWriter IIg: Downloading Macros in PCL Mode (8/93)

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Article Created: 24 August 1993

TOPIC ----------

When running a LaserWriter IIg in PCL mode (LaserJet emulation), there seems to be a problem in downloading multiple forms (PCL macros). If two forms are downloaded, only one will be available, and it varies which one.

The same problem does not occur with an HP LaserJet IIP. Multiple forms work fine. I am running PostScript from a LocalTalk network of Macintosh computers and PCL via RS-232 from an IBM RS/6000.

How does the memory on the LaserWriter IIg behave when switching between PCL (emulation) and PostScript modes? Does downloaded information remain resident for each mode?

DISCUSSION ----------

We were unable to duplicate the problem you outlined. We created and downloaded two simple macros to our LaserWriter IIg in PCL mode and were able to execute either one on command. We created and executed the macros using the following sequences:

<ESC>&f#Y

= 0 : To define the macro
= 1 : To end defining the macro
= 2 : To execute the macro
= 10 : To make the macro permanent

The last sequence, <ESC>&f10Y, is the key in keeping the macro available in the printer's RAM for use beyond the current job. There is a default amount of RAM set aside strictly for PCL emulation where this information will remain, unless the printer is power cycled.

With regard to your specific question about downloaded information while

switching between PostScript and PCL modes, this information does remain resident in RAM if the appropriate PostScript or PCL commands are used. In other words, <ESC>&f10Y for macros in PCL mode.

As you may know, in PostScript mode the server loop can also be exited where commands will remain persistent even beyond power cycles of the printer. We are unaware of a mechanism for this in PCL mode.

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Tech Info Library Article Number:13051

Tech Info Library

Newton MessagePad: Maximum Note Length (8/93)

Revised: 8/24/93
Security: Everyone

Newton MessagePad: Maximum Note Length (8/93)

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Article Created: 24 August 1993

TOPIC -----

What is the maximum size of a note in the Newton MessagePad's Note Pad?

DISCUSSION -----

Each note in the Note Pad has a maximum size of 4000 bytes. To check the current note size, tap on the little circled "i" icon at the top left of the note. If you are working with raw text in the default 18 point text size, you can write up to 12 screens of text per note.

Another limitation is that you can have approximately 50 items in a note, where an item can be a shape, ink (unconverted text), or a paragraph of converted text.

Shapes and ink are much more memory intensive objects than straight text.

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Tech Info Library Article Number:13052

Tech Info Library

Quadra 840AV: Using With NEC Multisync 6FG (8/93)

Revised: 12/2/93
Security: Everyone

Quadra 840AV: Using With NEC Multisync 6FG (8/93)

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Article Created: 26 August 1993

TOPIC --

I have an NEC MultiSync 6FG monitor. With a Macintosh Quadra 840AV, it works fine in 640 x 480 mode, but not 1152 x 870. It acts like it's not syncing correctly. (It works fine with a Quadra 800.)

DISCUSSION --

A Quadra 840AV connected to an NEC MultiSync FG 21-inch 6FG monitor requires the new AV 1152 X 870 or AV Multi-Res adapter. To obtain these adapters free of charge from NEC, call 312-622-7427. (General NEC Tech Support questions should be directed to 800-388-8888.)

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Tech Info Library Article Number:13053

Tech Info Library

Newton MessagePad: Clock Loses Time (8/93)

Revised: 8/24/93
Security: Everyone

Newton MessagePad: Clock Loses Time (8/93)

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Article Created: 24 August 1993

TOPIC -----

When I reset my Newton MessagePad, the internal clock loses time. What causes this?

DISCUSSION -----

Approximately once every 5 minutes, the Newton MessagePad saves the time on its clock to a location in memory. When you reset the Newton, its clock is reset to the last saved time. The result is that the clock can lose up to 5 minutes each time you reset your Newton.

Your Newton MessagePad doesn't save the time while it is asleep, so resetting your Newton when it is asleep could result in a greater than 5 minute time loss. We recommend you wake up your Newton before resetting it.

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Tech Info Library Article Number:13054

Tech Info Library

SNA•ps 3270 API Developer Technical Support (8/93)

Revised: 8/25/93
Security: Everyone

SNA•ps 3270 API Developer Technical Support (8/93)

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Article Created: 23 August 1993

TOPIC -----

Where does a person get support on out SNA•ps 3270 API? What status do they have to have with Apple, like a registered developer, to get support?

DISCUSSION -----

I checked with Developer Technical Support and they told me if someone is a Partner or an Associate, they can send their 3270 API questions to the AppleLink address, DEVSUPPORT.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13056

Tech Info Library

AppleShare Pro: Number Of Users and Groups (8/95)

Revised: 8/23/95
Security: Everyone

AppleShare Pro: Number Of Users and Groups (8/95)

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Article Created: 24 August 1993
Article Reviewed/Updated: 23 August 1995

TOPIC ----------

It is stated that AppleShare Pro can support a maximum of 200 simultaneous users. Is there a limit as to how many user ACCOUNTS can be defined under AppleShare Pro?

DISCUSSION ----------

On page 115 of the "AppleShare Pro Administrator's Guide" you will find the AppleShare Pro Specifications appendix.

Here is the contents of that page regarding the AppleShare Pro File Server:

Begin_Table

Maximum connected users	200	
Maximum number of open files	5,000	(may require adding RAM)
Maximum number of volumes	50	
Maximum number of shared items	50	
Maximum number of users in a user/group file	2,000	(Recommended)
Maximum number of groups in a user/group file	2,000	(Recommended)
Maximum number of group memberships per user	42	
Maximum number of simultaneous launches	200	

End_Table

NOTE: The maximum number of users in a user/group file and maximum number of groups in a user/group file in the manual is stated at 2,000. However, AppleShare Pro is based on AppleShare 4.0 code and the maximum number of users in a user/group file and maximum number of groups in a user/group file in the "AppleShare Administrator's Guide, Version 4" is stated as 8,192 (2,000 recommended).

Article Change History:
23 Aug 1995 - Included NOTE information.

Support Information Services

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Tech Info Library Article Number:13057

Tech Info Library

Apple Workgroup Server 95 & Telnet (8/93)

Revised: 9/20/93
Security: Everyone

Apple Workgroup Server 95 & Telnet (8/93)

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Article Created: 24 August 1993

TOPIC -----

I've set up an Apple Workgroup Server (AWS) 95 following the instructions to install TCP/IP on the UNIX side with the newconfig command. I also set up MacTCP. However, I have been unable to get Telnet to work (a Macintosh version of Telnet) OR to get UNIX commands such as rlogin to work.

I want to use the machine to set up a listserver (running under UNIX). I want to use Telnet to connect to another site to a listserv. I also plan to use the server as a file server for our computer Lab.

I believe I'm having a problem with domain names, how do I install domain name service on the server? I'm told most computers support domain name service.

I have been able to ping within my subnet, but not outside of my subnet. This indicates that there has to be a way to specify the default gateway router, but I can't find how to do that.

DISCUSSION -----

First, the problem might have to do with "your set up of MacTCP under A/UX". I'm not sure how/what you did to setup MacTCP on A/UX. Under A/UX you don't have to "set up" MacTCP the same way as it does in Macintosh OS. MacTCP under A/UX will be automatically configured after configuring the TCP/IP network (such as IP address, subnet, name server, route, and so on) in the A/UX way. This information will be shown in MacTCP CDEV under A/UX.

Regarding domain name service, you may refer to the section of "Setting Up the Name Server" in A/UX Network System Administration for setting up the AWS 95 as a domain name server. If you only want the AWS 95 to be a client for accessing a remote domain name server, you can create the file called "resolv.conf" under the /etc directory with the following contents:

```
        domain YOUR-DESIRED-DOMAIN-NAME
        nameserver IP-ADDRESS-OF-THE-NAMESERVER
```

For example,

```
        domain support.apple.com
        nameserver 130.43.6.2
```

Here is an example of manually adding a default route in our network. You may put the following line in the /etc/rc file:

```
/usr/etc/route add 0 130.43.4.4 1
```

The IP address of 130.43.4.4 is an example of a cisco router, while 1 is the number of hups to get to the router from a local machine.

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Tech Info Library Article Number:13059

Tech Info Library

Microsoft Mail 3.1a: CD-ROM Software Conflict (3/94)

Revised: 3/1/94
Security: Everyone

Microsoft Mail 3.1a: CD-ROM Software Conflict (3/94)

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Article Created: 25 August 1993
Article Reviewed/Updated: 1 March 1994

TOPIC ----------

Version 3.1a of the Microsoft Mail server conflicts with Apple CD-ROM software. Is there a fix?

DISCUSSION ----------

Microsoft Mail Tech Support confirms there's a known problem with Microsoft Mail server version 3.1a and CD-ROM activity when running on the same Macintosh. If you're running an MS Mail server on a system with a CD-ROM drive, any CD-ROM activity will cause the MS Mail server to hang.

Microsoft has corrected the problem in MS Mail Server 3.1c and later. Please contact Microsoft directly regarding an upgrade for the MS Mail server.

Article Change History:
1 March 1994 - Updated with current info, made Topic a complete sentence.
18 January 1994 - Updated to reflect release of Mail 3.1c.

Support Information Services

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Tech Info Library Article Number:13060

Tech Info Library

Performa Displays: Supported Macintosh Models (12/93)

Revised: 12/14/93
Security: Everyone

Performa Displays: Supported Macintosh Models (12/93)

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Article Created: 25 August 1993
Article Reviewed/Updated: 14 December 1993

TOPIC ----------

Do the Performa and Performa Plus Displays work with Macintosh models outside the Macintosh Performa family?

DISCUSSION ----------

The Performa and Performa Plus Displays are standard Macintosh monitors with a resolution of 640 by 480 pixels. In order to work with either of the Performa displays, a Macintosh must either:

1) Have built in video which supports 640 by 480 monitors - or -

2) Have a video card which supports 640 by 480 monitors.

As of August 1993, the following Macintosh models with built in video will work with the Performa and Performa Plus displays:

Macintosh LC, LC II, LC III, LC 475, LC 550
Macintosh IIsi
Macintosh IIci
Macintosh IIvx, IIvi
Macintosh Centris 610, Centris 650, Centris 660AV
Macintosh Quadra 605, Quadra 610, Quadra 660AV, Quadra 700, Quadra 800, Quadra 660AV, Quadra 840AV, Quadra 900, Quadra 950

The following Apple video cards support 640 by 480 monitors:

Macintosh II High-Resolution Video Card
Macintosh 4•8 Display Card
Macintosh 8•24 Display Card
Macintosh 8•24GC Display Card

Article Change History:
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14 December 1993 - Added Macintosh models introduced since last update.
10 September 1993 - Revised article, adding info that Performa displays are standard 640 by 480 Macintosh monitors and any Macintosh with built-in video or any Apple video card which supports 640 by 480 will drive either Performa display.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13061

Tech Info Library

Macintosh AV Series: Update Older Hard Disks (12/93)

Revised: 12/14/93
Security: Everyone

Macintosh AV Series: Update Older Hard Disks (12/93)

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Article Created: 25 August 1993
Article Reviewed/Updated: 14 December 1993

TOPIC ----------

I've heard that the Macintosh AV Series computers use a faster SCSI manager. Do I need to update my older drives I plan to use with the Centris 660AV, Quadra 660AV or Quadra 840AV?

DISCUSSION ----------

Yes, use HD SC Setup 7.2.2 to update any older hard disks you plan to use with the Centris 660AV or Quadra 840. Use the following procedure to update your hard disks:

1) Launch Disk First Aid 7.1.1 or higher. (Disk First Aid 7.2 is shipped on the Software Utility Update 1.0 and higher disk.)

2) Select the disk you wish to update.

3) Click the Start button (for Disk First Aid 7.2, click Verify.) Disk First Aid will inform you if any repairs are needed.

4) If repairs are needed, click the Repair button.

5) Repeat steps 2 through 4 for any additional hard disks you wish to update.

6. Quit Disk First Aid.

7) Launch HD SC Setup 7.2.2 or higher.*

8) Click the drive button to select the hard disk you wish to update.

9) Click the Update button. This installs the new version of the SCSI driver.

10) Repeat Steps 2 and 3 for any additional hard disks you wish to update.

11) Click the Quit button to return to the Finder.

*Notes: - Make sure that Disk First Aid and HD SC Setup is not running from any hard disk you wish to update.
- Make sure that none of the hard disk(s) you wish to update is the startup disk.)

Why Update Older Hard Disks?

The Centris 660AV and Quadra 840AV use a new SCSI Manager, 4.3, a new system level manager that extends the capabilities of Macintosh systems both in terms of functionality and performance.

This new SCSI Manager is fully asynchronous, allowing each of several SCSI devices to have multiple requests outstanding. By queuing requests in this manner, overall throughput is improved. Other features such as direct memory access (DMA) support further enhance overall performance. Functionality has been improved through support for multiple buses and hardware configurations, and support for SCSI-2 messages and protocol actions.

Hard disks not updated using HD SC Setup 7.2.2 or higher will run approximately 15-20 percent slower than updated hard disks.

Article Change History:
14 December 1993 - Added information on HD SC Setup 7.2.2 and on the Quadra 660AV. Retitled to include all Macintosh AV Series computers.

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Tech Info Library Article Number:13062

Video Signal: Composite vs. Component (8/93)

Revised: 8/25/93
Security: Everyone

Video Signal: Composite vs. Component (8/93)

==========

Article Created: 25 August 1993

TOPIC -----

This article defines composite and component video.

DISCUSSION -----

Component video

A term given to a recording system which does not require NTSC encoding of RGB signals, but uses a means of recording and routing the luminance and color signals separately. This method does not reduce bandwidth nor compromise the RGB components and results in images of higher resolution and better color quality than composite video. Though designed for high end television production, similar recording methods have recently become available to the consumer market.

Composite video

A composite video signal is one in which the luminance, chrominance and sync information have been combined into a single signal using one of the coding standards: NTSC, PAL, SECAM, etc. This is the form the signal must take before it can be broadcast or recorded by standard means. Until recently, most monitors and projectors have accepted only composite video signals, although many now available accept RGB. See NTSC. Compare component video.

In the United States, the NTSC composite signal format is required for most video recording, manipulation, and display. The exception is high-end post-production facilities that use component video for improved signal integrity.

NTSC Composite vs. Component

..TIL13063-Video_Signal-Composite_vsComponent_8-93_(TA21585).pdf

In a composite signal, the luminance signal and the color signals are encoded together into one signal. When the color components are kept as separate signals, the video is called component analog video (CAV), which requires three separate signals: the luminance signal (Y) and the color difference signals (R-Y and B-Y).

Because component video does not undergo the encoding process, the color quality is noticeably better than composite video.

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Tech Info Library Article Number:13063

Tech Info Library

Desktop Video: Glossary of Terms (A-C) (8/93)

Revised: 8/25/93
Security: Everyone

Desktop Video: Glossary of Terms (A-C) (8/93)

==========

Article Created: 24 August 1993

TOPIC ----------

This article describes desktop video terminology with words "A" through "C".

DISCUSSION ----------

A/B roll editing
Editing from two source VCRs to a third VCR. This allows for transition effects like dissolves from one source tape to another.

Aliasing
A term used to describe the unpleasant jaggy appearance of unfiltered angled lines. Aliasing is the “beating” effects caused by sampling frequencies being too low to faithfully reproduce an image. There are several types of aliasing that can affect a video image which include temporal aliasing (e.g. wagon wheel spokes apparently reversing) and raster scan aliasing (e.g. flickering effects on sharp horizontal lines).

Analog video
A video signal that represents an infinite number of smooth gradations between given video levels. By contrast, a digital video signal assigns a number for each level. The Macintosh video board converts computer-created (or digital) video to an analog signal for output to a monitor.

Animatic
A limited animation used to work out film or video sequences. It consists of artwork shot on film or videotape and edited to serve as an on screen storyboard. Animatics are often used to plan out film sequences without incurring the expense of the actual shoot.

ANSI
Acronym for American National Standards Institute, which sets standards for many technical fields.

Anti-aliasing
Anti-aliasing is the manipulation of the edges of an image, graphic or text, to make them appear smoother to the eye. On close inspection, anti-aliased edges appear blurred, but at normal viewing distance, the apparent smoothing is dramatic. Anti-aliasing is important when working with high quality graphics for television use. See aliasing.

Aspect ratio
The ratio of an image's width to its height. For example, a standard video display has an aspect ratio of 4:3.

Assemble editing
Adding new material to the end of a previously recorded portion of a videotape that involves writing a completely new signal (including the control track) onto the tape. Performing an assemble edit in the middle of an existing program will introduce an undesirable glitch on the tape caused by an abrupt change in the sync information of the video signal. Compare insert editing.

Asynchronous
Not synchronized by a mutual timing signal or clock. Compare synchronous. audio effects board The audio effects board is like the switcher, and acts as the main router and mixer for source audio. Here audio levels are adjusted, mixed, and filtered. Usually audio effects are kept to a basic level in a video editing session. More complex audio work is usually performed with a digital audio workstation.

Auto-assemble
If all the editing decisions are made off-line, and the EDL is loaded into the CMX the actual editing is automatic, executing one event after another. This is called auto-assemble mode. During auto-assembly, the editor monitors video and audio levels, but does not need to control each edit. Loading the EDL into the CMS is typically done manually, however, some Macintosh programs can create CMX disks. The EDL generated by computer based editing systems like the Digital F/X and Avid Media Composer are usually perfectly accurate, therefore, they make auto-assembly a breeze since the opportunity for errors in entering the EDL by hand are eliminated.

Bandwidth
The frequency range of a video signal, measured in MHz. The bandwidth is directly related to horizontal resolution—the higher number of picture elements defined, the higher the frequency required. Put another way, the bandwidth describes "how much" information is being transferred. The bandwidth of the Macintosh II video signal can be as high as 33MHz, depending on screen size. By comparison, the bandwidth of broadcast television is 4 MHz. High resolution images can be displayed on low resolution monitors, with an obvious loss in quality.

Black level
The level of the video signal that corresponds to the maximum limits of the black areas of the picture.

Black, black burst
In video production, black refers to a composite video signal which has composite sync, reference burst, and a black video signal. Used for genlock purposes.

Blanking
The portion of the video signal that is off, or black, during the retrace interval of the scan. Blanking occurs between each horizontal line and during the vertical retrace between each field.

Blanking is important in broadcast production situations since there are strict FCC rules defining the blanking periods. Not all video products for the Macintosh conform to this aspect of the NTSC broadcast standard. Discuss this issue with vendors if broadcast quality is required. Related to composite sync, this signal has both horizontal and vertical components and is at its negative level whenever video is to be blanked or turned off.

Blanking level
The level of a video signal that separates the range that contains the picture information from the range that contains the synchronizing information. The level of the front and back porches is 0 IRE units.

BNC connector
A connector typically used with professional video equipment for connecting cables that carry the video signal. Compare RCA connector and XLR connector.

Brightness
(1) The luminance of the video signal, or the level of brightness on the scale from black to maximum white. One of the three determinants (with hue and saturation) of the color of an image, and the only one of the three that affects a monochrome image. (2) The brightness of a monitor or video projector measured in lumens. See luminance.

Broadcast quality
An NTSC composite video signal conforming to FCC rules concerning signal properties like video and sync levels, timing and blanking. Devices providing NTSC signals do not necessarily meet FCC broadcast standards. This is important if the video signal or videotape being recorded is going to be used in a broadcast situation.

Bump-up
Making a copy from one recording medium onto a second medium which is more suitable for post-production purposes due to it’s higher bandwidth and/or timecode capability. For example, material shot on Hi8 is usually “bumped-up” to 3/4" SP or Betacam SP for editing purposes since these formats feature higher resolution, less generation loss, a more robust tape, timecode, better frame-accuracy and faster shuttle speeds.

CAV
Acronym for Component Analog Video.

CCITT
Abbreviation for Consultative Committee on International Telegraphy and Telephony; an international committee that sets standards and makes recommendations for international communication.

CG
Acronym for Character Generator.

CGI
Acronym for Computer Graphic Imagery.

Character generator
A character generator (CG) is a video device found in on-line editing suites used for titles and credits. A CG is simply a high-end word processor for video with a wide variety of fonts and sizes available. The most common character generator is the Chyron.

Chroma
The color information contained in a video signal, consisting of hue (phase angle) and saturation (amplitude of the color subcarrier).

Chroma keying
The process of overlaying one video signal over another, the areas of overlay being defined by a specific range of chrominance. For this process to work, the chrominance must have sufficient resolution, or bandwidth. Composite video does not have sufficient bandwidth for acceptable quality chroma keying, therefore analog chroma keyers typically use component sources.

Chrominance
The color part of a signal, relating to the hue and saturation but not to the luminance (brightness) of the signal. Any colored signal has both chrominance and luminance.

Clean list (clean EDL)
An EDL which does not contain any overlapping or redundant edits. Typically during the off-line editing process changes are made which result in edits that overlap or become redundant. Most computer-based editing systems can clean an EDL automatically.

CLIPPING
The process of cutting off the peaks of either the white or the black portions of a video signal.

CMX
The most commonly used editing computer. The EDL is loaded into it and it executes the edits and effects by controlling all of the required video machines. Actually, it may not control all of them. certain operations may need to be done manually. Most editing computers use the CMX language, which has become an industry standard.

Color bars
See NTSC color bars.

Color burst
A portion of the composite video signal used for decoding its color information. Burst is several cycles of 3.58 MHz pulses recorded during the horizontal blanking interval and used to establish phase relationships for determining the hue. The color oscillator of a color television receiver is phase locked to the color burst.

Color correction
A process in which the coloring in a video image is altered by electronic means.

Color subcarrier
The 3. 58 MHz signal which carries color information. This signal is superimposed on the luminance level. Amplitude of the color sub-carrier represents saturation and phase angle represents hue.

Component video
A term given to a recording system which does not require NTSC encoding of RGB signals, but uses a means of recording and routing the luminance and color signals separately. This method does not reduce bandwidth nor compromise the RGB components and results in images of higher resolution and better color quality than composite video. Though designed for high end television production, similar recording methods have recently become available to the consumer market. See S-VHS and Hi8. Compare composite video.

Composite blanking
see blanking.

Composite sync
A signal consisting of horizontal sync pulses, vertical sync pulses, and equalizing pulses only, with a no-signal reference level.

Composite video
A composite video signal is one in which the luminance, chrominance and sync information have been combined into a single signal using one of the coding standards: NTSC, PAL, SECAM, etc. This is the form the signal must take before it can be broadcast or recorded by standard means. Until recently, most monitors and projectors have accepted only composite video signals, although many now available accept RGB. See NTSC. Compare component video.

Compositing
Combining two or more video or electronic images into a single frame or display.

Conforming
The process of doing the final editing of a video using an off-line edited master as a guide.

Contrast
The range of light and dark values in a picture or the ratio between the

maximum and the minimum brightness values.

Control track
The portion along the length of a video tape on which sync control information is placed and used to control the playback of the video signal.

Control track editing
Editing videotape with equipment that reads the control track information in order to synchronize the editing between two decks. Frame accuracy is not certain as the VTRs can go slightly out of sync during pre-roll. Compare time code editing.

Control-L
See LANC.

Convergence
(1) The beam-position accuracy of the red, green, and blue beams of a color monitor or projector. Color systems require exact accuracy of beams, both for position and speed, to properly produce the desired colors from their phosphors. (2) The adjustment of the red, green, and blue electron beams in a monitor or video projector to align the red, green and blue images. cross color A defect characteristic of NTSC composite video that manifests itself as spurious rainbow patterns on highly textured objects like the one found on a striped shirt or tweed jacket. Cross-color defect is attributed to the make-up of the signal which mixes the high luminance and chrominance information in the same composite baseband spectrum. Johnny Carson used to wear ties with designs specifically designed to create this effect.

Cross luminance
A defect characteristic of NTSC composite video that appears as a dot pattern crawling up or hanging on the edges of color areas. This is a result of the signal structure where the color information leaks into the luminance signal. Also referred to as dot crawl.

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Desktop Video: Glossary of Terms (G-I) (8/93)

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Desktop Video: Glossary of Terms (G-I) (8/93)

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TOPIC ----------

This article describes desktop video terminology, words "G" through "I".

DISCUSSION ----------

Gamut
The range of voltages allowed for a video signal, or a component of a video signal. Signal voltages outside of the range (i.e., exceeding the gamut) may lead to clipping, crosstalk, or other distortions.

Gate weave
An artifact of poor registration either during the film-to-tape transfer process or the actual filming that manifests itself as a weaving back and forth of the film image. See registration.

GBR
The same signals as RGB. The sequence is often rearranged to indicate the mechanical sequence of the connectors in the SMPTE standard.

Generation loss
With analog video formats extensive efforts are made to keep generations to a minimum since each successive generation will exhibit some loss of image quality in the form of noise and other artifacts. This characteristic varies from format to format. For example, 1-inch Type C exhibits almost imperceptible loss up to 4 generations while VHS shows considerable degradation each generation. With digital formats such as D-1 and D-2, however, this requirement is no longer necessary, since each copy can potentially be very close to perfect. This is especially important for applications such as compositing which require images to be dubbed several times.

Generations

The number of times a video clip is copied or processed. See generation loss.

Genlock
The capability to synchronize video signals from one device with those of another video source. This is required when mixing signals together as in overlaying computer graphics on an image from a camera, VCR or videodisc player to prevent screen flicker or rolling. Genlocking a Macintosh requires changing its video scan rate, switching the video into an NTSC timed interlaced image which can then be synchronized with the other video source. This requires either an encoder box attached to a video card which supports genlock or a scan converter. Genlock is a process of sync generator locking. This is usually performed by introducing a composite video signal from a master source to the subject sync generator. The generator to be locked has circuits to isolate vertical drive, horizontal drive and subcarrier. The process then involves locking the subject sync generator to the master subcarrier, horizontal, and vertical drives so that the result is that both sync generators are running at the same frequency and phase.

Ghost
A shadowy or weak image in the received picture, offset either to the right or to the left of the primary image. It is the result of transmission conditions where secondary signals are created and received earlier or later than the primary signal caused by a reflected RF signal.

Gray scale
A series of tones which range from true black to true white, it is usually expressed in 10 steps in video applications.

HDTV
High Definition Television. Still, to this day, limited to some very high-end applications. The FCC is close to establishing a broadcast standard for HDTV. The SMPTE has proposed a high definition television production standard consisting of 1125 lines, 2:1 interlace, 60 Hz field (30 frames/sec), a 16:9 aspect ratio and 30 MHz RGB and luminance bandwidth. Stay tuned for further developments.

Hertz (Hz)
The unit of frequency of vibration or oscillation, defined as the number of cycles per second. Named for the physicist Heinrich Hertz.

Horizontal blanking
The blanking signal that is produced at the end of each scanning line.

Horizontal blanking interval
The time between the display of the rightmost pixel on one line and the leftmost pixel on the next line.

Horizontal drive
See horizontal sync.

Horizontal resolution
The smallest increment of a television picture that can be discerned in the horizontal plane. This increment is dependent upon the video bandwidth and is measured in frequency or lines.

Horizontal scan frequency
The frequency at which horizontal sync pulses start the horizontal retrace for each line. A high frequency is needed for a non-interlaced scan. The horizontal sync frequency for a color Macintosh connected to the 13" RGB display is 35 KHz, while the NTSC frequency is 15.75 KHz. Projection of high resolution non-interlaced Macintosh color video requires projectors capable of 35 KHz horizontal sync frequency.

Horizontal sync
A signal created and used to synchronize the horizontal scan of a video signal, often combined with vertical sync into a composite sync. This signal is derived by dividing sub-carrier by 227.5 and then doing some pulse shaping. The signal is used by monitors and cameras to determine the start of each horizontal line. See horizontal scan frequency.

House sync
A common sync signal generated by a sync generator and fed to all video devices in an editing facility in order to synchronize the devices. See sync.

Hue
(1) The distinction between colors. Red, blue, green, yellow, etc. are hues. White, black, and gray are not considered hues. The dimension of color that is referred to a scale of perceptions ranging from red through yellow, green, blue back to red.

(2) The color tint of a video image. The color of an analog video signal is determined by three factors: hue, saturation and luminance. In a composite video signal, the hue is determined by the phase relationship to the color burst.

IEEE
The Institute of Electrical and Electronic Engineers, an organization which sets many of the standards in the electronic industry.

Interlace
An NTSC 525 line frame which is separated into two sequential scans, or fields, of 262.5 lines each. Field one scans the odd numbered lines and field two scans the even numbered lines creating two interlaced images per frame. The process results in 60 fields per second and is used to reduce the flickering which is apparent when the eye is presented with 30 images per second. In standard video, odd-numbered lines are drawn first. Most computer displays are not interlaced.

IRE scale, IRE units
A unit used for the measurement of video levels. The scale used for the graticule on a waveform monitor. 140 IRE represents 1.000 volts,

100 IRE represents 0.714 volts, while 1 IRE represents 0.007 volts.

ISO
Acronym for International Standards Organization.

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TOPIC ----------

This article describes desktop video terminology, words "D" through "F".

DISCUSSION ----------

Decoder
A device used to recover the component signals from a composite (encoded) source. Decoders are used in displays and in various processing hardware where component signals are required from a composite source.

Delay line
A device designed to delay the video signal for a specific length of time. Required when switching between different types of devices or cameras with significantly different cable lengths.

Demodulate
To recover the information being transmitted by a modulated signal. For example, a conventional TV receiver demodulates an incoming broadcast signal to convert it into the luminance and chrominance information displayed by the CRT and the sound emitted by the speaker. Compare modulate.

Demodulator
A device which strip the video and audio signals from the carrier frequency.

Device interface
A converter box which separates the RGB and sync signals in order to display computer graphics on an RGB video monitor. Vendors include Covid and Extron.

Differential Gain (DG) and Differential Phase (DP)
The distortion characteristics of the chrominance signal expressed as a

numerical value which indicates to what degree the amplitude (differential gain as a percentage) and phase (differential phase in degrees) are distorted from the beginning and end of one horizontal scanning line.

Digital audio workstations
Computer-based systems for editing and manipulating digital audio. The audio can be synchronized with video for video post-production applications. Some common systems based on the Macintosh include Dyaxis, Pro Tools, Synclavier, and Dawn.

Digital disk recorder
A recorder much like a videotape recorder which uses large digital disk memories instead of tape. They can record and play back in single frame steps (with no pre-roll, since there is no tape involved), at variable speeds or at 30 fps. Digital disk recorders are available as both component and composite machines. Very, very, expensive. Digital disk recorders can usually mix an incoming video signal with a stored one and record the net result simultaneously. Since everything is digital, this mix can be performed repeatedly, producing layer upon layer of moving images.

Digital video
A video signal represented by binary numbers describing a finite set of colors and luminance levels. In accordance with “CCIR 601,” the international digital video standard for sampling, the conversion from analog to digital suffers virtually no loss.

With current technology, the cost of using digital video to represent the range of levels and colors easily handled by analog videotape is prohibitive. Digital video requires more bandwidth than analog video to produce the same results, unless fancy compression techniques are used. As digital memory capacity and processing speeds become more economical, digital video will eclipse analog video. Standards such as QuickTime, DVI, MPEG, and JPEG for video make digital manipulation of video information possible on today’s personal computers.

Note: consumer “digital” televisions and camcorders use the term to refer to the use of digital frame buffers for effects or signal processing. The output of these buffers is still converted back into analog signals for display and storage.

Digital Video Effects (DVEs)
A real-time frame buffer that can zoom in and out, reposition, and freeze frame in real time. Some can also warp video frames into trapezoids, cylinders, and spheres to create a variety of special effects. Common trade names include ADO, Encore, Mirage, and Pinnacle.

DIN
Acronym for Deutsche Industrie Normal, a European standards organization.

Dirty list (dirty EDL)
An EDL containing overlapping or redundant edits.
See and compare clean list.

Dither pattern
The matrix of color or gray-scale values used to represent colors gray shades in a display system with a limited color palette.

Dithering
A technique for alternating the values of adjacent dots or pixels to create the effect of intermediate values. In printing color or displaying color on a computer screen, the technique of making adjacent dots or pixels different colors to give the illusion of a third color. For example, a printed field of alternating cyan and yellow dots appears to be green. Dithering can give the effect of shades of gray on a black-and-white display, or more colors on a color display.

Dot crawl
See cross luminance.

Dot pitch
A measure of the distance between dots on the screen. The closer the dots, the sharper and clearer the image.

Dot space
The horizontal distance between dot centers. This distance depends on the character pitch in effect.

Drop-out
Missing information from magnetic tape caused by dust, lack of oxide, etc. Especially noticeable with a format such as Hi8 which packs a tremendous amount of information onto a tiny and fragile tape.

Dubbing
Making a copy from one recording medium to another. See bump-up.

Duration
The length or persistence of a signal in time. Compare frequency.

Dynamic tracking
The ability for a video head to “bend” back and forth enough to find an adjacent track and follow it. This allows true freeze-frame rather than only freeze-field display. It also allows for variable speed playback, including playing in reverse, which otherwise is not possible.

EBU European Broadcasting Union.

Edit Decision Lists (EDL)
The Edit Decision List, or EDL, is the data controlling the editing computer during an on-line session. It lists “in-points” and “out-points” for both the source playback decks and the record deck. These “events” can be for video, audio, or both. The EDL may control all sources, various effects machines (for fades and dissolves, for example) and the record deck. An EDL may be created manually after the off-line editing is complete or it may be generated by the edit controller used in more sophisticated

off-line systems. Computer based editing systems including the Digital F/X and Avid Media Composer will automatically generate an EDL. See off-line, on-line.

Effects
Effects involve any manipulation or processing of the video or audio signal. Though they are often used for gratuitous gimmickry, they can also be used for valid functional and aesthetic design purposes. Video effects seem to change annually, and are heavily technology-driven. Since they sometimes cannot be simulated in an off-line environment, the best way to prepare to use them is to look over the free demos available from various video facilities and vendors. Off-line systems like the Avid Media Composer allow you to preview most of the standard video effects.

EIA Electronic Industries Association.
The organization which determines recommended audio and video standards in the United States.

EIA sync see RS-170.

Encoded video
The encoded video signal is formed by starting with an RGB signal from the color television camera. This RGB signal is then processed through an encoder, known as the I and Q encoder, which converts the RGB into a composite NTSC signal. The encoded signal has all of the elements of the composite video signal: sync, burst, chroma, and luminance.

Encoder
A device which transforms NTSC timed red, green and blue signals into a single NTSC composite signal combining luminance, chrominance, and sync information. Compare decoder.

ENG Acronym for Electronic News Gathering.

Equalizer
(1) Equipment designed to compensate for loss and delay frequency effects within a system. (2) A component, or circuit, which allows for the adjustment of a signal across a given band

FCC Federal Communications Commission.
A federal bureau that regulates radio and television broadcast standards. FCC regulations carry the force of law.

Field
One complete vertical scan of the picture, containing 262.5 lines. Two fields make up a complete television frame; the lines of field 1 are vertically interlaced with field 2 for 525 lines of resolution in the NTSC standard.
In many respects, a video signal is best conceptualized as 60 separate images per second. When video is recorded from a video camera, each field represents an independent sample of time. This becomes apparent when video-originated material on a videodisc is still framed, one may see flutter: two different images shot 1/60 of a second apart from each other

on the same screen.

Film
While videotape is simple in structure but requires complex machines for recording, film is complex in structure but requires simple recording machines. Film cameras are simple and elegant machines, and when you think about it, the film itself is the recorder.

Film is often used in the production of video for a variety of reasons, including the high image quality of film transferred to video and the ability to record film at any frame rate the camera allows. There are no technical requirements for a particular frame rate as there are with video, each film frame is simply exposed to light, then advanced. Many film cameras have variable frame-rate capabilities—a concept totally foreign to video.

Film chain
A device used to transfer film to video. They are still used by some TV stations to broadcast programming distributed on 16mm film. See telecine.

First generation
The first time the signal is recorded on tape, that tape is called a first generation tape. Each time the tape is dubbed, a generation is added. See generation loss.

Fotovix
The brand-name of a device available from Tamron which provides a relatively inexpensive way to transfer still 35mm film slides and negatives to video.

Frame
The total area of the picture which is scanned while the picture signal is not blanked. A complete NTSC TV picture consisting of two fields; a total scanning of all 525 lines of the raster area; occurs every 1/30 of a second. In other countries where PAL and SECAM are the video standard, a frame consists of 625 lines at 25 frame/sec.

Frame grabber
A device allowing the real time capture of a single frame of video in a temporary buffer for manipulation or conversion to selected computer file formats. Some frame grabbers have buffers large enough to store several complete frames, allowing rapid capture of a number of images. The distinction between a frame grabber and a digitizer is that a digitizer captures a sequence of complete frames, and therefore must employ some form of compression and/or acceleration in order to operate in real-time.

Frames
NTSC video plays at 30 frames per second, and each video frame consists of two half-frames called fields. A field consists of every other horizontal line. When the video image is created on a TV set, the little scanning dot of light first scans across the topmost horizontal line, line 1. Rather than scanning along line 2 next, it scans line 3, then line 5, and so on. When it gets to the bottom (in half of the 1/30 second frame time), it

begins at the top again but on line 2, then line 4, and so on. This technique is called interlace, and it was invented because most people see a flickering image if television is scanned sequentially at 30 fps.

Frequency
The number of complete cycles transmitted per second. Frequency is usually expressed in hertz (cycles per second), kilohertz (kilocycles per second), or megahertz (megacycles per second). In acoustics, frequency of vibration determines musical pitch. Compare duration.

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TOPIC ----------

This article describes desktop video terminology, words "J" through "M".

DISCUSSION ----------

Jitter
Small and rapid variations in a wave form due to mechanical disturbances, changes in the characteristics of components, supply voltages, imperfect synchronizing signals, circuits, etc.

Kelvin
Also expressed as Kelvin or K, the unit of measurement of the temperature of light In color recording, light temperature affects the color values of the lights and the scene that they illuminate.

Keying
The process of replacing part of one television image with video from another image. See chroma keying and insert keying.

Kilohertz (KHz)
One thousand hertz, or cycles per second. See Hertz.

LANC
A protocol defined by Sony which permits the external control of video devices and access to status information from the device. Also referred to as Control-L. See VISCA, Vbox.

Legal signal
A video signal in which each component does not exceed the specified gamut for the given format. Compare valid signal.

Light valve projector

A video projector design with very high light output. An example of a projector using this technology is the Talaria from General Electric.

Longitudinal time code (LTC)
Longitudinal time code (LTC) is recorded as an audio signal on the address track or one of the audio tracks of a video tape. It may also be recorded on a track of audio tape. LTC can be read at high tape shuttle speeds, allowing time code readers to stay “in-sync” during rewind or fast forward. Unfortunately, LTC cannot be read at very slow shuttle speeds (such as when you are “crawling” the tape frame by frame) or in pause. See SMPTE time code, compare vertical interval time code.

Looping
A term indicating that a high impedance device has been permanently connected in parallel to a video source.

LTC
See longitudinal time code.

Luminance
The aspect of the video signal carrying information about the brightness of an image.

Macintosh video
Typically refers to the signal produced by a Macintosh 8•24 display card or Quadra built-in video. Although several scan rates and resolutions are supported, when connected to the 13" RGB monitor the display resolution is 640 x 480 pixels with a 67.7 Hz scan rate.

Matte
(1) A film term sometimes used in video production work to denote a keyed effect, an insert of video signal information keyed from one source into a second video signal.

(2) A opaque piece of art or a model that leaves a selected area unexposed to be filled on a subsequent pass or in composite. Also referred to as a mask.

Mavica
The name-brand of a popular still video camera sold by Sony, See still video cameras.

Megahertz (MHz)
One million hertz, or cycles per second. See Hertz.

Metal particle tape
Videotape using iron in its pure metallic form, instead of as an oxide. Offers improved frequency response and wider dynamic range than traditional oxide formulations.

MIDI
Acronym for Musical Instrument Digital Interface. A standard communications protocol used by electronic music equipment allowing device control from

personal computers. MIDI has moved into the audio and video realm for mixing and editing.

MIDI time code
A time code system allowing timed device control through MIDI protocols. It has become more important in video post production as more and more people are working with personal computer based systems. Compare SMPTE time code.

Modulate
To modify or alter a signal so as to transmit information. For example, conventional broadcast television transmits the video image by modulating the amplitude and frequency of a carrier signal. Compare demodulate.

Moiré
Optical disturbance caused by interference of similar frequencies. The wavy effect produced by the convergence of lines. It usually appears as a curving of the lines in the horizontal wedges of a test pattern. It is a natural optical effect when converging lines in a television picture are nearly parallel to the scanning lines. Compare aliasing.

Monitor
A particular type of television that receives a composite and/or component video signal (as opposed to an RF signal) directly from a VCR, camera, or separate TV tuner for high quality picture reproduction. Does not contain a channel selector. Compare television receiver.

Monochrome signal
A single color video signal; usually a black and white signal or, sometimes, the luminance portion of a composite or component color signal.

Motion control photography
A system for using computers to precisely control camera movements so that different elements of a shot can later be composited in a natural and believable way.

Multiscan
A term taken by a particular manufacturer often used to refer to any multisync device. See multisync.

Multisync monitors (and projectors)
Video displays which accept a wide variety of horizontal and vertical timings, from NTSC to computer video signals. Multisync monitors and projectors will often automatically adjust to the appropriate timing. Since the horizontal frequency range varies among different models, product specifications should be checked to assure a monitor or projector will support the Macintosh connected to it.

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This article describes desktop video terminology, words "N" through "P".

DISCUSSION ----------

Neutral colors
The range of gray levels, from black to white, but without color. For neutral areas in the image the RGB signals will all be equal, in color difference formats the color difference signals will be zero.

NTSC
(1) Abbreviation for National Television Standards Committee, which standardized the NTSC color broadcasting system which is used today in the in the US, Japan and elsewhere.

(2) The standard video format defined by the NTSC, also called composite because it combines all the video information, including color, into a single signal. See NTSC composite.

NTSC color bars
A pattern generated by an NTSC generator consisting of eight equal width color bars. Colors are white (75%), black (7.5% set-up level), 75% saturated pure colors red, green, and blue, and 75% saturated hues of yellow, cyan, and magenta. (Mixtures of two colors in 1:1 ratio without third color).

NTSC composite
A video signal standard proposed by the National Television Standards Committee of the Electronics Industries Association and adopted by the FCC for broadcast television in the United States. The signal is a composite video signal of 525 lines, interlaced, 60 fields per second (30 frames per second) with a bandwidth limited to 4 MHz so that it will fit into a 6 MHz

broadcast television channel without interfering with adjacent channels. NTSC is also the standard system for Japan.

The standard was created to allow color television signals to be compatible with existing monochrome (black and white) television. The restriction of compatibility with the earlier technology results in compromises in color image quality. The NTSC composite signal format is required for video recording except with devices which support component video.

Though there are 525 scan lines, more than 40 lines are blanked during vertical retrace periods. Overscanning and poorly adjusted televisions reduce the number of visible lines further, leaving viewers around 360 lines of video information in a normal television picture.

Macintosh video can be converted to NTSC composite using an encoder or scan converter. When using an encoder with a Macintosh video card there is an unavoidable reduction in image quality and single pixel lines, for instance, will flicker (unless the video card supports convolution) due to the interlaced nature of the NTSC signal. Images intended for NTSC use should be designed according to the limitations of the format, unless a more expensive scan converter is being used. See encoder and scan converter.

NTSC RGB
Interlaced red, green, and blue video signals timed to NTSC standards. Refers to three monochrome signals representing the primary colors of the image. This is a superior signal format to composite video which is one signal encoded from the three signals. An NTSC RGB signal differs from a component video signal which consists of Y, R-Y, and B-Y signals.

Off-line, off-line editing
The preliminary or rough edit usually done on a low-cost editing system using videocassette work tapes. In an increasing number of situations random-access non-linear editing system using digitized video or laserdiscs are being used for off-line editing. Allows editors to make decisions and gain necessary approvals before making the more expensive and demanding on-line edit.

Since the actual edit session in a professional video facility is very expensive, it is always best to make all editing decisions in advance. This is called off-line editing or off-lining. See window dubs, on-line, special effects.

On-line, on-line editing
The final edit of a video using original master tapes to produce the finished piece. An on-line edit suite usually has a full range of high-end video devices (switcher, TBCs, DVE, character generator, etc.) which would normally be too expensive to use during an off-line edit session.

The on-line session is where the actual editing and effects take place. It occurs in an edit suite with a professional editor (known as the on-line editor). Again, the more prepared you are, the better since “things happen.” It is very easy to go way over your budget estimate for an

off-line edit if your EDL contains little surprises like a mislabeled in-point. Computer based editing systems like the Digital F/X and Avid Media Composer automatically generate EDLs which are very accurate, reducing on-line time considerably. See CMX, special effects, window-dubs. Compare off-line.

Opticals
Visual effects produced optically using an optical printer that contains one camera head and several projectors. The projectors are precisely aligned in order to produce multiple exposures in exact registration on the film in the camera head. Rapidly being replaced with special high-resolution video devices for all but feature applications.

Overscan
(1) The television picture beyond area of normal screen size.
(2) A method by which the video image is scanned beyond the normal viewing area of the screen. Compare underscan.

Paintbox
Paintbox is the trade name for a device made by Quantel, however, it is generally used to describe a digital video paint program capable of drawing and shading images from scratch or from digitized video frames. The Paintbox creates only still images, but sequences of animated images can be made from the still images by loading frame by frame onto a Harry or equivalent.

PAL
Phase Alternative Line system. The television broadcast standard for most of western Europe. Based on the 50 Hz power system, it displays 625 lines interlaced at 50 fields per second (25 frames per second). By reversing the relative phase of the color signal components on alternate scanning lines, this system avoids the color distortion that appears in NTSC reception. PAL is not compatible with NTSC or SECAM, though conversion between the standards is possible. Video products to be used in Europe require compatibility with PAL standards.

Pedestal
See blanking level.

Period
The time elapsed during one complete cycle of a wave.

Phase
(1) A stage in a periodic process; a point in a cycle. (2) The relationship between two periodic signals or processes. (3) The amount by which the cycles of one wave precede or lag behind the cycles of another wave of the same frequency. (4) Some fraction of a wave cycle (measured from a fixed point on the wave).

Pre-roll
Almost all videotape decks need a running start to get up to speed. This is called pre-roll, and varies between machines from about 3 to 10 seconds. This means that for every edit, source and record decks must first stop,

count backward the exact number of frames required for pre-roll, begin playing simultaneously, then at the precise edit point begin recording. It is a mechanical and electronic marvel that video editing can be frame-accurate at all. See sync.

Primary colors
Colors, usually three, which are combined to produce the full range of other colors within the limits of a color system. All non-primary colors are mixtures of two or more of the primary colors. In television, the primary colors are a specific set of red, green and blue.

Pulse
A current or voltage which changes abruptly from one value to another and back to the original value in a finite length of time. Used to describe one particular variation in a series of wave motions.

Pulse distribution amplifier
An amplifier designed to boost the strength of the sync as well as other control signals to the proper level for distribution to a number of cameras, special effects generators, or other equipment.

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Tech Info Library

Desktop Video: Glossary of Terms (Q-T) (8/93)

Revised: 8/25/93
Security: Everyone

Desktop Video: Glossary of Terms (Q-T) (8/93)

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Article Created: 24 August 1993

TOPIC ----------

This article describes desktop video terminology, words "Q" through "T".

DISCUSSION ----------

Radio-frequency (RF) modulator
A device that makes your television set work as a monitor. See modulator.

Rank
The brand-name of a device used for film-to-video transfer. See telecine.

Raster
The rectangular, repeating pattern of lines scanned in a video monitor or camera pickup tube creating the video image. The scan is a continuous cycle regardless of the image content.

RCA connector
A connector typically used for audio and video signals, with some professional equipment and most consumer equipment. Compare BNC connector, XLR connector.

RCA connector
A connector typically used for cabling in both audio and video applications.

Registration
(1) An adjustment associated with color monitors and projectors to ensure that the three electron beams (the three primary colors) are hitting the proper color dots/stripes on the phosphor screen, A similar adjustment exists on color tube cameras.

(2) The alignment of film frame-by-frame in a camera, projector or telecine. Good registration is critical in order to eliminate gate weave. See gate-weave.

Resolution
A measure that shows to what extent details can be distinguished on the TV screen. Generally called horizontal resolution when referring to a video image. It can be evaluated by establishing the limit to which lines can be distinguished on a test pattern with the naked eye. A broader frequency band of the video signal permits a higher resolution.

Macintosh video has a bandwidth of 30 MHz, resolving color images at 640 pixels by 480 pixels. This exceeds the capabilities of an NTSC composite signal.

RF
Radio Frequency refers to a composite video signal superimposed on a very high (radio) frequency capable of being broadcast through the atmosphere. Standard television sets receive these signals, separate the composite signal from the RF, and then decode and display the composite signal.

Until recently, television sets were designed to receive only RF signals, which were applied to their antenna terminals. VCRs, videodisc players and some computers provide RF signals for use with televisions. The process of mixing composite video with RF, only to have it removed again by the television, further degrades the image quality.

RGB
Red, Green, Blue. Refers to three monochrome signals representing the primary colors of the image. RGB signals are provided on individual outputs with composite sync available either on a fourth output or combined with the green signal. RGB signals can be interlaced (timed to NTSC standards) or non interlaced (at higher sync frequencies).

RGB monitor
A type of color monitor that receives separate signals for each color (red, green, and blue). See also composite video.

RGB, RGB Format, RGB System
Red, Green, and Blue. The basic parallel component set, in which a signal is used for each primary color; or the related equipment or interconnect formats or standards. The same signals may also be called GBR as a reminder of the mechanical sequence of connections in the SMPTE interconnect standard. See RGB component. Compare component video.

Rise time
The time taken for a signal to make a transition from one state to another; usually measured between the 10% and 90% completion points of

the transition. Shorter, or faster rise times require more bandwidth in a transmission channel.

Rotoscope
A camera set up that projects live-action film one frame at a time onto a surface so that an animator can trace complicated movements. The completed animation film exactly matches the motion of the original action.

RS-170
The EIA (Electronics Industries Association) standard that defines the timing of broadcast video in the United States, Japan, and several other markets. It specifies a 15.75-KHz horizontal and a 60-Hz vertical interlaced scan frequency as well as other aspects of the composite signal such as voltage, sync levels and timing of blanking. Interlacing is the process by which two fields, called scan lines, are interleaved on the screen. Due to the limitations of video devices at the time the standard was being set in 1957, the speed of broadcast signals and picture tubes required the image to be displayed in parts.

The solution allowed the partial update of video pictures to remain unnoticed to the viewer. An RS-170 video frame contains 525 lines and is displayed 60 times per second—for a total of 15,750 lines, or 15.75 KHz. Of these lines, only the odd or even lines are displayed with each frame. A total of 60 frames per second allows 30 frames per second, or a 30-Hz update of each line.

Like the RS-343 standard, RS-170 is strictly a timing specification for monochrome video signals. By combining three such signals to control individual red, green, and blue sweep circuits, you can create a full-color system. The RS-170 mode is available with the Macintosh video card as a way for VCRs and large screen projectors, not capable of high-frequency scans, to interface with the Macintosh.

Compare RS-343, RS-170A, RS-170 RGB.

RS-170 RGB
Refers to RGB signals timed to RS-170 specifications. Since the red, green and blue signals are actually individual monochrome signals representing their respective colors, RS-170 RGB merely refers to three black and white signals sharing one sync signal which is either provided separately as a fourth signal or (usually) combined with the green signal. Compare RS-170A, RS-170.

RS-170A
Twenty years after the drafting of RS-170, the EIA video signal standard proposal RS-170A evolved into what is known today as the NTSC composite video signal. RS-170A specifies timing of scans (essentially the same as RS-170: 15.732 KHz horizontal and 59.94 Hz vertical) and blanking as well as the 3.58 MHz burst required to decode the color signals. As adopted by the FCC for broadcast use, the standards are precisely adhered to and carry the force of law. For non-broadcast use, EIA standards are merely recommendations and are not enforced.

Specifications referring to RS-170A do not necessarily mean the signals are broadcast standard. RS-170 RGB, RS-170.

RS-343
An EIA (Electronics Industries Association) standard for non-broadcast high resolution monochrome video, specifying a 60 Hz non-interlaced scan with a composite sync signal with timings that produce a non-interlace (progressive) scan at 675 to 1023 lines.

While the Macintosh version of the RS-343 signal varies somewhat, it essentially follows the guidelines necessary for connection to RS-343 display devices. Therefore, with a display adapter (available from Covid , Extron, or Inline) the Mac can drive a RS-343 device (i.e. video projector or large monitor).

The major differences between Macintosh video and the RS-343 standard are: a separate TTL level composite sync signal on pin 3, the separate video lines used to produce RGB color, a vertical scan rate of 66.67 Hz to reduce screen flicker, and a voltage white level of 1 volt for its red and blue signals and 1.3 volts on its green signal. RS-343 provides for a 60-Hz signal but has been changed to 66.67 Hz on the Macintosh video card to prevent the screen flicker which is visible at 60 Hz. The inclusion of the analog composite sync found on pin 5 of the video card connector, called the green signal, allows for monochrome composite video.

S-video
A consumer form of component video (Y/C) used primarily with Hi8 and S-VHS equipment.

Safe title area
80 percent of the TV screen, from the center of the screen; that area of the display screen (and therefore of the camera scanning area) which will reproduce legible title credits no matter how poorly adjusted the monitor or receiver may be.

SC phase
The phase of the color subcarrier.

Scan converter
A device that changes the scan rate of a video signal and may also convert it from non-interlaced to interlaced mode. A scan converter allows computer graphics to be recorded on videotape or displayed on a standard video monitor.

Scan rate
The scan rate is the time it takes the electron gun to move across one line of the screen or repeat one entire screen. These values are known as the horizontal and vertical scan rates, respectively. The number of times a screen is redrawn each second. Computer display scan rates differ from standard video scan rates.

Scanning

The rapid movement of the election beam in a pickup device of a camera or in the CRT of a television receiver. It is formatted in a line-for-line manner across the photo sensitive surface which produces or reproduces the video picture.

SECAM
Systeme Couleur Avec Memoire. The television broadcast standard for France, the USSR and various eastern European countries. Like PAL, SECAM is based on a 50 Hz power system, but it utilizes a different encoding process and displays 819 lines interlaced at 50 fields per second. The color information is transmitted sequentially (R-Y followed by B-Y, etc.) for each line and conveyed by a frequency modulated subcarrier that avoids the distortion arising during NTSC transmission. SECAM is not compatible with NTSC or PAL, although conversion between the standards is possible.

Serial device control
Most professional video equipment can be controlled via an RS-232 serial port. The protocols used for controlling these devices varies from vendor to vendor, however, Sony’s protocol is supported by most editing systems.

Signal-to-noise ratio (S/N)
An S/N ratio can be given for the luminance signal, chrominance signal, and audio signal. The S/N ratio is the ratio of noise to actual total signal, and it shows how much higher the signal level is than the level of noise. It is expressed in decibels (dB), and the bigger the value is, the more crisp and clear the picture and sound will be during playback.

SMPTE
Society of Motion Picture and Television Engineers, pronounced “simptee.” An organization which studies and proposes standards for the film and television industry.

SMPTE format, SMPTE standard
In component video these terms refer to the SMPTE standards for parallel analog component video interconnection. The SMPTE has standardized both RGB and Y, Pr, Pb color difference systems (a version of Y, B-Y, R-Y).

SMPTE timecode
A coding scheme standardized by the Society of Motion Picture and Television Engineers (SMPTE). Frame accuracy is achieved through timecode, a method of coding a unique “stamp” on each frame. Timecode consists of four numbers representing hours, minutes, seconds, and frames, for example, 23:59:59:29.

Since color video actually runs at 29.97 fps rather than 30 fps, two kinds of timecode have evolved: drop fame and non-drop frame. Drop-frame timecode literally drops certain agreed-upon numbers to compensate for the 0.03 fps discrepancy. Drop-frame timecode allows a 30:00:00:00 tape to really be 30 minutes long, which is critical in

broadcast applications. For non-broadcast applications it tends to do nothing but create problems, and non-drop-frame timecode is usually preferred.

Most of the low-end videotape formats, like VHS and Video 8 do not have timecode. They can count frame pulses on the tape, but are not frame-accurate. Sony has introduced “8mm timecode” in order to support more accurate editing applications with Hi8.

There are two basic techniques used to record SMPTE time code on videotape, see longitudinal time code (LTC) and vertical interval time code (VITC).

Snow
(1) Random noise on the display screen, often resulting from dirty videotape heads. (2) TV signal breakup caused by weak or no video reception.

Sound digitizer
A device for recording natural sounds and voices and storing them as computer files. Once digitized, the audio can be easily edited or used to create various effects. On the low-end there are products like the Farallon MacRecorder or Apple’s built-in capability on some Macintosh models. With the AudioMedia card or Pro Tools interface from DigiDesign, CD-quality sound digitizing is possible with the Macintosh.

Split screen
A special effect utilizing two or more video sources so that two or more scenes are visible simultaneously on each part of the screen. Often used to make window-dubs of multi-camera shoots. A useful means for comparing two sources simultaneously. Permits a fast visual check of the phase and sync timing between two inputs.

Staircase
A pattern generated by the NTSC generator, consisting of equal width luminance steps of 0, +20, +40, +60, +80, and + 100 IEEE units and a constant amplitude chroma signal at color burst phase. Chroma amplitude is selectable at 20 IEEE units (low stairs) or 40 IEEE units (high stairs). The staircase pattern is useful for checking linearity of luminance and chroma gain, differential gain, and differential phase.

Standard, interconnect standard
The specific signal configuration, reference pulses, voltage levels, etc. which describe the input/output requirements for a particular type of equipment. Some standards have been established by professional groups or government bodies (such as SMPTE or EBU). Others are determined by equipment vendors.

Still video cameras
Still video cameras are cameras that look like something in-between a still and a video camera. The Sony Mavica records on a two-inch disk

that holds 25 frames or 50 fields on flexible disks which are erasable and reusable. The encoding is analog component, but with less bandwidth (and therefore a noticeably lower quality image).

Electronic still photography has been used for “electronic journalism," where images are shot in the field and sent by modem from any available phone. These cameras have already begun to replace still picture film cameras for many applications which do not require the high resolution and image quality of 35mm still picture film.

Sub-carrier
A 3.58 MHz signal modulated by color signals and combined with luminance signals to produce an NTSC composite video signal.

Subcarrier (SC, 3.58, 3.58CW)
This is the basic signal in all NTSC sync signals. It is a continuous sine wave, usually generated and distributed at 2 volts in amplitude, and having a frequency of 3.58 MHz. Subcarrier is usually divided down from a primary crystal running at 14.32 MHz, and that divided by 4 is 3.58. All other synchronizing signals are directly divided down from the subcarrier.

Subcarrier phase shifter
Special circuitry designed to control the phase relationships of the two portions of the encoded color signal so that they maintain their correct relationship during recording transmission and reproduction.

Switcher, video switcher
The switcher is the central router and mixer of video source material in an on-line suite. Switchers are generally analog devices, and are capable of performing analog effects as well as switching incoming channels. These effects include fades and dissolves, wipes and borders, and keys (opaque overlays based on replacing black or a particular color). In earlier days this was called the “special effects generator” or SEG.

Sync
Short for synchronous. Refers to signals used to synchronize the horizontal and vertical scans of a video signal. This signal is derived from a composite or combination of horizontal and vertical drives, with some slightly narrowed and delayed pulses as well as the addition of equalizing pulses. When used, is usually accompanied by subcarrier.

Synchronization of video tape recorders
In order for any mixing or editing of video signals to occur, all source and record decks must be in sync with each other, running at exactly the same speed and in identical phase. You can picture the process as being similar to transferring goods between high-speed trains running alongside each other. In editing facilities, all decks are fed a common sync signal, called “house sync.” See pre-roll. Without synchronization, each individual transport would all run at slightly different rates. Analog tape transports, being mechanical,

have small fluctuations in tape speed called “wow and flutter". The capstans on tape machines can slip over time as well, also generating changes in tape speed.

With disk-based systems there is no mechanical transport and no tape. Instead, the playback and record speeds are controlled by quartz crystal oscillators. However, no two oscillators are exactly the same, and an oscillator's frequency can vary with time and temperature. What all this means is that any two transports, even when started at exactly the same time, will begin to drift apart over time and the audio on the different systems will eventually drift out of sync. Synchronization is achieved in these systems by constantly checking to see the current SMPTE frame, and adjusting the playback speed to keep all devices locked. In analog systems, this is achieved by automated motor speed control. In digital systems it is achieved by adjusting the playback sample rate. See sync, SMPTE time code.

Synchronous
Able to perform two or more processes at the same time, such as sending and receiving data, by means of a mutual timing signal or clock. Compare asynchronous.

Synchronous transmission
A transmission process that uses a clocking signal to ensure an integral number of unit (time) intervals between any two characters. Compare asynchronous transmission.

Telecine
(1) A device which consists of a projector without the lens and a video camera aimed directly at the illuminated film to record it. A telecine projector incorporates a five-bladed shutter splitting the film into 1/120 second flashes and resulting in two exposures of film for each video field. Since these would not necessarily be of the same film frame, the video fields would often have two different images superimposed. This can cause problems with videodisc still framing.

(2) A Rank or Bosch. These are the highest-quality devices for film-to-video transfer. Unlike a telecine projector, they do not use a lens. Instead, a dot of light on one side of the film and a light sensor on the other side is used to scan the film. The Rank uses a small picture tube as the source of the dot of light. This is called a flying-spot scanner. The Bosch uses a one-dimensional CCD array. Both the Rank and the Bosch produce excellent results. The Rank has the advantage of changing the scanning size electronically, allowing control over the size and position of the film area being scanned. Both of these machines have highly developed methods of color correction, allowing very selective work. For example, a single shade of color in a particular area of the picture can be changed without affecting anything else.

Television receiver
A device capable of accepting video signals broadcast as RF. Also capable of producing a demodulated video signal output from a off-air

input signal. Compare monitor.

Test pattern
An optical guide for television camera reference alignment.

Time base corrector (TBC)
A time base corrector, or TBC, is a device which corrects the timing irregularities that occur during VTR playback.

Since synchronization between videotape decks is so important, it is imperative that all decks perform at precisely the same speed. Speeds always vary, at least slightly, due to VCR velocity errors and tape stretch. TBCs are essential for any kind of multiple mixing of input from videotape source decks, including wipes, dissolves, and overlays. Each source deck must have its own TBC, and each must be synchronized to “house sync.”

TBCs are also used simply to “clean up” the timing of a recorded video signal. These TBCs act like black boxes, taking in unstable video and putting out stable video. Because they work alone, without house sync, they are often called standalone TBCs.

Time base stability
The maintenance of the scanning process to very close tolerances. See time based corrector.

Time code
See SMPTE time code.

Time code editing
By recording a sequential time code along with the video and audio material, you can obtain a precise reference for editing. Each frame has its own number or code which tells the time in hours, minutes, and seconds, and includes a frame number. The industry standard code is called SMPTE time-code .Time code permit very fast and accurate editing. Automatic editing is possible using an edit controller. See EDL, edit controller. Compare control track editing.

Timecode, 8mm
8mm timecode is a proprietary form of timecode used by Sony with some of their Hi8 products. Compatibility problems in time-code editing environments is solved by using a third-party device made by Horita that converts the timecode from the Sony EVO-9850 and EVO-9800 editing decks to standard SMPTE time code.

Title generator
A black and white camera that is used to shoot titles which are electronically superimposed on the video picture while shooting or during editing. Title color can be selected and changed independently. A more sophisticated device know as a character generator (CG) can generate titles directly.

Tracking

The angle and speed at which the tape passes the video heads.

Transcoder
A device used to convert from one video component set to another. For example, to dub a Hi8 tape to Betacam SP with the highest possible results, you would need to use a transcoding TBC which includes a transcoder capable of converting the Hi8 (Y/C) signal to the Betacam SP component (Y, R-Y, B-Y) signal.

TTL RGB
A type of video monitor that can accept only a limited number of digital values and display only a correspondingly limited number of colors. Compare analog RGB.

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Desktop Video: Glossary of Terms (U-V) (8/93)

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Desktop Video: Glossary of Terms (U-V) (8/93)

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TOPIC ----------

This article describes desktop video terminology, words "U" through "V".

DISCUSSION ----------

Underscan
A mode available on professional video monitors which decreases the raster size H and V so that all four edges of the picture are visible on the monitor. Allows viewing of skew and tracking which would not be visible in normal (overscanned) mode. Also helpful when aligning test charts to be certain they touch all four corners of the raster.

Valid signal
A video signal which will remain legal when transcoded to any other format. Signals which are not valid will be processed without problems in their current format, but problems may be encountered if the signal is transcoded to a different format. For example, the Macintosh will let you generate highly saturated colors which may be legal in the RGB domain, however, when converted to composite video will exceed the NTSC specifications. A valid signal is always legal, but a legal signal is not necessarily valid.

Vbox
The Vbox is a an interface device which can be connected to a personal computer via an RS-232 serial interface. Through the Vbox the computer can control LANC (a.k.a. Control-L) compatible video devices. The Vbox translates the VISCA commands from the computer into Sony’s LANC protocol. Up to 7 Vboxes can be daisy-chained from one serial port. See LANC, VISCA.

VCR
Video Cassette Recorder. See VTR.

Vectorscope

A round oscilloscope used to analyze and align the amplitude and phase of the color video signal.

Vertical blanking
See vertical interval.

Vertical interval
The period of time during which the scan is retraced from the bottom of the screen back to the top. The picture is blanked during this part of the scan. The vertical interval period contains sync pulses and in broadcast use, can contain network information, test signals and closed captioning signals.

Vertical interval time code (VITC)
VITC is recorded within the video signal, each timecode stamp is recorded between the video frames, during the vertical blanking interval. VITC cannot be recorded on audio tracks. With VITC, video devices can capture the timecode from the video deck when it’s paused or in “crawl” mode, however, most synchronizers cannot read VITC at speeds exceeding about ten times playback speed, preventing slaved machines from maintaining synchronization during rewind and fast forward. See SMPTE time code, compare longitudinal time code.

Vertical retrace
The return of the electron beam to the top of a television picture tube screen or a camera pickup device target at the completion of the field scan.

Vertical scan frequency
The frequency of the vertical sync pulses, or the frequency of the vertical scan. NTSC vertical scan frequency is 59.9 Hz. The Macintosh video vertical scan frequency is 67.7 Hz.

Vertical sync
A pulse used to trigger the vertical retrace of a scanning electron gun from the bottom of a frame back to the top.

Vertical sync pulse
A portion of the vertical blanking interval which is made up of blanking level and six pulses (92% duty cycle at -40 IRE units) at twice the horizontal sync pulse repetition rate. Synchronizes vertical scan of television receiver to composite video signal. Starts each frame at same vertical position (sequential fields are offset 1/2 line to achieve interlaced scan.

Video
(1) A means for reproducing moving visual images by representing them with an analog electronic signal. The images are decomposed into a series of horizontal scan lines. In this way the signal can be stored, transmitted and reproduced. See rasterization, field, frame.

(2) Referring to the NTSC composite video standard. This is a widespread standard such that the “video in” of one machine is compatible with the

“video out” of another.

(3) There are various standards which define this signal, see RS-170, RS-170A, NTSC, PAL, SECAM, RGB, CAV.

Video distribution amplifier
A special amplifier for strengthening the video signal so that it can be supplied to a number of video monitors or other devices at the same time.

Video editing
Editing is the process of selecting the frames and arranging them on the edit master videotape. In professional applications usually edits must be frame accurate. For example. when mastering a laserdisc frame accuracy absolutely essential, especially when single frame elements are involved. See off-line, on-line, et al.

Video format
A standard determining how a video signal is recorded onto videotape. These include 1-inch Type C, 3/4" U-Matic, 3/4" U-Matic SP, Betacam, Betacam SP, M-II, D-1, D-2, D-3, VHS, Hi8, Video 8, Beta, and S-VHS.

Video monitor
A display device that can receive video signals by direct connection only and cannot receive broadcast signals such as commercial television; it can be connected directly to the computer. Compare television set.

Video recording
Any image, still or moving, can be converted into a video signal, most often through a video camera. Then the video signal can be recorded. By far the most common method of recording video is on videotape.

Video signal
A dynamic signal which represents the varying levels of a video image but does not contain the sync pulses for its display. The video signal can be combined with sync pulses into a composite signal.

Video waveform
The pictorial display on a waveform monitor (a special oscilloscope) of the various components of the video signal, used to check the integrity of the signal and signal components.

Videocassette
A self-contained video module played on a specially designed video tape recorder; similar in design to an audio cassette; houses two reels (supply and take-up) with the tape running between them but connected to both.

Videodisc
A double-sided optical disc capable of storing and playing back full-motion video. Videodisc has come to refer to all video media that are disc-shaped, regardless of whether they are optical or magnetic, digital or analog.

Videotape
A magnetic medium capable of storing an electronic signal and consisting of

backing, binder, and coating. The coating usually consists of iron oxide, however, metal particle or metal evaporated coatings are also used.

Videotape formats
Videotape equipment ranges in price from $250 for a bargain-basement VHS deck to over $200,000 for a digital component deck. Nevertheless, both produce the same 525-line, 30-frame-per-second image. The differences lie in visual quality, generation loss characteristics and in control capabilities.

VISCA
Acronym for Video System Control Architecture. VISCA is a device control language designed for synchronized control of multiple video devices. The protocol is device and platform independent. See LANC, V-Box.

VITC
See Vertical Interval Time Code.

VTR
Video Tape Recorder. An electro-mechanical device capable of recording, storing, and reproducing an electronic signal which contains audio, video, and control information. The term VTR includes reel-to-reel and cassette type (VCR) recorders.

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Desktop Video: Glossary of Terms (W-Z) (8/93)

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Desktop Video: Glossary of Terms (W-Z) (8/93)

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TOPIC ----------

This article describes desktop video terminology, words "W" through "Z".

DISCUSSION ----------

Waveform
(1) The shape of a wave (a graph of a wave’s amplitude over time).
(2) Slang for waveform monitor.

Waveform monitor
An oscilloscope used to display the video waveform.

Wavelength
The horizontal extent of one complete cycle of a wave.

Window dubs
The trick to off-lining is to always have access to the timecode for all of the source material. If the source medium is of professional quality, like Betacam SP, then viewing the material is expensive and complex. But it is also unnecessary: the material can be transferred to a more accessible medium, like 3/4-inch or VHS tape, with the timecode “burned in” on the picture, usually near the bottom. This is called a window dub. Each video frame is marked permanently with the exact timecode number. The advantage this offers is the ability to see the timecode on a VCR without a timecode reader. This assures frame accuracy during off-lining. Window-dubs are the video equivalent of workprints in film.

Wipe
A visual transition between images during which the edge of one image moves across the screen revealing the next image.

Wow and flutter

Small fluctuations in tape speed. Wow is a gradually occurring change; flutter is a rapidly occurring change. A widely used specification in analog audio and videotape recorders.

XLR connector
A connector with three conductors used in professional audio applications, typically with a balanced signal. Compare RCA connector and BNC connector.

Y, C1, C2
A generalized set of CAV signals: Y is the luminance signal, C1 is the 1st color difference signal and C2 is the 2nd color difference signal.

Y, I, Q
The set of CAV signals specified for the NTSC system: Y is the luminance signal, I is the 1st color difference signal and Q is the 2nd color difference signal.

Y, Pb, Pr
A version of component video (Y, R-Y, B-Y) specified for the SMPTE analog component standard .

Y, R-Y, B-Y
The general set of CAV signals used in the PAL system as well as for some encoder and most decoder applications in NTSC systems; Y is the luminance signal, R-Y is the 1st color difference signal and B-Y is the 2nd color difference signal.

Y, U, V
The luminance and color difference components for PAL systems; simply the Y, B-Y, R-Y components with new names. The derivation from RGB is identical.

Y/C Delay
Lag of timing between the luminance (Y) and chrominance (C) signals.

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Video Definitions: NTSC, PAL, SECAM (8/93)

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Video Definitions: NTSC, PAL, SECAM (8/93)

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TOPIC ----------

There are currently three standards in the world for composite, color encoded video: NTSC, PAL and SECAM. Standards exist for High Definition Television (HDTV), however, this article will only discuss the broadcast formats currently in wide use.

DISCUSSION ----------

NTSC

NTSC stands for the National Television System Committee of the Electronics Industries Association, the organization which defined the standard format adopted by the FCC for broadcast television in the United States. NTSC is also the standard used in Japan, Canada, and Mexico.

"NTSC" is usually taken to mean the NTSC color television system itself, or its interconnection standards. This is also called "composite video" because all of the video information—sync, luminance, and color—are combined into a single analog signal.

"NTSC" is often said to stand for "Never The Same Color." When color broadcasting first became a commercial possibility, the standard was created to allow color television signals to be compatible with existing black and white television. The restriction of compatibility with the earlier technology results in compromises in color image quality.

PAL

"PAL" stands for Phase Alternation by Line, the broadcast video standard used in West Germany, Great Britain and most Western European nations.

By reversing the relative phase of the color signal components on alternate

scanning lines, this system avoids the color distortion that appears in NTSC. Otherwise, PAL closely resembles NTSC. Based on the 50 Hz power system, PAL displays 625 lines interlaced at 50 fields per second (25 frames per second).

PAL is not compatible with NTSC or SECAM, though conversion between the standards is possible. Video products to be used in Europe require compatibility with PAL standards.

SECAM

"SECAM" is an abbreviation for Séquential Couleur à Mémoire, the line sequential color system used in France, Russia, Eastern Europe and some Middle Eastern countries.

Like PAL, SECAM is based on a 50 Hz power system, displaying interlaced lines at 50 fields per second. The color information is transmitted sequentially (R-Y followed by B-Y, etc.) for each line and conveyed by a frequency modulated subcarrier that avoids the distortion arising during NTSC transmission.

SECAM is not compatible with NTSC or PAL, although conversion between the standards is possible.

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Adjustable Keyboard: Command Key Shortcuts & VersaTerm (2/95)

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Adjustable Keyboard: Command Key Shortcuts & VersaTerm (2/95)

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TOPIC ----------

When I use my Adjustable keyboard with VersaTerm Pro, the Command-key shortcuts are not recognized. Is there something included with System 7.1 that fixes the problem?

DISCUSSION ----------

Apple Support used VersaTerm-Pro 3.6.3, with the Adjustable Keyboard and did not have any problems with any command key shortcuts. Specifically, we used the following command key shortcuts:

CMD-S calls up Send files
CMD-Y calls up Text Options
CMD-I goes off/on line
CMD-K clears page
CMD-J jumps back

To answer your question, there is nothing in System 7.1 to fix the Adjustable keyboard. You may want to check your version of VersaTerm Pro.

Article Change History:
02 Feb 1995 - Revised access privileges of article.

Support Information Services

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Tech Info Library Article Number:13075

Tech Info Library

Workgroup Server 80 & 95: Reading Status Lights (8/93)

Revised: 8/26/93
Security: Everyone

Workgroup Server 80 & 95: Reading Status Lights (8/93)

==========

Article Created: 26 August 1993

TOPIC ----------

How do I read the status lights on the Apple Workgroup Servers 80 and 95 ?

DISCUSSION ----------

The front panel has two bi-color lights (LEDs). Green is used to indicate normal operation and Amber is used to imply warning conditions. Pulsing usually shows activity between the drive and the SCSI bus. If the cassette Light (Left) shows a steady Amber, this indicates that the cassette is write protected. If the Drive Light (Right) shows a steady Amber, this indicates a fault condition.

The following table lists the possibilities:

	Cassette Light	Drive Light	Meaning
Read / Write States	Pulse Green	Pulse Green	Cassette (Unloading)
	Green	Green	Cassette Loaded/Online
	Green	Pulse Green	Cassette Loaded/Activity
	Green	Off (No Light)	Cassette Loaded/Offline
Write-Protect Status	Pulse Amber	Green	Casette (Unloading)
	Amber	Green	Cassette Loaded/Online
	Amber	Pulse Green	Cassette Loaded/Activity
	Amber	Off (No Light)	Cassette Loaded/Offline
Error States	Green	Pulse Amber	Media Wear (Caution)
	Amber	Amber	High Humidity, No termination on SCSI bus
	Pulse Amber	Pulse Amber	Self Test (Normal)
	Pulse Amber	Amber	Self Test (Failure)

Other States	Off (No Light)	Off (No Light)	No cassette loaded
	Off (No Light)	Green	Error (illegal state)
	Off (No Light)	Pulse Green	Error (illegal state)
	Off (No Light)	Amber	Error (illegal state)
	Off (No Light)	Pulse Amber	Error (illegal state)
	Pulse Green	Off (No Light)	Error (illegal state)
	Pulse Green	Green	Error (illegal state)
	Pulse Green	Amber	Error (illegal state)
	Pulse Green	Pulse Amber	Error (illegal state)
	Pulse Amber	Off (No Light)	Error (illegal state)
	Pulse Amber	Pulse Green	Error (illegal state)
	Green	Amber	Error (illegal state)
	Amber	Pulse Amber	Error (illegal state) (Write Protect on)

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13076

Tech Info Library

Apple Workgroup Server 95 PDS Card: SCSI Port Max Transfer Rate

Revised: 8/26/93
Security: Everyone

Apple Workgroup Server 95 PDS Card: SCSI Port Max Transfer Rate

==========

Article Created: 26 August 1993

TOPIC ----------

What is the maximum transfer rate of the SCSI ports on the Apple Workgroup Server 95 PDS card?

DISCUSSION ----------

The theoretical maximum for the SCSI bus is 5MB per second. The actual aggregate performance is around 4.5MB per second.

Maximum throughput for the 500MB and 1000MB drives on the SCSI DMA port of the Apple Workgroup Server 95 are as follows:

- Reads : 3MB per second
- Writes: 2MB per second

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13078

Tech Info Library

72-Pin SIMMs: Which Macs Support Industry Standard (3/94)

Revised: 3/25/94
Security: Everyone

72-Pin SIMMs: Which Macs Support Industry Standard (3/94)

==========

Article Created: 17 August 1993
Article Reviewed/Updated: 25 March 1994

TOPIC ----------

All desktop Macintosh models introduced since February 1993 use 72-pin SIMM slots for their RAM. This type of SIMM is considered an industry standard, and is widely available for other brands of computers.

However, the specification for using these SIMMs with Macintosh computers omits the ninth parity bit, which is part of the so-called "industry standard." Will these SIMMs still work when installed in the new Macintosh models?

DISCUSSION ----------

The ninth parity bit in 72-pin SIMMs installed in Macintosh slots is ignored and should not present any problems. However, it is always best to test a type of SIMM carefully in all banks in any Macintosh models you intend to use.

The SIMMs that work in Macintosh models supporting 72-pin SIMMs are considered industry standard 72-pin SIMMs, but not all "industry standard" SIMMs are guaranteed to work in these Macintosh systems. In other words, these Macintosh models might require the "higher" quality SIMMs that meet industry standards. When purchasing SIMMs, be sure you get 72-pin fast-paged mode with 60ns access time or faster (80ns for the Macintosh LC III).

Be aware that Apple does not support composite SIMMs for the 72-pin SIMM form factor. (Composite SIMMs are SIMMs manufactured using a smaller or older memory technology. An example of this would be a 16MB SIMM made of rows of 4MB chips -- basically a 16MB SIMM made of four 4MB SIMMs on one board. Composite SIMMs are never recommended for use in Apple computers.)

Article Change History:
25 March 1994 - Retitled and edited article.

Support Information Services

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Tech Info Library Article Number:13086

Composite SIMMs: How to Identify (2/95)

Revised: 5/23/95
Security: Everyone

Composite SIMMs: How to Identify (2/95)

==========

Article Created: 17 August 1993
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

Apple recommends against using composite SIMMs in any Macintosh. Apple hasn't tested composite SIMMs, and there are known problems with some CPUs. This article tells you what some of the problems are, and how to identify composite SIMMs.

DISCUSSION ----------

A composite SIMM uses lower density components to construct a single bank of memory. It forms a large memory SIMM using many smaller DRAM chips along with additional bank-controlling circuitry and sometimes buffers for the address and control signals, deceiving the Macintosh memory controller circuitry.

Composite SIMMs are less expensive than non-composite SIMMS because they are made with less expensive components. As an example, a 16 MB composite SIMM would be made up of 32 4-megabit DRAM chips, along with the additional circuitry to control the banks. Conversely, a non-composite 16 MB SIMM would be made up of 8 16-megabit chips only. Composite SIMMs are made up of more commonly available and less expensive parts.

Composite SIMMs pose timing and electrical problems in some Macintosh computers, particularly those optimized for maximum DRAM performance, such as the Quadra 800 and 900 series. Composite SIMMs with signal buffering have caused floppy disk (especially 800K) mounting problems on the Macintosh AV computers. The additional circuitry in the composite SIMMs causes random memory failures due to:

- Higher electrical currents
- Increased system noise
- The added timing overhead (delay)

Composite SIMMs may work under some conditions, but may cause random problems

such as start-up failures, system errors, or unexplained crashes. The errors can vary with different SIMMs, SIMM configurations, and vendors. Two composite SIMMs may work, but four may begin to cause random failures. One CPU might behave differently than the same model manufactured at a different time. Even temperature and supply voltages can cause minute variations.

Some SIMM vendors claim to have solved the loading and timing issues. However, the Macintosh memory system is tuned to expect the loading of standard SIMMs. Apple systems are verified to work with eight memory chips per bank, plus parity chips.

Article Change History:
14 Feb 1995 - Revised description of Composite SIMM.
11 Oct 1994 - Reviewed, made minor changes, added new keyword
26 Sep 1994 - Removed binary attachment.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13087

Tech Info Library

Quadra 900 & 950: 256MB RAM & RAM Disk (8/93)

Revised: 8/27/93
Security: Everyone

Quadra 900 & 950: 256MB RAM & RAM Disk (8/93)

==========

Article Created: 18 August 1993

TOPIC -----

We have a Macintosh Quadra 950 loaded with 256MB of RAM. However, we are unable to turn on the RAM Disk feature when the machine has this much memory.

DISCUSSION -----

The MMU (memory management unit) page table is limited to 256K. When you install 256MB of RAM in a Quadra 900 or 950, the MMU page table grows a little too big and overwrites the RAM disk portion of memory. Replacing one bank of the 16MB SIMMs with 4MB SIMMS (reducing the total RAM below 256MB) will allow the system to work correctly with the RAM disk enabled.

Note that Apple does not officially support 16MB SIMMs in the Quadra, although in most situations they will work fine.

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Tech Info Library Article Number:13088

Tech Info Library

MindVision Software (8/93)

Revised: 8/26/93
Security: Everyone

MindVision Software (8/93)

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Article Created: 26 August 1993

MindVision Software

1335 North 27th Street
P.O. Box 81886
Lincoln, NE 68503

402-477-3269

402-477-1395 Fax

Company Profile:
Specializes in compression software.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13091

Tech Info Library

Cyclos (8/93)

Revised: 8/26/93
Security: Everyone

Cyclos (8/93)

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Article Created: 26 August 1993

Cyclos

P.O. Box 31417
San Francisco, CA 94131

415-821-1448

Company Profile:
Specializes in compression software.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13092

Tech Info Library

Glen Canyon Software, Inc. (8/93)

Revised: 11/12/96
Security: Everyone

Glen Canyon Software, Inc. (8/93)

==========

Article Created: 26 August 1993

Glen Canyon Software, Inc.

3921 Shasta View
Eugene, OR 97405

503-345-6360 Technical Support

AppleLink: GLENCANYON

Cypress Research Corp.
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24 Caribbean Drive
Sunnyvale, CA 94089

408-752-2700 Sales

Company Profile:
Specializing in compression software, Glen Canyon Software, Inc. tests the products marketed by Cypress Research Corp.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13093

Tech Info Library

StepUp Software (8/93)

Revised: 8/26/93
Security: Everyone

StepUp Software (8/93)

==========

Article Created: 26 August 1993

StepUp Software

3883 Turtle Creek Blvd.
Penthouse 10
Dallas, TX 75219

214-520-7717

Company Profile:
Specializes in compression software.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13094

Tech Info Library

LaserWriter Pro: Connecting to a NeXT Computer (8/93)

Revised: 8/27/93
Security: Everyone

LaserWriter Pro: Connecting to a NeXT Computer (8/93)

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Article Created: 27 August 1993

TOPIC --------------------

How can I connect a NeXT computer to my LaserWriter Pro 600?

DISCUSSION --------------------

From a hardware standpoint the only requirement for a serial RS232 connection to the printer would be a null modem cable. On an AppleTalk network, you can connect via the printer's LocalTalk port. Use NeXTSTEP 3.0 which reportedly includes an Appleshare client which provides access to PostScript printers on an AppleTalk network.

On the LaserWriter Pro itself, you want to set the thumbwheel switch to position 0 which sets the printer for PostScript, 9600 baud, 8 data bits, 1 stop bit, and XON/OXFF handshaking.

Contact NeXt for more information. To locate a vendor's address and phone number, use the vendor's name as a search string.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13096

Tech Info Library

Fonts: Fonts on theMore Fonts Disk (8/93)

Revised: 8/31/93
Security: Everyone

Fonts: Fonts on the"More Fonts" Disk (8/93)

==========

Article Created: 27 August 1993

TOPIC ----------

What are the fonts found on the "More Fonts" and "Even More Fonts" disks that are shipped with the Personal LaserWriter NTR? I have been unable to find a comprehensive list anywhere.

DISCUSSION ----------

More Fonts:

Delphian
Garamond Narrow
Garamond Narrow (bold)
Garamond Narrow (bold,italic)
Garamond Narrow (italic)
Helvetica Black
Helvetica Compressed
Lucida Bright
Lucida Bright (bold)
Lucida Bright (bold, italic)
Lucida Bright (italic)

Even More Fonts:

Lubalin Graph
Lubalin Graph (bold)
Machine
Nadianne
Nadianne (bold)
Old English Text
Onyx
Oxford
Swing

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13097

Tech Info Library

NeXT Computer, Inc.

Revised: 8/27/93
Security: Everyone

NeXT Computer, Inc.

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Article Created: 27 August 1993

NeXT Computer, Inc.
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900 Chesapeake Drive
Redwood City, Ca 94063

800-848-6398

415-780-3714 Fax

Company Profile:
Software, develops an operating system called NEXTSTEP, an object oriented system software for Intel processors.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:13098

Tech Info Library

Newton MessagePad: Deleting Printers From List (8/93)

Revised: 8/27/93
Security: Everyone

Newton MessagePad: Deleting Printers From List (8/93)

==========

Article Created: 27 August 1993

TOPIC -----

How do I remove a printer from my Newton's print slip (or dialog box)? I've just renamed my Laserwriter, but its old name is still in the print list.

DISCUSSION -----

The print list in the Newton MessagePad can display a total of two printer names, with the most recently selected printer name displayed on top of the list. There is no way to delete a printer from this list.

You can remove a printer name by choosing another printer from either the "Network printers" or "Other printers" selections. This will remove the oldest name from the print list. In your case, this will be the old name of your LaserWriter.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13103

Tech Info Library

Apple MessagePad: Using Foreign Characters in Word List (5/95)

Revised: 5/5/95
Security: Everyone

Apple MessagePad: Using Foreign Characters in Word List (5/95)

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Article Created: 27 August 1993
Article Reviewed/Updated: 5 May 1995

TOPIC ----------

I can enter words that contain non-English characters (such as "ä", "é", or "ø") into the Apple MessagePad's word list. Why do these words appear without the accent?

DISCUSSION ----------

You can save words with non-English characters to the word list of the U.S. version of the Apple MessagePad. These words, however, are displayed without accents and the Apple MessagePad do not recognize non-English characters when you write them. We recommend that you do not enter words with non-English characters into your word list.

Article Change History:
05 May 1995 - Changed Newton to Apple MessagePad. Reformatted.

Support Information Services

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Tech Info Library Article Number:13104

Tech Info Library

PowerPC Microprocessor Family: An Overview (3/94)

Revised: 3/11/94
Security: Everyone

PowerPC Microprocessor Family: An Overview (3/94)

==========

Article Created: 30 August 1993
Article Reviewed/Updated: 11 March 1994

TOPIC ----------

This article gives an overview of the PowerPC microprocessor family.

DISCUSSION ----------

Apple, IBM, and Motorola are working on four versions of the PowerPC microprocessor simultaneously. Each version is designed to meet the needs of a different segment of the marketplace.

PowerPC 601 (MPC601)

The first microprocessor in the family is the PowerPC 601. The 601 will be in production in early 1994 and will be used in the initial midrange and high-end Macintosh systems.

PowerPC 601 features:

- 32-bit implementation of the PowerPC architecture
- 32-bit address bus
- 64-bit data bus
- Processor bus based on 88110 bus
- Available in two versions: a 66 MHz version and a 80 MHz version.

PowerPC 603 (MPC603)

The PowerPC 603 microprocessor will offer performance similar to the 601 in an even lower-power, lower-cost design. These features will allow Apple to use the 603 in high-volume desktop Macintosh computers and PowerBook models.

PowerPC 603 features:

- 32-bit implementation of the PowerPC architecture
- 32-bit address bus
- 64-bit data bus
- Processor bus based on 88110 bus
- Low power consumption
- Fully static logic with power-saving features
- 3.3 volt design
- Requires only two watts of power during full operation, one watt when only in active use.
- Available in two versions: a 66 MHz version and a 80 MHz version.

PowerPC 604 (MPC604)

The PowerPC 604 microprocessor will eventually replace the 601, allowing Apple to offer even better performance in midrange and high-end Macintosh computers.

PowerPC 604 features:

- 32-bit address bus
- 64-bit data bus
- Bigger pipeline
- Higher parallelism
- Advanced branching techniques for higher performance

PowerPC 620 (MPC620)

The PowerPC 620 microprocessor will be a high-end product offering premium performance and a full 64-bit architecture. It is being designed primarily for high-performance workstations and servers.

PowerPC 620 features:

- 32-bit address bus
- 64-bit data bus
- Multiple levels of parallelism
- Will use a different processor bus

Article Change History:
11 March 1994 - Reclassified article for Power Macintosh intro.
7 December 1993 - Added additional 601, 603 version and power consumption information.

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Tech Info Library Article Number:13109

Tech Info Library

AppleShare Print Server 2.0 Requires Laser Prep File (8/93)

Revised: 8/30/93
Security: Everyone

AppleShare Print Server 2.0 Requires Laser Prep File (8/93)

==========

Article Created: 30 August 1993

TOPIC ----------

Our AppleShare Print Server software no longer runs on a network where all workstations (and by necessity the print server as well) are running the 7.x versions of the LaserWriter drivers.

DISCUSSION ----------

Since AppleShare Print Server 2.0 requires the Laser Prep file, the the Prep file has been updated specifically for AppleShare Print Server 2.0 only. You'll find this updated file on the Printing Tools disk that comes with System 7.x. Replace the file on the print servers in the System Folder with this file. Don't put the Prep file on the workstations, only on the print server.

Note: The Laser Prep file was rolled into LaserWriter Driver version 6.1 and later. The Laser Prep file was required with printer driver versions 6.0 and earlier.

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Tech Info Library Article Number:13110

Tech Info Library

Apple Adjustable Keyboard: Keypad Access & Key Caps DA (8/93)

Revised: 8/31/93
Security: Everyone

Apple Adjustable Keyboard: Keypad Access & Key Caps DA (8/93)

==========

Article Created: 31 August 1993

TOPIC ----------

I have a Macintosh Centris 650 and an Apple adjustable keyboard. How do I use the Key Caps to access the both the keyboard and the keypad? Is there some kind of toggle switch?

DISCUSSION ----------

Install the Hardware System Update 2.0 (HSU 2.0) on any system that will have an Apple Adjustable Keyboard attached. After the HSU 2.0 is installed, all that is needed to switch from the keyboard to the keypad and vice versa in the Key Caps DA is to touch a key on the respective device.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13111

Tech Info Library

LaserWriters: Differences in HP Emulation (8/93)

Revised: 8/31/93
Security: Everyone

LaserWriters: Differences in HP Emulation (8/93)

==========

Article Created: 31 August 1993

TOPIC ----------

1) Is there a list of PCL 4+ (Printer Control Language) commands supported by the LaserWriter IIg?

2) I would like to find out the differences between HP LaserJet emulation (PCL 4+) on Apple's LaserWriter printers, and the HP LaserJet IIP printer.

DISCUSSION ----------

1) With regard to the list of PCL 4+ commands supported by the LaserWriter IIg, we don't believe that such a list is available. However, as stated in Chapter 3 of the LaserWriter Reference (Addison-Wesley #ISBN 0-201-19258-6),

"With a few exceptions, the LaserJet+ emulator supports the entire set of escape sequences for both the LaserJet and the LaserJet+. This set includes the positioning commands, font-selection commands, and bit-mapped graphics with no limitation on areas covered by bit maps, as well as the rules, macros, overlays, and downloadable fonts."

2) The LaserWriter Reference has a total of about 11 pages that provide specifics on the HP LaserJet+ emulator (PCL 4+).

Appendix D in the LaserWriter IIf and IIg Owner's Guide provides some in-depth information on HP LaserJet+ emulation. The most important section are below:

The LaserJet IIP emulator contained in the LaserWriter allows you to print just about anything you can print on the LaserJet IIP, with these differences:

- The LaserJet IIP omits characters that overlap the left margin of the paper, but the emulator prints the portion of the character that does not extend into the margin.

- The LaserJet IIP allows you to insert commands to halt printing so that you can insert paper or envelopes manually. The emulator interprets those commands as form feeds.

- Applications that produce justified text with the LaserJet IIP versions of Helvetica (Helv) and Times Roman (Tms Rmn) fonts may generate slightly ragged output on the emulator.

- While the LaserJet IIP prints characters in the closest available point size and pitch for each font, the emulator scales the font to the specified size.

- The line printer font, which is 16.67-pitch Courier, appears with a height of 7.2 points when printed with the emulator, rather than 8.5 points as printed by the LaserJet IIP.

- The Control-C and Control-T key combinations, which you can normally use to interrupt printing or query the status of the LaserJet IIP, cannot be used with the emulator.

- The emulator does not print nine characters from the LaserJet IIP Roman-8 symbol set. These characters are shown in the following table.

  Decimal codes: 176, 179, 227, 228, 240, 241, 247, 248, and 254.

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Tech Info Library Article Number:13112

Tech Info Library

Finder and Desktop Manager: How They Work Together (8/93)

Revised: 8/31/93
Security: Everyone

Finder and Desktop Manager: How They Work Together (8/93)

==========

Article Created: 31 August 1993

TOPIC -----

I have two questions about how the Desktop Manager and Finder work together:

1) When does the Finder update the Desktop Manager Files?

2) If there are multiple applications with the same creator, how does the Finder decide which one to use?

DISCUSSION -----

1) The Finder makes Desktop Manager calls when it needs to:

- Add icons to the Desktop database
- Add application information to the Desktop database
- Add "Get Info" comments for a file to the Desktop database
- Remove application information from the Desktop database
- Remove "Get Info" comments for a file from the Desktop database
- Get an icon or icon information from the Desktop database
- Find an application
- Get the "Get Info" comments for a file
- Rebuild the Desktop database

For more detailed information, please read pages 9-44 to 9-66 of Inside Macintosh Volume VI.

2) The Finder, using the call PBDTGetAPPL, will find and use the application with the most recent creation date. If two or more applications have the same creation date, the most recently added application in the Desktop database will be used.

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Tech Info Library Article Number:13113

Tech Info Library

Apple PowerCD: Available in NSTC and PAL (8/93)

Revised: 8/31/93
Security: Everyone

Apple PowerCD: Available in NSTC and PAL (8/93)

==========

Article Created: 31 August 1993

TOPIC -----

Can you tell me if the PowerCD is a multi-standard unit or whether there is a separate PAL and NTSC version of the unit? Another words is it switchable or is it hard-wired?

DISCUSSION -----

The Apple PowerCD is available in 2 different versions, PAL and NTSC, thus they're separate units. Each version has it's own marketing number.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13114

Tech Info Library

LaserWriter Driver 8.x: How Auto Select Works (4/97)

Revised: 4/14/97
Security: Everyone

LaserWriter Driver 8.x: How Auto Select Works (4/97)

==========

Article Created: 31 August 1993
Article Reviewed/Updated: 14 April 1997

TOPIC ----------

I have had problems using the Auto Select feature of LaserWriter Driver 8.x. The Auto Select option in the Print dialog seems to be ignored randomly, or used randomly when not asked for.

DISCUSSION ----------

This article explains the LaserWriter Driver 8.x "Auto Select" feature. However, when following the information presented here, you must first make sure that "Auto Select" is selected as the paper source in the LaserWriter 8.x Print dialog.

Installed and Preferred

This setting only affects print jobs coming from the Macintosh you "Configure". Either the 250-sheet or 500-sheet cassette can be chosen as the default paper tray by selecting the printer in the Chooser, clicking on Setup, and then on Configure. Once the Configure dialog box displays, the 500-sheet cassette can be set for Installed and Preferred, which makes it the default paper tray for that paper size. Thus, if there is Legal-sized paper in the 500-sheet tray, then any Legal-sized print job uses the 500-sheet cassette. If the 500-sheet cassette is set only as Installed, then the default paper tray used is the 250-sheet cassette (for all jobs using the paper size installed in that cassette).

To access the Configure dialog box with LaserWriter Driver 8.2 or greater, you must click on Setup once to select the PostScript Printer Description (PPD) file, and then click on Setup again to get the option for Configure.

PostScript and Default Paper Tray

This affects ALL print jobs coming from ANY Macintosh since the value is modified at the printer, not the client (as in the preceding Installed and

Preferred procedure).

You can set any of the paper trays (Multipurpose, 250-sheet, 500-sheet, or Envelope) as the default paper tray by downloading the PostScript code (see PostScript Code on page 10) to the printer. The default tray selected is used automatically for any print jobs of the same paper size as in the default tray that you set.

PostScript Code

Use this PostScript code at your own risk. You are responsible for the support of any problems associated with changing the default tray. You should also inform others using the printer that you have changed the default tray. Changing the default tray on the printer may cause the paper out LED to light if there is no paper present in the default tray, or if the wrong size paper is used in the tray. When this happens, there is nothing wrong with the printer's hardware.

This is PostScript Level 1 code:

```
%=============================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin 1 setdefaultpapertray end
%
% end PostScript Code
%=============================================================
```

VALUE	TRAY SELECTION
0	250 sheet cassette
1	Multi-purpose tray
2	500 sheet cassette
3	Envelope tray

NOTE: The VALUE column pertains to the integer preceding the setdefaultpapertray command on the second line in the PostScript code.

This is the equivalent PostScript Level 2 code:

```
%=============================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
1 dict dup /InputAttributes 1 dict dup /Priority [2 1 0] put put setpagedevice
%
% End PostScript Code
%=============================================================
```

This sets the paper tray priority to:
1st Priority - Cassette (500 Sheets) - designated by the "2" in the array above.

2nd Priority - Multipurpose Tray - designated by the "1" in the array above.
3rd Priority - Cassette (250 Sheets) - designated by the "0" in the array above.

You can change the paper tray priority order by changing the values in "/Priority [2 1 0]".
For example, /Priority [0 1 2] makes the 250 sheet cassette first priority, then the Multipurpose tray next, then the 500 sheet cassette.

WARNING: If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

Individual Documents

Tray selection is NOT stored with each individual document, however, page size is. Thus, with "Auto Select" the LaserWriter driver does its best to match the page size with the appropriate tray, depending on how the printer was configured using the preceding procedures.

Sticky Trays?

LaserWriter 8.x DOES NOT automatically use (for the next job) the last paper tray used in the previous job, unless the current print job is of the same paper size as the previous job.

This article was published in the "Information Alley":
Volume II, Issue 4, Page 9

Article Change History:
14 Apr 1997 - Added PostScript Level 2 code.
14 Jun 1995 - Added Info Alley information; made several technical updates.
21 Apr 1995 - Added additional information to Caution message.

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Tech Info Library Article Number:13117

Tech Info Library

QuickDraw, Color QuickDraw, 32-Bit QuickDraw, and QuickDraw GX

Revised: 1/6/94
Security: Everyone

QuickDraw, Color QuickDraw, 32-Bit QuickDraw, and QuickDraw GX

==========

Article Created: 30 August 1993
Article Reviewed/Updated: 6 January 1994

TOPIC --------------------

This article explains the relationship of QuickDraw, Color QuickDraw, 32-bit QuickDraw, and QuickDraw GX.

DISCUSSION --------------------

QuickDraw

QuickDraw shipped with the original Macintosh computers. It's in every Macintosh computer, and consists of drawing commands used by windows, menus, and dialogs as well as the usual graphics drawing such as the old MacPaint programs. It's sometimes called original QuickDraw.

QuickDraw supports only 8 colors: black, white, cyan, magenta, blue, green, yellow, and red; although most programs that use only original QuickDraw draw in black and white. There are two reasons for this:

- The original Macintosh computers didn't have color displays, so color seemed useless (unless you were printing).

- There are limitations to what you can do with color under original QuickDraw.

Color QuickDraw

Color QuickDraw first shipped with the Macintosh II, and is in every Macintosh II class computer, (which includes the SE/30). Color QuickDraw supplements QuickDraw by adding new color support. With Color QuickDraw, you can create and display incredible color images, among other things.

At this time Apple also introduced hardware for color displays. Most of the color PICT files you see today were made with Color QuickDraw. Color QuickDraw also makes it possible to have color menus, color windows, icons, and so forth. Most of the "graphical" toolbox routines were revised to support the color enhancements.

Notes: Inside Macintosh V talks about Color QuickDraw. So does Inside Macintosh VI, but they are completely different. What Inside Macintosh VI calls Color QuickDraw is really 32-bit QuickDraw.

The Color QuickDraw 1.2 INIT that shipped with system software 6.0.5 can't be used on computers prior to the Macintosh II or SE/30 (like the Plus, SE, or Classic) because there's no Color QuickDraw on board.

32-Bit QuickDraw

32-bit QuickDraw first shipped as an INIT with system 6.0.5. It supplemented Color QuickDraw, and therefore required Color QuickDraw to be present. Now every Color QuickDraw computer Apple creates also has a version of 32-bit QuickDraw in ROM. 32-bit QuickDraw was an enhancement for Color QuickDraw in that it made it easier to create graphics, and had additional graphics operations.

Any CPU with Color QuickDraw, and either 32-bit QuickDraw in ROM or the 32-bit QuickDraw INIT running, as well as any CPU running system 7 supports 32-bit QuickDraw.

A factor introduced with system 7 was the provision of 32-bit QuickDraw support on any computer. Although what occurs on a non-color QuickDraw computer (like the Classic) is a hybrid of true 32-bit QuickDraw. In any case, System 7 supports all the calls.

Therefore System 7 gives 32-bit QuickDraw and Color QuickDraw support to computers prior to the Macintosh II or SE/30. This doesn't necessarily give color capability to these systems -- but allows software that makes calls to 32-bit QuickDraw or Color QuickDraw to operate without crashing. System 7 also gives the Macintosh II, IIcx, IIfx, LC, LCII and computers with 32-bit QuickDraw in ROM (such as Macintosh IIci) a less buggy version of QuickDraw, with some additional features. Just as system software evolves, so does the underlying graphics software. The latest version will always be in the latest system software release.

QuickDraw GX

QuickDraw GX is the next evolution of QuickDraw. Like Color QuickDraw and 32-bit QuickDraw, it co-exists with the previous versions of QuickDraw, although it no longer requires them. However, GX requires system 7.1, so you'll automatically have 32-bit QuickDraw and Color QuickDraw support built in.

To summarize:

- You always have QuickDraw in a Macintosh.
- If you have Color QuickDraw, you also have QuickDraw.
- If you have 32-bit QuickDraw, you also have Color QuickDraw and QuickDraw.
- If you have system 7 you have 32-bit QuickDraw and Color QuickDraw support as well as QuickDraw (the actual code executed is different than the usual 32-bit QuickDraw).
- QuickDraw GX provides QuickDraw and some version (either true or a hybrid) of 32-bit QuickDraw and Color QuickDraw as well.

And just to be clear, the different types of QuickDraw can all be used together. You can ALWAYS intermix the calls, as long as they're supported by the system you're using.

Article Change History:
30 November 1993 - Clarified what System 7 does for systems prior to the Macintosh II and SE/30.
6 January 1994 - Reworded QuickDraw GX information.

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Tech Info Library Article Number:13121

Tech Info Library

MobilTape (8/93)

Revised: 8/31/93
Security: Everyone

MobilTape (8/93)

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Article Created: 31 August 1993

MobilTape

25061 West Ave. Stanford
Suite 70
Valencia, CA 91355

805-295-0504

805-295-8474 (Fax)

Company Profile:
Instructional video tapes.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13123

..TIL13124-ABS_Tech_Note-AS00_About_AppleSearch_Technical_Notes_6-94_(TA30056).pdf

Tech Info Library

ABS Tech Note: AS00 About AppleSearch Technical Notes (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AS00 About AppleSearch Technical Notes (6/94)

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Article Created: 23 June 1994

TOPIC ----------

This document accompanies each release of Apple Business Systems Technical Notes.

DISCUSSION ----------

We want Technical Notes to be distributed as widely as possible, so they are sent to all Partners and Associates at no charge; they are also posted on AppleLink in the Developer Services Bulletin Board also.

We place no restriction on copying Technical Notes, with the exception that you cannot resell them, so read, enjoy and share. We hope Apple Business Systems Technical Notes will provide you with lots of valuable information.

Technical notes are a 'living' complement to product documentation, be it Inside Macintosh or other documentation. This means that they are updated on a regular basis, so as to be accurate and up to date. New Notes are added as required.

This technical note is an index of all technical notes related to the AppleSearch and related products. It also documents all changes to the technical notes since the previous release.

Index

Technical Note	Subject	Last Revision
ASearch00	About AppleSearch Tech Notes	Dec, 1993
ASearch01	Character formats in AppleSearch	Aug, 1993
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ASearch04	AppleEvent Data Limits	Nov, 1993
ASearch05	AppleSearch Compatibility	Dec, 1993
ASearch06	AppleSearch and XTND	Mar, 1994
ASearch07	Guest Access Bug	Mar, 1994

..TIL13124-ABS_Tech_Note-AS00_About_AppleSearch_Technical_Notes_6-94_(TA30056).pdf

ASearch08 AppleSearch and the PowerPC May, 1994

Changes since last release:

New Tech Notes: ASearch08
Modified Tech Notes:

Support Information Services

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Tech Info Library Article Number:13124

ABS Tech Note: AS01 AppleSearch Character Support (8/93)

Revised: 5/21/96
Security: Everyone

ABS Tech Note: AS01 AppleSearch Character Support (8/93)

==========

Article Created: 31 August 1993

TOPIC --

As with most information retrieval applications, AppleSearch deals with a variety of language and character rules in order to function properly. This note will outline the AppleSearch character support for version 1.0.Note that our search engine is licensed from Personal Library Software.

DISCUSSION --

Summary

For version 1.0 of AppleSearch, we are supporting the US English Character Set, with some mapping exceptions as defined below. Technically, we are 7-bit compatible, but 8-bit aware.

We've defined our character support based on the Inside Mac Volume VI definition of the Roman Character set; Appendix E: The Standard Roman Character Set.

The server software "handles" accented and double characters in a limited fashion. Accented characters are mapped to their US English counterpart, for example, é to e, å to a. AppleSearch makes no distinction between accented and non-accented characters. This mapping is consistent between indexing and searching. For example, while indexing the word "élève" would be changed to "eleve". When you search for the word "élève", it would be changed to "eleve", before searching the index.

Double characters are mapped to the first letter, for example, œ to o, æ to a. This may seem odd, but our options were to:

- Store the character
- Map it to a space
- Map it to a 7-bit equivalent

We have chosen to map characters with accent marks and double characters to their 7-bit equivalent for the following reasons:

- Staying 7-bit clean today, will ensure compatibility between future 8-bit releases and version 1.0 index files.

- Users may get false hits when using languages where diacritical marks change the meaning of a word. However, for languages where the grammatical rules for diacritical marks are not very rigid, it is better to compare words after stripping diacritical marks. You may get false hits, but you'll not miss any documents.

Note

Download this document, open with your favorite word processor, and change the font to either Courier, Palatino, or Times to read all the characters below.

AppleSearch v1.0 Character Mapping

0x30	0	0	0x66	f	F	0x95	ï	I
0x31	1	1	0x67	g	G	0x96	ñ	N
0x32	2	2	0x68	h	H	0x97	ó	O
0x33	3	3	0x69	i	I	0x98	ò	O
0x34	4	4	0x6a	j	J	0x99	ô	O
0x35	5	5	0x6b	k	K	0x9a	ö	O
0x36	6	6	0x6c	l	L	0x9b	õ	O
0x37	7	7	0x6d	m	M	0x9c	ú	U
0x38	8	8	0x6e	n	N	0x9d	ù	U
0x39	9	9	0x6f	o	O	0x9e	û	U
			0x70	p	P	0x9f	ü	U
0x41	A	A	0x71	q	Q	0xa7	ß	S
0x42	B	B	0x72	r	R	0xae	Æ	A
0x43	C	C	0x73	s	S	0xaf	Ø	O
0x44	D	D	0x74	t	T	0xbe	æ	A
0x45	E	E	0x75	u	U	0xbf	ø	O
0x46	F	F	0x76	v	V	0xcb	À	A
0x47	G	G	0x77	w	W	0xcc	Ã	A
0x48	H	H	0x78	x	X	0xcd	Õ	O
0x49	I	I	0x79	y	Y	0xce	Œ	O
0x4a	J	J	0x7a	z	Z	0xcf	œ	O
0x4b	K	K				0xd8	ÿ	Y
0x4c	L	L	0x80	Ä	A	0xd9	Ÿ	Y
0x4d	M	M	0x81	Å	A	0xde	fi	F
0x4e	N	N	0x82	Ç	C	0xdf	fl	F
0x4f	O	O	0x83	É	E	0xe5	Â	A
0x50	P	P	0x84	Ñ	N	0xe6	Ê	E
0x51	Q	Q	0x85	Ö	O	0xe7	Á	A
0x52	R	R	0x86	Ü	U	0xe8	Ë	E
0x53	S	S	0x87	á	A	0xe9	È	E
0x54	T	T	0x88	à	A	0xea	Í	I
0x55	U	U	0x89	â	A	0xeb	Î	I

0x56	V	V	0x8a	ä	A	0xec	Ï	I
0x57	W	W	0x8b	ã	A	0xed	Ì	I
0x58	X	X	0x8c	å	A	0xee	Ó	O
0x59	Y	Y	0x8d	ç	C	0xef	Ô	O
0x5a	Z	Z	0x8e	é	E	0xf1	Ò	O
			0x8f	è	E	0xf2	Ú	U
0x61	a	A	0x90	ê	E	0xf3	Û	U
0x62	b	B	0x91	ë	E	0xf4	Ù	U
0x63	c	C	0x92	í	I	0xf5	ı	I
0x64	d	D	0x93	ì	I			
0x65	e	E	0x94	î	I			

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Tech Info Library Article Number:13125

Tech Info Library

At Ease 1.x Loses Aliases to Servers (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 1.x Loses Aliases to Servers (8/95)

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Article Created: 30 August 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

I'm using At Ease 1.x in a laboratory of computers containing a file server. When a student clicks on a button in At Ease for an item located on the file server, a message prompts to log in. If the user account doesn't have access privileges to the item, an error will appear that the alias can't be opened, because the original item can't be found. The button is then removed from the At Ease screen. The administrator then has to go back into At Ease and set the button up again.

DISCUSSION ----------

Version 2.0 of At Ease doesn't have this problem. Upgrade to At Ease 2.0. This problem has been confirmed in all versions of At Ease 1.x

If you use At Ease in conjunction with a file server, consider At Ease for WorkGroups, which will offer much more flexibility. There's no upgrade from 1.x to At Ease for Workgroups.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:13126

Arabic System: Which LaserWriter Printer Driver? (9/93)

Revised: 9/1/93
Security: Everyone

Arabic System: Which LaserWriter Printer Driver? (9/93)

==========

Article Created: 1 September 1993

TOPIC --------------------

I bought an Arabic 7.1 system (WorldScript) and a LaserWriter Select 310. Does this system require the Arabic version of the LaserWriter Select 310 printer drivers or will the UK or international printer drivers work?

Are localized printer drivers required to match the localized versions of system software?

DISCUSSION --------------------

The Arabic version of the LaserWriter Select 310 print driver is not a requirement for using the printer with Arabic System 7.1. We are not sure about "compatibility" with the UK version of the print driver, however, the international Z-version will work just fine with the Arabic system.

Essentially, the localized print drivers such as the Arabic version contain localized strings (Page Setup and Print dialog boxes with Arabic instead of English words), installer scripts, and paper size selections available in the respective country. The Z-version has English strings for the user interface, though contains the region-specific paper size selections, as well as modified installer scripts to accommodate the various script systems.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13127

Tech Info Library

Fonts: Location Relative to Version of Operating System (2/95)

Revised: 2/15/95
Security: Everyone

Fonts: Location Relative to Version of Operating System (2/95)

==========

Article Created: 1 September 1993
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

The chart below describes where to properly place fonts relative to the version of the operating system in use.

DISCUSSION ----------

	Bitmap	PostScript	TrueType
System 6.x	Use Font/DA mover to install fonts into System file	System Folder	System file * (see below)
System 7.0 and System 7.0.1	Drag to System file **	Extensions folder **	System file **
System 7.1	Font folder **	Font folder **	Font folder **
System 7.5	Font folder **	Font folder **	Font folder **

. ----------

NOTE
* TrueType fonts don't work with system software version 6.0.4 or earlier and versions 6.0.5 through 6.0.8 require the TrueType INIT.

** System 7.0, System 7.0.1, and System 7.1 will automatically place Bitmap, PostScript, and TrueType fonts in the proper locations when they are dragged to the System Folder.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy.
06 Sep 1994 - Added System 7.5 information to article, revised title.

Support Information Services

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Tech Info Library Article Number:13130

GeoPorts: How to Fix Disconnect Problem (9/93)

Revised: 9/10/93
Security: Everyone

GeoPorts: How to Fix Disconnect Problem (9/93)

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Article Created: 2 September 1993

TOPIC ----------

I have problems with GeoPorts connecting to services and disconnecting immediately. The software on the update for the Express Modem is supposed to work with the GeoPort.

DISCUSSION ----------

You should use the software that comes with the GeoPort Telecom Adapter. The Express Modem Software 1.1.2 is compatible, but there's much more software installed by the GeoPort Express Modem Installer than by the normal one. Software installed includes the Shared Library Manager, ASLM Resources, GeoPort Extension, GeoPort Telecom Adapter, and GeoPort Telecomm. Without these files, you can't use the GeoPort Telecom Adapter.

If you installed the proper software, and still experience problems with disconnects or aren't connecting at all, try turning off error correction. You can do this with the modem command: &Q0 in the modem string.

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Tech Info Library Article Number:13131

..TIL13133-ABS_Tech_Note-AWS00_About_AWS_Technical_Notes_11-94_(TA30065).pdf

Tech Info Library

ABS Tech Note: AWS00 About AWS Technical Notes (11/94)

Revised: 11/14/94
Security: Everyone

ABS Tech Note: AWS00 About AWS Technical Notes (11/94)

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Article Created: 14 November 1994

TOPIC ----------

This document accompanies each release of Apple Business Systems Technical Notes.

DISCUSSION ----------

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This technical note is an index of all technical notes related to the Apple Workgroup Servers and related products. It also documents all changes to the technical notes since the previous release.

Note: we are also including for your convenience the technical documentation from the third party vendors of the Apple Workgroup Server products Oracle 7 and Retrospect. These documents were not written by Apple or tested for accuracy, but are included because we feel you might find them useful.

Index

Technical Note	Subject	Last Revision
AWS00:	About AWS Tech Notes	Dec, 1993
AWS01:	Correct Platform Choice for 4D Servers	Dec, 1993
AWS02:	SCSI Termination on AWS 95	Dec, 1993

AWS03:	(Obsolete. See note A below)	
AWS04:	(Obsolete. See note A below)	
AWS05:	(Obsolete. See note A below)	
AWS06:	(Obsolete. See note A below)	
AWS07:	(Obsolete. See note A below)	
AWS08:	AWS95 kconfig modifications	May, 1994
AWS09:	AWS95 buffer cache Q&A	May, 1994
AWS10:	Apple Workgroup Server Q&A	Sep, 1994
AWS11:	Inode configuration and overhead on AWS95	Aug, 1993
AWS12:	Retrospect on AWS Q&A	Sep, 1993
AWS13:	(Obsolete. See note A below)	
AWS14:	Tune-Up install and AppleShare Pro	May, 1994
AWS15:	Proper reconfig. of bent for ATalk support	Dec, 1993
AWS16:	FileAccess Control on the AWS 95	Dec, 1993
AWS17:	.fs_cache item limits	May, 1994
AWS18:	(Obsolete: See note B below)	
AWS19:	Adding a UFS Drive	Dec, 1993
AWS20:	Multihoming and IP Forwarding	May, 1994
AWS21:	A/UX & Micropolis Drives	May, 1994
AWS22:	Retrospect Errors	Mar, 1994
AWS23:	SHMAT Limitations	May, 1994
AWS24:	Multiple Printers	May, 1994
AWS25:	Flushing the 68040 cache	May, 1994
AWS26:	Hybrid Applications and A/UX	Sep, 1994
AWS27:	Configuration changes in A/UX 3.1	May, 1994
AWS28:	Disk Driver changes in A/UX 3.1	Sep, 1994
AWS29:	Running AWS95 headless	May, 1994
AWS30:	/etc/fstab corruption	Sep, 1994

Notes:
A: These technical notes have been superceded by the document "Tuning Server Performance and Adding Internal Hard Drives" available with release 3.1 of A/UX for the Workgroup Server 95.

B: This note is obsolete with release 3.1 of A/UX

Changes since last release:
New Technical Notes: AWS26, AWS30
Modified Technical Notes: AWS10, AWS28

Support Information Services

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Tech Info Library Article Number:13133

Tech Info Library

VST Power Systems, Inc. (3/97)

Revised: 3/4/97
Security: Everyone

VST Power Systems, Inc. (3/97)

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Article Created: 2 September 1993
Article Reviewed/Updated: 4 March 1997

VST Power Systems, Inc.

VST Power Systems, Inc.
1620 Sudbury Road
Concord MA 01742

508-263-9700

Company Profile:

VST Power Systems specializes in battery products for PowerBook systems.
- VST ThinPack, a light long-life external rechargable battery pack for PowerBooks, thin enough to fit inside a PowerBook carrying case or be attached to the bottom of the PowerBook.
- ThinPack Utilities, battery-management software.
- MagentaCase TP, carrying case for PowerBook and two ThinPack batteries.

Article Change History:
04 Mar 1997 - New phone number.

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Tech Info Library Article Number:13134

Tech Info Library

ABS Tech Note: AWS01 File/Print Server for 4th Dimension (1/94)

Revised: 1/11/94
Security: Everyone

ABS Tech Note: AWS01 File/Print Server for 4th Dimension (1/94)

==========

Article Created: 23 December 1993

TOPIC --------------------

This technical note advises you to choose the Apple Workgroup Server (AWS) 95 File/Print server platform for 4th Dimension.

DISCUSSION --------------------

With the release of the AWS 95 there has been confusion with respect to guiding customers towards selecting the proper platform for their specific needs. In a number of instances the database version of this product has been selected when what the customer required was really the File/Print Server.

ACIUS Inc. is shipping their version of the 4th Dimension server. It will be important to make sure that people who want to obtain this product combination understand that the proper platform is the File/Print Server and not the database server product.

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Tech Info Library Article Number:13135

ABS Tech Note: AWS02 AWS95 SCSI Termination (1/94)

Revised: 1/11/94
Security: Everyone

ABS Tech Note: AWS02 AWS95 SCSI Termination (1/94)

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Article Created: 23 December 1993

TOPIC --------------------

This technical note describes SCSI termination on the Apple Workgroup Server (AWS) 95.

DISCUSSION --------------------

The introduction of the AWS 95 has led to questions with regard to the SCSI termination requirements for the internal Processor Direct Slot Card and the SCSI busses that it supports. The internal and external SCSI buses on the AWS 95 are two separate electrical buses that are logically treated as one via software. This means external cabling and termination issues do not affect the internal bus and vice-versa. Both buses are terminated at the main board. The second termination point for the internal SCSI bus is built-in to the end of the internal SCSI cable, and the second termination point for the external SCSI bus is provided via a terminator connected to the last device on the external SCSI chain.

The AWS 95 retains the same termination scheme on the main board and on the PDS card for a total of four electrically separated SCSI buses. The two buses attached to the PDS card are terminated at the PDS card. The second termination point for the internal PDS SCSI bus is built-in to the end of the internal SCSI cable, and the second termination point for the external PDS SCSI bus is provided via a terminator connected to the last device on the external PDS SCSI chain.

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Tech Info Library Article Number:13136

ABS Tech Note: AWS08 kconfig Defaults & Deltas (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AWS08 kconfig Defaults & Deltas (6/94)

==========

Article Created: 23 June 1994

TOPIC ----------

This article describes Kernel parameters (kconfig) defaults & deltas for the Apple Workgroup Server (AWS) 95 File/Print and Database Server Configurations.

DISCUSSION ----------

This technical note documents the default Kernel parameters settings for the File/Print and Database server Configurations under A/UX version 3.0.1 and 3.1 and how they are different from A/UX version 3.0. It also describes the new configuration parameters introduced in A/UX version 3.0.1 and their default settings.

Kernel Configuration Defaults

Variable	File/Print	Database	3.0 Defaults
MAXSC	32	32	8
NBLK16	256	256	128
NBLK64	800	800	64
NBLK128	256	256	32
NBLK256	256	256	16
NBLK512	128	128	8
NBLK1024	300	300	8
NBUF	-1	0	0
NCALL	500	150	75
NFILE	7500	1024	256
NINODE	7500	1024	256
NMOUNT	32	32	10
NPBUF	64	64	20
NQUEUE	1200	1200	256
NSTREAM	200	200	32
SBUFSIZE	4096	4096	2048

Kernel Configuration Parameters Introduced in 3.0.1

Variable	Description	Default
GNOFILE	Global File Table (used by Mac environment)	6144
MSGMAP	Message Map Entries (used by msgop(2))	200
MSGMAX	Maximum Message Size (used by msgop(2))	8192
MSGMNB	Max. Message Queue Size (used by msgop(2))	16384
MSGMNI	Message Queue Identifiers (used by msgop(2))	50
MSGTQL	Number of Message Headers	200
NASIOD	Number of Asynchronous I/O Daemons	4
NASIOQ	Asynchronous I/O Request Queue	128
SEMMAP	Semaphore Map Entries (see semop(2))	50
SEMMNI	Semaphore Identifiers (see semop(2))	50
SEMMNS	Total Number of Semaphores (see semop(2))	300
SHMMNI	Shared Memory Segment Identifiers (shmop(2))	100

For more information on kernel parameters, refer to the on-line man page for kconfig.

In release 3.1, the behavior of the system has changed when NBUF is set to -1. The new algorithm for determining the size of the buffer cache is:

```
  if (v.v_buf == -1) {
      /* if < 20Mb available just allocate 10% for bufs */
      if (availmem <= 5120)
           m = availmem / 10;
      /* else if < 40Mb available, reserve 20Mb for procs */
      else if (availmem < 10240)
           m = availmem - 5120;
      /* else split 50/50 */
      else
           m = availmem / 2;

      /* make sure we've got at least 10% for the bufs */
      if (m < (availmem / 10))
           m = availmem / 10;

      v.v_buf = ptob(m) / v.v_sbufsz;
  } else if (v.v_buf == 0)
      v.v_buf = ptob(availmem) / (10 * v.v_sbufsz);
```

Support Information Services

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Tech Info Library Article Number:13142

ABS Tech Note: AWS09 A/UX Buffer Cache Q&As on AWS 95 (6/96)

Revised: 6/3/96
Security: Everyone

ABS Tech Note: AWS09 A/UX Buffer Cache Q&As on AWS 95 (6/96)

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Article Created: 23 June 1994
Article Reviewed/Updated: 3 June 1996

TOPIC ----------

This technical note discusses the buffer cache on the Apple Workgroup Server 95, how it affects performance and how to tune your buffer cache to maximize performance.

DISCUSSION ----------

Question: What is Unix buffer cache and how is it related to performance?

Answer: Typically, the I/O buffers, or call it cache, store the most recently fetched information from block I/O devices, primarily disk drives. So in general, increasing the number/size of cache increases the chance that commonly accessed data will be in the cache, thereby increasing performance. However, it also reduces the free memory in the system, which increases the probability that the system will run out of physical memory and begin paging or swapping.

If the system commonly has free memory available, and/or if the applications have SMALL memory requirements, the cache size can be increased quite a bit.

If the application is NOT dependent on performance or A/UX is being used as a workstation then, the application should probably use the default cache size, though the cache could be adjusted up or down depending on many factors such as the nature of application, number of processes, file system size etc.

Adding more system RAM definitely gives more flexibility and freedom in terms of using more RAM to cache and thereby affecting the performance, by increasing the probability that the items will be in the cache.

Question: How can proper cache sizing be achieved?

Answer: A/UX buffer cache sizing on A/UX 3.0.1 and later releases may be

achieved through Unix or by the Macintosh memory CDEV. There has been an enhancement made to the Macintosh Memory Control Panel Device (CDEV) to permit viewing and sizing of A/UX buffer cache, the Unix analogue of Macintosh's disk cache, in A/UX Version 3.0.1.

Using this facility, you can set the A/UX buffer cache in the Memory CDEV, located in the Control Panels folder under the Apple Menu. The Cache Size shows the current buffer cache size in use by the running kernel. If the user changes the cache size with the slide control, it will not be changed in the running kernel, until the memory CDEV is closed and the system is rebooted.

The traditional UNIX way, checking and changing the buffer cache size which is the function of the kernel's NBUF and SBUFSIZE parameters, requires you to use commands such as kconfig -a -n /Unix | grep NBUF. Since using kconfig can be confusing and prone to errors if kconfig adjustments are done incorrectly, this enhancement enables you to change the buffer cache through the memory Control Panel, and the system ensures the buffer cache size stays within acceptable limits.

In addition, A/UX 3.0.1 supports static and dynamic cache sizing.

In dynamic cache sizing, the kernel uses an algorithm to size the buffer cache as it boots, based on the value of NBUF=0 or -1 and SBUFSIZE.

NBUF=0

Set the cache to 10% of memory available at boot time.

NBUF=-1

See AWS08 for details on how the buffers are allocated.

In static cache sizing, the buffer cache is set to NBUF * SBUFSIZE bytes, based on the value of NBUF > 0, unless such a cache would be greater than 90% of available memory then it resets to 10% of available memory.

Question: What is the cache setting for the default File/Print as well as database configuration?

Answer: The AWS95 software comes in two flavors, one for the file/print server configuration and the other for database server configuration.

The manual "Tuning Server Performance and Adding Internal Hard Drives" shipped with release 3.1 has details on how to configure the server.

Question: What A/UX cache settings will optimize server performance?

Answer: As a default configuration, the file/print server version of A/UX sets NBUF to -1 and SBUFSIZE to 4096, and the database server version of A/UX sets NBUF to 0 and SBUFSIZE to 4096.

In general, an A/UX system acting as a file/print server, should have a fairly large buffer cache. A/UX systems running only database applications that access disks through raw devices should have a small buffer cache. More detail can be found on this in technical note AWS03.

For more information on A/UX buffer cache, please search the Technical Information for article, "Workgroup Server 95: Cache Optimization, Basic Formula".

Article Change History:
03 Jun 1996 - Added reference to Tech Info Library article.

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Tech Info Library Article Number:13143

ABS Tech Note: AWS10 Apple Workgroup Server 95 Q&A (4/95)

Revised: 4/18/95
Security: Everyone

ABS Tech Note: AWS10 Apple Workgroup Server 95 Q&A (4/95)

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Article Created: 14 November 1994
Article Reviewed/Updated: 18 April 1995

TOPIC ----------

This article is the ABS Technical Note, AWS10 Apple Workgroup Server 95 Q&A.

DISCUSSION ----------

Product Information

Question: What is the relative positioning of the Apple Workgroup Servers and AppleShare family of products?

Answer: The Apple Workgroup Server 60 runs AppleShare 4.0, uses System 7.1, and is targeted at small business and classroom lab environments.

The Apple Workgroup Server 80 runs AppleShare 4.0, uses System 7.1, and is targeted at medium-sized business environments and addressing communications server (that is Internet Router, SNA•ps, X.25, X.400 gateways) needs.

The Apple Workgroup Server 95 runs AppleShare Pro, uses A/UX 3.1 as the server operating system, and is targeted at large or data-intensive workgroups. The AWS 95 is also ideal for running relational database (RDBMS) products such as Oracle7 Cooperative Server.

Question: What is the positioning of the AWS 95 and AppleShare Pro against its competitors?

Answer: The AWS 95 with AppleShare Pro is a high-performance AppleShare file and print server. It is designed for Macintosh-mostly AppleTalk workgroups. Therefore, it is best to position it against AppleShare 3.0 as opposed to Novell NetWare or UNIX-based file/print solutions. AppleShare Pro on the AWS 95 has 4 times the throughput of AppleShare 3.0 on a Quadra 950 and will be up to 4 times faster for many operations. The AWS 9150 is somewhat below the AWS 95, while the

8150 is below that and about the same as a 8150, and AppleShare 4.0.2 on a AWS 60 will be close to performance of a 6150.

For those customers who thought that they needed to move to Novell NetWare or a UNIX-based AFP server to satisfy the performance needs of their Mac-mostly workgroup, the AWS 95 running AppleShare Pro is an ideal choice.

Question: What third party applications are available for the Workgroup Server 95?

Answer: Apple Business Systems has published a Workgroup Server Solutions Guide that details many of the third party client-server solutions available for Apple servers today. The solutions guide can be ordered from Apple Starting Line (S.LINE.ORDER). The phone number is 1-800-825-2145 and the cost is $6.25 per copy. Apple Starting Line is located in Colorado.

General Issues

Question: How does the AWS 95 fit into an AOCE environment?

Answer: Although the AOCE server will not run on A/UX 3.1, there are some advantages to having AOCE on a Mac OS-based server in the network with an AWS 95. The primary advantage is the "key chaining" concept which allows a single network logon.

Question: How do we setup the server if we want to use 4D Server?

Answer: 4D Server performs optimally when run with a large A/UX Buffer Cache and a large Macintosh virtual memory partition (at least 16 MB of real RAM). Therefore, 4D Server should be run in one of the three file/print configurations (as opposed to the database configurations) although it does not require AppleShare Pro.

Question: What type of caches are used by the on the AWS 95?

Answer: There are 3 levels of caching on the server: hardware, OS, and software. The hardware cache is called a Level 2 cache and is basically just fast RAM (15 ns). The OS cache, also called the A/UX Buffer Cache, is a backing cache for the entire file system. This means that all applications, including the local Finder, can take advantage of this cache. Files will remain in this cache until they are pushed out by another file. Therefore, the larger the buffer cache, the more likely a commonly used file will remain in the cache, and the better the performance will be. The AppleShare cache comes in 3 flavors: File Cache, Directory Cache, and Icon Cache. The Directory and Icon Caches store information found in the desktop database and information about file sizes, mod dates, and so on. Therefore, these caches are helpful in improving the navigation of the file system (especially with the Finder). The File Cache allows the server to "read ahead" and "write behind". An AppleTalk network sends data across the network in very small packets (about 4K). Since it is very inefficient for a

server to continually go to disk for 4K chunks of data, the read-ahead cache gathers larger blocks of data (up to 128K) before sending it across the network. The write-behind cache does the same for writes by buffering data in the server's RAM before writing to disk. This greatly improves I/O efficiency thereby improving performance.

Question: What kind of network cabling systems are supported on the AWS 95?

Answer: The AWS 95 currently supports Ethernet and LocalTalk cabling systems. It does not currently support Token Ring networking interfaces. A third-party FDDI card manufacturer has announced FDDI support for the AWS 95 and A/UX.

AppleShare Issues

Question: Is there a way to import User Names, Groups, and Passwords from a text file to a File/Print AWS 95?

Answer: Third party developers of AppleShare management program, such as TechWorks, are incorporating tools for importing Users and Groups from text files into their products. These products will allow administrators to create text files in a specific format that can be transformed into a Users and Groups data file.

Question: Is the AppleShare Pro client software backwards compatible? Will it affect those users who try to access an AppleShare 3.0 server?

Answer: AppleShare Pro includes version 3.5 of the AppleShare Workstation. We chose the version number 3.5 so that it could live independently of the AppleShare version that it is bundled with. Workstation 3.5 is merely a bug fix of older AppleShare Workstations and is fully compatible with older versions of AppleShare. And, older versions of the AppleShare Workstation are fully compatible with AppleShare Pro. However, we recommend that users upgrade to the latest release.

Question: Can I run AppleShare Pro on any other Macintosh or Workgroup Server platforms?

Answer: AppleShare Pro will only run on the AWS 95. However, AppleShare 4.0 is essentially the same product as AppleShare Pro and is shipping now. AppleShare 4.0 uses all of the same caching algorithms as AppleShare Pro and runs on the following 6 platforms: Workgroup Server 60, Workgroup Server 80, Centris 610, Quadra 700, Quadra 800, and Quadra 950. Remember, AppleShare Pro gets some of its performance improvements from its own caches, but the rest comes from A/UX and the AWS 95 PDS card. AppleShare Pro 4.0.1 is required to operate on the RISC-based servers.

A/UX Issues

Question: What is the "Mac environment" in A/UX? How large is it?

Answer: The Mac environment (or virtual Macintosh) is a UNIX process that provides the operating system services required by Macintosh applications. These services include the System 7.0.1 Toolbox, so any well-behaved, 32-bit clean, System 7-aware application can run on the AWS 95 (A "well-behaved" application does not access hardware directly; the A/UX security model prevents user-level access.). The default size of the Mac environment is 16 MB in all configurations, but all UNIX processes run in virtual memory so the available memory can be much larger. This default size of the Mac environment can be changed using the "Virtual Memory" setting in the Memory Control Panel.

Question: How is RAM allocated in A/UX for a File/Print configuration?

Answer: The UNIX kernel and core processes take approximately 7 MB of RAM. The remainder of dynamic RAM is divided between the buffer cache and the applications (like the Mac environment). There is also 51 MB of swap space available for virtual memory for UNIX processes. So, for a 32 MB configuration, 7 MB would be used by the Kernel, leaving 25 MB of dynamic RAM (and 51 MB of swap space). The A/UX Buffer Cache would then take 9 MB, leaving 16 MB of real RAM for UNIX processes. The Mac environment would then look for 16 MB of RAM, taking 16 MB of dynamic RAM and 2 MB of swap space. This would then leave 51 MB of swap space for other UNIX processes. The only caveat here is that the Mac environment does not allocate dynamic RAM for unused portions of it's 16 MB heap. Therefore, if only a portion of the 16 MB Mac Partition is being used at any one time, the remaining dynamic RAM will be available for other processes and Mac applications started later may wind up using swap space. See pages 8-10 of Chapter 2 of the Tuning Server Performance guide for more details.

Question: What about the Database configuration?

Answer: Since high-end databases like Oracle7 may maintain their own file system, they may not need a large buffer cache. Therefore all available dynamic RAM, not used by the Kernel, buffer cache, and the Mac environment, are used by Oracle 7.

Question: What version of AppleTalk runs on the Workgroup Server 95?

Answer: The AWS 95 uses a special version of AppleTalk, designed to run on A/UX. The version will report version 56 when polled but is actually compatible with the latest AppleTalk version 58. Do NOT try to install the latest Mac OS version of AppleTalk from the Network Software Installer (NSI) as it is not compatible with A/UX.

Hardware

Question: Describe the second-level memory cache on the AWS 95.

Answer: The second-level memory cache, which allows the microprocessor to gain

significantly faster access to frequently accessed data or instructions, is located on the AWS 95 Processor Direct Slot (PDS) card. The cache uses 15 ns static RAM. 128 KB is on-board the PDS card. The second-level memory cache is expandable to 512 KB via SIMM upgrade kits. The second-level cache is a write-through, direct-mapped cache.

Question: Describe the SCSI DMA channels on the AWS 95.

Answer: Two SCSI DMA (Direct Memory Access) channels are located on the AWS 95 PDS card. SCSI DMA allows for more efficient data transfers between SCSI devices and DRAM (because data transfer is managed by the SCSI controller and SCSI DMA control logic instead of the microprocessor).

Question: How many SCSI devices can be attached to the AWS 95, and why?

Answer: Up to 20 SCSI devices can be attached to the AWS 95.
• Up to 7 SCSI devices can be attached to the PDS card's external SCSI port.
• Up to 7 SCSI devices can be attached to the main logic board's external SCSI port
• Up to 6 internal SCSI devices can be attached to the PDS card's internal SCSI port. NOTE: in order to attach 6 internal SCSI devices, special carriers would be required such as the 5 drive bracket for the AWS 95.

Question: Is the SCSI interface on the AWS 95 SCSI-1 or SCSI-2?

Answer: The SCSI interface is still SCSI-1. However, the AWS 95 supports the following SCSI enhancements:

Connect/disconnect is supported by A/UX and is available on all 4 SCSI channels. The benefit is more efficient use of SCSI bus (less contention). A SCSI device can momentarily disconnect from the SCSI bus while it is executing a time consuming operation (that is a full stroke seek on a CD-ROM drive). This permits other devices on the bus to execute SCSI commands until the slow device reconnects when it has data available for the initiator of the SCSI command. Applications such as Retrospect A/UX make good use of this feature.

Active termination and active negation technology is supported on the 2 SCSI DMA channels on the PDS card. The benefit is enhanced SCSI signal quality/integrity on the SCSI bus.

SCSI controllers on the PDS card are clocked at 33MHz.

SCSI performance is more efficient because of a combination of A/UX's asynchronous I/O capabilities and the hardware SCSI DMA. Multiple tasks can be queued up and data transfers finish quicker with SCSI DMA.

Question: Does the AWS 95 support fast or wide SCSI-2 options or synchronous transfers? Is there RAID support for the AWS 95?

Answer: The AWS 95 does not currently support either fast or wide SCSI-2 options. Synchronous transfers are also not currently supported. Work is being done with 3rd party providers for SCSI-2 options and RAID solutions. For more 3rd party information, please refer to the Apple Workgroup Server Solutions Guide.

Question: What kind of DRAM can I use with the AWS 95?

Answer: The AWS 95 ships with 4 MB parity DRAM (4 X 9), but non-parity DRAM can also be used (that is 1 X 8, 4 X 8, 16 X 8). The DRAM must be at least 80 ns and you add DRAM in the same way as you would for the Quadra 900/950 (that is you must fill a bank of 4 SIMM slots at a time, with the same DRAM density for each of the SIMMs in the bank). IMPORTANT: if you "mix and match" parity and non-parity DRAM in the AWS 95, make sure that parity checking is disabled in A/UX. To enable or disable parity checking, you should take the following steps, you should, from the Finder, choose Restart from the Special menu. Then, cancel the A/UX Startup process by either clicking the Cancel button or pressing Command-Period while the "Welcome" box is displayed. As a result, the A/UX Startup window opens and the Preferences menu appears in the menu bar. Choose General from the Preferences menu which gives you the check box for memory parity checking.

For more information, refer to Chapter 3, 'Configuring the Software' of "Setting Up and Managing Your Server" manual.

Question: How much data can the DDS-DC 4mm tape drive (sometimes called a DAT drive) back up?

Answer: The Digital Data Storage-Data Compression (DDS-DC) 4mm tape drive can typically back up 4-6GB of compressed data on a 90m tape. Exactly how much data can be backed up depends on the type of data being backed up. The DDS-DC drive can back up 2GB of uncompressed data.

Question: How should hard drives be formatted when they are attached to the AWS 95?

Answer: Hard drives should be formatted as UFS (Unix File System) drives instead of HFS drives. Be sure to use the A/UX version of HDSC Setup. This special version of HDSC Setup will automatically create a mount point for the hard drive.

Troubleshooting

Question: Why does the file system get "dirty" if the server is not shut down gracefully (that is, a power interruption)?

Answer: High performance servers gain most of their performance from caches. However, the data in the cache may not be the same as the data on the disk. It's the servers ability to schedule the writes to disk at a later time that gives

the server a big performance boost. The side affect of this is that losing power before the caches are flushed can cause inconsistencies in data or even lost data. The FSCK (file system check) utility in UNIX allows the file system to rebuild itself and minimizes the possibility that data has been lost.

Question: Are there any guidelines in using or adding INITs and CDEVs to the A/UX Macintosh virtual machine?

Answer: Be extremely careful when using INITs or CDEVs that may be considered "hacks" and bypass the Macintosh toolbox interface. For example, applications such as SCSI Probe and Norton Utilities are not compatible with A/UX.

Question: I have been trying to remove INITs from A/UX by holding down the <shift> key as I do with Mac OS, but it doesn't seem to work, what am I doing wrong?

Answer: This works but is a question of timing. The <shift> key should ONLY be pressed after A/UX has loaded and is about to start up the Macintosh environment (that is, you see a spinning watch come up and the white menu bar is displayed). You have about 5 seconds to start holding down (and keep holding down) the <shift> key. INITs will not load, and the you can then go into the System Folder and remove the incompatible INIT.

Question: How do I rebuild the desktop with the Apple Workgroup Server 95, for example, if my icons become generic icons and the desktop needs to be rebuilt?

Answer: Right after A/UX has loaded and is about to start up the Macintosh environment (that is, you see a spinning watch come up and the white menu bar is displayed), press the <option> and <cmd> keys simultaneously and keep them depressed until you are asked via a dialog box if you want to rebuild the desktop or not.

Question: Why should I avoid pushing the RESET button on the AWS 95?

Answer: Reset the AWS 95 via the front reset button only as a last resort. If certain commands, such as hard disk writes, are occurring when there is a hardware reset, A/UX may detect a corrupted file system, and you may need to go into the A/UX Command Shell to manually check and/or rebuild the file system. Refer to the question above on 'dirty' file systems.

Question: How do I check or rebuild the file system?

Answer: If A/UX Startup says the file system is damaged or corrupt, choose AutoRecovery from the Execute menu to perform a file-system check (by executing fsck) on the root file system. Or, you may run fsck manually by executing the following command:

fsck /dev/default

and in general, answer "y" to any questions that come up. If you want to automatically answer "y" to all questions, use the following command:

fsck -y /dev/default

After A/UX has examined and fixed the file system, type <cmd> <L> to relaunch A/UX.

Question: An application running in the Mac environment of A/UX has hung or seems to have crashed. What should I do?

Answer: If a server application running in the Mac environment of A/UX seems to have hung or crashed, DON'T push the reset button! First, quit and restart the Mac environment by entering the command:

<control> <cmd> <e> [NOTE: type all 3 keys simultaneously]

Please be patient - wait 10-30 seconds for A/UX to quit and restart the Macintosh environment.

Question: Who should I contact if I have a question or find a problem with the Workgroup Server 95.

Answer: The normal chain of technical support should be used to report any problems. This allows the engineering and support teams to process the reports in the most efficient manner and ensure that nothing slips through the cracks.

Question: I've tried to install the drivers for the CD-ROM, and the Finder hangs. What do I do?

Answer: The CD-ROM drivers are actually part of the Unix Kernel on the AWS 95, and so the Mac OS-based drivers are not needed, and are in fact not compatible with A/UX. They should not be installed.

Question: I installed an extension into my System Folder and now my machine won't let me log in. How do I get rid of it?

Answer: First, try holding down the Shift Key during logon to disable inits. If this doesn't work, you can change your logon type to a terminal to eliminate the Macintosh environment and use the Unix shell to delete the files. Please be aware that the Unix environment is case sensitive and that spaces need to be quoted, so you have to use strings like 'cd "System Folder"'. Installing an INIT manager such as Now Startup or Extension Manager is also an option.

Article Change History:
18 Apr 1995 - Made correction of typographical errors.

..TIL13144-ABS_Tech_Note-AWS10_Apple_Workgroup_Server_95_QandA_4-95_(TA30071).pdf

Support Information Services

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Tech Info Library Article Number:13144

Tech Info Library

ABS Tech Note: AWS11 Configuring UFS inode Overhead (8/93)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: AWS11 Configuring UFS inode Overhead (8/93)

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Article Created: 31 August 1993

TOPIC ----------

This technical note documents methods for tuning/creating a UNIX file system with lower overheads in terms of inode allocation, which proves to be important in large size file systems by reclaiming disk space on a Apple Workgroup Server (AWS) 95.

DISCUSSION ----------

The newfs command makes a Berkeley 4.2 UNIX file system (UFS) on the specified device file. The A/UX version of HD SC Setup invokes newfs when creating a UFS.

Each file on the system is represented by an inode, which contains critical information about the file, including ownership, permissions, size, and so on The newfs command allocates disk space for inodes when the UFS is created.

By default, newfs creates an inode for each 4 kilobytes (kb) of available space (2 kb on A/UX 3.0.1 and previous versions). Since each inode takes up 128 bytes on disk, the space dedicated for inodes (or the inode overhead) amounts approximately 3% of the total filesystem space (6% on A/UX 3.0.1 and previous versions). On a 1 gigabyte drive, this works out to be 32 megabytes (MB) or 250,000 inodes (64 MB or 500,000 inodes on A/UX 3.0.1 and previous versions).

If the average size of the files you use is much greater than 4 kb, for example, large, bit-mapped, color graphics, you may want to reclaim some of the inode overhead. Use the -i option to newfs to specify a larger value of bytes-per-inode (or the inode density). Figure 1 graphically depicts the inode overhead on differently-sized filesystems given inode densities of 2, 4 and 8 kb.

For example, if all the files you use contain at least 16 kb of data, you

would choose the bytes-per-inode to be 16384. You need to manually execute the newfs command from the A/UX CommandShell. Important: This must be done when the filesystem is created. If you already have data on this disk drive, be sure to back-up your data before re-creating the filesystem. Assuming the filesystem was previously formatted with HD SC Setup on an external SCSI drive (id 5) on the external main board SCSI bus (bus 2), you would enter the following command.

```
newfs -i 16384 /dev/dsk/c205d0s3 other
```

The filesystem device name is identified as /dev/dsk/cx 0yd0sz where x specifies the bus (1-4), y is the SCSI ID number (0-6), and z is the slice number.

Note: If the data on the filesystem will be predominantly Macintosh files in the AppleDouble format, for example, plain text files, be sure to allocate additional inodes. The AppleDouble format requires two inodes per file, one for the resource fork and one for the data fork.

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Tech Info Library Article Number:13146

Tech Info Library

Delrina Corporation

Revised: 3/3/94
Security: Everyone

Delrina Corporation

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Article Created: 1 September 1993
Article Reviewed/Updated: 3 March 1994

Delrina Technologies

6830 Via de Oro, Suite 240
San Jose, CA 95119

800-268-6082

408-363-2345

408-363-2340 (Fax)

Company Profile:
Software, specializing in fax products for Macintosh and Windows computers.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:13147

Tech Info Library

AppleCD Multimedia Kit for Macintosh: Description (9/93)

Revised: 9/3/93
Security: Everyone

AppleCD Multimedia Kit for Macintosh: Description (9/93)

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Article Created:1 September 1993
Article Revised/Updated: 3 September 1993

TOPIC ----------

This article describes the AppleCD Multimedia Kit for Macintosh computers.

DISCUSSION ----------

The high-performance AppleCD Multimedia Kit for Macintosh computers offers all the components you need to advance your Macintosh into the CD-ROM and multimedia revolution. This multimedia kit gives you access to the wealth of business resources, educational programs, reference libraries, software, databases, clip art, and games available on CD-ROM. It comes complete with an AppleCD 300 external CD-ROM drive, AppleDesign Powered Speakers, all necessary cables and software, and up to five CD-ROM titles.

FEATURES

AppleCD 300 External CD-ROM Drive

- Double-speed (300 KB/sec), 295 ms access
- Lets you read multisession Kodak Photo CDs and play standard audio CDs
- Is compatible with industry-standard ISO 9660/High Sierra file formats and Macintosh HFS

AppleDesign Powered Speakers

- Personal, near-field listening
- High-quality stereo separation and sound
- Excellent frequency response using transducer, tuned-port design, and active equalization
- Built-in noise circuitry for clear sound
- Magnetically shielded

CD-ROM titles

- Apple Multimedia Starter CD
- Compton's Multimedia Encyclopedia
- An entitlement to 3 free CDs of your choice from the "Choose Your Three CDs" brochure.

Ordering Information

AppleCD Multimedia Kit for Macintosh
Order No. M2159LL/A

Related Products

AppleCD Caddy (box of 5)
Order No. M2705LL/A

Apple SCSI Peripheral Interface Cable
Order No. M0207LL/A

Apple SCSI Cable Extender
Order No. M0208LL/A

Article Change History:
3 September 1993 - Added name of CD brochure

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Tech Info Library Article Number:13148

Multimedia Kits: Overview of Three Bundles (9/93)

Revised: 10/12/93
Security: Everyone

Multimedia Kits: Overview of Three Bundles (9/93)

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Article Created: 1 September 1993
Article Reviewed/Updated: 12 October 1993

TOPIC ----------

At the time of introduction, three CD-ROM Multimedia bundles will be available for the USA and English-speaking geographies. The CD-ROM bundles are first in a series of bundled media products including "cross-platform" into the PC world. They include everything a customer needs to get started with the CD-ROM and media applications by creating an all-in-one solution. This article describes the three bundles.

DISCUSSION ----------

The first bundle is targeted at existing Macintosh customers.

Apple CD Multimedia Kit for Macintosh (M2159LL/A)

- AppleCD 300 drive and caddy
  SCSI system cable, and terminator
- AppleDesign Powered Speakers
  Powered speaker and satellite speaker
  Power-supply module (120-V input)
  Computer-to-speaker cable (with 3.5-mm miniplugs)
  CD stereo cable with RCA jacks
  Speaker-to-speaker cable
- Compton’s Multimedia Encyclopedia
- Apple Multimedia Starter CD
- CD-ROM titles brochure: an entitlement to 3 free CDs of the customer's choice
- Complete instructional documentation for setup and reference

* Macintosh System requirements *

- Any Macintosh running system software version 6.0.7 or later with a 68020 microprocessor or greater
- At least 5MB of RAM (or more) recommended

- A color display with 640 x 480 pixel resolution or greater

The second bundle is targeted at the PC-compatible and Windows customers. It's an "internal upgrade" meaning that the CD-ROM and Sound Card are mounted internally.

CD Multimedia Kit for PCs (M2160LL/A)

- AppleCD 300i (internal) drive and caddy
  Internal SCSI and audio cables, AT mounting rails
- AppleDesign Powered Speakers
  Powered speaker and satellite speaker
  Power-supply module (120-V input)
  Computer-to-speaker cable (with 3.5-mm miniplugs)
  Speaker-to-speaker cable
- Media Vision Pro AudioSpectrum 16 sound card
  QuickTime for Windows
  Spectrum 16 software
  Software includes Pocket Recorder, MIDI Sequencer, Software Controlled Mixer, TrakBlaster Pro, Monologue, and Windows drives
- Apple Multimedia Starter CD
  An entertaining introduction with movies, sounds, and pictures.
- Compton’s Multimedia Encyclopedia
- CD-ROM titles brochure: an entitlement to 3 free CDs of the customer's choice
- Complete instructional documentation for setup and reference

* System requirements *

- An 80386SX-based personal computer or greater running at 25 MHz or faster
- At least 4MB of RAM
- 10MB of available hard disk space
- VGA color display
- 5.25" half-height expansion bay
- ISA internal expansion slot
- Microsoft Windows version 3.0 or later and MS-DOS 5.0 or later

The third bundle is targeted at Macintosh Performa customers and is sold through channels that support the Performa line.

Performa Multimedia Upgrade Kit (M2364LL/A)

- AppleCD 300 drive and caddy
  Power cord, SCSI system cable, and terminator
- AppleDesign Powered Speakers
  Powered speaker and satellite speaker
  Power-supply module (120-V input)
  Computer-to-speaker cable (with 3.5-mm miniplugs)
  CD stereo cable with RCA jacks

Speaker-to-speaker cable
- Grolier's Encyclopedia
- Apple Multimedia Starter CD
- Complete instructional documentation for setup and reference

* Performa System requirements* *
- Any Macintosh Performa with a 68020 (with PMMU) microprocessor or greater running Performa system software
- At least 4MB of RAM (5MB or more recommended)
- A color display with 640 x 480 pixel resolution or greater

Article Change History:
12 October 1993 - Removed PMMU information under Macintosh System requirements
3 September 1993 - Revised PC system requirements, removed reference to Aris and MPC Wizard

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Tech Info Library Article Number:13149

Tech Info Library

CD Multimedia Kit for PCs: Description (9/93) (Discontinued)

Revised: 5/7/96
Security: Everyone

CD Multimedia Kit for PCs: Description (9/93) (Discontinued)

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Article Created:1 September 1993
Article Reviewed/Updated: 3 September 1993

TOPIC ----------

This article describes the CD Multimedia Kit for PC-compatible computers.

DISCUSSION ----------

The high-performance CD Multimedia Kit for PCs offers all the components you need to advance your PC-compatible computer into the CD-ROM and multimedia revolution. This multimedia kit gives you access to the wealth of business resources, educational programs, reference libraries, software, databases, clip art, and games available on CD-ROM. It comes complete with an AppleCD 300i internal CD-ROM drive, AppleDesign Powered Speakers, Media Vision Pro AudioSpectrum 16 sound card, all necessary cables and software, and up to five multimedia CD titles. Kit contents exceed Multimedia PC Level 2 specifications.

The AppleCD 300i is a double-speed CD-ROM drive that offers the versatility to read multisession Kodak Photo CDs (with Kodak Photo CD access software) and to play standard audio CDs. You can cut and paste music, sound, animation, photographs, and even movies into your favorite word-processing, presentation, and graphics applications.

AppleDesign Powered Speakers equip your computer with CD-quality near-field stereo output, and excellent stereo separation and sound quality using controlled sound dispersion. Built-in noise circuitry provides clear sound, and each speaker is magnetically shielded for use near computer displays and peripheral devices.

The Media Vision Pro Audio-Spectrum 16 sound card gives you the highest-fidelity sound available on a PC. It includes 16-bit stereo sound and an advanced music synthesizer, and is compatible with Sound Blaster and other popular sound file formats.

..TIL13150-CD_Multimedia_Kit_for_PCs-Description_9-93_Discontinued.pdf

The Apple Multimedia Starter CD provides an interactive exploration of CD-ROM and multimedia including samples of education, business, and home uses for multimedia and “galleries” of clip art, photos, QuickTime movies, sound/music, and more. Each kit includes Compton’s Multimedia Encyclopedia, Apple Multimedia Starter CD, and your choice of additional free CD-ROM titles from a menu of over 30 titles carefully selected for value and quality.

FEATURES

Exceeds MPC Level 2 specifications

AppleCD 300i internal CD-ROM drive

- Double-speed (300 KB/sec), 295 ms access
- Lets you read multisession Kodak Photo CDs and play standard audio CDs
- Is compatible with industry-standard ISO 9660/High Sierra file formats and Macintosh HFS

AppleDesign Powered Speakers

- Personal, near-field listening
- High-quality stereo separation and sound
- Excellent frequency response using transducer, tuned-port design, and active equalization
- Built-in noise circuitry for clear sound
- Magnetically shielded

Media Vision Pro AudioSpectrum 16 sound card

- Highest-fidelity sound available on a PC
- 16-bit stereo sound with an advanced music synthesizer
- Compatible with popular sound file formats including Sound Blaster

CD-ROM titles

- Apple Multimedia Starter CD
- Compton’s Multimedia Encyclopedia
- Your choice of up to 3 free titles from a selection of 30 top CD titles

Ordering Information

CD Multimedia Kit for PC
Order No. M2160LL/A

Related Products

AppleCD Caddy (box of 5)
Order No. M2705LL/A

Article Change History:
3 September 1993 - Removed reference to Aris MPC Wizard CD

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Tech Info Library

Performa Multimedia Upgrade Kit: Description (9/93)

Revised: 9/2/93
Security: Everyone

Performa Multimedia Upgrade Kit: Description (9/93)

==========

Article Created: 1 September 1993

TOPIC ----------

This article describes the Multimedia Upgrade Kit for Macintosh Performa computers.

DISCUSSION ----------

The Performa Multimedia Upgrade Kit includes everything you need to add to your existing Macintosh to enter into the exciting world of multimedia. It combines the speed and power of a Sony double-speed CD-ROM drive and the high quality sound from the AppleDesign Powered Speakers in one affordable package. The Performa Multimedia Upgrade Kit comes complete with two CDs, including the Grolier's Multimedia Encyclopedia and the San Diego Zoo Presents Animals (received through mail-back in return for registration.)

FEATURES

AppleCD 300 External CD-ROM Drive

- Double-speed (300 KB/sec), 295 ms access
- 256KB buffer for faster data transfer
- Automatic lens cleaning and double front-loading door for better dust protection

AppleDesign Powered Speakers

- Optimized output for personal listening
- High-quality stereo separation and sound
- Excellent frequency response using transducer, tuned-port design, and active equalization
- Built-in noise circuitry for clear sound
- Magnetically shielded

Computer Connectivitiy and Use

- Dual-input mixer for computer and CD-generated sound
- Magnetic shielding to prevent computer display image distortion
- Small, sleek design to fit on a desk

Ease of Use

- Built-in dual-channel amplifier
- Power, volume, and balance controls conveniently located on the front panel
- Head phone jack for privacy

CD-ROM Software included

- Apple Multimedia Starter CD
- Grolier's Encyclopedia
- San Diego Zoo presents animals (mail-back in return for registration)

Ordering Information

Apple CD Multimedia Kit for Performa
Order No. M2364LL/A

Related Products

AppleCD Caddy (box of 5)
Order No. M2705LL/A

Apple SCSI Peripheral Interface Cable
Order No. M0207LL/A

Apple SCSI Cable Extender
Order No. M0208LL/A

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Tech Info Library Article Number:13151

Tech Info Library

CD Multimedia Kit for PCs: Technical Spec (Discontinued)

Revised: 5/7/96
Security: Everyone

CD Multimedia Kit for PCs: Technical Spec (Discontinued)

==========

Article Created: 1 September 1993
Article Revised/Updated: 13 September 1993

TOPIC ----------

This article gives the technical specifications for the CD Multimedia Kit for PCs.

DISCUSSION ----------

AppleCD 300i internal drive

Performance:
• Double-speed (300 KB/sec.) data-transfer rate
• 256KB buffer for faster data transfer
• Average access time of 295 ms

Compatibility:
• Compatible with ISO 9660 including High Sierra format and Macintosh HFS
• Supports multiple CD-ROM formats, including CD-ROM XA, multisession Photo CD, CD+G, and CD+MIDI
• Plays standard audio CDs
• CD digital audio data via SCSI

Reliability:
• Automatic lens cleaning and double front-loading door for better dust protection

AppleDesign Powered Speakers

Audio quality:
• Tuned-port bass-reflex system for extended low-frequency response
• Active equalization for best frequency response at all listening levels
• Focused sonic dispersion to optimize output for personal, near-field

listening
• Noise-reduction circuitry for audio clarity

Computer connectivity and use:
• Dual-input mixer for computer-and CD-generated sound
• Magnetic shielding to avoid image distortion on computer displays
• Small, sleek design to fit on a desk
• Compatible with virtually any personal computer, CD or audio cassette player, or television supporting sound output
• Built-in dual-channel amplifier
• Power, volume, and balance controls conveniently located on the front panel
• Headphone jack for privacy

Pro AudioSpectrum 16 sound card 16-bit sampling and playback

• 8-, 12-, and 16-bit PCM 2 kHz-44kHz in stereo
• Dynamic filtering 4 Hz-20 kHz programmable
• Yamaha YMF262 (OPL-3) 20-voice synthesizer

Volume control:
• Master volume: 0 to -62 dB (1 dB/step)
• Input mixer +1 to -60 dB (2 dB/step)

Signal audio output:
• 1 V p-p reference

Dynamic range and signal to noise:
• Synthesized and mixed audio: 90 dB
• Sampled audio PCM: 90 dB
• Total harmonic distortion: 0.05%

Frequency response:
• 30 Hz-20 kHz (+/- 3 dB)

System requirements:
• An 80386SX-based personal computer or greater running at 25 MHz or faster
• 4MB of RAM or greater
• 10MB of available hard disk space
• VGA color display
• 5.25" half-height expansion bay
• ISA internal expansion slot
• Microsoft Windows version 3.0 or later and MS-DOS 5.0 or later

Ordering Information

CD Multimedia Kit for PC
Order No. M2160LL/A

Related Products

AppleCD Caddy (box of 5)
Order No. M2705LL/A

Article Change History
13 September 1993 - Added system requirements for Media Vision sound card

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:13152

Tech Info Library

CD Multimedia Kit for Macintosh: Specifications (Discontinued)

Revised: 8/19/96
Security: Everyone

CD Multimedia Kit for Macintosh: Specifications (Discontinued)

==========

Article Created: 2 September 1993
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

This article gives the technical specifications for the Macintosh Multimedia Kit components.

DISCUSSION ----------

AppleCD 300 external drive

Performance:
- Double-speed (300 KB/sec) data transfer rate
- 256KB buffer for faster data transfer
- Average access time of 295 ms

Compatibility:
- Fully compatible with Macintosh operating system software, including System 7 and QuickTime software
- Compatible with ISO 9660 including High Sierra format and Macintosh HFS
- Supports multiple CD-ROM formats, including CD-ROM XA, multisession Photo CD, CD+G, and CD+MIDI
- Plays standard audio CDs
- Supports CD digital audio data via SCSI

CD 300 Size and weight:
- Height: 1.96 in. (5.0 cm)
- Width: 7 in. (17.75 cm)
- Depth: 13.1 in. (33.4 cm)
- Weight: 6.29 lb. (2.85 kg)

Formats supported:
- Multisession Kodak Photo CD
- ISO 9660/High Sierra
- Macintosh HFS

- CD-ROM XA
- CD+MIDI
- Standard Audio CDs

Interfaces:
- One headphone jack (front panel)
- Two SCSI 50-pin connectors for connection to the Macintosh and other SCSI devices (rear panel)
- Two RCA audio output jacks for external amplifier or amplified speakers (rear panel)

Capacity:
- Mode 1: 656 MB
- Mode 2: 748 MB

Audio Playback:
- Playing time: more than one hour
- Frequency response: 20 to 20,000 Hz

Electrical Requirements:
- Power requirements:
  External: 100 to 240 V AC, 50/60 Hz
  Internal: +5V DC ± 5% , 12 V DC ± 10%
- Power consumption:
  External: 0.28 A AC (drive on)
  Internal: 350 mA maximum for +5V and 750 mA average, 1.5 A peak for +12V

Environmental requirements:
- Operating temperature: 41° F to 104° F (10° C to 40° C)
- Storage temperature: -22° F to 122° F (-30° C to 65° C)
- Relative humidity: 5% to 90% noncondensing

AppleDesign Powered Speakers

Audio quality:
- Tuned-port bass-reflex system for extended low-frequency response
- Active equalization for best frequency response at all listening levels
- Focused sonic dispersion to optimize output for personal, near-field listening
- Noise-reduction circuitry for audio clarity

Computer connectivity and use:
- Dual-input mixer for computer- and CD-generated sound
- Magnetic shielding to avoid image distortion on computer displays
- Small, sleek design to fit on a desk
- Compatible with virtually any personal computer or electronic device with stereo audio line out player, or any television supporting sound output
- Built-in dual-channel amplifier
- Power, volume, and balance controls conveniently located on the front panel

• Headphone jack to provide privacy

Speaker type:
• Full range, tuned port, bass reflex

Maximum output:
• 90-dB sound pressure level (SPL) at 0.5m at 90 Hz

Maximum input voltage:
• 2 V peak-to-peak

Interfaces:
• One stereo computer-sound input port
• One stereo CD/audio input port
• One stereo headphone output port

Controls:
• Power on/off
• Balance
• Volume

Power Source:
• 15-V DC power supply

Electrical requirements:
• Line voltage: 100 to 240 depending on the power-supply module
• Frequency: 50 to 60 Hz
• Power: 40 watts maximum

Environmental requirements:
• Operating temperature: 50° F to 104° F (10° C to 40° C)
• Storage temperature: -40° F to 116.6° F (-40° C to 47° C)
• Relative humidity: 20% to 85% noncondensing
• Maximum altitude: 15,000ft. (4722 m)

Speaker Size and Weight:
• Height: 9.25 in. (23.1 cm)
• Width: 4.5 in. (11.2 cm)
• Depth: 4.75 in. (11.9 cm)
• Weight: 4.8 lb. (2.2 kg)

Ordering Information

AppleCD Multimedia Kit for Macintosh
Order No. M2159LL/A

Related Products

AppleCD Caddy (box of 5)
Order No. M2705LL/A

Apple SCSI Peripheral Interface Cable
Order No. M0207LL/A

Apple SCSI Cable Extender
Order No. M0208LL/A

Article Change History:
19 Aug 1996 - Corrected misspelling.

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Tech Info Library Article Number:13155

Tech Info Library

Performa Multimedia Upgrade Kit: Specifications (Discontinued)

Revised: 8/19/96
Security: Everyone

Performa Multimedia Upgrade Kit: Specifications (Discontinued)

==========

Article Created: 2 September 1993
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

This article gives the technical specifications for the Performa Multimedia Kit components.

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AppleCD 300 external drive

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• Double-speed (300 KB/sec) data transfer rate
• 256KB buffer for faster data transfer
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• Fully compatible with Macintosh operating system software, including System 7 and QuickTime software
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Electrical Requirements:
- Power requirements:
  External: 100 to 240 V AC, 50/60 Hz
  Internal: +5V DC ± 5% , 12 V DC ± 10%
- Power consumption:
  External: 0.28 A AC (drive on)
  Internal: 350 mA maximum for +5V and 750 mA average, 1.5 A peak for +12V

Environmental requirements:
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- Volume

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Ordering Information

AppleCD Multimedia Kit for Performa
Order No. M2364LL/A

Related Products

AppleCD Caddy (box of 5)

Order No. M2705LL/A

Apple SCSI Peripheral Interface Cable
Order No. M0207LL/A

Apple SCSI Cable Extender
Order No. M0208LL/A

Article Change History:
19 Aug 1996 - Corrected misspelling.

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Tech Info Library Article Number:13156

ABS Tech Note: DAL27 REXEC Time-outs For TCP (8/93)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL27 REXEC Time-outs For TCP (8/93)

==========

Article Created: 31 August 1993

TOPIC

This Technical Note discusses session establishment timing between a DAL Client and Server using the REXEC facility of TCP/IP.

DISCUSSION

REXEC daemons: function in the DAL environment

REXEC is a standard daemon used in TCP/IP environments. Its primary function is to listen for incoming requests from remote hosts and respond appropriately. Specifically for Data Access Language, REXEC is used by the various DAL Servers to establish sessions with DAL Clients. In the A/UX, VAX/VMS, and VM/CMS host environments, REXEC will respond by logging in the USERID of the client on behalf of the client. For AS/400 and MVS, a sub task is spawned as part of a main server task.

Port numbers

Each DAL Server is configured to listen for connections on a specific REXEC port number. By default, DAL uses the de-facto standard of 512. Once the server is started, it waits to receive a connection request on the specified port number. Upon receiving a request, a validation is made against the user (client) making the request using the host's security facilities. If validated, a connection is then initiated back to the client on a different port number and the session begins. The port number that the server uses to respond back to the client varies from session to session; the REXEC daemon listener port is constant (unless changed in the DAL Server's configuration and a restart of the server is performed).

Timing issues

Since there can only be one client using the services of REXEC at any given time, a request to REXEC while it is in use will result in an error. The

exact codes returned to the client will vary depending upon the server and client versions and platforms. The amount of time REXEC will be busy (and thus unavailable for any other client requests) will also vary based upon server platform due to size, implementation, load factors, and so on.

In all cases, REXEC is busy starting from the time it receives a connection request until (1) The request is satisfied via establishment of a session over a different port number or, (2) The request is rejected due to authorization failure. Once the session has been established or rejected, REXEC is then free to receive a new connection request.

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Tech Info Library Article Number:13157

..TIL13158-ABS_Tech_Note-DAL28_HOME_Key_8-93_(TA30076).pdf

Tech Info Library

ABS Tech Note: DAL28 HOME Key (8/93)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL28 HOME Key (8/93)

==========

Article Created: 31 August 1993

TOPIC ----------

This Technical Note describes the need when making connections with DAL Clients to DAL Servers in the IBM environment, to send a HOME key as part of the login or logoff sequence.

DISCUSSION ----------

When making connections with DAL Clients to DAL Servers in the IBM environment using 3270 (MVS/TSO, MVS/VTAM, VM/CMS) or 5250 (AS/400) datastream protocols, it may be necessary to send a HOME key as part of the login or logoff sequence. HOME is not currently implemented within DAL's connection scripts. These scripts are commonly known as 'DAL Preferences' (Macintosh System 7.x), 'hosts.cl1' (Macintosh System 6.0.x), and 'hosts.dal' (DOS/Windows clients).

It is still possible to access the field desired by using a combination of forward tab (FTAB) or backward tab (BTAB) characters. Experimentation should be done with a 'live' 3270 or 5250 session to determine the exact number of tabs required.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13158

ABS Tech Note: DAL29 UPDATE Statements and $sqlcode (8/93)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL29 UPDATE Statements and $sqlcode (8/93)

==========

Article Created: 31 August 1993

TOPIC ----------

When a DAL UPDATE statement is executed and does not modify any rows, $sqlcode returns 0, even though some kind of error response would be appropriate.

DISCUSSION ----------

The problem is that DAL is using dynamic SQL statements, and DBMS vendors do not return an appropriate SQLCODE to DAL under this circumstance, so there is no way for DAL to return an error.

If this information is necessary, you can check for a non-zero set of data by doing a SELECT FOR EXTRACT and checking $rowcnt to make sure it is greater than zero.

For instance, the following SQL will update no rows in the demonstration tables, but return an $sqlcode of 0:

```
UPDATE offices SET city = 'Port Ludlow' WHERE office_nr = 444;
print $sqlcode;
```

To verify whether or not this command modifies rows, the following code can be used:

```
SELECT city FROM offices WHERE office_nr = 444 FOR EXTRACT;
print $rowcnt;
```

If $rowcnt is greater than zero, then the equivalent UPDATE statement will modify rows.

This limitation may be resolved in a future release of DAL if the appropriate information is available from the host DBMS.

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Tech Info Library Article Number:13159

ABS Tech Note: DAL30 Error Inserting Date With Select (8/93)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL30 Error Inserting Date With Select (8/93)

==========

Article Created: 31 August 1993

TOPIC ----------

This tech note describes a problem with DAL and the Oracle DBMS relating to inserting dates.

DISCUSSION ----------

If you try to insert into a table using values from another table with an INSERT INTO <table> SELECT phrase, and if there's a date involved the insert will fail with an Oracle error. You can insert the same date value if you use an INSERT INTO <table> VALUES phrase. The following code shows an example:

```
set $datefmt="DDMMM YY";
set $timefmt="HHMM";
insert into table_name values ("234234", "@#$@", "12Feb 92 0901");
insert into location values ("AAAAAA", "BBBB");

insert into table_name select location.station, "BBBB", "12Feb 92 0901"
from location where location.building = "BBBB";
```

••••Remote DAL Error••••
•Primary Error: untranslated DBMS error (-10207)
•Secondary Error: (-1830)

This is not a DAL error, but an Oracle error, and the same error can be reproduced under SQL*Plus. You can work around this error by removing the time field and only inserting the date.

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Tech Info Library Article Number:13160

..TIL13161-ABS_Tech_Note-DAL31_DAM_And_Non-Text_Data_8-93_(TA30080).pdf

Tech Info Library

ABS Tech Note: DAL31 DAM And Non-Text Data (8/93)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL31 DAM And Non-Text Data (8/93)

==========

Article Created: 31 August 1993

TOPIC --------------------

This Technical Note is about Data Access Manager and non-data returns.

DISCUSSION --------------------

When using either the high-level or low-level interfaces of the Data Access Manager, by default the text is coerced to return as text strings. There are routines that allow a programmer to install and remove their own result handlers to override this (DBInstallResultHandler, DBRemoveResultHandler, see IM VI 8-65), but if the underlying database adaptor is Data Access Language, it must also be coerced to return non-text data as well. If you don't take that step then DAL will return data to DAM as text and your own result handlers will not be called.

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Tech Info Library Article Number:13161

Tech Info Library

ABS Tech Note: DAL32 Terminal Servers and DAL (8/93)

Revised: 9/2/93
Security: Everyone

ABS Tech Note: DAL32 Terminal Servers and DAL (8/93)

==========

Article Created: 31 August 1993

TOPIC ----------

This technical note discusses a problem with reliability problems when trying to connect to a DAL server through an asynchronous connection and a terminal server.

DISCUSSION ----------

When attempting to connect to a DAL server via the Asynchronous network adapter through a terminal server, you may have trouble writing connection scripts that work reliably. A common symptom is that the connection scripts work when in debugging mode, but they don't work as consistently (or at all) when in standard mode.

Some terminal servers do baud rate recognition and require two carriage returns at the beginning of the script to activate them. DAL may send those returns with too little delay for the server to recognize them. The solution is to add a short wait between the two returns by modifying the script from '\r\r' to '\r\w1\r', which forces DAL to pause long enough for the terminal server.

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Tech Info Library Article Number:13162

Tech Info Library

System 7.1.x: Foreign Language Keyboard & KCHR Resource (1/95)

Revised: 1/17/95
Security: Everyone

System 7.1.x: Foreign Language Keyboard & KCHR Resource (1/95)

==========

Article Created: 1 September 1993
Article Reviewed/Updated: 17 January 1995

TOPIC ----------

How can I obtain and install the keyboard layout for French, Spanish, Italian, German, and so on in System 7.1.x?

DISCUSSION ----------

With the release of System 7.5 there is built in support for many European languages. For more informaiton search the Tech Info Library for the article titled, "Keyboard Control Panel: International Layouts (10/94)".

You can add keyboard layouts from other countries to your system by dragging keyboard resources known as a KCHRs into your System Folder.

You can extract the KCHR from the internationalized version of system software of the country you want. Using German as an example, find the German 7.1 Images on the System Software CD (part of the Developer CD series). Double click on the Deutsch 7.1.sea and download the software to your hard drive. Double click on the System suitcase, and you'll see the KCHR for German.

Once you've extracted this resource, follow these steps:

1) Drop the German KCHR file into your U.S. System File within the System Folder.
2) Choose the Keyboard Control Panel in the Apple Menu. You'll see that for Keyboard Layout, German KCHR is now one of the choices. If you highlight German KCHR, your keyboard now becomes German.
3) You can check that you're in German mode by choosing Key Caps from the Apple menu. You'll find, for example, that the "y" key now becomes the "z" key and vice versa.

For your reference, system resources of type KCHR map key codes to

character codes. Each resource of type KCHR normally corresponds to a natural language, and represents the character set in which the language is written.

Another good source of information is the book called "Guide to Software Localization" which you can order through APDA.

Article Change History:
17 Jan 1995 - Added System software version and System 7.5 information.

Support Information Services

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Tech Info Library Article Number:13163

Tech Info Library

MacTest Pro: Description (3/94)

Revised: 3/30/94
Security: Everyone

MacTest Pro: Description (3/94)

==========

Article Created: 1 September 1993
Article Reviewed/Updated: 30 March 1994

TOPIC ----------

What is MacTest Pro?

DISCUSSION ----------

MacTest Pro is diagnostic software that can test logic boards, video cards, monitors, floppy drives, hard drives, and CD ROM drives. It can also detect software corruption problems, and the existence of multiple System Folders on a volume.

Refer to the Service price pages for information on ordering MacTest Pro.

For information on which computers are tested by each version of MacTest Pro, check the Tech Info Library using "MacTest" as the search word.

Article Change History:
30 March 1994 - Removed reference to specific test modules.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:13165

Network Software Installer 1.3.2: What it Fixes (9/93)

Revised: 9/2/93
Security: Everyone

Network Software Installer 1.3.2: What it Fixes (9/93)

==========

Article Created: 1 September 1993

TOPIC -----

This article lists the major changes made to NSI 1.3.2.

DISCUSSION -----

Network Software Installer 1.3.2:

- Installs AppleTalk v58.0.2 onto PowerBook Duos. NSI 1.3 was incompatible.
- Recognizes the Centris and Quadra 800 units and installs the latest EtherTalk software. NSI 1.3 didn't install the correct EtherTalk software to the Centris and Quadra 800.
- Installs A/ROSE v1.2 which is compatible with the Macintosh IIvx, and allows use of the Ethernet NB card on the IIvx system.
- Fixes the compatibility issue between EtherTalk and DecNet tools which was broken with NSI 1.3.
- Improves the performance of built-in Ethernet for all 68040-based systems. Anyone using a Quadra should install NSI 1.3.2 for this reason.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13167

Tech Info Library

Newton MessagePad: NiCds in Alkaline Battery Holder (8/93)

Revised: 9/2/93
Security: Everyone

Newton MessagePad: NiCds in Alkaline Battery Holder (8/93)

==========

Article Created: 2 September 1993

TOPIC -----

Can I use Nickel-Cadmium (NiCd) AAA batteries in the Newton MessagePad's alkaline battery holder in place of AAA alkaline batteries?

DISCUSSION -----

You may be able to operate your Newton MessagePad with Nickel-Cadmium (NiCd) batteries in the alkaline battery holder. Apple, however, does not support their use and recommends that you use NiCd battery packs designed specifically for the Newton MessagePad.

If you do put NiCd batteries in the MessagePad's alkaline battery holder, each battery must have .22 Amp-hour (Ah) capacity. If you use batteries with a different capacity, the MessagePad may fail to operate and/or may suffer damage.

Alkaline and NiCd batteries function differently in the MessagePad. If you put an alkaline battery holder filled with NiCd batteries into your MessagePad, the MessagePad will treat the batteries as if they were alkaline instead of NiCd. This may cause the MessagePad to shutdown more quickly.

Note that the Newton MessagePad will not recharge any batteries that are in the alkaline battery holder. Also, do not insert the alkaline battery holder (with any type of batteries) into the Newton Battery Charger. This may damage both the batteries and the charger.

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Tech Info Library Article Number:13168

Tech Info Library

PowerBook Duo Dock and Ethernet Problem (9/93)

Revised: 7/8/94
Security: Everyone

PowerBook Duo Dock and Ethernet Problem (9/93)

==========

Article Created: 2 September 1993

TOPIC -----

I'm having a network problem. The network is a star network controlled by Farallon's StarLet. The network contains a Macintosh Quadra 800, a Macintosh Quadra 950, and three PowerBook Duo 230 computers with Duo Dock, each has Apple Ethernet cards.

The network works properly over LocalTalk, but after selecting Ethernet the StarLet control LEDs indicating collisions related to the Duo Docks. All of the Ethernet cards are from Apple. The cards in the Duo Docks were tested in a Quadra and seem to work properly. Below are the software configurations being used:

1) Network CDEV ver. 2.3.3
   EtherTalk Phase 2 ver. 2.3.1
   AppleTalk ver. 57.0.4

2) Network CDEV ver. 2.3.3
   EtherTalk Phase 2 ver. 2.3.1
   AppleTalk ver. 58.0

3) Network CDEV ver. 2.3.3
   EtherTalk Phase ver. 2 2.3.1
   AppleTalk ver. 56

4) Network CDEV ver. 2.3.3
   EtherTalk Phase 2 ver. 2.5
   AppleTalk ver. 57.0.4

5) Network CDEV ver. 2.3.3
   EtherTalk Phase ver. 2 2.5
   AppleTalk ver. 58.0

6) Network CDEV ver. 2.3.3

EtherTalk Phase 2 ver. 2.5
AppleTalk ver. 56

DISCUSSION ----------

The problem is most likely caused by the presence of AutoRemounter 1.0 in the Control Panels folder of the PowerBook Duo computers. If this software is removed, does the problem persist? (The software needs to be removed, turning it off does not help.) If this resolves the problem, please ask the customer to not re-install the software. An updated version of AutoRemounter that corrects this problem should be available around mid September 1993.

Support Information Services

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Tech Info Library Article Number:13171

ARA and CCL With NOTE Command On Hang Up (9/93)

Revised: 9/3/93
Security: Everyone

ARA and CCL With NOTE Command On Hang Up (9/93)

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Article Created: 2 September 1993

TOPIC ----------

I have modified a CCL to work with the Defender security system. Everything works fine until I click the disconnect button. At this point the Macintosh hangs with "Sorry a system error ... ARA error Type 11". The entire operating system hangs and the Macintosh must be rebooted.

Now the Macintosh works fine with all other CCL's, and dials up and handles all Defender Prompts.

1) The customer has a large CCL. The number of branches is not over 128 but it is large. Could the size of the CCL cause memory errors?

2) Do we know of errors with the disconnect routine?

DISCUSSION ----------

We think that when you wrote your CCL you used a NOTE command in the hang up section of the CCL. The NOTE command is not supported in the hang up section of the CCL. This is a known problem and has been reported, although we can't say for sure whether or not it will be fixed in the next release of ARA.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13172

Express Modem: Latin America Compatible (9/93)

Revised: 9/3/93
Security: Everyone

Express Modem: Latin America Compatible (9/93)

==========

Article Created: 3 September 1993

TOPIC ----------

I read the back of an Express Modem Specifications sheet and it states that it's compatible with MOST South American countries. Why isn't it compatible with all South American countries?

DISCUSSION ----------

The Express Modem is compatible throughout Latin America. Fortunately, the telephone systems in Latin America are compatible with each other. The other bit of good news is that if a product receives FCC approval it is automatically approved in the Latin American countries.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13173

Tech Info Library

Hebrew Font: Characters Appear as Squares (9/93)

Revised: 9/3/93
Security: Everyone

Hebrew Font: Characters Appear as Squares (9/93)

==========

Article Created: 1 September 1993

TOPIC ----------

When booting from the Hebrew Installation disk #1, the Hebrew font isn't properly loaded and all of the characters appear as squares.

DISCUSSION ----------

This is a known problem, however the workaround is very easy. It requires that you lock the installation disk before booting the system. If the disk isn't locked, the fonts aren't loaded properly and the font defaults to Geneva. The Hebrew characters map to the square character in Geneva.

The disk is also corrupted. If you created your disks from the Developer CD, just recreate the disk and be sure to lock it before booting from it.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13176

Tech Info Library

PhotoGrade: Requirements for Increased Resolution (9/93)

Revised: 9/3/93
Security: Everyone

PhotoGrade: Requirements for Increased Resolution (9/93)

==========

Article Created: 1 September 1993

TOPIC ----------

I thought the LaserWriter IIf and IIg printed images using PhotoGrade at a much higher resolution. I'm not seeing a difference.

DISCUSSION ----------

PhotoGrade is available on the LaserWriter IIf and IIg, but must be enabled by setting the Color/Grayscale radio button in the "Print" dialog.

Also, PhotoGrade requires quite a bit of memory to print large, high quality images. Increase the RAM in the IIf and IIg.

Use the LaserWriter Utility that ships on a disk with the IIf and IIg to adjust the PhotoGrade settings for more levels of gray, or higher resolution.

Finally, some applications don't automatically use Photograde, and must be set to do so. When possible, set the default to "Use printer's settings," to allow the IIg to set the line screen and use Photograde. If the line screen must be set manually, set it to 106 lpi (the default for the IIg).

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13177

Tech Info Library

Windows 3.x: Accessing Apple LaserWriters (4/96)

Revised: 4/22/96
Security: Everyone

Windows 3.x: Accessing Apple LaserWriters (4/96)

==========

Article Created: 1 September 1993
Article Reviewed/Updated: 22 April 1996

TOPIC ----------

How do I access Apple LaserWriters from a PC running Windows 3.x?

DISCUSSION ----------

Windows ships with a basic PostScript driver upon which sit individual vendors' Windows Printer Description (WPD) files to support custom features of specific printers. Users wishing to access Apple printers via Windows should acquire the latest driver from Microsoft.

The WPD for the LaserWriter IINTX will support basic printing services for the IINT, IINTX, IIf, and IIg. There are problems with the NTR, but it may work in some situations. There's no support under the IINTX WPD for custom features on the IIf and IIg, like FinePrint and PhotoGrade. The LaserWriter IINTX WPD is available from Microsoft through a variety of sources, including their CompuServe forum.

Beginning with the LaserWriter Pro and Select series, Apple offers more support for Windows users. Unlike LaserWriters in the II series, the Pro and Select ship with a floppy disk specifically for Windows 3.x users. It contains new WPD files for the Pro and Select series, and a crude LaserWriter Utility which will allow power users to gain control of custom features such as FinePrint, PhotoGrade, 600dpi, and so on.

All of this comes with a strict caveat from Apple: do not use non-standard or non-commercial Windows applications when using Apple LaserWriters.

Article Change History:
22 Apr 1996 - Removed incorrect information.
09 Mar 1994 - Verified information

..TIL13178-Windows_3-x-Accessing_Apple_LaserWriters_4-96_(TA30093).pdf

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Tech Info Library Article Number:13178

Tech Info Library

Control Panel: Fixing Abnormal Icons (11/94)

Revised: 11/11/94
Security: Everyone

Control Panel: Fixing Abnormal Icons (11/94)

==========

Article Created: 1 September 1993
Article Reviewed/Updated: 11 November 1994

TOPIC ----------

My Control Panel icons look strange, where they used to have some design to them, they now appear generic.

DISCUSSION ----------

You should be able to recover the icons by rebuilding the desktop by holding down the Command and Option keys at startup. You will see a dialog box asking if you want to rebuild the desktop, select yes and it will preform the operation and continue the boot process.

If this doesn't fix the problem, delete the invisible Desktop DB and Desktop DF files from the hard drive. The easiest way to do this is to use a disk utility program to make these files visible, then drag them to the trash.

Article Change History:
11 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:13179

Tech Info Library

AppleTalk Packet Analyzer: Watch (9/93)

Revised: 9/3/93
Security: Everyone

AppleTalk Packet Analyzer: Watch (9/93)

==========

Article Created: 1 September 1993

TOPIC --

I need to analyze packets on my AppleTalk network. Are there any shareware options for this?

DISCUSSION --

Watch is a freeware (copyrighted, but free to distribute) utility from Cayman Systems.

You can find it on AppleLink following this path:

```
Software Sampler
   3rd Party Demos/Updates
        Software Updates
            Companies A-D
                Cayman Systems
```

To locate a vendor's address and phone numbers, use the vendor name as a search string.

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Tech Info Library Article Number:13180

Tech Info Library

System File: What Increases Size Under System 6 and 7 (9/93)

Revised: 9/3/93
Security: Everyone

System File: What Increases Size Under System 6 and 7 (9/93)

==========

Article Created: 1 September 1993

TOPIC ----------

When I choose "About this Macintosh..." from the Finder, it says the System is 4 megabytes or larger. Why is the System so big?

DISCUSSION ----------

The System can get big, but unless you have a large number of fonts it should never be larger than 3MB under System 7, and much less than that under System 6. There are several reasons the system will appear to grow. Here are the most common ones.

System 6

System 6 acts differently from System 7 in that its RAM heap is a fixed resource which needs to be constantly managed if you have many INITs and/or fonts installed. HeapFixer from CE Software is a simple utility which allows setting the System 6 heap size. The basic rule under System 6 was to keep the System showing 25% free (that is, white) space in the "About this Macintosh..." dialog.

These are the contributors to System File size under System 6:

- Fonts and INITs - both contribute to System memory requirements.
- Bit mode - System 6 is a 24-bit operating system. This means that unless a System 6 Macintosh has a third-party INIT enabling 32-bit addressing (such as Maxima from Connectix), all installed physical RAM over 8MB will show up as additional System memory.

System 7

Under System 7, the operating system maintains more extensive guards against running out of memory. Basically, the Cache (configured in the Memory Control Panel) controls how much space to allocate to the

System. Memory management was improved under System 7, and users no longer need to worry about the "25% free space" concept. The System will typically take up 95-99% of its allocation, leaving only a small bit of white space in the "About this Macintosh..." graphic. This is nothing to worry about. If you get messages that you need more memory, then you can allocate more in the form of Cache, or you should consider adding more RAM if there's none available for additional Cache.

Here are the factors that contribute to a large System File size under System 7:

- Fonts - Previous to version 7.1, each installed font drove the system's RAM requirements up.
- Cache - The amount of RAM Cache allocated in the Memory control panel is included in the overall figure for System RAM requirements. To correct: set the Cache to 256K or less, and restart.
- Extensions - Each extension obtains its own amount of RAM and contributes to a large System RAM requirement.
- Bit mode - if the Macintosh has more than 8MB of physical RAM installed and is set to run in 24-bit mode (under the Memory Control Panel), then the excess over 8MB shows up as System memory. To correct: set the Macintosh to run in 32-bit mode.
- RAM Disk - Macintosh computers supporting the Apple RAM Disk (Quadras and later) can create a RAM disk using a portion of their installed physical RAM. All RAM used in the RAM Disk shows up as System memory in the "About this Macintosh.." dialog.

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Tech Info Library Article Number:13182

Tech Info Library

Hayes SmartCom Fax Print 1.0: Incompatible with AV Macs (9/93)

Revised: 9/8/93
Security: Everyone

Hayes SmartCom Fax Print 1.0: Incompatible with AV Macs (9/93)

==========

Article Created: 7 September 1993

TOPIC ----------

This article describes an incompatibility between:
• Hayes SmartCom Fax Print 1.0 software, and
• the Macintosh Centris 660AV and Quadra 840AV.

DISCUSSION ----------

According to Hayes technical support, SmartCom Fax Print 1.0 software is incompatible with AV Macintosh models. A revision is planned, but a release data is not known as of 7 September 1993.

Customers have experienced severe system crashes on AV Macintosh models when using the SmartCom Fax software. Reinitializing the hard disk is necessary, because Disk First Aid can't repair the damage.

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Tech Info Library Article Number:13183

Tech Info Library

WorldScript: Requires a Script Bundle Like Japanese Lang. Kit

Revised: 9/7/93
Security: Everyone

WorldScript: Requires a Script Bundle Like Japanese Lang. Kit

==========

Article Created: 7 September 1993

TOPIC -----

My understanding of Worldscript is that with system software 7.1 you can use localized Japanese versions of the software without having to run the localized version of the operating system, and use WorldScript-aware applications with the Japanese fonts.

I also need a list of current localized Japanese and Worldscript-aware Applications.

DISCUSSION -----

Yes, you can use localized Japanese versions of software without a localized operating system, but only if you have the Japanese Language Kit installed. It provides the ability to input Japanese text into localized or WorldScript-aware applications.

The Japanese Language Kit is basically installed on top off an already existing System 7.1 system. If the existing system is the U.S. version of System 7.1, then the primary script (what language the system boots from and displays -- for instance, the menu bar) is English. But you can now launch Japanese versions of applications and input Japanese characters just as if they were running on a localized system.

You can also use WorldScript-aware applications with the Japanese fonts, if they have the Japanese Language Kit installed.

You can find a list of current localized Japanese and Worldscript-aware software in the Tech Info Library under "Japanese Language Kit: Overview". The article includes the compatibility list.

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Tech Info Library Article Number:13185

At Ease 2.0: Setting Up For Users (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0: Setting Up For Users (8/95)

==========

Article Created: 7 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

This article describes how to configure At Ease 2.0 for users, including how to turn it on, how to set an administrator password, and how to register users.

DISCUSSION ----------

The At Ease Administrator sets up the At Ease 2.0 system for users and establishes the access privileges each will have. The administrator should follow these directions to get At Ease 2.0 ready for use (it is important to follow the steps in order):

TURNING ON AT EASE 2.0

When you first turn on your computer, At Ease is turned off. (This is true even if your copy of At Ease was factory-installed.) To turn it on:

Step 1

Double-click the hard drive icon on the upper-right side of the screen.

Step 2

Double-click the At Ease Setup icon.

Step 3

Click the On button in the At Ease Setup window.

SETTING AN ADMINISTRATOR PASSWORD

The administrator should set his or her own password so that no one else can access the At Ease Setup program to change access privileges.

Step 1

Choose Administrator Password from the Options menu.

Step 2

Type the password of your choice in the top box. The password can be up to 15 characters. Dots will appear in place of the letters you type to keep the password confidential from people who might be within reading distance of your screen.

Step 3

Retype the password in the second box to confirm it.

Step 4

Type a clue in the large text box. This is optional, but may help you remember your password in the future. It will always be shown when you are asked for the administrator password. Your clue may be up to 63 characters.

Step 5

Click OK.

REGISTERING USERS

Each person who will use the Macintosh should be registered in the At Ease Setup program. You can register up to ten users, each with different access privileges.

Adding a User

Step 1

Click the New button in the At Ease Setup window. The New User window will appear.

Step 2

Type the user's name in the uppermost box.

Adding A Password

Type a password in the second box (optional). Be sure to inform the user of his or her password. All users can change their passwords later if they want to.

Choosing At Ease or the Finder

Step 1

Determine the user's needs and choose whether the user will use At Ease or the Finder. If you choose "Stay in At Ease," skip to step 6.

Step 2

If you chose "Switch to Finder," that user will not be able to use At Ease. Click Done and you will be returned to the At Ease setup screen.

Step 3

Click the Next button to continue registering the user.

Establishing Access Privileges to Programs and Documents

Step 1

Click the Add Applications button. At Ease will search for all application programs on your hard drive on the left, and all of the applications listed for access by this user on the right. (If this is the first time you have set access privileges for this user, the right window will be empty.)

Step 2

In the Add Applications window, select any programs you want this user to have access to. Click Add.

Step 3

When you are done, click OK.

Step 4

To give the user access to other items, such as documents, click the Find Items button.

Step 5

Type all or part of the item's name.

Step 6

Click Finder. The item will show up in the right window.

Step 7

Click Add to add the item to the users list of accessible items.

Step 8

Click OK, then Click Next.

Customizing At Ease Menus

Step 1

If you want the user to see limited, basic menus, leave the Minimal button selected. Minimal limits the commands available to things like Open, Close, Quit and Restart.

Note: Minimal users will not be able to see the Chooser in the Apple menu.

Step 2

If you want the user to have access to all At Ease commands, click the All button. This allows users to perform such tasks as renaming and deleting files, copying files to and from floppy disks and changing Views.

Activating Text-To-Speech

You can have At Ease speak the names of buttons when the pointer passes over them. This is a handy feature for non-readers or people with vision difficulties.

Step 1

To activate text-to-speech, click the "Speak button names" button under Speech.

Step 2

Click Next.

Assigning a Location for Opening and Saving

• Anywhere -- The user can use his or her discretion and save files anywhere on the computer. This limits the administrator's ability to control file management and limits other users' privacy.

• Only in user's folder -- Keeps all the user's documents in one place and limits disk clutter elsewhere.

• Only on floppy -- A good idea if many people are saving many items and could quickly fill up disk space. This gives the administrator complete control over the arrangement and content of the hard disk. However, users will miss the convenience of keeping items stored in one place.

Access to the Finder

Some users who are more familiar with the Macintosh might want access to the Finder. Such access can be made available through At Ease.

Step 1

Click "Allow access to Finder." This is different from choosing the Finder as a startup environment. In this case, the user will start in At Ease but be free to switch to the Finder when he or she wants.

Note: The administrator should always check this if he or she chose At Ease as a startup environment while registering himself or herself.

Step 2

Click Done.

Step 3

Select Quit from the File menu when you finish registering users.

Removing Users

If you decide to remove users from At Ease, follow these steps:

Step 1

Open At Ease Setup. You will be asked for your administrator password.

Step 2

Select the name of the user you want to remove.

Step 3

Click Remove.

Changing Access Privileges

If you decide to adjust the privileges of any of the At Ease users:

Step 1

Open At Ease Setup.

Step 2

Click the name of the user whose privileges you want to change.

Step 3

Click Open.

Step 4

Click Add Applications.

Step 5

Click the Applications you want to remove or add.

Step 6

Click Add or Remove.

Step 7

Click Find Items if you want to change privileges on certain documents.

Step 8

Click the items you want to add or remove.

Step 9

Click Add or Remove.

Step 10

Click OK.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:13186

Tech Info Library

A/UX and TCP/IP Client Delays (9/93)

Revised: 9/7/93
Security: Everyone

A/UX and TCP/IP Client Delays (9/93)

==========

Article Created: 2 September 1993

TOPIC ----------

On A/UX when running any kind of TCP/IP client like ping, ftp, telnet, and so on, A/UX sits for two minutes before proceeding. Other UNIX computers can ping the A/UX computer with no delay.

DISCUSSION ----------

This can happen if the loop back address is not in the /etc/hosts file. Ensure the file contains the following line (all 4 aliases are required):

127.0.0.1 loop lo loo localhost

Restart the computer and it should work as expected.

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Tech Info Library Article Number:13187

At Ease 2.0: Basic Use Tips (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0: Basic Use Tips (8/95)

==========

Article Created: 7 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

This article discusses the basic day-to-day use of At Ease 2.0, including switching between panels, paging through, opening programs and documents, saving, and changing your password.

DISCUSSION ----------

After you have installed and configured At Ease 2.0 for users, you are ready to begin using it. When you start up in the At Ease environment, you will see the At Ease desktop, which looks like two manila folders (called panels), one on top of the other. One of the panels is titled At Ease Items, and the other is titled User Items (or the name of the user who had logged on).

Each of the panels has buttons on it representing applications or documents. The menu commands you can see will vary depending on what access privileges you were assigned by the administrator.

Switching Between Panels

To switch between the At Ease Items panel and your panel, just use the mouse to click the tab where the name of that panel appears.

Paging Through

If you can't see the item you want on the panel where you expect it to be, it is probably on a different page. At Ease supplies extra pages for buttons when you fill the first page and need more space.

The number of the page you are on, as well as how many total pages compose the panel you are looking at, appears at the bottom of the panel. You will also see upturned page corners on one or both of the bottom corners of the panel, indicating there are additional panels to be seen.

To move between pages:

1) Click the left corner to go to the previous page, or click the right corner to go to the next page.

2) To go to a specific page, hold down the Command (Apple) key and type the number of the page you want.

Opening Programs and Documents

To open either a program or a document, use the mouse to move the pointer to the button you want and click once. The desktop will disappear and you will see the window of the application or document you chose.

Saving Documents

When you save a new document, your choice of where to save it is determined by how the administrator set up your user registration. There are three possibilities, and you may need to check with your administrator to be certain which applies to you.

The three settings are:

• Anywhere -- Allows you to save documents anywhere on the hard disk or on a floppy. When you choose Save or Save As, you are presented with a dialog box that lets you select the location you wish.

• Only in user's folder -- Allows you to save documents only in your own folder. When you choose Save or Save As, the dialog box presented lets you save directly to your folder. You can also create new folders within your folder.

• Only on floppy disk -- Prevents you from saving documents to anything but a floppy disk. When you choose Save or Save As, you are prompted to insert a floppy disk unless one is already in the drive.

Changing Your Password

You may want to change the password the administrator gave you when you were registered. Here's how:

1) Start the Macintosh.

2) Click the Change button in the Password window that appears.

3) Type your old password in the upper box, then type your new password in the box below it. Type it again in the third box to confirm it. (Dots will appear in place of letters as you type, so people nearby can't see your password.)

4) Click OK.

Article Change History:

14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:13188

Tech Info Library

AWS 95: Volume and Finder File Limit (10/93)

Revised: 11/16/93
Security: Everyone

AWS 95: Volume and Finder File Limit (10/93)

==========

Article Created: 24 August 1993
Article Reviewed/Updated: 26 October 1993

TOPIC ----------

I have an Apple Workgroup Server (AWS) 95. I want to know if I can use a hard disk larger than 2GB, and if the 32,000 file limit for the Finder in Macintosh OS applies to the Finder environment under A/UX? If I have four separate UFS partitions on a drive, and mount them all into folders in the Shared Data folder, can each one have 32,000 files, and still be viewable from the Finder environment?

DISCUSSION ----------

System Volume Limit

Since the AWS 95 uses A/UX it also has a 2GB file system limit, however, you could have several UNIX file systems mounted to get around some of the limitations of the Finder's 2GB limit. The Finder based AppleShare clients can not. What this means is that in order to use larger volumes on the AWS 95 you must share partitions of less than 2GB as separate AppleShare Volumes. Following is an example to help explain:

You could have A/UX and AppleShare Pro running on a 400 MB partition and mount a couple of partitions of about 2GB in size. Although the total size of disk space available is more than 2GB, A/UX deals with each UNIX mounted disk as a separate volume, therefore not running into the 2GB limitation. Do not share the parent directory of the mount points, share each one of the mount points separately.

Finder File Limit

For clarification, the maximum number of files and folders on a Macintosh HFS volume is 65,535 while the maximum number of files in a folder is 32,768. Remember these numbers are maximums under specific conditions, not for a practical implementation.

For the server client, the HFS limits for number of files to a folder still apply when sharing a UNIX volume, no more than 32,768 files should be present in a single directory (folder). We recommend 500 or less as the practical maximum.

On an AWS 95 with the Finder running in the Macintosh process under A/UX, the same limits for number of files to a folder still apply as the native Macintosh Finder. No directory may contain more than 32,768 files, however once again we recommend 500 files or less as the practical maximum.

Article Change History:
26 Oct 1993 - Included information on volume size limit.

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Tech Info Library Article Number:13189

Tech Info Library

At Ease 2.0: Menus, Commands and Shortcuts (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0: Menus, Commands and Shortcuts (8/95)

==========

Article Created: 7 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

This article discusses:
• the location and function of At Ease menus and commands
• keyboard equivalents for menu commands.

DISCUSSION ----------

INTRODUCTION

The menus are located in a bar across the top of the screen.

Depending on what menus were selected for you when you were registered to use At Ease, you will either have minimal menus or full menus.

• Minimal menus contain the only commands that are always available in almost any situation, like Close, Quit, and Restart. They do not include the ones marked "optional" in the following list.

• Full menus include all of the commands discussed here.

The keyboard equivalents allow you to execute the commands without pulling down menus. They require that you hold down the indicated keys simultaneously.

(In this article, the key used to activate keyboard equivalents is called the Apple key because the keycap is labeled with the Apple logo. It is sometimes referred to as the Command key.)

THE FILE MENU

If you have access to full menus, you will see a menu with ten items in it. If you have access to minimal menus, you will see a menu with two items, Close and Quit.

New Folder (optional)

• Keyboard Shortcut: Apple-key, N

This command allows you to create new folders on your user panel. After a new folder is created, you can save new documents to it, but you can't move any documents that were previously created into the new folder.

To create a new folder:

1) If necessary, click the tab of your user panel to bring it to the foreground.

2) Choose New Folder from the File menu.

3) Type in a name for the new folder, then click New Folder. A button for the new folder will appear on your user panel.

Open Other (optional)

• Keyboard Shortcut: Apple-key, O

This command allows you to open programs or documents. If you have access privileges to open items anywhere, you can open any item on any disk using this command. If not, this command lets you open only those items on your user panel.

To open an item:

1) Choose Open Other from the File menu.

2) If necessary, use the pop-up menu (above the window with the list of items) to move to a different level or a different disk.

3) Click on the item you want to open, then click Open. The Open Other screen disappears and the window of the selected item appears.

Close

• Keyboard Shortcut: Apple-key, W

This command allows you to close any window that is currently open. It does not close the At Ease Items panel or the User Items panel.

Rename (optional)

• Keyboard Shortcut: Apple-key, R

This command allows you to rename any document or folder on your user panel.

1) If necessary, click the tab of the user panel to bring it to the foreground.

2) Choose Rename from the File menu.

3) Click on the item you want to rename, then click Rename.

4) Type a new name for the item in the text box, then click Rename.

Delete (optional)

• Keyboard Shortcut: Apple-key, D

This command allows you to delete any document or folder on your user panel. Deleting a folder also deletes its contents permanently.

To delete an item:

1) If necessary, click the tab of the user panel to bring it to the foreground.

2) Choose Delete from the File menu.

3) Select the item you want to delete by clicking on it.

4) Click Delete.

5) To permanently delete the item, click delete again.

Get Info (optional)

• Keyboard Shortcut: Apple-key, I

This command give you information about any item on either At Ease panel. To get information about an item:

1) Click the tab of the panel that contains the item you want information about.

2) Choose Get Info from the File menu.

3) Select the item you want information about by clicking it, then click Get Info. An information box appears for you to read.

4) Click OK when you're done reviewing the information.

Find (optional)

• Keyboard Shortcut: Apple-key, F

This command helps you find items on either At Ease panel. To find an item:

1) Choose Find from the File menu.

2) Type the name (or part of the name) of the item you're looking for in the

text box. Be sure, if you type the whole name, to type it exactly, including spaces and punctuation.

3) Click Find.

4) Select the name of the item you're looking for from the list shown. Information about the item will appear below it, and the Go To button will become active.

5) Click Go To, and the Find screen disappears. You will see the panel where the item is located, and its button will flash.

Copy to Floppy (optional)

• No Keyboard Shortcut

This command allows you to copy items from your user panel onto a floppy disk. To copy onto a floppy disk:

1) If necessary, click the tab of the user panel to bring it to the foreground.

2) Choose Copy to Floppy from the File menu. If there is not a floppy disk in the drive, At Ease will prompt you to insert one.

3) Select the item you want to copy. To select more than one item, hold down the shift key while you click each name.

4) Click Copy. At Ease will show you the progress of the copying process. When the message disappears, the process is complete.

Copy From Floppy (optional)

• No Keyboard Shortcut

This command allows you to copy items from a floppy disk onto your user panel. To copy from a floppy disk:

1) If necessary, click the tab of the user panel to bring it to the foreground.

2) Choose Copy From Floppy from the File menu.

3) Select the item or items you want to copy.

4) Click Copy. A message appears showing the progress of the copying process. When the message disappears, the process is complete.

Quit

• Keyboard Shortcut: Apple-key, Q

This command returns you to the At Ease Welcome screen. From there you can

shut down the computer, or another user can start up with At Ease. (If there is only one At Ease user, this command does not appear.)

THE EDIT MENU

- Keyboard Shortcuts:

Undo:	Apple-key, Z
Cut:	Apple-key, X
Copy:	Apple-key, C
Paste:	Apple-key, V
Select All:	Apple-key, A

All users see the same Edit menu commands. The commands work the same as those in an application's Edit menu. They are available when you have selected a command that asks you to enter text (such as Rename or Find in the File menu).

THE VIEW MENU

- No Keyboard Shortcuts

You will only have access to the View commands if you have full menu access privileges. These commands let you change the way items on either At Ease panel are organized. To change your view:

1) Click the tab of the panel whose organization you want to change.

2) Choose a view from the view menu. There are four options:

   - By Name -- organizes the items alphabetically.

   - By Size -- organizes the items according to size, starting with the largest. When the pointer moves over an item in the View By Size mode, the item's size is displayed below its name.

   - By Kind -- organizes the items in alphabetical order by category (application, document, etc.). Also documents are organized by the application in which they were created. When the pointer moves over an item in the View By Kind mode, the item's kind is displayed below its name.

   - By Date -- organizes items by the date they were last modified, starting with the most recent. When the pointer moves over an item in the View By Date mode, the date the item was last modified is displayed below its name.

THE SPECIAL MENU

What commands you may see depends on your menu access privileges.

Turn Sound Off

- No Keyboard Shortcut

This command lets you turn off the sounds At Ease makes when executing tasks like turning a page, clicking a button, etc. When you select Turn Sound Off, the menu command becomes Turn Sound On.

Eject Disk

• Keyboard Shortcut: Apple-key, E

This command lets you eject a floppy disk. If there is more than one disk present, you will see a list of disks to choose from. If there is only one disk, the command will read "Eject <disk name>".

Go To At Ease Setup (may require a password)

• No Keyboard Shortcut

This command takes you to the At Ease Setup program, where access privileges can be set. If the At Ease owner has set an administrator password, you will need to enter it to gain access.

Go To Finder (optional)

• No Keyboard Shortcut

This command is available if you have the access privileges to switch to the Finder. Choosing this command brings the Finder forward; At Ease will still be running in the background. You can go back to At Ease by selecting Go To AT Ease from the File menu of the Finder.

Restart

• No Keyboard Shortcut

This command restarts the computer. Any floppy disks are ejected in this process, and applications are automatically quit. The first thing you will see when the computer restarts is the At Ease welcome screen.

Shut Down

• No Keyboard Shortcut

This command shuts down the computer so that it is safe to switch off the power. Any disks are ejected and applications quit.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13190

Tech Info Library

Macintosh AP and UPI Solutions: A Listing (9/93)

Revised: 9/16/93
Security: Everyone

Macintosh AP and UPI Solutions: A Listing (9/93)

==========

Article Created: 16 September 1993

TOPIC ----------

My university is ordering Macintosh computers to replace old terminals for the production of our newspaper and magazine publications. I need current information dealing with connectivity to AP (Associated Press) and UPI (United Press International) news feeds.

DISCUSSION ----------

We checked the Redgate Buyers Guide on AppleLink, performed a periodical search, and also contacted AP in New York for their recommendations. To locate a vendor's address and phone number, use the vendor name as a search string.

- Crosfield Inc's Newsline Solo, a wire photo receiver and transmitter kit, is reportedly popular in Canada but is also distributed in the United States.

- Mainstream Data Inc's Mainstream Newscast uses FM band or satellite dish to deliver leading news wires directly to Macintosh computers. Mainstream's software runs in the background and lets users clip stories on particular topics. Several wire services, including Reuters, Dow Jones and The Associated Press, use Mainstream's technology to deliver news.

- WireManager by Baseview Products, Inc.
  Business And Professional Software
  Wire capture and story management
  Macintosh Plus or larger; 1 MB of RAM; System 6.0.5 or later.

  WireManager was developed for the news publishing and broadcasting industry. It sorts through the wire, automatically placing stories where users want them. It is available in low- and high-speed formats to capture AP, UPI, Canadian Press, Reuters, broadcast wires and foreign

language wires, including AFP, EFE and Notimex. The program puts stories to primary and backup paths and creates the subject directories asked for. When used in conjunction with Baseview's IQue database, searches can be tailored to specific tasks, cutting back on the time wasted searching the wires. WireManager is designed as a primary wire capture package for multiuser environments, but can also function equally well in single-user environments. Copy management can be made even easier with NewsEdit, Baseview's editorial program, but WireManager is compatible with all major word processing and layout programs, MultiFinder and AppleShare. WireManager's AppleShare setup allows the creation of "read only" and "group access" folders.

- The Internet has become a medium for bulk information service delivery. Dow Jones News Retrieval, Dialog, AP, UPI, Reuters, Mead Data, Lexis/Nexis, and LEGI-Slate.

- Dialog Information Services, Inc. offers more than 400 databases and two terabytes of data.

- Dow Jones News/Retrieval gives users access to more than 1,300 publications and 70 databases.

- Numerous consumer BBs offer access to UPI and AP (typically for read access only - you must check with the supplier):

  America Online Inc.
  ClariNet Communications Corp.
  CompuServe Inc.
  DataTimes
  Dialog Information Services, Inc.
  Dow Jones & Co.
  GE Information Services
  Mainstream Data Inc.
  Mead Data Central Inc.
  NewsNet Inc.
  Prodigy Services Co.
  Ziff Desktop Information

- The Associated Press distributes PhotoExpress, a service that sends non-AP photos via PhotoStream. PhotoStream transmits photos in digitally compressed format. Advances in compression technology allows AP to offer the service to non-AP newspapers and distributors.

  They also distributes AP MacArchive, which enables users to store and retrieve digital image files from the AP's image-handling system. AP MacArchive is Mac-based and utilizes Aldus Fetch to store and retrieve files.

  AP recommends the university contacts their local AP Bureau for consultation. The local bureaus are said to be very familiar with Macintosh connectivity and solutions. AP as well recently came out with a new Macintosh solution called NewsHound. It is a database with a HyperCard search engine.

..TIL13192-Macintosh_AP_and_UPI_Solutions-A_Listing_9-93.pdf

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13192

Tech Info Library

PostScript Printer Description Files: Naming Rules (9/94)

Revised: 9/1/94
Security: Everyone

PostScript Printer Description Files: Naming Rules (9/94)

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Article Created: 8 September 1993
Article Reviewed/Updated: 1 September 1994

TOPIC ----------

What is the syntax or rules, if any, for properly naming PostScript Printer Description (PPD) files so they work properly with LaserWriter driver 8.0?

DISCUSSION ----------

There really is no "standard" for naming PPD files. If there are any naming conventions required for the files, those conventions will be application specific. For example, PageMaker 4.2a requires that the PPD filename end with ".PPD" and is located in a specific folder within the System Folder.

With regard to LaserWriter driver 8.0, all PPD files will work with the driver regardless of their name. Generally speaking, PPD files are named after the printer model name stored in the printer's ROMs. If the PPD files are named something different, those files will still work fine since the driver looks at the contents of the PPD file. The only possible loss of functionality in this case would be with the "Auto Setup" feature.

With "Auto Setup," LaserWriter driver 8.0 first queries the printer for its Model Name and PostScript ROM version stored in its ROMs. It then takes this information and looks for an associated PPD file with either of the following criteria:

- PPD filename matches Model Name exactly (that is, Apple LaserWriter IIf)
- PPD filename matches Model Name with version (in other words, Apple LaserWriter IIf v2010.113)

If either of the above criteria are not met, then the driver asks to manually select the PPD. Once selected, the PPD file will work fine. Again, unless the application using the PPD file has specific requirements for PPD filenames, it really is the contents of the file that's most important.

Article Change History:
01 Sep 1994 - Reviewed for accuracy.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:13193

Tech Info Library

LW Driver 8.0: Different Printer Icons in the Chooser (9/93)

Revised: 9/8/93
Security: Everyone

LW Driver 8.0: Different Printer Icons in the Chooser (9/93)

==========

Article Created: 8 September 1993

TOPIC ----------

When using the LaserWriter Driver 8.0, (to select a printer in the Chooser) I noticed that there are several different printer icons that appear in the Chooser. What do these icons represent?

DISCUSSION ----------

There are a total of four different icons that can appear when selecting a printer using the LaserWriter 8.0 driver.

1. The standard icon resembles a black and white laser printer with a piece of paper containing two ampersands emerging from the printer. This icon is displayed whenever a black and white PostScript printer with a resolution less than or equal to 600 DPI is selected.

2. If a color printer is chosen then the two ampersands are replaced by a piece of paper with a rainbow of colors on it.

3. A small magnifying glass appears whenever the chosen printer has a print resolution exceeding 600 DPI.

4. If a print spooler is chosen, then an icon representing a spool of thread will be displayed.

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Tech Info Library Article Number:13194

Tech Info Library

LaserWriter Driver 7.2 and Earlier: Helvetica Font Bug (9/93)

Revised: 9/8/93
Security: Everyone

LaserWriter Driver 7.2 and Earlier: Helvetica Font Bug (9/93)

==========

Article Created: 8 September 1993

TOPIC ----------

When using Helvetica bold underline, the underline only goes under about three quarters of the word or sentence. The underline command works fine with plain Helvetica, but not when you bold. I have reinstalled the fonts and the problem still exists.

DISCUSSION ----------

There is a known bug in previous versions of the LaserWriter driver (version 7.2 or earlier) where the problem outlined can occur. The problem is due to how the driver calculates the underlining as opposed to how the application calculates it.

This problem has been fixed in LaserWriter driver version 8.0. Try using this version of the driver.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13195

Tech Info Library

Personal Computer Memory Card Industry Association (PCMCIA)

Revised: 9/8/93
Security: Everyone

Personal Computer Memory Card Industry Association (PCMCIA)

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Article Created: 2 September 1993

Personal Computer Memory Card Industry Association

1030G East Duane Ave.
Sunnyvale, CA 94086

408-720-0107

Company Profile:
An independent organization that defines the PCMCIA standard of designing add-on cards for hand-held and portable computers. There's a charge for a copy of the standards.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13199

Tech Info Library

XTND: DataViz Translator Compatibility (9/93)

Revised: 9/8/93
Security: Everyone

XTND: DataViz Translator Compatibility (9/93)

==========

Article Created: 2 September 1993

TOPIC --------------------

Who supports XTND? Are DataViz translators compatible with XTND?

DISCUSSION --------------------

Claris supports XTND in all Claris applications.

Most, but not all DataViz translators are XTND compatible. Call DataViz for more information on compatibility questions about their translators with XTND.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13200

Tech Info Library

AppleShare Print Server: Prevent Error Page Printing (9/94)

Revised: 9/27/94
Security: Everyone

AppleShare Print Server: Prevent Error Page Printing (9/94)

==========

Article Created: 9 September 1993
Article Reviewed/Updated: 27 September 1993

TOPIC ----------

I'm using AppleShare File and Print Server 3.0.2 and I'm having the following problem with the print server. Every time a print job is canceled or an error occurs, a report is printed notifying me the job has been canceled or there has been an error. This is no problem on a printer with ordinary paper, but it is a problem on a printer with film because it wastes film.

Is it possible to change the print server in someway to disable this feature?

DISCUSSION ----------

Here is how to prevent Error pages from printing on all printers captured by the AppleShare Print Server.

1) Using ResEdit open the AppleShare Print Server.

2) Open the "EXOP" resource.

3) Open the resource ID 128.

4) Change the first four zeros to ones.

5) Quit ResEdit and Save the changes.

Article Change History:
27 Sep 1994 - Reviewed.

Support Information Services

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Tech Info Library Article Number:13201

Tech Info Library

Express Modem Software: Using with Fax/Data Modem (4/95)

Revised: 4/24/95
Security: Everyone

Express Modem Software: Using with Fax/Data Modem (4/95)

==========

Article Created: 10 September 1993
Article Reviewed/Updated: 24 April 1995

TOPIC ----------

This information only applies to PowerBook Fax/Data Modem (2400 bps) users.

DISCUSSION ----------

Using the Express Modem software with the PowerBook Fax/Data Modem requires that the Serial Tool be installed in the Extensions folder.

The Serial Tool is installed in one of two ways:

• If you already have the older Fax Sender software installed on your system, the Serial Tool will remain on your system after installing the new Express Modem software.

• You can manually drag the Serial Tool into your Extensions folder.

These articles can help you locate software updates mentioned here:

• Where To Find Apple Software Updates
Lists online services for "free" Apple software updates.

• Obtaining Apple Product Support in the USA
Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
24 Apr 1995 - Added info on where to find software updates online.

Support Information Services

..TIL13202-Express_Modem_Software-Using_with_Fax-Data_Modem_4-95_(TA30116).pdf

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13202

Tech Info Library

OneScanner w/Accessory Kit for Windows: Kits Contents (9/93)

Revised: 9/9/93
Security: Everyone

OneScanner w/Accessory Kit for Windows: Kits Contents (9/93)

==========

Article Created: 9 September 1993

TOPIC ----------

I have a question regarding the prices pages for the Apple OneScanner w/Accessory Kit for Windows. The description of the product says that it "Requires appropriate cables. Includes Apple OneScanner (C0187LL/A) w/Accessory Kit (C0217LL/A)."

I thought a cable shipped with the accessory kit? If it doesn't, what does "Requires appropriate cables" mean? Does Apple make the appropriate cables and if we do what is the part number?

DISCUSSION ----------

The comment "Requires appropriate SCSI cables is ambiguous and applies only to the Macintosh bundle. We've requested the Price Pages be reworded to more accurately represent what the accessory kits contain.

B0634LL/A The Apple OneScanner w/Accessory Kit (for Windows™) includes:

- documentation & software
- SCSI I/F Card, cable & terminator

B0634LL/C The Apple OneScanner w/Accessory Kit (this is the Macintosh bundle) includes:

- documentation & software

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Tech Info Library Article Number:13204

Tech Info Library

DART 1.5.2: Macintosh AV Series Incompatibility (10/93)

Revised: 10/6/93
Security: Everyone

DART 1.5.2: Macintosh AV Series Incompatibility (10/93)

==========

Article Created: 10 September 1993
Article Reviewed/Updated: 6 October 1993

TOPIC ----------

DART v1.5.2 doesn't work on the Quadra 840AV and Centris 660AV. When will a new version be available?

DISCUSSION ----------

DART 1.5.3 is now available, adding the following enhancements and fixes:

- Compatibility with new Macintosh Quadra 840av and Centris 660av machines.
- Compatibility with Apple Event Manager 1.0.1 (a component of AppleScript).

You can obtain DART from two locations on AppleLink:

1) On the Apple SW Updates icon:
Software Sampler
Apple SW Updates
Macintosh
Utilities

2) On the AppleLink version of the Tech Info Library, posted as an enclosure to the article: "DART 1.5.3: Version Change History (10/93)"

Article Change History:
6 October 1993 - Added information on DART 1.5.3 and where to obtain it.

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Tech Info Library Article Number:13206

Japanese Localized Versions of Applications (9/93)

Revised: 9/14/93
Security: Everyone

Japanese Localized Versions of Applications (9/93)

==========

Article Created: 14 September 1993

TOPIC -----

I need a list of locations where I can purchase Japanese localized versions of the software without having to go to Tokyo. We're looking for Lotus 1-2-3 1.1J , Claris MacWrite II/Pro J, and Microsoft ExcelJ.

DISCUSSION -----

You can purchase Japanese localized versions of application software through any authorized Kanji Reseller. There's an article in the Tech Info Library that lists all of them country-wide. Search under "Kanji" and "Reseller".

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13207

Tech Info Library

Macintosh AV Systems: Source for Stereo Y-Adapter (4/95)

Revised: 4/4/95
Security: Everyone

Macintosh AV Systems: Source for Stereo Y-Adapter (4/95)

==========

Article Created: 10 September 1993
Article Reviewed/Updated: 04 April 1995

TOPIC ----------

What do I need to connect my Macintosh AV system to a stereo system?

DISCUSSION ----------

The Macintosh AV system computers (Quadra 840AV, Centris 660AV, and Power Macintosh with AV card) can record stereo audio to a hard disk from most audio sources such as VCRs, televisions, amplifiers, and CD, LP, and cassette players by directly connecting their sound out cables to the computer. The sound files stored on the hard drive can then be edited by using software on the computer.

Stereo audio input for the Macintosh AV computers requires a "Stereo-Y-Adapter" to connect the two RCA plugs (commonly used in audio equipment) to the 3.5mm stereo mini-jack on the rear of the Macintosh (indicated by the microphone icon).

Apple does not offer this adapter with the Macintosh AV system computers. A similar adapter (mono only) was included with previous Macintosh computers.

Functional adapters are available from electronics stores and hi-fi retailers nationwide.

Article Change History:
04 Apr 1995 - Corrected size of phono plug.
08 Mar 1995 - Added reference to Power Macintosh.

Support Information Services

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Tech Info Library Article Number:13208

Tech Info Library

PowerBook 145B Plus Pack: Description (6/96)

Revised: 6/5/96
Security: Everyone

PowerBook 145B Plus Pack: Description (6/96)

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Article Created: 13 September 1993
Article Reviewed/Updated: 5 June 1996

TOPIC ----------

This article describes the Apple PowerBook 145B Plus Pack.

DISCUSSION ----------

The Apple PowerBook 145B Plus Pack is a Apple PowerBook 145B computer bundled with a Global Village PowerPort Bronze internal fax/data modem and additional software.

The Global Village PowerPort Bronze modem can send fax documents at 9,600-bps and can receive fax documents at 4,800-bps. It can send/receive data at 2,400-bps.

The Plus Pack also includes the following application and communications software:

Applications

Aldus TouchBase Pro
Aldus DateBook Pro
Macintosh PC Exchange

Communication Software

ZTerm data send/receive software
Global Village fax send/receive software
AppleLink Online Services *

* on-line services require usage fees, see documentation for details

Article Change History -
05 Jun 1996 - Corrected minor typographical error.
03 Dec 1993 - Corrected fax receive speed for the PowerPort Bronze Modem.

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Tech Info Library Article Number:13209

Tech Info Library

PowerBook 145B Plus Pack: Technical Specifications (6/96)

Revised: 6/5/96
Security: Everyone

PowerBook 145B Plus Pack: Technical Specifications (6/96)

==========

Article Created: 13 September 1993
Article Reviewed/Updated: 5 June 1996

TOPIC ----------

This article provides the technical specifications for the Apple PowerBook 145B Plus Pack.

DISCUSSION ----------

Microprocessor

- Motorola 68030, running at 25 MHz

Memory

- Comes with 4 MB of pseudostatic RAM (PSRAM)
- Expands to 8 MB of RAM with the addition of a 4-MB PSRAM expansion card
  Disk storage
- One built-in 1.4-MB Apple SuperDrive disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks
- One internal 80-MB hard disk drive

Display

- 10-in. (254 mm) diagonal
- Backlit supertwist passive-matrix display, 640 by 400 pixels

Battery

- Nickel-cadmium which provides 2 to 3 hours of portable computer use before recharging is necessary

Keyboard

- Built-in keyboard with standard Macintosh layout
- Two-level tilt adjustment

Trackball

- 30-mm (approx. 1.25-inch) diameter, two buttons

Clock/Calendar

- CMOS custom-integrated circuit with long-life lithium battery

Interfaces

- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other input devices
- Two RS-422 serial ports for LocalTalk networking, printers, modems, and other devices
- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices
- One sound-out port for external audio amplifier or headphones
- One sound-in port

Modem

- Internal PowerPort Bronze 2400-bps modem from Global Village Communication with fax send/receive at 9600 baud; includes fax send/receive software and ZTerm software

Sound Generator

- Apple Sound Chip provides 8-bit sound and is capable of driving stereo headphones or other stereo equipment. These devices connect to the Apple Sound Chip through the sound port.

Sound input

- 8-bit sound, sampled at 11 or 22 kHz

Disability Access

- CloseView, Easy Access, and visible-beep software are included with system software. These built-in third-party options provide alternative means of input and output for people with disabilities.

ADB Power Requirements

- Maximum current draw for all ADB devices is 200 mA (milliamps) (a maximum of three ADB devices is recommended)

Electrical Requirements

- Line voltage: 110 to 220 V
- Frequency: 50 to 60 Hz

Environmental Requirements

- Operating temperature: 50° F to 104° F (10° C to 40° C)
- Storage temperature: -13° F to 140° F (-25° C to 60° C)
- Relative humidity: 20% to 80% noncondensing
- Operating altitude: 0 to 10,000 ft. (0 to 3048 m)
- Maximum storage altitude: 15,000 ft. (4722 m)

Size and Weight

- Height: 2.25 in. (5.7 cm)
- Width: 11.25 in. (28.6 cm)
- Depth: 9.3 in. (23.6 cm)
- Weight: 6.8 lb. (3.03 kg)

Article Change History:
05 Jun 1996 - Corrected minor typographical error.

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Tech Info Library Article Number:13210

Tech Info Library

AppleShare 3.0.3 Patch (11/95)

Revised: 11/4/95
Security: Everyone

AppleShare 3.0.3 Patch (11/95)

==========

Article Created: 10 September 1993
Article Reviewed/Updated: 4 November 1995

TOPIC ----------

This article describes where to find the AppleShare 3.0.3 Patch on AppleLink, and the AppleShare 3.0.3 Patch Read Me First information.

DISCUSSION ----------

AppleShare 3.0.3 Patch is available. These articles can help you locate this software update:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

AppleShare 3.0.3 Patch - Read Me First

AppleShare 3.0.3 is the latest maintenance release of the AppleShare 3.0 product. It fixes problems found in the AppleShare 3.0, 3.0.1, and 3.0.2 releases.

Version 3.0.3, also fixes some incompatibilities between AppleShare and AOCE, and AppleShare and AppleSearch. It is recommended that you upgrade your AppleShare server to version 3.0.3 if you will be running either AOCE or AppleSearch on your server.

The AppleShare 3.0.3 patch application will upgrade your AppleShare 3.0, 3.0.1, or 3.0.2 product to AppleShare 3.0.3. It will upgrade the file server and AppleShare Admin to version 3.0.3. It will not upgrade the print server.

There are actually four different patch applications available. Choose the one that is appropriate for the language of AppleShare you are using.

IMPORTANT NOTICE:
If you have previously upgraded your AppleShare 3.0 or 3.0.1 server to AppleShare 3.0.1 Rev. B, you must replace your Rev. B File Server Extension file with either the 3.0 or 3.0.1 version prior to running the AppleShare 3.0.3 Patch Program.

To perform the upgrade, follow these steps:

1) Quit all applications that are currently running on your server.

2) Turn off any virus detection software.

3) Open the patch application. A text box with important information will appear.

4) Click Patch after reading the information in the text box.

5) Reboot your system.

Article Change History:
04 Nov 1995 - Reviewed for technical accuracy.
21 Jul 1994 - Changed section on where to find software updates.

Support Information Services

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Tech Info Library Article Number:13211

Tech Info Library

Apple MessagePad: Moving Items to Memory Card (5/95)

Revised: 5/5/95
Security: Everyone

Apple MessagePad: Moving Items to Memory Card (5/95)

==========

Article Created: 9 September 1993
Article Reviewed/Updated: 5 May 1995

TOPIC ----------

How do I move items, such as notes, names or Calendar items, from my Apple MessagePad's main memory to a PCMCIA memory card?

DISCUSSION ----------

There are three ways to move items from the Apple MessagePad's memory to a PCMCIA memory card:

1) Use the Newton Connection Kit to synchronize your Apple MessagePad with a computer, then restore the data to the Apple MessagePad's memory card. You can only move notes and name cards with this method.

2) Copy individual items or groups of items to your memory card. You can move notes, name cards, or Calendar items with this method.

3) Remove software applications from your Apple MessagePad, then download them to your MessagePad's memory card.

Using the Connection Kit
==========

To use the Connection Kit to move notes and name cards to a memory card, you must synchronize your Apple MessagePad with a computer. Be sure to have the PCMCIA card inserted into your Apple MessagePad. This produces two synchronization files -- one for your Apple MessagePad and one for your memory card.

To move name cards

Step 1:

Open your Apple MessagePad synchronization file, then tap twice on Name File and select all the names from the Name File window.

Step 2:
Choose "Cut Name File Entries" from the Edit Menu. Then open the memory card synchronization file and tap twice on Name File.

Step 3:
Choose "Paste Name File Entries" from the Edit Menu. This places all the names on the memory card.

To move notes

Step 1:
Open the Apple MessagePad synchronization file, then tap twice on Notepad and select all the names from the Notepad window.

Step 2:
Choose "Cut Notes" from the Edit Menu. Then open the memory card synchronization file and double-click on Notepad.

Step 3:
Choose "Paste Notes" from the Edit Menu. This places all the notes on the memory card.

After you have moved your name cards and notes, synchronize your Apple MessagePad again. Your names and notes are now moved to your memory card.

Copying Items
==========

You can move individual names or notes by tapping the envelope icon and choosing "Move To Card," but individual Calendar or To Do items can not be moved with this method. If you have many items to move or you need to move all your Calendar items, follow these steps:

To move Notes and Calendar items to your memory card

Step 1:
Tap the Find button, then tap Look For and choose "dates after".

Step 2:
Enter an early date such as 1/1/80 and tap All. The Apple MessagePad displays an overview of all Notes and Calendar appointments created after the specified date.

Step 3:
Tap on the Envelope icon and choose Move to Card.

To move Name, ToDo items or Calendar day notes

Step 1:
Tap the Find button, then tap Look For and choose Text.

Step 2:
Enter the letter "a" and tap All. The Apple MessagePad displays a list of items that contain the letter "a".

Step 3:
Tap on the Envelope icon and choose Move To Card. Repeat this step for other letters in the alphabet. You should be able move all your items to your memory card by repeating these steps with all the vowels.

Moving Software Packages

Step 1:
Tap the Extras button, then tap Prefs.

Step 2:
Tap Memory in the Preferences menu, then tap Remove Software. Tap the name of the software applications that you want to move. This removes these software applications from main memory.

Step 3:
Tap X twice to return to the Extras drawer, then tap Card. Tap Store new items on card, then tap X again.

Step 4:
Reinstall your software applications with the Connection Kit. They are stored on the memory card.

Article Change History:
05 May 1995 - Changed Newton to Apple MessagePad. Reformatted.

Support Information Services

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Tech Info Library Article Number:13213

Newton MessagePad: Name Cards Don't Appear in Overview (9/93)

Revised: 9/10/93
Security: Everyone

Newton MessagePad: Name Cards Don't Appear in Overview (9/93)

==========

Article Created: 9 September 1993

TOPIC -----

When I list the cards in my Name File (by tapping the dot at the bottom of the screen), the cards aren't listed alphabetically by company name and don't appear next to the first letter in the company name.

For example, I have a card with a company called "Telephone Company" and it does not show up under the T's in the list.

Why is this?

DISCUSSION -----

When you list your Newton MessagePad's Name File, the name cards will be displayed in alphabetical order based on either last name or company name.

If a name card only has a company name and its last name field is empty, it will not be placed under a letter in the overview list. Instead, it will be put at the top of the list with no letter next to it. To display such a card in alphabetical order by last name, you must:

1) Use the Find function to find the appropriate card. Tap Show, then tap All Info.

2) Tap List by, then tap Last Name.

The same problem can also occur if you select List by Company, but the name card has no data in the company field. To display such a card in alphabetical order by company, you must:

1) Use the Find function to find the appropriate card. Tap Show, then tap All Info.

2) Tap List by, then tap Company.

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Tech Info Library Article Number:13214

Tech Info Library

Media Vision Inc.

Revised: 4/4/97
Security: Everyone

Media Vision Inc.

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Article Created: 13 September 1993
Article Reviewed/Updated: 4 April 1997

Media Vision Inc.

3185 Laurelview Ct.
Fremont, CA 94538

510-770-8600
800-638-2807 (technical support - prerecorded)
510-770-9905 (technical support)
510-770-8648 (fax)

Company Profile:
Media Vision develops and markets multimedia audio products for Macintosh, Microsoft Windows and MS-DOS computers.

Article Change History:
26 May 1995 - Updated telephone numbers.

Support Information Services

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13216

Tech Info Library

Newton MessagePad: Proper Names Have Separate Word List (9/93)

Revised: 9/27/93
Security: Everyone

Newton MessagePad: Proper Names Have Separate Word List (9/93)

==========

Article Created: 27 September 1993

TOPIC -----

If I write the word "Developer" into the Last Name or Company field of a name card, the Newton MessagePad won't recognize it properly, even though the word "Developer" is entered in the user word list.

When I type "Developer" on the keyboard, however, it is recognized quite easily.

Why is this?

DISCUSSION -----

The proper names word list and the user word list are stored in separate dictionaries on your MessagePad. The Last Name and Company fields in the Name File use the proper names word list to recognize text. When you enter a name into a new name card, the MessagePad uses only the proper names word list to look up and match the text you have entered.

Since the word "Developer" is entered in the user word list, the MessagePad won't recognize it and place it into a name card.

The built-in keyboards look at all word lists to recognize words, so the word "Developer" would be recognized and placed into the Note Pad or Calendar.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13218

At Ease 2.0: System Requirements and Installation (12/95)

Revised: 12/4/95
Security: Everyone

At Ease 2.0: System Requirements and Installation (12/95)

==========

Article Created: 14 September 1993
Article Reviewed/Updated: 4 December 1995

TOPIC ----------

This article lists the system requirements for At Ease 2.0 and describes how to install it.

DISCUSSION ----------

If you purchased a Macintosh Performa computer with At Ease already installed, you do not need to go through the installation procedure. If At Ease was installed at the factory, you also may not have received the disks described in this article.

System Requirements

At Ease 2.0 runs on Macintosh computers with:

• at least 2MB of RAM (4MB is recommended)

• System software 7.0 or later

• an internal or external hard disk drive

Installation
==========

Make sure you have the At Ease 2.0 Install disks, which contain the At Ease program and related files.

Step 1

Turn on your Macintosh.

Step 2

Insert the At Ease 2.0 Install 1 disk.

Step 3

Double-click the Installer icon to begin the installation process. You see a screen that welcomes you to the Installer, and explains the installation process.

Step 4

After you have read the welcome screen, click OK. You see a new screen labeled Easy Install. Make sure the disk named for installation is your startup disk. If not, click Switch Disk until you see the name of your startup disk.

Step 5

Click the Install button. A status screen shows you the progress of the installation. Whenever the computer needs information from another disk, it ejects the current disk and display a message indicating which disk you should insert next.

Step 6

Insert the At Ease 2.0 disks as requested. When installation is complete, you see a message indicating the process was successful.

Step 7

Click Restart to quit the Installer program and restart your computer. You are now ready to set up At Ease 2.0 for use.

Article Change History:
04 Dec 1995 - Removed keyword and deleted FAX statement.
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword; reviewed and reformatted article.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13221

..TIL13222-America_OnLine_9-93.pdf

Tech Info Library

America OnLine (9/93)

Revised: 9/16/93
Security: Everyone

America OnLine (9/93)

==========

Article Created: 14 September 1993
Article Reviewed/Updated: 16 September 1993

AMERICA ONLINE

8619 Westwoods Center Drive
Vienna, VA 22182

800-827-6364

703-448-8700

703-883-1509 FAX

Company Profile:
On-line computer service.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13222

QuickTime Thumb Nails (9/93)

Revised: 9/14/93
Security: Everyone

QuickTime Thumb Nails (9/93)

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Article Created: 13 September 1993

TOPIC -----

QuickTime 1.5 and later versions add the ability to see thumb nails of graphics files in the open dialog box of some applications. I have these questions:

- Does the application have to implement this feature?
- What determines whether this feature shows up in a dialog box?
- What are all the file types that QuickTime can generate thumb nails for?

DISCUSSION -----

QuickTime includes extensions to the Standard File Package that allow you to create and display file previews -- information that gives the user an idea of a file's contents without opening the file. Typically, a file's preview is a small PICT image (the thumb nail), but previews may also contain other types of information that is appropriate to the type of file. For example, a text file's preview might tell when the file was created and what it discusses.

"Inside Macintosh: QuickTime" has this to say:

"The Movie Toolbox provides two new Standard File functions, StandardGetFilePreview and CustmGetFilePreview, that allow you to display file preview in an open dialog box in System 7 using Standard File reply structures (of type StandardFileReply). The StandardGetFilePreview function corresponds to the existing StandardGetFile function; the CustomGetFilePreview function corresponds to the existing CustomeGetFile function.

"You use these new functions in place of the existing standard file

functions whenever you want to allow the user to display previews during the Open dialog box."

So, whatever you want to display can be previewed based on what the programmer of the application has programmed.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13223

Tech Info Library

Apple IIe Card: Software Version 2.2.1 Available (9/93)

Revised: 9/14/93
Security: Everyone

Apple IIe Card: Software Version 2.2.1 Available (9/93)

==========

Article Created: 14 September 1993

TOPIC -----

Apple IIe Card (2.2.1) software is available on AppleLink.

DISCUSSION -----

Apple IIe Card (2.2.1) software is now available for customers on AppleLink using the following path:

Software Sampler
 Apple SW Updates
  Macintosh
   Peripheral Software
    Apple IIe Card (2.2.1)

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:13225

Tech Info Library

Macintosh Performa: FPU Upgrade Options (7/95)

Revised: 7/7/95
Security: Everyone

Macintosh Performa: FPU Upgrade Options (7/95)

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Article Created: 14 September 1993
Article Reviewed/Updated: 07 July 1995

TOPIC ----------

What are the FPU upgrade options for the Performa line of Macintosh computers?

DISCUSSION ----------

System	FPU included	FPU upgrade	FPU upgrade method	Notes
Performa 200 (Macintosh Classic II)	No	Yes	3rd party PDS card	
Performa 400 (Macintosh LC II)	No	Yes	3rd party PDS card	
Performa 405	No	Yes	3rd party PDS card	
Performa 410	No	Yes	3rd party PDS card	
Performa 430	No	Yes	3rd party PDS card	
Performa 450 (Macintosh LC III)	No	Yes	Apple Service p/n 922-0107	
Performa 460	No	Yes	Apple Service p/n 922-0107	
Performa 466	No	Yes	Apple Service p/n 922-0107	
Performa 467	No	Yes	Apple Service p/n 922-0107	
Performa 475	No	Yes	Replace 68LC040 w/ 68040	(1)
Performa 476 (Macintosh LC 475; Macintosh Quadra 605)	No	Yes	Replace 68LC040 w/ 68040	(1)
Performa 550 (Macintosh LC 520; Macintosh LC 550)	No	Yes	Apple Service p/n 922-0107	
Performa 560	No	Yes	Apple Service p/n 922-0107	
Performa 575 (Macintosh LC 575)	No	Yes	Replace 68LC040 w/ 68040	(1)
Performa 577	No	Yes	Replace 68LC040 w/ 68040	(1)
Performa 578	No	Yes	Replace 68LC040 w/ 68040	(1)
Performa 600 (Macintosh IIvx)	No	Yes	Apple Service p/n 922-0107	

Performa 63x (Macintosh LC 630; Macintosh Quadra 630)	No	Yes	Replace 68LC040 w/ 68040	(1)

Notes:
(1) - Apple does not recommend or support replacing the CPU chip.

Article Change History:
07 Jul 1995 - Added comparable computers information
20 Mar 1995 - Updated part number for Apple FPU.
29 Jul 1994 - Added Performa 63x.

Support Information Services

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Tech Info Library Article Number:13226

Tech Info Library

Easy Access: Saving Settings Between Restarts (1/95)

Revised: 1/3/95
Security: Everyone

Easy Access: Saving Settings Between Restarts (1/95)

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Article Created: 13 September 1993
Article Reviewed/Updated: 3 January 1995

TOPIC ----------

I need a way to get the Easy Access settings to persist between restarts.

I use a headset to navigate on the Macintosh. I use Easy Access and would like a way for it to automatically be active when I start up the Macintosh. Currently, I have to press the shift key 5 times in succession, or open the control panel and manually select "On" each time I starts the Macintosh to activate Easy Access.

Are you aware of any way to have the Easy Access setting stay on between restarts?

DISCUSSION ----------

This was fixed with System Update 3.0. Below is the section on Easy Access from it's Read Me file.

Updates the Easy Access control panel to version 7.2. This new version allows Sticky Keys to remain active after waking up if it was active when the PowerBook or Portable went to sleep. Also, Easy Access now remembers whether sticky keys, mouse keys, and slow keys were on or off between restarts.

Article Change History:
03 Jan 1995 - Changed article to show fix with System Update 3.0.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13227

Tech Info Library

Install Me First CD: Booting Into At Ease (8/95)

Revised: 8/14/95
Security: Everyone

Install Me First CD: Booting Into At Ease (8/95)

==========

Article Created: 13 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

Why does the Install Me First CD sometimes startup into At Ease and sometimes it does not?

DISCUSSION ----------

There are two ways to startup from the Install Me First CD:

- Select the CD-ROM as the startup device in the Startup Disk control panel and restart. This will startup into At Ease.

- Bypass the internal hard disk by starting up with the Command-Option-Shift-Delete key combination held down. This may or may not launch At Ease at start up, depending on how long the Shift key is held.

The way At Ease and the system software are installed on the Install Me First CD does not allow disabling of extensions at startup. There is also no message indicating the extensions are off. At Ease will not be disabled if you hold down the Shift key until the "Welcome To Macintosh" is displayed.

It appears that At Ease acts more like a startup application than a control panel or cdev. The Shift key bypasses At Ease during startup, but ONLY if the key is held down AFTER the "Welcome to Macintosh" screen is displayed.

If At Ease is preferred and did not load, follow these steps:

Step 1

Choose the Startup Disk Alias under the Apple Menu.

Step 2

```
------
Select the CD-ROM.

Step 3
------
Restart with no keys held down. This will launch At Ease at startup.


Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services
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Tech Info Library Article Number:13229

Tech Info Library

Newton MessagePad: When Letter Styles Don't Stay Selected (9/93)

Revised: 9/14/93
Security: Everyone

Newton MessagePad: When Letter Styles Don't Stay Selected (9/93)

==========

Article Created: 14 September 1993

TOPIC----------

If I select a letter in the Letter Styles Preference, then tap Rarely, often the Rarely button will darken momentarily, then the selection goes back to Sometimes.

Why is this?

DISCUSSION----------

You must choose Sometimes for at least one Letter Styles selection in both upper and lower case of each character. The Newton MessagePad will not allow changing all upper or lower case letter choices for each character to "Rarely."

When you select Cursive Only or Printed Only in the Handwriting Style Preferences, your Letter Styles Preferences become limited to cursive or printed styles, respectively.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13230

Tech Info Library

PowerBook 165: Express Modem Cannot Be Used... Message (9/93)

Revised: 7/8/94
Security: Everyone

PowerBook 165: "Express Modem Cannot Be Used..." Message (9/93)

==========

Article Created: 16 September 1993

TOPIC ----------

Some customers have reported problems with the PowerBook 165 and the Express Modem. When they access the Express Modem, a message appears stating "The Express Modem cannot be used with this PowerBook."

DISCUSSION ----------

Some PowerBook 165 systems were shipped with two different enablers:
• version 1.0.2 on the hard drive
• version 1.0.3 on a floppy

Version 1.0.2 is the problem. The solution is to replace it on the hard drive with version 1.0.3, which works properly with the PowerBook 165 and Express Modem.

In general, Apple recommends using the latest version of an Enabler. If you get the message "The Express Modem cannot be used with this PowerBook" you should compare the version of the Enabler installed in your Macintosh's System folder to the version of the Enabler that comes with the Express Modem software -- and use the later of the two. Here's how:

1) Drag the old Enabler out of the System Folder (but not into the Trash).

2) Drag the new Enabler into the System Folder.

3) Restart.

4) Throw away the old Enabler.

Support Information Services

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Tech Info Library Article Number:13233

Tech Info Library

Macintosh AV Series: Video Conferencing (10/93)

Revised: 10/4/93
Security: Everyone

Macintosh AV Series: Video Conferencing (10/93)

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Article Created: 15 September 1993
Article Reviewed/Updated: 4 October 1993

TOPIC ----------

I want more information about the feasibility of teleconferencing with a Macintosh AV series computer to my headquarters in Europe. I have a digital phone system available.

- Can both audio and visual signals be sent over a single telephone line? The demo I saw appeared to be doing video over Ethernet, while one document I've seen indicates that some type of AppleTalk connection is required for teleconferencing.

- Besides the camera, what additional hardware or software is required, some kind of GeoPort? What kind of results can the I expect, for example quality of signals?

DISCUSSION ----------

Several products, including the bundled ES•F2F product, support the Macintosh AV series and can connect with other computers via AppleTalk, ISDN, many of the Comm (communications) toolbox tool, and ordinary telephone lines.

Other products which provide videoconferencing for Macintosh include Cameo Personal Video System from Compression Labs, ShareView Plus from ShareVision Technology and the MovieStar Videoconferencing Toolkit from Intelligence At Large. For specific details on each product, please contact the individual vendors.

To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
4 October 1993 - Changed title to include the Macintosh AV Series, deleted some incorrect information and added some additional third party

product information.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13239

Tech Info Library

Compression Labs

Revised: 4/4/97
Security: Everyone

Compression Labs

==========

Article Created: 15 September 1993
Article Reviewed/Updated: 4 April 1997

Compression Labs

2860 Junction Ave.
San Jose, CA 95134

408-435-3000

Company Profile:
Specialists in video conference (videoconference) products.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13240

AppleShare 3.0.3 Patch and Change History (11/95)

Revised: 11/6/95
Security: Everyone

AppleShare 3.0.3 Patch and Change History (11/95)

==========

Article Created: 15 September 1993
Article Reviewed/Updated: 4 November 1995

TOPIC ----------

Can you tell us what changes were made in AppleShare 3.0.3?

DISCUSSION ----------

AppleShare 3.0.3 Change History

Release dates:

- version 3.0.1 (9/92)
- version 3.0.2 (6/93)
- version 3.0.3 (9/93)

Notes:
All patches are incremental. All changes made in 3.0.1 are incorporated in 3.0.2, and all changes in 3.0.2 are incorporated in 3.0.3. Therefore, customers upgrading from 3.0, 3.0.1, or 3.0.2 to 3.0.3 will be running the most recent version of AppleShare file server.

AppleShare 3.0.1

The following fixes and enhancement were made in AppleShare 3.0.1:

File Server 3.0.1

- Fixed incompatibilities between CE Software (QuickMail 2.5) and AppleShare 3.0.

- When one client duplicated a large (several MB) file on the server, other clients would hang. The problem has been corrected so that the server will better service other requests during the duplication.

- Fixed a problem involving AppleShare and Retrospect Remote where if the Users & Groups file was backed up by Retrospect, users could no longer log into the server.

Admin 3.0.1

- "Users" folder access privileges incorrectly changed from explicit to inherited after the menu item "Verify Apple II Startup Info" was selected.

- AppleShare 3.0.1 now repairs damaged btree files. This fix eliminates occasional 2.0 to 3.0 upgrade failures.

- On System 7.1 the Admin in AppleShare 3.0 could not delete a user or group without hanging the machine with the File Server running. AppleShare 3.0 version 3.0.1 is now compatible with System 7.1.

- Fixed problems involving AppleShare 3.0's "Copy Item too…" feature where copy would terminate with a "file not found" error if it encountered an invisible folder at the root of source folder.

- There was an occasional inherited privileges problem when updating from AppleShare 2.0 to 3.0. Access privileges were sometimes upgraded incorrectly user AppleShare 3.0.

- Selecting the menu item "Compact volume Access Privileges" caused launch limit settings to be lost.

- AppleShare 3.0 "Summary of Shared Item Report" did not work correctly. The report would sometimes show an incorrect owner and group with incorrect privileges. If you looked at the server itself, the privileges were set correctly; it was just that the report that was incorrect.

Print Server 3.0.1

- The AppleShare Print Server previously did not properly handle contiguous paper feed on ImageWriter printers. (Extras <CRs> were issued when printing continuously with feed paper through an ImageWriter II. The beginning of each subsequent page started further down on the page.)

- If many Macintosh clients were using the Print Server a lot, the Print Server could freeze up.

- If many Apple II clients were spooling to the Print Server, the clients that tried to talk to the Print Server, after the ninth client, would report problems communicating with the printer. This problem was in the AppleShare Print Server and the Apple II client software. AppleShare Print Server 3.0.1 will continue to work the older Apple II clients, but for full robustness and future compatibility it is recommended that users upgrade the Apple II client software to version GS/OS 6.0.1.

- If the AppleShare Print Server and the AppleShare File Server were

running on the same Macintosh under heavy stress, it was possible for the Macintosh to crash or freeze up. Users will need to upgrade the AppleTalk drivers on their server Macintosh's by using the Network Software Installer version 1.2.3 or greater.

AppleShare 3.0.2

The following fixes and enhancements were made in AppleShare 3.0.2:

- Allows Retrospect to properly back up the Users and Groups file. Previously caused an error whereby the file was left open and AppleTalk Remote Access clients couldn't dial into the network after a backup. There was no effect on AppleShare clients.

- Ups Max Cur Requests from 5 to 16 (although only 8 can be used) reducing the chance that a slow network link client (like an AppleTalk Remote Access client) will get a server timeout and hang until it retries.

- Fixes a bug related to B-Tree files that caused file system problems resulting in Open Error messages on random files once the bug occurred. Products that cause this bug to happen are: AppleSearch, AOCE, and other third party server products.

AppleShare 3.0.3

The following fixes and enhancements were made in AppleShare 3.0.3:

- Version 3.0.3 fixes some incompatibilities between AppleShare and AOCE and AppleShare and AppleSearch. It is recommended that customers upgrade their AppleShare servers to version 3.0.3 if they will be running either AOCE or AppleSearch on their server.

Article Change History:
04 Nov 1995 - Reviewed for techncial accuracy.

Support Information Services

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Tech Info Library Article Number:13241

Tech Info Library

Retrospect A/UX - 32000 File Limitation (9/93)

Revised: 9/16/93
Security: Everyone

Retrospect A/UX - 32000 File Limitation (9/93)

==========

Article Created: 15 September 1993

TOPIC ----------

The A/UX version of Retrospect has a limitation brought from the Macintosh version. It is the limitations of 32,000 files when storing or restoring a volume.

The error message, "Error -24062 (limited to 32000 files/folders)", is still in the A/UX version of the product. This puts some restrictions on what users can plan to backup with an Apple Workgroup Server (AWS) 95.

In the Macintosh version, Dantz claims that the HFS file system can get unstable with about 32000 files. That should not be true with the UNIX file system.

Will Dantz make any changes to eliminate this limitation in future version of Retrospect A/UX?

DISCUSSION ----------

Here is what we received from Dantz:

It is true that Retrospect has a limit per scan of 32,000 files. This matches the limits of the Macintosh file system, though they will address this limit in a future version of Retrospect.

There are a couple of ways to work around this limit on the AWS 95. The best is to use Retrospect A/UX and backup a large drive in segments of 32,000 files or fewer. Retrospect can define folders as "Subvolumes" which act as separate volumes for backup purposes. The entire drive can be backed up this way since each backup session or script may contain an essentially unlimited number of Subvolumes.

Another possibility is to use UNIX utilities such as TAR or DUMP for volumes which exceed 32,000 files or folders.

..TIL13242-Retrospect_A-UX_-32000_File_Limitation_9-93_(TA30149).pdf

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Tech Info Library Article Number:13242

Tech Info Library

AudioVision Display: X Displayed Through the Video INIT(3/95)

Revised: 6/27/96
Security: Everyone

AudioVision Display: "X" Displayed Through the Video INIT(3/95)

==========

Article Created: 16 September 1993
Article Reviewed/Updated: 23 January 1995

TOPIC ----------

I'm running the AudioVision Display on a Centris 660/AV. Upon startup my computer loads with an "X" through the video init and when I select the Video Control Panel it indicates that the control panels are not loaded. Additionally, when I select the Sound Control Panel the computer will freeze or give a system error.

DISCUSSION ----------

The AudioVision software provides integrated sound and video capabilities that allow you to take advantage of multi-media and voice technology applications.

This monitor requires a system extension, also known as an "INIT" in the system folder. During the startup process of the Macintosh computers, these extensions display icons at the bottom of the screen as they are loaded.

When an "X" is displayed through the extension icon during this process, the extension has not loaded properly and will not function.

The following procedure should ensure proper loading of the Audio Vision extension.

Note: Your Macintosh system software must be System 7.0.1 or later in order to use the Apple AudioVision software.

The keyboard cable must be plugged into the AudioVision display, and not the back of the computer. When it's not plugged into the monitor, you will still see the X through the INIT startup. The INIT looks to the monitor's ADB port for one of the sense pins on the ADB cable, doesn't see it and 'X's it out.

Install the Software

---

1) Insert the AudioVision Installer disk into the internal floppy disk drive.

2) Click the Installer icon.

3) Make sure that the hard disk indicated in the dialog box is the one on which you want to install AudioVision software.

4) Click the Install button.

5) After finishing the installation, restarting your computer is the only choice you have. When you restart the red X still appears through the video INIT.

6) Shut down your computer AND turn off the monitor for at least 30 seconds before restarting.

7) If you do not perform step 6, upon startup you will continue to see an icon on your monitor with an "X" through it. This icon indicates that the video control panel is not loaded and the AudioVision Display software is not be activated.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
20 Mar 1995 - Minor typographical correction.
23 Jan 1995 - Added Step 5.
17 Nov 1994 - Added the note that the keyboard must be plugged into the Display not the computer.

Support Information Services

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Tech Info Library Article Number:13243

Tech Info Library

Macintosh AV Systems: Multiple GeoPort Applications (9/93)

Revised: 12/2/93
Security: Everyone

Macintosh AV Systems: Multiple GeoPort Applications (9/93)

==========

Article Created: 16 September 1993

TOPIC --

Why can't two DSP (Digital Signal Processor) GeoPort applications run concurrently on a Macintosh AV system? If I run, for example, both ApplePhone and the fax software set up to receive faxes, I expect them to work like ARA when it is set to answer calls. ARA will relinquish serial port rights to another application and then reclaim the serial port when the other application releases it.

Is this a function of how those two applications were written, or is a limitation of the ARA software?

DISCUSSION --

The issue: using the GeoPort telecomm adapter, you can run only one telecomm application at a time. Remember that the Express Modem software counts as one application, so you can have multiple applications that use that software running at the same time.

ApplePhone, which is not modem-based, doesn't use the Express Modem software, so you have an either/or situation with it. On the other hand, you could have multiple well-behaved commtoolbox application running at the same time.

You can also have (in some cases, depending on bandwidth use and processor capabilities) multiple DSP applications up and running. Remember that speech recognition takes a LOT of bandwidth and that it is difficult to get other DSP applications running concurrently with it.

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Tech Info Library Article Number:13245

Tech Info Library

At Ease 2.0 for Workgroups: Shift-Key Security Loopholes (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0 for Workgroups: Shift-Key Security Loopholes (8/95)

==========

Article Created: 16 September 1993
Article Revised/Updated: 14 August 1995

TOPIC ----------

We are using At Ease 2.0 for Workgroups. We want a solution that will keep students from saving files and folders anywhere but to a specified folder on the Macintosh server (to cut down on security problems we were having).

At Ease was set up to use the server as the At Ease disk. Everything was working fine until a student held down the Shift key when powering up the Macintosh. At Ease came up with a dialog "The At Ease Preferences file is damaged, please contact your Administrator." The dialog box has a Cancel button in the lower right corner. Clicking on Cancel brings up the Finder with no protection to the local hard disk or the At Ease server that is mounted. This error dialog also comes up if there's any kind of an AppleTalk error, or if the server is under too heavy a load to support the request from the booting At Ease Macintosh.

Reformatting a couple of the drives with the newest HD SC Setup, reinstalling system software and applications, and At Ease, don't fix the problem. This shift key loophole is a big security issue.

If they remove the Finder from the System Folder, can we assume that no one can go to the Finder on those machines, including the administrator or teachers? Is there a utility that would work in this situation (no Finder), that the administrator or teachers could use to move the Finder out of the System Folder and back into it?

DISCUSSION ----------

Users can no longer hold down the shift-key during startup to get into the finder when the At Ease disk is a server. At Ease for Workgroups version 2.0.1 and later have fixed this problem.

Article Change History:

14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.
02 Mar 1995 - Added problem fixed with At Ease 2.0.1 or later.

Support Information Services

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Tech Info Library Article Number:13246

Tech Info Library

Setting MacSNMP trapDestination (4/96)

Revised: 4/20/96
Security: Everyone

Setting MacSNMP trapDestination (4/96)

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Article Created: 14 September 1993
Article Reviewed/Updated: 20 April 1996

TOPIC --------------------

I'm trying to specify the console where alarms are sent in MacSNMP, but I'm having a problem. On page 25 of the SNMP Admin Guide, it says to set trapDestination in the trapTable for the System Group of the Macintosh Agent. I can't figure out how to do this. What do I need to do?

DISCUSSION --------------------

We also tried to set trapDestination in the trapTable using the MacSNMP Admin application, but could not do it either. The variable value is not editable from the application. We checked with MacSNMP engineering and they told us you can only set it from a management console.

You need to copy the MIBs from the Administration disk onto the console. You will have to refer to the administration guide that came with your console for the instructions.

Normally from a UNIX workstation you can set trapDestination from the client by specifying the IP address. However, Macintosh is a multiprotocol workstation and we decided that the trapDestination has to be set from the management console.

Article Change History:
20 Apr 1996 - Change distribution status.
21 Sep 1993 - Included additional information.

Copyright 1993-96, Apple Computer, Inc.

Tech Info Library Article Number:13247

Tech Info Library

Baseview Products, Inc. (9/93)

Revised: 9/16/93
Security: Everyone

Baseview Products, Inc. (9/93)

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Article Created: 16 September 1993

Baseview Products, Inc.
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538 N. Division Street
Ann Arbor, MI 48104

313-662-5800

313-662-5204 FAX

Company Profile:
Provides access to news wire services, and story management.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13324

ClariNet Communications Corp. (9/93)

Revised: 9/16/93
Security: Everyone

ClariNet Communications Corp. (9/93)

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Article Created: 16 September 1993

ClariNet Communications Corp.

P.O. Box 1479
Cupertino, CA 95015-1479

800-873-6387

408-296-0366

408-296-0366 FAX

Company Profile:
BBS on-line computer service - site licenses available.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13325

Tech Info Library

CompuServe, Inc. (1/97)

Revised: 1/20/97
Security: Everyone

CompuServe, Inc. (1/97)

==========

Article Created: 16 September 1993
Article Reviewed/Updated: 20 January 1997

CompuServe, Inc.

P.O. Box 20212
5000 Arlington Centre Blvd.
Columbus, OH 43220

800-848-8199

614-457-0802

614-457-0348 FAX

<http://www.compuserve.com/> Internet

Company Profile:
On-line computer service.

Apple is publishing support information on CompuServe. There are four areas maintained by Apple on CompuServe, each with a different go word (shortcut):

• Apple Support Forum (go alpsup): Apple Information and US Apple software updates.

• Apple Worldwide Forum (go alpww): Worldwide (localized versions of) Apple software updates.

• Apple Tech Info Library (go apltil): Apple's official technical support database.

• Sysop Address: 74431,1617 (Internet: 74431.1617@compuserve.com)

..TIL13326-CompuServe_Inc_1-97_(TA21590).pdf

Article Change History:
20 Jan 1997 - Added url for CompuServe, aplww forum info
04 Nov 1996 - Updated Sysop address

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13326

Tech Info Library

Crosfield (Canada) Inc. (9/93)

Revised: 9/16/93
Security: Everyone

Crosfield (Canada) Inc. (9/93)

==========

Article Created: 16 September 1993

Crosfield (Canada) Inc.

6500 Kestrel Road
Mississauga, Ontario L5T 1Z6
Canada

416-670-3933

416-670-0250 FAX

Company Profile:
Newsline Solo is a wire photo receiver and transmitter kit.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13327

Tech Info Library

Dialog Information Services, Inc. (9/93)

Revised: 9/16/93
Security: Everyone

Dialog Information Services, Inc. (9/93)

==========

Article Created: 16 September 1993

Dialog Information Services, Inc.

3460 Hillview Ave.
Palo Alto, CA 94304

800-334-2564

415-858-2700

415-858-7069 FAX

Company Profile:
Dialog offers more than 400 databases and two terabytes of data.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13328

Tech Info Library

GE Information Services (9/93)

Revised: 9/16/93
Security: Everyone

GE Information Services (9/93)

==========

Article Created: 16 September 1993

GE Information Services

6300 S. Syracuse Way
Suite 550
Englewood, CO 80111

303-793-1308

303-793-1316 FAX

Company Profile:
On-line computer wire service.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13329

Tech Info Library

Mainstream Data Inc. (9/93)

Revised: 9/16/93
Security: Everyone

Mainstream Data Inc. (9/93)

==========

Article Created: 16 September 1993

Mainstream Data Inc.
---

420 Chipeta Way Suite 200
Salt Lake City, UT 84108

801-584-2800

801-584-2831 FAX

Company Profile:
Provides access to news wire services.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13330

Tech Info Library

Mead Data Central, Inc. (9/93)

Revised: 9/16/93
Security: Everyone

Mead Data Central, Inc. (9/93)

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Article Created: 16 September 1993

Mead Data Central, Inc.

P.O. Box 933
Dayton, OH 45401

800-227-4908

513-865-6800

513-865-1666 FAX

Company Profile:
On-line computer service, on-line charges vary, volume discounts available.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13331

Prodigy Services Company (9/93)

Revised: 9/16/93
Security: Everyone

Prodigy Services Company (9/93)

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Article Created: 16 September 1993

Prodigy Services Company
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445 Hamilton Ave.
White Plains, NY 10601

800-776-3449

914-993-8820

914-684-0278 FAX

Company Profile:
On-line computer service.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13332

Tech Info Library

The Associated Press (9/93)

Revised: 9/16/93
Security: Everyone

The Associated Press (9/93)

==========

Article Created: 16 September 1993

The Associated Press
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50 Rockefeller Plaza
New York, NY 10020

212-621-1796

212-621-1512 FAX

Company Profile:
News service.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13333

Tech Info Library

Ziff Desktop Information (9/93)

Revised: 9/16/93
Security: Everyone

Ziff Desktop Information (9/93)

==========

Article Created: 16 September 1993

Ziff Desktop Information
---

25 First Street
Cambridge, MA 02141

617-252-5200

617-252-5551 FAX

Company Profile:
On-line computer services - ZiffNet and ZiffNet/Mac.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13334

..TIL13337-Brainchild_Corporation.pdf

Tech Info Library

Brainchild Corporation

Revised: 4/7/97
Security: Everyone

Brainchild Corporation

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Article Created: 17 September 1993
Article Reviewed/Updated 7 April 1997

Brainchild Corporation

Brainchild Corporation
547 Pepper Ridge Road
Cincinnati, Ohio 45244

(513) 831-8451

(513) 831-7804 Fax

Internet: brainchild@applelink.apple.com

CompuServe: 75720,3100

Company Profile:
Software, develops and markets integrated products which combine the functionality of calendaring programs, PIMs, contact databases, word processors, mail-merge and label printing software.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13337

Tech Info Library

Cabletron Systems, Inc. (5/95)

Revised: 5/18/95
Security: Everyone

Cabletron Systems, Inc. (5/95)

==========

Article Created: 17 September 1993
Article Reviewed/Updated: 18 May 1995

Cabletron Systems Inc.

Cabletron Systems Inc.
35 Industrial Way
Rochester NH 03867

603-332-9400

BBS: 603-335-3358

AppleLink: D3355

Internet: support@ctron.com - 134.141.197.25

CompuServe:GO CTRON at any ! prompt

Company Profile:
Software and Hardware, develops and markets ethernet cards for Macintosh computers.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13338

..TIL13339-CoStar_Inc.pdf

Tech Info Library

CoStar, Inc.

Revised: 4/7/97
Security: Everyone

CoStar, Inc.

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Article Created: 17 September 1993
Article Reviewed/Updated 7 April 1997

CoStar, Inc.

CoStar Corporation
100 Field Point Rd.
Greenwich, CT 06830-6406

203-661-9700

xxx-xxx-xxxx Fax

Company Profile:
Software and Hardware, develops and markets products for address label printing & management.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13339

..TIL13340-Jeddak_Inc.pdf

Tech Info Library

Jeddak, Inc.

Revised: 4/7/97
Security: Everyone

Jeddak, Inc.

==========

Article Created: 17 September 1993
Article Reviewed/Updated 7 April 1997

Jeddak, Inc.

2540 North First Street
Suite 301
San Jose, CA 95131

408-894-6900

408-894-9020 Fax

Company Profile:
Software, develops and markets products to prevent software piracy over AppleTalk networks as well as handy network utilities.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13340

Tech Info Library

At Ease 2.0: If You Forget the Administrator Password (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0: If You Forget the Administrator Password (8/95)

==========

Article Created: 20 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

This article describes what to do if you are an At Ease 2.0 administrator and you have forgotten the administrator's password.

DISCUSSION ----------

If you forget the administrator password, you can set a new one. However, doing this will turn At Ease off and reset the user greeting to "Welcome to At Ease" (if you had changed it).

To reset the administrator password:

Step 1

Turn off the Macintosh.

Step 2

Insert a disk with system software on it into your floppy drive. If your computer came with a disk called "Disk Tools," use it. If not, use a backup copy you made using Apple Backup.

Step 3

Turn on the Macintosh.

Step 4

Open the System Folder of your usual startup disk (probably on your hard drive). Do not open the System Folder on the floppy disk you are using to start up.

Step 5

Open the At Ease Items folder inside your System Folder.

Step 6

Find the At Ease Preferences file and drag it into the Trash.

Step 7

Hold down the Option key while you choose Empty Trash from the Special menu.

Step 8

Choose Restart from the Special menu, and the floppy disk automatically ejects from the drive.

Step 9

Open the At Ease Setup program.

Step 10

Choose Administrator Password from the Options menu. The Administrator Password screen appears.

Step 11

Type the new administrator password in the upper box. It can be up to 15 characters. Type it again in the middle box to confirm it. (Dots appear in place of letters to keep the password confidential).

Step 12

Type a clue in the lower box to help you remember this password. The clue can be up to 63 characters.

Step 13

Click OK.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.
06 Jan 1994 - Corrected step 8.

Support Information Services

Copyright 1993-95, Apple Computer, Inc

Tech Info Library Article Number:13348

Tech Info Library

At Ease 2.0: Permanently Removing It (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0: Permanently Removing It (8/95)

==========

Article Created: 20 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

This article describes how to permanently remove At Ease software from your Macintosh.

DISCUSSION ----------

Turning Off At Ease
==========
If you don't plan to be using At Ease in the near future, but may choose to use it again later, the best option is to simply turn it off. Here's how:

Step 1

Open the At Ease Setup program, and type your password

Step 2

Click the Off button.

If you want At Ease 2.0 completely erased from your system, how you go about it will depend on whether you have the At Ease 2.0 Install 1 disk.

If your Performa came with software already factory-installed, you may not have this disk. In this case, be certain to make a backup copy of At Ease 2.0 (or use Apple Backup to backup your entire hard drive with At Ease on it) before you remove At Ease from your system. Label the backup disks "At Ease 2.0." This way, you have a copy of the software in case you ever want to reinstall it.

NOTE: Never attempt to remove At Ease without turning it off first.

If You Have the At Ease 2.0 Install 1 Disk

Step 1

Open the At Ease Setup Program, and type the administrator password.

Step 2

Click the Off button.

Step 3

Quit the At Ease Setup program.

Step 4

Insert the At Ease 2.0 Install 1 disk into the disk drive.

Step 5

Click the Customize button.

Step 6

Select At Ease.

Step 7

Hold down the Option key. The Install button turns into a Remove button.

Step 8

Click the Remove button. At Ease will be permanently removed from your system. You may reinstall it in the future using the installation disks.

If You Do Not Have the At Ease 2.0 Install 1 Disk

Step 1

Open the At Ease Setup program, and type the administrator password.

Step 2

Click the Off button on the first screen.

Step 3

Quit the At Ease setup program.

Step 4

Drag the At Ease files to the Trash. The files you need to remove are:

- the At Ease Setup program (at the main directory level of your startup hard disk)
- the At Ease Items folder (in your System folder)
- the At Ease file (in your System folder)
- the At Ease Startup extension (in the Extensions folder)

Step 5

Hold down the Option key while you choose Empty Trash from the Special menu.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13349

At Ease 2.0: How To Add & Remove Button Sounds (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0: How To Add & Remove Button Sounds (8/95)

==========

Article Created: 20 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

This article describes how to add and remove button sounds in At Ease 2.0.

DISCUSSION ----------

Sound effects can be added to any item that appears in a user's At Ease panels. The sounds will play any time the pointer is moved over a button that has sound attached to it.

NOTE: The sound effect will play even if the text-to-speech feature is turned on. The sound you have recorded will replace the spoken identification of that button.

To attach a sound to a button, you need existing sound files on your hard drive or on a floppy disk. These files are often available as third-party software. If you do not already have sound file, you can also create your own if you have compatible microphone hardware.

Preparing to Attach a Sound
---

1) Open the At Ease Setup Program.

2) Type the administrator password.

3) Choose Attach Sounds from the file menu. The Attach Sounds screen appears, showing you the items to which users have access.

   If the speaker icon next to an item has wavy lines next to it (sound waves emitting from the speaker), that item already has an attached sound.

4) Click the name of the item to which you want to add a sound.

To Import an Existing Sound

Follow the steps above, then:

1) Click the import sound button. The Import Sound screen appears.

2) If necessary, click the pop-up menu above the list of documents and folders on the left side of the screen to locate the sound file you want to use.

3) Click the name of the sound you want attached. You can hear the sound before you import it by clicking the Play Sound button at the bottom of the screen.

4) Click the Import button to attach the sound.

5) Click Done.

To Record an Original Sound

Follow the steps under "Preparing to Attach a Sound," then:

1) Click the Record Sound button. A screen appears allowing you to record a sound.

2) When you are ready to record a sound, click the Record button (marked with a circle).

3) When you are finished recording, click the Stop button (marked with a square).

4) To hear the sound before you attach it to the selected item, click the Play button (marked with a right-pointing arrow).

5) Click Save to save the sound. Wavy lines appear beside the speaker icon associated with the item to which you attached the sound. This indicates that the button will now play the sound you recorded rather than the button name when the pointer passes over it.

Removing a Sound

Follow the steps under "Preparing to Attach a Sound." You will see a screen called "Attach Sounds." Then:

1) Click once on the item from which you want the sound removed.

2) Click Remove Sound.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

Copyright 1993-95, Apple Computer, Inc

Tech Info Library Article Number:13350

Tech Info Library

At Ease 2.0: Restoring Deleted At Ease Software (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0: Restoring Deleted At Ease Software (8/95)

==========

Article Created: 20 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

I purchased a Performa with At Ease 2.0 software already installed. I removed it from my system, but now I want to use it again. Will I have to buy the software?

DISCUSSION ----------

If you removed At Ease from your system or deleted any files for At Ease that you want to use again, you have three options:

- If you performed a backup with Apple Backup while the At Ease software was still on your hard drive, you can restore the software using Apple Restore.

- If you did not perform a backup, or if you no longer have a backup copy with At Ease on it, you can call 1-800-SOS-APPL to further discuss your situation.

- If you did not perform a backup, and if you no longer have a backup copy of your hard drive with At Ease on it, you can go to an Apple Authorized Service Provider, who can provide the floppies you need, and may even install the software for you if you bring in your computer. To find the nearest Apple Authorized Service Provider, call 1-800-538-9696.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13353

Tech Info Library

At Ease 2.0 for Workgroups: Installation (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0 for Workgroups: Installation (8/95)

==========

Article Created: 20 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

This article describes how to install At Ease 2.0 for Workgroups, including:

- Using the Install program
- Creating an administrator password
- Setting up for remote administration on an AppleTalk network

DISCUSSION ----------

You will need to install At Ease 2.0 for Workgroups on the startup disk of every computer on the network that will be using it.

(NOTE: The software licensing agreement for your copy of At Ease specifies how many computers may use that copy. Also, before you put other software in shared folders in At Ease, be sure to check whether the software agreement for those programs allows for sharing.)

Before you begin:

- Make sure that file sharing is off on the computers you will be installing At Ease on. To check, look in the File Sharing Setup control panel (in the Control Panels folder under the Apple menu).

- Make sure all virus checkers on the computers are turned off.

- Make sure you have these disks: At Ease 2.0 (WG) Install 1 At Ease 2.0 (WG) Install 2 At Ease 2.0 (WG) Install 3

WARNING: DO NOT install At Ease 2.0 for Workgroups by dragging the files to each hard drive from the floppies. Use the Installer program, which will put files in the correct locations on the startup disks.

Using the Installer

To install At Ease 2.0 for Workgroups on the first Macintosh (the administrator's):

Step 1

Turn on the Macintosh.

Step 2

Insert the At Ease 2.0 (WG) Install 1 disk.

Step 3

Double-click the installer icon.

Step 4

Click OK.

Step 5

Click the Install button and follow the directions on the screen.

Step 6

Click Restart to make At Ease active on that Macintosh.

Administrator Password

Now you will need to create an administrator password so that only you, the administrator, can make changes to the At Ease computers. To do this:

Step 1

Open the At Ease Setup program. You will find it on the startup disk of any Macintosh that has had At Ease installed.

Step 2

Choose Administrator Password from the Options menu.

Step 3

Type the password in the first box, then type it again to confirm it. (You will just see dots instead of letters -- this is to keep the password confidential.) Then, if you choose, type a clue in the large box below.

Step 4

Click OK.

Once you have set up the first Macintosh with At Ease, you will need to prepare the other computers in the workgroup. If the Macintosh systems are not linked by an AppleTalk network, you will have to run the Installer and create the administrator's password on each Macintosh individually at this point.

Setting Up For Remote Administration

If the At Ease computers are linked by an AppleTalk network, the workgroup's administrator can administer the network remotely from a single Macintosh. The administrator can set up At Ease and make changes to it on the administrator's Macintosh, then update every other computer on the network.

To prepare for remote administration, follow these steps for each At Ease computer:

Step 1

Choose Control Panels from the Apple menu.

Step 2

Open the Sharing Setup control panel.

Step 3

Type a name into the space labeled "Macintosh Name," then close the control panel. Make sure each At Ease Macintosh has a distinct name and that everyone knows which name goes with which computer.

Step 4

Go back to the At Ease Setup program by clicking inside the At Ease Setup window.

Step 5

Choose Security from the Options menu.

Step 6

Click the checkbox labeled "Allow remote administration," then click OK.

Step 7

Choose Quit from the File menu to quit the At Ease Setup program.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

..TIL13355-At_Ease_2-0_for_Workgroups-Installation_8-95_(TA30176).pdf

Support Information Services

Copyright 1993-95, Apple Computer, Inc

Tech Info Library Article Number:13355

Tech Info Library

MacCheck: Test And Help Buttons Grayed Out (6/95)

Revised: 6/16/95
Security: Everyone

MacCheck: Test And Help Buttons Grayed Out (6/95)

==========

Article Created: 20 September 1993
Article Reviewed/Updated: 16 June 1995

TOPIC -----

When I double-click on MacCheck, it loads the tests as usual, but the Test and Help buttons are grayed out and not available. I can only click on System Info and Quit.

DISCUSSION -----

This occurs when the application program doesn't reside in the same folder as the data file. Relocate MacCheck to the same folder as the data file, and you'll be able to use the test and help buttons.

Article Change History:
16 June 1995: Added keywords

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13356

Tech Info Library

Kensington Turbo Mouse: Supersedes Mouse Control Panel 6/94

Revised: 6/8/94
Security: Everyone

Kensington Turbo Mouse: Supersedes Mouse Control Panel 6/94

==========

Article Created: 20 September 1993
Article Reviewed/Updated: 8 Jun 1994

TOPIC ----------

My computer didn't respond to double-clicks. I opened the Mouse control panel, and the Double-click Speed buttons appeared deselected. I selected the buttons, and my computer responded to double-clicks. But when I restarted, the buttons appeared deselected again.

DISCUSSION ----------

Kensington Turbo Mouse software will take precedence at startup over the settings contained in the Apple Mouse control panel. The mouse uses the values allocated in the Turbo Mouse CDEV (v3.0), or the Turbo Mouse Control application program (v4.0), and respond accordingly. As with the Mouse control panel, setting the Turbo Mouse controls to the fastest setting can be inoperable for some users-they just can't click fast enough. The range of values selected for the double click speed in the Turbo Mouse Control Panel was chosen to accommodate the 5th to 95th percentile users. This means that if you select the farthest extreme to the right some users might have a problem generating a double click. Try decreasing the speed in the control panel.

Article Change History:
8 Jun 1994 - Updated the article with information from Kensington.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13357

Tech Info Library

At Ease 2.0 for Workgroups: If a User Forgets a Password (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0 for Workgroups: If a User Forgets a Password (8/95)

==========

Article Created: 21 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

We use At Ease 2.0 for Workgroups on an AppleTalk network. One of our users forgot his password. He had changed the password from the one the administrator had assigned to him. How can he regain access to At Ease?

DISCUSSION ----------

The administrator password always works with any user name. To create a new password:

Step 1

Enter the administrator password.

Step 2

Open At Ease Setup.

Step 3

Click Users.

Step 4

Click the name of the user whose password you want to change.

Step 5

Type the new password where the bullets (dots) appear.

Article Change History:

14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13361

Tech Info Library

At Ease 2.0 for Workgroups: Questions and Answers (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0 for Workgroups: Questions and Answers (8/95)

==========

Article Created: 21 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

This article answer several frequently asked questions about At Ease 2.0 for Workgroups.

DISCUSSION ----------

Making Existing Files Available to a User
==========

Question: How do I make existing documents available to a particular user?

Answer: In the Finder, place the items in the user's Documents folder. Here's how:

Step 1

Log on to At Ease as the user to whom you want to make a document available. Use the user's name, but the administrator's password.

Step 2

Go to the Finder (You may need to log on as a user who has access privileges to the Finder.)

Step 3

Open the Documents folder.

Step 4

Find the user's own folder. Inside the Documents folder is an individual Documents folder for each user who has logged on.

Step 5

Move the items into the user's Documents folder.

Can't Open Requested File

Question: The application several members of our workgroup use asks them to open a file that is not on either At Ease panel. It's grayed out in the pop-up menu.

Answer: The administrator set a security feature not allowing users to access documents outside of their own folder. To turn this feature off:

Step 1

Open At Ease Setup.

Step 2

Click Options.

Step 3

Deselect the box next to "Keep users from opening documents anywhere else."

Step 4

Click OK.

Auto Log Out Not Working

Question: I set the computers in our workgroup to log out of At Ease if their Macintoshes had been idle for more than 15 minutes. Now sometimes the Macintoshes stay logged on well past that 15 minute limit. Why?

Answer: If a user has made changes to a document but has not saved them yet, At Ease can't log them out. Save or cancel the changes to the document(s) and At Ease will log that user off.

Items Not Copied From Floppy

Question: I tried to copy some items from a floppy disk to a user's panel. Some of them copied, but others didn't. Why?

Answer: At Ease panels displays only documents or folders that can be opened from At Ease. If the user whose panel you tried to copy to does not have access to the applications that created some of the items on the floppy disk, they will

not copy over to the User's panel.

User's Password Doesn't Work On Other At Ease Computers

Question: A user changed his password, but it only works on the Macintosh he changed it on. Why don't the other Macintoshes recognize it?

Answer: If your workgroup is not on a server, you will have to update each Macintosh in the group separately so they "know" about the new password.

Network Update Does Not Take Effect

Question: The administrator changed the configuration of one of the Setups, then tried to update the other computers. Why didn't the changes show up?

Answer: When you update over the network, each computer will receive the new information. However, At Ease will not reflect the changes on a Macintosh until At Ease is Quit and launched again on that computer.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

Copyright 1993-95, Apple Computer, Inc

Tech Info Library Article Number:13363

Tech Info Library

AppleWorks: Technical Support Changes (9/93)

Revised: 9/21/93
Security: Everyone

AppleWorks: Technical Support Changes (9/93)

==========

Articles Created: 21 September 1993

TOPIC ----------

Quality Computers now provides technical support for AppleWorks versions 2.0.1 or later.

DISCUSSION ----------

Claris previously supported these versions. Apple Assurance provides technical support for versions previous to 2.0.1.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13364

Tech Info Library

Apple Font Pack: Making Clock Symbols with the Zeal Font (9/93)

Revised: 9/21/93
Security: Everyone

Apple Font Pack: Making Clock Symbols with the Zeal Font (9/93)

==========

Article Created: 21 September 1993

TOPIC -----

The "Getting Started with Type" booklet that ships with the Apple Font Pack for Macintosh (M4040LL/A) contains incorrect information about which key combinations result in some of the clock symbols available in the Zeal font.

In particular, it says that six o'clock is made by pressing command-shift g. However this combination results in an open book.

DISCUSSION -----

The correct key combination is option-` command-i.

An MS Word document describing the correct key combinations is included on font pack's Install disk. The document is titled "Zeal Symbol Info (MS WORD 5.0)." You don't have to use MS Word to open the document. Most word processors can open it through translation.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13365

Tech Info Library

Macintosh System Update 2.0.1: Description (10/93)

Revised: 10/1/93
Security: Everyone

Macintosh System Update 2.0.1: Description (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

System Update 2.0.1 contains enhancements to Macintosh System 7.1 and System 7 Pro and a collection of bug fixes. This update requires Macintosh System Software version 7.1 or System 7 Pro.

DISCUSSION -----

Macintosh System Update 2.0.1 incorporates enhancements from the two previous versions of the Hardware System Update, versions 1.0 and 2.0. The primary additional enhancements that Macintosh System Update 2.0.1 provides are:

- Apple HD SC Setup version 7.2.2, which gives you more flexibility to format large Apple hard disks between 1 and 2 gigabytes.
- AutoRemounter 1.2, which significantly reduces network traffic.
- Apple Disk First Aid 7.2, a utility that repairs damaged disks, which provides a new user interface.
- More efficient management of the way fonts use memory.
- Macintosh PowerBook Control Panel version 7.1.3 and Express Modem software version 1.1.2, which include support for communications software that doesn't use the Apple Communications Toolbox.
- System Enabler 131 (version 1.0.3) for the PowerBook 160, 165, 165c, and 180 to support 12-inch monitors and improve reliability.
- Support for System 7.1.1.

The Apple Macintosh System Update will be licensed to customers free of charge through various on-line services, including AppleLink,

America Online, and CompuServe. The System Update 2.0.1 extension will also be included in System 7 Pro, and will be placed directly onto hard drives of shipping CPUs.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13366

Tech Info Library

MacSNMP: Mac System MIB Compile Error (4/96)

Revised: 4/26/96
Security: Everyone

MacSNMP: Mac System MIB Compile Error (4/96)

==========

Article Created: 21 September 1993
Article Reviewed/Updateed: 26 April 1996

TOPIC --------------------

Next week, together with IBM, I'm going to be demonstrating SNMP at a big exhibition. In trying to configure a RS/6000 as the console we had the following problem:

We couldn't compile the Apple-Macintosh-System-MIB. An error was reported at the line "userInTrouble TRAP-TYPE". I noticed that the MIB's first line states "IMPORTS TRAP-TYPE FROM RFC-1215". This RFC is not available on the RS/6000.

• Is this the problem?

• What is RFC-1215, where is it available, and can we receive a copy?

DISCUSSION --------------------

You have to remove this trap from the MIB definition and it should work fine. The RS/6000 can't handle this trap.

RFC 1215 is a convention for Defining Traps for use with the SNMP, you can find the it on the Internet using a tool such as Gopher.

Article Change History:
26 Apr 1996 - Reviewed and changed distrubution status.

Copyright 1993-96, Apple Computer, Inc.

Tech Info Library Article Number:13368

Tech Info Library

AWS 95: Long File Names and Retrospect Problem (9/93)

Revised: 9/23/93
Security: Everyone

AWS 95: Long File Names and Retrospect Problem (9/93)

==========

Article Created: 21 September 1993

TOPIC ----------

I backed up my Apple Workgroup Server (AWS) 95, and I had problems backing up files with filenames containing 32 or more characters. I got the error messages from Retrospect, what's wrong?

DISCUSSION ----------

This is a limitation of the Macintosh environment sitting on top of A/UX. The Macintosh limits filenames to 31 characters, so there's no way for Retrospect to deal with this. It's not a Retrospect (or AUX, for that matter) problem, but simply a place where the emulation isn't perfect.

You will find, if you look at that directory in the Finder, that the filenames aren't complete (view with Small Icons, it's easiest to see). If you attempt to move these files via the finder, they are created in the final location with a truncated filename.

This is documented, by the way, in Dantz's manual "Retrospect A/UX backup for the Apple Workgroup Server 95" on page 30 under troubleshooting.

The workaround is to rename these files so that their filenames match the Macintosh naming restrictions (31 characters). This should be a rare case, and the Retrospect log makes it easy to track them down. An alternative would be to back them up exclusively in the UNIX environment with tar, cpio or one of the other backup utilities.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13369

Tech Info Library

Intelligence At Large Inc.

Revised: 10/8/93
Security: Everyone

Intelligence At Large Inc.

==========

Intelligence At Large Inc.

Intelligence At Large Inc.
3508 Market St., Suite 230
Philadelphia, PA 19104.

215-387-6002 voice

215-387-9215 fax

Company Profile:
Vendor of MovieStar Videoconferencing Toolkit.

video conference, videoconference

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13370

Tech Info Library

Intuit, Inc.

Revised: 4/7/97
Security: Everyone

Intuit, Inc.

==========

Article Created: 22 September 1993
Article Reviewed/Updated: 7 April 1997

Intuit, Inc.
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155 Linfield Ave.
P.O. Box 3014
Menlo Park, CA 94026-3014

(800) 624-8742 (Sales)

(505) 896-7265 (Technical Support)

(520) 295-3240 (Main Number)

(415) 329-3689 (Fax)

Company Profile:
Software, develops and markets personal and small business finance and accounting products.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13371

At Ease 2.0 for Workgroups: Installing Over a Network (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0 for Workgroups: Installing Over a Network (8/95)

==========

Article Created: 22 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

This article describes how to install At Ease 2.0 for Workgroups over an AppleTalk network.

DISCUSSION ----------

If there are several computers on your network that will be using At Ease 2.0 for Workgroups, it is probably easiest to install the application over the network.

At the Administrator's Macintosh

First, you must install At Ease 2.0 for Workgroups on a server. Working from the administrator's Macintosh:

Step 1

Choose New Folder from the File menu.

Step 2

Name the folder At Ease 2.0 (WG) Net Install.

Step 3

Insert the At Ease 2.0 (WG) Install 1 disk into the floppy disk drive.

Step 4

Drag the At Ease 2.0 (WG) Install 1 disk icon to the At Ease 2.0 (WG) Net Install folder. Eject the disk.

Step 5

Insert the At Ease 2.0 (WG) Install 2 disk. Drag its icon to the Net Install folder. Eject the disk.

Step 6

Insert the At Ease 2.0 (WG) Install 3 disk and drag its icon to the Net Install folder. Eject the disk.

Step 7

Open the At Ease 2.0 (WG) Net Install folder.

Step 8

Open the At Ease 2.0 (WG) Install 1 folder.

Step 9

Select the Installer icon and drag it out of the At Ease 2.0 (WG) Install 1 folder into the At Ease 2.0 (WG) Net Install window.

Step 10

Select the Install At Ease icon and drag it to the At Ease 2.0 (WG) Net Install window.

At Each Workstation
==========

Follow these steps for each computer on the network that will be using At Ease:

Step 1

Turn on the computer.

Step 2

Connect to the file server that has At Ease 2.0 for Workgroups on it.

Step 3

Open the At Ease 2.0 (WG) Net Install folder.

Step 4

Double-click the Installer icon. Click OK in the Welcome dialog box that appears.

Step 5

Click the Install button and follow the directions on the screen.

Step 6

Click Restart to restart the computer and make At Ease available.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:13372

System Enablers Collection 1.0: Overview (6/96)

Revised: 6/4/96
Security: Everyone

System Enablers Collection 1.0: Overview (6/96)

==========

Article Created: 22 September 1993
Article Reviewed/Updated: 4 June 1996

TOPIC ----------

In a press release on August 9, 1993, Apple announced the Apple System Enablers Collection 1.0. This article describes the Collection.

DISCUSSION ----------

The System Enablers Collection contains nearly all of Apple's system enabler files on a single disk (the enablers included cover Macintoshes released between October, 1992 and May, 1993) System enablers are system files that allow System 7.1 to operate on Macintosh computers released since October 1992. Macintosh computers introduced before October, 1992 do not need a system enabler to operate. The disk also contains Control Panels and other files specific to these newer Macintoshes. The product contains a simple installer that automatically installs all of the system enablers and control panels in the user's system folder.

BENEFITS
By consolidating all of the different system enabler files into an easy-to-install package, system administrators, who support a variety of Macintosh models, can find the latest system enablers they need in one place. These customers will be able to use the System Enabler Collection to create a system folder that can boot any Macintosh, greatly simplifying network administration.

Some Macintosh users, particularly those with portable hard disks used for presentations or demonstrations, need to maintain a system folder that can boot any Macintosh. The System Enabler Collection will allow these customers to easily install all of the current system enablers into any system folder, so that their portable hard disk will be able to boot any Macintosh.

Service providers and computer rental agencies will also benefit from the System Enablers Collection. These customers will be able easily configure a system folder that can be loaded on any Macintosh computer, allowing them to standardize on one system folder for all their service and rental needs.

SYSTEM REQUIREMENTS AND DETAILS

When installed, the files in the System Enablers Collection take up approximately 550K of hard disk space. This product requires System 7.1. It supports all Macintosh computers released between October, 1992 and May, 1993 (see list in "Details" section). This product does not support Performa computers.

COMPATIBILITY

The System Enablers Collection is compatible with any Macintosh computer running System 7.1 (as of July 1993). Apple is not aware of any applications that have a compatibility problem with the System Enablers Collection 1.0.

AVAILABILITY AND DISTRIBUTION

The System Enablers Collection 1.0 will be made available to bulletin boards and on-line electronic services, including AppleLink. Users can also order the product from Apple's system software fulfillment center by calling the Apple Order Center. When purchased directly from Apple, there is a nominal $10 charge for this product to cover manufacturing, shipping, and processing. Credit card orders only will be taken at the Apple Order Center number.

The Tech Info Library article titled "Locating Vendor Information" can help you search for the Apple Order Center phone number.

Article Change History:

04 June 1996 - Updated for technical accuracy.

Copyright 1993-96, Apple Computer, Inc

Tech Info Library Article Number:13374

System Enablers Collection 1.0: Q & A (9/93)

Revised: 9/22/93
Security: Everyone

System Enablers Collection 1.0: Q & A (9/93)

==========

Article Created: 22 September 1993

TOPIC ----------

This article addresses questions on system enablers and the Enabler Collection.

DISCUSSION ----------

Q: WHAT IS A SYSTEM ENABLER?
A: System enablers are system files that allow System 7.1 to operate on Macintosh computers released since October 1992 (see list in "Extra" section). Macintosh computers introduced before October, 1992 do not need a system enabler to operate. System enablers are located in the computer's System Folder.

Q: HOW DOES THIS SOFTWARE GET INSTALLED?
A: The System Enablers Collection contains an installation program that automatically installs all of the software on the disk in the user's System Folder.

Q: DOES THE DISK CONTAIN ANY FILES BESIDES SYSTEM ENABLERS?
A: Yes. Some of the computers supported by the Collection also have Control Panels and other files that are specific to those computers. These files are also contained in the System Enabler Collection, and are automatically installed along with the system enablers. Examples of these extra files: the Battery Desk Accessory, the PowerBook Control Panel, and the AutoRemounter Control Panel. The Collection also contains the 32-Bit System Enabler, which allows owners of the Macintosh SE/30, II, IIx, and IIcx to address more than 8MB of physical RAM.

Q: WHY DO SOME MACINTOSHES HAVE SYSTEM ENABLERS, BUT OTHER MACS DO NOT?
A: System enablers were introduced in October, 1992 along with System 7.1. System enablers allow Apple to introduce new Macintoshes

without revising the base system software (System 7.1). This has resulted in the most rapid introduction of new Macintoshes in Apple's history. System 7.1 supports Macintoshes released before October, 1992 without the use of a system enabler file. Only one computer released since October, 1992 does not require a system enabler -- the PowerBook 145B.

Q: WILL THIS DISK BE UPDATED IN THE FUTURE?
A: Apple will release updated versions of the System Enablers Collection as needed. The next major release of system software will consolidate all previously released system enablers, which will temporarily eliminate the need for the System Enablers Collection.

Q: IF NEW COMPUTERS COME WITH SYSTEM ENABLERS PREINSTALLED, WHY DO I NEED the System Enablers Collection?
A: Many users, particularly system administrators and service providers, need to create a single System Folder that will boot any Macintosh. Since newer Macs need system enablers to work with System 7.1, these users will need all of the system enabler files in one place if they intend to create a System Folder that will boot any Macintosh. The System Enablers Collection provides all of these enablers in one place, so that users can easily create a System Folder that will boot any Macintosh.

DETAILS
List of Macintosh CPUs that have system enablers on the System Enablers Collection, the name of their system enabler, and the version included in the Collection:

PowerBook Duo 210	System Enabler 201, version 1.0.1
PowerBook Duo 230	System Enabler 201, version 1.0.1
PowerBook 160	System Enabler 111, version 1.0.2
PowerBook 165C	System Enabler 121, version 1.0
PowerBook 180	System Enabler 111, version 1.0.2
Macintosh IIvx	System Enabler 001, version 1.0.1
Macintosh IIvi	System Enabler 001, version 1.0.1
Macintosh Color Classic	System Enabler 401, version 1.0.5
Macintosh LC III	System Enabler 003, version 1.0
Macintosh Quadra 800	System Enabler 040, version 1.0
Macintosh Centris 610	System Enabler 040, version 1.0
Macintosh Centris 650	System Enabler 040, version 1.0

Other files that are contained in the System Enablers Collection:
- Battery Desk Accessory, version 7.1.1
- PowerBook Control Panel, version 7.1.1
- PowerBook Display Control Panel, version 1.0.4
- Sound Control Panel, version 7.1.1
- Screen Control Panel, version 1.0
- AutoRemounter Control Panel, version 1.0
- Memory Control Panel, version 7.1.1
- Caps Lock Extension, version 7.1.2
- 32-Bit System Enabler, version 1.0.3

This product does NOT contain the enablers for the PowerBook 180C and the Macintosh LC 520. These computers were released after the Collection was completed.

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Tech Info Library Article Number:13375

Tech Info Library

Alias Research, Inc.

Revised: 4/7/97
Security: Everyone

Alias Research, Inc.

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Article Created: 22 September 1993
Article Reviewed/Updated: 7 April 1997

Alias Research, Inc.
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110 Richmond St. East
Suite 400
Toronto Ontario M5C 1P1
CANADA

800-465-0868 (technical support)

416-362-9181 (main number)

416-362-4696 Fax

416-362-1276 Fax (technical support)

Company Profile:
Software, develops and markets applications for creating and editing artwork and images.

.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13377

Datawatch Corporation

Revised: 4/7/97
Security: Everyone

Datawatch Corporation

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Article Created: 22 September 1993
Article Rewiewed/Updated: 19 January 1995

Datawatch

Triangle Software Division
PO Box 13984
Research Triangle Park, NC 27709-3984

919-490-1277

919-490-6672 Fax

Company Profile:
Software, develops and markets virus detection, security (encryption) and network utilities.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13381

Tech Info Library

Fractal Design Corporation (2/97)

Revised: 2/21/97
Security: Everyone

Fractal Design Corporation (2/97)

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Article Created: 22 September 1993
Article Reviewed/Updated: 21 February 1997

Fractal Design Corporation
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335 Spreckels Drive, Suite F
Aptos, CA 95003

408-430-4100: Sales/Customer Assistance
408-438-9670: FAX

408-430-4200: Technical Support
408-438-9672: FAX

Internet:
Web: http://www.fractal.com/
FTP: ftp://ftp.fractal.com/
AOL: keyword: Fractal

Company Profile:
Software, develops and markets 2D painting applications.

Article Change History:
21 Feb 1997 - Updated phone information.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13383

Tech Info Library

Gold Disk

Revised: 4/7/97
Security: Everyone

Gold Disk

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Article Created: 22 September 1993
Article Reviewed/Updated: 7 April 1997

Gold Disk

Gold Disk
385 Van Ness Avenue, Suite 110
Torrance, CA 90501

800-835-5889 (sales)

416-602-0395 (Macintosh products technical support)

416-602-5292 (Windows products technical support)

416-602-4357 (Amiga products technical support)

416-602-0393 Fax

Company Profile:
Software, develops and markets presentation creation applications.

.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13385

Tech Info Library

Gryphon Software

Revised: 4/7/97
Security: Everyone

Gryphon Software

==========

Article Created: 22 September 1993

Gryphon Software

7220 Trade St., Ste. 120
San Diego, CA 92121

619-536-8815

619-536-8932 Fax

Company Profile:
Software, develops and markets quicktime-based multimedia recording and editing applications.
.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13389

Tech Info Library

Innovative Data Design Inc.

Revised: 4/7/97
Security: Everyone

Innovative Data Design Inc.

==========

Article Created: 22 September 1993
Article Reviewed/Updated: 7 April 1997

Innovative Data Design

1820-L Arnold Industrial Way
Concord, CA 94520-5325

510-680-6818

510-680-1165 Fax

Company Profile:
Software, develops and markets graphics creation and editing applications.

.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13390

..TIL13391-Nolo_Press.pdf

Tech Info Library

Nolo Press

Revised: 4/7/97
Security: Everyone

Nolo Press

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Article Created: 22 September 1993
Article Reviewed/Updated: 7 April 1997

Nolo Press
---

950 Parker St.
Berkeley, CA 94710

800-992-6656 (orders)

510-549-1976 (technical support)

510-548-5902 Fax

Company Profile:
Software and books, develops and markets do it yourself legal software, including will writing, trust creation and record keeping packages.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13391

Tech Info Library

Ray Dream Inc.

Revised: 4/7/97
Security: Everyone

Ray Dream Inc.

==========

Article Created: 22 September 1993
Article Reviewed/Updated: 7 April 1997

Ray Dream Inc.

1804 N. Shoreline Blvd.
Mountain View, CA 94043

Telephone: 415-960-0765

Telephone: 800-846-0111

Fax: 415-960-1198

Company Profile:
Software, develops and markets 3D image creation and editing applications.

.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13395

Tech Info Library

Specular International Ltd.

Revised: 4/7/97
Security: Everyone

Specular International Ltd.

==========

Article Created: 22 September 1993
Article Reviewed/Updated: 7 April 1997

Specular International
---
479 West Street
Amherst, MA 01004

800-433-7732

413-253-3100

413-253-0540 Fax

Company Profile:
Software, develops and markets 3D image creation and editing applications.

.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13396

..TIL13398-Strata_Inc.pdf

Tech Info Library

Strata, Inc.

Revised: 4/7/97
Security: Everyone

Strata, Inc.

==========

Article Created: 22 September 1993
Article Reviewed/Updated: 7 April 1997

Strata Inc.
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2 W. Saint George Blvd., Ste. 2100
St. George, UT 84770

1-800-STRATA 3D (1-800-787-2823)

801-628-5218

801-628-9756 Fax

Company Profile:
Software, develops and markets applications for creating and editing 3D artwork and images.

Support Information Services

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13398

Tech Info Library

Vision Software International

Revised: 4/7/97
Security: Everyone

Vision Software International

==========

Article Created: 22 September 1993
Article Reviewed/Updated: 7 April 1997

Vision Software International

4633 Old Ironsides Dr., Ste. 250
Santa Clara, CA 95054

408-748-8411

408-748-9584 Fax

Company Profile:
Software, develops and markets QuickTime-based recording and editing software.

.

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13403

Tech Info Library

At Ease 2.0 for Workgroups: Importing User Names (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0 for Workgroups: Importing User Names (8/95)

==========

Article Created: 22 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

This article describes how to import a database file with a list of users into At Ease.

DISCUSSION ----------

You do not have to add users to At Ease individually if their names already exist in a separate database file. For instance, a list of employees or class members could serve as your source of At Ease user names.

Multiple fields that identify the users may make the import and setup process easier. For instance, if the database file you wish to use has employees' first and last names, identification numbers, and departments, you can convert these respectively into Setup fields like user, password, and Setup.

As you import the list of users, you can also tailor the list by grouping the names into particular Setups as you go.

To Import A List Of Users

Step 1

Open the At Ease Setup program on the administrator's Macintosh.

Step 2

Click Users.

Step 3

Click Import to add a list of users to At Ease.

Step 4

Select the name of the file that you want to import.

Step 5

Choose the fields from the original file that you want to import into At Ease.

- At least one name field will become the user name
  (for instance, the last name).
- You may use another available field for the password
  (for instance, a student or employee ID number).
- You may use another field to become the Setup
  (for instance, the employee's department).

Step 6

In the order of the fields in your database, click each label in the available fields list that defines what you want the fields in your database to become in At Ease. Click <Ignore> for any field in the database that you don't want to import. Click Add after each field label selection to make it appear in the Imported Fields list. (Select any item in Imported Fields you decide to remove, and click Remove.)

Step 7

After you have made your choices, click Sample Import to check them.

Step 8

Click OK if the sample is correct.

Step 9

Click OK to import the list.

Step 10

A window will identify how many users and Setups were added. Click OK.

Step 11

Click Done when you are finished importing users. If you have imported a Setup, its name appears in the list of Setups in the main window of At Ease Setup.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:13405

Tech Info Library

Apple Order Center (12/96)

Revised: 12/10/96
Security: Everyone

Apple Order Center (12/96)

==========

Article Created: 22 September 1993
Article Reviewed/Updated: 10 December 1996

Apple Order Center

1-800-950-5382
1-800-293-6617

Company Profile:
The Apple Order Center handles upgrades for selected Apple software products.

Copyright 1993-96, Apple Computer, Inc.

Tech Info Library Article Number:13406

AsiaSoft, Inc. (formerly SystemSoft) (6/95)

Revised: 6/8/95
Security: Everyone

AsiaSoft, Inc. (formerly SystemSoft) (6/95)

==========

Article Created: 22 September 1993
Article Revised/Updated: 8 June 1994

AsiaSoft, Inc.
---

333 17th Street
Suite L
Vero Beach, FL 32960

800-882-8856 (Sales)

407-234-5366 (Support)

Company Profile:
Sells and supports a number of Kanji applications for the Macintosh, such as EGWord, Claris MacWrite II-J, Above Photoshop-J, etc. AsiaSoft supports KanjiTalk, the Japanese version of the Mac OS.

Article Change History:
08 Jun 1995 - Changed company name from SystemSoft to AsiaSoft.
21 Jan 1994 - Added information about third-party Kanji applications

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13407

Tech Info Library

KanjiTalk 6.0.7 Upgrade (5/95)

Revised: 5/23/96
Security: Everyone

KanjiTalk 6.0.7 Upgrade (5/95)

==========

Article Created: 22 September 1993
Article Reviewed/Updated: 23 May 1996

TOPIC ----------

KanjiTalk 6.0.7 users have two options to upgrade their Macintosh Japanese Operating Systems.

DISCUSSION ----------

KanjiTalk 6.0.7 users can upgrade to KanjiTalk 7 or Japanese Language Kit 1.2 at special upgrade prices.

KanjiTalk 7

KanjiTalk 7 offers the following features:

- Japanese (fully localized) version of System 7.1
- Japanese Finder
- Seven TrueType fonts: HonMincho, MaruGothic, HeiseiMincho, HeiseiGothic, Osaka, Ryumin, GothicBBB.
- Two PostScript fonts: ChuGothic, SaiMincho

KanjiTalk 7 system requirements:

- At least 5 MB RAM
- At least 28 MB of free hard disk space
- CD ROM Drive (in order to load additional fonts)

Customers who wish to purchase KanjiTalk 7 should contact AsiaSoft Inc. for pricing information. They are at 800-882-8856 as of the date of this article.

Japanese Language Kit 1.2

The Japanese Language Kit offers the following features:

- An extension to System 7.5 (English or other versions) that allows you to input Japanese text and run Japanese applications without switching systems.
- Support for Japanese application menus
- Finder remains English
- Full compatibility with most Japanese software
- Two TrueType fonts: HonMincho and MaruGothic
- Two PostScript fonts: ChuGothic and SaiMincho

Japanese Language Kit system requirements:

- At least 5 MB of RAM
- At least 20 MB of free hard disk space
- An Apple SuperDrive floppy disk drive
- Macintosh System 7.1 or later

Customers who want to purchase the Japanese Language Kit should contact AsiaSoft Inc. for pricing information. They are at 800-882-8856 as of the date of this article.

To verify a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
23 May 1996 - Corrected minor typographical error.
26 Jun 1995 - Updated vendor and availability information.

Copyright 1993-96, Apple Computer, Inc.

Tech Info Library Article Number:13408

Tech Info Library

HP DeskWriter C: Cause of Garbage Characters (10/93)

Revised: 10/8/93
Security: Everyone

HP DeskWriter C: Cause of Garbage Characters (10/93)

==========

Article Created: 6 October 1993

TOPIC ----------

When I send a print job from a Performa 400 to an HP DeskWriter C, the printer seems to dump garbage characters that have accumulated in the print buffer. This problem occurs only when the printer is plugged in to the printer port, and ceases when the printer is switched to the modem port.

What could be sending this garbage out of the printer port? Is this a problem in 7.0.1P that could be fixed by upgrading to 7.1P2?

DISCUSSION ----------

The problem is most likely the print driver or the AppleTalk driver. Upgrading to 7.1P2 is worth a try if the suggestions below don't help.

HP provided some helpful information on where the "garbage characters" might be coming from:

- HP ships two drivers with the DeskWriter C printer: one for an AppleTalk connection, the other for a direct serial connection. If the HP DeskWriter serial driver is being used and AppleTalk is (or was previously) ON, there is a good possibility that some "AppleTalk data" was sent to the printer buffer and printed as "garbage". One way to clean the print buffer completely is to power cycle the printer.

- In rare instances, spurious data is sent to the printer if the printer is already powered on when the Macintosh is turned on. Try starting up the Macintosh on first, then powering on the DeskWriter.

- Be sure the serial cable you're using is an HP cable #92215S or Apple cable #M0197 for a direct serial connection.

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Tech Info Library Article Number:13411

Tech Info Library

LW 8.0: Fixed Margins in Page Setup (9/93)

Revised: 9/23/93
Security: Everyone

LW 8.0: Fixed Margins in Page Setup (9/93)

==========

Article Created: 23 September 1993

TOPIC ----------

I have some questions regarding the LaserWriter 8.0 driver.

1) Why is the right margin in LaserWriter 8.0 Page setup window set at .403 and the other margins are set at .431 on an 8.5 by 11 inch page?

2) Why are the margins in all different (top .111, left .139, bottom .208, right .153) sizes if Larger Print Area is selected on an 8.5 by 11 inch page?

DISCUSSION ----------

1) The fixed margins displayed in the LaserWriter 8.0 Page Setup dialog are "standards" created by the Apple Imaging hardware group and these same standards apply to all LaserWriters since the LaserWriter IINT, with a few exceptions. All of the margins are based on what the maximum imageable areas are for the various print engines. When a different PPD (PostScript Printer Description) is selected for a different printer, these values may change to reflect the imageable area for that print engine.

2) In terms of your question with "Larger Print Area", the margins displayed are in fact the minimum margins that create a boundary for the maximum imageable (or printable) area. NOTE: Even though Larger Print Area is selected, the maximum printable area may not be achieved unless an application specifically supports those minimum margins.

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Tech Info Library Article Number:13413

At Ease 2.0 (WG): Updating On An AppleTalk Network (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0 (WG): Updating On An AppleTalk Network (8/95)

==========

Article Created: 23 September 1993
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

This article describes how to put the information on the administrator's Macintosh onto all of the At Ease computers on an AppleTalk Network.

DISCUSSION ----------

Making a List of Computers to Update

The first step to updating the At Ease workgroup is to make a list of the computers in the group you want to update with the information on the administrator's Macintosh. To do this:

Step 1

Open the At Ease Setup program on the administrator's computer (where you have created the group's Setups).

Step 2

Choose update Computers from the Options menu.

Step 3

To create the list of computers to be updated, click the Add button. You will see a dialog box with a window called "At Ease Computers" and another called "Computers to Update". If one of the names of the At Ease computers is dimmed, it has been set not to allow remote administration. If you want to update that computer, you will have to turn on the remote administration option in its At Ease Setup program.

Step 4

Click the names of the computers that you want to update with the At Ease information on the administrator's computer. If you have never remotely updated computers before, try updating one computer first, then check that computer to be sure the update process was successful and the settings are as you want them. If they are not, change the settings on the administrator's computer and try updating again.

Step 5

Click Add. If you are asked for the password, type in the administrator's password.

Step 6

Click OK when you are done. A list of the computers you selected for updating will appear.

Checking the At Ease Computers

At this point you can check each selected computer's setup. Top do this:

Step 1

Click the name of the computer you want to check.

Step 2

Click Check.

If you are attempting to update a computer with documents or applications to which that computer does not have access, it will list the missing items. You will have to add those documents or applications to the computer before it can be updated.

Step 3

Click OK.

Updating the Computers

Now you can finish updating by clicking Update All. If you get a message saying a computer is unavailable (it may be turned off, or not running At Ease), you can continue the update and update the unavailable computer later. If you click Cancel at this point, then make the unavailable computer available, you will have to start the update process over again from the beginning.

Click Done when you are finished.

You will need to restart all the computers that have been updated and have them

start up with At Ease:

Step 1

Check the main window of the At Ease Setup program to make sure that At Ease is turned on.

Step 2

Choose Quit from the File menu.

Step 3

Choose Restart from the Special menu.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:13415

Tech Info Library

A/UX and gcc Binary (9/93)

Revised: 9/24/93
Security: Everyone

A/UX and gcc Binary (9/93)

==========

Article Created: 23 September 1993

TOPIC ----------

I would like to get the A/UX gcc binary. Do you have one for A/UX 3.0? Could you tell me where I can get it?

DISCUSSION ----------

The latest version of gcc for A/UX 3.0 and 3.0.1 is 2.4.5. It is available from anonymous ftp on jagubox.gsfc.nasa.gov (128.183.44.1) under the /pub/aux directory.

You might also need to get a copy of gzip package (also in jagubox) to uncompress files since it is in gz (gnu compressed) format.

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Tech Info Library Article Number:13417

Portable StyleWriter: How the Two Power Sources Interact (9/93)

Revised: 9/24/93
Security: Everyone

Portable StyleWriter: How the Two Power Sources Interact (9/93)

==========

Article Created: 16 September 1993

TOPIC ----------

What is the value of the DC current necessary to run the Portable Stylewriter?

DISCUSSION ----------

The AC adapter supplies +9.5VDC to the printer. The Nickel-cadmium battery Pack supplies 6VDC.

Here is a brief explanation of how the two power sources interact:
When the DC plug of the AC adapter is plugged into the printer, the unit will switch from the Ni-Cad battery to the AC adapter. The DC input, after passing through a 0.4A fuse and a noise filter, is checked for voltage by the A/D converter to judge whether the input is from the 9.5VDC or 6VDC Ni-Cad. If the Ni-Cad only is being used, the 'low battery sensing function' and 'auto power off' functions are activited. When the Ni-Cad pack is being charged, the A/D converter is used to check that DC is being inputted from the AC adapter and to activate the 'auto charge off function'.

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Tech Info Library Article Number:13418

Tech Info Library

AppleSearch Searching Tips (9/93)

Revised: 9/24/93
Security: Everyone

AppleSearch Searching Tips (9/93)

==========

Article Created: 20 September 1993

TOPIC ----------

This article presents Boolean operators that help you refine search requests in AppleSearch. The name Boolean is a mathematical term, used here to describe document-searching and sorting logic. Boolean queries use special qualifying words, called Boolean operators, to expand or narrow the scope of your search. AppleSearch supports the full range of Boolean operators: or, and, not, wild characters, and proximity connectors. This article summarizes them.

DISCUSSION ----------

Please note that a search request is evaluated from left to right. Here's a list of operators you can use in AppleSearch:

- The and operator
  This searches for articles that contain both search words separated by the operator "and".

- The or operator
  This searches for articles that contain either one or combinations of the search words. The "or" operator is the default operator between search words.

- The not operator
  This searches for articles that contain the search words preceding, "not". It ignores articles containing the search words following "not".

- The "*" (wild string) operator
  Wild string searching allows you to generate other possible search words by substituting the "*" with 0 or more text characters in order to form new words. You can insert the "*" anywhere in the search word to find articles that contain variations of the word with the

"*". Example: Searching on Victor* will find words such as victor, victorian, victoria and victory.

- The "?" character
  Use the question mark to search for words that can be formed by substituting the question mark (?) with a letter. Example: Poe?s finds poets or poems.

- Proximity (or adjacency) operators
  Proximity searching allows you to find important search terms when they are next to each other. You can use any of these operators: (-), (.), (,), ('), (adj). The "adj" operator requires spaces between the words.

  For example, the search string:

    AppleTalk adj Remote adj Access

  will give you all occurrences of AppleTalk Remote Access and won't return articles that contain only "appletalk" or "remote" or "access".

  You can further adjust the proximity of the search by specifying how close the search terms need to be to each other. To adjust the proximity of your search, use the W/n Boolean operator, where W means within and n equals the number of terms that exist between your search words. For example, the search string:

    Apple w/3 router

  finds a good selection of AppleTalk Internet Router articles.

- The "!" (word expansion) operator
  Word expansion allows you to search for words that frequently occur with your search word. By inserting the exclamation mark (!) after your search word, you instruct AppleSearch to find articles that contain the words that occur most often with the search word (the word preceding the exclamation mark). For example, the search:

    SCSI!

  will find articles containing words like device, SC, Small Computer Systems Interface, and so on.

- The () operator
  Enclosing a phrase in parentheses instructs AppleSearch to process the enclosed search words before evaluating those outside parentheses. It designates the precedence of searching as the phrase is evaluated from left to right.

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Tech Info Library Article Number:13420

Tech Info Library

IIe Installer Disk 2.2.1: Disk Contents (9/93)

Revised: 9/24/93
Security: Everyone

IIe Installer Disk 2.2.1: Disk Contents (9/93)

==========

Article Created: 24 September 1993

TOPIC --

This article details the contents of the IIe Installer disk 2.2.1. This installs software for the Apple IIe card used in the Macintosh LC and selected Performa computers.

DISCUSSION --

File Name	Version #	Created	Modified
Apple HD SC Setup	3.1	2/11/92	2/11/92
BASIC.SYSTEM		7/17/90	7/17/90
Desktop		10/7/92	7/27/93
IIe Script	2.2.1	7/6/93	7/28/93
IIe Startup	2.2.1	7/27/93	7/27/93
Installer	3.2	4/23/91	4/23/91
PRODOS		7/17/90	7/17/90
Read Me		10/5/92	10/5/92
Color	3.3.2	9/5/89	9/5/89
Finder	6.1.8	4/17/91	4/17/91
General	3.3.3	3/7/90	3/7/90
Keyboard	3.3.1	8/26/88	8/26/88
Monitors	4.3	9/4/90	9/4/90
Mouse	3.3.1	8/26/88	8/26/88
ProDOS File System	1.2.1	7/6/93	7/6/93
Startup Device	3.3.1	8/26/88	8/26/88
System	6.0.8	4/17/91	4/17/91
TeachText	1.2	4/30/88	4/30/88

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Tech Info Library Article Number:13423

Express Modem Install for GeoPort: Disk Contents (9/93)

Revised: 9/24/93
Security: Everyone

Express Modem Install for GeoPort: Disk Contents (9/93)

==========

Article Created: 24 September 1993

TOPIC --------------------

This article details the contents of the Express Modem Install for GeoPort disk.

DISCUSSION --------------------

File Name	Version #	Created	Modified
Express Modem ReadMe		6/24/93	8/4/93
AppleLink 9600 US Access		12/23/92	12/23/92
ASLM Resources		6/30/93	6/30/93
Express Modem	1.1.2	8/4/93	8/4/93
Express Modem AT Cmds		12/23/92	12/23/92
Express Modem CCL	1.0	12/23/92	12/23/92
Express Modem Tool	1.1.2	8/4/93	8/4/93
Fax Cover	1.2	8/4/93	8/4/93
Sample		3/26/93	3/26/93
Standard		12/23/92	12/23/92
Fax Extension	1.2	8/4/93	8/4/93
Fax Sender	1.2	8/4/93	8/4/93
Fax Terminal	1.2	8/4/93	8/4/93
Fax Viewer	1.3	8/4/93	8/4/93
GeoPort™ Extension	1.0	8/5/93	8/5/93
GeoPort™ Telecom	1.0	12/23/92	12/23/92
GeoPort™ Telecom Adapter	1.0	8/5/93	8/5/93
My first fax		12/23/92	12/23/92
Serial Extension	1.0	8/5/93	8/5/93
Shared Library Manager	1.1	6/30/93	6/30/93
Install GeoPort™	7.1	8/5/93	8/5/93
Installer	3.4	8/17/92	8/4/93
TeachText	7.1	11/24/92	11/24/92

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Tech Info Library Article Number:13424

Tech Info Library

Hardware System Update 2.0.1: Disk Contents (9/93)

Revised: 12/1/93
Security: Everyone

Hardware System Update 2.0.1: Disk Contents (9/93)

==========

Article Created: 24 September 1993

TOPIC ----------

This article details the contents of the Hardware System Update 2.0.1 disk.

DISCUSSION ----------

The Hardware System Update 2.0.1 is shipped on a 1.4MB disk.

File Name	Version #	Created	Modified
PowerBook Display	1.0.4	3/22/93	3/22/93
AutoRemounter	1.2	8/25/93	8/25/93
Express Modem	1.1.2	8/4/93	8/4/93
Memory	7.1.1	11/17/92	11/17/92
PowerBook	7.1.3	7/8/93	7/8/93
Sound	8.0.1	6/25/93	6/25/93
Desktop		9/16/93	9/16/93
720K Floppy Disk Formatter	1.0	6/29/93	6/29/93
Express Modem Tool	1.1.2	8/4/93	8/4/93
Hardware System Update	2.0.1	9/14/93	9/14/93
Record Button	1.0	9/29/92	9/29/92
Sound Manager	3.0	6/25/93	6/25/93
Installer	3.4	8/17/92	8/17/92
Installer Script	2.0.1	9/14/93	9/14/93
System Enabler 131		6/8/93	6/8/93
System Enabler 401		3/8/93	3/8/93
Keyboard Resources	1.0	9/29/92	9/29/92
Serial Resources		12/3/92	12/3/92
System Update 2.0.1 Read Me		6/25/93	9/15/93
TeachText	7.1	11/24/92	11/24/92
Apple HD SC Setup	7.2.2	9/15/93	9/15/93
Disk First Aid	7.2	8/6/93	8/6/93

..TIL13425-Hardware_System_Update_2-0-1-Disk_Contents_9-93_(TA30211).pdf

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Tech Info Library Article Number:13425

Tech Info Library

32-Bit System Enabler: Disk Contents (6/95)

Revised: 6/13/95
Security: Everyone

32-Bit System Enabler: Disk Contents (6/95)

==========

Article Created: 27 September 1993
Article Reviewed/Updated: 13 June 1995

TOPIC -----

This article details the contents of the 32-Bit System Enabler, shipped on one 800K floppy disk.

DISCUSSION -----

Availability

AppleLink:
Software Sampler
 Apple SW Updates
  Macintosh
   Supplemental System Software

Disk Name:	Version:
32-Bit System Enabler Disk	
32-Bit System Enabler	1.0.3
32-Bit System Enabler Read Me	
TeachText	7.1

Article Change History:
13 June 1995 - Corrected typos

Support Information Services

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Tech Info Library Article Number:13427

Tech Info Library

Hardware System Update 1.0: Disk Contents (6/95)

Revised: 6/13/95
Security: Everyone

Hardware System Update 1.0: Disk Contents (6/95)

==========

Article Created: 27 September 1993
Article Reviewed/Updated: 13 June 1995

TOPIC -----

This article details the contents of Hardware System Update 1.0, shipped on one 1.4MB floppy disk.

DISCUSSION -----

Availability

AppleLink:
Software Sampler
 Apple SW Updates
  Macintosh
   Supplemental System Software

Contents

Control Panels *f*	
- Memory	7.1.1
Extensions *f*	
- Hardware System Update	1.0
HW System Update Read Me	
Installer	3.4
Installer Script	1.0
TeachText	7.1

Article Change History:
13 June 1995 - Corrected typos

..TIL13428-Hardware_System_Update_1-0-Disk_Contents_6-95_(TA30213).pdf

Support Information Services

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Tech Info Library Article Number:13428

Tech Info Library

System 7.0.1: 1.4MB Disk Contents (9/93)

Revised: 9/28/93
Security: Everyone

System 7.0.1: 1.4MB Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 7.0.1, as shipped on six 1.4MB floppy disks.

DISCUSSION -----

Availability

AppleLink:
Software Sampler
 Apple SW Updates
  Macintosh
   System Software

FTP Apple.com: /dts/mac/sys.soft/7.0.1

Disk Name:	Version:	Part Number:
Disk Tools		690-6049
Apple HD SC Setup	7.0.1	
Disk First Aid	7.0	
System Folder		
- Apple Menu Items		
- Control Panels		
- Extensions		
- Finder	7.0	
- Fonts		
- Preferences		
-Finder Preferences		
- Startup Items		

```
- System                          7.0.1

Install 1                                        690-6041
------------------
Install                          7.0.1
Installer                        3.2
Network Extension                7.0
System                           7.0.1

Install 2                                        690-6042
---------
A/ROSE                           1.1.5
AppleShare                       7.0
DAL                              1.3
DAL Preferences                  1.3
EtherTalk Phase 2                2.2.1
Finder                           7.0
Finder Help                      7.0
TokenTalk Phase 2                2.2
TokenTalk Prep                   2.2

Tidbits                                          690-6045
-------
Apple File Exchange Folder
- Apple File Exchange            7.0
- DCA-RFT/MacWrite               1.01
Cache Switch                     7.0.1
CloseView                        7.0
Control Panels
- Brightness                     7.0.1
- Caps Lock                      7.0.1
- Color                          7.0
- Control Panels (alias)
- File Sharing Monitor           7.0
- General Controls               7.0
- Keyboard                       7.0
- Labels                         7.0
- Map                            7.0
- Memory                         7.0.1
- Monitors                       7.0
- Mouse                          7.0
- Network                        2.3.1
- Portable                       7.0.1
- Sharing Setup                  7.0
- Sound                          7.0
- Startup Disk                   7.0
- Users & Groups                 7.0
- Views                          7.0
Desk Accessories
- Alarm Clock                    7.0
- Battery                        7.0.1
- Calculator                     7.0
- Chooser                        7.0
```

- Key Caps	7.0	
- Note Pad	7.0	
- Puzzle	7.0	
- Scrapbook	7.0	
- Scrapbook File		
Easy Access	7.0	
File Sharing Extension	7.0.1	
LaserWriter Font Utility	7.0	
Read Me		
TeachText	7.0	

Printing 690-6044

AppleTalk ImageWriter	7.0	
Backgrounder	1.3	
ImageWriter	7.0	
Installer	3.2	
Laser Prep	7.0	
LaserWriter	7.0	
LQ AppleTalk ImageWriter	7.0	
LQ ImageWriter	7.0	
Personal LaserWriter SC	7.0	
Personal LW LS	7.0	
Printer Update	7.0	
PrintMonitor	7.0	
StyleWriter	7.0	

Fonts 690-6043

Athens	N/A	
Cairo	N/A	
Chicago	N/A	
Courier	N/A	
Geneva	N/A	
Helvetica	N/A	
London	N/A	
Los Angeles	N/A	
Monaco	N/A	
New York	N/A	
Palatino	N/A	
San Francisco	N/A	
Symbol	N/A	
Times	N/A	
Venice	N/A	

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Tech Info Library Article Number:13429

Tech Info Library

System 2.0.1 (4.1/5.5) 800K Disk Contents (9/93)

Revised: 9/27/93
Security: Everyone

System 2.0.1 (4.1/5.5) 800K Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 2.0.1 (System file version 4.1 and Finder version 5.5) shipped on three 800K floppy disks.

DISCUSSION -----

Availability

AppleLink:
Developer Support
 Developer Services
  System Software
   Macintosh U.S. System Software

Disk Name:	Version:
System Tools	
System Folder	
- AppleTalk ImageWriter	2.6
- Clipboard File	
- Easy Access	1.0
- Finder	5.5
- General	1.0
- ImageWriter	2.6
- Key Layout	2.1
- Keyboard	1.0
- Laser Prep	4.0
- LaserWriter	4.0
- Monitors	1.0
- Mouse	1.0

```
- Scrapbook File
- Sound                          1.0
- Startup Device                 1.0
- System                         4.1
TeachText                        1.0
Update Folder
- Read Me
Utilities Folder
- Apple HD SC Setup              1.4
- Installer                      2.4
- Installer Script
  - Mac Plus, 512Ke, 512K Script
  - Macintosh II Script
  - Macintosh SE Script

Utilities 1
-----------
Apple HD SC Setup                1.4
Disk First Aid                   1.2
HDBackup                         1.0
Run Disk First Aid.
System Folder
- AppleTalk ImageWriter          2.6
- Clipboard File
- Easy Access                    1.0
- Finder                         5.5
- General                        1.0
- ImageWriter                    2.6
- Key Layout                     2.1
- Keyboard                       1.0
- Laser Prep                     4.0
- LaserWriter                    4.0
- Monitors                       1.0
- Mouse                          1.0
- Startup Device                 1.0
- System                         4.1
TeachText                        1.0
Update Folder
- Read Me

Utilities 2
-----------
Apple File Exchange Folder
- Apple File Exchange            1.0
- DCA-RFT/MacWrite
Font/DA Mover Folder
- Desk Accessories
  - Find File
  - Note Pad
  - Puzzle
- Font/DA Mover                  3.5
- Fonts
  - Athens
```

- Cairo
- Courier
- Helvetica
- London
- Los Angeles
- Mobile
- San Francisco
- Symbol
- Times

TeachText 1.0
Update Folder
- Read Me

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Tech Info Library Article Number:13430

Tech Info Library

System 5.0: 800K Disk Contents (9/93)

Revised: 9/27/93
Security: Everyone

System 5.0: 800K Disk Contents (9/93)

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Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 5.0, shipped on four 800K floppy disks.

DISCUSSION -----

Availability

AppleLink:
Developer Support
 Developer Services
  System Software
   Macintosh U.S. System Software

FTP Apple.com: /dts/mac/sys.soft/5.0

Disk Name:	Version:
System Tools 1	
System Folder	
- Clipboard File	
- Color	3.2
- DA Handler	1.0
- Easy Access	1.0
- Finder	6.0
- General	3.2
- Key Layout	2.2
- Keyboard	3.2
- Monitors	3.2
- Mouse	3.2

```
- MultiFinder                    1.0
- Scrapbook File                 2.1
- Sound                          3.2
- Startup Device                 3.2
- System                         4.2
TeachText                        1.1
Update Folder
- Read Me
Utilities Folder
- Apple HD SC Setup              1.5
- Installer                     2.5
- Installer Scripts
  - Macintosh II Script
  - Macintosh Plus Script
  - Macintosh SE Script

System Tools 2
--------------
Installer                        2.5
System Folder
- AppleTalk ImageWriter          2.6
- Background Printing
- Backgrounder                   1.0
- Clipboard File
- Color                          3.2
- DA Handler                     1.0
- Easy Access                    1.0
- Finder                         6.0
- General                        3.2
- ImageWriter                    2.6
- Key Layout                     2.2
- Keyboard                       3.2
- Laser Prep
- LaserWriter                    5.0
- Mouse                          3.2
- MultiFinder                    1.0
- PrintMonitor                   1.0
- Scrapbook File
- Sound                          3.2
- Spool Folder
- Startup Device                 3.2
- System                         4.2
TeachText                        1.1
Update Folder
- Read Me

Utilities 1
-----------
Apple HD SC Setup                1.5
Disk First Aid                   1.3
HDBackup                         1.0
System Folder
- Clipboard File
```

- Color 3.2
- DA Handler 1.0
- Easy Access 1.0
- Finder 6.0
- General 3.2
- Key Layout 2.2
- Keyboard 3.2
- Monitors 3.2
- Mouse 3.2
- MultiFinder 1.0
- Scrapbook File
- Sound 3.2
- Startup Device 3.2
- System 4.2

TeachText 1.1

Update Folder
- Read Me

Utilities 2

Apple File Exchange Folder
- Apple File Exchange 1.0.1
- DCA-RFT/MacWrite

Font/DA Mover Folder
- Desk Accessories
  - Alarm Clock
  - Calculator
  - Chooser
  - Control Panel
  - Find File
  - Key Caps
  - Note Pad
  - Puzzle
  - Scrapbook
- Font/DA Mover 3.8
- Fonts
  - Athens
  - Cairo
  - Courier
  - Geneva
  - Helvetica
  - London
  - Los Angeles
  - Mobile
  - New York
  - San Francisco
  - Symbol
  - Times
  - Venice

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Tech Info Library Article Number:13431

Tech Info Library

System 5.1: 800K Disk Contents (9/93)

Revised: 9/27/93
Security: Everyone

System 5.1: 800K Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC --------------------

This article details the contents of System 5.1, shipped on two 800K floppy disks.

DISCUSSION --------------------

Availability

AppleLink:
Developer Support
 Developer Services
  System Software
   Macintosh U.S. System Software

FTP Apple.com: /dts/mac/sys.soft/5.1

Disk Name:	Version:
System Tools 1	
System Folder	
- Clipboard File	
- Color	3.2
- DA Handler	1.0
- Easy Access	1.0
- Finder	6.0
- General	3.2
- Key Layout	2.2
- Keyboard	3.2
- Monitors	3.2
- Mouse	3.2

```
- MultiFinder                        1.0
- Scrapbook File
- Sound                              3.2
- Startup Device                     3.2
- System                             4.3
TeachText                            1.1
Update Folder
- Read Me
Utilities Folder
- Apple HD SC Setup                  1.5
- Installer                          2.5
- Installer Scripts
  - Macintosh II Script
  - Macintosh Plus Script
  - Macintosh SE Script

System Tools 2
--------------
Installer                            2.5
System Folder
- AppleTalk ImageWriter              2.6
- Background Printing
- Backgrounder                       1.1
- Clipboard File
- Color                              3.2
- DA Handler                         1.0
- Easy Access                        1.0
- Finder                             6.0
- General                            3.2
- ImageWriter                        2.6
- Key Layout                         2.2
- Keyboard                           3.2
- Laser Prep
- LaserWriter                        5.1
- Mouse                              3.2
- MultiFinder                        1.0
- PrintMonitor                       1.1
- Scrapbook File
- Sound                              3.2
- Spool Folder
- Startup Device                     3.2
- System                             4.3
TeachText                            1.1
Update Folder
- Read Me
```

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Tech Info Library Article Number:13432

Tech Info Library

System 6.0: 800K Disk Contents (9/93)

Revised: 9/28/93
Security: Everyone

System 6.0: 800K Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 6.0, shipped on four 800K floppy disks.

DISCUSSION -----

Availability

AppleLink:
Developer Support
 Developer Services
  System Software
   Macintosh U.S. System Software

FTP Apple.com: N/A

Disk Name:	Version:
System Tools	
Read Me	
Setup Folder	
- Apple HD SC Setup	2.0
- Installer	2.6.1
- Installer Scripts	
- Macintosh II Script	6.0
- Macintosh Plus Script	6.0
- Macintosh SE Script	6.0
System Folder	
- Backgrounder	1.2
- Clipboard File	6.0

- Color	3.3
- DA Handler	6.0
- Easy Access	1.0
- Finder	6.1
- General	3.3
- Key Layout	2.3
- Keyboard	3.3
- Monitors	3.3
- Mouse	3.3
- MultiFinder	6.0
- Scrapbook File	6.0
- Sound	3.3
- Startup Device	3.3
- System	6.0
TeachText	1.2

Utilities 1

Apple HD SC Setup	2.0
Disk First Aid	1.4
HD Backup	1.1
Installer	2.6
Responder	1.0
Special Installer Scripts	
- AppleShare Script	1.1
- Minimum II Script	6.0
- Minimum Plus Script	6.0
- Minimum SE Script	6.0
System Folder	
- Access Privileges	
- AppleShare	
- Clipboard File	6.0
- Color	3.3
- Easy Access	1.0
- Finder	6.1
- General	3.3
- Key Layout	2.3
- Keyboard	3.3
- Monitors	3.3
- Mouse	3.3
- Scrapbook File	6.0
- Sound	3.3
- Startup Device	3.3
- System	6.0

Utilities 2

Apple File Exchange Folder	
- Apple File Exchange	1.1
- DCA-RFT/MacWrite	
CloseView	1.0
Font/DA Mover Folder	
- Desk Accessories	

```
    - Alarm Clock
    - Calculator
    - Chooser
    - Control Panel
    - Find File
    - Key Caps
    - Note Pad
    - Puzzle
    - Scrapbook
  - Font/DA Mover                    3.8
  - Fonts
    - Athens
    - Cairo
    - Courier
    - Geneva
    - Helvetica
    - London
    - Los Angeles
    - Mobile
    - New York
    - San Francisco
    - Symbol
    - Times
    - Venice
  MacroMaker Folder
  - MacroMaker                       1.0
  - MacroMaker Help                  1.0
  - Macros
  Map                                1.1

  Printing Tools
  --------------
  AppleTalk ImageWriter              2.7
  ImageWriter                        2.7
  Laser Prep                         5.2
  LaserWriter                        5.2
  LaserWriter IISC                   1.1
  PrintMonitor                       1.2
```

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Tech Info Library Article Number:13433

Tech Info Library

System 6.0.2: 800K Disk Contents (9/93)

Revised: 12/1/93
Security: Everyone

System 6.0.2: 800K Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 6.0.2, shipped on four 800K floppy disks.

DISCUSSION -----

Availability

AppleLink:
Developer Support
 Developer Services
  System Software
   Macintosh U.S. System Software

FTP Apple.com: /dts/mac/sys.soft/6.0.2

Disk Name:	Version:
System Tools	
Read Me	
Setup Folder	
- Apple HD SC Setup	2.0
- Installer	2.6.1
- Installer Scripts	
- Macintosh II/IIx Script	6.0.2
- Macintosh Plus Script	6.0.2
- Macintosh SE Script	6.0.2
System Folder	
- Backgrounder	1.2
- Clipboard File	6.0.1

- Color	3.3.1
- DA Handler	6.0.1
- Easy Access	1.0
- Finder	6.1
- General	3.3.1
- Key Layout	2.3
- Keyboard	3.3.1
- Monitors	3.3.1
- Mouse	3.3.1
- MultiFinder	6.0.1
- Scrapbook File	6.0.1
- Sound	3.3.1
- Startup Device	3.3.1
- System	6.0.2
TeachText	1.2

Utilities 1

Apple HD SC Setup	2.0
Disk First Aid	1.4.1
HDBackup	1.1
Installer	2.6.1
Responder	1.0
Special Installer Scripts	
- AppleShare Script	2.0.1
- Minimum II/IIx Script	6.0.2
- Minimum Plus Script	6.0.2
- Minimum SE Script	6.0.2
System Folder	
- Access Privileges	
- AppleShare	2.0.1
- Clipboard File	6.0.1
- Color	3.3.1
- Easy Access	1.0
- Finder	6.1
- General	3.3.1
- Key Layout	2.3
- Keyboard	3.3.1
- Monitors	3.3.1
- Mouse	3.3.1
- Scrapbook File	6.0.1
- Sound	3.3.1
- Startup Device	3.3.1
- System	6.0.2

Utilities 2

Apple File Exchange Folder	
- Apple File Exchange	1.1
- DCA-RFT/MacWrite	
CloseView	1.0
Font/DA Mover Folder	
- Desk Accessories	

```
    - Alarm Clock
    - Calculator
    - Chooser
    - Control Panel
    - Find File
    - Key Caps
    - Note Pad
    - Puzzle
    - Scrapbook
  - Font/DA Mover                    3.8
  - Fonts
    - Athens
    - Cairo
    - Courier
    - Geneva
    - Helvetica
    - London
    - Los Angeles
    - Mobile
    - New York
    - San Francisco
    - Symbol
    - Times
    - Venice
  MacroMaker Folder
  - MacroMaker                       1.0.1
  - MacroMaker Help                  1.0.1
  - Macros
  Map                                1.1

  Printing Tools
  --------------
  AppleTalk ImageWriter              2.7
  ImageWriter                        2.7
  Laser Prep                         5.2
  LaserWriter                        5.2
  LaserWriter IISC                   1.1
  AppleTalk ImageWriter LQ           2.0
  ImageWriter LQ                     2.0
  PrintMonitor                       1.2
```

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Tech Info Library Article Number:13434

System 6.0.3: 800K Disk Contents (9/93)

Revised: 12/2/93
Security: Everyone

System 6.0.3: 800K Disk Contents (9/93)

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Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 6.0.3, shipped on four 800K floppy disks.

DISCUSSION -----

Availability

AppleLink:
Developer Support
 Developer Services
  System Software
   Macintosh U.S. System Software

FTP Apple.com: /dts/mac/sys.soft/6.0.3

Disk Name:	Version:
System Tools	
Read Me	
Setup Folder	
- Apple HD SC Setup	2.0
- Installer	2.6.1
- Installer Scripts	
- Macintosh II Family Script	6.0.3
- Macintosh Plus Script	6.0.3
- Macintosh SE Script	6.0.3
- Macintosh SE/30 Script	6.0.3
System Folder	
- Backgrounder	1.2

- Clipboard File	6.0.1
- Color	3.3.1
- DA Handler	6.0.3
- Easy Access	1.0
- Finder	6.1
- General	3.3.1
- Key Layout	2.3
- Keyboard	3.3.1
- Monitors	3.3.1
- Mouse	3.3.1
- MultiFinder	6.0.3
- Scrapbook File	6.0.1
- Sound	3.3.1
- Startup Device	3.3.1
- System	6.0.3
TeachText	1.2

Utilities 1

Apple HD SC Setup	2.0
Disk First Aid	1.4.2
HDBackup	1.1
Installer	2.6.1
Responder	1.0.1
Special Installer Scripts	
- AppleShare Script	2.0.1
- Minimum II Family Script	6.0.3
- Minimum Plus Script	6.0.3
- Minimum SE Script	6.0.3
- Minimum SE/30 Script	6.0.3
System Folder	
- Access Privileges	
- AppleShare	2.0.1
- Clipboard File	6.0.1
- Color	3.3.1
- Easy Access	1.0
- Finder	6.1
- General	3.3.1
- Key Layout	2.3
- Keyboard	3.3.1
- Monitors	3.3.1
- Mouse	3.3.1
- Scrapbook File	6.0.1
- Sound	3.3.1
- Startup Device	3.3.1
- System	6.0.3

Utilities 2

Apple File Exchange Folder	
- Apple File Exchange	1.1.1

- DCA-RFT/MacWrite	1.01
CloseView	1.0
Font/DA Mover Folder	
- Desk Accessories	
- Alarm Clock	
- Calculator	
- Chooser	
- Control Panel	
- Find File	
- Key Caps	
- Note Pad	
- Puzzle	
- Scrapbook	
- Font/DA Mover	3.8
- Fonts	
- Athens	
- Cairo	
- Courier	
- Geneva	
- Helvetica	
- London	
- Los Angeles	
- Mobile	
- New York	
- San Francisco	
- Symbol	
- Times	
- Venice	
MacroMaker Folder	
- MacroMaker	1.0.1
- MacroMaker Help	1.0.1
- Macros	
Map	1.1

Printing Tools

AppleTalk ImageWriter	2.7
ImageWriter	2.7
Laser Prep	5.2
LaserWriter	5.2
LaserWriter IISC	1.1
LQ AppleTalk ImageWriter	2.0
LQ ImageWriter	2.0
PrintMonitor	1.2

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Tech Info Library Article Number:13435

Tech Info Library

System 6.0.4: 800K Disk Contents (9/93)

Revised: 9/27/93
Security: Everyone

System 6.0.4: 800K Disk Contents (9/93)

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Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 6.0.4, shipped on four 800K floppy disks.

DISCUSSION -----

Availability

AppleLink:
Developer Support
 Developer Services
  System Software
   Macintosh U.S. System Software

FTP Apple.com: /dts/mac/sys.soft/6.0.4

Disk Name:	Version:
System Tools	
Apple HD SC Setup	2.0
Installer	3.0
Installer Script	6.0.4
Read Me	
System Folder	
- Clipboard File	6.0.1
- Finder	6.1.4
- General	3.3.2
- Monitors	4.1
- Startup Device	3.3.1
- System	6.0.4

```
TeachText                          1.2

Utilities 1
-----------
Apple HD SC Setup                  2.0
Disk First Aid                     1.4.2
Responder                          1.1.1
System Folder
- Access Privileges
- AppleShare                       2.0.2
- Backgrounder                     1.2
- Clipboard File                   6.0.1
- Color                            3.3.2
- DA Handler                       6.0.4
- Finder                           6.1.4
- General                          3.3.2
- Keyboard                         3.3.1
- Monitors                         4.1
- Mouse                            3.3.1
- MultiFinder                      6.0.4
- Sound                            3.3.1
- System                           6.0.4
TeachText                          1.2

Utilities 2
-----------
Apple File Exchange Folder
- Apple File Exchange              1.1.3
- DCA-RFT/MacWrite                 1.01
Font/DA Mover Folder
- Desk Accessories
  - Alarm Clock
  - Battery
  - Calculator
  - Chooser
  - Control Panel
  - Find File
  - Key Caps
  - Note Pad
  - Puzzle
  - Scrapbook
- Font/DA Mover                    3.8
- Fonts
  - Athens
  - Cairo
  - Courier
  - Geneva
  - Helvetica
  - London
  - Los Angeles
  - Mobile
  - New York
  - San Francisco
```

```
  - Symbol
  - Times
  - Venice
MacroMaker Folder
- MacroMaker                        1.0.1
- MacroMaker Help                   1.0.1
- Macros
System Folder Additions
- CloseView                         1.1
- Color                             3.3.2
- Easy Access                       1.0.1
- Key Layout                        2.3.2
- Keyboard                          3.3.1
- Map                               1.2
- Mouse                             3.3.1
- Portable                          1.0
- Scrapbook File                    6.0.1
- Sound                             3.3.1
- Startup Device                    3.3.1

Printing Tools
--------------
AppleTalk ImageWriter               2.7
ImageWriter                         2.7
Laser Prep                          5.2
LaserWriter                         5.2
LaserWriter IISC                    1.1
LQ AppleTalk ImageWriter            2.0
LQ ImageWriter                      2.0
PrintMonitor                        1.2
```

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Tech Info Library Article Number:13436

System 6.0.5: 800K Disk Contents (9/93)

Revised: 9/27/93
Security: Everyone

System 6.0.5: 800K Disk Contents (9/93)

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Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 6.0.5, shipped on four 800K floppy disks.

DISCUSSION -----

Availability

AppleLink:
Developer Support
 Developer Services
  System Software
   Macintosh U.S. System Software

FTP Apple.com: /dts/mac/sys.soft/6.0.5

Disk Name:	Version:
System Tools	
Apple HD SC Setup	2.0.1
Installer	3.0.1
Installer Script	6.0.5
Read Me	
System Folder	
- Clipboard File	6.0.1
- Finder	6.1.5
- General	3.3.3
- Monitors	4.2
- Startup Device	3.3.1
- System	6.0.5

TeachText	1.2

Utilities 1

Apple HD SC Setup	2.0.1
Disk First Aid	1.4.3
Responder	1.1.1
System Folder	
- Access Privileges	
- AppleShare	2.0.2
- Backgrounder	1.2
- Clipboard File	6.0.1
- Color	3.3.2
- DA Handler	6.0.5
- Finder	6.1.5
- General	3.3.3
- Keyboard	3.3.1
- Mouse	3.3.1
- MultiFinder	6.0.5
- Sound	3.3.1
- System	6.0.5
TeachText	1.2

Utilities 2

Apple File Exchange Folder	
- Apple File Exchange	1.1.4
- DCA-RFT/MacWrite	1.01
Font/DA Mover Folder	
- Desk Accessories	
- Alarm Clock	
- Battery	
- Calculator	
- Chooser	
- Control Panel	
- Find File	
- Key Caps	
- Note Pad	
- Puzzle	
- Scrapbook	
- Font/DA Mover	3.8
- Fonts	
- Athens	
- Cairo	
- Courier	
- Geneva	
- Helvetica	
- London	
- Los Angeles	
- Mobile	
- New York	
- San Francisco	
- Symbol	

```
  - Times
  - Venice
MacroMaker Folder
- MacroMaker                          1.0.2
- MacroMaker Help                     1.0.2
- Macros
System Folder Additions
- CloseView                           1.1
- Color                               3.3.2
- Easy Access                         1.0.1
- Key Layout                          2.3.3
- Keyboard                            3.3.1
- Map                                 1.2
- Mouse                               3.3.1
- Portable                            1.2
- Scrapbook File                      6.0.1
- Sound                               3.3.1
- Startup Device                      3.3.1

Printing Tools
--------------
Apple Color
- 32-Bit QuickDraw                    1.2
- Laser Prep                          6.0.1
- LaserWriter                         6.0.2
- Read Me for Apple Color
- TeachText                           1.2
- Technical Information on 6.0.5
AppleTalk ImageWriter                 2.7
ImageWriter                           2.7
Laser Prep                            5.2
LaserWriter                           5.2
LaserWriter IISC                      1.1
LQ AppleTalk ImageWriter              2.0
LQ ImageWriter                        2.0
PrintMonitor                          1.3
```

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Tech Info Library Article Number:13437

Tech Info Library

System 6.0.7: 1.4MB Disk Contents (9/93)

Revised: 9/28/93
Security: Everyone

System 6.0.7: 1.4MB Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 6.0.7, as shipped on two 1.4MB floppy disks. (A separate article describes the contents of the same software as shipped on 800K disks.)

DISCUSSION -----

Availability

AppleLink: N/A

FTP Apple.com: /dts/mac/sys.soft/6.0.7

Disk Name:	Version:
System Startup	
Apple HD SC Setup	2.0.3
Disk First Aid	1.4.3
Installer	3.0.1
Installer Script	6.0.7
Read Me	
System Folder	
- Access Privileges	
- AppleShare	2.0.2
- Backgrounder	1.2
- Brightness	1.0
- Clipboard File	6.0.1
- Color	3.3.2
- DA Handler	6.0.7
- Easy Access	1.0.2

- Finder 6.1.7
- General 3.3.3
- Key Layout 2.3.4
- Keyboard 3.3.1
- Map 1.2
- Monitors 4.3
- Mouse 3.3.1
- MultiFinder 6.0.7
- Portable 1.2
- Scrapbook File 6.0.1
- Sound 3.3.2
- Startup Device 3.3.1
- System 6.0.7

TeachText 1.2

System Additions

Apple Color
- 32-Bit QuickDraw 1.2
- Laser Prep 6.0.1
- LaserWriter 6.0.2
- Read Me for Apple Color
- TeachText 1.2

Apple File Exchange Folder
- Apple File Exchange 1.1.4
- DCA-RFT/MacWrite 1.01

CloseView 1.1

Font/DA Mover Folder
- Desk Accessories
  - Note Pad
  - Puzzle
- Font/DA Mover 3.8
- Fonts
  - Athens
  - Cairo
  - Courier
  - Geneva
  - Helvetica
  - London
  - Los Angeles
  - Mobile
  - New York
  - Palatino
  - San Francisco
  - Symbol
  - Times
  - Venice

MacroMaker Folder
- MacroMaker 1.0.2
- MacroMaker Help 1.0.2
- Macros

Printing Folder
- AppleTalk ImageWriter 2.7

- ImageWriter	2.7
- Laser Prep	5.2
- LaserWriter	5.2
- LQ AppleTalk ImageWriter	2.0
- LQ ImageWriter	2.0
- Personal LaserWriter SC	1.0.1
- PrintMonitor	1.3
Responder	1.1.1

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Tech Info Library Article Number:13438

System 6.0.7: 800K Disk Contents (9/93)

Revised: 9/28/93
Security: Everyone

System 6.0.7: 800K Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC --

This article details the contents of System 6.0.7, as shipped on four 800K floppy disks. (A separate article describes the contents of the same software as shipped on 1.4MB disks.)

DISCUSSION --

Availability

AppleLink:
Developer Support
 Developer Services
  System Software
   Macintosh U.S. System Software

FTP Apple.com: /dts/mac/sys.soft/6.0.7

Disk Name:	Version:
System Tools	
Installer	3.0.1
Installer Script	6.0.7
Read Me	
System Folder	
- Clipboard File	6.0.1
- Finder	6.1.8
- General	3.3.3
- Monitors	4.3
- Startup Device	3.3.1
- System	6.0.8

TeachText	1.2

Utilities 1

Apple HD SC Setup	2.0.3
Disk First Aid	1.4.3
Responder	1.1.1
System Folder	
- Access Privileges	
- AppleShare	2.0.2
- Clipboard File	6.0.1
- DA Handler	6.0.7
- Finder	6.1.7
- MultiFinder	6.0.7
- System	6.0.7

Utilities 2

Apple File Exchange Folder	
- Apple File Exchange	1.1.4
- DCA-RFT/MacWrite	1.01
Font/DA Mover Folder	
- Desk Accessories	
- Alarm Clock	
- Battery	
- Calculator	
- Find File	
- Key Caps	
- Note Pad	
- Puzzle	
- Scrapbook	
- Font/DA Mover	3.8
- Fonts	
- Athens	
- Cairo	
- Courier	
- Geneva	
- Helvetica	
- London	
- Los Angeles	
- Mobile	
- New York	
- San Francisco	
- Symbol	
- Times	
- Venice	
MacroMaker Folder	
- MacroMaker	1.0.2
- MacroMaker Help	1.0.2
- Macros	
System Folder Additions	
- Backgrounder	1.2
- Brightness	1.0

- CloseView	1.1
- Color	3.3.2
- Easy Access	1.0.2
- Key Layout	2.3.4
- Keyboard	3.3.1
- Map	1.2
- Mouse	3.3.1
- Portable	1.2
- Scrapbook File	6.0.1
- Sound	3.3.2
- Startup Device	3.3.1

Printing Tools

Apple Color	
- 32-Bit QuickDraw	1.2
- Laser Prep	6.0.1
- LaserWriter	6.0.2
- Read Me for Apple Color	
- TeachText	1.2
AppleTalk ImageWriter	2.7
ImageWriter	2.7
Laser Prep	5.2
LaserWriter	5.2
LQ AppleTalk ImageWriter	2.0
LQ ImageWriter	2.0
Personal LaserWriter SC	1.0.1
PrintMonitor	1.3

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Tech Info Library Article Number:13439

Tech Info Library

System 6.0.8: 1.4MB Disk Contents (9/93)

Revised: 9/28/93
Security: Everyone

System 6.0.8: 1.4MB Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 6.0.8, as shipped on two 1.4MB floppy disks. (A separate article describes the contents of the same software as shipped on 800K disks.)

DISCUSSION -----

Availability

AppleLink: N/A

FTP Apple.com: /dts/mac/sys.soft/6.0.8

Disk Name:	Version:
System Startup	
Apple HD SC Setup	2.0.3
Disk First Aid	1.4.3
Installer	3.0.1
Installer Script	6.0.8
Read Me	
System Folder	
- Access Privileges	
- AppleShare	2.0.2
- Backgrounder	1.3
- Brightness	1.0
- Clipboard File	6.0.1
- Color	3.3.2
- DA Handler	6.0.8
- Easy Access	1.0.2

- Finder	6.1.8
- General	3.3.3
- Key Layout	2.3.4
- Keyboard	3.3.1
- Map	1.2
- Monitors	4.3
- Mouse	3.3.1
- MultiFinder	6.0.8
- Portable	1.2
- Scrapbook File	6.0.1
- Sound	3.3.2
- Startup Device	3.3.1
- System	6.0.8
TeachText	1.2

System Additions

Apple Color	
- 32-Bit QuickDraw	1.2
- Read Me for Apple Color	
- TeachText	1.2
Apple File Exchange Folder	
- Apple File Exchange	1.1.4
- DCA-RFT/MacWrite	1.01
CloseView	1.1
Font/DA Mover Folder	
- Desk Accessories	
- Note Pad	
- Puzzle	
- Font/DA Mover	3.8
- Fonts	
- Athens	
- Cairo	
- Courier	
- Geneva	
- Helvetica	
- London	
- Los Angeles	
- Mobile	
- New York	
- Palatino	
- San Francisco	
- Symbol	
- Times	
- Venice	
MacroMaker Folder	
- MacroMaker	1.0.2
- MacroMaker Help	1.0.2
- Macros	
Printing Folder	
- AppleTalk ImageWriter	2.7
- ImageWriter	2.7
- Laser Prep	7.0

- LaserWriter	7.0
- LQ AppleTalk ImageWriter	2.0
- LQ ImageWriter	2.0
- Personal LaserWriter SC	7.0
- PrintMonitor	7.0
Responder	1.1.1

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Tech Info Library Article Number:13440

System 6.0.8: 800K Disk Contents (9/93)

Revised: 9/28/93
Security: Everyone

System 6.0.8: 800K Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC ----------

This article details the contents of System 6.0.8, as shipped on four 800K floppy disks. (A separate article describes the contents of the same software as shipped on 1.4MB disks.)

DISCUSSION ----------

Availability

AppleLink:
Software Sampler
 Apple SW Updates
  Macintosh
   System Software

FTP Apple.com: /dts/mac/sys.soft/6.0.8

Disk Name:	Version:
System Tools	
Installer	3.0.1
Installer Script	6.0.8
Read Me	
System Folder	
- Clipboard File	6.0.1
- Finder	6.1.8
- General	3.3.3
- Monitors	4.3
- Startup Device	3.3.1
- System	6.0.8

TeachText	1.2

Utilities 1

Apple HD SC Setup	2.0.3
Disk First Aid	1.4.3
Responder	1.1.1
System Folder	
- Access Privileges	
- AppleShare	2.0.2
- Clipboard File	6.0.1
- DA Handler	6.0.8
- Finder	6.1.8
- MultiFinder	6.0.8
- System	6.0.8

Utilities 2

Apple File Exchange Folder	
- Apple File Exchange	1.1.4
- DCA-RFT/MacWrite	1.01
Font/DA Mover Folder	
- Desk Accessories	
- Alarm Clock	
- Battery	
- Calculator	
- Find File	
- Key Caps	
- Note Pad	
- Puzzle	
- Scrapbook	
- Font/DA Mover	3.8
- Fonts	
- Athens	
- Cairo	
- Courier	
- Geneva	
- Helvetica	
- London	
- Los Angeles	
- Mobile	
- New York	
- San Francisco	
- Symbol	
- Times	
- Venice	
MacroMaker Folder	
- MacroMaker	1.0.2
- MacroMaker Help	1.0.2
- Macros	
System Folder Additions	
- Backgrounder	1.3
- Brightness	1.0

- CloseView	1.1
- Color	3.3.2
- Easy Access	1.0.2
- Key Layout	2.3.4
- Keyboard	3.3.1
- Map	1.2
- Mouse	3.3.1
- Portable	1.2
- Scrapbook File	6.0.1
- Sound	3.3.2
- Startup Device	3.3.1

Printing Tools

Apple Color	
- 32-Bit QuickDraw	1.2
- Read Me for Apple Color	
- TeachText	1.2
AppleTalk ImageWriter	2.7
ImageWriter	2.7
Laser Prep	7.0
LaserWriter	7.0
LQ AppleTalk ImageWriter	2.0
LQ ImageWriter	2.0
Personal LaserWriter SC	7.0
PrintMonitor	7.0

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Tech Info Library Article Number:13441

Tech Info Library

System 7 Tune-Up 1.1.1: 800K Disk Contents (9/93)

Revised: 9/28/93
Security: Everyone

System 7 Tune-Up 1.1.1: 800K Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 7 Tune-Up 1.1.1, shipped on one 800K floppy disk.

DISCUSSION -----

Availability

AppleLink:
Software Sampler
 Apple SW Updates
  Macintosh
   System Software

Disk Name:	Version:
System 7 Tune-Up	
Install System 7 Tune-Up	1.1.1
Installer	3.2
Read Me	
Tune-Up Parts	
- Chooser	7.1
- File Sharing Extension	7.0.2
- LaserWriter	7.1.1
- StyleWriter	7.2.2
- System 7 Tuner	1.1.1

The Disk Part Number is: 690-0204

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13442

Tech Info Library

System 7.0: 1.4MB Disk Contents (6/95)

Revised: 6/13/95
Security: Everyone

System 7.0: 1.4MB Disk Contents (6/95)

==========

Article Created: 27 September 1993
Article Reviewed/Updated: 13 June 1995

TOPIC ----------

This article details the contents of System 7.0, shipped on seven 1.4MB floppy disks. (A separate article describes the contents of the same software as shipped on 800K disks.)

DISCUSSION ----------

Availability

AppleLink: N/A

FTP Apple.com: /dts/mac/sys.soft/7.0

Disk Name:	Version:	Apple Part Number:
Before You Install System 7		690-5687
Before You Install System 7	1.0	
Compatibility Checker	1.0	
Late Breaking News		
Read Me		
TeachText	1.2	
Disk Tools		690-5819
Apple HD SC Setup	7.0	
Disk First Aid	7.0	
System Folder		
- Apple Menu Items		
- Control Panels		

- Extensions		
- Finder	7.0	
- Fonts		
- Preferences		
-Finder Preferences		
- Startup Items		
- System	7.0	
Install 1		690-5690

Install	7.0	
Installer	3.2	
Network Extension	7.0	
System	7.0	
Install 2		690-5691

A/ROSE	1.1.3	
AppleShare	7.0	
DAL	1.2.2	
DAL Preferences		
EtherTalk Phase 2	2.2.1	
Finder	7.0	
Finder Help	7.0	
TokenTalk Phase 2	2.2	
TokenTalk Prep	2.2	
Tidbits		690-5693

Apple File Exchange Folder		
- Apple File Exchange	7.0	
- DCA-RFT/MacWrite	1.01	
CloseView	7.0	
Control Panels		
- Brightness	7.0	
- Color	7.0	
- Control Panels (alias)		
- File Sharing Monitor	7.0	
- General Controls	7.0	
- Keyboard	7.0	
- Labels	7.0	
- Map	7.0	
- Memory	7.0	
- Monitors	7.0	
- Mouse	7.0	
- Network	2.3	
- Portable	7.0	
- Sharing Setup	7.0	
- Sound	7.0	
- Startup Disk	7.0	
- Users & Groups	7.0	
- Views	7.0	
Desk Accessories		

- Alarm Clock	7.0	
- Battery	7.0	
- Calculator	7.0	
- Chooser	7.0	
- Key Caps	7.0	
- Note Pad	7.0	
- Puzzle	7.0	
- Scrapbook	7.0	
- Scrapbook File		
Easy Access	7.0	
File Sharing Extension	7.0	
LaserWriter Font Utility	7.0	
Read Me		
TeachText	7.0	

Printing		690-5692

AppleTalk ImageWriter	7.0	
Backgrounder	1.3	
ImageWriter	7.0	
Installer	3.2	
Laser Prep	7.0	
LaserWriter	7.0	
LQ AppleTalk ImageWriter	7.0	
LQ ImageWriter	7.0	
Personal LaserWriter SC	7.0	
Personal LW LS	7.0	
Printer Update	7.0	
PrintMonitor	7.0	
StyleWriter	7.0	

Fonts		690-5821

Athens	N/A	
Cairo	N/A	
Chicago	N/A	
Courier	N/A	
Geneva	N/A	
Helvetica	N/A	
London	N/A	
Los Angeles	N/A	
Monaco	N/A	
New York	N/A	
Palatino	N/A	
San Francisco	N/A	
Symbol	N/A	
Times	N/A	
Venice	N/A	

Article Change History:
13 June 1995 - Corrected typos

..TIL13443-System_7-0-1-4MB_Disk_Contents_6-95_(TA30230).pdf

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13443

Tech Info Library

System 7.0: 800K Disk Contents (6/95)

Revised: 6/13/95
Security: Everyone

System 7.0: 800K Disk Contents (6/95)

==========

Article Created: 27 September 1993
Article Reviewed/Updated: 13 June 1995

TOPIC -----

This article details the contents of System 7.0, as shipped on nine 800K floppy disks. (A separate article describes the contents of the same software as shipped on 1.4MB disks.)

DISCUSSION -----

Availability

AppleLink:
Software Sampler
Apple SW Updates
Macintosh
System Software

FTP Apple.com: /dts/mac/sys.soft/7.0

Disk Name:	Version:	Apple Part Number:
Before You Install System 7		690-5687
Before You Install System 7	1.0	
Compatibility Checker	1.0	
Late Breaking News		
Read Me		
TeachText	1.2	
Disk Tools		690-5684
Apple HD SC Setup	7.0	

```
Disk First Aid                      7.0
System Folder
- Brightness                        1.0
- Finder                            6.1.7
- General                           3.3.3
- Monitors                          4.3
- Mouse                             3.3.1
- Portable                          1.2
- Startup Device                    3.3.1
- System                            6.0.7

Install 1                                                  690-5680
---------
Install                             7.0
Installer                           3.2
System                              7.0

Install 2                                                  690-5681
---------
Apple File Exchange Folder
- Apple File Exchange               7.0
- DCA-RFT/MacWrite                  1.01
Cerulean Data

Install 3                                                  690-5682
---------
A/ROSE                              1.1.3
CloseView                           7.0
DAL                                 1.2.2
DAL Preferences
EtherTalk Phase 2                   2.2.1
Finder                              7.0
Finder Help                         7.0
TeachText                           7.0
TokenTalk Phase 2                   2.2
TokenTalk Prep                      2.2

Tidbits                                                    690-5686
-------
Control Panels
- Brightness                        7.0
- Color                             7.0
- Control Panels (alias)
- Easy Access                       7.0
- General Controls                  7.0
- Keyboard                          7.0
- Labels                            7.0
- Map                               7.0
- Memory                            7.0
- Monitors                          7.0
- Mouse                             7.0
- Portable                          7.0
- Sound                             7.0
```

- Startup Disk	7.0
- Users & Groups	7.0
- Views	7.0
Desk Accessories	
- Alarm Clock	7.0
- Battery	7.0
- Calculator	7.0
- Chooser	7.0
- Key Caps	7.0
- Note Pad	7.0
- Puzzle	7.0
- Scrapbook	7.0
- Scrapbook File	
Network	
- AppleShare	7.0
- File Sharing Extension	7.0
- File Sharing Monitor	7.0
- Network	2.3
- Network Extension	7.0
- Sharing Setup	7.0
Read Me	

More Tidbits 690-5700

AppleTalk ImageWriter	7.0
Chicago	
Geneva	
ImageWriter	7.0
LaserWriter Font Utility	7.0
LQ AppleTalk ImageWriter	7.0
LQ ImageWriter	7.0
Monaco	
New York	

Printing 690-5683

Backgrounder	1.3
Installer	3.2
Laser Prep	7.0
LaserWriter	7.0
Personal LaserWriter SC	7.0
Personal LW LS	7.0
Printer Update	7.0
PrintMonitor	7.0
StyleWriter	7.0

Fonts 690-5685

Athens	N/A
Cairo	N/A
Courier	N/A
Helvetica	N/A
London	N/A

Los Angeles	N/A
San Francisco	N/A
Venice	N/A
Palatino	N/A
Symbol	N/A
Times	N/A

Article Change History:
13 June 1995 - Corrected typos

Support Information Services

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Tech Info Library Article Number:13444

Tech Info Library

System 7.1: 1.4MB Disk Contents (9/93)

Revised: 9/28/93
Security: Everyone

System 7.1: 1.4MB Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 7.1, as shipped on seven 1.4MB floppy disks. (A separate article describes the contents of the same software as shipped on 800K disks.)

DISCUSSION -----

Availability

AppleLink: N/A

FTP Apple.com: N/A

Disk Name:	Version:	Apple Part Number:
Before You Install		690-0231
Compatibility Checker	2.0	
Disk Tools		690-0245
Apple HD SC Setup	7.1	
Disk First Aid	7.1	
System Folder		
- Apple Menu Items		
- Control Panels		
- Extensions		
- Finder	7.1	
- Fonts		
- Preferences		
- Startup Items		

```
- System                          7.1

Install                                                  690-0237
-------
Install FDHD                      7.1
Installer                         3.4
System                            7.1

Install 2                                                690-0238
---------
A/ROSE                            1.1.7
EtherTalk Phase 2                 2.3.1
EtherTalk Prep                    1.0.2
Finder                            7.1
Finder Help                       7.1
Network                           2.3.3
Network Extension                 7.1
Token Ring                        1.0.1
TokenTalk Phase 2                 2.4.1
TokenTalk Prep                    2.4.1

Tidbits                                                  690-0244
-------
Apple Menu Items
- Alarm Clock                    7.1
- Battery                        7.1
- Calculator                     7.1
- Chooser                        7.2
- Control Panels (alias)
- Key Caps                       7.1
- Note Pad                       7.1
- Puzzle                         7.1
- Scrapbook                      7.1
Apple Utilities
- Apple File Exchange Folder
  - Apple File Exchange          7.0
  - DCA-RFT/MacWrite             1.01
- LaserWriter Font Utility       7.0
- Read Me
- TeachText                      7.0
CloseView                        7.1
Control Panels
- Brightness                     7.0.1
- Cache Switch                   7.0.1
- Color                          7.1
- Date & Time                    7.1
- File Sharing Monitor           7.1
- General Controls               7.1
- Keyboard                       7.1
- Labels                         7.1
- Map                            7.1
- Memory                         7.1
- Monitors                       7.0
```

- Mouse	7.1
- Numbers	7.1
- PowerBook	7.1
- Sharing Setup	7.1
- Sound	7.1
- Startup Disk	7.0
- Users & Groups	7.1
- Views	7.1
Easy Access	7.0
Extensions	
- AppleShare	7.1
- Caps Lock	7.1
- File Sharing Extension	7.1
Scrapbook File	

Printing 690-0242

AppleTalk ImageWriter	7.0.1
ImageWriter	7.0.1
Installer	3.4
LaserWriter	7.1.2
LQ AppleTalk ImageWriter	7.0.1
LQ ImageWriter	7.0.1
Only System 6.x	
- Backgrounder	1.3
- Laser Prep	7.1.2
Personal LaserWriter SC	7.0.1
Personal LW LS	7.2
Printer Update	7.1
PrintMonitor	7.1
StyleWriter	7.2.3

Fonts 690-0243

Apple Classic Fonts	(folder)
- Athens	N/A
- Cairo	N/A
- London	N/A
- Los Angeles	N/A
- Mobile	N/A
- San Francisco	N/A
- Venice	N/A
Chicago	N/A
Courier	N/A
Geneva	N/A
Helvetica	N/A
Monaco	N/A
New York	N/A
Palatino	N/A
Symbol	N/A
Times	N/A

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Tech Info Library Article Number:13445

Tech Info Library

System 7.1: 800K Disk Contents (9/93)

Revised: 9/28/93
Security: Everyone

System 7.1: 800K Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC -----

This article details the contents of System 7.1, as shipped on nine 800K floppy disks. (A separate article describes the contents of the same software as shipped on 1.4MB disks.)

DISCUSSION -----

Availability

AppleLink: N/A

FTP Apple.com:N/A

Disk Name:	Version:	Apple Part Number:
Before You Install		690-0231
Compatibility Checker	2.0	
Disk Tools		690-0228
Apple HD SC Setup	7.1	
Disk First Aid	7.1	
System Folder		
- Brightness	1.0	
- Finder	6.1.7	
- General	3.3.3	
- Monitors	4.3	
- Mouse	3.3.1	
- Portable	1.2	
- Startup Device	3.3.1	

```
- System                          6.0.7

Install                                                  690-0224
-------
Cerulean Data
Install 800K                      7.1
Installer                         3.4

Install 2                                                690-0225
---------
System                            7.1

Install 3                                                690-0226
---------
AppleShare                        7.1
EtherTalk Phase 2                 2.3.1
EtherTalk Prep                    1.0.2
Finder                            7.1
Finder Help                       7.1
Network Extension                 7.1
Token Ring                        1.0.1
TokenTalk Phase 2                 2.4.1
TokenTalk Prep                    2.4.1

Tidbits                                                  690-0232
-------
A/ROSE                            1.1.7
Caps Lock                         7.1
CloseView                         7.1
Control Panels
- Brightness                      7.0.1
- Cache Switch                    7.0.1
- Color                           7.1
- Control Panels (alias)
- Date & Time                     7.1
- Easy Access                     7.0
- File Sharing Monitor            7.1
- General Controls                7.1
- Keyboard                        7.1
- Labels                          7.1
- Map                             7.1
- Memory                          7.1
- Monitors                        7.0
- Mouse                           7.1
- Network                         2.3.3
- Numbers                         7.1
- PowerBook                       7.1
- Sharing Setup                   7.1
- Sound                           7.1
- Startup Disk                    7.0
- Users & Groups                  7.1
- Views                           7.1
Desk Accessories
```

- Alarm Clock	7.1
- Battery	7.1
- Calculator	7.1
- Chooser	7.2
- Key Caps	7.1
- Note Pad	7.1
- Puzzle	7.1
- Scrapbook	7.1
- Scrapbook File	
File Sharing Extension	7.1

Tidbits 2 690-0233

Apple File Exchange Folder	
- Apple File Exchange	7.0
- DCA-RFT/MacWrite	1.01
AppleTalk ImageWriter	7.0.1
LaserWriter Font Utility	7.0
LQ AppleTalk ImageWriter	7.0.1
LQ ImageWriter	7.0.1
Read Me	
TeachText	7.0

Printing 690-0227

Backgrounder	1.3
ImageWriter	7.0.1
Installer	3.4
Laser Prep	7.1.2
LaserWriter	7.1.2
Personal LaserWriter SC	7.0.1
Personal LW LS	7.2
Printer Update	7.1
PrintMonitor	7.1
StyleWriter	7.2.3

Fonts 690-0229

Chicago	N/A
Courier	N/A
Geneva	N/A
Helvetica	N/A
Monaco	N/A
New York	N/A

Fonts 2 690-0230

Apple Classic Fonts	(Not Auto Installed)
- Athens	N/A
- Cairo	N/A
- London	N/A
- Los Angeles	N/A
- Mobile	N/A

- San Francisco	N/A
- Venice	N/A
Palatino	N/A
Symbol	N/A
Times	N/A

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Tech Info Library Article Number:13446

Tech Info Library

System 2.0 (4.1/5.5) 800K Disk Contents (9/93)

Revised: 12/2/93
Security: Everyone

System 2.0 (4.1/5.5) 800K Disk Contents (9/93)

==========

Article Created: 27 September 1993

TOPIC --------------------

This article details the contents of System 2.0, shipped on three 800K floppy disks.

DISCUSSION --------------------

Availability

AppleLink:
Developer Support
 Developer Services
  System Software
   Macintosh U.S. System Software

Disk Name:	Version:
System Tools	
System Folder	
- AppleTalk ImageWriter	2.6
- Clipboard File	
- Easy Access	1.0
- Finder	5.5
- General	1.0
- ImageWriter	2.6
- Key Layout	2.1
- Keyboard	1.0
- Laser Prep	4.0
- LaserWriter	4.0
- Monitors	1.0
- Mouse	1.0
- Scrapbook File	2.1

```
- Sound                              1.0
- Startup Device                     1.0
- System                             4.1
TeachText                            1.0
Update Folder
- Read Me
Utilities Folder
- Apple HD SC Setup                  1.3
- Installer                          2.4
- Installer Script
  - Mac Plus, 512Ke, 512K Script
  - Macintosh II Script
  - Macintosh SE Script

Utilities
---------
Apple HD SC Setup                    1.4
Desk Accessories
- Find File
- Note Pad
- Puzzle
Disk First Aid                       1.2
Font/DA Mover                        3.5
Fonts
- Athens
- Cairo
- Courier
- Helvetica
- London
- Los Angeles
- Mobile
- San Francisco
- Symbol
- Times
HDBackup                             1.0
System Folder
- AppleTalk ImageWriter              2.6
- Clipboard File
- Easy Access                        1.0
- Finder                             5.5
- General                            1.0
- ImageWriter                        2.6
- Key Layout                         2.1
- Keyboard                           1.0
- Laser Prep                         4.0
- LaserWriter                        4.0
- Monitors                           1.0
- Mouse                              1.0
- Startup Device                     1.0
- System                             4.1
TeachText                            1.0
Update Folder
- Read Me
```

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Tech Info Library Article Number:13447

SNA•ps APPC and APPC/PC Under DOS (9/93)

Revised: 9/28/93
Security: Everyone

SNA•ps APPC and APPC/PC Under DOS (9/93)

==========

Article Created: 27 September 1993

TOPIC ----------

Can SNA•ps APPC connect to a PS/2 running APPC/PC under DOS? My environment has a PS/2 running APPC/PC (V 1.11, 1986) under DOS 3.3 connecting to an IBM 9370 mainframe running VTAM as a Host type 5 or SSCP node.

DISCUSSION ----------

In your environment, you were not able to connect the APPC/PCs to the 9370 using PU 2.1 peer-to-peer communications. You were also not able to get SNA•ps APPC gateways to attach to the PS/2 running APPC/PC using peer or PU 2.1 connections. From the trace provided, the APPC/PC is rejecting the SNA•ps peer PU 2.1 XID response. We had to conclude the APPC/PC (DOS version) was not able to interact with a full implementation of PU 2.1 found with the SNA•ps APPC product. The APPC/PC product is too old in the evolution of SNA to work at the peer level with SNA•ps.

Here is the exact technical explanation, SNA•ps receives a '2203000000' on the XID pre-negotiation phase. This is the very last thing in their response to our XID. By looking up the control vector (Chapter 8 of SNA Formats) we find that this is a 'XID Negotiation Error' and that the '0000 00' are the byte and bit offset of the offending data. In other words, they rejected the first bit of the first byte of data that we sent them.

In checking with IBM, we found that IBM no longer supports APPC/PC, and they recommend moving to OS/2 or NS/DOS. SNA•ps has been tested with both OS/2 and NS/DOS and works perfectly in PU 2.1 peer-to peer connections.

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Tech Info Library Article Number:13448

Tech Info Library

PrairieSoft, Inc.

Revised: 4/7/97
Security: Everyone

PrairieSoft, Inc.

==========

Article Created: 27 September 1993
Article Reviewed/Updated: 7 April 1997

PrairieSoft, Inc.

P.O. Box 65820
West Des Moines, Iowa 50265

515-225-3720 (Main)

515-225-4122 (Technical Support)

515-225-2422 Fax

Company Profile:
Software, develops and markets Macintosh application and utility software, most are former CE Software products including: DiskTop, Alarming Events, Amazing Paint, MockPackage Plus Utilities and In/Out.

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Tech Info Library Article Number:13450

Tech Info Library

Apple Fax Document Index (8/96)

Revised: 2/17/97
Security: Everyone

Apple Fax Document Index (8/96)

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The following is the Apple Fax technical support fax document index as of 8/16/96.

This index contains the document numbers, titles and short abstracts of the technical support documents available on the Apple Fax system.

Each of the documents has a corresponding Technical Information Library article.

To order one of the following documents by fax;

1) Review the Apple Fax Document Index for the available product literature. (This article)

2) Make note of the 5 digit literature number to the left of each document.

3) Call Apple Fax at 1-800-505-0171

When you make the connection;

4) Press 1 on your touch tone phone to order a document.

5) You will be prompted to enter the document number(s) you are requesting.

==========

20000 Apple Fax - Document Index - Product Support Literature
Updated: 8/16/96 (4 Pages)

HyperCard

20703 HyperCard 2.2 Description
Updated: 9/28/94 (2 Pages)

Macintosh Fonts and Desk Accessories

20204 Common Questions about Apple Font Pack.
Updated: 12/1/95 (2 Pages)

20207 System 7 Software: Bitmap, PostScript & TrueType Fonts
Updated: 10/11/94 (3 Pages)

20218 Fonts & Desk Accessories Installation Quick Reference Guide
Updated: 8/29/94 (2 Pages)

20221 System 7.1: What to do if a Suitcase is damaged
Updated: 9/8/94 (1 Page)

20231 How System 7 Decides Between Bitmap, TrueType, and ATM Fonts
Updated: 6/20/96 (2 Pages)

Macintosh Operating Systems

20200 Common Questions about System 7.1
Updated: 9/28/94 (1 Page)

20211 System 7.1: Overview
Updated: 8/29/94 (2 Pages)

20213 Installing System 7.1
Updated: 11/01/94 (4 Pages)

20230 Macintosh System Folder: Files Described
Updated: 10/4/94 (4 Pages)

20722 System 7.5: Apple Guide Description
Updated: 5/9/95 (2 Pages)

20724 QuickDraw GX: Key Features Explained
Updated: 2/22/95 (3 Pages)

20726 System 7.5: 50 New Features Described
Updated: 2/15/95 (5 Pages)

20728 System 7.5: Upgrade Kit Contents
Updated: 1/30/95 (2 Pages)

20749 System Enablers: Current Versions & Change History
Updated: 1/12/96 (5 Pages)

20750 System Update 3.0 Read Me
Updated: 5/2/95 (8 Pages)

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20208 QuickTime: Versions, System Requirements & Installation
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Tech Info Library Article Number:13451

Tech Info Library

PowerCD: How to Connect to a Macintosh (9/93)

Revised: 9/27/93
Security: Everyone

PowerCD: How to Connect to a Macintosh (9/93)

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Article Created: 27 September 1993

TOPIC ----------

How do I connect my PowerCD to a Macintosh computer?

DISCUSSION ----------

To connect your PowerCD to a Macintosh computer, you must use the appropriate SCSI cable and set the SCSI ID number. In order to be recognized as a SCSI device on your Macintosh, the PowerCD needs to be powered on before the Macintosh is booted.

SCSI Cabling

If a PowerCD is the only SCSI device you're connecting to a Macintosh, connect a SCSI System cable between the SCSI ports of the Macintosh and the PowerCD. If you're connecting to a PowerBook, use a HDI-30 SCSI System cable instead. The PowerCD has active internal termination, so an external SCSI terminator isn't necessary.

If you're connecting to a Macintosh along with other SCSI devices, connect a SCSI Peripheral cable between the SCSI ports of the PowerCD and the last device on the SCSI chain. Be sure to plug a SCSI terminator between the end of the SCSI cable and the PowerCD.

If you're connecting to a PowerBook along with other SCSI devices, connect a SCSI Peripheral cable between the SCSI ports of the PowerCD and the last device on the SCSI chain. Plug a SCSI terminator in two places:

1) Between the end of the SCSI cable and the PowerCD

2) Between the end of the SCSI System cable and the first SCSI device in the chain

Note that the PowerCD must be the last device on the SCSI chain. Apple

recommends using Apple SCSI cables to ensure trouble-free results.

SCSI ID Number

You may set the SCSI ID number, which is on the back of the PowerCD next to the SCSI port, to any unused number between 1 and 6. The SCSI ID number of your PowerCD is factory set to 3.

The PowerCD can be used on a SCSI chain with other Apple CD-ROMs and with the AppleCD 300 driver loaded, but its SCSI ID number must be lower than any other CD-ROM device in the chain. If you connect a PowerCD to a Macintosh with an Apple Internal CD-ROM 300 drive, you will probably have to change the PowerCD's SCSI ID number, since the Apple Internal CD-ROM 300 is usually set to SCSI ID=3. Note that the PowerCD Audio (or CD Remote) will only play audio tracks on the device that has the lowest SCSI ID number.

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Tech Info Library Article Number:13452

Tech Info Library

System 7.1 Software: Installing from 800K Disks (9/93)

Revised: 9/27/93
Security: Everyone

System 7.1 Software: Installing from 800K Disks (9/93)

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Article Created: 27 September 1993

TOPIC ----------

System 7.1 Update Kits purchased from software resellers contain 800K media. Those purchased directly from Apple are on 1.44MB disks. The System 7.1 installation process for 800K media differs slightly from 1.44MB disks. This article discusses the differences.

DISCUSSION ----------

With 1.44MB disks, you are instructed to shut down the computer, boot from the first floppy Install disk, and follow the installation program from there.

The installation using 800K media is slightly different. You're instructed to insert the first floppy Install disk while the Macintosh is running, and follow the installation program from there.

There are no problems using 800K media in high density floppy disk drives. The key difference is that you can't start up the Macintosh with System 7.1 on 800K disks. The 800K Install disk doesn't have room for the system files required to start up a Macintosh.

The documentation in the System 7.1 Upgrade Kit is correct for 800K media. The manual instructs users to insert the Install disk and proceed from there. You shouldn't shut down the computer, and try to boot from the disk.

Complete instructions for a Clean Install of System 7.1 are available in a separate article in the Tech Info Library or from the FaxInfo System.

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Tech Info Library Article Number:13453

Apple IIgs OS v 6.0: Aristotle Installation (2/95)

Revised: 6/5/96
Security: Everyone

Apple IIgs OS v 6.0: Aristotle Installation (2/95)

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Article Created: 27 September 1993
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

This document provides installation steps to install Aristotle on an Apple IIgs using GS/OS v 6.0

DISCUSSION ----------

Hardware Requirements

You will need the following hardware:

- A Macintosh Plus, SE, or member of the Classic, LC, Macintosh II, Centris or Quadra families of Macintosh computers operating in System 7 with a minimum of 4 Megabytes of random access memory (RAM) installed for Apple IIe networks.

- A Macintosh computer with 5 MB of RAM installed is recommended for Macintosh and Apple IIgs networks.

Installation
---

1) Preparing the hard drive.

   Insert the Disk Tools disk from the system software package in the accessory kit, and turn the Macintosh on. Open the program "Apple HD SC Setup" and click "Initialize." Answer any dialogues that ask if you want to erase the hard drive. Once the hard drive has been successfully initialized, click "Quit." When you see the Macintosh desktop, choose "Restart" from the "Special" menu.

2) Installing System 7

Insert the Install disk, or the InstallMeFirst disk from the system software package in the accessory kit. Follow any prompts. Be sure to click "Customize" to install any necessary network card services (Ethernet, Router, and so on).

3) Installing AppleShare 3

a) With the Macintosh turned on, insert the File Server Disk and double-click on the Installer.

i) Click "Customize"

ii) Select File Server software, and Apple II Startup.

b) Check Computer's clock and set time in the "General Controls" control panel

c) Check Network Connections

i) Choose "Chooser" from the Apple menu and make sure AppleTalk is active

ii) Choose "Control Panels" from the Apple Menu and open the Network control panel to verify correct services (Ethernet, or LocalTalk) are selected.

4) Setting Up File Service

a) Open the System Folder (not the folder titled "system") and locate the AppleShare Admin application. Select its icon by clicking on it once and choose "Make Alias" from the "File" menu. Put the alias in the Apple Menu Items folder.

b) Open the AppleShare Admin Application

c) Name the File Server (enter Admin. key and click OK)

i) This is the name users will see in the Chooser

ii) Admin. Key is a password you enter whenever entering the Admin. Application. Password can be up to 8 characters long.

d) Enter an Administrator's name and Password

i) Enter any name -- Default is "Administrator"

ii) Up to 8 characters for password -- For Administrator's personal account on the server.

e) Check options needed as server Administrator

i) You will probably assign yourself all available options. Be sure to click "save."

5) Creating Groups

For Aristotle, there must be a group named EXACTLY "Student" and one named EXACTLY "Teacher" not "STUDENTS" and not "TEACHERS."

6) Creating Users

Assign each user to Student or Teacher as a primary group.

Only user's who's primary group is Teacher or student can log onto Aristotle

7) Allowing Guest Access

Double Click on the <any user? option in User List

Default is turned off. Click Login Enabled.

8) Enable Apple II Startup

Select "Enable Apple II Startup" from the Server Preferences in Server menu of the Admin. Program.

This will create a folder named "Users" on the root level of the server volume.

9) Selecting Volumes to Share

a) In the Administrator Application, choose "Access info" from the "Privileges" menu.

b) Select the item to be shared and click "share." The item will appeared in the shared items box on the right side of the dialog box.

c) Set privileges for the administrator. Mark check boxes: See folders, See files, Make changes.

d) Set everyone in users and groups to 'See folders'

e) Click the save button, a dialog box will appear. Select explicit.

Note: If you are going to provide Apple II Network Startup, the entire startup hard disk must be shared.

10) Open the AppleShare Server Application

11) Creating AppleShare Workstation Disk for the IIgs on 3.5 disk.

a) Start up with the Apple IIgs GSOS 6.0 System Disk

b) Insert a blank 800 K disk in the second 3.5-inch drive

c) Format the blank disk and name it "Workstation"

d) Remove the blank disk and insert GSOS v 6.0 Install Disk.

e) Open the Installer program on the Install Disk.

f) Click "Customize" when the Installer program appears.

g) Eject the Install disk and insert the Workstation disk.

h) Click "Disk" until you see "Workstation"

i) Select "Network: AppleShare 3.5 Disk" and click "install."

j) Swap disks until the installation is complete

k) Set the Apple IIgs control panel (CMD-CTR-ESC).

Note: It is recommend that you use two 3.5-inch drives.

Note: 01 and 03 ROM revision Setups.

```
 IIgs ROM 01 - Slot 1=your card
               Slot 7=AppleTalk

 IIgs ROM 03 - Slot 1=AppleTalk
               Slot 7=AppleTalk
```

12) Restart the IIgs with the Workstation disk. (CTR-Reset, at prompt type PR#5).

13) Connecting to the server from the IIgs

a) When Launcher window appears, click "Cancel"

b) Choose "Control Panel" from the Apple Menu

c) Select the AppleShare Icon on the left and the name of the server on the right.

d) Click "OK"

e) Type in the name and password of the Administrator and click "OK"

f) Select the name of the volume that will be used for the Apple II software.

g) Click "OK" and close the Control Panel.

14) Installing GSOS system software

a) Choose "Launch" from the "File" menu.

b) When the Launcher window appears, insert the Install disk.

c) Click "Disk" until Install is the Active disk.

d) Select Installer and click "Open."

e) Click "Customize" when the Installer program appears.

f) Click "Disk" until the name of the Server volume appears.

g) Choose the "Network: Server Startup" and "Network: Server Quick Logoff". (Open Apple to select multiple items.)

h) Click "Install" and "Perform this Update"

15) Restarting the IIgs from the network.

a) Open the AppleShare Admin. program from the Macintosh File Server

b) Select a user from the User list(click one time, do not open)

c) Choose "Set startup info" from the "Startup" menu

d) Click "Set Startup App"

e) Click "Desktop" then double-click the name of hard drive and the open the System folder.

f) Select the file called "Setstart.Sys16"

g) Close the Set Startup window and click "OK"

h) Choose "Verify" from the "Startup" menu.

i) Click "OK"

j) Go to the IIgs and change hardware control panel(CMD-CTR-ESC) set the RAM DISK to a minimum of 256k.

k) Restart the IIgs.

l) Log in as Administrator.

** Note: Repeat steps b-i for every user who will log in from an Apple IIgs.

16) Installing Aristotle

a) Insert the Aristotle Menu Software disk in the IIgs floppy drive.

b) Drag the Aristotle folder to the server volume icon on the desktop.

This will put the folder on the root level of the hard disk. This is recommended to minimize problems with access Privileges of enclosing folder.

c) Eject the Aristotle Menu Software Disk.

d) Insert the GSOS Install Disk.

e) Open the Installer Program.

f) Click "Customize" from the Installer program window.

g) Click "Disk" until the name of the server volume appears.

h) Choose the Aristotle Update script on the Left.

i) Open the Aristotle folder on the server volume.

j) Open the Menu.D. folder within that Aristotle folder.

k) Click "Install" and quit the Installer.

17) Setting Privileges on the File Server

a) For the folder named "System", NOT the Macintosh System folder.

Verify that Owner, Group and Everyone can See Folder and See Files on the Folder named System. Click "Save"

b) For the "Users" Folder, verify Owner and Group and Everyone can See Folders. DO NOT change all enclosed folders. Click "Save"

c) The "users" folder's group should be Teacher

d) For the Aristotle folder, verify that Owner, Group, and Everyone can See Folders and See Files. Owner and Group should be able make changes.

e) The Aristotle folder's group should be Teacher. Change all enclosed folders. Click "Save"

18) Setting up the Startup application for each user

a) A Student User should be set to Menu.D as Startup

b) A Teacher User should be set to Menu.M as startup.

c) Verify each group from the Startup Menu and select Verify startup.

Adding New Users

After installing Aristotle, new users that have been added to the Users and

Groups datafile will not appear in the User Menu of the Aristotle Menu Management Program.

They will appear after performing these steps:

1) Select the name of user.

2) Select "Verify Apple II startup Information" from the "Startup" menu in the Administrator Program.

3) With Verification complete, open the Users Window in Aristotle (If already open, close and open again.).

If these three steps do not work, check privileges and make sure the user has Teacher or Student assigned as a primary Group.

Article Change History:
16 Feb 1995 - Added heading for installation steps section.
03 Feb 1995 - Made corrections to AppleTalk references.
13 Jan 1995 - Made corrections to select file names appearing in article.

Support Information Services

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Tech Info Library Article Number:13454

Tech Info Library

AppleShare 3.0 Commonly Asked Questions (9/94)

Revised: 9/29/94
Security: Everyone

AppleShare 3.0 Commonly Asked Questions (9/94)

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Article Created: 27 September 1993
Article Reviewed/Updated: 29 September 1994

TOPIC ----------

This article presents commonly asked customer questions about AppleShare 3.0, and the answers.

DISCUSSION ----------

Q) Some of the user names are "grayed out" in the User List. What's wrong?
A) The login for those users is disabled. The Administrator, within the Admin application, must enable each user's login.

Q) How do I remotely administer my AppleShare server?
A) Apple doesn't provide a way to administer AppleShare 3.0 remotely. You must do administration tasks at the server or remotely via a third-party product.

Q) The users on the network can't see the server. What's wrong?
A) Ensure that you've done the following:

- Launched the File Server
- Shared the volumes
- Given users appropriate access

Q) Should I install the workstation software for AppleShare 3.0.1 on my workstations?
A) You should install the AppleShare 3.0.1 workstation software, unless the workstations are running System 7.1. This version has many new features.

Q) What can I do to maximize the performance of AppleShare 3.0?

A) Check the following:

- Make sure that AppleShare is the only application running on the server.
- Set the Remote User Activity Meter to 100%.
- Set the RAM cache between 1024K and 2048K.
- Eliminate any third-party extensions.

Increasing the memory partition for the AppleShare File Server application won't affect performance.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
29 Sep 1994 - Reviewed for consistency and added Fax information.
17 Nov 1993 - Retitled, edited.

Support Information Services

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Tech Info Library Article Number:13457

Tech Info Library

Macintosh PC Exchange: Troubleshooting Overview (7/96)

Revised: 7/1/96
Security: Everyone

Macintosh PC Exchange: Troubleshooting Overview (7/96)

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Article Created: 17 November 1993
Article Reviewed/Updated: 01 July 1996

TOPIC ----------

Macintosh PC Exchange is a control panel that lets you format, read, or write DOS-format floppy disks in a Macintosh computer.

Formatting a disk prepares the disk to receive data. PC and Macintosh computers format disks differently. The term "DOS" describes disks formatted using DOS, Windows, or OS/2. Macintosh PC Exchange doesn't provide data translation.

DISCUSSION ----------

REQUIREMENTS
============

Be sure you have the proper software and hardware to use Macintosh PC Exchange:

- System software version 7.0 or later
- An Apple SuperDrive (formerly called FDHD), or equivalent third-party drive that reads DOS high-density disks
- At least 3 MB of random access memory (RAM)

WORKING WITH DOS DISKS
======================

After you install Macintosh PC Exchange in your Control Panels folder and restart your computer, DOS-format disks appear directly on your Macintosh desktop when you insert them into the floppy disk drive.

Formatting Disks

Formatting erases all data on a disk. Be sure the disk you want to format

doesn’t contain information you need. Click on the disk icon once to select it, and then choose Erase Disk from the Special menu. A format pop-up menu includes these options:

- Standard Macintosh format

  Formats high-density disks at 1440K, and low-density disks at 800K.

- PC-DOS format

  Formats high-density disks at 1440K, and low-density disks at 720K.

- Apple II ProDOS disks

  Formats 400K, 800K, or 1.4MB 3.5 inch Apple II ProDOS disks.

Unreadable Disks

When you insert a floppy disk into a Macintosh, you may see a message saying the disk isn’t readable, and asking whether to initialize it. This might happen for the following reasons:

- In the past, many DOS users formatted low-density disks for use as high-density disks. On a DOS computer, always format standard double-sided disks in the 720K capacity, and high-density disks in the 1440K capacity. The Macintosh doesn’t recognize an improperly formatted disk.

- An unreadable disk might be damaged. Don’t try to repair a DOS-format disk with a Macintosh repair utility program. This may destroy information on the disk. If the disk requires repair, use a disk repair utility on a DOS computer.

- If a disk has never been used, you just need to initialize it.

- If you don’t see more than one disk format choice, your computer needs an Apple SuperDrive. You can’t use Macintosh PC Exchange in a Macintosh SE or a Macintosh II computer without a SuperDrive upgrade. You can’t use Macintosh PC Exchange on a Macintosh Plus computer.

- Macintosh PC Exchange might not be properly installed. The PC Exchange icon must be in the Control Panels folder, and you must restart the computer after installation. Read the installation instructions in the Macintosh PC Exchange User’s Guide.

Extension (INIT) Conflicts

The Macintosh loads system extensions, often called INITs, into system memory when the computer starts up. When they aren’t compatible with other software on your computer, you have an INIT conflict. Here are some typical symptoms of INIT conflicts:

- System won’t accept a correctly formatted DOS disk.

- System freezes when you insert a correctly formatted DOS disk.

- You can’t open the Macintosh PC Exchange control panel to make changes.

If you suspect an INIT conflict, call the Apple Fax Info System at 1-800-505-0171 and order fax document number 20242 for instructions.

WORKING WITH DOS DOCUMENTS

DOS Documents Won't Open

Sometimes you might double-click a document’s icon, and see a message saying that the application program couldn’t be found. An MS-DOS or Windows document may not open when you double-click the icon for the following reasons:

- The Macintosh doesn't know which application program to launch. You can follow the steps in the "Opening a Document from within a Program" section. You can also follow the instructions under "Assigning Document Type."

- You may be trying to access the document over a network. PC Exchange assignments don’t work for documents over a network. Assignments work only for documents on DOS-format floppy disks and documents copied from DOS-format floppy disks.

- The disks currently available on your computer don't have the application. Find the disk that contains the application, and copy the application to your hard disk.

Sometimes the application program launches, but the document doesn't open. Here are some reasons this may happen:

- The application program may not be able to open DOS documents when you double-click the icon. Follow the instructions in the "Opening a Document from within a Program" section.

- The document may have been assigned a document type that the program can't open. Follow the instructions in the "Assigning Document Type" section to change the document type. Refer to the table in the "Assigning Macintosh Programs to DOS Documents" section of the "Macintosh PC Exchange User's Guide" to find types that a program can open.

Incorrect Document Format

Sometimes you can open a document, but find the format is wrong. It may contain incorrect characters and strange codes. This can happen when an application program recognizes the document’s type, but doesn’t interpret the document’s file format (the way the information in the document is encoded).

Check the application’s documentation for document opening and saving procedures

with different file formats, or open the document with another program.

You can also try assigning a different document type. Follow the instructions"Assigning Document Type" section of this article. Refer to "the table in the "Assigning Macintosh Programs to DOS Documents" section of the Macintosh PC Exchange User’s Guide" to find types that a program can open.

Opening a Document from within a Program

To open a document using an application program, follow these steps:

1) Launch a Macintosh application.

2) Choose the Open command from the File menu.

3) In the dialog scroll box, select the DOS document and click Open.

Here's why the document you want may not be listed in the directory dialog box when you choose Open in an application program:

- The program can't recognize the document type assigned to the document. Try to open the document with another application program. Or reassign a document type following the instructions in the "Assigning Document Type" section to change the document type. Refer to the table in the "Assigning Macintosh Programs to DOS Documents" section of the "Macintosh PC Exchange User's Guide" to find types that a program can open.

- You may be trying to access the document over a network. PC Exchange assignments don't work for documents over a network. Assignments work only for documents on DOS-format floppy disks and documents copied from DOS-format floppy disks.

Assigning Document Type

The Macintosh PC Exchange control panel lets you map file types. A three-letter DOS suffix maps to a corresponding document type on the Macintosh. Here's how to designate a specific Macintosh application for opening MS-DOS documents:

1) Choose Control Panels from the Apple menu.

2) Double-click the PC Exchange control panel to open it.

3) Click on Add.

4) In the DOS Suffix box, type a period and the three-letter DOS suffix (for example, .TXT). The suffix is required. There is an error in the manual which states that a suffix is NOT required. This is incorrect.

5) In the lower part of the dialog box, select the Macintosh application.

6) Choose a document type from the Document Type pop-up menu (for

example, TEXT).

7) Click OK.

Once you make this assignment, you can double-click the icon of the DOS document to open it.

When assigning document types, you must specify the type of document the application supports. If you're unsure of which document type to use, TEXT is the safest.

Once you've made assignments, documents appear on the disk with the icon representing application and document type. Documents with an unassigned DOS suffix appear as generic DOS documents.

So that all network users are consistent, make a master list of assignments on one Macintosh. Also, place a copy of the PC Exchange Preferences file in the Preferences folder, within the System Folder, of each licensed user's Macintosh.

WORKING WITH MACINTOSH DOCUMENTS

Document Types

Choose Save from the File menu to save documents onto a DOS-format disk. When saving documents created or modified on the Macintosh, be sure to save the document in a file format that the DOS application can read. Refer to the application's documentation to find out what file formats the program can open, import, and save.

The Macintosh also creates two new files for each document, to keep track of such things as the location of icons and windows. You'll need to leave about 5K of extra disk space for each document to accommodate these files.

Document Name Length

While the Macintosh supports document names up to 31 characters long, DOS supports up to eight characters plus a three-character suffix. Macintosh PC Exchange truncates a longer name used on the Macintosh when saved to a DOS disk. To preview what the shorter name looks like:

1) Click on the file to highlight it.

2) Choose Get Info from the File menu.

3) Click on the document name in the Info dialog box. This switches between the Macintosh and DOS (truncated) version of the name.

If this procedure doesn't work, make sure the File Sharing Extension is in the Extensions folder.

Non-English Word Processors

When you create a document with a non-English word processor on the Macintosh, the special accent characters (diacritical marks) may change when you open the document on a DOS computer. DOS computers may not support all characters displayed on a Macintosh.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
01 Jul 1996 - Added Fax Doc Word
13 Oct 1994 - Added keyword; made several technical corrections.
28 Sep 1994 - Reviewed for technical accuracy.
29 Apr 1994 - Indicated that a suffix is required for DOS files.
09 Feb 1994 - Added more troubleshooting information and retitled.

Support Information Services

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Tech Info Library Article Number:13463

Tech Info Library

Quadra 660AV and 840AV: Frequently Asked Questions (7/96)

Revised: 7/1/96
Security: Everyone

Quadra 660AV and 840AV: Frequently Asked Questions (7/96)

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Article Created: 27 September 1993
Article Reviewed/Updated: 01 July 1996

TOPIC ----------

This article contains answers to frequently asked questions (FAQ) about the Macintosh Centris/Quadra 660AV and Quadra 840AV.

DISCUSSION ----------

Quadra 840AV Q&A

Question: How is the DRAM/VRAM configured? Is it the same as the Quadra 800?

Answer: The 8MB configuration comes with one 8MB SIMM. The 16MB configuration comes with two 8MB SIMMs. The VRAM is the same as the Quadra 800. It takes four 256K SIMMs to achieve the maximum 2MB of VRAM. There is no DRAM on the logic board.

Question: Is the Quadra 840AV upgradeable to Power Macintosh?

Answer: The Quadra 840AV is upgradeable to the Power Macintosh 8500/120. This upgrade will not be available until 2 months after the introduction date of the Power Macintosh 8500 series computers.

Question: Can I upgrade the Quadra 900/950 to a Quadra 840AV?

Answer: No, there is currently no upgrade path for these machines to the Quadra AV technology.

Centris/Quadra 660AV Q&A

Question: Is the Centris/Quadra 610 upgradeable to the 660AV?

Answer: These logic board upgrades have been discontinued.

Question: Does the Quadra 660AV have an FPU built-in?

Answer: Yes, it's a 68RC040 processor running at 25MHZ.

Question: What are the DRAM/VRAM configurations on the Quadra 660AV? Is it the same as the Centris/Quadra 610?

Answer: Yes, Except the 660AV requires 70ns RAM. It has 4MB of RAM on the Logic Board, and two slots for expansion. The 8MB configuration comes with one 4MB SIMM. The Macintosh Quadra 660AV has 1 MB of VRAM.

Question: Is the 660AV upgradeable to the Power Macintosh?

Answer: These logic board upgrades have been discontinued.

Question: Is it compatible with all third party monitors?

Answer: There are differences in the video port of the Quadra 840AV and the Quadra 660AV that may cause compatibility issues with some third party monitors. If a third party monitor isn't working with the built-in video, please contact the vendor of the monitor. You need to tell the vendor "The 840AV/660AV does not support sync on green." The vendor will need to provide a fix.

Question: Can I use a video board instead of the built-in video and still use the video-in capabilities of the Quadra 840AV and the Quadra 660AV?

Answer: No, the video-in capabilities on the new AV Macintosh computers will only work with the internal video of the Macintosh.

Question: Can I use another video card with my AV Macintosh?

Answer: Yes, however you will not be able to use the video-in capabilities of for that card.

Question: Will a future AV Macintosh connect directly to the AV monitor?

Answer: You will always need the adapter cable.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature).

The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
01 Jul 1996 - Added Fax Doc Word
30 Aug 1995 - Changed references to Power Macintosh logic board upgrades.
25 May 1995 - Added VRAM information to answer and indicated upgrades have been discontinued.
08 Feb 1995 - Revised Discussion, updated formatting.

Support Information Services

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Tech Info Library

QuickTime Versions, System Requirements, Installation (5/95)

Revised: 10/14/96
Security: Everyone

QuickTime Versions, System Requirements, Installation (5/95)

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Article Created: 27 September 1993
Article Reviewed/Updated: 24 May 1995

TOPIC -----

QuickTime is the multimedia architecture for the Macintosh computer family. It allows any color-capable Macintosh to integrate dynamic data types such as video, sound, and animation into presentations, training materials, and documents. Hundreds of commercial applications support QuickTime.

DISCUSSION -----

Four Components

The QuickTime architecture has four key components:

- True synchronization of streams of information in time -- video and sound, for example, using the movie controller.
- A variety of compression schemes, to minimize storage requirements.
- A standard graphical interface for navigating, manipulating, and editing data.
- A rich, flexible file format that readily accommodates these new information types.

QuickTime 1.5 Features

Compared to earlier versions, QuickTime 1.5 provides:

- Larger screen software-only movie playback. Up to 320 x 240 pixels at up to 15 frames per second, or four times the screen area on a Macintosh LC II. Movies on screen will now be twice as big. Alternatively, you can play back movies of 160 x 120 pixels at up to 30 frames per second on a Macintosh LC II.

- Integrated support for Kodak Photo CD allows digitizing photos onto a CD-ROM where QuickTime can access them. Features include easily viewed "thumbnails," QuickTime overview movie of photo images, and file-format translation -- so you can paste Photo CD images into any Macintosh application that supports PICT files.

- Improved CD-ROM data handling for enhanced QuickTime movie playback from a CD.

- Improved network performance for better CD playback over a network.

- Faster 1-bit dithering offers enhanced and smoother viewing of QuickTime movies on PowerBook computers and other monochrome computers.

- Generic media handlers allow developers to incorporate different data types into QuickTime movies to create new movie track types.

- Text Track, a new feature that allows integration of texts into QuickTime movies.

- Human Interface support for compression settings, sound input devices, and video digitizers. Developers can now easily change settings and features in their hardware.

QuickTime 1.6 Features

- Significantly improved performance, sound, and graphics support.

- Movies play back more than 10 percent faster than the previous version 1.5, delivering smoother playback.

- The new sound manager provides customers using third-party sound cards with the ability to input and play back CD-quality, 16-bit sound from QuickTime movies. Sound Manager version 3.0 completely replaces the existing Sound Manager, and it works with all versions of QuickTime. If Sound Manager 3.0 is installed, QuickTime 1.6 will take advantage of its new features.

- A Movie Import component allows you to open Audio CD tracks from QuickTime's Standard File Preview dialog, just as you could open PICS and AIFF files with QuickTime 1.5. If you have an AppleCD 300 or 300i drive, you can use QuickTime 1.6 to convert tracks of your favorite audio CD directly into QuickTime movies.

- By supporting ColorSync, Apple's color-matching technology, QuickTime 1.6 will ensure that colors in a movie played on one color monitor will be the same when played on any other color monitor.

- QuickTime 1.6 requires 90 percent less memory than the previous version when installed, giving Macintosh customers with entry-level computers more flexibility when installing QuickTime.

QuickTime 1.6.1 Fixes

QuickTime 1.6.1 fixed problems with the Alias Manager, incompatibilities with NOW and HAM utilities extensions, and with the decompressor for Photo CD.

QuickTime 2.0

QuickTime 2.0 is significant because it provides larger video at faster frame rates, support for music, and support for interactive television applications.

Larger, Faster, TV Like Video

Video on computers is often confined to small windows and played at less than 12 frames per second, making the video appear rough and jerky. QuickTime 2.0 provides greatly increased performance resulting in full-screen movies without the addition of any hardware. This closely resembles what viewers see on television today. For example, on a Macintosh LC 475, one of Apple's lowest-cost computers, 30 frames per second video is possible at a resolution of 320 x 240, or full-screen video (640 x 480) is possible at 15 frames per second.

Key components of the new video enhancements are new features that support professional-level video editing. QuickTime 2.0 includes support for time-code, 60 fields per second video and high data throughput greater than 3 MB per second. This represents a 300 percent increase over previous versions of QuickTime.

Interactive Television Support

QuickTime 2.0 creates an infrastructure for development and delivery of interactive television applications through MPEG support and network enhancements. Now, with its new device protocols, QuickTime can address distributed networks and devices, such as video servers, on the information superhighway.

QuickTime 2.0 supports MPEG, widely regarded as the industry-standard method of delivering video into the home for interactive television applications such as Video On Demand (VOD) and home shopping. However, MPEG, by itself, allows only playback. With QuickTime 2.0, users of MPEG-based devices will be able to edit, search for, interact with, as well as play back—video information.

Note:
QuickTime requires additional hardware for MPEG playback.

Music For The Masses

Building on Apple's industry renowned ease-of-use, QuickTime 2.0 makes it much easier for computer users to create, edit, playback and synchronize music with video—all without a technical understanding of MIDI technology. In the past, users of Macintosh computers and other personal computers have required an

understanding of MIDI technology in order to create and playback music on computers.

In addition, QuickTime 2.0's music capabilities will save disk space for users, because QuickTime music tracks are much smaller than digital audio. For example, Beethoven's 5th Symphony could easily fill a 300 MB hard disk if stored as CD-quality audio, but when represented as a QuickTime music track it would fill just a single 800K floppy disk.

Compatibility with Older Versions of QuickTime

Movies created with earlier versions of QuickTime will playback with QuickTime 2.0, and usually they will playback more smoothly.

Applications and tools which support early versions of QuickTime, Movie Player and Movie Converter for example, will playback QuickTime 2.0 movies.

QuickTime 2.0 Availability

Developers: QuickTime 2.0 and QuickTime for Windows 2.0.x are available to software developers on the QuickTime Software Developer Kit (SDK) through APDA, and include licensing agreements from Apple's Software Licensing division.

End Users: QuickTime 2.0 for Mac OS is available as part of System 7.5 or can be downloaded from CompuServe (GO QTIME) for a small fee.

QuickTime 2.0 for Windows is available from CompuServe for a small fee (GO QTIME).

QuickTime 2.0 for both Mac OS and Windows can also be downloaded from the internet for a small fee. It is available from the WWW site:

http://quicktime.apple.com

All earlier versions of QuickTime are no longer available and have been removed from Apple SW Updates.

Most QuickTime products also include a copy of QuickTime.

System Requirements

QuickTime requires a Macintosh computer with a 68020 or later microprocessor, with system software version 6.0.7 or later. Apple recommends at least 4MB of memory when using QuickTime with System 7. QuickTime relies on the capabilities of 32-bit QuickDraw, which only runs on 68020 or later Macintosh computers.

If you want to use QuickTime on an older Macintosh, you might be able to upgrade the unit or use a third-party board to bring it up to a 68020 microprocessor or higher. QuickTime will then work with System 7 installed, or with the 32-bit QuickDraw file installed in system 6.0.5 or 6.0.7.

Installation

To install, simply drag the QuickTime extension to your System Folder and restart. Please note that the Installer for QuickTime Starter Kit 1.0 will replace QuickTime versions 1.5, 1.6, 1.6.1, or 2.0 with 1.0. Just reinstall the QuickTime 1.5, 1.6, 1.6.1, or 2.0 extension. QuickTime 2.0 also has additional components that need to be installed including QuickTime PowerPlug (For use only on Power Macintosh computers), and QuickTime Musical Instruments (for MIDI playback). Both the QuickTime PowerPlug and QuickTime Musical Instruments go in your Extensions folder.

With System 6.0.7, the 32-bit QuickDraw file is located on the Printing Tools disk in the Apple Color folder and is not automatically installed. You must install it manually. With System 7 and later versions, 32-bit QuickDraw is built into the system software, and a separate file for 32-bit QuickDraw is no longer required.

If QuickTime movies don't play in the Scrapbook, follow these steps:

1) Copy the Scrapbook DA from the QuickTime disk to your Apple Menu Items folder.

2) Replace your existing Scrapbook DA.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
24 May 1995 - Added QuickTime 2.0 information.
29 Sep 1994 - Reviewed for consistency and format.
04 Aug 1994 - Removed binary file. Took QRG out of title. Verified against contents of the fax document.

Support Information Services

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Tech Info Library Article Number:13466

Tech Info Library

System 6: Removing Fonts and Desk Accessories (9/94)

Revised: 3/27/95
Security: Everyone

System 6: Removing Fonts and Desk Accessories (9/94)

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Article Created: 27 September 1993
Article Reviewed/Updated: 7 September 1994

TOPIC ----------

This article gives instructions for removing fonts and desk accessories (DAs) from a System file. It applies only to Macintosh systems that use a version of System 6.

DISCUSSION ----------

Change from MultiFinder to Finder

Font/DA Mover 4.1 can remove desk accessories, but can't remove fonts from the startup System file while in MultiFinder. If you aren't using MultiFinder, skip to the "Use Font/DA Mover" section. If you try to remove fonts, a message appears. Click the OK button.

You now have three options to change from MultiFinder to Finder:

- Restart and Press Command Key
  Choose Restart from the Special menu and hold down the Command key. This temporarily disables MultiFinder. Choosing Restart again enables MultiFinder.

- Restart with a System Floppy Disk
  1) Choose Restart from the Special menu.
  2) Put a System disk in the main floppy drive right after you hear the chime.

- Set Startup to Finder Only
  1) Choose Set Startup... from the Special menu. A dialog box appears.
  2) Click the Finder radio button (the Finder Only radio button highlights at the same time).
  3) Click the OK button.

4) Choose Restart from the Special menu.

Use Font/DA Mover

You are now ready to remove fonts from your System file. If you don't already have Font/DA Mover 4.1 on your hard disk, copy the application to your hard disk now.

Note: If you have older versions of Font/DA Mover on your hard disk, drag them to the Trash and choose Empty Trash from the Special menu. Using an older version can damage your System file!

1) Double-click the Font/DA Mover 4.1 application. (Hold down the Option key before launching Font/DA Mover 4.1 to display desk accessories first rather than fonts. The scroll box on the left then shows the desk accessories currently installed in your System file. Follow steps 2-4, substituting desk accessories wherever you see fonts.) The Font/DA Mover screen appears.

   The scroll box on the left shows the fonts currently installed in your System file. The title below the scroll box, "System on Macintosh HD," indicates the location of the fonts.

2) Select the fonts you want to remove by one of two methods:

   - Drag over the list on the left while pressing the mouse button.
   - Or you can hold down the Shift key and click each font. You can select items that aren't next to each other by this method.

   Font/DA Mover displays the selected fonts in reverse type (white letters on a black background).

3) Click the Remove button to remove the selected fonts. A message appears.

4) Click the OK button. Font/DA Mover removes the fonts, and they no longer appear in the left window of the screen.

5) To remove desk accessories and fonts during the same session, click the Font or Desk Accessory radio buttons at the top of the Font/DA Mover window.

6) When you're finished, click the Quit button to go back to the desktop (Finder).

7) If you previously chose to Set Startup to Finder Only, repeat the steps in that section, but click the MultiFinder radio button rather than the Finder radio button.

Article Change History:
07 Sep 1994 - Reviewed fax document. Added paragraph about Apple Fax line.

..TIL13467-System_6-Removing_Fonts_and_Desk_Accessories_9-94_(TA30245).pdf

24 Feb 1994 - Provided text-only version.

Support Information Services

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Tech Info Library Article Number:13467

Where Do I Find PC/TCP Software (6/95)

Revised: 6/29/95
Security: Everyone

Where Do I Find PC/TCP Software (6/95)

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Article Created: 27 September 1993
Article Reviewed/Updated: 29 June 1995

TOPIC -----

Where do I get PC/TCP which is an equivalent of MacTCP for PCs? I'm involved in an evaluation of the Farallon PhoneNet PC/Timbuktu products, and I need access to TCP/IP.

DISCUSSION -----

PC/TCP can be obtained from FTP Software of Wakefield, Massachusetts. The latest version is 2.2 and requires DOS 3.3 or later, 640K, hard disk and a network card. To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
29 Jun 1995 - Corrected spelling.

Support Information Services

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Tech Info Library Article Number:13473

Tech Info Library

PowerShare: Installing a Server (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare: Installing a Server (9/93)

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Article Created: 28 September 1993

TOPIC ----------

This article describes how to install a PowerShare Server.

DISCUSSION ----------

1) Install PowerShare. Launch the installer from the PowerShare CD-ROM or set of floppy disks. Use the default Easy Install selection when installing PowerShare.

2) After the installation is complete, restart the Macintosh.

3) Run PowerShare Easy Setup. The installation process installs an alias to the PowerShare Easy Setup application in the Startup Items folder inside the System Folder. Upon restart, the PowerShare Easy Setup application will launch.

4) In the PowerShare Easy Setup application, click the New button.

5) A dialog box appears, asking whether this is a new PowerShare system or an existing one. Click the New button.

6) You will be prompted to type a name for this PowerShare system and a password for the Administrator. Type in the inforamtion and click the OK button.

(Note: the PowerShare System Administrator name cannot be changed.)

7) Wait for PowerShare to start. You will see a series of dialog boxes informing you that the PowerShare Catalog Server is starting and then that the PowerShare Mail Server is starting.

8) Confirm that the servers are running. At this point, the PowerShare Catalog Server and the PowerShare Mail Server should be running. Each

server will display a separate server status window.

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Tech Info Library Article Number:13474

PowerShare: Adding a Catalog Server (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare: Adding a Catalog Server (9/93)

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Article Created: 28 September 1993

TOPIC ----------

How do I add another PowerShare Catalog Server?

DISCUSSION ----------

An important feature of your PowerShare System is the ability to replicate and distribute the contents of catalogs across the network. If there is excessive load on a server, you can create another server and use it to store catalog folders—without altering the structure of the catalog.

However, it is not possible to have more than one PowerShare Catalog Server running on a Macintosh at the same time. You need another Macintosh with the following minimum requirements:

• At least one Macintosh computer (using a 68020 or later processor) with a hard disk.

• A minimum of 4 megabytes of memory for each installed server.

• If both the PowerShare catalog server and the PowerShare mail server are installed on the same computer you will require at least 8 MB.

• The PowerShare Server system requires system software version 7.1.1 or later. (The PowerShare Installer will install System 7.1.1 if it is needed.)

Setting up an additional PowerShare Server:
---

1) Install the PowerShare software on the Macintosh where the new server will reside. Upon restart, the PowerShare Easy Setup application starts and displays a dialog box informing you that the Easy Setup application requires some information to set up the PowerShare System.

2) Click the Later button in the dialog box.

3) Open the PowerShare Server Folder and double-click on the PowerShare Catalog Server application to start it. A dialog box appears, asking whether you want to create a new PowerShare System or join an existing System.

3) Click the Join Existing button. A dialog box appears, prompting you for an administrator name and password and asking you to select a PowerShare Catalog to join.

4) Choose a PowerShare System from the pop-up menu at the top of the window. If the System you want to join is not listed in the menu, choose Other. The PowerShare Admin application begins searching for available catalogs on the network, displaying a dialog box that indicates that a search is in progress. Depending on the size of the network, the search can take from a few seconds to several minutes. Click Cancel to terminate the search. When all PowerShare Systems have been located, a dialog box appears listing the names of the available PowerShare Systems. For example: In the list of PowerShare Systems, click the System you want to join then click OK. Now that you have selected a System to administer,you can complete the logon by providing the administrator name and password.

5) In the appropriate fields, type the administrator name and password that was specified when the catalog System was set up.

6) When the information is complete, click the OK button. When your identity is authenticated, a dialog box appears asking you for a name for the new PowerShare Catalog Server. The new server must have a unique name. By default, the name of your Macintosh is supplied as the server name.

7) In the Server Name field, type a unique Catalog Server name.

8) Click the OK button. The Server application creates the new PowerShare Catalog Server. The new server name is registered for use on the network and a status window appears, displaying information about the server's operation. You can see from the status window that the new server has joined the catalog structure of the selected PowerShare System. If the System Manger Utility is also running, the System Monitor window will now list the new server. Because the Catalog Server is brand new, no catalog folders are stored on it. You can now begin adding folders and assigning their contents to the new Catalog Server or you can use the new server to store copies of existing folders.

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Tech Info Library Article Number:13476

Tech Info Library

PowerShare Server: Primary Services Provided (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare Server: Primary Services Provided (9/93)

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Article Created: 28 September 1993

TOPIC ----------

What are the services that a PowerShare server can provide out of the box?

DISCUSSION ----------

The PowerShare Servers provide three primary services that enable a wide range of collaborative applications:

1) Catalog services. A shared, centrally-administered catalog which can be used by users and collaborative applications.

2) Authentication services. The Catalog Server acts as a trusted third party in establishing authenticated network connections.

3) Mail services. A store-and-forward mail and message server. Catalog services In a PowerShare System, the catalog is a collection of records stored in folders on one or more PowerShare Catalog Servers. Each catalog record contains information about an entity in the PowerShare System, which can be a user, group of users, network device (such as a printer or file server), purchase order forms, or meeting rooms.

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Tech Info Library Article Number:13477

PowerShare: Minimum Server Requirements (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare: Minimum Server Requirements (9/93)

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Article Created: 28 September 1993

TOPIC ----------

This article describes the minimum system requirements for a PowerShare server.

DISCUSSION ----------

You'll need the following hardware to set up a PowerShare Server system:

• At least one Macintosh computer (using a 68020 or later processor) with a hard disk.

• A minimum of 4 megabytes of memory for each installed server.

• If both the PowerShare catalog server and the PowerShare mail server are installed on the same computer you will require at least 8 MB.

• The PowerShare Server system requires system software version 7.1.1 or later.

Notes:

If this version of system software is not already installed on the Macintosh computers that will be running the server software, the Installer will automatically update the system software during installation.

The system can be administered from the same computer on which the servers are installed or from any other computer on the network on which the PowerTalk system software has been installed. The computer serving as the administration station can be any Macintosh computer with at least 5 megabytes of memory.

..TIL13478-PowerShare-Minimum_Server_Requirements_9-93_(TA30251).pdf

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13478

Tech Info Library

PowerShare Server: Authentication Services (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare Server: Authentication Services (9/93)

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Article Created: 28 September 1993

TOPIC ----------

This article describes the PowerShare Server's Authentication Services.

DISCUSSION ----------

The authentication service allows collaborating users and applications to interact over a network by positively verifying the identity of each party. This verification protects against unauthorized access by parties masquerading as legitimate users or services.

In providing the authentication service a PowerShare Catalog Server acts as a trusted third party by maintaining an authentication key for each user, application, or other entity that has a record in the catalog. Collaborative services and applications will use the Catalog Server to authenticate themselves in order to communicate with other users and services. Once an authenticated session is established, transmissions across the network are encrypted to prevent unauthorized tapping of the network media.

PowerShare authentication and privacy services permit collaborative applications to securely exchange and transmit sensitive information such as financial records or personnel information.

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Tech Info Library Article Number:13479

Tech Info Library

PowerShare Server: Mail Services Description (2/95)

Revised: 2/9/95
Security: Everyone

PowerShare Server: Mail Services Description (2/95)

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Article Created: 28 September 1993
Article Reviewed/Updated: 9 February 1995

TOPIC ----------

This article describes the PowerShare Server's Mail Services.

DISCUSSION ----------

PowerShare Mail Servers provide the routing and storage for data exchanged between users and applications. Data is exchanged between users in the form of letters; data is exchanged between applications in a format known as messages.

Letters and messages are stored in containers known as queues on the hard disk on which a Mail Server is installed. To exchange letters and messages through PowerShare Mail Servers, a user or application (or other entity such as a printer) must have a queue on a PowerShare Mail Server.

A record for the Mail Server is stored in a PowerShare catalog folder. This record provides information about how the Mail Server is used to store and forward messages and letters.

Your PowerShare System also provides access to other mail systems. It does this through gateways, software, and/or hardware products, allowing devices on your network to communicate with other networks running different messaging protocols.

Article Change History:
09 Feb 1995 - Added keyword; made several technical updates.

Support Information Services

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Tech Info Library Article Number:13480

Tech Info Library

PowerShare: Software Components (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare: Software Components (9/93)

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Article Created: 28 September 1993

TOPIC ----------

What software components are included in the PowerShare Server Package?

DISCUSSION ----------

The PowerShare Server Package consists of the following software components:

1) The PowerShare Catalog Server, which provides catalog and authentication services.

2) The PowerShare Mail Server, which provides messaging and mail services.

3) PowerShare Admin,an application which provides an administrator with the ability to manage and monitor the servers and catalog. With this application, you can administer a PowerShare System from any Macintosh on the network.

4) PowerShare Easy Setup, an application which allows you to quickly set up a PowerShare System that includes one PowerShare Catalog Server and one PowerShare Mail Server on a single Macintosh The PowerShare System and services.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13481

Tech Info Library

PowerShare: Moving Servers (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare: Moving Servers (9/93)

==========

Article Created: 28 September 1993

TOPIC ----------

How do I move a PowerShare server from one Macintosh to another Macintosh?

DISCUSSION ----------

Every PowerShare server includes the application, its data files and a preferences file. By moving a PowerShare Catalog Server, you can maintain your PowerShare catalog structure without having to rebuild the PowerShare System by recreating the folder hierarchy and all your data records. The list below identifies the tasks you must perform when moving the server to a new location:

1) Reinstall the Server software from the original disks.

2) From the top folder level,copy the PowerShare Catalog Data folder and PowerShare Mail Data folder to the top folder level on the new disk or volume.

3) From the Preferences Folder in your System Folder, you also need to copy the files PowerShare Catalog Prefs and PowerShare Mail Prefs. These files should both be copied to the Preferences folder on the new Macintosh. (You don't need to move these items if you are moving the servers to another volume that won't be a startup volume.)

Note: After you restart the servers you have moved to a new location, you may need to identify the volume on which they are stored.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13482

PowerShare Server: Catalog Services (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare Server: Catalog Services (9/93)

==========

Article Created: 28 September 1993

TOPIC ----------

This article describes the PowerShare Server's Catalog Services.

DISCUSSION ----------

In a PowerShare System, the catalog is a collection of records stored in folders on one or more PowerShare Catalog Servers. Each catalog record contains information about an entity in the PowerShare System, which can be a user, group of users, network device (such as a printer or file server), purchase order forms, or meeting rooms.

The structure of the PowerShare catalog is easily customized to fit your organization's needs. For example, you can design the catalog to reflect organizational hierarchy, function, geographic distribution, or the type of information stored.

Within each record, information about the entity is stored as a collection of attributes. For example, a record named "William Smith" of the type "User" can store information about that user such as telephone number, building, and so on. Another record named "ColorPrint" of the type "LaserWriter" can store information about a printer.

In a collaborative environment, a catalog can be used by users and by PowerTalk-savvy services and applications to locate entities, store information, indicate status, or provide any other type of information that may be required by collaborative applications.

In the same way that you can arrange files in folders on your Macintosh desktop, you store records in containers known as catalog folders. Each catalog folder in the PowerShare System can contain records or other catalog folders. You can use the PowerShare Admin provided with your server software to administer the catalog structure; creating folders and manipulating the catalog structure to fit your needs. The PowerShare

software provides built-in templates that allow you to quickly create records that you can use to store information about individual users and groups of users in your organization.

The structure of the PowerShare catalog is easily customized to fit your organization's needs. For example, you can design the catalog to reflect organizational hierarchy, function, geographic distribution, or the type of information stored. The figure below represents the hierarchical structure of a PowerShare System catalog, designed by an administrator to reflect the organization of a fictitious company.

With the PowerShare Admin, you can manage the structure of the PowerShare catalog in much the same way as you manage folders and files in the Macintosh Finder.

Keep in mind that the hierarchical structure of folders is simply a means of organizing and managing information—it does not necessarily represent network connectivity or physical proximity.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13483

Tech Info Library

PowerShare: Replicating a Folder (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare: Replicating a Folder (9/93)

==========

Article Created: 28 September 1993

TOPIC ----------

How do I replicate a folder on a PowerShare Catalog Server?

DISCUSSION ----------

Use the PowerShare Admin application to replicate a folder on any existing PowerShare Catalog server. Replication of folders provides better performance in larger or frequently accessed folders by shifting the workload between servers.

To replicate a folder:

1) Start the PowerShare Admin application if is not already running and switch to Manage Mode.

2) In the System window, select the catalog server on which you want to store the folder copy and click the Open button.

3) When the server window opens, choose Catalog Folders from the pop-up menu of display options.

4) Open the Catalog window and display the folder that you want to replicate.

5) From the Catalog window, drag the folder icon to the "Catalog Folder Name" area at the bottom of the server window. When you release the mouse button, the folder now appears in the listing of catalog folders residing on the selected server.

The load for managing the folder will now be distributed between the two servers on which it resides. Notice that on the Macintosh where the newly added server is running, the status window for the server now indicates that it is serving the specified folder. From now on, any change you make

to the folder is replicated on both servers.

Note: In the catalog window, the replicated folder is still only represented as a single folder; replication does not affect the organizational structure of the catalog.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13484

Tech Info Library

PowerShare Server: PowerShare Admin (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare Server: PowerShare Admin (9/93)

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Article Created: 28 September 1993

TOPIC ----------

This article describes the functionality of the PowerShare Admin application.

DISCUSSION ----------

The PowerShare Admin application provided with the PowerShare Server product package is a utility that the system administrator can use to monitor and manage the workings of a PowerShare System. The system administrator will use PowerShare Admin to:

- monitor and manage the operations of PowerShare System servers and gateways.
- manage the catalog containing folders and records.

The PowerShare Admin application provides two modes of operation: Monitor mode and Manage mode. In Monitor mode, you can view a listing of servers on the PowerShare System. When running in this mode, PowerShare Admin can be set up in a public location where users can observe the operations of the PowerShare System.

When PowerShare Admin is in Manage mode, an administrator can use the application to manage all aspects of the System, including the catalog and individual records.

Note: The PowerShare Admin will not run on a Macintosh on which the PowerTalk software has been turned off in the PowerTalk control panel.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13485

PowerTalk: Troubleshooting Common Problems (9/93)

Revised: 9/28/93
Security: Everyone

PowerTalk: Troubleshooting Common Problems (9/93)

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Article Created: 28 September 1993

TOPIC -----

This article describes common problems and solutions when using PowerTalk.

DISCUSSION -----

Registration problems

Problem: You get a dialog box reporting that there is someone else with your name in the same catalog. The two names are differentiated by a creation ID.

Solution: Check with your administrator to be sure which creation ID is yours.

Access to catalogs and services

Problem: You can't find the Key Chain icon or you've thrown it away.

Solution: To create a new Key Chain, go to the PowerTalk Setup control panel and click the Key Chain button.

Problem: You can't find the Mailbox or the Catalogs icon.

Solution: PowerTalk is probably turned off. Go to the PowerTalk Setup control panel and activate PowerTalk.

Problem: AppleTalk or PowerShare catalogs are dimmed in the Catalogs window.

Solution: Go to the Chooser and activate AppleTalk.

Problem: You get a message that the system can no longer access a server

on your network. In some cases a Resolve button appears in the notification dialog box.

Solution: Click the button to reconnect. Check the cable connection on the back of your computer.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13486

Tech Info Library

PowerShare: Only One Catalog Server Per Macintosh (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare: Only One Catalog Server Per Macintosh (9/93)

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Article Created: 28 September 1993

TOPIC ----------

Can I run more than one PowerShare catalog server on a single Macintosh?

DISCUSSION ----------

No, you cannot have more than one PowerShare Catalog Server running on a Macintosh at the same time. You must set up additional servers elsewhere on your network.

Note: You can install and run one PowerShare Catalog Server and one PowerShare Mail Server on a single Macintosh.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13487

Tech Info Library

PowerShare: Only One Mail Server Per Macintosh (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare: Only One Mail Server Per Macintosh (9/93)

==========

Article Created: 28 September 1993

TOPIC ----------

Can I run more than one PowerShare Mail Server on a single Macintosh?

DISCUSSION ----------

No, you cannot have more than one PowerShare Mail Server running on a Macintosh at the same time. You must set up additional servers elsewhere on your network.

Note: You can install and run one PowerShare Catalog Server and one PowerShare Mail Server on a single Macintosh.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13489

PowerShare: Setting up a Mail Connection (9/93)

Revised: 9/28/93
Security: Everyone

PowerShare: Setting up a Mail Connection (9/93)

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Article Created: 28 September 1993

TOPIC ----------

How do I set up a PowerShare Mail Connection?

DISCUSSION ----------

Use the PowerShare Admin application to set up a mail connection between the PowerShare System and a foreign mail system running on the same network. A mail connection allows users of AppleMail to exchange messages with users of other mail applications, including AppleLink and QuickMail.

To set up a mail connection, you must first install and run a third-party gateway application that oversees communications between different types of mail systems. You must install and run the gateway on the same Macintosh on which a PowerShare Mail Server is installed and running.

Follow these steps to set up a gateway:

1) Start the gateway application installed on the Macintosh on which a Mail Server is running. Depending on the type gateway you installed, you will be asked to provide a gateway name and password. At some point in the set up, the gateway will establish communications with the PowerShare Mail Server, which will ask you to identify yourself with an administrator name and password.

2) Enter the appropriate name and password, then click OK. The Mail Server creates a record for the gateway and stores it in the System Catalog. It also creates a queue for the gateway, allowing it to store messages on the Mail Server. The Mail Server then returns control to the gateway. The gateway completes its set up process. Now you can use the PowerShare Admin application to set up a connection to a foreign mail system through the gateway.

Follow these steps to set up a mail connection:

1) Open the PowerShare Admin application and choose the system on which you installed the gateway. The Servers window should display the newly installed gateway.

2) Switch to Manage mode and choose Show Mail Systems Window from the Servers menu A Mail Systems window for the current PowerShare System appears. If you have not yet established any external mail systems the window is empty.

3) Click the New button. The New Mail System dialog box appears, asking you to create a new mail system.

4) In the Name field, type a name for the mail link.

5) Choose the type of mail connection: Open the Type pop-up menu and choose a mail system. Choose the type of mail system you will be connecting; some examples include AppleLink, QuickMail and Microsoft Mail.

6) Open the Gateway pop-up menu and choose the gateway that you are using to make the connection. Any gateways currently installed on the PowerShare System are listed in the pop-up menu.

7) Click Create. The PowerShare Admin application creates the new Mail Link, which is now displayed in the Mail Systems window. With the Mail Link in place, PowerTalk users on the network can now begin exchanging messages with users on the foreign mail system.

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Tech Info Library Article Number:13490

Tech Info Library

Performa 410: RAM Expansion Details (10/93)

Revised: 10/21/93
Security: Everyone

Performa 410: RAM Expansion Details (10/93)

==========

Article Created: 18 October 1993

TOPIC -----

This article describes the RAM expansion details for the Performa 410.

DISCUSSION -----

The Performa 410 includes both RAM soldered onto the logic board as well as mounted in the two SIMM (Single Inline Memory Module) slots on the logic board.

Performa 410 RAM expansion:
- Supports 30-pin, 80 ns (nanoseconds) DRAM SIMMs only.
- Supports the following SIMM sizes: 1, 2, or 4MB DRAM SIMMs.
- Does not support 256K SIMMs.

Article Change History:
21 October 1993 - Removed erroneous reference to 8, 16, and 32MB SIMMs.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13511

Tech Info Library

Performa 410: Specifications (7/94)

Revised: 7/26/94
Security: Everyone

Performa 410: Specifications (7/94)

==========

Article Created: 18 October 1993
Article Reviewed/Updated: 26 July 1994

TOPIC ----------

This article provides technical specifications for the Macintosh Performa 410 computer.

DISCUSSION ----------

Microprocessor

- MC68030, 32-bit architecture, 16 MHz clock speed
- CMOS custom clock/calendar with long-life lithium battery

Memory

- 4MB RAM on logic board, expandable to 10MB via two SIMM slots using 30-pin, 80ns (nanosecond) SIMMs.
- 512K Video RAM (VRAM)

Video Display

- Apple Performa Display standard:
  - 14-inch color display
  - 640 by 480 pixels
  - 0.39 mm dot pitch
  - Meets the strictest international magnetic-field emissions guidelines (SWEDIAC MPR2)
  - 256 colors displayed with standard 512K VRAM

Storage

- One internal SuperDrive 1.4MB high-density floppy-disk drive, reads disks from Macintosh, Apple II, MS-DOS, and Windows systems.

- One internal 80MB SCSI hard disk drive
- Optional external SCSI hard disk drive (many capacities available)
- Optional external AppleCD CD-ROM drive

Modem

- TelePort/Bronze for Macintosh Performa
  (from Global Village Communication, Inc.)
- GlobalFax software (send-only fax) for 9600-baud faxing from any
  application to fax machines worldwide (upgradable to receive fax via
  software)
- Modem also serves as 300/1200/2400-baud data modem
- No separate power adapter required

Power Input

- Line voltage: 90 to 240 volts AC, RMS automatically configured
- Frequency: 47 to 63 Hz single phase
- Power: 50 watts maximum, not including display power

Interfaces

- One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other
  devices daisy-chained through a low-speed, synchronous serial bus
- Two serial (RS-232/RS-422) ports, 230 kilobits per second maximum
  (up to 0.920 megabits per second if clocked externally)
- SCSI interface for connecting up to six external devices
- Video port supports RGB and monochrome monitors of various sizes and
  resolutions
- Sound output port capable of delivering monophonic sound to both
  channels of a stereo device
- Sound input port for monaural sound input
  (monaural 8-bit sound, sampled at 22 or 11 kHz)
- Internal expansion slot for one processor-direct expansion card

Keyboard and Mouse

- Apple Desktop Bus (ADB) keyboard with numeric keypad and two-level tilt
  adjustment
- Apple ADB Mouse II

Apple Desktop Bus Power Requirements

- Maximum current draw for all ADB devices: 200 milliamperes (mA)
- Recommended maximum of three ADB devices
- Mouse draws 10 mA
- Keyboard draws 25 mA

Microphone

- Hands-free omnidirectional electret microphone included

Sound Generator

Custom sound chip, including mono sampling generator capable of driving stereo miniature phone jack headphones, or stereo equipment by sending the same output into each channel.

Software

- Macintosh System Software version 7.1P5 with Launcher, designed specifically for Performa computers.
- At Ease software lets adults share the computer with children -- while protecting valuable data.
- Macintosh PC Exchange lets you work with MS-DOS and Windows disks.
- Application software: a selection of productivity and communication tools already installed on the hard drive.
  - ClarisWorks 2.0 by Claris
  - Quicken 4 by Intuit
  - Best of Homeworks Templates by Paradygn
  - Click Art Performa Collection by T/Maker
  - TelePort Fax/Modem software by Global Village
  - American Heritage Dictionary 3rd Edition by WordStar
  - Mario Teaches Typing by InterPlay
  - Spectre Challenger by Velocity & Pennisula Gameworks
  - Super Munchers by MECC

Disability Access

- CloseView, Easy Access, and "visible beep" software are built in.
- Third-party options provide other alternative input and output devices

Size and Weight

- Main Unit
  Weight: 8.8 pounds (4.0 kg)
  Height: 3.2 inches (81 mm)
  Width: 12.2 inches (310 mm)
  Depth: 15.0 inches (382 mm)

- Mouse
  Weight: 4 ounces (0.10 kg)
  Height: 1.3 inches (33 mm)
  Width: 2.4 inches (61.7 mm)
  Depth: 4.2 inches (107.3 mm)

- Keyboard
  Weight: 2 pounds (1 kg)
  Height: 1.8 inches (44 mm)
  Width: 16.5 inches (418 mm)
  Depth: 5.6 inches (142 mm)

Environment

- Operating temperature: 10 to 40 C (50 to 104 F)
- Storage temperature: -40 to 47 C (-40 to 116.6 F)

- Relative humidity: 20% to 80% (noncondensing)
- Maximum altitude: 3048 m (10,000 ft.)

Service and Support

- One year limited warranty
- One year free in-home service
- Toll-free help line
- Support for non-Apple software is provided by the respective software publishers.

Ordering Information

- M1985LL/A - Macintosh Performa 410 with 4MB of RAM and an internal 80MB hard disk.

Article Change History:
26 Jul 1994 - Expanded sound generation capabilities.
10 Dec 1993 - Changed System Software version to 7.1P5.
16 Nov 1993 - Deleted reference to FPU socket
26 Oct 1993 - Eliminated references to displays other than the bundled one.

Support Information Services

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Tech Info Library Article Number:13512

Tech Info Library

Performa 410: Description (10/93)

Revised: 10/15/93
Security: Everyone

Performa 410: Description (10/93)

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Article Created: 18 October 1993

TOPIC ----------

This article describes the Macintosh Performa 410 computer.

DISCUSSION ----------

Overview

The Apple Macintosh Performa 410 is the perfect choice for families looking for an entry-level color computer. Packed into one box are the computer, monitor, keyboard, mouse, and fax/modem, as well as operating system and application software.

All the hardware and software you need to get started is included. Just take the computer out of the box, connect the display, attach the keyboard and mouse, plug in the power cord, and turn the computer on. On-screen tutorials help you achieve basic Macintosh skills.

Running at 16 megahertz (MHz), the Macintosh Performa 410 can display 256 colors on its 14-inch Apple Performa Display. The 80 megabyte (MB) hard disk drive provides ample storage. Pre-installed System 7 software (version 7.1P) has been customized to provide enhanced functionality and ease of use. For instance, the Launcher allows you to easily open the programs you use most often. The software for word processing, calculations, graphics and communications comes built in.

With the accompanying TelePort/Bronze fax/modem from Global Village Communications, you can use your Macintosh Performa to send faxes and electronic mail to the office or to friends. You can also tap financial, travel, educational, and news services.

Multimedia ready, the Macintosh Performa 410 computer is equipped with built-in digital sound and speaker and is ready to add a CD-ROM drive. You can grow your systems simply by plugging in printers, scanners, hard

disks and other SCSI devices -- there's no need to buy or install separate expansion cards.

Power and speed

• 16-MHz 68030 microprocessor
• 32-bit architecture

Memory

• 4MB of RAM on board, expandable to 10MB via two 30-pin SIMM (single inline memory modules) slots.
• Requires 80 nanosecond (ns) SIMMs.

Displays

• Comes standard with Apple Performa Display
- 14-inch RGB color display
- 640 by 480 pixels
- 0.39 mm dot pitch
- Non-interlaced
- Meets the strictest international magnetic-field emissions guidelines (SWEDIAC MPR2)
- 256 colors displayed with standard 512K VRAM

Expansion

• Internal expansion slot for one processor-direct expansion card
• Seven built-in ports for peripherals

System Software

• System software version 7.1P with multitasking, file sharing, QuickTime, Balloon Help, TrueType, and more

Networking

• Built-in AppleTalk networking
• File sharing without a dedicated server

Compatibility

• Reads Macintosh, Windows, MS-DOS, OS/2, and ProDOS floppy disk formats

Disability access

• CloseView, Easy Access, and visible-beep included with system software.
These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

What's in the box:

Each unit includes a Performa Display (monitor), TelePort/Bronze Data/Fax

modem, power cord, keyboard, keyboard cable, mouse, and system software.

System software includes System 7.1, System Enabler, Color Macintosh Basics, QuickTime 1.6, HyperCard Runtime, At Ease and Macintosh PC Exchange.

• Third Party bundled software includes:
 - ClarisWorks 2.0 by Claris
 - Quicken 4 by Intuit
 - Best of Homeworks Templates by Paradygn
 - Click Art Performa Collection by T/Maker
 - TelePort Fax/Modem software by Global Village
 - American Heritage Dictionary 3rd Edition by WordStar
 - Mario Teaches Typing by InterPlay
 - Spectre Challenger by Velocity & Peninsula Gameworks
 - Super Munchers by MECC

• Documentation included with the Performa 410:
 - Getting Started with your Macintosh Performa
 - Technical Information for the Macintosh Performa 400 Series
 - Macintosh User's Guide for Macintosh Performa computers

Ordering Information

• M1985LL/A - Macintosh Performa 410 with 4MB of RAM and an internal 80MB hard disk.

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Tech Info Library Article Number:13513

Tech Info Library

Performa 460: Specifications (7/94)

Revised: 7/26/94
Security: Everyone

Performa 460: Specifications (7/94)

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Article Created: 28 September 1993
Article Reviewed/Updated: 26 July 1994

TOPIC ----------

This article provides technical specifications for the Macintosh Performa 460 computer.

DISCUSSION ----------

Microprocessor

- MC68030, 32-bit architecture, 33 MHz clock speed
- Socket for optional 68882 FPU
- CMOS custom clock/calendar with long-life lithium battery

Memory

- 4MB RAM on logic board, expandable to 36MB via one 72-pin SIMM slots
- 512K Video RAM (VRAM) for 256 colors on the Apple Performa PLUS Display. VRAM is expandable to 768K for 32,000 colors.

Video Display

- Apple Performa Display standard:
  - 14-inch color display
  - 640 x 480 pixels
  - 0.39mm dot pitch
  - Meets international magnetic-field emissions guidelines (SWEDAC MPR2)

Storage

- One internal SuperDrive 1.4MB high-density floppy-disk drive, reads disks from Macintosh, Apple II, MS-DOS, and Windows systems
- One internal 80MB SCSI hard disk drive

- Optional external SCSI hard disk drive (many capacities available)
- Optional external AppleCD CD-ROM drive

Modem

- TelePort/Bronze for Macintosh Performa
  (from Global Village Communication, Inc.)
- GlobalFax software (send-only fax) for 9600-baud faxing from any application
  to fax machines worldwide (upgradable to receive fax via software)
- Modem also serves as 300/1200/2400-baud data modem
- No separate power adapter required

Power Input

- Line voltage: 90 to 240 volts AC, RMS automatically configured
- Frequency: 47 to 63 Hz single phase
- Power: 50 watts maximum, not including display power

Interfaces

- One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other
  devices daisy-chained through a low-speed, synchronous serial bus
- Two serial (RS-232/RS-422) ports, 230 kilobits per second maximum
  (up to 0.920 megabits per second if clocked externally)
- SCSI interface for connecting up to six external devices
- Video port supports RGB and monochrome monitors of various sizes and
  resolutions
- Sound output port capable of delivering monophonic sound to both
  channels of a stereo device
- Sound input port for monaural sound input
  (monaural 8-bit sound, sampled at 22 or 11 kHz)
- Internal expansion slot for one processor-direct expansion card

Keyboard and Mouse

- Apple Desktop Bus (ADB) keyboard with numeric keypad and two-level tilt
  adjustment
- Apple ADB Mouse II

Apple Desktop Bus Power Requirements

- Maximum current draw for all ADB devices: 200 milliamperes (mA)
- Recommended maximum of three ADB devices
- Mouse draws 10 mA
- Keyboard draws 25 mA

Sound Generator

Custom sound chip, including mono sampling generator capable of driving stereo miniature phone jack headphones, or stereo equipment by sending the same output into each channel.

Software

- Macintosh System Software version 7.1P, designed specifically for Performa computers.
- At Ease software lets adults share the computer with children -- while protecting valuable data.
- Macintosh PC Exchange lets you work with MS-DOS and Windows disks.
- Application software: a selection of productivity and communication tools already installed on the hard drive.

Disability Access

- CloseView, Easy Access, and "visible beep" software are built in.
- Third-party options provide other alternative input and output devices

Size and Weight

- Main Unit
  Weight: 8.8 lb. (4.0 kg)
  Height: 3.0 inches (77 mm)
  Width: 12.2 inches (310 mm)
  Depth: 15.0 inches (382 mm)
- Mouse
  Weight: 6 oz. (0.17 kg)
  Height: 1.1 inches (27.9 mm)
  Width: 2.1 inches (53.3 mm)
  Depth: 3.8 inches (96.5 mm)
- Keyboard
  Weight: 2 lb. (1 kg)
  Height: 1.8 inches (44 mm)
  Width: 16.5 inches (418 mm)
  Depth: 5.6 inches (142 mm)

Environment

- Operating temperature: 10 to 40° C (50 to 104° F)
- Storage temperature: -40 to 47° C (-40 to 116.6° F)
- Relative humidity: 20% to 80% (noncondensing)
- Maximum altitude: 3048 m (10,000 ft.)

Service and Support

- One year limited warranty
- One year free in-home service
- Toll-free help line
- Support for non-Apple software is provided by the respective software publishers.

Article Change History:
26 Jul 1994 - Expanded information on sound generation.

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Tech Info Library Article Number:13514

Tech Info Library

Performa 466: Specifications (7/94)

Revised: 7/26/94
Security: Everyone

Performa 466: Specifications (7/94)

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Article Created: 28 September 1993
Article Reviewed/Updated: 26 July 1994

TOPIC ----------

This article provides technical specifications for the Macintosh Performa 466 computer.

DISCUSSION ----------

Microprocessor

- MC68030, 32-bit architecture, 33 MHz clock speed
- Socket for optional 68882 FPU
- CMOS custom clock/calendar with long-life lithium battery

Memory

- 4MB RAM on logic board, expandable to 36MB via one 72-pin SIMM slots
- 512K Video RAM (VRAM) for 256 colors on the Apple Performa PLUS Display. VRAM is expandable to 768K for 32,000 colors.

Video Display

- Apple Performa Plus Display standard:
  - 14-inch color display
  - 640 x 480 pixels
  - 0.28mm dot pitch
  - Meets international magnetic-field emissions guidelines (SWEDAC MPR2)

Storage

- One internal SuperDrive 1.4MB high-density floppy-disk drive, reads disks from Macintosh, Apple II, MS-DOS, and Windows systems
- One internal 160MB SCSI hard disk drive

- Optional external SCSI hard disk drive (many capacities available)
- Optional external AppleCD CD-ROM drive

Modem

- TelePort/Bronze for Macintosh Performa
  (from Global Village Communication, Inc.)
- GlobalFax software (send-only fax) for 9600-baud faxing from any application
  to fax machines worldwide (upgradable to receive fax via software)
- Modem also serves as 300/1200/2400-baud data modem
- No separate power adapter required

Power Input

- Line voltage: 90 to 240 volts AC, RMS automatically configured
- Frequency: 47 to 63 Hz single phase
- Power: 50 watts maximum, not including display power

Interfaces

- One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other
  devices daisy-chained through a low-speed, synchronous serial bus
- Two serial (RS-232/RS-422) ports, 230 kilobits per second maximum
  (up to 0.920 megabits per second if clocked externally)
- SCSI interface for connecting up to six external devices
- Video port supports RGB and monochrome monitors of various sizes and
  resolutions
- Sound output port capable of delivering monophonic sound to both
  channels of a stereo device
- Sound input port for monaural sound input
  (monaural 8-bit sound, sampled at 22 or 11 kHz)
- Internal expansion slot for one processor-direct expansion card

Keyboard and Mouse

- Apple Desktop Bus (ADB) keyboard with numeric keypad and two-level tilt
  adjustment
- Apple ADB Mouse II

Apple Desktop Bus Power Requirements

- Maximum current draw for all ADB devices: 200 milliamperes (mA)
- Recommended maximum of three ADB devices
- Mouse draws 10 mA
- Keyboard draws 25 mA

Sound Generator

Custom sound chip, including mono sampling generator capable of driving stereo miniature phone jack headphones, or stereo equipment by sending the same output into each channel.

Software

- Macintosh System Software version 7.1P, designed specifically for Performa computers.
- At Ease software lets adults share the computer with children -- while protecting valuable data.
- Macintosh PC Exchange lets you work with MS-DOS and Windows disks.
- Application software: a selection of productivity and communication tools already installed on the hard drive.

Disability Access

- CloseView, Easy Access, and "visible beep" software are built in.
- Third-party options provide other alternative input and output devices

Size and Weight

- Main Unit
  Weight: 8.8 lb. (4.0 kg)
  Height: 3.0 inches (77 mm)
  Width: 12.2 inches (310 mm)
  Depth: 15.0 inches (382 mm)
- Mouse
  Weight: 6 oz. (0.17 kg)
  Height: 1.1 inches (27.9 mm)
  Width: 2.1 inches (53.3 mm)
  Depth: 3.8 inches (96.5 mm)
- Keyboard
  Weight: 2 lb. (1 kg)
  Height: 1.8 inches (44 mm)
  Width: 16.5 inches (418 mm)
  Depth: 5.6 inches (142 mm)

Environment

- Operating temperature: 10 to 40° C (50 to 104° F)
- Storage temperature: -40 to 47° C (-40 to 116.6° F)
- Relative humidity: 20% to 80% (noncondensing)
- Maximum altitude: 3048 m (10,000 ft.)

Service and Support

- One year limited warranty
- One year free in-home service
- Toll-free help line
- Support for non-Apple software is provided by the respective software publishers.

Article Change History:
26 Jul 1994 - Expanded sound generation section.

Support Information Services

..TIL13515-Performa_466-Specifications_7-94.pdf

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:13515

Tech Info Library

Performa 467: Specifications (7/94)

Revised: 7/26/94
Security: Everyone

Performa 467: Specifications (7/94)

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Article Created: 28 September 1993
Article Reviewed/Updated: 26 July 1994

TOPIC ----------

This article provides technical specifications for the Macintosh Performa 467 computer.

DISCUSSION ----------

Microprocessor

- MC68030, 32-bit architecture, 33 MHz clock speed
- Socket for optional 68882 FPU
- CMOS custom clock/calendar with long-life lithium battery

Memory

- 4MB RAM on logic board, expandable to 36MB via one 72-pin SIMM slots
- 512K Video RAM (VRAM) for 256 colors on the Apple Performa PLUS Display. VRAM is expandable to 768K for 32,000 colors.

Video Display

- Apple Performa Plus Display standard:
  - 14-inch color display
  - 640 x 480 pixels
  - 0.28mm dot pitch
  - Meets international magnetic-field emissions guidelines (SWEDAC MPR2)

Storage

- One internal SuperDrive 1.4MB high-density floppy-disk drive, reads disks from Macintosh, Apple II, MS-DOS, and Windows systems
- One internal 160MB SCSI hard disk drive

- Optional external SCSI hard disk drive (many capacities available)
- Optional external AppleCD CD-ROM drive

Modem

- TelePort/Bronze for Macintosh Performa
  (from Global Village Communication, Inc.)
- GlobalFax software (send-only fax) for 9600-baud faxing from any application
  to fax machines worldwide (upgradable to receive fax via software)
- Modem also serves as 300/1200/2400-baud data modem
- No separate power adapter required

Power Input

- Line voltage: 90 to 240 volts AC, RMS automatically configured
- Frequency: 47 to 63 Hz single phase
- Power: 50 watts maximum, not including display power

Interfaces

- One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other
  devices daisy-chained through a low-speed, synchronous serial bus
- Two serial (RS-232/RS-422) ports, 230 kilobits per second maximum
  (up to 0.920 megabits per second if clocked externally)
- SCSI interface for connecting up to six external devices
- Video port supports RGB and monochrome monitors of various sizes and
  resolutions
- Sound output port capable of delivering monophonic sound to both
  channels of a stereo device
- Sound input port for monaural sound input
  (monaural 8-bit sound, sampled at 22 or 11 kHz)
- Internal expansion slot for one processor-direct expansion card

Keyboard and Mouse

- Apple Desktop Bus (ADB) keyboard with numeric keypad and two-level tilt
  adjustment
- Apple ADB Mouse II

Apple Desktop Bus Power Requirements

- Maximum current draw for all ADB devices: 200 milliamperes (mA)
- Recommended maximum of three ADB devices
- Mouse draws 10 mA
- Keyboard draws 25 mA

Sound Generator

Custom sound chip, including mono sampling generator capable of driving stereo miniature phone jack headphones, or stereo equipment by sending the same output into each channel.

Software

- Macintosh System Software version 7.1P, designed specifically for Performa computers.
- At Ease software lets adults share the computer with children -- while protecting valuable data.
- Macintosh PC Exchange lets you work with MS-DOS and Windows disks.
- Application software: a selection of productivity and communication tools already installed on the hard drive.

Disability Access

- CloseView, Easy Access, and "visible beep" software are built in.
- Third-party options provide other alternative input and output devices

Size and Weight

- Main Unit
  Weight: 8.8 lb. (4.0 kg)
  Height: 3.0 inches (77 mm)
  Width: 12.2 inches (310 mm)
  Depth: 15.0 inches (382 mm)
- Mouse
  Weight: 6 oz. (0.17 kg)
  Height: 1.1 inches (27.9 mm)
  Width: 2.1 inches (53.3 mm)
  Depth: 3.8 inches (96.5 mm)
- Keyboard
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  Depth: 5.6 inches (142 mm)

Environment

- Operating temperature: 10 to 40° C (50 to 104° F)
- Storage temperature: -40 to 47° C (-40 to 116.6° F)
- Relative humidity: 20% to 80% (noncondensing)
- Maximum altitude: 3048 m (10,000 ft.)

Service and Support

- One year limited warranty
- One year free in-home service
- Toll-free help line
- Support for non-Apple software is provided by the respective software publishers.

Article Change History:
26 Jul 1994 - Expanded sound generation section.

Support Information Services

..TIL13516-Performa_467-Specifications_7-94.pdf

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:13516

Tech Info Library

AppleSearch and AFP (9/93)

Revised: 10/1/93
Security: Everyone

AppleSearch and AFP (9/93)

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Article Created: 28 September 1993

TOPIC --------------------

I have received inquiries about AppleSearch. I understand that this product is a client/server type application. The server component runs on a 68030 or 68040 System 7 Macintosh workstation (not necessarily a server?). The client component is currently available for the Macintosh and may be available in the future for other platforms.

Will AppleSearch work with any AFP compliant volume, for example NetWare for Macintosh, System 7 file sharing, LAN Manager, or will it only work with a genuine AppleShare server volume?

DISCUSSION --------------------

The AppleSearch Server needs to run on a Macintosh computer that supports AFP (AppleTalk Filing Protocol) and PPC (Program to Program Communication).

The AppleSearch client software initiates the search on the AppleSearch Server via PPC in order to isolate the data handling on the server and optimize performance. (For this reason the data and indexes must reside on the AppleShare Server itself.) AFP is used to transfer the search results back to the client software.

At this time only Macintosh computers running System 7 File Sharing, AppleShare 3.0x, AppleShare 4.0, or AppleShare Pro can function as AppleSearch Servers.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13520

Tech Info Library

AWS 80, AppleShare 4.0, and A/UX 3.0.1 (9/93)

Revised: 10/1/93
Security: Everyone

AWS 80, AppleShare 4.0, and A/UX 3.0.1 (9/93)

==========

Article Created: 28 September 1993

TOPIC ----------

I'm planning to purchase an Apple Workgroup Server (AWS) 80. I need to know if I can use it to backup existing DOS and UNIX fileservers. Will I require A/UX to do this, or does AppleShare 4.0 contain the needed software to allow Retrospect Remote to backup these foreign volumes? I'm running SCO UNIX, and have an Ethernet network. What additional software is needed, if any, to get TCP/IP and NFS compatibility? Is there an upgrade path to A/UX from AppleShare 4.0, if there is what is needed?

DISCUSSION ----------

According to Dantz, the current Retrospect or Retrospect Remote product for Macintosh OS can only recognize and backup Macintosh HFS file systems. Foreign volumes like DOS or UNIX file systems are not supported by Retrospect for Macintosh OS. Retrospect for A/UX is for the AWS 95 operating under A/UX 3.0.1. However, Retrospect is able to backup both HFS and UNIX volumes since UNIX volumes can be mounted as AppleShare volumes under A/UX 3.0.1.

Without upgrading to the AWS 95 running A/UX 3.0.1, here is what we think might be a solution for you. Have the following software installed and running on the AWS 80 (assuming SCO UNIX has NFS server capability):

• Install Pathway (NFS Mounter) from Wollongong Group. Pathway acts as an NFS client, then mount the NFS file system as an AppleShare volume.

• Install NFS/Share from InterCon Systems Corporation. It acts as an NFS client, then mount the NFS file system as an AppleShare volume.

Another possibility is to install CAP (Columbia AppleTalk Package) on your SCO UNIX computer which implements the AppleTalk protocol stack on a variety of UNIX machines. The main applications provide an AppleShare compatible server (aufs), a LaserWriter Spooler (lwsrv), and a program to

print to LaserWriters (papif).

To locate a vendor's address and phone number, use the vendor name as a search string.

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Tech Info Library Article Number:13521

Tech Info Library

Apple Internet Router 3.0 On Quadra 840AV and 660AV (11/93)

Revised: 11/10/93
Security: Everyone

Apple Internet Router 3.0 On Quadra 840AV and 660AV (11/93)

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Article Created: 28 September 1993
Article Updated/Reviewed: 10 November 1993

TOPIC ----------

What is the official response regarding the Apple Internet Router 3.0 running on a Quadra 840AV or Quadra 660AV? Are they supported? Have they been tested?

DISCUSSION ----------

The Macintosh Quadra 840AV and Quadra 660AV are compatible with the Apple Internet Router 3.0 software. Please note that the Apple Internet Router 2.0 has not been tested with either of these computers and should not be used.

Article Change History:
10 Nov 1993 - Added Quadra 660AV to this article.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13523

Tech Info Library

Netware: Broadcast Message Character Limit (9/93)

Revised: 10/1/93
Security: Everyone

Netware: Broadcast Message Character Limit (9/93)

==========

Article Created: 29 September 1993

TOPIC -----

My customer is sending a broadcast message from one Macintosh to another via a Novell server. They are suppose to be able to send 80 character messages but are being limited to 28-30 characters (like a PC). Is there something we can do to get around this?

DISCUSSION -----

This is a known problem to Novell that is improved by using the version of Network Tools that ships with 4.x, or with the 3.12 upgrade. The new limit is 44 characters.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13526

Tech Info Library

AOCE Templates (8/94)

Revised: 8/23/94
Security: Everyone

AOCE Templates (8/94)

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Article Created: 4 October 1993
Article Reviewed/Updated: 23 August 1994

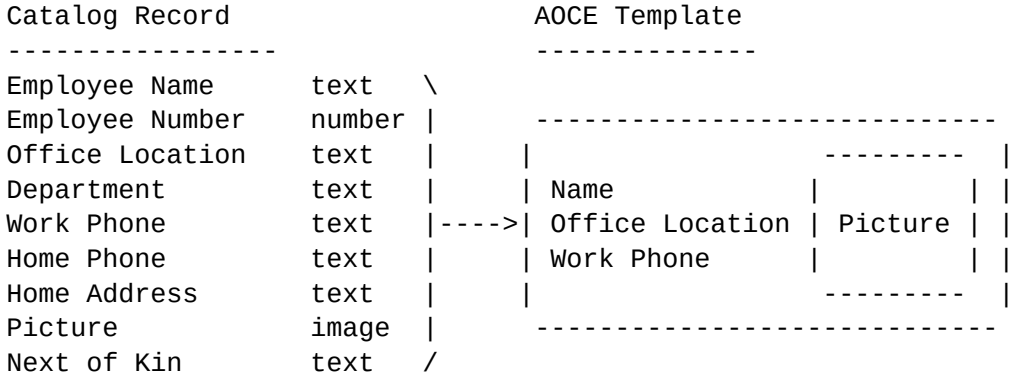
TOPIC ----------

This article describes AOCE Templates of Apple Open Collaborative Environment (AOCE).

DISCUSSION ----------

AOCE templates are system extensions that control how information in a catalog record is displayed on the screen. AOCE templates are common to all types of catalog services including catalogs on PowerShare Catalog Servers and those accessed through Catalog Service Access Modules.

There are times when it is neither desirable or appropriate to display all of the data resident in a catalog. An AOCE template can be written to display only the desired information and to display it in the appropriate manner.



Mapping attributes to AOCE template

Templates can have multiple pages of information, or they can be of any size or format necessary to best display information on that catalog

record.

Installing AOCE Templates
AOCE template files are system extensions. To install a new AOCE template, drop the template file into the System Folder and reboot.

Where do AOCE templates come from?
AOCE Templates are created by developers.

Article Change History:
23 Aug 1994 - Review for accuracy

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:13527

Tech Info Library

AOCE: Signature Verification Without PowerShare (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Signature Verification Without PowerShare (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

How is a signature verified if PowerShare isn't available?

DISCUSSION -----

DigiSign does not depend on or require PowerShare in any way. The two technologies are entirely independent from each other. All information necessary to verify a signature is contained within the signature itself.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13528

Tech Info Library

AOCE: Accessing Messages Remotely (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Accessing Messages Remotely (10/93)

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Article Created: 4 October 1993

TOPIC ----------

This article describes Accessing Messages Remotely on Apple Open Collaborative Environment (AOCE).

DISCUSSION ----------

PowerTalk users may have a need to retrieve their PowerShare Server mail from remote locations. There are a couple ways to do this for server-based messaging.

If the user is at a Macintosh computer that is connected to the same network as the PowerShare Mail Server on which the user has an account, then the user can use the Visitor Mailbox feature to retrieve messages from that PowerShare Mail Server. Search for "Visitor Mailboxes" for details.

If the user is using a Macintosh computer that is not connected to any network, then it is still possible to retrieve PowerShare Mail Server based mail using AppleTalk Remote Access (ARA). In this scenario, the user would connect to the AppleTalk network containing their PowerShare servers and communicate as though the remote Macintosh computer were connected to the network locally. PowerTalk and PowerShare work the same over ARA as they do when connected to a local network.

This is not the same as using Direct Dialup mail in PowerTalk. Direct Dialup Mail is simply the ability of two Macintosh computers to call each other and deliver a message. Direct Dialup mail and ARA use the same connection scripts. However, they offer distinctly different types of services.

Direct Dialup mail only works between two PowerTalk workstations. There is no server-based dial up in the initial release of PowerShare. Two individual PowerTalk workstations can call each other and exchange

messages. However, it is not possible to send an AOCE message to a PowerShare account and have the server call the destination whether the destination is either another server or an individual workstation. PowerShare Mail Servers do not support Direct Dialup mail.

While ARA can be used to access messages in PowerShare Mail Server message queues, there is no way to access messages that are located in personal message queues. This is the same situation as with Visitor Mailboxes. Remote users can gain access to any messages that are delivered to a PowerShare Mail Server or through a server based Mail Service Access Module. Any messages that are delivered to local message queues (Direct Dialup mail, Direct AppleTalk mail and personal Mail Service Access Modules) cannot be accessed remotely.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13529

Tech Info Library

AOCE: AppleMail (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: AppleMail (10/93)

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Article Created: 4 October 1993

TOPIC ----------

This article describes AppleMail in Apple Open Collaborative Environment (AOCE).

DISCUSSION ----------

PowerTalk will ship with a letter application called AppleMail. This application allows users to create, edit, address, read, and send letters.

AppleMail supports Standard Interchange Format which supports styled text, pictures, sound in AIFF format and QuickTime movies.

Users can use an application other than AppleMail to read messages from the In Tray. Because of type and creator conflicts, PowerTalk will not automatically launch an application other than AppleMail. However, users could open mail by dragging messages from the In Tray to a third party letter application that supports Apple Letter format.

Letterheads

AppleMail also supports letterheads.

Users can create new letterheads at any time by saving a document as a letterhead. To use a letterhead, select Letterheads from the File menu.

Letterheads are stored in a folder inside the Preferences folder in the System Folder.

File Format

AppleMail can send letters in two different formats: AppleMail and SnapShot. The SnapShot format is an image format, suitable for sending to a destination that does not understand AppleMail format, such as a FAX machine. It is possible to send a letter in both formats simultaneously

by checking the 'Multiple Formats' box. This option is useful in situations where the user sending the letter does not know if the user at the destination has the application necessary to open and read the letter.

Signing A Letter

AppleMail also fully supports the digital signatures capability of AOCE. Letters are signed by checking the 'Sign' box in the Send dialog box. PowerTalk will either use the signer file named in the Digital Signatures Prefs file or prompt the user to select a signer file.

The signed letter is then sent to its destination. Once the destination receives the letter, the signature can be verified by clicking the button in the mailer.

Letter Priority

The Send dialog box also allows the user to set a message priority. Message priority is a type of tag that can be used to sort messages in the In Tray using the View menu. Setting a message priority does not do anything different as far as how the message is actually delivered.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13530

AOCE: Authentication and Privacy Services Overview (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Authentication and Privacy Services Overview (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

This article provides an overview of Authentication and Privacy Services of Apple Open Collaborative Environment (AOCE).

DISCUSSION -----

PowerShare provides authentication and privacy features for users in a server-based environment. Through AOCE's two way authentication service, users and applications can be confident that the network entity with whom they are communicating are who they claim to be. The privacy feature of AOCE refers to a new protocol, AppleTalk Secure Data Stream Protocol (ASDSP) which encrypts data traveling across the wire.

Two Way Authentication

Two way authentication means that both sides are authenticated to each other. To illustrate why this is important, imagine a network application which prompts a user for a password. The user enters the password, thereby authenticating the user to the application. However, the application has not been authenticated to the user. It is possible that there is a password-gathering application loose on the network which, by impersonating a legitimate application, gathers user names and passwords. This situation is an example of one way authentication.

Two way authentication means that both parties are authenticated to each other. There is a mechanism by which each side can be assured that the entity with whom they are communicating is who it claims to be.

Authentication vs. Authorization

AppleTalk Secure Data Stream Protocol (ASDSP) only offers authentication services, not authorization. Authentication answers the questions 'Who am I?' and 'Who am I talking to?,' while authorization answers the questions 'Do I have access to this server?' and 'What are my access

privileges?' ASDSP leaves authorization services up to the individual application.

ASDSP

Some customers are concerned about someone tapping into their physical network with a packet analysis tool and gathering confidential information by reading the packets on the network. Before AOCE, there was no way for customers to protect against wire tapping, other than guarding the physical security of their network.

PowerShare offers protection against wire tapping through the use of a new protocol, AppleTalk Secure Data Stream Protocol (ASDSP). ASDSP is a secure version of AppleTalk Data Stream Protocol (ADSP). ASDSP encrypts the packets traveling across the wire. If a wire tapper does tap into the network, the packets gathered will be encrypted.

ASDSP uses RC4 encryption.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13531

Tech Info Library

AOCE: Catalog Service Access Modules (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Catalog Service Access Modules (10/93)

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Article Created: 4 October 1993

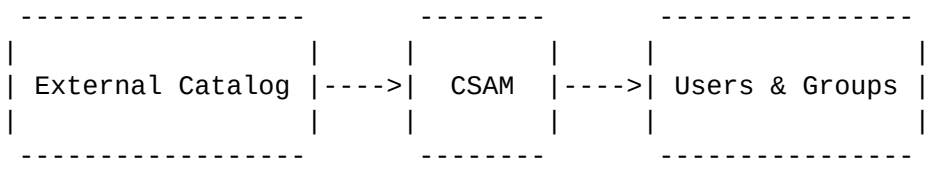
TOPIC --

This article describes Catalog Service Access Modules of Apple Open Collaborative Environment (AOCE).

DISCUSSION --

Catalog Service Access Modules (CSAMs) provide PowerTalk users with access to external sources of information. Examples include an X.500 directory service, a list of network entities on an AppleTalk network, or a window into a foreign file system.

Catalogs accessed through a Catalog Service Access Module are taking advantage of AOCE's open architecture which provides users the ability to use a wide variety of catalog services. Catalog Access Modules are responsible for translating external catalog information, in whatever form it may exist, into something which AOCE can display in the Catalogs icon.



Role of Catalog Service Access Module

Catalog Service Access Modules reside on the local workstation. In the initial release of AOCE software, server based Catalog Service Access Modules are not supported.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13533

AOCE: Catalog Services Brief Description (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Catalog Services Brief Description (10/93)

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Article Created: 4 October 1993

TOPIC --

This article provides a brief description of Catalog Services in Apple Open Collaborative Environment (AOCE).

DISCUSSION --

One possible use of catalog services is a directory service of electronic mail addresses. However, PowerTalk catalogs can provide much more information than simple lists of names. Through either the PowerShare Catalog Server or through Catalog Service Access Modules, PowerTalk users can access data in any format from text to sound to images. Catalog services go far beyond simple lists of names.

PowerTalk provides a new icon on the desktop, the Catalogs icon, through which users can browse a variety of catalog services.

In addition, users can place personal catalogs on their local workstation. Personal catalogs can be placed in the Apple menu or in any other location on a local or shared drive.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13534

Tech Info Library

AOCE: Certificate Sets Part Of The Digital Signature (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Certificate Sets Part Of The Digital Signature (10/93)

==========

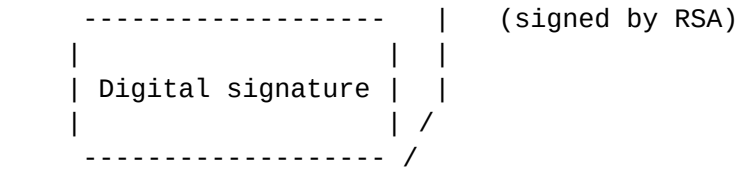
Article Created: 4 October 1993

TOPIC --

The certificate set is part of what is attached to data that has been signed. The public key certificate contains the signer's public key, signed by the issuing organization.

DISCUSSION --

A certificate set contains a complete chain of signed certificates. In this example, Joe's public key certificate is signed by Apple. The digital signature portion of Joe's signed certificate consists of a digest of Joe's public key certificate signed by Apple. That means the digest is encrypted with Apple's private key. The encrypted digest is decrypted by using Apple's public key which is the next certificate in the chain. Apple's signed certificate follows Joe's certificate. Apple's signed certificate is constructed in the same way: a public key certificate containing Apple's public key and various other identifying information followed by an encrypted digest of the public key certificate signed by RSA.



Certificate Set

There is no certificate for RSA because everyone knows RSA's public key. RSA's public key is installed into a user's Macintosh with AOCE.

To validate something signed by Joe, Apple's public key is taken from Joe's certificate set and used to decrypt the digest of Joe's public key certificate. The decrypted digest is then compared with a new digest of Joe's public key. In turn, Apple's signature is verified by using RSA's public key to decrypt the digest of Apple's public key certificate and then the digests are compared. Finally, Joe's public key is applied to the encrypted digest of the data being signed. The result is compared with a newly calculated digest of the data. If they match, the signature is validated.

If any of the above steps fails the signature will not verify.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13535

AOCE: Date & Time Control Panel (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Date & Time Control Panel (10/93)

==========

Article Created: 4 October 1993

TOPIC --------------------

This article describes the function of the Date & Time Control Panel in Apple Open Collaborative Environment (AOCE) and it's importance for proper operation.

DISCUSSION --------------------

Many features of AOCE technology rely upon the date and time being correct. PowerTalk includes a new Date & Time control panel for setting the correct date, time and time zone. If any of these are incorrect, users may experience problems with accessing their PowerShare servers. Mail messages will also have the wrong date attached to them.

To set the date and time, open the Date & Time control panel, and check that the information is correct. Set the proper time zone by selecting a city located in the same time zone as the Macintosh computer.

Troubleshooting

One common user problem with PowerTalk or PowerShare is getting the date, time, or year wrong. If nothing is working, always check the Date & Time control panel for the correct information, including the correct year. If the system clock has been reset to 1904, AOCE services will not work.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13536

Tech Info Library

AOCE: Direct AppleTalk Mail (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Direct AppleTalk Mail (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

This article describes Direct AppleTalk Mail on Apple Open Collaborative Environment (AOCE).

DISCUSSION -----

AOCE software will ship with Direct AppleTalk mail, an example of a Catalog Service Access Module.

The AppleTalk catalog displays Macintosh computers which have an AOCE Toolbox installed. A PowerTalk user would use this catalog to address messages to a particular Macintosh computer, allowing users to exchange messages in a server-less environment.

The entries in the AppleTalk catalog display the machine name of each Macintosh computer, taken from the Sharing Setup control panel.

AppleShare Servers

The AppleTalk catalog also displays AppleShare servers on the network. Users can select an AppleShare server from the AppleTalk Catalog and place a key to that file server in the PowerTalk Key Chain.

This provides easy access to networking services without requiring the user to remember separate user names and passwords for many different servers. Access to servers is still protected by the PowerTalk Key Chain access code.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13537

AOCE: How ASDSP Encrypts (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: How ASDSP Encrypts (10/93)

==========

Article Created: 4 October 1993

TOPIC --

This article describes how AppleTalk Secure Data Stream Protocol (ASDSP) Encrypts in Apple Open Collaborative Environment (AOCE).

DISCUSSION --

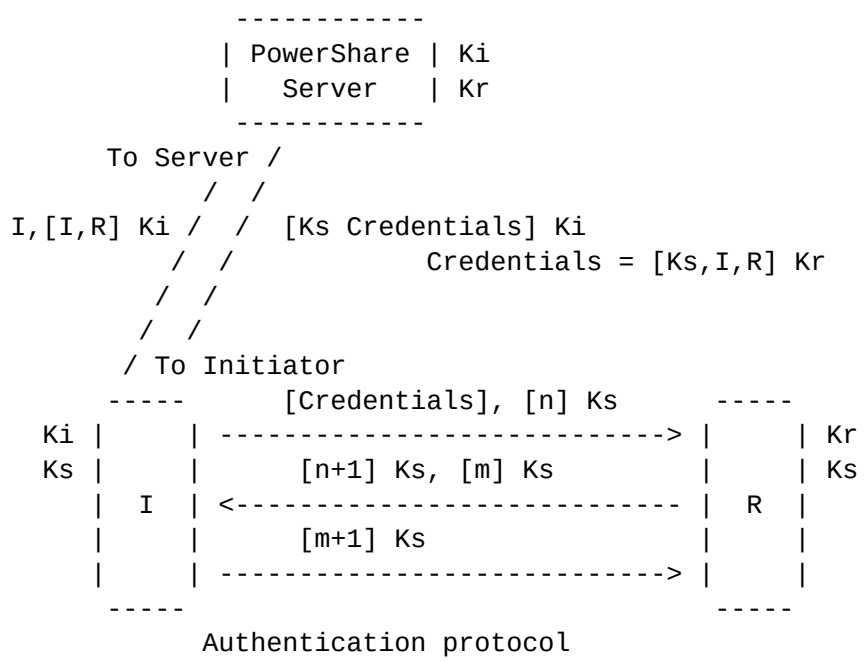
The authentication process in AOCE technology relies on a trusted authority, the PowerShare Catalog Server, to authenticate two parties to each other. Each entity on the network trusts the server to authenticate other entities on the network.

The PowerShare Catalog Server can provide these authentication services because everyone has a PowerShare account. The server converts the user's password into a key that is used to encrypt information.

A Walk Through the Protocol

Suppose "I", the Initiator, wants to talk to "R", the Recipient. There is also a PowerShare Catalog on the network. At the beginning of the process, the Initiator knows the Initiator's key, Ki, the Recipient knows the Recipient key, Kr, and the PowerShare Catalog knows both their keys.

The process begins with the Initiator sending a request to the PowerShare Catalog asking for a set of credentials to use in establishing a secure session with the Recipient. This request contains who the Initiator is and who the intended Recipient is, encrypted with the Initiator's key, Ki. The encrypted information is accompanied by a clear text statement of who the Initiator is so the catalog knows which key to use to decrypt the request. The PowerShare Catalog Servers serving that catalog folder are the only entities on the network, besides the Initiator, which can decrypt the credential request.



Authentication protocol

Once the PowerShare Catalog Server decrypts the credential request, the server sends the Initiator a set of credentials along with a session key, Ks. The session key will be used to encrypt communication between the Initiator and the Recipient. The packet returned by the PowerShare Catalog Server is encrypted with Ki, the Initiator's key. The only entity on the network that can decrypt this packet, besides the PowerShare Catalog Server, is the Initiator. Once the Initiator decrypts this packet, using Ki, the Initiator knows both its own key, Ki, and the session key, Ks.

The next step is for the Initiator to begin to send the Recipient the credentials package in order to authenticate the Initiator to the Recipient. The Initiator cannot decrypt the credentials package because the information in the credentials package is encrypted with Kr, the Recipient's key. The Initiator sends the credentials package to the Recipient who then decrypts it. The credentials package contains the session key, Ks, the Initiator's identity, and the Recipient's identity. The Recipient now has the session key.

The next portion of the authentication process is the challenge exchange. This is to prevent a wiretapper from capturing packets on the network and then replaying them later in order to establish a false session.

Along with the credentials package, the Initiator sends a random number, n, encrypted with the session key. Once the Recipient successfully decrypts the credentials and has the session key, the Recipient will be able to decrypt the random number n. The Recipient adds one to the random number n, encrypts the result with the session key, and sends it to the Initiator. At the same time, the Recipient picks its own random number, m, encrypts it with the session key, and sends it to the Initiator.

The Initiator decrypts the n+1 package sent by the Recipient and confirms that it is indeed the original random number n, +1. The Initiator then decrypts the Recipient's random number m, adds one to it, encrypts it with

the session key, and returns it to the Recipient. The Recipient confirms that what it receives really is m+1.

At this point, a secure session has been established. The Initiator and Recipient can use the session key to encrypt data traveling between them using ASDSP.

What This Means

The session key can be valid for up to eight hours. After that period, a new key must be negotiated. The process of session key negotiation is transparent to the user. An application using ASDSP can specify the time period for which the session key will be used.

The Initiator and Recipient must have accounts in the same PowerShare Catalog, though not on the same server or in the same catalog folder.

Import/Export Restrictions

Apple has a license to export all AOCE technology from the United States. At this date, there is a problem with importing the technology into France. To address this issue, there will be two versions of AOCE software available: encrypted and encryption-free. The encryption-free version will be shipped in France and any other country where importing AOCE technology becomes an issue.

If both sides are using the software that allows encryption, the session is encrypted. Otherwise, the session is not encrypted.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13538

Tech Info Library

AOCE: The I'm At Feature and PowerBook (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: The "I'm At" Feature and PowerBook (10/93)

==========

Article Created: 4 October 1993

TOPIC --------------------

This article describes the benefits of the "I'm At" feature of Apple Open Collaborative Environment (AOCE) and how it assists PowerBook users.

DISCUSSION --------------------

The "I'm At" feature of PowerTalk allows users to store several configurations for their AOCE client systems. The options are work, home, on the road, or off-line. This option is particularly useful for PowerBook users.

A PowerTalk user will probably have access to different services depending on the Macintosh computer's location, at home, work, or on the road. For example, a user may want to disable Direct Dialup mail unless the Macintosh computer is at home. Similarly, if the user is at home, some work related catalogs might not be available.

Working off-line means the user will be able to create and send messages, but no attempt will be made to deliver the messages until the user indicates that a network is now connected. This selection is most useful in situations where the Macintosh computer is not connected to any network or communications methods.

PowerBook users will find the "I'm at" feature to be especially useful. It allows them to store several different preset configurations for collaboration services. One menu selection quickly enables or disables the appropriate services.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13540

Tech Info Library

AOCE: Regulatory Issues With Encryption Import/Export (3/96)

Revised: 4/1/96
Security: Everyone

AOCE: Regulatory Issues With Encryption Import/Export (3/96)

==========

Article Created: 4 October 1993
Article Reviewed/Updated: 29 March 1996

TOPIC ----------

Are there any import/export problems with AOCE technology?

DISCUSSION ----------

Apple has received the necessary licenses from the United States government to export AOCE technology. However, there are problems with importing AOCE technology into France and its colonies and territories. The French government puts many restrictions on importing of software which does any kind of encryption. Since PowerShare does encryption with ASDSP, Apple will not be able to import AOCE products with encryption into France.

As a result of this restriction, Apple will be shipping an encryption-free version (PowerTalk Lite) in France. This version will not support ASDSP or authentication.

PowerShare Catalogs must either all support encryption or all not support encryption. If only one PowerShare Catalog Server in an PowerShare Catalog does not support encryption, then there will be no ASDSP or authentication services available.

Article Change History:
29 Mar 1996 - Changed title to be more descriptive.

Copyright 1993-6, Apple Computer, Inc.

Tech Info Library Article Number:13541

Tech Info Library

AOCE: Information Cards (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Information Cards (10/93)

==========

Article Created: 4 October 1993

TOPIC ----------

This article describes Information Cards of Apple Open Collaborative Environment (AOCE).

DISCUSSION ----------

An information card is a file that contains the contents of one catalog record. Information cards are created by dragging a catalog record to the desktop or to someplace other than another catalog window. They can also be created from within a catalog using the Catalogs menu. Once an information card has been created, it can be used in the same way as the original catalog entry.

Information cards can be used for drag and drop mailing or for dropping information to a catalog entry. A user could create an information card for a frequently used mail address. Putting the information card on the desktop allows the user to easily mail files and folders by dropping them onto the information card.

Because information cards are portable, they can also be distributed as enclosures in mail messages or put onto a floppy disk.

Information cards can be created from any catalog record, including those found in PowerShare Catalogs, the AppleTalk catalog or personal catalogs.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13542

Tech Info Library

AOCE: Mail Service Access Modules (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Mail Service Access Modules (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

This article describes the Mail Service Access Modules of Apple Open Collaborative Environment (AOCE).

DISCUSSION -----

Just as Catalog Service Access Modules provide access to external catalog services, Mail Service Access Modules provide access to messaging services. With the appropriate Mail Service Access Module, a PowerTalk user will be able to exchange messages with users on a variety of platforms and message delivery systems. Mail Service Access Modules will be provided by third parties.

At the time PowerTalk ships, some of the Mail Service Access Modules that will be available are: SMTP, Microsoft Mail, FAX, voice mail, QuickMail, and pager. This is partial list with many other MSAMs under development and available shortly after product ship.

There are two different types of Mail Service Access Modules: personal and server-based. A personal Mail Service Access Module resides on the local user's workstation. A server-based Mail Service Access Module resides on a PowerShare Mail Server. Letters sent through the server-based Mail Service Access Module are sent first to the PowerShare server and then out through the Mail Service Access Module.

This is a different situation from Catalog Service Access Modules where Catalog Service Access Modules could reside only on the local workstation.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13543

Tech Info Library

AOCE: Mailbox (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Mailbox (10/93)

==========

Article Created: 4 October 1993

TOPIC ----------

This article describes the Mailbox of Apple Open Collaborative Environment (AOCE).

DISCUSSION ----------

PowerTalk puts a new icon on the desktop for the Mailbox.

The icon represents an In Tray since this is where all incoming mail arrives, no matter what the original source. Messages in the mailbox can be in a variety of formats.

When the In Tray is open, the Mailbox menu is added to the menu bar. The Mailbox menu includes several selections for users to administer their incoming and outgoing mail.

Mailbox menu contains the following options:
  In Tray
  Out Tray
  Tag...
  Copy Local...
  Preferences

• Out Tray
  The Out Tray displays items that either have been sent recently or are waiting to be sent.

  A copy of a sent letter will remain in the local system's outgoing letter queue until either the user drags it to the Trash or until the timeout period expires. Letters stay in the Out Tray for a period of time after they are sent to allow users to access recently sent letters. The default time for letters to remain in the Out Tray after being sent

is 14 days. This time period can be configured using the PowerTalk Setup control panel.

If the letter was sent through a server, the letter is resident on the server queue. If the letter was sent through server-less messaging, the letter remains on the local system until the Out Tray timeout period has expired. In either case, the user will see the letter in the Out Tray.

- Copy Local
  Copy Local means to take the selected letters and copy them from a server based letter queue to the local letter queue. This is another feature to make it easier for PowerBook users to collaborate remotely.

- Mailbox Preferences
  The Preferences menu selection provides the following choices:
  - Mail Tray:
    Show most recent first
    Allow Visitor's mailbox
  - When Mail Arrives:
    Display alert
    Blink icon in menu bar
    Play this sound:
  - Out Tray Aging
    Remove processed items after XX days.
  - Tags List:
    Edit (button)

  If visitor's mailboxes are allowed, then someone else will be able to use this Macintosh computer to retrieve mail stored on a PowerShare Mail Server. Visitor mailboxes allow the user to have multiple mailboxes open on the desktop.

- Tags
  Tags can be added to letters in the In Tray. Tags are useful in filtering incoming letters. The View menu can be used to restrict the view of letters in the In Tray to only show letters with a given tag.

  Tags are assigned to letters using the Tag menu item. To assign a tag, select the item(s) in the In Tray and then select Tag from the Mailbox menu. Tags can also be assigned form within AppleMail.

  To see a list of tags already created, press the pop up arrow button. Create a new tag by typing it into the dialog box and clicking the Add button from the Tag window.

  The tags attached to a letter can be seen through the Get Info dialog box. Select the letter from the In Tray and then select Get Info from the File menu.

  Tags can also be used by Beyond Software's MacRules Pro application. MacRules Pro can create rules to automatically add or delete tags or to take certain actions based on tags assigned to letters.

Tags can be single words or a short phrase.

Tags are removed when the item is moved from the In Tray to the local hard drive.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13544

Tech Info Library

AOCE Mailer (10/93)

Revised: 9/30/93
Security: Everyone

AOCE Mailer (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

This article describes the Mailer in Apple Open Collaborative Environment (AOCE).

DISCUSSION -----

The top portion of AppleMail contains the Mailer.

Apple is encouraging developers to incorporate the AOCE Mailer into their applications. Once the mailer is a standard part of a Macintosh application, sending messages from within an application will become as commonplace as printing is today.

Developer University has completed a course on adding the AOCE Mailer to applications. Because the process requires very little effort on the part of developers while at the same time adding significant functionality to the application, it is expected that most Macintosh developers will be incorporating the AOCE Mailer into their products.

There are applications where it would not be appropriate to include the entire Mailer. In these cases, developers can access the mail and messaging services of AOCE using the Mail Manager calls directly instead of using the standard Mailer.

- From...
  The 'from' field defaults to the owner of this AOCE system.

- Recipients...
  Letters are addressed using the Catalog Browser Panel. Click the Recipients button to display the Catalog Browser Panel.

  Personal Catalog
    Letters can be addressed by selecting the address from the list of

potential addresses and clicking either the To button or the CC: button. The top icon displays the contents of the preferred Personal Catalog.

Catalog Browser
The second icon shifts the display to the Catalogs icon. This will look inside the Catalogs icon on the desktop. Users can also use the pop-up menu at top to browse through the file system for other personal catalogs or information cards.

Find Address
The third icon is used for finding addresses. Users can search for addresses located in a particular catalog or on any mounted volume.

Type in addressing
The last icon allows users to type in an address. This is useful when the user knows the destination address yet there is no catalog service available to use in addressing the letter. One common example might be an Internet address or other messaging system that does not have a directory service.

- Subject...
  The subject field contains the subject of the letter.

- Enclosures...
  There are two ways to add enclosures with the Mailer. The first is to drag enclosures directly into the enclosures field.

  The second is to click the Enclosures button and use the standard file dialog box to select a file or folder to enclose.

- Finder Support
  PowerTalk is able to support dragging items directly into the enclosures field because of modifications to the Finder. PowerTalk incorporates a new Finder with changes made for AppleScript, AOCE, and QuickDraw GX.

  It is also possible to drag information cards or addresses from Catalog windows into the Recipients field to address a letter.

  The drag and drop method of addressing letters or adding enclosures is a feature of the System 7 with PowerTalk. It works no matter which application, third party or Apple, is in use.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13545

Tech Info Library

AOCE: Which Algorithm, MD4 or MD5, In The Digest (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Which Algorithm, MD4 or MD5, In The Digest (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

Which algorithm, MD4 or MD5, is used to create the digest?

DISCUSSION -----

The algorithm used to create the digest is MD4.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13546

Tech Info Library

AOCE: Message Delivery Methods (11/93)

Revised: 11/30/93
Security: Everyone

AOCE: Message Delivery Methods (11/93)

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Article Created: 4 October 1993
Article Reviewed/Updated: 30 November 1993

TOPIC ----------

This article describes the Message Delivery Methods of Apple Open Collaborative Environment (AOCE).

DISCUSSION ----------

PowerTalk itself can exchange messages using three different message delivery methods.

- Direct AppleTalk mail
- PowerShare Server mail
- Direct Dialup mail

Additional message delivery methods can be added using Mail Service Access modules from third parties.

Direct AppleTalk Mail

Direct AppleTalk mail enables users to exchange letters across an AppleTalk network without the use of a server. PowerShare is not required to take advantage of Direct AppleTalk mail. Direct AppleTalk mail is part of the PowerTalk package.

Within the AppleTalk Catalog, Macintosh computers with an AOCE toolbox installed appear as Direct AppleTalk mail addresses in the Catalogs window. A PowerTalk user could use this address to send messages to any Macintosh that appears in the AppleTalk Catalog window.

PowerShare Mail Server based messaging

Apple will be marketing a PowerShare Mail Server for users who want the advantages of a server-based mail system. With a PowerShare Mail Server,

users will be able to use Visitor Mailboxes to retrieve server-based mail from remote locations. PowerShare also gives users additional privacy and security features with over the wire encryption and authenticated connections.

Direct Dialup Mail

Direct Dialup mail is the ability of two Macintosh computers to call each other and exchange messages through a modem. This allows users who are connected by telephone to exchange messages with other PowerTalk users.

Dialup and AppleTalk Remote Access (ARA)

ARA 2.0 and Direct Dialup mail use the same modem connection scripts and low level drivers. They also are compatible with each other. If a call comes in, ARA and PowerTalk will negotiate to determine whether the call is for ARA or Direct Dialup mail. However, Direct Dialup mail is not the same thing as ARA.

Direct Dialup mail is not a way to retrieve PowerTalk letters from a remote location.

There is no way to use Direct Dialup mail or ARA to retrieve messages stored in a local message queue. Examples include messages delivered to a Direct AppleTalk mail address.

- IMPORTANT: Direct Dialup mail will not be a part of the initial release of PowerTalk, Direct Dialup may be obtain separately. To get Direct Dialup mail the request card which comes with System 7 Pro along with the amount of money specified. Direct Dialup mail may be fully incorporated into a later release of PowerTalk.

Server Based Dialup

PowerShare does not support server based dial up in the initial release. Two PowerShare Mail Servers will not call each other to exchange messages.

Article Change History:
30 Nov 1993 - Updated article for ARA 2.0 release.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13547

Tech Info Library

AOCE: Messaging Services (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Messaging Services (10/93)

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Article Created: 4 October 1993

TOPIC --------------------

This article describes the Messaging Services of Apple Open Collaborative Environment (AOCE).

DISCUSSION --------------------

The most obvious use of messaging services is electronic mail, exchanging letters and documents between two end users. However, electronic mail is just one example of the possible messaging services offered by AOCE technology.

- IPM
  AOCE software supports InterProgram Messaging (IPM) a way of sending messages between applications as well as between electronic mail users. IPM is different from InterProgram Communication (IPC) in that IPM messages are delivered in a store and forward manner and that they can be addressed to a group of addresses. IPC messages must be delivered in real time and can have only one destination per message.

- Mail vs. messaging
  The AOCE toolbox distinguishes between electronic mail and other AOCE messages through the use of message families. Any message of family 'file' or 'mail' will be treated as an electronic mail message and delivered to the System Mailbox. Messages of the 'file' family are direct display files, meaning that the file can be displayed as an image without any application software required.

  The AOCE toolbox does no special handling for messages of different families. All messages, whether destined for the system mailbox or another application, are delivered in the same manner.

- Store and forward messaging
  All AOCE messages are delivered in a store and forward manner. When a

message is created on an AOCE system, the message is placed in an outgoing queue and delivered when the destination is available. Once the message has been placed in the outgoing message queue, the message originator need not worry about checking to see when the destination is available. The AOCE Toolbox will attempt to contact the destination and deliver the message.

In a server-based environment, messages are delivered to the server and then to their eventual destination. In a server-less environment, messages remain in the local outgoing message queue until they are delivered.

There is a timeout period associated with message delivery. If an AOCE system is unable to deliver a message for 5 days, a problem report will be sent to the message originator informing them that the message could not be delivered. The 5 day period was chosen to take into account situations where a message could not be delivered because the destination was unavailable over a 3 day weekend.

The 5 day timeout period is not user modifiable in the initial release of PowerTalk and PowerShare.

All AOCE users gain the benefit of store and forward messaging, whether they are in a server-based or server-less environment.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13548

AOCE: Personal Catalogs (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Personal Catalogs (10/93)

==========

Article Created: 4 October 1993

TOPIC --------------------

This article describes Personal Catalogs of Apple Open Collaborative Environment (AOCE).

DISCUSSION --------------------

There are times when users may find it more convenient to store catalog items locally instead of on a server. For this situation, PowerTalk includes personal catalogs. A personal catalog can contain any record that can be stored in an PowerShare Catalog Server or available through a Catalog Service Access Module. Users can also create new records specifically for a personal catalog.

When PowerTalk is installed, one personal catalog is created and placed in the Apple menu. Users can have more than one personal catalog on a workstation. Personal catalogs can be stored on any volume.

Personal catalogs could be used to gather collections of similar records. For example, one personal catalog could contain the addresses of everyone associated with a particular project. Another personal catalog could be an index to a music collection. Personal catalogs can hold the same types of information as a regular PowerShare Catalog with the advantage that users can create and edit personal catalogs at will.

Unlike PowerShare Catalog Server catalogs or catalog services accessible through a Catalog Service Access Module which have a hierarchical structure, personal catalogs have a flat structure. They are simple collections of records.

Personal catalogs, like other AOCE Catalogs, support collections of user records called groups. To create a group, use the 'Create Group' menu item. To add items to a group, drag the record from the personal catalog into the group's folder.

To add a record to a personal catalog from a PowerShare Catalog or other Catalog service, drag the PowerShare Catalog entry into the personal catalog window. Data stored in the catalog record will be copied to the personal catalog.

There is no automatic synchronization of records in a personal catalog with the corresponding records in a PowerShare Catalog. To avoid synchronization problems, it is possible to create aliases to the PowerShare Catalog record and place the aliases into the PowerShare Catalog. The disadvantage of this approach is that the record is no longer available if the system cannot communicate with the PowerShare Catalog. PowerBook users, especially, should avoid this approach.

Personal catalogs can also contain aliases to the original records. Personal catalogs cannot contain other personal catalogs.

Creating New personal catalogs

To create a new personal catalog, open the Catalogs windows and select 'New Personal Catalog' from the Catalogs menu. There is no limit on the number of personal catalogs a user can access. However, the preferred Personal Catalog comes up automatically in the Catalog Addressing Panel. Select which personal catalog is the preferred Personal Catalog by using the Get Info window.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13549

Tech Info Library

AOCE: PowerTalk Setup Control Panel (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: PowerTalk Setup Control Panel (10/93)

==========

Article Created: 4 October 1993

TOPIC ----------

This article describes the PowerTalk Setup Control Panel and Visitor Mailboxes of Apple Open Collaborative Environment (AOCE).

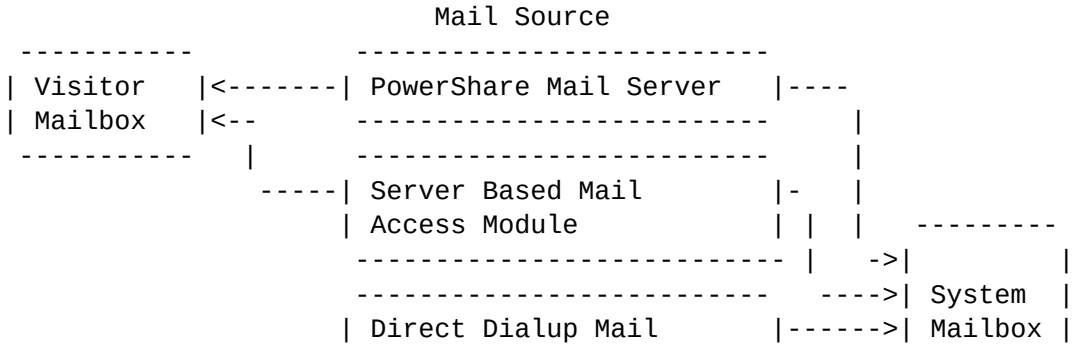
DISCUSSION ----------

Functionality for adding and removing different messaging and catalog services has been moved to the PowerTalk Key Chain.

There is now a user adjustable time-out period. If the system is idle for a given amount of time, the user will be prompted to enter a password to access collaboration services. This is useful in the situation where someone walks away from their desk, leaving their Macintosh computer unattended.

Visitor Mailboxes

There are situations where a user might want to retrieve their mail from somewhere other than their usual workstation. There are also situations where one user may want to have mailboxes for multiple PowerShare accounts simultaneously open on the desktop. To handle these situations, PowerTalk provides Visitor Mailboxes.



What is accessible from which mailbox

Visitor Mailboxes contain any messages that come from a PowerShare Mail Server. The messages can be delivered directly through the PowerShare Mail Server or through a server-based Mail Service Access Module. In either case, the messages are delivered to a message queue on a PowerShare Mail Server.

Visitor Mailboxes do not have access to messages delivered to a local message queue. Any messages that are delivered through Direct Dialup mail, Direct AppleTalk mail or through a personal Mail Service Access Module cannot be accessed through a Visitor Mailbox.

By default, Visitor Mailbox capability is turned off in PowerTalk. To enable Visitor Mailboxes, open the System Mailbox and select Preferences from the Mail menu.

Check the box to enable Visitor Mailboxes. Now there will be a new selection in the Special menu for creating a Visitor Mailbox.

When selecting Visitor Mailbox, the user will provide the PowerShare account name, password, and which catalog contains the account.

If the workstation does not know about the PowerShare Catalog containing the account, select Other and PowerTalk will perform a network search to find available PowerShare Catalogs. Once the list is complete, select the PowerShare Catalog containing the user's account.

One PowerTalk workstation can have multiple Visitor Mailboxes open at the same time. Each Visitor Mailbox points to a different server-based message queue.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13550

Tech Info Library

AOCE: Protection and Storage of Private Keys (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Protection and Storage of Private Keys (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

Where are the private keys stored and how are they protected?

DISCUSSION -----

If you mean the items in the key chain, we do protect them and they are encrypted, but we aren't telling anyone where or how.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13551

Tech Info Library

AOCE: PowerShare Catalog Server Administration (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: PowerShare Catalog Server Administration (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

This article describes PowerShare Catalog Server Administration of the Apple Open Collaborative Environment (AOCE).

DISCUSSION -----

PowerShare Catalogs are created and maintained using an application called the PowerShare System Manager's Utility. This utility can be run locally or from a remote location. The PowerShare Catalog Servers serving a particular PowerShare Catalog can be physically located in a phone closet or other secure location while administration happens remotely. Remote administration does not create a security breach since all communication between the Admin application and the PowerShare Catalog Server is encrypted with ASDSP. Any packets tapped from the wire would be encrypted.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13552

Tech Info Library

AOCE: Public Key Cryptography (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Public Key Cryptography (10/93)

==========

Article Created: 4 October 1993

TOPIC --

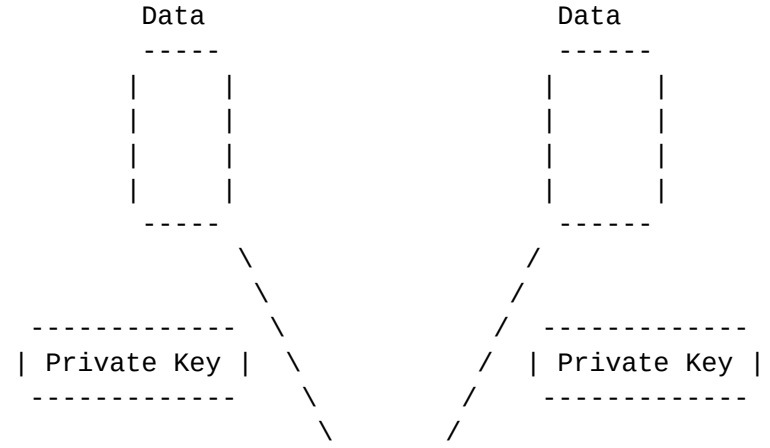
This article describes Public Key Cryptography in Apple Open Collaborative Environment (AOCE).

DISCUSSION --

While the process of signing something does use encryption, the data itself is never encrypted. If digital signatures could be used to encrypt data, Apple would not be able to export the technology. However, digital signatures does use encryption to create the signature.

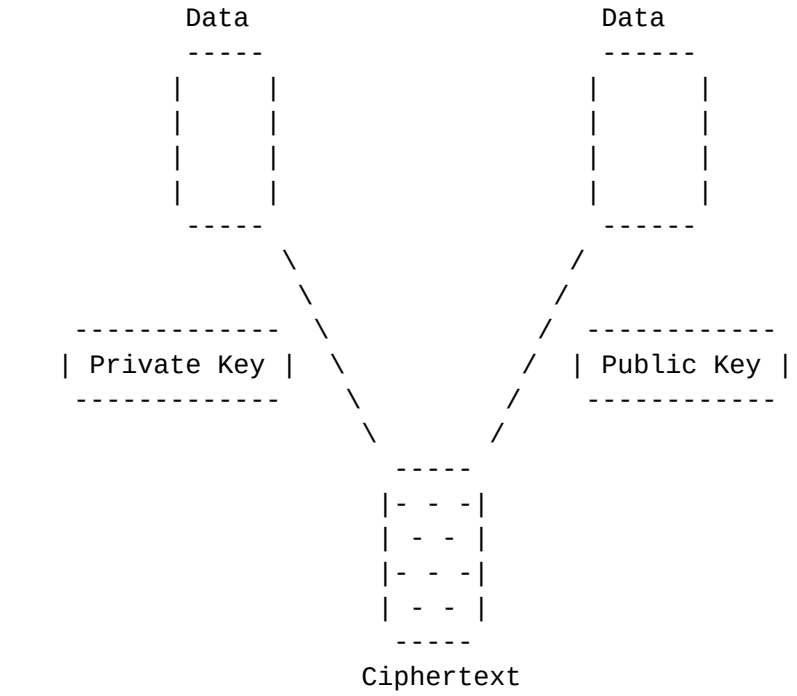
The type of encryption used by digital signatures is called public key cryptography. This is different from the usual private key encryption.

To encrypt something using private key encryption, a private key is used to encrypt the original data and create ciphertext. The same private key is used to decrypt the ciphertext and reproduce the original data. The challenge with private key technology is how to communicate the private key in such a way that it does not become compromised.



Private key cryptography

DigiSign uses something called public key encryption. With public key encryption, a private key is still used to encrypt the original data into ciphertext. This private key remains private, protected by the entity which does the original encryption. Public key technology uses a second public key to decrypt the data. This second key is called a public key because it can be widely distributed. Since both keys are necessary to complete an encrypt/decrypt cycle, only one key need be kept secret.



Public key cryptography

RSA

Apple has licensed digital signature technology from RSA Data Security, Inc. The RSA system has been in use for quite some time. It is the emerging commercial standard of public key encryption systems. By using a standard, Apple ensures that as commercial products using digital signature technology become available on other platforms, Apple will be compatible.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13553

AOCE: PowerShare Catalog Servers Brief Description (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: PowerShare Catalog Servers Brief Description (10/93)

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Article Created: 4 October 1993

TOPIC --------------------

This article provides a brief description of PowerShare Catalog Servers in Apple Open Collaborative Environment (AOCE).

DISCUSSION --------------------

While the PowerTalk package provides an array of services for customers in a server-less environment, the PowerShare package offers additional features. The PowerShare package contains the PowerShare Catalog Server and the PowerShare Mail Server. The PowerShare Catalog is a hierarchical, distributed repository of information. Putting information on a PowerShare Catalog Server makes that information available to all PowerTalk users and AOCE applications. Information stored in an PowerShare Catalog Server can be of virtually any type.

A PowerShare Catalog contains a number of predefined record types and attribute types. Developers who wish to work with other record types of attribute types can do so by writing an AOCE template. An attribute is the name of the data structure which stores the data in a catalog record. Attributes can have any number of attribute values.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13554

Tech Info Library

AOCE: PowerShare Catalog Structure (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: PowerShare Catalog Structure (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

This article describes the PowerShare Catalog Structure in Apple Open Collaborative Environment (AOCE).

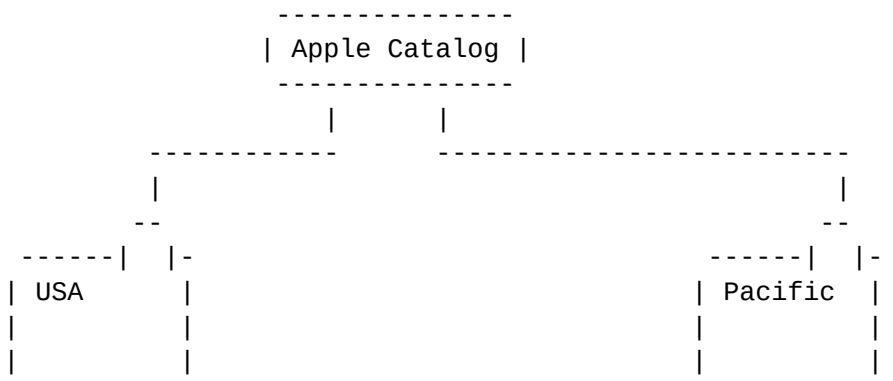
DISCUSSION -----

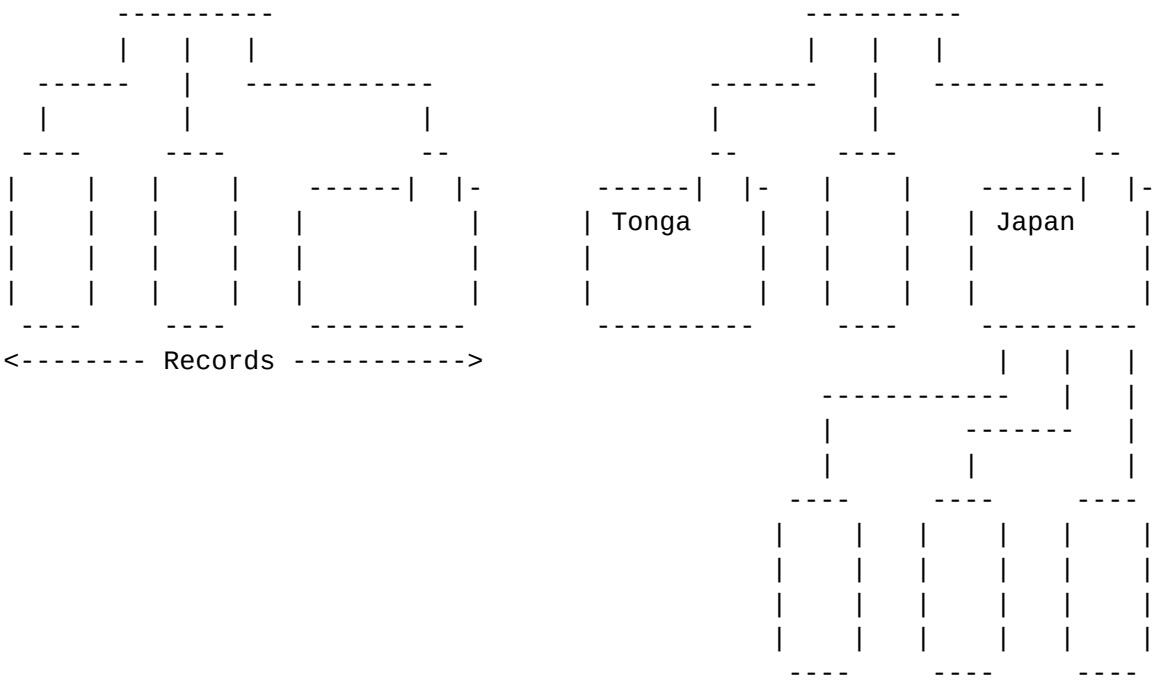
A PowerShare Catalog is a hierarchical, distributed repository of information served by one or more PowerShare Catalog Servers. This catalog also provides authentication services on the network.

The relationship between a PowerShare Catalog and a PowerShare Catalog Server is not necessarily one to one. In fact, in all but the smallest installations, there will be several PowerShare Catalog servers for each PowerShare Catalog.

It is possible for a PowerTalk user to access information from more than one PowerShare Catalog.

- Hierarchical Structure
  An PowerShare Catalog is organized in a hierarchical manner. For example, a PowerShare Catalog could be created for Apple Computer.



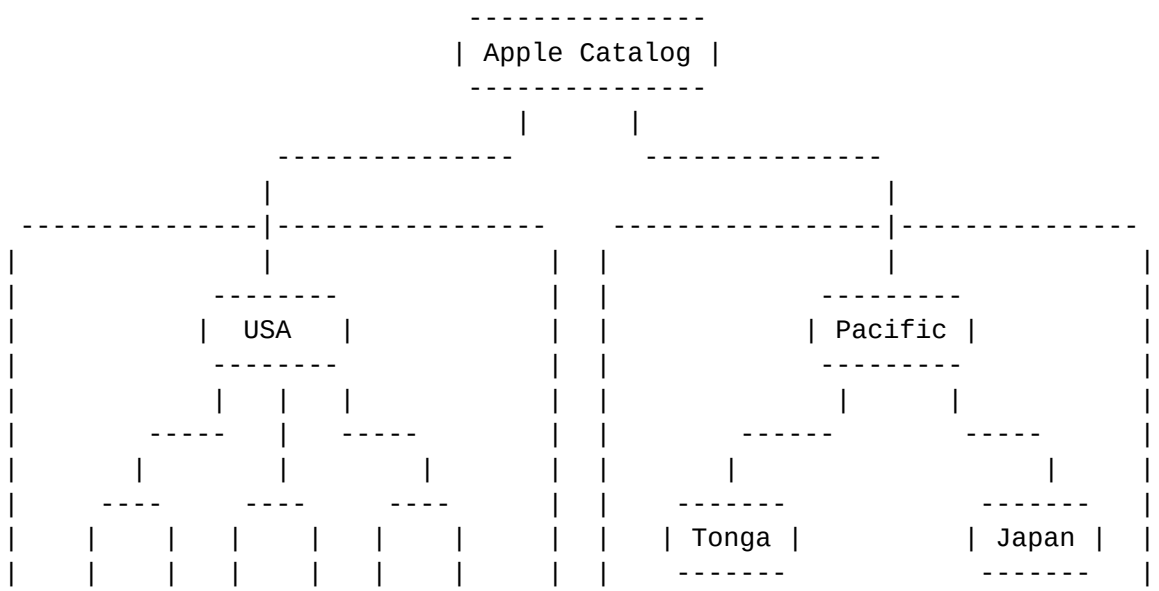


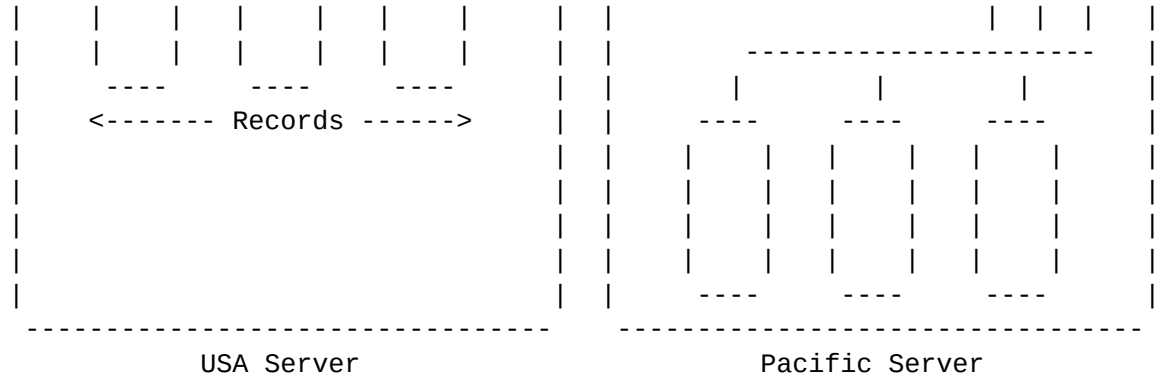
Catalog Structure

Records are stored in catalog folders. It is possible to have a catalog folder that contains both records and other catalog folders.

- Where are the Servers?
  Notice in the above diagram that there are no servers represented. This diagram is a picture of the logical structure of the information in the catalog. The catalog structure does not necessarily indicate which PowerShare Catalog Servers contain which information.

  In this example, it is highly unlikely that the entire Catalog could be maintained on one PowerShare Catalog Server. Instead, the load would be distributed among several PowerShare Catalog Servers. No one server would contain all of the data.





Distributed PowerShare servers

From the AOCE client's perspective, there is no concept of PowerShare Catalog Servers, only PowerShare Catalogs. AOCE clients never select a particular server. In fact, an end user never knows which specific PowerShare Catalog Server is responding to an information request.

In this example, all data for Apple USA resides on the Apple USA server and all data for Apple Pacific resides on the Apple Pacific server. There is no one server that contains all of the records for the entire database. The data is distributed across two servers. However, all the data is in one PowerShare Catalog.

If a user in Apple USA needs information from the Apple Pacific catalog folder, the user need only open the Apple Pacific catalog folder from the Catalogs icon on the desktop. PowerTalk takes care of finding out which PowerShare Catalog Server serves the Apple Pacific catalog folder and directs the information request accordingly. The end user never has to select a PowerShare Server.

- Folders Directory
  PowerTalk keeps a list of which PowerShare servers serve the Folders Directory. The Folders Directory is a copy of the structure of the PowerShare Catalog. The Folders Directory is a type of PowerShare Catalog which is used by PowerTalk and PowerShare to keep track of which servers serve which catalog folders. While the entire Folders Directory might be replicated in several places in a PowerShare system, the Folders Directory does not contain any user data. It contains only path information to direct PowerTalk and PowerShare users to the appropriate PowerShare Servers.

  PowerTalk asks one of the servers serving the Folders Directory which PowerShare servers serve the catalog folder containing the requested data. PowerTalk receives a list of servers serving the appropriate catalog folder. Finally, PowerTalk picks a server from the list and sends the information request.

  This process is transparent to the end user. An AOCE client never sees the different servers. The client only sees different catalog folders. In the Catalogs icon, the end user never knows nor cares which PowerShare Catalog Servers serve which catalog folders.

Replication

If the server containing data for a particular catalog folder goes down, the information in that catalog folder is no longer available. To guard against this situation, two PowerShare Catalog Servers can serve the same catalog folder, replicating the information among themselves.

A replicated server system can also balance the load between several servers, providing quicker responses to client systems. This means more clients can simultaneously access the same catalog folders with no loss of performance.

For example, if Pacific Server #1 would go down for some reason, users would still have access to data in a Apple Pacific catalog folder because Pacific Server #2 also contains a copy of that information.

The end user still sees only the catalog and not the servers. The replication is transparent from the point of view of the AOCE client system.

Replication happens automatically with no intervention required by the catalog administrator. To add a record to a catalog folder, the catalog administrator would run PowerShare Admin to add the new record. As with PowerTalk, the catalog administrator cannot specify which PowerShare Catalog Server will be updated. Instead, the PowerShare System Manager's Utility will add the record to the catalog folder. The PowerShare System Manager's Utility picks one of the PowerShare Catalog Servers that serve that particular catalog folder. That PowerShare Catalog Server takes care of communicating the changes to other PowerShare Catalog Servers that serve the same catalog folder. The catalog administrator only has to update the catalog folder once, instead of updating each and every PowerShare Catalog Server that serves that particular catalog folder.

The PowerShare Catalog Servers keep each other up to date by exchanging updates to information on the catalog folders they serve. The replication mechanism is peer to peer based, not master-slave based. Any server can accept and distribute updates to other servers serving the same directory folders. If one PowerShare Catalog Server receives an update, that server propagates the new information to other PowerShare Catalog Servers that serve the same catalog folder.

While it is true that the servers communicate with each other to check for new information, this exchange does not cause an excessive increase in network traffic. There are two reasons for this. The first is that the servers only exchange information on updates. They do not automatically exchange the entire contents of a catalog folder. The second reason is that the frequency with which the servers check with each other for new information is proportional to the rate of new information. If a large number of updates have been made recently, the servers will communicate frequently. As the amount of new information drops off, the servers drop the frequency with which they communicate with each other. The amount of network traffic generated by PowerShare Catalog Servers is directly

proportional to the amount of information changing in the PowerShare Catalog structure.

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Tech Info Library Article Number:13555

Tech Info Library

AOCE: Are Messages Between Client and Server Encrypted (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Are Messages Between Client and Server Encrypted (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

Are E-Mail messages sent from a client to the message server, and then from the message server to the recipient client, encrypted using ASDSP? How is the mutual authentication between clients handled?

DISCUSSION -----

In a server-based environment, all communication between client and server is encrypted using ASDSP. If it's a server-less environment, there is no authentication or ASDSP. If the mail is being sent using Direct AppleTalk Mail, the message will not be encrypted, even if there is a server on the network. If two PowerTalk systems want to send messages between each other from within an application, that can be encrypted or not, depending on whether the application knows to call ASDSP instead of ADSP.

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Tech Info Library Article Number:13556

..TIL13557-AOCE-Where_is_the_RSA_Key_Pair_Created_10-93_(TA30298).pdf

AOCE: Where is the RSA Key Pair Created (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: Where is the RSA Key Pair Created (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

Is the RSA key pair created on the client, or at the Certifying Authority?

DISCUSSION -----

The private key is created using the DigiSign Utility on the client system. A key request is sent to the Certifying Authority (RSA, usually) who uses the request (based on the private key created on the client) to create a corresponding public key. This is placed in a signer approval file & sent back to the client. The user then uses the DigiSign Utility on the client system to merge the signer approval file with the private key and create a signer containing both key pairs.

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Tech Info Library Article Number:13557

AOCE: Support Issues Q & A (2/95)

Revised: 2/8/95
Security: Everyone

AOCE: Support Issues Q & A (2/95)

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Article Created: 4 October 1993
Article Reviewed/Updated: 8 February 1995

TOPIC ----------

This article contains support issue related questions and answers about the Apple Open Collaborative Environment (AOCE).

DISCUSSION ----------

Q) After I installed System 7 Pro, my Macintosh at startup is slower than before. Does it take so long because of the network activity of PowerTalk?
A) No, this is normal behavior because of the additional setup required with PowerTalk. It isn't really network related, it happens even if AppleTalk is turned off.

Q) I have forgotten the Access Code to my Key Chain, how do I create a new one?
A) If you have forgotten the Access Code to your Key Chain, or it has become corrupted, throw away the PowerTalk Setup preferences file from the Preferences Folder. If there are items in the mailbox, they show up again the next time the system goes through the startup process, even if the new Key Chain is set to a different name.

Q) What's the difference between a Password and an Access Code?
A) In the documentation there is a distinction between the two. Passwords are used for things like external mail systems, AppleShare file servers, and so on, while Access Code refers only to the PowerTalk Key Chain, which unlocks the other passwords.

Q) Direct AppleTalk doesn't tell you who sent the mail, only the computer's name from the Sharing Setup Control Panel.
A) Here are ways to resolve this:

- Place the user's name in the "Machine Name" field of the Sharing

Setup Control Panel to help identify mail senders.

- Create a new information card for the person; name it anything you want (for example, name it with their name), then drag their AppleTalk Info Card to the new Info Card you just created. Their AppleTalk address is added to the list of electronic addresses in the Info Card you created with a name that makes sense to you.

- Uncheck Direct AppleTalk Mail in the I'm At… dialog box under the Special menu. Mail can then only be sent through connections that are "turned on". If all mail is sent through a server, then the sender's name is included with the mail. If no server is available, then all access to the user's mailbox is disabled. This is handy if the user doesn't want mail dropped in his or her mailbox without user authentication - there is some room for abuse with non-authenticated mail.

Q) Information Cards and Aliases are easily confused. Information Cards for file servers allow access similar to Aliases. What is the difference?
A) Information Cards are not a hot link to a server but rather a document that contains the address of the server along with other user information. Information Cards only work under System 7 Pro, while Aliases work under all versions of System 7.x.

Q) If I threw away my Key Chain, how can I get it back?
A) Click on the Key Chain button in the PowerTalk Setup control panel, a new Key Chain is generated.

Q) How do I make new letterheads?
A) Documents saved as letterhead become new, potential letterheads.

Q) The mailbox Icon should change when there's mail or when there's a problem sending mail. Why isn't it?
A) Indication of mail in the mail box is set in the mail box preferences; the mailbox Icon does not change. The preferences box setting either beeps, flashes an alert, flashes an icon in the upper left corner, and so on.

Q) What do the different Information Card Icons mean for the same person?
A) Information Cards may provide information on a person, Macintosh, or File Server. A person may own all three types of Information Cards, with three different Information Card Icons representing different connections, all of which get information to the same mail box.

Q) What does it take to send and receive mail without a mail server?
A) You need System 7 Pro or System 7.5; it includes everything you need for server-less mail. No PowerShare is required.

Q) Is it OK to use PowerTalk for 20 or more people without a server?
A) Yes, it's fine to use PowerTalk with 20 or more clients in a server-less environment. However larger sites might want the central administration features.

Q) How do you remove an enclosure from a letter?
A) Here are a few suggestions:

- Simply drag the Icon representing the enclosure to the desktop; a copy of the enclosed file(s) is made.

- Throw it in the trash, if you want to get rid of it

- Drag it to the destination folder. System 7 Pro or System 7.5 adds a new feature which allows dragging between applications. Things can be dragged between Finder windows and the AOCE Mailer window.

Q) Can I change PowerShare service to the Key Chain by doing a shift click and drag of several items?
A) Services added to the Key Chain are added one by one; you cannot shift click and drag.

Q) Does the Views control panel change mail Icons to larger size?
A) Changing the List Views option in the Views control panel allows for larger Icons in your mail box.

Q) Why have I stopped receiving mail in my Mailbox?
A) If the amount of space available on your startup disk is less than 2 MB, your Mailbox will refuse new mail, even if the new mail is smaller than 2 MB. Deleting mail from your Mailbox will let new mail be received.

Article Change History:
08 Feb 1995 - Added System 7.5.
18 Nov 1994 - Added Q & A on mail not being received.
13 Oct 1994 - Added keyword; made several technical updates.
16 Nov 1993 - Added additional information.

Support Information Services

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Tech Info Library Article Number:13558

AOCE: Description and Technology Overview (10/94)

Revised: 10/13/94
Security: Everyone

AOCE: Description and Technology Overview (10/94)

==========

Article Created: 4 October 1993
Article Reviewed/Updated: 13 October 1994

TOPIC ----------

This article provides a technology overview of the Apple Open Collaborative Environment (AOCE).

DISCUSSION ----------

The Apple Open Collaberation Environment (AOCE) includes two products:

- PowerTalk
- PowerShare

PowerTalk

System 7 Pro with PowerTalk is an upgrade to System 7 that provides a unified framework for collaboration on the Macintosh computer.

The PowerTalk package includes System 7 extensions for collaborative services, and AppleMail, a letter application for sending and receiving messages. AppleMail is included to enable PowerTalk users to immediately take advantage of the collaborative features of System 7 with PowerTalk.

PowerTalk requires a hard drive. Apple recommends 5 MB of RAM for PowerTalk users.

PowerShare

PowerShare is the AOCE server product.

The PowerShare package provides server-based services. Only customers who require a server-based environment need to purchase the PowerShare package.

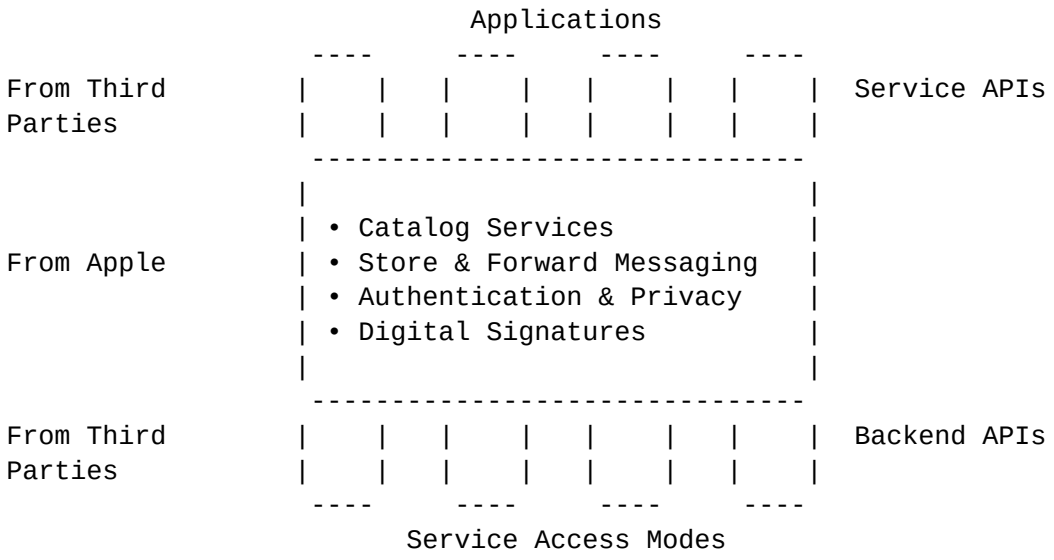
Basic collaboration services are available in the PowerTalk package.

Technology Overview

PowerTalk and PowerShare are the first Apple products to take advantage of the AOCE technology. PowerShare and System 7 with PowerTalk consist of a number of managers, toolbox packages, and new desktop facilities that provide catalog services, store and forward messaging and mail, authentication and privacy features, and digital signature capability.

Apple and Third Party Components

This diagram illustrates what comes from Apple and what comes from third parties.



What comes from Apple and what comes from third parties

NOTE: API = Application Program Interface

- Catalog Services

  PowerTalk catalog services can provide access to simple lists, which is only one of many types of information available through the PowerTalk catalogs. PowerTalk catalog services also provide access to data in any format from sounds to pictures to QuickTime movies. PowerTalk catalogs can provide access to services located on another Macintosh computer, an external directory service such as X.500, or a foreign file system such as a CD-ROM based database.

- Store and Forward Messaging

  Store and forward messaging is the ability to send messages to a server for later distribution or to hold the message locally until the destination is available to accept the incoming message. AOCE

messages can take the form of either letters exchanged between users or program to program communication.

- Authentication and Privacy

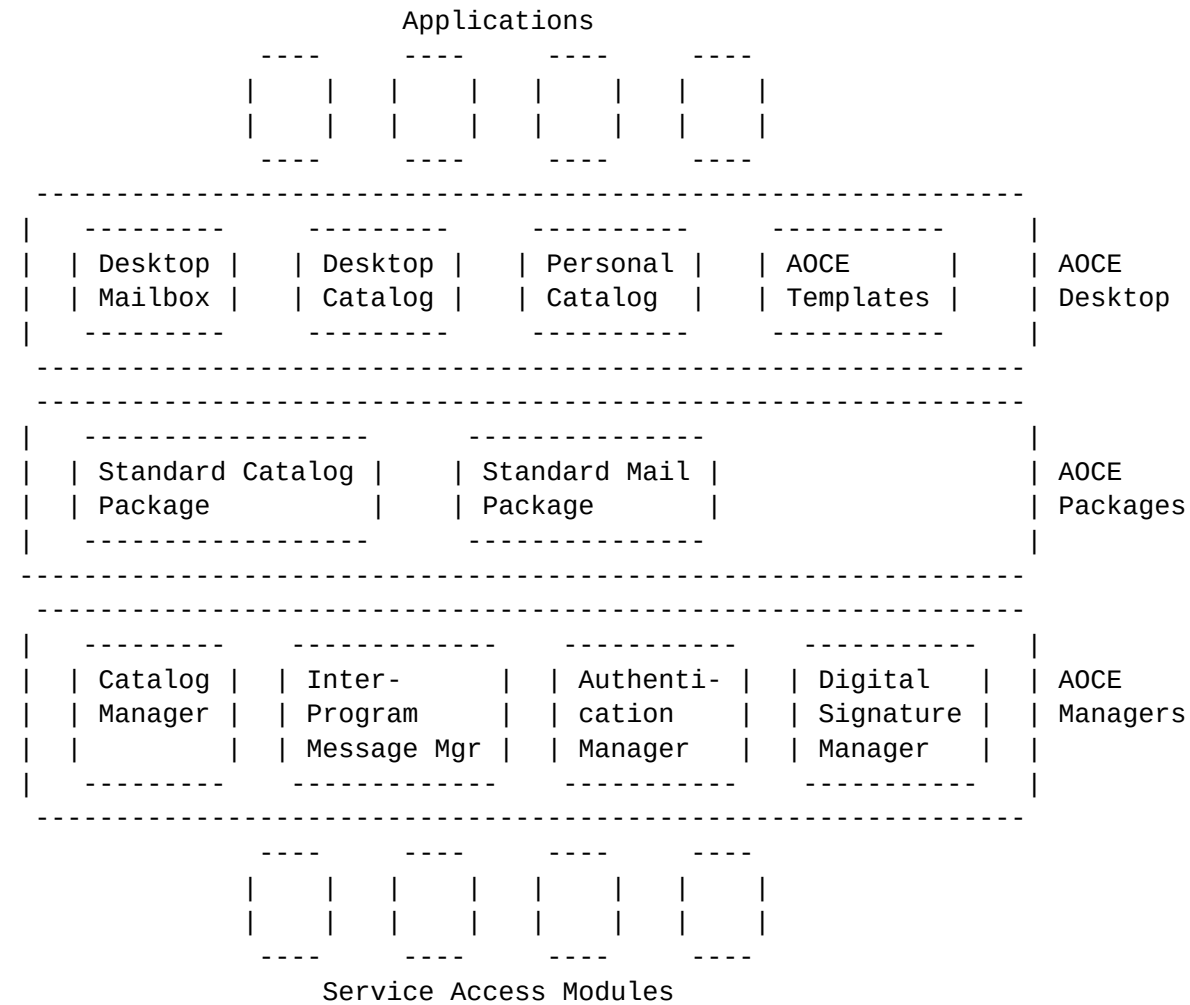
  Authentication services ensure that the communicating entities are who they claim to be. Privacy refers to a new protocol, AppleTalk Secure Data Stream Protocol (ASDSP) which prevents wire tapping.

- Digital Signatures

  Digital signatures provide a means of detecting whether data has been altered and of providing positive identification of the signer. They are especially useful in building automated workflow solutions.

AOCE Architecture

AOCE technology is built in several layers, as this diagram illustrates:



AOCE architecture

Inside the AOCE Toolbox are the managers and packages of the underlying

technology. AOCE software includes front end Application Program Interfaces (APIs) for developers to build collaborative features into existing end user applications or to build entirely new collaborative applications. AOCE technology also offers an open back end through Service Access Modules. Developers can use these APIs to connect AOCE users to existing messaging and catalog services or to new, as yet unknown, services.

The front end APIs provide a uniform way of accessing collaborative service from within third party applications. Building the services into the operating system preserves the Macintosh experience. End users access collaborative services in the same manner, no matter which vendor’s application is being used.

The open backend APIs of AOCE technology extend the reach of PowerTalk and PowerShare users to any messaging or catalog service. Service Access Modules (SAMs) make the technology fully extensible. When a new messaging or catalog standard appears, PowerTalk users can easily plug into the system through the use of a SAM.

Article Change History:
13 Oct 1994 - Added description of PowerTalk and PowerShare; added keyword.

Support Information Services

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Tech Info Library Article Number:13559

Tech Info Library

AOCE: To Use a PowerShare Server or Not (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: To Use a PowerShare Server or Not (10/93)

==========

Article Created: 4 October 1993

TOPIC -----

This article describes what requirements are needed in helping to determine if PowerShare Services are necessary in Apple Open Collaborative Environment (AOCE).

DISCUSSION -----

Not all PowerTalk users require a server-based environment. Stand-alone users or users in a small network will not require a server to take advantage of the package of collaboration services included in PowerTalk. Direct AppleTalk mail does not require a server. Neither does messaging using personal Mail Service Access Modules. For small workgroups who wish to communicate only with each other through AppleTalk or with the outside world through personal Mail Service Access Modules, there is no need for a server. A typical server-less AOCE installation will be one in which the AppleTalk and Personal Catalog features are sufficient for catalog services, personal Mail Service Access Modules are available for any external messaging, and security is not a critical issue.

However, if authentication and security is an issue for the customer, then a server-based environment is indicated. The PowerShare Catalog Server is required in order to take advantage of the authentication services and to utilize ASDSP across the network.

Some installations may also have a need for server-based messaging. Examples include installations where one Macintosh is shared by several users, and situations where users travel frequently and dial into one central point for messages.

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Tech Info Library Article Number:13560

AOCE: DigiSign What It Does (12/94)

Revised: 12/9/94
Security: Everyone

AOCE: DigiSign What It Does (12/94)

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Article Created: 04 October 1993
Article Reviewed/Updated: 09 December 1994

TOPIC -----

DigiSign is Apple’s implementation of digital signature technology. It is a way of electronically signing data. With a digital signature attached, a user can verify the signature to detect whether or not the data has been altered since the signature was attached. Signature verification also checks the validity of the signature itself, providing positive identification of who signed the data.

DISCUSSION -----

DigiSign has two goals:

- To provide a mechanism by which a user can detect whether or not a document has been altered since the time it was signed

- To positively identify the signer

Signing a document does not in any way encrypt data or prevent it from being altered. While the process of signing something does use encryption in the signature process, it is not possible to use DigiSign or Apple’s digital signature manager to encrypt data.

Signing a document does not prevent someone else from reading or altering the document. The data is not encrypted, just as it was before the signature was attached. Anyone can read it and anyone can make changes.

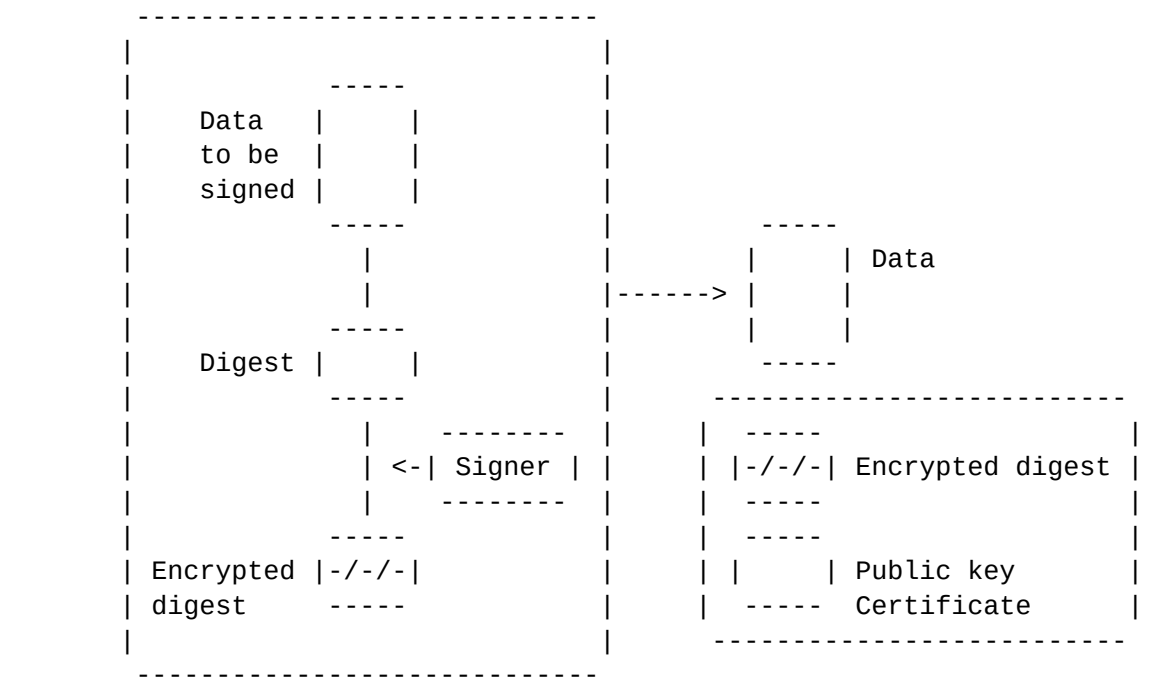
The process of verifying a signature detects whether or not changes have been made although it is not possible to discover what the changes were.

How to Sign Something

The process of signing something begins with the data to be signed. The digital signature manager creates a 16 byte digest. The digest is a highly sophisticated

checksum of the data. It is nearly impossible for two sets of data that differ in any way to produce the same digest.

This diagram ilustrates the signing process:



The signer file uses a private key from the signer file to encrypt the digest. The data itself is not encrypted. Only the digest of the data is encrypted.

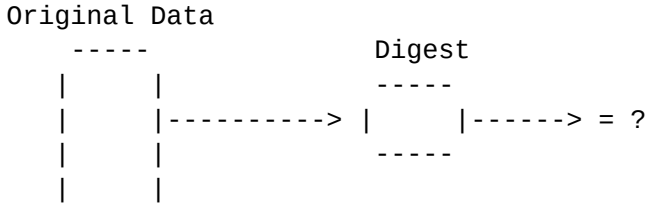
The resulting encrypted digest and a public key certificate are appended to the data file as a signature resource. The original data remains unchanged and unprotected from anyone reading the data or making changes to it. The only thing that is changed about the file is the addition of the signature resource.

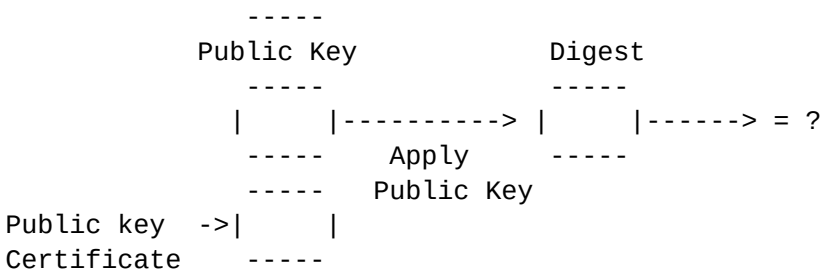
How to Verify Something

The process of verifying a signature begins with calculating a new digest of the original data. Next, the public key is retrieved from the public key certificate in the digital signature attached to the document. The public key is used to decrypt the encrypted version of the digest.

The two digests are then compared. If they match, the signature verifies. If they do not match, then something has been changed on the original document so that the digests are different.

This diagram illustrates the verification process:





The process of signature verification also verifies all signatures in the attached public key certificate. This is to ensure that the signature itself is valid and has not been altered.

Finder Signing

Third party applications will integrate digital signature technology into their products. For example, Shana Corporation will incorporate digital signature technology into their Informed Manager product to enable electronic authorization of forms.
PowerTalk users can sign entire files from the Finder by dragging a file to be signed onto a Signer file. Files signed from the Finder have a signature resource attached to them. The document is also locked. However, the file locking is not secure. In order to unlock the document, the user need only select the document, choose Get Info from the File menu and then uncheck the Locked check box. The purpose of locking the file is to prevent casual changes to the document, not to secure the file against any possible changes.
If the name of the file changes, the signature still verifies. The reason for this is that the document itself has not changed, only the name of the document.

- Validating a Signature

  A file signed from the Finder has a new icon in the Get Info window for the file the Verification button. Click this button and a DigiSign dialog box appears.

  To verify the signature, click the Verify button in the DigiSign dialog box. The signature is checked for validity. If the signature is verified a successful signature dialog box is displayed.

  If the signature fails to verify, a dialog displays stating, “The signature of ‘Document Name’ could not be verified. Either the file has been modified since it was signed or the signature itself has been altered”.

- Removing a Digital Signature

  To remove a digital signature from a document signed in the Finder, click the Remove button instead of the Verify button in the preceding process.

Article Change History:

09 Dec 1994 - Added keyword, reformatted, made numerous technical changes.

Support Information Services

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Tech Info Library Article Number:13561

Tech Info Library

PowerShare Collaboration Servers Description (10/93)

Revised: 9/30/93
Security: Everyone

PowerShare Collaboration Servers Description (10/93)

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Article Created: 4 October 1993

TOPIC ----------

This article describes the PowerShare Collaboration Servers.

DISCUSSION ----------

Features

- Easy administration
  - Provides consistency and ease of administration for large teams of PowerTalk users
  - Includes easy-to-use administrative utilities to streamline installation and management
  - Allows server management from any Macintosh on the network
  - Enables the network administrator to control access to shared catalogs
- Automatic network security
  - Authenticates PowerTalk users and PowerTalk-savvy applications
  - Encrypts network traffic between PowerTalk users and applications
- Scalability
  - Allows a network administrator to set up a single server in minutes
  - Provides the infrastructure to support large multiserver distributed systems
- Collaboration on demand

- Allows multiple users and applications to share PowerTalk catalogs and access modules

- Lets mobile PowerTalk users keep in touch with colleagues easily anytime, anywhere

Summary

PowerShare collaboration server software provides System 7 Pro PowerTalk users with server-based messaging, shared catalog, and network security services on AppleTalk networks. PowerShare provides the foundation on which organizations can build team productivity and workflow solutions.

The PowerShare Mail Server acts as a store-and-forward agent for PowerTalk messages, ensuring delivery even when the sender and recipient systems are not available at the same time. Mobile users can use AppleTalk Remote Access to dial in at any time to send and retrieve messages.

The PowerShare Catalog Server is a shared repository for collaborative information such as employee databases and corporate document templates. Storing PowerTalk catalogs on shared servers minimizes administrative overhead. PowerShare servers automatically authenticate PowerTalk users and encrypt their network traffic to ensure the privacy of sensitive information.

Multiple PowerShare servers can work together using distributed, replicated catalogs that provide higher performance and greater reliability. This makes PowerShare as useful for organizations with thousands of users as it is for small teams. Replicated catalogs are easy to manage because PowerShare automatically keeps them synchronized.

Software modules from other vendors allow PowerShare servers to connect with other messaging systems such as QuickMail from CE Software, Microsoft Mail, Internet/SMTP, and X.400. These gateways enable PowerTalk users to exchange mail with users on the other systems. Because the access modules reside on a PowerShare server instead of on individual systems, gateway management is simplified and the cost of providing access to all users is minimized.

PowerShare servers can act as the focus for collaborative applications ranging from basic electronic mail to sophisticated scheduling, project management, and business-forms routing. Independent software developers are creating innovative applications in all of these categories that take advantage of PowerTalk and PowerShare technology, enabling the deployment of a wide range of team productivity and workflow solutions. Network administrators will be able to manage multiple collaborative applications with a single catalog.

PowerShare collaboration server software can be installed on the same Macintosh computer as AppleShare or other server software, and can be administered from any Macintosh system on the network.

Technical Specifications

- PowerShare Mail Server
  - Provides server-based messaging services for PowerTalk users
  - Stores PowerTalk messages to ensure delivery when user systems come on line
- PowerShare Catalog Server
  - Stores collaborative information—such as group addresses, document templates, graphics, and sound—in shared catalogs
  - Authenticates users and encrypts their network traffic
  - Supports multiserver distributed systems
  - Replicates and synchronizes catalogs across multiple servers for higher performance and greater reliability
  - Lets you find, open, save, view, and create new shared catalogs
- PowerShare System Manager's Utility
  - Monitors mail and catalog server activity, user accounts, and stored messages
  - Provides system alerts to the administrator
  - Allows server management from any Macintosh system on the network
- Easy Setup
  - Automatically sets up basic PowerShare Mail and Catalog servers

System requirements

- Apple Macintosh personal computer with at least 4MB of RAM for each installed server (Mail and/or Catalog Server)
- Hard disk
- System software version 7.1.1 and utilities

Ordering Information

PowerShare Collaboration Servers
In the U.S., Order No. M1272LL/A
Outside the U.S., Order No. M1272Z/A

- System software version 7.1.1 and utilities

- PowerShare software version 1.0, including Mail Server, Catalog Server, System Manager's Utility, and Easy Setup application

- PowerShare System Manager's Guide

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Tech Info Library Article Number:13562

Tech Info Library

AOCE: PowerTalk Icons Presented On The Desktop (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: PowerTalk Icons Presented On The Desktop (10/93)

==========

Article Created: 4 October 1993

TOPIC --------------------

This article describes the new icons found on the desktop with PowerTalk.

DISCUSSION --------------------

PowerTalk puts three new icons on the desktop, the Catalogs icon, the Mailbox icon and the PowerTalk Key Chain.

Opening the Catalogs icon displays the different catalogs available. Examples include a PowerShare Catalog, the AppleTalk catalog, or an X.500 directory service.

The Mailbox contains all incoming and outgoing mail. Mail from any source, in any format is accessible through the Mailbox.

The PowerTalk Key Chain protects access to the services available through the Catalogs and Mailbox icons. The PowerTalk Key Chain provides users with one stop access to a variety of collaboration services.

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Tech Info Library Article Number:13563

AOCE: PowerTalk Key Chain Features (10/93)

Revised: 9/30/93
Security: Everyone

AOCE: PowerTalk Key Chain Features (10/93)

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Article Created: 4 October 1993

TOPIC --------------------

This article describes how the PowerTalk Key Chain protects access to the services available through Catalogs and Mailbox icons. The PowerTalk Key Chain provides users with one stop access to a variety of collaboration services.

DISCUSSION --------------------

In today's electronically connected world, a user may receive incoming messages from an overwhelming number of sources. It is not uncommon for employees to have accounts on a network mail system (for example, AppleLink, Internet, or other company mail system), a LAN mail system (for example, QuickMail), and voice mail. Logging into multiple message services can be time consuming as well as confusing.

The PowerTalk Key Chain makes it possible to access all of these services while remembering only one Access Code to access all of the other catalog and messaging services they may use.

The first time AOCE services are accessed after installation, the user will be prompted to enter an Access Code for the PowerTalk Key Chain.

The PowerTalk Key Chain protects access to other messaging and catalog services available through PowerTalk. In order to access services protected by PowerTalk, the user must enter the correct Access Code.

Unlike the Catalogs or In Tray icons, the PowerTalk Key Chain icon can be moved from the desktop. Once the PowerTalk Key Chain has been created, the user can move it to anywhere on the local disk.

Once the PowerTalk Key Chain has been configured, the user can configure access to other services into the PowerTalk Key Chain.

For example, the PowerTalk Key Chain can be configured to give a user access to messaging services available through both Direct AppleTalk mail and a PowerShare Mail Server. The Key Chain can also have a key for an AppleShare file server. The user has to configure access to the services once. After the initial configuration is complete, the user only has to remember the access code to their PowerTalk Key Chain to access all services linked to keys in the PowerTalk Key Chain.

- Changing The PowerTalk Key Chain Name
  To change the name of the PowerTalk Key Chain, click the PowerTalk Key Chain icon in the upper right hand corner of the PowerTalk Key Chain window.

  The user then has the option of entering either a new PowerTalk Key Chain name or a new Access Code.

- Automatically Locking The PowerTalk Key Chain
  The PowerTalk Key Chain must be unlocked each time the Macintosh computer boots. This prevents unauthorized use of the services protected by the PowerTalk Key Chain.

  The AOCE PowerTalk Key Chain will also lock itself after a period of inactivity. The timeout period can be controlled using the AOCE Setup control panel. By default, the automatic locking feature is turned off. To enable it, enter a number in the AOCE Setup control panel dialog box.

  If a user is going to be away from their Macintosh computer for a period of time and would like to prevent someone else from accessing the services protected by the PowerTalk Key Chain, it is possible to lock the PowerTalk Key Chain. To do this, select Lock Key Chain from the Special menu. Once the PowerTalk Key Chain has been locked, PowerTalk services will not be available on this Macintosh computer until the user provides the correct access code to unlock the PowerTalk Key Chain.

- Access Code Requirements
  The Access Code must be greater than six characters in length. Apple recommends that access codes include symbols or numbers as well as letters.

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Tech Info Library Article Number:13564

Tech Info Library

68LC040 Macintosh Computers: FPU Upgrade (7/95)

Revised: 7/6/95
Security: Everyone

68LC040 Macintosh Computers: FPU Upgrade (7/95)

==========

Article Created: 21 October 1993
Article Reviewed/Updated: 06 July 1995

TOPIC ----------

Can I add an FPU (floating point unit) to any of the following computers:
-Macintosh LC 475
-Performa 475 and 476
-Quadra 605
-Macintosh 57x Family
-Macintosh 630 Family

The following computers are in the Macintosh 57x family: Performa 575, Performa 577, Performa 578, and LC 575.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

DISCUSSION ----------

The Macintosh LC 475, Performa 475 and 476 and the Quadra 605 have a 25MHz 68LC040 microprocessor. Computers in the Macintosh 57x family and the Macintosh 630 family have a 33MHz 68LC040 microprocessor. In order to upgrade to a microprocessor with a floating point unit (FPU), it is necessary to remove the existing microprocessor from its socket, and replace it with a full 68040 microprocessor, which corresponds to the speed of the original 68LC040 processor. Unlike the LC III, these models have no specific FPU socket on the logic board.

Such an upgrade would not come from Apple. Apple has no plans to market an FPU upgrade, nor does Apple officially support this configuration

Article Change History:
07 Jul 1995 - Added Macintosh 57x and 630 families
11 Nov 1993 - Added note that Apple doesn't support third-party upgrade.

..TIL13565-68LC040_Macintosh_Computers-FPU_Upgrade_7-95_(TA30305).pdf

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13565

Tech Info Library

LC 475, Performa 475 & 476, Quadra 605: Custom ICs (10/93)

Revised: 10/27/93
Security: Everyone

LC 475, Performa 475 & 476, Quadra 605: Custom ICs (10/93)

==========

Article Created: 21 October 1993

TOPIC ----------

This article describes the custom integrated circuits (ICs) in the Macintosh LC 475, Performa 475 and 476, and Quadra 605.

DISCUSSION ----------

The Macintosh LC 475, Performa 475 and 476, and the Quadra 605 support VRAM-based video and utilize a MEMC Jr. memory controller.

The MEMC Junior IC

The MEMC Jr. (the Most Excellent Memory Controller Junior) chip is a 208-pin Apple-designed integrated circuit which controls video display processing as well as memory control. The result is improved performance compared to the Quadra 700, 900, and 950 video.

The LC 475 and the Quadra 605 use the same 15-pin connector for video output used by the Quadra 700 and 900, as well as other Apple systems.

The Apple AudioVision 14 Monitor requires an adapter which connects the monitor cable on one end to the individual input/output ports such as Video and ADB.

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Tech Info Library Article Number:13566

Tech Info Library

LC 475, Performa 475 & 476, Quadra 605: Expansion Slot (10/93)

Revised: 10/27/93
Security: Everyone

LC 475, Performa 475 & 476, Quadra 605: Expansion Slot (10/93)

==========

Article Created: 21 October 1993

TOPIC -----

This article describes the expansion slot in the Macintosh LC 475, Performa 475 and 476, and the Quadra 605.

DISCUSSION -----

The expansion slot in the Macintosh LC 475, Performa 475 and 476, and the Quadra 605 is not a true 040 PDS slot because it does not directly access the microprocessor bus. The expansion slot is an LC III compatible expansion connector: most cards that work with LC II, LC III, and LC 520 work with these systems. Examples: Ethernet cards for the LC Family, video cards for the LC family, and the Apple IIe Card.

Cards that are 030 specific, such as 030 accelerators or 030 cache cards, will not work with these models because they require direct access to the 68030 microprocessor. Those cards are intended to speed the 68030 microprocessor to higher performance levels that are already attainable with the 68040 microprocessor. However, accidentally plugging in an 030 accelerator or cache card will not cause any damage to your Macintosh.

Article change history:
13 October 1993 - Also compatible with LC II & LC 520 cards.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13567

Tech Info Library

Performa 400, 405, 410 and LC II: Differences (10/93)

Revised: 10/15/93
Security: Everyone

Performa 400, 405, 410 and LC II: Differences (10/93)

==========

Article Created: 18 October 1993

TOPIC -----

What are the differences between the Performa 400, 405, 410, and LC II?

DISCUSSION -----

The following table shows the differences between the Performa 400, 405, 410, and LC II. (The Performa 400 and LC II are discontinued models.)

	400	405	410	LC II
Processor	68030	68030	68030	68030
Clock Speed	16 MHz	16 MHz	16 MHz	16 MHz
FPU Socket	No	No	No	No
Std. RAM	4MB	4MB	4MB	4MB
Max. RAM	10MB	10MB	10MB	10MB
Std. Hard Drive	80MB	80MB	80MB	80MB
Display (1)	Separate	Included	Included	Separate
Std. VRAM (2)	512K	256K	512K	256K
Max. RAM	512K	512K	512K	512K
Resolution	Varies with Monitor	640 by 480	640 by 480	Varies with Monitor
Dot Pitch	.39mm/.29mm	.39mm	.39mm	.29mm
Slots	1 LC PDS	1 LC PDS	1 LC PDS	1 LC PDS
Modem	N/A	Included	Included	N/A
Min. System Software	7.0.1P	7.1P	7.1P	7.0.1

Market	Home	Home	Home	Education (3)

Notes
---
(1) The Apple Performa Display is included with the Performa 405 and Performa 410.
(2) 256K of VRAM will display 16 colors. 512K of VRAM will display 256 colors.
(3) As of October 1993, The Macintosh LC line has been repositioned for the Education market. The LC II however, was offered to all markets before it was discontinued.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13568

Tech Info Library

LC III & 475, Performa 475 & 476, Q 605: How They Differ (11/93)

Revised: 11/10/93
Security: Everyone

LC III & 475, Performa 475 & 476, Q 605: How They Differ (11/93)

==========

Article Created: 21 October 1993
Article Reviewed/Updated: 10 November 1993

TOPIC -----

This article compares the features of five similar Macintosh models: the Macintosh LC III, the Macintosh LC 475, the Performa 475, the Performa 476, and the Quadra 605. These five models have similar weight and dimensions. Each has a SCSI port and a single slot.

DISCUSSION -----

	LC III	LC 475	P 475	P 476	Q 605
Market	schools	schools	home	home	business
Processor	68030	68LC040	68LC040	68LC040	68LC040
Clock Speed	25 MHz	25 MHz	25 MHz	25 MHz	25 MHz
FPU Socket	yes	no (5)	no (5)	no (5)	no (5)
Std. RAM	4MB	4MB	4MB	4MB	4MB
Max. RAM	36MB	36MB	36MB	36MB	36MB
Std. Hard Drive	80MB	80/160MB	160MB	230MB	80/160MB
Display	Separate (1)	Separate (1)	Bundled	Bundled	Separate (1)
Display Support	Up to 16"	All Apple displays	All Apple displays	All Apple displays	All Apple displays
VRAM	512/1MB	512/1MB	512/1MB	512/1MB	512/1MB

Colors	256 (2) Up to 16-bit on 14"	256 (3) Up to 16-bit on 16"	256 (3) Up to 16-bit on 16"	256 (3) Up to 16-bit on 16"	256 (3) Up to 16-bit on 16"
PDS	one LC PDS	one LC III-compat. PDS	one LC III-compat. PDS	one LC III-compat. PDS	one LC III-compat. PDS
Modem Incl.	no	no	yes	yes	no
System SW	7.1	7.1	7.1P	7.1P	7.1
Bundled Apps	no	no	yes (4)	yes (4)	no

Notes:
(1) The Performa models are bundled with the Macintosh Performa Display; the LC models can be used with a variety of Apple and third-party displays.

(2) Can be upgraded to 32,000 colors with VRAM upgrade from 512K to 768K.

(3) Can be upgraded to 32,000 colors with VRAM upgrade from 512K to 1MB.

(4) The Performa models are shipped with a selection of application software appropriate to the target market and resale channel.

(5) These systems come with a 68LC040 that has no FPU. A qualified technician can remove it and replace it with a 68040RC, which includes an FPU; Apple neither offers nor supports such an upgrade.

Article Change History:
10/8/93 - updated to correct technical inaccuracies.
11/10/93 - added details on FPU upgrade.

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Tech Info Library Article Number:13569

Tech Info Library

Macintosh LC 475: Description (6/95)

Revised: 6/13/95
Security: Everyone

Macintosh LC 475: Description (6/95)

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Article Created: 1 October 1993
Articel Reviewed/Updated: 13 June 1995

TOPIC ----------

This article is an overview of the Apple Macintosh LC 475 personal computer.

DISCUSSION ----------

Summary

The Macintosh LC 475 is the new fast flexible affordable computer system for working, learning, and productivity.

It's the first LC model that uses the Motorola 68040 processor, making it more than twice as fast as the LC III. It has many features that are expensive options on other computers, including stereo sound, built-in networking, and support for all Apple and various third-party displays. It can display up to 256 colors on all Apple displays, and with additional video RAM, more than 32,000 colors on the 14-inch and 16-inch Macintosh color displays. The built-in Apple SuperDrive lets you work with documents created in different computing environments: it can read from, and write to, Windows, MS-DOS, OS/2, and Apple II ProDOS disks. There's an expansion slot for special options, such as video capture, Apple IIe emulation, or Ethernet networking. Multiple ports let you easily add peripherals such as a high-capacity CD-ROM drive, scanner, and modem. The LC 475 is fully compliant with the EPA's Energy Star program.

Features

• 25-MHz 68LC040 microprocessor
• 4MB of RAM on board, expandable to 36MB
• Support for all Apple and many third-party displays
• 256 colors, expandable to 32,768 with VRAM upgrade

Expansion

• Slot supports most Macintosh LC II, LC III, and LC 520 expansion cards
• Seven built-in ports for peripherals

System Software

System software version 7.1 with multitasking, file sharing, QuickTime, Balloon Help, and TrueType.

Networking

• Built-in AppleTalk networking
• File sharing without a dedicated server

Compatibility

Reads Macintosh, Windows, MS-DOS, OS/2, and ProDOS floppy disk formats

Ordering Information

Order No. M1818LL/A
• Macintosh LC 475 computer with 4MB RAM, 512K VRAM, built-in 1.4MB Apple SuperDrive, internal 80MB hard drive, mouse, manuals (no keyboard)

Order No. M1819LL/A
• Macintosh LC 475 computer with 8MB RAM, 512K VRAM, built-in 1.4MB Apple SuperDrive, internal 160MB hard drive, mouse, manuals (no keyboard)

Order No. M1944LL/A
• Macintosh LC 475 computer with 4MB RAM, 512K VRAM, built-in 1.4MB Apple SuperDrive, internal 80MB hard drive, mouse (no disks, no manuals, no keyboard)

Macintosh LC 475 Education Accessory Kit
Order No. M1945LL/A

VRAM Expansion Kit
part number 661-1021
(Requires two kits for expansion to 1MB VRAM)

DRAM Expansion Kit
Order No. M1507LL/A (4MB)
Order No. M1508LL/A (8MB)

Apple PlainTalk Microphone
Order No. M9060LL/A

Article Change History:
13 Jun 1995 - Reviewed for technical accuracy.
02 Nov 1993 - Corrected processor name to 68LC040
17 Jan 1994 - Corrected part number

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Tech Info Library Article Number:13570

Tech Info Library

Macintosh LC 475: Displays (10/93)

Revised: 10/14/93
Security: Everyone

Macintosh LC 475: Displays (10/93)

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Article Created: 1 October 1993

TOPIC ----------

This article describes display options for the Macintosh LC 475 computer system.

DISCUSSION ----------

512K VRAM in SIMMs (for 256 colors) is standard. VRAM is expandable to 1MB for 32,000 colors.

The Macintosh LC 475 works with all Apple and many third-party displays from 12-inch to 21-inch, including portrait displays and VGA monitors. Some examples:

- Macintosh 12" RGB Display

  with 512K of VRAM:
  512 by 384 pixels with 1, 2, 4, 8, or 16 bits per pixel
  (thousands of colors/256 grays)

  with 1MB of VRAM:
  512 by 384 pixels 1, 2, 4, 8, or 16 bits per pixel
  (thousands of colors/256 grays)

- Macintosh 12-inch Monochrome Display, AppleColor High-Resolution Monitor (13-inch), and Macintosh Color Display (14-inch)

  with 512K of VRAM:
  640 by 480 pixels with 1, 2, 4, or 8 bits per pixel
  (256 colors/256 grays)

  with 1MB of VRAM:
  640 by 480 pixels 1, 2, 4, 8, or 16 bits per pixel
  (thousands of colors/256 grays)

- Macintosh Color Display
  with 512K of VRAM:
  640 by 480 pixels with 1, 2, 4, or 8 bits per pixel
  (256 colors/256 grays)

  with 1MB of VRAM:
  640 by 480 pixels 1, 2, 4, 8, or 16 bits per pixel
  (thousands of colors/256 grays)

- Macintosh Portrait Display (15-inch)

  with 512K of VRAM:
  640 by 870 pixels with 1, 2, or 4 bits per pixel
  (16 grays)

  with 1MB of VRAM:
  640 by 870 pixels 1, 2, 4, or 8 bits per pixel
  (256 grays)

- Macintosh 16-inch Color Display

  with 512K of VRAM:
  832 by 624 pixels with 1, 2, 4, or 8 bits per pixel
  (256 colors/grays)

  with 1MB of VRAM:
  832 by 624 pixels 1, 2, 4, 8, or 16 bits per pixel
  (thousands of colors/grays)

- Macintosh 21-inch Color Display

  with 512K of VRAM:
  1152 by 870 pixels with 1, 2, or 4 bits per pixel
  (16 colors/grays)

  with 1MB of VRAM:
  1152 by 870 pixels 1, 2, 4, or 8 bits per pixel
  (256 colors/grays)

- VGA Monitors (with a special adapter cable)

  with 512K of VRAM:
  640 by 480 pixels with 1, 2, 4, or 8 bits per pixel
  (256 colors/256 grays)

  with 1MB of VRAM:
  640 by 480 pixels 1, 2, 4, 8, or 16 bits per pixel
  (thousands of colors/256 grays)

Other Apple and non-Apple monitors may also be supported, if used in conjunction with expansion cards or adapters. See your authorized Apple service provider for details.

Article change History:
13 October 1993 - added Macintosh Color Display

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Tech Info Library Article Number:13571

Tech Info Library

FTP Software (9/93)

Revised: 10/1/93
Security: Everyone

FTP Software (9/93)

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Article Created: 27 September 1993

FTP Software
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26 Princess Street
Wakefield, MA 01880

617-246-0900

617-246-0901 FAX

617-246-2920 Tech Support

Company Profile:
Make an equivalent of MacTCP for IBM PCs and clones.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13572

Tech Info Library

Macintosh LC 475: Logic Board Upgrade (Discontinued)

Revised: 7/11/95
Security: Everyone

Macintosh LC 475: Logic Board Upgrade (Discontinued)

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Article Created: 1 October 1993
Article Reviewed/Updated: 11 July 1995

TOPIC ----------

A Macintosh LC II or Macintosh LC III can be upgraded to a Macintosh LC 475 with a logic board upgrade. The upgrade kit can also be used to upgrade a Performa 400, 405, 410, 430, 450, 460, 466, or 467.

There is no kit for upgrading a Macintosh LC to a Macintosh LC 475, but a Macintosh LC can be upgraded to a Macintosh LC III.

** IMPORTANT NOTE **
Apple discontinued this logic board upgrade in June 1995. There may be some third party resellers who still carry this logic board upgrade, but it is no longer available directly from Apple Computer, Inc. or Apple Authorized resellers.

DISCUSSION ----------

Contents

- Macintosh LC 475 logic board
- Name badge sheet
- Getting Started manual
- Install Me First disk
- Disks Tools disk
- Agency approval label
- Resource Guide
- Product return form

The kit does not include system software. Customers who have already upgraded System software to version 7.1 can use it with their logic board upgrade. Customers who have not upgraded to system 7.1 will need to purchase it.

Ordering Information

M2139 Macintosh LC 475 Logic Board Upgrade

Article Change History:
11 Jul 1995 - Added information about upgrade being discontinued.
19 Oct 1993 - Added list of Performa models that can use this kit.
04 Jan 1994 - Added note that the kit is not yet available.

Support Information Services

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Tech Info Library Article Number:13573

Tech Info Library

Macintosh LC 475: Specifications (8/95)

Revised: 8/3/95
Security: Everyone

Macintosh LC 475: Specifications (8/95)

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Article Created: 1 October 1993
Article Reviewed/Updated: 03 August 1995

TOPIC ----------

This article provides the technical specifications for the Macintosh LC 475 computer system.

DISCUSSION ----------

Microprocessor

- 68LC040, 32-bit architecture, 25 mHz clock frequency
  Can be upgraded to full 68040, which includes FPU. (Such an upgrade would not come from Apple. Apple has no plans to market an FPU upgrade, nor does Apple officially support this configuration).
- CMOS custom clock/calendar with long-life lithium battery

Memory

- 4MB RAM, expandable to 36MB via 72-pin socket. Upgrade with 1MB, 4MB, 16MB single-sided SIMMs; or 2MB, 4MB, or 32MB double-sided SIMMs. Possible configurations are 4MB, 5MB, 6MB, 8MB, 12MB, 20MB, and 36MB. SIMMs are the same as those used in Macintosh LC III, and Centris/Quadra 610 and 650.

- 512K VRAM for 256 colors, expandable to 1MB for 32,000 colors

Displays

The LC 475 works with all Apple and many third-party displays from 12-inch to 21-inch, including VGA and portrait displays. A separate Tech Info Library article provides details.

Storage

- Built-in Apple SuperDrive 1.4MB high-density floppy disk drive, reads

disks from Macintosh, Apple II, MS-DOS, and Windows systems
• Internal 80MB or 160MB SCSI hard disk drive
• Optional external SCSI hard disk drives (several capacities available)
• Optional external AppleCD CD-ROM drive

Electrical Requirements

• Line voltage: 90 to 240 volts AC, RMS single-phase
• Frequency: 50 to 60 Hz
• Power: 30 watts maximum, not including display power

Interfaces

• One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other devices (up to three devices) daisy-chained through a low-speed, synchronous serial bus
• Two serial (RS-232/RS-422) ports, 230 kilobits per second maximum (up to 920 Kbits per second if clocked externally)
• SCSI interface for connecting up to six external devices
• Video port supports RGB and monochrome monitors of various sizes and resolutions
• Sound output port for external audio amplifier or headphones
• Sound input port for monaural sound input - Requires Plaintalk Microphone (monaural 8-bit sound, sampled at 22 or 11 kHz)
• Internal expansion slot for one expansion card, which can accommodate 96-pin (as in LC II) or 114-pin (as in LC III) expansion cards. Accepts Apple IIe Card.

Keyboard and Mouse

• ADB keyboard not included; several models available
• Apple ADB Mouse II

Apple Desktop Bus Power Requirements

• Maximum current draw for all ADB devices: 500 milliamperes (mA)
• Recommended maximum of three ADB devices
• Mouse draws 10 mA
• Keyboard draws 25 to 80 mA, depending on model

Sound Generator

Stereo 8-bit sound capable of driving stereo headphones or other stereo equipment through the sound jack.

Software

System Software 7.1 with Enabler 065

Disability Access

• CloseView, Easy Access, and "visible beep" software are built in.
• Third-party options provide other alternative input and output devices

Size and Weight

- Main Unit
  Weight: 8.8 lb. (4.0 kg)
  Height: 3.2 inches (81 mm)
  Width: 12.2 inches (310 mm)
  Depth: 15.0 inches (382 mm)
- Mouse
  Weight: 4 oz. (0.10 kg)
  Height: 1.3 inches (33 mm)
  Width: 2.4 inches (61.7 mm)
  Depth: 4.2 inches (107.3 mm)

Environment

- Operating temperature: 10 to 40 C (50 to 104 F)
- Storage temperature: -40 to 47 C (-40 to 116.6 F)
- Relative humidity: 20% to 95% (noncondensing)
- Maximum altitude: 4722 m (15,000 ft.)

Article Change History:
03 Aug 1995 - Added information on Plaintalk Microphone requirements.
08 Oct 1993 - Deleted incorrect reference to FPU socket and VRAM expansion.
13 Oct 1993 - Deleted reference to keyboard, which is not included.

Support Information Services

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Tech Info Library Article Number:13575

Tech Info Library

Performa 475 and 476: Description (10/93)

Revised: 10/15/93
Security: Everyone

Performa 475 and 476: Description (10/93)

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Article Created: 1 October 1993

TOPIC ----------

This article is an overview of the Macintosh Performa 475 and Performa 476 personal computers.

DISCUSSION ----------

Summary

These two products differ in three ways:
• Hard drive capacity
• Application software installed
• Where sold

The Performa 475 and 476 have many features that are expensive options on other computers, including stereo sound, built-in networking, and support for all Apple and various third-party displays. They can display up to 256 colors on all Apple displays, and with additional video RAM, more than 32,000 colors on the 14-inch and 16-inch Macintosh color displays. The built-in Apple SuperDrive lets you work with documents created in different computing environments: it can read from, and write to, Windows, MS-DOS, OS/2, and Apple II ProDOS disks. There's an expansion slot for special options, such as video capture, Apple IIe emulation, or Ethernet networking. Multiple ports let you easily add peripherals such as an external hard drive, high-capacity CD-ROM drive, and scanner.

They are fully compliant with the EPA's Energy Star program.

Features

• 25-MHz 68LC040 microprocessor
• 4MB of RAM on board, expandable to 36MB
• Hard drive: Performa 475 160MB, Performa 476 230MB
• Support for all Apple and many third-party displays

- 256 colors, expandable to 32,768 with VRAM upgrade

Expansion

- Slot supports most Macintosh LC II, LC III, and LC 520 expansion cards
- Seven built-in ports for peripherals

Software

- System software version 7.1P3 with multitasking, file sharing, QuickTime, Balloon Help, and TrueType.
- At Ease software lets adults share the computer with children -- while protecting valuable data.
- A variety of application software already installed.
- Launcher provides easy launching of applications, and provides customers with easy access to service and support assistance, users tips, etc.

Networking

- Built-in AppleTalk networking
- File sharing without a dedicated server

Compatibility

Reads Macintosh, Windows, MS-DOS, OS/2, and ProDOS floppy disk formats

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Tech Info Library Article Number:13577

Tech Info Library

Performa 475 & 476: Specifications (8/95)

Revised: 8/17/95
Security: Everyone

Performa 475 & 476: Specifications (8/95)

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Article Created: 1 October 1993
Article Reviewed/Updated: 15 August 1995

TOPIC ----------

This article provides the technical specifications for the Macintosh Performa 475 and Performa 476 computer systems. These two products differ in three ways:

- Hard drive capacity
- Application software installed
- Where sold

DISCUSSION ----------

Microprocessor

- 68LC040, 32-bit architecture, 25 mHz clock frequency
- CMOS custom clock/calendar with long-life lithium battery

Memory

4MB RAM, expandable to 36MB
512K VRAM for 256 colors, expandable to 1MB for 32,000 colors

Display

- Macintosh Performa Plus Display (14 inch)

  with 512K of VRAM:
  640 x 480 pixels with 1, 2, 4, or 8 bits per pixel
  (256 colors/grays)

  with 1MB of VRAM:
  640 by 480 pixels with 1, 2, 4, 8, or 16 bits per pixel
  (thousands of colors/256 grays)

Storage

- Built-in Apple SuperDrive 1.4MB high-density floppy disk drive, reads disks from Macintosh, Apple II, MS-DOS, and Windows systems
- Performa 475: internal 160MB SCSI hard disk drive
  Performa 476: internal 230MB SCSI hard disk drive
- Optional external SCSI hard disk drives (several capacities available)
- Optional external AppleCD CD-ROM drive

Modem

- TelePort/Bronze for Macintosh Performa (from Global Village Communication, Inc.)
- GlobalFax software (send-only fax) for 9600-baud faxing from any application to fax machines worldwide (upgradable to receive fax via software)
- Modem also serves as 300/1200/2400-baud data modem
- No separate power adapter required

Power Input

- Line voltage: 90 to 240 volts AC, RMS single-phase
- Frequency: 50 to 60 Hz
- Power: 30 watts maximum, not including display power

Interfaces

- One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other devices (up to three devices) daisy-chained through a low-speed, synchronous serial bus
- Two serial (RS-232/RS-422) ports, 230 kilobits per second maximum (up to 920 Kbits per second if clocked externally)
- SCSI interface for connecting up to six external devices
- Video port supports shadowmask, RGB, and monochrome displays of various sizes and resolutions
- Sound output port (stereo) for external audio amplifier or headphones
- Sound input port for monaural sound input* (monaural 8-bit sound, sampled at 22 or 11 kHz)
- Internal PDS expansion slot for one expansion card

*NOTE:
The Apple PlainTalk Microphone, which is sold as a standalone product, is compatible with these systems. These products cannot use the older style low-level output microphone used on previous Macintosh models.

Keyboard and Mouse

- Apple Desktop Bus (ADB) keyboard with numeric keypad and two-level tilt adjustment
- Apple ADB Mouse II

Apple Desktop Bus Power Requirements

- Maximum current draw for all ADB devices: 200 milliamperes (mA)
- Recommended maximum of three ADB devices
- Mouse draws 10 mA
- Standard keyboard draws 25 mA (third-party keyboards draw up to 80 mA)

Sound Generator

- Stereo 8-bit sound that can drive stereo headphones or other stereo equipment through the sound jack.

Software

- Macintosh System Software version 7.1P3, designed specifically for Performa computers.
- At Ease software lets adults share the computer with children -- while protecting valuable data.
- Macintosh PC Exchange lets you work with MS-DOS and Windows disks.
- Application software: a selection of productivity and communication tools already installed on the hard drive.
- Launcher software provides easy way to launch applications, and provides easy access to service and support information, user tips, etc.

Disability Access

- CloseView, Easy Access, and "visible beep" software are built in.
- Third-party options provide other alternative input and output devices

Size and Weight

- Main Unit
  Weight: 8.8 lb. (4.0 kg)
  Height: 3.2 inches (81 mm)
  Width: 12.2 inches (310 mm)
  Depth: 15.0 inches (382 mm)
- Mouse
  Weight: 4 oz. (0.10 kg)
  Height: 1.3 inches (33 mm)
  Width: 2.4 inches (61.7 mm)
  Depth: 4.2 inches (107.3 mm)
- Keyboard
  Weight: 2.2 lb. (1 kg)
  Height: 1.8 inches (44 mm)
  Width: 16.5 inches (418 mm)
  Depth: 5.6 inches (142 mm)

Environment

- Operating temperature: 10 to 40° C (50 to 104° F)
- Storage temperature: -40 to 47° C (-40 to 116.6° F)
- Relative humidity: 20% to 80% (noncondensing)
- Maximum altitude: 3048 m (10,000 ft.)

Service and Support

- One year limited warranty
- One year free in-home service
- Toll-free help line
- Support for non-Apple software is provided by the respective software publishers.

Article Change History:
15 Aug 1995 - Included PlainTalk microphone information.
26 Jul 1994 - Expanded sound output information.
24 Feb 1994 - Corrected ADB amperage rating

Support Information Services

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Tech Info Library Article Number:13580

Tech Info Library

Portable StyleWriter: Undocumented Self Tests (10/93)

Revised: 10/1/93
Security: Everyone

Portable StyleWriter: Undocumented Self Tests (10/93)

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Article Created: 1 October 1993

TOPIC -----

This article describes additional self test information that is not documented in the Owner's manual.

DISCUSSION -----

Make sure paper is loaded into the printer first. All of the tests are continuous. To stop the tests, turn off the printer.

1: Power on the printer. After the beep let up on the power button, press the "PITCH" button and hold it until you hear another beep. Then, let up on the "PITCH" button. The printer will print a sample of the 11 built-in fonts for the CANON BJ-10e.

2: Power on the printer. After the beep, let up the power button. Press the "LF/FF" button and hold it down until you hear another beep. Then let up on the "LF/FF" button. The printer will print a "barber pole" test print.

3: Power on the printer while holding down the "ON LINE" and "LF/FF" buttons. After the first beep, let up on the power button. After the second beep let go of the "ON LINE" and "LF/FF" buttons. The printer will print rows of "H"s.

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Tech Info Library Article Number:13581

Tech Info Library

Performa 450, 460, 466, 467 & Mac LC III: Differences (10/93)

Revised: 10/15/93
Security: Everyone

Performa 450, 460, 466, 467 & Mac LC III: Differences (10/93)

==========

Article Created: 1 October 1993

TOPIC -----

What are the differences between the Performa 450, 460, 466, 467 & Macintosh LC III?

DISCUSSION -----

The following table shows the differences between the Performa 450, 460, 466, 467, and Macintosh LC III.

	450	460	466	467	LC III
Processor	68030	68030	68030	68030	68030
Clock Speed	25 MHz	33 MHz	33 MHz	33 MHz	25 MHz
FPU Socket	Yes	Yes	Yes	Yes	Yes
Std. RAM	4MB	4MB	4MB	4MB	4MB
Max. RAM	36MB	36MB	36MB	36MB	36MB
Std. Hard Drive	120MB	80MB	160MB	160MB	40/80/120MB
Display*	Performa +	Performa	Performa +	Performa +	Separate
Std. VRAM	512K	512K	512K	512K	512K
Max. VRAM	786K	786K	786K	786K	786K
Slots	one	one	one	one	one
Modem^	Included	Included	Included	Included	N/A
Min. System Software	7.1P	7.1P3	7.1P3	7.1P3	7.1
Bundled Software~	Yes	Yes	Yes	Yes	No

Market	Home	Home	Home	Home	Education

KEY:
---
* - The Apple Performa Display is a 14-inch display with 640 by 480 pixels and a .39 mm dot pitch.
The Apple Performa Plus Display is a 14-inch display with 640 by 480 pixels and a .28 mm (Performa 466 and 467) or .29 mm (Performa 450) dot pitch.

^ - Each computer with included modem has a Global Village TelePort Bronze fax/data modem (2400 bps data/9600 bps fax).

~ - Each computer with bundled software has a set of application, communication, and utility software. This software varies between models.

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Tech Info Library Article Number:13582

Tech Info Library

Performa 460, 466, 467: RAM and VRAM Specifications (10/93)

Revised: 10/15/93
Security: Everyone

Performa 460, 466, 467: RAM and VRAM Specifications (10/93)

==========

Article Created: 1 October 1993

TOPIC ----------

This article describes the RAM and VRAM specifications for the Performa 460, 466 and 467.

DISCUSSION ----------

RAM

The Performa 460, 466 and 467 has 4 megabytes (MB) of memory soldered to the logic board and a single 72-pin SIMM RAM expansion socket.

The Performa 460, 466 and 467 can accomodate 1MB, 2MB, 4MB, 8MB, 16MB and 32MB RAM SIMMs. They do not support 256K SIMMs. You must use 72-pin fast-paged mode SIMMs with 80ns access time or faster.

Possible RAM configurations are 4MB, 5MB, 6MB, 8MB, 12MB, 20MB, and 36MB.

VRAM

The Performa 460, 466 and 467 have 512K of VRAM soldered to their logic board and have a single VRAM expansion socket. They can be expanded to 768K by adding a single 100ns 256K VRAM SIMM.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13583

Tech Info Library

System 7 Pro: Description (10/93)

Revised: 10/1/93
Security: Everyone

System 7 Pro: Description (10/93)

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Article Created: 4 October 1993

TOPIC ----------

System 7 Pro provides the following software in one package:

- System 7 version 7.1.1
- PowerTalk 1.0
- AppleScript 1.0
- QuickTime 1.6.1

DISCUSSION ----------

System 7 Pro includes everything that's in System 7.1, plus PowerTalk (AOCE collaboration services for individuals), AppleScript (runtime and script editor), and QuickTime 1.6.1. System 7 Pro doesn't replace System 7.1 -— it enhances the functionality of the base system software release.

System 7

System 7 features include:

- Faster access to files and applications with Finder tools such as Find, the Apple Menu, and aliases
- Publish and Subscribe functions for automatic updating of documents
- Support for Apple TrueType technology
- One-button installation

PowerTalk

PowerTalk allows you to correspond and work with others using built-in mail and collaboration services. Use your modem or an AppleTalk network to send messages of any type -- including text, images, video, and sound -- to other System 7 Pro users.

With PowerTalk, you can send items from your desktop by dragging and dropping its icon onto an information-card icon for the recipient. You use this same method whether you're sending the item to other PowerTalk recipients or using access software provided by other vendors to reach fax or other electronic-mail destinations.

Incoming mail items arrive in a single universal desktop mailbox directly on the Macintosh desktop. You can open items, copy them to folders, and otherwise manipulate them as you would any other desktop objects.

PowerTalk also lets you create catalogs of information that facilitate your collaboration with others, from simple address lists to collections of images or sounds.

The PowerTalk "key chain" lets you protect and access your mailbox, AppleShare volumes, and other services using a single access code. Commercial-grade electronic-signature support is provided via PowerTalk's DigiSign software.

PowerTalk features:

- Exchange mail with other PowerTalk users without a server or system administrator.
- Send items with a "drag and drop" of desktop icons.
- Send a single document over multiple delivery mechanisms (fax, electronic mail, and so on) with a single command.
- Use PowerTalk catalogs to organize the information you refer to most often when collaborating with others.
- Implement basic mail services with the AppleMail letter application, which supports text, images, video, and sound.
- Protect your mailbox and other PowerTalk services with a single access code.
- Use DigiSign software to approve documents electronically.
- Use PowerTalk-savvy applications to further automate and extend your messaging capabilities.
- Obtain additional authentication and encryption capabilities with optional PowerShare servers.
- Receive mail from multiple sources in a single desktop mailbox, with an In Tray for viewing and organizing all kinds of correspondence sent to you and an Out Tray for viewing the correspondence you've sent.

AppleScript

AppleScript is a system-level "macro" language that lets you invoke pre-scripted automated tasks.

AppleScript features:

- Automate routine tasks.
- Create custom solutions using off-the-shelf AppleScript-savvy applications.

- Use a consistent scripting language across all AppleScript-savvy applications.

QuickTime

QuickTime is Apple's multimedia technology. It lets you view, copy, and paste video, animations, images, and sound as easily as you manipulate text.

QuickTime features:

- Enables you to edit and play back QuickTime movie files.
- Uses a cross-platform file format that allows playing back Macintosh QuickTime files on Microsoft Windows systems using QuickTime for Windows.
- Offers built-in ability to compress video, animation, and still-image files to a fraction of their original size.
- Supports Kodak's PhotoCD format.
- Lets you import audio files from CDs using an AppleCD 300 or 300i CD-ROM drive and add them to QuickTime movies using the QuickTime standard file-preview dialog box from any QuickTime-compatible application.
- Supports PowerBook systems that have 16-level gray-scale display.

System Requirements

You can install System 7 Pro in any Macintosh computer with 4MB of RAM (5MB of RAM is recommended). System 7 Pro doesn't run on the Macintosh 128, Macintosh 512, Macintosh Plus, or Macintosh XL.

- Apple Macintosh or PowerBook computer with at least 4MB of RAM (5MB recommended)
- Hard disk
- Apple SuperDrive floppy disk drive

Installation

If you already have system software installed on your disk, the System 7 Pro Installer will update it, leaving your existing fonts, desk accessories, extensions, and so on untouched.

Ordering Information

System 7 Pro Personal Upgrade Kit for one user:

- In the U.S., Order Number M0439LL/A
- Outside the U.S., Order Number M0439Z/A

Includes:

- System software version 7.1.1 and utilities
- PowerTalk software version 1.0, including AppleMail and DigiSign software

- AppleScript software version 1.0, including many sample scripts
- QuickTime software version 1.6.1
- What's New in System 7 Pro
- PowerTalk User's Guide
- Getting Started with AppleScript

System 7 Pro MultiPack for up to 10 users:

- In the U.S., Order Number M1271LL/A
- Outside the U.S., Order Number M1271Z/A

Includes:

- System software version 7.1.1 and utilities
- PowerTalk software version 1.0, including AppleMail and DigiSign software
- AppleScript software version 1.0, including many sample scripts
- QuickTime software version 1.6.1
- Macintosh CD Setup software version 4.0.4
- What's New in System 7 Pro
- PowerTalk User's Guide
- Getting Started with AppleScript
- MultiPack Handbook

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Tech Info Library Article Number:13584

System 7 Pro: Installation Key Points (9/94)

Revised: 6/5/96
Security: Everyone

System 7 Pro: Installation Key Points (9/94)

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Article Created: 4 October 1993
Article Reviewed/Updated: 29 September 1994

TOPIC ----------

This article discusses what you need to keep in mind when installing System 7 Pro.

DISCUSSION ----------

Pre-Installation Checklist

- Turn off extensions when you start up by holding the Shift key when you start the Macintosh.

- Turn off all security software and virus- protection software.

- Back up the information on the hard disk.

- Run Disk First Aid.

- Update SCSI drivers if you're updating from System 6 to System 7 Pro.

Compatibility Checker

Run the Compatibility Checker before installing System 7 Pro. If the Compatibility Checker finds incompatible or unknown items in the System Folder of the startup disk, it presents a dialog box that allows you to move those items out of the System Folder. This dialog box lists the items not included in the compatibility database, as well as items that are incompatible.

The dialog box will come up with all items checked for moving. You can click the "Move" or "Don't Move" button. Or you can deselect the items you wish to remain before you click the "Move" button.

If you select "Move," the Compatibility Checker creates a new folder on the hard

disk named, "May Not Work With System 7 Pro," and automatically moves the selected items to this folder. Be sure to follow the instructions in the compatibility report that it generates for you. You can save this report to disk as a text file.

Network Installer

The network install doesn't work the same as previous versions of system software:

- The Installer and Installer Script remain inside the Install Me First folder.

- An alias of both items is outside the Install Me First folder.

800K Installation Disks

If you wish to have 800K installation disks, there's a coupon in the box that you use to send for them.

Common Problems and Resolutions

If the Installer displays a message that your computer doesn't have enough memory, your Macintosh has less than 5MB of RAM. Contact your Apple-authorized dealer for information about how to purchase additional memory.

If the Installer displays the message that it's out of memory, usually it means that the disk cache is set too high. Open the Memory control panel and set your disk cache to the lowest possible setting.

If the Installer displays a message that there isn't enough disk space available, the hard disk has less than the minimum required to use the Installer. Remove some files from the disk to make more space available. Make backup copies of the files, if necessary, then drag them to the Trash. If you're installing from floppy disks, you can also try starting up with the Install disk. This requires less available hard disk space.

Article Change History:
29 Sep 1994 - Reviewed for concistency and update format.
12 Nov 1993 - Added Common Problems and Resolutions section.

Support Information Services

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Tech Info Library Article Number:13585

Tech Info Library

AppleCD 300: Connecting to a PC? (10/94)

Revised: 10/27/94
Security: Everyone

AppleCD 300: Connecting to a PC? (10/94)

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Article Created: 5 October 1993
Article Reviewed/Updated: 25 October 1994

TOPIC ----------

Is it possible to connect an AppleCD 300 to a MS-DOS PC using a SCSI interface? Are there any drivers available for a MS-DOS PC?

DISCUSSION ----------

While it is technically possible to do this, it is not supported by Apple.

In order to use the AppleCD 300 with a PC, you need:

- The Transtor SCSI card and driver, which are reasonably compatible with the AppleCD 300.
- A utility called MSCDEX that comes with MS DOS 6.0.
- A compatible sound card. Unless you have a sound card, you will not have sound capabilities. Finding a compatible sound card requires testing and some "trial and error" to make it work.

Article Change History:
25 Oct 1994 - Removed Multimedia Kit for PCs.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13586

VAX to Mac Special Character Translation On The Fly (9/93)

Revised: 10/4/93
Security: Everyone

VAX to Mac Special Character Translation On The Fly (9/93)

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Article Created: 30 September 1993

TOPIC ----------

Is there a way to automatic translate text files created on a VAX with edit/edt, characters like "áéíóúñÑ", to be correctly read on a Macintosh? The configuration is a VAX with PATHWORKS v 1.1, with file transfer being done by copying the text files from a VAXshare volume mounted on the Macintosh desktop.

I know that it can be done via a small program (HyperCard?) looking for the special characters and replacing them for the Macintosh equivalent ones, but this is not as automatic as I want or need. Also I have seen that Mac340 emulation contains a Kermit based file transfer that allows this automatic translation, but this is also not acceptable, because the file transfer should be done via AppleTalk, and using Mac340 (or similar) means extra costs.

DISCUSSION ----------

Digital engineering told us that the only parts of PATHWORKS that currently handle this are NetCopy and FAL in DECnet for Macintosh, and Mail for Macintosh. DECnet allows you to select character translations for the transfer of TEXT files, and Mail does for mail messages. Digital does not have any specific plans to enhance this in the future.

We are also not aware of any other third party software that allows this kind of translation on the fly.

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Tech Info Library Article Number:13587

Tech Info Library

System 7.x: Third-Party Keyboard Startup Difficulties (10/93)

Revised: 10/1/93
Security: Everyone

System 7.x: Third-Party Keyboard Startup Difficulties (10/93)

==========

Article Created: 1 October 1993

TOPIC -----

I have a third-party keyboard, and I can't boot with extensions off, nor zap the PRAM.

DISCUSSION -----

First, make sure the Caps Lock key ISN'T depressed.

Second, wait until the Happy Mac appears. The correct key combination has to be held down after the Happy Mac and before the "Welcome to Macintosh" screen. This is usually a one-second window. This is necessary since some third-party keyboards aren't recognized until a few seconds after the Macintosh is turned on.

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Tech Info Library Article Number:13589

Tech Info Library

Creative Labs, Inc. (9/94)

Revised: 9/7/94
Security: Everyone

Creative Labs, Inc. (9/94)

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Article Created: 4 October 1993
Article Reviewed/Updated: 7 September 1994

Creative Labs, Inc.

San Jose, CA
(Acquired Sharevision Technology, Inc. in October, 1993.)

In the USA...

Telephone: 1-800-998-5227 (Sales, Product information)

Telephone: 408-428-6600 (General Company Number)

International - Singapore...

Telephone: 65-773-0233

Fax: 65-773-0353

Company Profile:
Software and hardware: develops and markets software and hardware for videoconferencing (video conference), screen sharing and filesharing over telephone lines and AppleTalk networks.

Also develops and markets hardware and software for sound recording and playback for PC's and compatibles (SoundBlaster family)

Support Information Services

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Tech Info Library Article Number:13591

Tech Info Library

Quadra 605: Description (10/93) (Discontinued)

Revised: 6/3/94
Security: Everyone

Quadra 605: Description (10/93) (Discontinued)

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Article Created: 21 October 1993
Article Reviewed/Updated: 2 November 1993

TOPIC ----------

This article describes the Macintosh Quadra 605 computer.

DISCUSSION ----------

Overview

The Apple Macintosh Quadra 605 personal computer, Apple's most affordable high-performance desktop system, is an ideal multipurpose personal computer for business and professional users. Like all Macintosh Quadra computers, it puts the highest levels of Macintosh performance and flexibility at your fingertips. Yet the Macintosh Quadra 605 brings the cost of high performance down to almost any budget, and its new, slimline design saves desk space.

The Macintosh Quadra 605 uses the powerful 68LC040 processor, so you can scroll, search, and sort through your applications faster than ever before. You'll also appreciate the speed with which the Macintosh Quadra 605 redraws graphics, recalculates spreadsheets, and reformats large documents. It comes with 4MB of RAM on board, expandable to 36MB, so you can work with multiple applications simultaneously.

Like other Macintosh Quadra computers, the Macintosh Quadra 605 includes many standard features that you pay extra for on other computers -- for instance stereo sound and built-in support for all Apple displays (256 colors) and many third-party displays. With additional video RAM, it can display more than 32,000 colors on 14-inch and 16-inch displays.

The Macintosh Quadra 605 also has built-in networking capability, comes standard with an Apple SuperDrive, and accommodates an 80MB or 160MB internal hard disk. Multiple ports provide direct connection to peripherals such as high-capacity CD-ROM drives, scanners, and modems, so you can

create the system that fits your needs.

As an added advantage, the Quadra 605 is one of the most energy-efficient systems Apple has ever built, and is fully compliant with the Energy Star program of the Environmental Protection Agency.

Power and speed

- 25-MHz 68LC040 microprocessor
- 32-bit data bus

Memory

- 4MB of RAM on board, expandable to 36MB

Displays

- Works with all Apple and many third-party displays
- 256 colors, expandable to 32,768

Expansion

- Slot supports most Macintosh LC II, LC III, and LC 520 expansion cards
- Seven built-in ports for peripherals

Usability

- Runs thousands of Macintosh applications
- Easy to set up, learn, use, and expand

System software

- System software version 7.1 with multitasking, file sharing, QuickTime, Balloon Help, TrueType, and more

Networking

- Built-in AppleTalk networking
- File sharing without a dedicated server

Compatibility

- Reads Macintosh, MS-DOS, OS/2, and ProDOS floppy disk formats

Ordering Information

- M1821LL/A - Macintosh Quadra 605 with 4MB RAM, 512K VRAM, and internal 80MB hard disk drive.

- M1822LL/A - Macintosh Quadra 605 with 8MB RAM, 512K VRAM, and internal 160MB hard disk drive.

- M0517LL/A - VRAM Expansion Kit (two kits required for expansion to

1MB VRAM)

- M1507LL/A - 4MB DRAM Expansion Kit
- M1508LL/A - 8MB DRAM Expansion Kit
- M9060LL/A - Apple PlainTalk Microphone

Article Change History:
2 November 1993 - Corrected processor name to 68LC040

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Tech Info Library Article Number:13595

Tech Info Library

Macintosh Quadra 605: Specifications (8/95)

Revised: 8/22/95
Security: Everyone

Macintosh Quadra 605: Specifications (8/95)

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Article Created: 21 October 1993
Article Reviewed/Updated: 22 August 1995

TOPIC ----------

This article gives technical specifications for the Macintosh Quadra 605 computer.

DISCUSSION ----------

Microprocessor

- MC680LC40, 25 MHz clock speed, logic board clock 25 MHz; 32-bit data bus
- Integrated Paged Memory Management Unit (PMMU)

Memory

- Comes with 4MB of RAM on the logic board
- Expandable to 36MB by adding one SIMM to a single 72-pin slot
- Includes RAM disk software

Disk drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 80MB or 160MB hard disk
- Optional external hard disk drive
- Optional external AppleCD CD-ROM drive

Video display

Supports several displays, including:
- Macintosh 12-inch Monochrome Display
- Macintosh 12-inch RGB Display
- AppleColor High-Resolution RGB Display (13-inch)
- Macintosh Color Display (14-inch)
- Macintosh Portrait Display (15-inch)

- Macintosh 16-inch Color Display
- Third-party monitors
- VGA monitors

Video RAM (VRAM)

- Standard 512K VRAM supports 8-bit color for display of 256 colors on monitors up to 16 inches.
- Additional 512K VRAM provides 16-bit color for display of thousands of colors on monitors up to 16 inches

- 512K standard supports:
  - 32,768 colors on the Macintosh 12-inch RGB Display
  - 256 colors on the AppleColor High-Resolution RGB Display (13-inch), Macintosh Color Display (14"), and Macintosh 16-inch Color Display
  - 256 shades of gray on the Macintosh 12-inch Monochrome Display
  - 16 shades of gray on the Macintosh Portrait Display (15-inch)
  - 16 colors on the Macintosh 21-inch Color Display
  - 16 shades of gray on the Two-Page Monochrome Display

- 1MB option supports:
  - 32,768 colors on the Macintosh 12-inch RGB Display, AppleColor High-Resolution RGB Display (13-inch), Macintosh Color Display (14-inch), and Macintosh 16-inch Color Display
  - 256 shades of gray on the Macintosh 12-inch Monochrome Display and Macintosh Portrait Display (15-inch)
  - 256 colors on the Macintosh 21-inch Color Display
  - 256 shades of gray on the Two-Page Monochrome Display

Interfaces

- One Apple Desktop Bus (ADB) port for a keyboard, mouse, and other devices
- SCSI interface for connecting up to six external peripheral devices
- Two serial (RS-232/RS-422) ports
- One video port for color and monochrome displays of various sizes and resolutions
- Sound-output port (stereo) for external amplifier or headphones
- Slot for most expansion cards that are compatible with Macintosh LC II, LC III, and LC 520 Processor Direct Slots.

Networking

- Built-in AppleTalk port

Sound Input*

- Sound input port for monaural sound input (monaural 8-bit sound, sampled at 22 or 11 kHz)

*NOTE:
The Apple PlainTalk Microphone, which is sold as a standalone product, is compatible with these systems. These products can not use the older style

low-level output microphone used on previous Macintosh models.

Keyboard and Mouse

- Several ADB keyboards with numeric key pads available
- Apple Desktop Bus Mouse II

Clock/Calendar

- Custom integrated circuit with long-life lithium battery

Disability Access

- CloseView, Easy Access, and visible-beep software are built in.
- Third-party options provide alternative input and output devices

Power Requirements

- Line voltage: 90 to 240 VAC, RMS single phase, automatically configured
- Frequency: 50 to 60 Hz
- Power: 30 watts maximum, not including display power
- EPA Energy Star compliant

ADB Power Requirements

- Maximum current draw for all ADB devices: 200 mA (three ADB devices maximum is recommended)
- Mouse draws 80 mA
- Keyboard draws 25 to 80 mA (varies with keyboard model used)

Size and Weight

Main unit:

- Height: 2.9 inches (7.4 cm)
- Width: 12.2 inches (31.0 cm)
- Depth: 15.3 inches (38.8 cm)
- Weight: 8.8 pounds (4.0 kg) (varies based on internal devices installed)

Mouse:

- Height: 1.3 inches (3.3 cm)
- Width: 2.4 inches (6.2 cm)
- Depth: 4.2 inches (10.7 cm)
- Weight: 4.0 ounces (0.10 kg)

Operating Environment

- Operating temperature: 50 to 104 F (10 to 40 C)
- Storage temperature: -40 to 116.6 F (-40 to 47 C)
- Relative humidity: 20% to 80% noncondensing
- Maximum altitude: 10,000 ft. (3,048 m)

System Software Requirements

Requires System 7.1 or later and System Enabler 065.

What's Included

Software included: System Software 7.1, QuickTime 1.6.1, HyperCard Player 2.1, Macintosh Basics 4.2 and MacCheck 1.0.4.

Documentation included:
- Getting Started with your Macintosh Quadra 605
- Macintosh User's Guide
- Technical Specifications for your Macintosh Quadra 605

Article Change History:
22 Aug 1995 - Added compatibility information on PlainTalk microphone.
18 Mar 1994 - Added "Macintosh" to title.
01 Mar 1994 - Added Two-Page Monochrome Monitor to Video RAM Section.

Support Information Services

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Tech Info Library Article Number:13596

Tech Info Library

Quadra 840AV: Screen Fax Displays As If Selected (12/94)

Revised: 12/14/94
Security: Everyone

Quadra 840AV: Screen Fax Displays As If Selected (12/94)

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Article Created: 4 October 1993
Article Reviewed/Updated: 14 December 1994

TOPIC ----------

I have a Quadra 840AV. When my Quadra 840AV received a Fax it was displayed on the monitor with a black background with white text (just the reverse of the plain paper Fax). Is there a command for switching the background color on the display from black to white?

DISCUSSION ----------

No, there is no command to switch the background color. This is a known problem where the display is affected. If the Fax is printed out, it will print correctly, however, sometimes, it prints in inverse video. This problem also occurs on Power Macintosh computers.

To resolve this problem you should upgrade to Express Modem 1.5.5 software. These articles can help you locate Express Modem 1.5.5 software mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
14 Dec 1994 - Added Express Modem 1.5.5 and where to obtain it.
29 Sep 1994 - Added Power Macintosh and problem with Fax, but not screen.

Support Information Services

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:13597

Tech Info Library

Apple Modem Tool 1.5: Third-party Modem Compatibility (10/93)

Revised: 10/6/93
Security: Everyone

Apple Modem Tool 1.5: Third-party Modem Compatibility (10/93)

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Article Created: 6 October 1993

TOPIC -----

Recently, I installed the version of Apple Modem Tool 1.5 which was included in the Newton Connection Kit 1.0. After installation, I wasn't able to use a third-party modem to connect my Macintosh to another computer. When I try to connect, I get the message "The connection settings are invalid. Please reset your modem..."

Why is this?

DISCUSSION -----

Apple Modem Tool 1.5 that is distributed with the Newton Connection Kit 1.0, is compatible with other modems than Apple and Hayes-compatible modems. This version of Apple Modem Tool 1.5, however, doesn't ship with a list of other modems' command strings; it only offers the choice of Hayes-Compatible, Custom, and a group of different Apple modems.

The workaround is to create a custom configuration for your modem. To do so, follow these steps:

1) Choose Connection from the Settings Menu.

2) In the lower-left corner of the Connection Settings dialog are the Modem Settings options. Scroll doen the list and select Custom.

3) Enter your "Custom Modem Configuration" (Refer to your modem user manual or contact the manufacturer of the modem should you need help in determining the proper command string to use.)

Your modem should now operate properly.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13598

Tech Info Library

LaserWriter 8.0: Global Village Incompatibility (5/95)

Revised: 5/24/95
Security: Everyone

LaserWriter 8.0: Global Village Incompatibility (5/95)

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Article Created: 4 October 1993
Article Reviewed/Updated: 24 May 1995

TOPIC ----------

I have a Global Village fax modem on my PowerBook. I'm constantly getting Type 1 errors. I've done a clean install of system software, and ran Disk First Aid. When I fax using the Global Village software it goes through, but then the document becomes corrupted. This doesn't happen with the LaserWriter driver 7.2, only with the 8.0 driver.

DISCUSSION ----------

This is a known problem and has been fixed in the LaserWriter driver version 8.1.1 and all LaserWriter drivers released after v8.1.1.

Article Change History:
24 May 1995 - Added information on later LaserWriter drivers.

Support Information Services

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Tech Info Library Article Number:13599

Tech Info Library

Forwarded Mail: Appears to Lose Enclosures (10/93)

Revised: 10/5/93
Security: Everyone

Forwarded Mail: Appears to Lose Enclosures (10/93)

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Article Created: 4 October 1993

TOPIC --------------------

Mail forwarded from within an application, like AppleMail, may appear to lose enclosures when the recipient opens the document. A paper clip may appear in the upper right corner of the standard mail, while the enclosure window displays nothing.

DISCUSSION --------------------

Actually the enclosure is in the mail, though in a different layer. By clicking the turned edge at the bottom left corner of the standard mailer, you can find enclosures in the original addresses mailer.

Also, a popup menu (triangle) appears to the right of the "From" field. This popup menu lists names of all forwarding individuals. A paper clip may appear beside some names in the popup menu indicating an enclosure. Selecting names from the popup menu allows instant access to the standard mailer page addresses.

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Tech Info Library Article Number:13600

Tech Info Library

System 7 Pro 7.1.1: 1.4MB Disk Contents (10/93)

Revised: 10/5/93
Security: Everyone

System 7 Pro 7.1.1: 1.4MB Disk Contents (10/93)

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System 7 Pro 7.1.1: 1.4MB Disk Contents (10/93)
Article Created: 5 October 1993

TOPIC --------------------

This article details the contents of System 7 Pro 7.1.1, shipped on twelve 1.4MB floppy disks.

DISCUSSION --------------------

Availability

AppleLink: N/A
FTP Apple.com: N/A

Disk Tools:

File Name	Version #	Created	Modified
Apple HD SC Setup	7.2.2	9/13/93	9/24/93
Disk First Aid 7.2	7.2	8/6/93	9/24/93
Disk Tools Read Me		9/21/93	9/24/93
Finder	7.1	8/27/92	9/24/93
Finder Preferences		9/22/93	9/24/93
System	7.1	8/27/92	9/24/93

Before You Install:

File Name	Version #	Created	Modified
AppleShare 3.0.3 patch	4.0.4	8/27/93	9/1/93
Before You Install Read Me		1/14/40	8/18/93
Compatibility Checker	7.1.1	9/22/93	9/22/93
Desktop		8/31/93	9/22/93

Install:

File Name	Version #	Created	Modified
Chicago		4/10/92	9/24/93
System	7.1	9/24/92	9/24/93
System Enabler 001		11/25/92	9/24/93
System Enabler 003		10/21/92	9/24/93
System Enabler 040		11/24/92	9/24/93
System Enabler 088		7/12/93	9/24/93
System Enabler 131		6/8/93	9/24/93
System Enabler 201		2/3/93	9/24/93
System Enabler 401		3/8/93	9/24/93
System Enabler 403		3/31/93	9/24/93

Install 2:

File Name	Version #	Created	Modified
PowerBook Display	1.0.4	3/22/93	9/24/93
Auto Power On/Off	1.0	6/24/93	9/24/93
AutoRemounter	1.2	8/25/93	9/24/93
Hardware System Update	2.0.1	9/1/93	9/24/93
Printer Share	1.1	4/8/93	9/24/93
Record Button	1.0	9/29/92	9/24/93
Screen	1.0.2	8/3/93	9/24/93
System	7.1.1	8/27/92	9/24/93

Install 3:

File Name	Version #	Created	Modified
A/ROSE	1.2	5/24/93	9/24/93
EtherTalk Phase 2	2.5.4	8/23/93	9/24/93
EtherTalk Prep	1.0.4	8/23/93	9/24/93
Finder	7.1.3	9/14/93	9/24/93
Finder Help	7.1.3	9/14/93	9/24/93
LaserWriter 300	1.2	6/30/93	9/24/93
Network	3.0.2	8/23/93	9/24/93
Network Extension	7.1.3	9/14/93	9/24/93
Token Ring	1.0.1	8/23/93	9/24/93
TokenTalk Phase 2	2.5.4	8/23/93	9/24/93
TokenTalk Prep	2.5.2	8/23/93	9/24/93

Fonts:

File Name	Version #	Created	Modified

Athens	9/16/91	9/16/91
Cairo	9/16/91	9/16/91
London	9/16/91	9/16/91
Los Angeles	9/16/91	9/16/91
Mobile	12/3/91	12/3/91
San Francisco	9/16/91	9/16/91
Venice	9/16/91	9/16/91
Chicago	4/10/92	4/10/92
Courier	9/16/91	9/16/91
Geneva	9/16/91	9/16/91
Helvetica	4/10/92	4/10/92
Monaco	9/16/91	9/16/91
New York	9/16/91	9/16/91
Palatino	1/23/92	1/27/92
Symbol	9/16/91	9/16/91
Times	9/16/91	9/16/91

Tidbits:

File Name	Version #	Created	Modified
Alarm Clock	7.1	8/13/92	9/24/93
Battery		9/8/92	9/24/93
Calculator	7.1	8/13/92	9/24/93
Chooser	7.3	11/19/92	9/24/93
Control Panels		4/25/91	9/24/93
Key Caps	7.1	8/17/92	9/24/93
Note Pad	7.1	8/17/92	9/24/93
Puzzle	7.1	8/17/92	9/24/93
Scrapbook	7.1	8/17/92	9/24/93
Apple File Exchange	7.0	4/25/91	9/24/93
DCA-RFT/MacWrite	1.0.1	12/9/88	9/24/93
LaserWriter Font Utility	7.0	4/25/91	9/24/93
System 7.1.1 Read Me		8/28/92	9/24/93
TeachText	7.1	11/24/92	9/24/93
CloseView	7.1	8/13/92	9/24/93
Brightness	7.0.1	9/16/91	9/24/93
Cache Switch	7.0.1	9/16/91	9/24/93
Color	7.1	8/13/92	9/24/93
Date & Time	7.1.1	9/22/93	9/24/93
File Sharing Monitor	7.1	8/27/92	9/24/93
General Controls	7.1	8/17/92	9/24/93
Keyboard	7.1	8/17/92	9/24/93
Labels	7.1	8/27/92	9/24/93
Map	7.1.1	9/22/93	9/24/93
Memory	7.1.2	6/24/93	9/24/93
Monitors	7.0	4/25/91	9/24/93
Mouse	7.1	8/17/92	9/24/93
Numbers	7.1	8/17/92	9/24/93
PowerBook	7.1.2	3/10/93	9/24/93
Sharing Setup	7.1	8/27/92	9/24/93
Sound	8.0	6/25/93	9/24/93

Startup Disk	7.2	6/28/93	9/24/93
Users & Groups	7.1	8/27/92	9/24/93
Views	7.1	8/27/92	9/24/93
Easy Access	7.0	4/25/91	9/24/93
AppleShare	7.1	8/17/92	9/24/93
Caps Lock	7.1.2	3/22/93	9/24/93
File Sharing Extension	7.1.1	9/22/93	9/24/93
Scrapbook File		4/25/91	9/24/93

Printing:

File Name	Version #	Created	Modified
AppleTalk ImageWriter	7.0.1	3/4/92	3/4/92
ImageWriter	7.0.1	3/4/92	3/4/92
Installer	3.4.4	6/18/93	6/18/93
LaserWriter	7.1.2	8/17/92	8/17/92
LQ AppleTalk ImageWriter	7.0.1	3/4/92	3/4/92
LQ ImageWriter	7.0.1	3/4/92	3/4/92
Backgrounder	1.3	1/29/91	1/29/91
Laser Prep	7.1.2	8/17/92	8/17/92
Personal LaserWriter SC	7.0.1	3/30/92	3/30/92
Personal LW LS	7.2	3/6/92	3/6/92
Printer Update	7.1	8/27/92	8/27/92
PrintMonitor	7.1	8/17/92	8/17/92
StyleWriter	7.2.3	1/28/92	1/28/92
StyleWriter II	1.0	11/20/92	11/20/92

PowerTalk:

File Name	Version #	Created	Modified
Mailbox Extension	1.0	9/22/93	9/24/93
PowerTalk Extension		9/22/93	9/27/93
PowerTalk Manager	1.0	9/22/93	9/24/93

PowerTalk 2:

File Name	Version #	Created	Modified
AppleMail	1.0	9/22/93	9/24/93
A Note		9/22/93	9/24/93
Celebration		9/22/93	9/24/93
F.Y.I.		9/22/93	9/24/93
Hot News		9/22/93	9/24/93
Memorandum		9/22/93	9/24/93
Out of the Office		9/22/93	9/24/93
Reply		9/22/93	9/24/93
Take a look…		9/22/93	9/24/93
The Daily News		9/22/93	9/24/93

AppleTalk Service	1.0	9/22/93	9/24/93
Catalogs Extension	1.0	9/22/93	9/24/93
Demonstration Signer		9/22/93	9/24/93
DigiSign Utility	1.0	9/22/93	9/24/93
Find in Catalog	1.0	9/22/93	9/24/93
Personal Catalog	1.0	9/22/93	9/24/93
PowerTalk Setup	1.0	9/22/93	9/24/93
Untitled Info Card	1.0b11c1nodbgs…	8/3/93	9/24/93

QuickTime:

File Name	Version #	Created	Modified
QuickTime Read Me		6/22/93	6/22/93
QuickTime	1.6.1	6/21/93	6/21/93
QuickTime Logo Movie		4/25/93	4/25/93
Scrapbook File		4/25/91	4/27/93
Scrapbook File Read Me		4/27/93	4/27/93
Scrapbook	7.1.2	10/2/92	7/19/93

AppleScript Runtime:

File Name	Version #	Created	Modified
AppleScript	1.0	4/14/93	4/14/93
Apple Event Manager	1.0.1	3/7/93	3/7/93
Script Editor	1.0.1	4/19/93	4/19/93
Scriptable Text Editor	1.0	4/6/93	4/6/93
Beep	1.0	4/6/93	4/6/93
Choose Application	1.0	4/6/93	4/6/93
Choose File	1.0	4/6/93	4/6/93
Current Date	1.0	4/6/93	4/6/93
Display Dialog	1.0	4/6/93	4/6/93
File Commands	1.0	4/6/93	4/6/93
Load Script	1.0	4/6/93	4/6/93
Numerics	1.0	4/6/93	4/6/93
Run Script	1.0	4/6/93	4/6/93
Store Script	1.0	4/6/93	4/6/93
String Commands	1.0	4/6/93	4/6/93
Getting Started Guide		3/22/93	4/23/93
Installer	3.4	4/6/93	4/23/93
Installer Script	1.0	4/19/93	4/23/93
Language at a Glance		1/30/93	4/28/93
Known Language Problems		4/7/93	4/23/93
Language Guide Errata		4/7/93	4/23/93
New Language Features		4/7/93	4/23/93
Script Application Notes		4/23/93	4/23/93
Script Editor Notes		4/7/93	4/23/93
Scripting Additions Notes		4/7/93	4/23/93
Guide to Sample Scripts		4/8/93	4/23/93
Item Delimiters & Paths		3/30/93	4/23/93

Folder Watcher		3/30/93	4/23/93
What’s New?		4/5/93	4/23/93
Yet Another Folder Watcher		4/7/93	4/23/93
Get File Info		4/7/93	4/23/93
Get Total Size		4/6/93	4/23/93
Reconcile Files		3/17/93	4/23/93
Sort files into subfolders		3/24/93	4/23/93
Total Size		3/23/93	4/23/93
eight ball		4/7/93	4/23/93
SoothSayer		4/7/93	4/23/93
Talk to SoothSayer		4/7/93	4/23/93
Date Object		3/15/93	4/23/93
fileLib		4/8/93	4/23/93
listLib		3/25/93	4/23/93
stringLib		4/7/93	4/23/93
modifyreadonly (ToolServer)		4/7/93	4/23/93
Set MPW Directory		4/3/93	4/23/93
Round Off Example		3/23/93	4/23/93
Set decimal precision		4/7/93	4/23/93
Run Script Demo.sender		4/7/93	4/23/93
Run Script Demo.target		4/7/93	4/23/93
Run Script Demo.target2		4/7/93	4/23/93
Run Script Demo.target3		4/7/93	4/23/93
Idle handler example		3/30/93	4/23/93
Quit handler example 1		3/18/93	4/23/93
Quit handler example 2		3/28/93	4/23/93
Script Object Runner		4/7/93	4/23/93
Talk to Script Object Runner		4/7/93	4/23/93
.Read Me		4/7/93	4/23/93
Count Files Since Created		3/7/93	4/23/93
Count Files Since Started		3/1/93	4/23/93
Count Words		4/7/93	4/23/93
Report Files		3/7/93	4/23/93
Document Madness		4/8/93	4/23/93
Number Lines		4/8/93	4/23/93
Proportional Resize		4/8/93	4/23/93
Remote Clipboard		4/8/93	4/23/93
Remove Line Numbers		4/8/93	4/23/93
Tile Windows		4/8/93	4/23/93
Transpose Words		4/8/93	4/23/93
Underline Long Words		4/8/93	4/23/93
The Intro		4/8/93	4/23/93
finderLib	1.0.1	4/7/93	4/23/93
Scripting the Finder	1.0	3/29/93	4/23/93
Welcome to AppleScript		4/13/93	4/23/93

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Tech Info Library Article Number:13601

AppleTalk Internet Redesign (10/93)

Revised: 10/6/93
Security: Everyone

AppleTalk Internet Redesign (10/93)

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Article Created: 5 October 1993

TOPIC -----

I have an internet redesign issue. I'm concerned about my strategy to update the router definitions in my network.

Is it possible for the router/zone updating process to propagate bad zone information after it is changed? If I update a zone list on a router is the old table kept in other routers and forwarded as a part of normal updating therefore maintaining this bad zone information? What exactly prevents this from happening if anything?

What phenomenon on the network would cause ZIP storms between routers?

If I am changing my Internet wide zone lists what strategy should I follow in updating the routers? Do I need to isolate each while I change it and prevent it communication with others until they are all updated? If this isn't possible do I have other choices?

Is it possible for normal RTMP updating between routers to propagate bad network number entries that keep "updating around the network" when they no longer describe a valid network entry? This assumes a router is redefined to have a different network number setup for the ports that it seeds.

There is also a problem with zone names and zones appearing/disappearing in the chooser.

I have a 6000 node network with hundreds of subnets. I want to change my network zone tables from one that reflects a physical layout to a logical one, but I'm concerned about how to implement a ZIP change on a subnet when routers may be propagating bad zip information behind the changes for old entries.

DISCUSSION -----

The Zone Information Protocol (ZIP) does not support dynamic network changes. The prescribed method of updating a zone list is to temporarily isolate the changing network from the internet, shut down all routers directly connected to the changing network, and change the zone list in each of the seed routers. Inside AppleTalk recommends the routers remain down for approximately 10 minutes to allow the old zone list to age out of all the other routers in the internet before being started again. If this procedure is not followed, it is possible for old zone information to be propagated after a change is made (depending on the complexity of the change, this could cause ZIP storms between routers).

Inside AppleTalk alludes to a "future network management protocol" that would provide the capability of changing the zone list of a network while that network is active as a part of the internet. Unfortunately, such a protocol hasn't been developed yet, so the aforementioned procedure is the only way to properly implement a network change.

The Routing Table Maintenance Protocol (RTMP) would only be temporarily impacted by a network change. The old network table entries would time out and get deleted as the routers on the internet no longer heard from the "old network" (Inside AppleTalk indicates this should take approximately 60 seconds).

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Tech Info Library Article Number:13604

Tech Info Library

AppleShare 3.0.3 Patch & Print Server Versions (10/93)

Revised: 10/6/93
Security: Everyone

AppleShare 3.0.3 Patch & Print Server Versions (10/93)

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Article Created: 5 October 1993

TOPIC -----

If I'm not mistaken, if you have Print Server 3.0 and you run either the 3.0.2 or 3.0.3 patch, there will not be any code changes made to the print server however installing the patch will update the version number to 3.0.2 or 3.0.3 respectively. You effectively still have Print Server 3.0, meaning the code fixes in 3.0.1 are not present.

DISCUSSION -----

Installing the AppleShare 3.0.3 patch DOES NOT change the version number of the AppleShare Print Server. The version number on the Admin program and the File Server are upgraded but the Print Server is not changed.

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Tech Info Library Article Number:13605

Tech Info Library

System 7 Pro 7.1.1: 800K Disk Contents (10/93)

Revised: 10/6/93
Security: Everyone

System 7 Pro 7.1.1: 800K Disk Contents (10/93)

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Article Created: 6 October 1993

TOPIC --------------------

This article details the contents of System 7 Pro 7.1.1, shipped on seventeen 800K floppy disks.

DISCUSSION --------------------

Availability

AppleLink: N/A
FTP Apple.com: N/A

Disk Tools:

File Name	Version #	Created	Modified
Apple HD SC Setup	7.2.2	9/13/93	9/13/93
Desktop		1/2/92	9/21/93
Disk First Aid 7.2	7.2	8/6/93	8/6/93
Disk Tools Read Me		9/21/93	9/21/93
Brightness	1.0	9/4/90	9/4/90
Finder	6.1.7	10/9/90	10/9/90
General	3.3.3	3/7/90	3/7/90
Monitors	4.3	9/4/90	9/4/90
Mouse	3.3.1	8/26/88	8/26/88
Portable	1.2	3/7/90	3/7/90
Startup Device	3.3.1	8/26/88	8/26/88
System	6.0.7	10/9/90	10/9/90

Before You Install:

File Name	Version #	Created	Modified

AppleShare 3.0.3 patch	4.0.4	8/27/93	9/1/93
Before You Install Read Me		1/14/40	8/18/93
Compatibility Checker	7.1.1	9/22/93	9/22/93
Desktop		8/31/93	9/22/93

Install:

File Name	Version #	Created	Modified
Catalogs Extension	1.0	9/22/93	9/22/93
Chicago		4/10/92	4/10/92
Desktop		9/22/93	9/22/93
Install 800K	1.0	9/22/93	9/22/93
Installer	3.4.4	6/18/93	9/22/93

Install 2:

File Name	Version #	Created	Modified
Cerulean Data		9/22/93	9/22/93
Alarm Clock	7.1	8/13/92	8/13/92
Battery		9/8/92	9/8/92
Calculator	7.1	8/13/92	8/13/92
Chooser	7.3	11/19/92	11/19/92
Key Caps	7.1	8/17/92	8/17/92
Note Pad	7.1	8/17/92	8/17/92
Puzzle	7.1	8/17/92	8/17/92
Scrapbook	7.1	8/17/92	8/17/92
Scrapbook File		4/25/91	4/25/91
Desktop		9/22/93	9/22/93
Hardware System Update	2.0.1	9/1/93	9/1/93

Install 3:

File Name	Version #	Created	Modified
AppleShare	7.1	8/17/92	8/17/92
Desktop		9/22/93	9/22/93
System	7.1.1	9/22/93	9/22/93

Install 4:

File Name	Version #	Created	Modified
Desktop		9/22/93	9/22/93
EtherTalk Phase 2	2.5.4	8/23/93	8/23/93
EtherTalk Prep	1.0.4	8/23/93	8/23/93
Finder	7.1.3	9/14/93	9/14/93

Finder Help	7.1.3	9/14/93	9/14/93
Network Extension	7.1.3	9/14/93	9/14/93
Token Ring	1.0.1	8/23/93	8/23/93
TokenTalk Phase 2	2.5.4	8/23/93	8/23/93
TokenTalk Prep	2.5.2	8/23/93	8/23/93

Tidbits:

File Name	Version #	Created	Modified
A/ROSE	1.2	5/24/93	5/24/93
Caps Lock	7.1.2	3/22/93	3/22/93
Brightness	7.0.1	9/16/91	9/16/91
Cache Switch	7.0.1	9/16/91	9/16/91
Color	7.1	8/13/92	8/13/92
Control Panels		4/25/91	4/25/91
Date & Time	7.1.1	9/22/93	9/22/93
Easy Access	7.0	4/25/91	4/25/91
File Sharing Monitor	7.1	8/27/92	8/27/92
General Controls	7.1	8/17/92	8/17/92
Keyboard	7.1	8/17/92	8/17/92
Labels	7.1	8/27/92	8/27/92
Map	7.1.1	9/22/93	9/22/93
Memory	7.1.2	6/24/93	6/24/93
Monitors	7.0	4/25/91	4/25/91
Mouse	7.1	8/17/92	8/17/92
Network	3.0.2	8/23/93	8/23/93
Numbers	7.1	8/17/92	8/17/92
PowerBook	7.1.2	3/10/93	3/10/93
Sharing Setup	7.1	8/27/92	8/27/92
Sound	8.0	6/25/93	6/25/93
Startup Disk	7.2	6/28/93	6/28/93
Users & Groups	7.1	8/27/92	8/27/92
Views	7.1	8/27/92	8/27/92
Desktop		9/22/93	9/22/93
File Sharing Extension	7.1.1	9/22/93	9/22/93

Tidbits 2:

File Name	Version #	Created	Modified
Apple File Exchange	7.0	4/25/91	4/25/91
DCA-RFT/MacWrite	1.0.1	12/9/88	12/9/88
AppleTalk ImageWriter	7.0.1	3/4/92	3/4/92
CloseView	7.1	8/13/92	8/13/92
Desktop		9/22/93	9/22/93
LaserWriter Font Utility	7.0	4/25/91	4/25/91
LQ AppleTalk ImageWriter	7.0.1	3/4/92	3/4/92
LQ ImageWriter	7.0.1	3/4/92	3/4/92
Record Button	1.0	9/29/92	9/29/92
System 7.1.1 Read Me		8/28/92	9/21/93

TeachText	7.1	11/24/92	11/24/92

Printing:

File Name	Version #	Created	Modified
Backgrounder	1.3	1/29/91	1/29/91
Desktop		9/22/93	9/22/93
ImageWriter	7.0.1	3/4/92	3/4/92
Installer	3.4	4/6/93	4/6/93
Laser Prep	7.1.2	8/17/92	8/17/92
LaserWriter	7.1.2	8/17/92	8/17/92
Personal LaserWriter SC	7.0.1	3/30/92	3/30/92
Personal LW LS	7.2	3/6/92	3/6/92
Printer Update	7.1	8/27/92	8/27/92
PrintMonitor	7.1	8/17/92	8/17/92
StyleWriter	7.2.3	1/28/92	1/28/92

PowerTalk:

File Name	Version #	Created	Modified
Desktop		9/22/93	9/22/93
Mailbox Extension	1.0	9/22/93	9/22/93
PowerTalk Manager	1.0	9/22/93	9/22/93

PowerTalk 2:

File Name	Version #	Created	Modified
A Note		9/22/93	9/22/93
Celebration		9/22/93	9/22/93
F.Y.I.		9/22/93	9/22/93
Hot News		9/22/93	9/22/93
Memorandum		9/22/93	9/22/93
Out of the Office		9/22/93	9/22/93
Reply		9/22/93	9/22/93
Take a look…		9/22/93	9/22/93
The Daily News		9/22/93	9/22/93
Desktop		9/22/93	9/22/93
Find In Catalog	1.0	9/22/93	9/22/93
Personal Catalog	1.0	9/22/93	9/22/93
PowerTalk Extension		9/22/93	9/22/93
Untitled Info Card	1.0b11c1nodbgs…	8/3/93	9/22/93

PowerTalk 3:

File Name	Version #	Created	Modified

AppleMail	1.0	9/22/93	9/22/93
AppleTalk Service	1.0	9/22/93	9/22/93
Demonstration Signer		9/22/93	9/22/93
Desktop		9/22/93	9/22/93
DigiSign Utility	1.0	9/22/93	9/22/93
PowerTalk Setup	1.0	9/22/93	9/22/93

Fonts:

File Name	Version #	Created	Modified
Chicago		4/10/92	4/10/92
Courier		9/16/91	9/16/91
Desktop		9/22/93	9/22/93
Geneva		9/16/91	9/16/91
Helvetica		4/10/92	4/10/92
Monaco		9/16/91	9/16/91
New York		9/16/91	9/16/91

Fonts 2:

File Name	Version #	Created	Modified
Desktop		9/22/93	9/22/93
Athens		9/16/91	9/16/91
Cairo		9/16/91	9/16/91
London		9/16/91	9/16/91
Los Angeles		9/16/91	9/16/91
Mobile		12/3/91	12/3/91
San Francisco		9/16/91	9/16/91
Venice		9/16/91	9/16/91
Palatino		1/23/92	1/27/92
Symbol		9/16/91	9/16/91
Times		9/16/91	9/16/91

AppleScript Setup:

File Name	Version #	Created	Modified
AppleScript	1.0	4/14/93	4/14/93
Apple Event Manager	1.0.1	3/8/93	3/8/93
Script Editor	1.0.1	4/19/93	4/19/93
Beep	1.0	4/6/93	4/6/93
Choose Application	1.0	4/6/93	4/6/93
Choose File	1.0	4/6/93	4/6/93
Current Date	1.0	4/6/93	4/6/93
Display Dialog	1.0	4/6/93	4/6/93
File Commands	1.0	4/6/93	4/6/93
Load Script	1.0	4/6/93	4/6/93
Numerics	1.0	4/6/93	4/6/93

Run Script	1.0	4/6/93	4/6/93
Store Script	1.0	4/6/93	4/6/93
String Commands	1.0	4/6/93	4/6/93
Desktop		6/14/93	6/14/93
Installer	3.4	4/6/93	4/6/93
Installer Script	1.0	6/15/93	6/15/93

AppleScript Additions:

File Name	Version #	Created	Modified
Desktop		6/14/93	6/14/93
Language at a Glance		1/30/93	4/13/93
Known Language Problems		4/7/93	4/14/93
Language Guide Errata		4/7/93	4/14/93
New Language Features		4/7/93	4/14/93
Script Application Notes		1/1/4	4/14/93
Script Editor Notes		4/7/93	4/14/93
Scripting Additions Notes		4/7/93	4/11/93
Guide to Sample Scripts		4/8/93	4/19/93
Item Delimiters & Paths		3/30/93	4/8/93
Folder Watcher		3/30/93	4/7/93
What’s New?		4/5/93	4/7/93
Yet Another Folder Watcher		4/7/93	4/7/93
Get File Info		4/7/93	4/8/93
Get Total Size		4/6/93	4/7/93
Reconcile Files		3/17/93	4/13/93
Sort files into subfolders		3/24/93	4/4/93
Total Size		3/23/93	4/8/93
eight ball		4/7/93	4/7/93
SoothSayer		4/7/93	4/7/93
Talk to SoothSayer		4/7/93	4/7/93
Date Object		3/16/93	4/8/93
fileLib		4/8/93	4/8/93
listLib		3/26/93	3/28/93
stringLib		4/7/93	4/7/93
modifyreadonly (ToolServer)		4/7/93	4/8/93
Set MPW Directory		4/3/93	4/7/93
Round Off Example		3/23/93	4/7/93
Set decimal precision		4/7/93	4/7/93
Run Script Demo.sender		4/8/93	4/8/93
Run Script Demo.target		4/8/93	4/8/93
Run Script Demo.target2		4/8/93	4/8/93
Run Script Demo.target3		4/8/93	4/8/93
Idle handler example		3/30/93	4/7/93
Quit handler example 1		3/18/93	4/7/93
Quit handler example 2		3/28/93	4/7/93
Script Object Runner		4/7/93	4/7/93
Talk to Script Object Runner		4/7/93	4/7/93
.Read Me		4/7/93	4/7/93
Count Files Since Created		3/7/93	4/7/93
Count Files Since Started		3/2/93	4/7/93

Count Words		4/7/93	4/7/93
Report Files		3/7/93	4/8/93
Document Madness		4/8/93	4/8/93
Number Lines		4/8/93	4/8/93
Proportional Resize		4/8/93	4/8/93
Remote Clipboard		4/8/93	4/8/93
Remove Line Numbers		4/8/93	4/8/93
Tile Windows		4/8/93	4/8/93
Transpose Words		4/8/93	4/8/93
Underline Long Words		4/8/93	4/8/93
The Intro		4/8/93	4/14/93
Scriptable Text Editor	1.0	4/6/93	4/6/93
finderLib	1.0.1	4/8/93	4/18/93
Scripting the Finder	1.0	3/30/93	4/11/93
Welcome to AppleScript™		4/14/93	4/20/93

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Tech Info Library Article Number:13608

Tech Info Library

System Enablers: Are Performa & Mac Enablers Compatible? (10/93)

Revised: 6/28/94
Security: Everyone

System Enablers: Are Performa & Mac Enablers Compatible? (10/93)

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Article Created: 6 October 1993

TOPIC ----------

Are the system enablers for similar Macintosh and Performa computers (such as the Macintosh LC III and the Performa 450) compatible?

DISCUSSION ----------

No, they are not compatible. You should not use Performa enablers with the Macintosh operating system or Macintosh enablers with the Performa operating system, since a particular system enabler may not have system resources that the other operating system needs.

Also, do not put a Performa enabler and a Macintosh enabler for a similar machine in the same System Folder, since this may cause unpredictable results.

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Tech Info Library Article Number:13610

PowerBook: Using SCSI Devices (2/97)

Revised: 2/12/97
Security: Everyone

PowerBook: Using SCSI Devices (2/97)

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Article Created: 6 October 1993
Article Reviewed/Updated: 12 February 1997

TOPIC

All PowerBook computers that have been released to date, with the exception of the PowerBook 200 Series, have an integral SCSI port. The PowerBook 200 Series computers must be attached to a Dock of some kind to gain that port. This article describes adding peripheral devices to your PowerBook and also using SCSI Disk Mode, which lets some PowerBook computers connect to a desktop Macintosh and appear as an external hard disk.

DISCUSSION

The SCSI Port and Cabling

The SCSI port used in the PowerBook series is called an HDI-30. It is a square socket SCSI connector with 30 pins. There are two different SCSI cables. In addition to one of these cables, you may need a terminator, model number M3503LL/A.

Apple HDI-30 SCSI Disk Adapter

This adapter, model number M2539LL/A is specifically for SCSI Disk Mode. It can be distinguished by its HDI-30 connector having 30 pins (5 rows of 6). The connector on the other end is a standard Centronics 50 socket connector.

Apple HDI-30 SCSI System Cable

This cable is for connecting external SCSI devices, like CD-ROMs and hard drives, to your PowerBook and it is called the Apple HDI-30 SCSI System Cable, model M2538LL/A. Its HDI-30 connector only has 29 pins. The connector on the other end is a standard Centronics male.

SCSI Disk Mode

This mode lets your PowerBook be connected to a desktop Macintosh and appear on that machine as an external hard disk. This mode is supported on all PowerBook models with the exception of the 140, 145, 145B, 150, and 170 and is recommended for high speed transfer of information, but is not necessarily intended for long-term usage. Follow these steps to setup SCSI disk mode:

Step 1

In the PowerBook control panel (Portable control panel for the 100) choose the SCSI ID for the PowerBook. Remember, each SCSI device must have a unique ID number. Verify that the hard drive name for the PowerBook is different from the hard drive name of the target machine.

Step 2

Shut down the PowerBook and any additional SCSI devices in the SCSI chain. Attach the HDI-30 SCSI Disk Adapter cable to the PowerBook and a terminator at the other end (the terminator may not be required). If you find that the main computer does start up properly, turn both computers off, remove the terminator and then restart the systems.

Step 3

Plug the SCSI Disk Adapter cable to either a SCSI cable attached to the desktop Macintosh, or to any existing SCSI device on the SCSI chain.

Step 4

Power on the PowerBook and you should see a diamond shaped symbol moving across the screen with a number corresponding to the SCSI ID you set. Once you see that, power on the desktop machine. After that machine boots up, you should see the PowerBook's hard drive appear on the screen of the desktop Macintosh.

To end the session, shut down the desktop Macintosh, then power off the PowerBook by either pressing and holding the power switch for two seconds then releasing, or, for the PowerBook 100, press both of the buttons on the left side of the unit.

NOTE: The Macintosh Plus and the Macintosh SE without an internal Hard Disk can be used with SCSI disk mode. Also, you can dock to another PowerBook (of any kind). When attaching under these configurations, you do NOT use the terminator between the two SCSI cables.

Adding External Devices

There are many devices that use the SCSI port to connect to your PowerBook. Some examples are Hard Disks, CD-ROM drives, backup devices, video expansion, and Ethernet connections.

The most important thing to keep in mind when adding devices to a SCSI chain is the ID number. The SCSI chain has an ID range from 0 to 7. ID 7 is reserved for the PowerBook itself; ID 0 is reserved for the internal hard drive. The other 6 ID numbers are for external devices. Generally, this ID can be set on the device by some external selector -- consult the manual for the device to see how to set this number. The ID number for each device must be unique on the chain, that is, only one device can use a given number.

A SCSI device chain must be terminated at both the beginning and end. PowerBook computers require additional termination at the end of a SCSI chain.
Because of this you need to add a second terminator to the last device in the chain, unless that device has termination built in. If there is only one external SCSI device, it needs two terminators, one for itself and one for the PowerBook.

If there is more than one external SCSI device connected in a chain to a PowerBook computer, they can be connected together using the Apple SCSI Peripheral Interface Cable. This cable is a Centronics 50 pin to 50 pin cable. Both the first and last device in the chain need one terminator each, unless one or more of the devices in the chain have termination built in.

Some older SCSI devices are internally terminated. If you are not sure, it is very important that you check the manual for each device. When creating a SCSI chain for the PowerBook, you want a terminated device at the beginning of the chain, and another at the end. If any of the devices in the middle are terminated, you will have difficulties seeing all the devices.

Before connecting or disconnecting devices on a SCSI chain, turn the power off for all devices. When you get ready to power up, turn on all external devices first, then turn on the PowerBook. When you wish to end the session, shut down the PowerBook first, then turn off all the devices.

Common Problems Q&A

Question: I am attempting SCSI Disk Mode, and the PowerBook does not display the diamond pattern. What is wrong?

Answer: First, make sure you are using the correct cable. This is the most common problem. Refer to the previous Cabling section to verify that you are using the SCSI Disk Adapter cable. Second, be aware that SCSI Disk Mode is only supported in certain PowerBooks. Review the instructions under SCSI Disk Mode to see which PowerBooks are supported.

Question: I have added an external SCSI device to my PowerBook and when I start up, I get a diamond symbol on my screen. What does this mean?

Answer: You are using the Disk Adapter Cable instead of the System Cable. See the preceding section on Cabling to see the difference.

Question: I have added an external SCSI device to my PowerBook and when I start up, I only get a flashing question mark (?) over a disk icon. Why?

Answer: Something is preventing your Hard Disk from starting up correctly. First try and start your computer from its Disk Tools disk. If it starts up, and your hard drive does not show up on the desktop, you may have a SCSI ID conflict. Make sure that the external device is set to an ID number from 1 to 6, and if more than one device is connected, make sure each has a unique ID number. Try opening the Apple HD SC Setup program on the Disk Tools disk. If that program can see your hard drive, try selecting the update button.

This updates the driver software on the Hard Disk. Check the version of the Apple HD SC Setup application. It is possible that a newer version is available which may address your problem. Make sure you are configuring your SCSI chain correctly, refer to the previous section, paying close attention to termination.

Question: In SCSI Disk Mode, the desktop computer tries to start up from the PowerBook’s drive, rather than its own internal drive. An example is an error message such as the one saying the system software is not correct for this Macintosh. What should I do?

Answer: Power the desktop computer off, and then start up from the Disk Tools disk for that computer. Make sure that both the PowerBook drive and the desktop's internal drive both show up on the screen. Verify that the names of the two drives are different. Open the Startup Disk Control Panel and verify the desktop computer is selected. Restart and let the Disk Tools disk be ejected, it should then start up from the correct drive.

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This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
12 Feb 1997 - Reworded for clarity.
20 Sep 1996 - Added keyword.
19 Jul 1995 - Updated from Info Alley.

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Tech Info Library Article Number:13611

Tech Info Library

LaserWriter 8 Printer Driver Version 8.1.1 (2/95)

Revised: 2/10/95
Security: Everyone

LaserWriter 8 Printer Driver Version 8.1.1 (2/95)

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Article Created: 4 October 1993
Article Reviewed/Updated: 9 February 1995

TOPIC ----------

This document contains important information about the LaserWriter 8 printer driver version 8.1.1. The new printer driver is more compatible with Apple printers and non-Apple software than earlier versions of the LaserWriter 8 printer driver.

DISCUSSION ----------

Before Installing Printer Driver Software

Before you install LaserWriter 8 software, check the information below about which files in your System Folder will be replaced with newer versions when you install, and what steps you might want to take to keep or remove files:

If You Use System 6

If you use System 6, you may want to make backup copies of your original PrintMonitor and Backgrounder to use if you need the option of sometimes using an older version of LaserWriter driver. (The Installer automatically replaces your original PrintMonitor and Backgrounder with newer versions.)

Drivers Older Than Version 8.0

The Installer doesn't replace versions of the LaserWriter driver that are older than version 8.0. You may remove printer driver files that are older than version 8.0 from your System Folder if you no longer need them.

Drivers For Versions 8.0 or Later

The Installer does remove earlier versions of the LaserWriter 8 driver (for example, version 8.0) and all Apple PostScript Printer Description (PPD) files.

The Installer Places These Files

For System 6, in your System Folder: LaserWriter 8 (version 8.1.1), PrintMonitor (version 7.0.1), Backgrounder (version 1.3), LaserPrep (version 7.2). The Installer also places PPD files for Apple LaserWriter printers in the Printer Descriptions folder in your System Folder.

For System 7, in the Extensions folder: LaserWriter 8 (version 8.1.1), PrintMonitor (version 7.1). It also installs the latest PPD files for Apple LaserWriter printers in the Printer Descriptions folder in your Extensions folder.

NOTE: Some files on the LaserWriter 8 disks have been compressed (their filenames end with .cmp). You can only install these files with the LaserWriter 8 Installer.

The Installer does not copy the LaserWriter Utility to your computer. You may install the utility by dragging it to your hard disk.

About PPD Files

The LaserWriter 8 printer driver is shipped with PPD files that contain information about specific features of LaserWriter printer models. These files are in the Printer Descriptions folder. PPD filenames indicate the printer model and its version of PostScript.

To take full advantage of your printer's features, follow these tips:

• Select your printer in the Chooser and click the Setup button.

• Click the Auto Setup button in the Setup dialog box. The correct PPD file for your printer is automatically selected.

• If the driver can't find a PPD file that matches your printer, you will be prompted to select one. You may select the generic PPD file, which will work with all LaserWriter printers.

About Creating EPS Files

You can create an Encapsulated PostScript (EPS) file in many applications programs by clicking File in the Print dialog box, then clicking Save. When you create an EPS file, note the following:

Creating EPS Files

Creating EPS files with the All option selected in the Font Inclusion pop-up menu in the EPS dialog box can result in very large files. If you include all fonts in an EPS file and save the file with the Unlimited Downloadable Fonts

option selected, an extremely large file may be created.

EPS File With No Fonts

If you create an EPS file with no fonts included and open the document, fonts in the document appear on your screen, but Courier may be substituted when you print.

EPS Files With Preview Information

When creating EPS files with preview information included, applications that create their own PostScript code may not display the EPS file accurately on the screen.

Using the LaserWriter 8 Driver

When using the LaserWriter 8 driver, you should be aware of the following situations. Some happen with all LaserWriter printers and others happen only with specific models.

All LaserWriters

The LaserWriter 8 driver allows some printers to print using a larger imageable print area on the page. If your printer does so, you may find that text in some documents reflows or is clipped to fit the new imageable area.

If you print using A4 size paper, have chosen Manual Feed as the Paper Source, and have a B5 size paper tray installed in your printer, the page will be clipped to match the B5 paper size.

Printing multiple documents with the Finder may not work if the documents have been created by different application programs.

LaserWriter IIg and IIf

When selecting paper sources from the First From and Remaining From pop-up menus in the Print dialog box, selecting Manual Feed for either source sets the driver to print the first page from the manual feed tray.

Some form-printing applications can't print forms using the Layout settings in the Page Setup dialog box.

LaserWriter IINT and IINTX

If you select both the Smooth Graphics and the Invert Image options in the Page Setup Options dialog box, a PostScript error results.

Don't use the B5 tray to print envelopes on a IINT. Use the Letter tray instead.

LaserWriter Pro 600 and 630

You can't use Auto Select as the Paper Source in the Print dialog box to print envelopes from the optional envelope feeder.

When you are printing at 600 dots per inch (dpi), bitmapped images may appear with lines across the image.

Personal LaserWriter NTR

When you are printing in the background, no message appears when the printer runs out of paper.

LaserWriter Pro 810

With some graphics applications, bitmap graphics will be reduced by 25% in size when Precision Bitmap Alignment is specified.

Using the LaserWriter 8 Driver with the Kanji System

To print Japanese characters using KanjiTalk or the Japanese Language Kit, your system must have WorldScript II 7.1.1.

Using the LaserWriter 8 Driver with Application Programs

Some application programs don't yet take advantage of the new features of the LaserWriter 8 driver, or have small incompatibilities that result in printing problems. If you experience problems with a program, contact the publisher of the program. In some cases a newer version of the program may be available.

The following list describes some special cases that you should be aware of when working with some application programs. (There may be other problems with these programs, or with other programs, not mentioned in this document.)

Aldus Freehand 3.11

You can't print using Layout options in the Print dialog box. If you choose a layout from the Layout pop-up menu, the document doesn't print and no error message appears.

EPS files created from within Freehand can't be used in other programs.

Selecting the Unlimited Downloadable Fonts option in the Page Setup Options dialog box results in a PostScript error.

Aldus PageMaker 4.2a

You can't scale EPS images in documents printed using the Layout option in the Page Setup dialog box.

Aldus Personal Press 2.0

Using several font style combinations in text can result in spacing problems.

When working with large EPS files in a document, you may need to increase the amount of memory allocated to the application.

Aldus Persuasion 2.1.2

When you print a document that contains gradient fill patterns, the document is printed with solid patterns instead of gradients.

Documents that contain EPS graphics may not print correctly if you select 2-Up or 4-Up printing.

Aldus SuperPaint 3.0

Rotated or filled polygons print as solid gray objects.

Canvas 3.0.6

Printing with substituted fonts may result in incorrect line layout.

CricketDraw III 1.0

You can't import an EPS file created with the LaserWriter 8 driver that has been saved without preview information.

Be sure that enough space is available on your hard disk when printing large documents; otherwise the application may malfunction.

CricketPresents 2.1

You can't import an EPS file created with the LaserWriter 8 driver that has been saved without preview information.

Informed Manager 1.3.5

Shaded headings in a document may not print correctly.

Some documents will print with extra pages.

MacDraft 2.1

When you print using the Cut Marks option, a PostScript error results.

Microsoft PowerPoint

In PowerPoint version 2.01f, you can't import an EPS file created with the LaserWriter 8 driver that has been saved without preview information.

When importing EPS files, you may want to increase the memory allocated to the application.

Microsoft Works 3.0

Printing documents that have rotated objects with rounded corners results in a PostScript error.

More 3.1

When creating EPS files with the LaserWriter 8 driver, be sure you have enough disk space to hold the file. No Disk Full error message appears when your hard disk becomes full and can't hold the entire file.

Publish It! Easy 2.1.9

Use an earlier version of the driver, or contact the publisher of the application program.

QuarkXPress 3.11

You can't print EPS files created by the LaserWriter 8 driver that contain certain TrueType fonts.

Using Calibrated Color results in a PostScript error.

ReadySetGo! 4.5 and 5.0 (DesignStudio)

Use an earlier version of the driver, or contact the publisher of the application program.

Studio/8 and Studio/32

When creating an EPS file with these programs and the LaserWriter 8.0 driver, you must select the QuickDraw Printer option.

Other Troubleshooting Tips

Printer Status Dialog Boxes

When you are printing with some application programs, the Printer Status dialog boxes may appear overlapping or misaligned on the screen, preventing you from canceling printing by clicking the Cancel button. Press Command-Period to cancel printing.

Unexpected Format Results

If you see unexpected format results when you print a document, choose Page Setup and check whether the paper size is shown as Other. If so, select the correct paper size.

Utility Programs That Change Your Printer Without The Chooser
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Utility programs that attempt to change your current printer without using the Chooser may produce unexpected results.

Cover Page May Not Print

With some graphics applications, the Cover Page may not be printed at the end of a multi-page document. Use Cover Page: Before Document.

Article Change History:
09 Feb 1995 - Removed LaserWriter 8.0 Update Guide and changed format.

Support Information Services

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Tech Info Library Article Number:13613

Tech Info Library

AppleScript: How to Use on AV Computers (10/93)

Revised: 10/7/93
Security: Everyone

AppleScript: How to Use on AV Computers (10/93)

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Article Created: 4 October 1993

TOPIC -----

Is there any information about using speech to control common, non-menu based Finder commands (jumping from one icon to another, and so on)?

What resources are available for customers to use AppleScript?

DISCUSSION -----

Regarding scripting non-menu based Finder commands, there are two options currently available:

- The AppleScript Developer's Toolkit provides instructions on using "finderLib", a script library providing routines which script the System 7.0 and System 7.1 Finder.

- Use the QuicKeys Test Drive which ships with AV Macintosh computers, which would allow you to use speech to control QuicKeys of Finder commands (that is, assign QuicKeys to arrow keys to "jump from one icon to another").

Of course the best solution will be when Apple releases a fully scriptable Finder (without having to use "finderLib").

In the meantime, one of the best sources of AppleScript information is the AppleScript Developer's Toolkit, available from APDA, product number R0175LL/A.

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Tech Info Library Article Number:13614

Software Utilities Update 1.0.1: How It's Different from 1.0

Revised: 10/25/93
Security: Everyone

Software Utilities Update 1.0.1: How It's Different from 1.0

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Article Created: 8 October 1993
Article Reviewed/Updated: 25 October 1993

TOPIC ----------

This article tells you what's been changed in version 1.0.1 of the Software Utilities Update.

DISCUSSION ----------

The Software Utilities Update version 1.0.1 includes:

- HD SC Setup version 7.2.2
  This version of HD SC Setup gives you more flexibility to format large Apple hard disks between 1 and 2 gigabytes.
- A revised ReadMe file for Software Utilities Update
- Revised ReadMe file for MacCheck

Here's a list of files found on Software Utility Update:

File Name	Version #
Apple HD SC Setup	7.2.2
Disk First Aid 7.2	7.2
MacCheck dataFile	1.0.4
MacCheck Read Me	
MacCheck User Guide.msWrd	
MacCheck User Guide.mwII	
MacCheck	1.0.4
Software Utility Update Read Me	
TeachText 7.1	7.1

NOTE: You should update your hard drive drivers and also update the version of this utility that is on your System 7.1 "Disk Tools" disk. If you've already updated using Apple HD SC Setup version 7.2 (from either the Macintosh Software Utility Update 1.0 or Hardware System

Update 2.0), you should still update to version 7.2.2. You can obtain the update from Apple resellers, AppleLink or other on-line services.

Article Change History:
25 October 1993 - Added list of files on the Software Utilities Update, and a note to update the drivers.

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Tech Info Library Article Number:13615

Tech Info Library

MacCheck 1.0.4 Read Me (2/94)

Revised: 2/22/94
Security: Everyone

MacCheck 1.0.4 Read Me (2/94)

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Article Created: 8 October 1993
Article Reviewed/Updated: 22 February 1994

TOPIC ----------

The ReadMe file for MacCheck is in the Discussion section of this article.

DISCUSSION ----------

This ReadMe document contains information about the MacCheck program. The Microsoft Word and MacWrite II documents, "MacCheck User Guide.msWrd" and "MacCheck User Guide.mwII" are a superset of this document and provide easier to read (better formatted and highlighted) text, along with more technical details about the inner workings of MacCheck.

I. INTRODUCTION TO MACCHECK

MacCheck is an Apple support utility tool with which you can learn more about your Macintosh computer, as well as diagnose software problems that result from corrupted directories and files. By using MacCheck in conjunction with Disk First Aid, you can resolve common disk corruption problems.

MacCheck creates a profile of your Macintosh computer, including:

- The processor, memory, expansion cards, SCSI drives, keyboard, monitor, and so on
- The installed applications and system software on your startup drive

MacCheck also provides:

- A general logic board test
- A checker for the file system and System files
- A checker for duplicate System Folders

The MacCheck product consists of the application file "MacCheck," and the data file "MacCheck dataFile." For MacCheck to work correctly, both the application file and the data file must be located in the same folder. MacCheck is compatible with System 7.0 or later.

Under most circumstances, MacCheck can be run with extensions on. However, if you are having trouble running MacCheck, you should turn extensions off (by restarting your computer while holding down the Shift key). MacCheck does conflict with some non-Apple extensions:

- Thunder 7
  Don't run MacCheck while Thunder 7 is active. MacCheck and Thunder 7 have serious conflicts.
- Virus protection programs
  You'll need to "teach" some virus protection programs about MacCheck.
- Electronic mail programs
  Sometimes when electronic mail programs, such as Microsoft Mail or QuickMail, are active, they disrupt the file system checking by making your startup volume "busy".

II. MACCHECK OVERVIEW

Launching MacCheck

When you launch MacCheck, you'll see a splash screen detailing the initialization processes that MacCheck performs while it starts up. During most of this time, MacCheck gathers profile information and checks for multiple System Folders. On a new Macintosh LC III, MacCheck takes about 1 minute to launch; on a 400MB, 8,000-plus-file Macintosh Quadra 950, it takes about 4-5 minutes to launch.

Note: If you want to speed up the launch process by about 20 seconds, press the Space bar when the splash screen first appears. This tells MacCheck not to profile modems or check SCSI devices that are typically slow, such as DAT tape drives. MacCheck will display a "•QuickBoot•" message. If you wish to quit the launch process at any time, press command-period.

Accessing Profile Information

MacCheck stores the collected profile information in three log files, the "System Info," "Additional System Info," and "Application and Font Info" logs. To view the profile information placed into these logs, select the log you want from the Windows menu.

Starting Logic Board and File System Tests

To start the logic board and file system tests, click the Test button or select the Test option (command-G) in the Diagnostics menu. When these tests are completed, MacCheck stores the results in a results file. The default name of this file is "Test Results-1". You may rename this file by selecting the Save Results As option in the File

menu.

Article Change History:
22 February 1994 - Retitled article to include version number.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:13616

Tech Info Library

System 7 Pro 7.1.1: Macintosh AV Systems Alert (3/94)

Revised: 3/25/94
Security: Everyone

System 7 Pro 7.1.1: Macintosh AV Systems Alert (3/94)

==========

Article Created: 7 October 1993
Article Reviewed/Updated: 24 March 1994

TOPIC ----------

An incompatibility has been discovered when running PowerTalk 1.0 on a Macintosh Centris 660AV or Macintosh Quadra 840AV system. The incompatibility can result in performance degradation and/or possible B*Tree corruption.

DISCUSSION ----------

One problem occurs when users exchange a Business Card (or Personal Catalog) between a non AV Macintosh and an AV system. The Business Card (Personal Catalog) will be damaged when opened on the AV system. PowerTalk has a built-in repair function, but a user confirmation dialog will be brought up every time such repair takes place.

Before installing System 7 Pro on Quadra 840AV or Centris/Quadra 660AV, make sure you have System Enabler 088 1.0.1 or later installed.

Version 1.0.1 (or later) of System Enabler 088 is currently available in Apple SW Updates, on AppleLink.

Article Change History:
24 Mar 1994 - Made visible to public, and updated enabler version information.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:13617

Tech Info Library

CopyDoubler: System 7 Pro Incompatibility (10/93)

Revised: 11/23/93
Security: Everyone

CopyDoubler: System 7 Pro Incompatibility (10/93)

==========

Article Created: 4 October 1993
Article Revised/Updated: 23 November 1993

TOPIC --

The System 7 Pro 7.1.1 Compatibility Checker reports that CopyDoubler 2.0.1 is compatible, but it should be listed as just "mostly compatible."

CopyDoubler 2.0.2 is compatible with System 7 Pro 7.1.1.

DISCUSSION --

If you have CopyDoubler's "Fast Empty Trash" enabled, it won't let you empty the trash if Apple Mail items have been thrown away. This also causes a crash about half the time.

We've reported this problem to Fifth Generation Systems.

Article Change History:
23 November 1993 - added that 2.0.2 is compatible

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Tech Info Library Article Number:13618

Tech Info Library

GeoPort and Extensions Manager (10/93)

Revised: 10/14/93
Security: Everyone

GeoPort and Extensions Manager (10/93)

==========

Article Created: 8 October 1993

TOPIC ----------

If I install Extensions Manager 2.0, turn all of my extensions or the Express Modem control panel off, and then restart, the Express Modem control panel will be corrupted. It will come up black when extensions are loading if it is turned back on with Extension Manager. The only way to get it back is to reinstall the GeoPort software.

DISCUSSION ----------

We did some testing with this and believe we have discovered the problem. This is not really a software conflict but rather a customer-usage issue.

We did a lot of testing with the GeoPort and the Extensions Manager and the only way I could get the problem, where the "phone turned black" and the Express Modem was unusable, was:

- To have turned off the Extension Manager's own extension, EM Extension, when the other extensions were turned off.

- NOT to turn it back on when the other extensions were turned on.

If the Express Modem was turned off, with and without turning off its own extensions, we could always get it turned on successfully -- as long as the EM Extension was not turned off and left off.

The key to knowing whether the EM Extension is off, is to check where the Extensions Manager icon loads at boot. If it shows before the other extensions, then it is on; if instead it shows after the extensions and before the Express Modem icon, then it is off, and the phone will go black. Then yes, the only way to get the Express Modem back and functional is to reinstall the GeoPort software.

So, in summary, the key is to NOT turn off the EM Extension (equals don't

turn off all extensions unless you really have to). If you do have to turn it off, BE SURE to turn it on in the Extensions Manager Control Panel BEFORE rebooting! Having the Extensions Manager half on/off is the actual problem.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13620

Tech Info Library

Freehand 3.1, Sys 7.1, Quadra 700 & 950: Use System Update 3.0

Revised: 9/13/95
Security: Everyone

Freehand 3.1, Sys 7.1, Quadra 700 & 950: Use System Update 3.0

==========

Article Created: 15 October 1993
Article Reviewed/Updated: 13 September 1995

TOPIC ----------

I am having problems working with Aldus Freehand 3.1. The first time I create a document, it works fine. If I edit the document, clicking on anything (editing and magnifying) freezes the application. Aldus tells me this is a problem with my Quadra 700.

DISCUSSION ----------

The Problem

The problem was with the way Aldus handled their screen buffers. With System 7.0 or 7.0.1, there was no problem. When customers upgraded to System 7.1, then Quadra 950s and Quadra 700s could exhibit the problem.

The Solution

The remedy is to install the latest System Update for System 7.1, currently System Update 3.0.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" - Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" - Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
13 September 1995 - Updated with latest System Update version.

..TIL13623-Freehand_3-1_Sys_7-1_Quadra_700_and_950-Use_System_Update_3-0_(TA30343)

Support Information Services

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Tech Info Library Article Number:13623

Tech Info Library

Apple HD SC Setup, 3rd-Party Drives, & SCSI Manager 4.3 (1/95)

Revised: 1/13/95
Security: Everyone

Apple HD SC Setup, 3rd-Party Drives, & SCSI Manager 4.3 (1/95)

==========

Article Created: 12 October 1993
Article Reviewed/Updated: 13 January 1995

TOPIC -----

Does Apple HD SC Setup format third party drives to take advantage of SCSI Manager 4.3?

DISCUSSION -----

Apple does not distribute a SCSI formatter that supports both SCSI Manager 4.3 and third party drives. Apple HD SC Setup 7.2.2 that ships with System Update 2.0.1 does not support third party drives, and although Apple HD SC Setup 3.0.1 shipped with A/UX supports third party drives, it doesn't support the SCSI Manager 4.3.

As of October, 1993 there are two third party SCSI drive formatters that support SCSI Manager 4.3. To locate a vendor's address and phone number, use the vendor name as a search string.

- MicroNet Technology's SCSI utility software v6.0 which is compatible with their drives.

- CharisMac Engineering's Anubis, v 2.5 which is a universal formatter.

Other vendors should have "SCSI Manager 4.3-savvy" drivers soon.

Article Change History:
13 Jan 1995 - Made corrections to application name appearing in article.
21 Oct 1994 - Retitled to better describe the article.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13624

Tech Info Library

Token Ring 4/16 NB Card RAM Expansion (11/93)

Revised: 11/17/93
Security: Everyone

Token Ring 4/16 NB Card RAM Expansion (11/93)

==========

Article Created: 7 October 1993
Article Reviewed/Updated: 17 November 1993

TOPIC ----------

I'm having difficulty obtaining a specified correct part for a DRAM upgrade to the Apple Token Ring 4/16 NB Card. Is the OKI part number M514400A-70Z, an acceptable substitute?

I would like Apple Computer's opinion on the acceptability of OKI part M514400A-70Z.

DISCUSSION ----------

We cannot bless an OKI part number as an acceptable replacement for a Toshiba or TI chip. We do not have access to the parts in question or the specifications of the OKI parts. Based on the part number it sounds like you want to upgrade the card with 2.0 MB of RAM to a total of 2.5 MB of RAM.

The best answer is for you to contact Marshall's Electronics telemarketing department at 800-800-2968 and ask to purchase, via credit card, the proper parts. There is a $50.00 minimum purchase requirement.

These are two parts they have in stock:

1) For 0.5 MB upgrade: Use TI part number TMS44C256-10SD @ $8.20 each (need 4 per card)

2) For 2.0 MB upgrade: Use TI part number TMS44000-12SD @ 27.50 each (need 4 per card). You may also used Toshiba part number TC514400AZ-80.

The Marshall's telemarketing staff is quite helpful on equivalent ZIP chip modules which have the bit density (256K x 4 or 1024K x 4) and the proper speed (120ns minimum). The parts are rare but a large semiconductor distributor has them.

Article Change History:
17 Nov 1993 - Updated to the proper chip speed.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13625

Tech Info Library

CharisMac Engineering, Inc.

Revised: 5/2/97
Security: Everyone

CharisMac Engineering, Inc.

==========

Article Created: 12 October 1993
Article Reviewed/Updated: 2 May 1997

CharisMac Engineering, Inc.
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66 "D" P&S Lane
Newcastle, CA 95658

Toll-Free: 800-487-4420
Local: 916-885-4420
Fax: 916-885-1410

Worldwide Web Site: http://www.CharisMac.com/

Company Profile:
Develops formatting software for the Macintosh.

Article Change History:
02 May 1997 - Reformatted; added WWW information.

Copyright 1993-1997, Apple Computer, Inc

Tech Info Library Article Number:13627

Disk First Aid: Disk Error & Cannot Repair Messages (6/96)

Revised: 6/27/96
Security: Everyone

Disk First Aid: Disk Error & Cannot Repair Messages (6/96)

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Article Created: 13 October 1993
Article Reviewed/Updated: 27 June 1996

TOPIC ----------

1) When I checked my hard drive using Disk First Aid v7.2, I got the following messages:

Checking catalog file.
Problem: Missing thread record, 3499, 160
Rechecking catalog file.
Test done. Problems were found, but Disk First Aid cannot repair them.

2) On another note, my Trash also will not empty with only one item in it. This also applies if there are multiple files in only one folder.

DISCUSSION ----------

General Background Information
==========

A directory, consisting of the Catalog B*-tree and the Extents B*-tree, among other things, keeps track of file locations. The Catalog B*-tree contains a unique entry for every file, specifying its name, attributes, location, and other information. It functions as an index or a table of contents for the disk. The Extents B*-tree contains information about file fragments (files may be broken up and stored in different locations on a disk).

The bottom level of a B*-tree structure is occupied exclusively by Leaf Nodes. A Catalog file leaf node can contain four different types of records, one of which is the File Thread Record. A file thread record provides a link between a file and its parent directory. It enables the File Manager to find the name and directory ID of the parent of a given file.

Answer to Question 1

==========

When Disk First Aid reports the thread for a file is missing and it cannot repair it, this means that it is unable to reconcile the entry for the file in the directory (Catalog B*-tree) with the location of the file on the volume. Usually Disk First Aid is unable to repair the missing thread record due to on of the following three situations:

Situation A

Disk First Aid is not being used properly. You cannot repair the boot volume (the startup disk) with Disk First Aid. If you are started from your hard drive, Disk First Aid cannot repair it until you start your Macintosh from another startup disk. Make sure you are starting up from your Power Macintosh CD, the System 7.5 Disk Tools floppy diskette, or other bootable disk (floppy or hard). Disk First Aid also cannot repair a disk on which it is located (basically, it cannot repair itself), or any disk where File Sharing is turned on).

Situation B

The file has been overwritten or characteristics changed (briefly: the file has become damaged).

Situation C

The Catalog B*-tree is damaged.

Apple recommends whenever you encounter directory problems that cannot be fixed by programs such as Disk First Aid, Norton Disk Doctor, and Central Point MacTools' DiskFix, backup your files and reformat the hard drive. Continuing to use a volume that has a damaged directory places your data in jeopardy!

Answer to Question 2
==========

Folders that cannot be thrown away may suggest a directory problem or a Finder flag problem. If it is the latter, programs such as UnlockFolder or Rename Rescue may help. The former, in the context of the problem you are reporting, provides further evidence of directory damage.

This article was published in the Information Alley on 10 May 1996.

Article Change History:
27 Jun 1996 - Added keyword.
09 May 1995 - Clarified and simplified description of Situation A.

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Tech Info Library Article Number:13628

Tech Info Library

Hard Drive: 230MB Drive Thermal Recalibration (10/93)

Revised: 10/13/93
Security: Everyone

Hard Drive: 230MB Drive Thermal Recalibration (10/93)

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Article Created: 13 October 1993

TOPIC ----------

Why does my 230MB drive access itself periodically when I'm not doing anything?

DISCUSSION ----------

The head positioning servo in the 230 MB drive maintains the heads over the desired track during the read/write operations. Fine tuning the position of the heads to compensate for changes in the thermal environment of the drive is a "designed in feature" of the 230 MB disk assembly, and is called "thermal recalibration"

When thermal conditions in the drive change, the servo system compensates for thermally induced dimensional changes, and keeps the heads properly positioned. At power on and at other predetermined times, and whenever an internal thermistor senses temperature changes greater than a specified amount, servo position information pre-written on the inner (ID) and outer (OD) tracks of the drive is sampled and used to provide correction to the location of the read/write heads relative to the optical encoder; this ensures that they are properly positioned over the magnetic recording surface during data transfer operations. This capability enhances the drives ability to accurately read and write data over it's specified operating environment.

This information pertains to the Apple 230MB drive as well as the 3rd Party drives using the Quantum ProDrive LPS 230 mechanism.

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Tech Info Library Article Number:13630

Tech Info Library

Alternating Cursor: Macintosh Can't Boot (11/94)

Revised: 11/2/94
Security: Everyone

Alternating Cursor: Macintosh Can't Boot (11/94)

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Article Created: 13 October 1993
Article Reviewed/Updated: 02 November 1994

TOPIC ----------

After starting the Macintosh, it draws a menu bar with no text, freezes, and then the cursor changes between the watch and arrow continuously. The Macintosh never completes the startup sequence. The Macintosh can't boot from a System 7.x floppy disk, but can boot from a System 6.x floppy disk. Booting with extensions off or zapping parameter RAM doesn't help either.

DISCUSSION ----------

The cause of this is incorrect window coordinates in the Finder. The Finder stores the top-left and bottom-right coordinate of each window. Should, for some reason, the bottom-right coordinate of a window be to the left or top of the top-left coordinate, the Finder will get very confused. You'll then see the alternating wristwatch and arrow cursor.

The solution to this problem is to restart with the Option key held down. This forces the Finder to close all the windows, and zero out their coordinates. This may not work if a third party keyboard is in use, for best results, use an Apple keyboard to zero out the coordinates.

Article Change History:
02 Nov 1994 - Added possible problems with third party keyboards.
30 Sep 1994 - Edited to include the words "watch" and "pointer".

Support Information Services

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Tech Info Library Article Number:13631

DigiSign Utility Signature Authentication (4/96)

Revised: 4/9/96
Security: Everyone

DigiSign Utility Signature Authentication (4/96)

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Article Created: 13 October 1993
Article Reviewed/Updated: 9 April 1996

TOPIC -----

DigiSign Utility that ships with PowerTalk has a new contact point for the signature authentication process.

DISCUSSION -----

When requesting DigiSign's signature authentication, a floppy disk containing the "Request" file, created by the DigiSign Utility, should be mailed to:

VeriSign Inc.
Apple Certificate Services
2593 Coast Ave
Mountain View, CA 94043

Telephone: 415-961-7500

This article was published in the Information Alley on 9 April 1996.

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Tech Info Library Article Number:13633

Tech Info Library

DigiSign: Not Supported on ImageWriter LQ & DeskJet (10/94)

Revised: 10/10/94
Security: Everyone

DigiSign: Not Supported on ImageWriter LQ & DeskJet (10/94)

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Article Created: 13 October 1993
Article Reviewed/Updated: 10 October 1994

TOPIC -----

I'm having problems printing my "signer request form" to an ImageWriter LQ.

DISCUSSION -----

The ImageWriter LQ and an HP DeskJet can not be used to generate a printed signer request form. It isn't a supported configuration.

The solution is to print to a 300 dot-per-inch or greater printer. Also, RSA Data Security, Inc., will accept the signer file on diskette. Simply save the signer request to a diskette instead of printing it. You must contact RSA to obtain a authorized signer.

To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
10 Oct 1994 - Added HP Deskjet.

Support Information Services

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Tech Info Library Article Number:13634

Tech Info Library

LaserWriter Driver Differences: Version 8.0 and 8.1.1 (10/93)

Revised: 10/15/93
Security: Everyone

LaserWriter Driver Differences: Version 8.0 and 8.1.1 (10/93)

==========

Article Created: 15 October 1993

TOPIC ----------

What are the differences between LaserWriter driver v8.0 and v8.1.1?

DISCUSSION ----------

Here's a summary of the differences between versions 8.0 and 8.1.1 of the LaserWriter driver:

NEW FEATURES:

Improved Tray Handling

When installed, the user may select the optional 500-sheet paper cassette as the "default" paper source. This was a much-requested feature from users. This feature is found in the "Configure" dialog during printer Setup from the Chooser.

Precision Bitmap Alignment

The driver now scales bitmaps in accordance with the resolution of the output device: 4% reduction as usual for 300 dpi printers, 10% for 400 dpi, and so on.

Consolidated PPDs

Multiple PPD files for different memory configurations are replaced by a single PPD file containing specifications for different page sizes. For example, we used to have 3 PPD files for the LaserWriter IIg v2010.113 (4MB, 5MB and 8MB) - with v8.1.1, we have one.

Improved Color Matching

The driver will use the ColorSync System Profile, if installed on the host,

instead of the Apple 13" colorspace profile built into the driver.

BUG FIXES

There are various bug fixes in LaserWriter 8.1.1 that address both driver and 3rd party application issues. Apple is suggesting that users of LaserWriter driver 8.0 upgrade to LaserWriter driver 8.1.1 mainly because of these bug fixes, and also for the additional features.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13635

SNA•ps 5250 Can't Connect, Config Problem (10/93)

Revised: 10/14/93
Security: Everyone

SNA•ps 5250 Can't Connect, Config Problem (10/93)

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Article Created: 13 October 1993

TOPIC -----

I'm having trouble connecting SNA•ps 5250 1.0 to a SNA•ps Gateway 2.0. I have verified the gateway configuration and it is working. I'm starting 32 sessions and all sessions are contention winners. QAUTOVRT is set to 500.

When I start SNA•ps 5250 I get a zone list. I can see the gateway in the gateway list. I can see both pool and session names in the pool/sessions column.

SNA•ps 5250 control panel Local LU is set for PASSTHRU and Auto Configuration. Local LU name on gateway is PASSTHRU.

When I select a session (or pool - I've tried it both ways) and click the Connect button I get the error, "Couldn't connect to session because there is an error communicating with the SNA•ps gateway."

I have tried to get a trace on the SNA•ps gateway and it showed nothing. I also run an SNA trace on the AS/400 and there is no traffic related to starting display station PASSTHRU or connecting a terminal session. No errors are generated on the AS/400.

This leads me to believe that this is a problem with SNA•ps 5250 itself. Gateway and terminal emulator are being run on the same Mac right now, but I've also tried connecting 5250 sessions from other Macintoshs on network, and get the same error message.

The gateway is a Macintosh IIci, 20 MB RAM, System 7.1, AppleTalk 58.0, EtherTalk 2.5, Asante Ethernet card, 32-bit addressing on, file sharing off.

I am certain this is not an SNA communications problem. This has something to do with the connection between the gateway and the emulator.

DISCUSSION ----------

Since the gateway bound all contention winner sessions correctly, we all passed judgement on the correctness of the SNA•ps Gateway configuration too quickly. The TP configuration of the SNA•ps Gateway was incorrect in the Characteristics area on the dialog box. The SNA•ps 5250 emulator requires the Basic/Mapped Verb radio button be selected and the PIP information check box selected. You have the Basic radio button and no check box for PIP information. The SNA•ps 5250 attach Verb call was rejected since it requires Mapped verb support so you get the dialog box " Couldn't connect to session because there is an error communication with the SNA•ps gateway." This is a generalized failure to connect dialog box which is displayed for the less often encountered attach errors.

You ended up with this TP configuration by using the Apple supplied sample configs which come with the 2.0 gateway. You used that config file as a base for other configuration entries and never checked on the Characteristics required in the SNA•ps 5250 documentation. If you had done the config from scratch, the normal TP defaults are Basic/Mapped and PIP checked.

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Tech Info Library Article Number:13636

DAL VM Server on VM/ESA and SUM Function Problems (10/93)

Revised: 10/15/93
Security: Everyone

DAL VM Server on VM/ESA and SUM Function Problems (10/93)

==========

Article Created: 7 October 1993

TOPIC ----------

This article describes a reported problem with the DAL VM Server, release 1.3.5 and queries which include the aggregate function, SUM.

DISCUSSION ----------

A few VM/ESA sites have reported problems of intermittent hangs, and server abends, with the DAL VM Server, release 1.3.5 and queries which include the aggregate function, SUM.

The symptom can be seen in a VM console log of the DAL session as an '80A' (Virtual Storage Capacity exceeded) abend, or an 'A0A' (Decimal Overflow Exception) abend of the server.

It has been determined that there needs to be a ZAP applied to the source code to solve this problem.

In both the DALVM and IDALVM modules the instruction at 034D4 needs to be NOP'd:

```
034CE  D700F000F000
034D4  4410C060
```

Needs to be changed to:

```
034CE  D700F000F000
034D4  07000700
```

Always be sure to do a verify before doing the Zap.

An additional factor to remember is that the user's virtual machine needs to be at least 6MB, and 8MB when DAL will be used with TCP/IP connections.

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Tech Info Library Article Number:13642

PhotoFlash: Description (10/93)

Revised: 5/7/96
Security: Everyone

PhotoFlash: Description (10/93)

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Article Created: 18 October 1993

TOPIC ----------

This article describes the PhotoFlash software.

DISCUSSION ----------

PhotoFlash is a photo-publishing product that focuses on the process of working with photos in documents. It provides tools for:

- Image management (a browser)
- Acquisition (support for many file formats and acquire plug-ins)
- Adjustment (basic image prep and tone control), and
- Placement into documents (automatic scripts).

As it is a companion to document creation, PhotoFlash is also very compact and fast, occupying around 3MB of RAM and providing responsive editing and adjustment tools. This allows a modest computer (8 to 12MB RAM) to run page layout software and PhotoFlash at the same time to speed the process of photo-publishing.

PhotoFlash is delivered on 2 floppy disks, along with a disk full of sample images. The PhotoFlash package also includes AppleScript 1.0 and QuickTime 1.6.1, which are part of the one-button installation process. PhotoFlash is fully scriptable and recordable and can be linked with many AppleScript applications for enhanced productivity.

Features

- High-performance
  Very quick response and processing speed
  Acceleration via SuperMac Thunder/DayStar Charger cards
- Memory-efficient
  Virtual memory minimizes memory requirements
  Accelerated JPEG provides for smaller files

- Fast Photo CD
  Industry's fastest reading of Photo CDs
- Image compression
  Accelerated JPEG saves time, space, transmission time
- Easy Picture Access
  Integrated browser for visual image location
- Simple User Interface
  Simple human interface and terminology
  Direct placement into Quark, PageMaker documents
- Automatic Tools
  Automatic brightness and contrast adjustment
  Automatic scratch and dust removal; Quick sharpen, blur, resize, crop
- Picture Previews
  Real-time previews of different effects
- Scripting
  Full AppleScript support; record and playback any actions
  10 useful scripts included along with more advanced scripting tools
  Automates repeated work across applications
- Tight Integration
  Direct linkage between PhotoFlash and XPress or PageMaker
  allows direct placement into Quark and PageMaker documents.
- Compatibility
  Supports PICT, TIFF, JPEG, Photoshop, Photo CD, EPS, DCS files
  Other file support can be added via plug-ins.
- Expandability
  Accepts third-party Photoshop compatible plug-ins and filters
  Direct access to peripherals through plug-in support
- Scriptable
  Fully scriptable/configurable to work with other applications
  Can be customized for specific tasks
- File conversion
  File formats can be converted in single or batch modes.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13644

Tech Info Library

Newton Messaging Card: How to Setup (10/93)

Revised: 11/15/93
Security: Everyone

Newton Messaging Card: How to Setup (10/93)

==========

Article Created: 18 October 1993
Article Reviewd/Updated: 15 November 1993

TOPIC ----------

How do I setup my Newton Messaging Card?

DISCUSSION ----------

With the Newton Messaging Card and the Apple Wireless Messaging Service, you can receive, read and store messages on your Newton. Anyone who knows your personal identification number (PIN) can send you number messages (such as a telephone number) or text messages that you can read on your Newton. If you've signed up for voice messaging, the Messaging Card can let you know when you've received a voice message.

Setup

To use your Messaging Card, you must activate the Apple Wireless Messaging Service, install the battery and turn on the card.

To activate the Apple Wireless Messaging Service, call the toll-free number listed in the information brochure that came with your Messaging Card. Be sure to have your Messaging Card available if you need to read the Card's ID number to the operator. You'll also be able to choose among the service options available in your area.

When you activate the service, you will receive a seven-digit PIN which is your address on the messaging service. Others must know your PIN to send you a message.

You will also receive a four digit PassCode which is a security code. You'll need it to review, hold or release messages, change your personal greeting, listen to voice messages or use other voice message features. Be sure to change your PassCode when you receive it and keep it to yourself.

To install the battery, follow these steps:

1) Slide off the battery compartment cover.
2) Insert one AAA-size battery. Be sure to properly orient the positive (+) and negative (-) terminals.
3) Replace the battery compartment cover.

Replace the battery when the indicator light flashes red or if a low-battery alert appears while you're reading messages.

To turn on the Messaging Card, slide the power switch to the left. The messaging card must be on to receive a message, but it does not have to be inserted into your Newton.

If someone sends you a message while the card is off, you will not receive the message. If you've left the card off for a while or believe that you've missed some messages, you can review those messages by calling a toll-free number listed in the messaging server quick reference guide.

To insert your Messaging Card, flip the latch on the top left corner of the Newton and press down on the switch to eject the current card. Then, insert the Messaging Card into the slot. It will not go all the way into the slot. When you insert the card, a dialog box with the message "Newton Messaging Card" will be displayed on the screen.

NOTE: On some airlines, passengers are asked to turn off their pagers to prevent possible interference with navigation systems. If you're on such a flight, turn off the Messaging Card.

Article Change History -
15 November 1993 - Corrected typographical errors

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13645

Tech Info Library

Apple Wireless Messaging Service: How to Use (10/93)

Revised: 11/15/93
Security: Everyone

Apple Wireless Messaging Service: How to Use (10/93)

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Article Created: 18 October 1993
Article Reviewd/Updated: 15 November 1993

TOPIC ----------

How do I use the Apple Wireless Messaging Service?

DISCUSSION ----------

The Apple Wireless Messaging Service, with the Newton Messaging Card, allows you to:

- Send and receive text and number messages
- Send and receive voice messages by telephone
- Hold, release or review your messages

Messages are distributed by wireless communication and can be received in major metropolitan areas and cities in the United States and Canada. You can select different coverage options depending upon your needs.

You can subscribe to the Apple Messaging Service by calling 1-800-474-6374. You should have your Newton Messaging Card available when you call.

When you subscribe to the Apple Wireless Messaging Service, you will receive a seven-digit personal identification number (PIN) which is your address on the messaging service. Others must know your PIN to send you a message.

You will also receive a four digit PassCode which is a security code. You'll need it to review, hold or release messages, change your personal greeting, listen to voice messages or use other voice message features. Be sure to change your PassCode when you receive it and keep it to yourself.

Sending Messages

To send a text message, follow these steps:

1) Call 1-800-577-9757.
2) Enter the recipient's PIN. Do not press the pound key (#).
3) An operator will take your message, then repeat the message to verify it. You can send a message of up to 55 characters.
4) You can now send another message. When you have finished sending messages, hang up.

To send a number message, follow these steps:

1) Call 1-800-639-9757.
2) Enter the recipient's PIN. Do not press the pound key (#).
3) Enter a number message, either a phone number or numeric code. The message will be repeated back to you.
4) To send another message to another PIN, enter the second PIN. When you have finished sending messages, hang up.

To send a voice message, follow these steps:

1) Call 1-800-639-9757.
2) Enter the recipient's PIN. Do not press the pound key (#).
3) Leave a voice message of up to 60 seconds.
4) To send another voice message to another PIN, enter the second PIN. When you have finished sending messages, hang up.

Receiving Messages

To receive messages with your Newton Messaging Card, you must switch on the card and be within range of the messaging service transmitters. Your messaging service quick reference guide will give you information about your local coverage area.

To view text and number messages on your Newton, follow these steps:

1) Insert the Messaging Card into your Newton.
2) Tap the Extras button to open the Extras Drawer.
   - To view unread messages only, tap In Box, then tap Receive. Tap Pager in the list of choices that appear. After a few seconds, any new messages will appear in the list.
   - To view all messages, Tap Pager, then tap the dot at the bottom of the screen to list all of your messages. Tap the message that you want to view.

When you are sent a voice message, your Newton Messaging Card receives an alert. To receive your voice messages (by telephone), follow these steps:

1) Call 1-800-639-9757.
2) Enter your PIN, then press the star key (#) to interrupt the greeting.
3) Enter your PassCode. Any voice messages you haven't heard are played back in the order they were received.
   - Press the 3 key to delete a message.

- Press the 5 key to save a message.

Reviewing Messages

If someone sends you a message while the Messaging Card is off, you won't receive the message, but the message will be stored with the messaging service for 72 hours. You can review these messages by telephone.

You can also have a message re-sent to your Messaging Card.

To review these messages by telephone, follow these steps:

1) Call 1-800-639-9757 and enter your Personal Identification Number (PIN).
2) Press the star key (*) to interrupt the greeting, then enter your PassCode.
3) Press the pound key (#) for options, then press the 3 key for Message Management.
4) Press the 1 key to review your messages. You will hear the most recent message first.
   - Press the 3 key to delete a message
   - Press the 5 key to hear a message again
   - Press the 6 key to skip a message
   - Press the 8 key to start again from the beginning
5) To have a message re-sent to your messaging card, press the 7 key.
6) Press the 9 key to exit to Options, then press the star key (*) to exit Options and hang up.

Holding Messages

You can also have the messaging service hold your number and text messages for up to two weeks until you are ready to receive them. You can then release these messages at any time before the holding period ends.

To hold your messages, follow these steps:

1) Call 1-800-639-9757 and enter your Personal Identification Number (PIN).
2) Press the star key (*) to interrupt the greeting, then enter your Passcode.
3) Press the pound key (#) for options, then press the 3 key for Message Management
4) Press the 2 key again for Page Hold.
5) Enter the number of hours you want your messages held (from 1 to 99 hours; enter 99 if you want messages held for 14 days).
6) Press the star key (*) to exit, and hang up.

To release your messages, follow these steps:

1) Call 1-800-639-9757 and enter your Personal Identification Number (PIN).
2) Press the star key (*) to interrupt the greeting, then enter your Passcode.
3) Press the pound key (#) for options, then press the 3 key for Message Management
4) Press the 3 key again for Page Release.

5) Press the 7 key (for "Release") to release your messages.
6) Press the star key (*) to exit, and hang up.

Article Change History -
15 November 1993 - Corrected typographical errors

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Tech Info Library Article Number:13646

Tech Info Library

Performa 550: Specifications (11/95)

Revised: 11/1/95
Security: Everyone

Performa 550: Specifications (11/95)

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Article Created: 18 October 1993
Article Reviewed/Updated: 1 November 1995

TOPIC ----------

This article gives technical specifications for the Macintosh Performa 550 computer.

DISCUSSION ----------

Microprocessor

- MC68030, 33 MHz clock speed; 32-bit data bus
- Built-in memory-management unit
- Socket for optional MC68882 floating-point unit (FPU)

Memory

- 5MB RAM standard (4MB on logic board, 1MB in SIMM)
- Expandable (by authorized Apple dealer) to as much as 36MB by adding 1MB, 2MB, 4MB, 8MB, 16MB, or 32MB SIMM to a single 72-pin slot. Requirement: 72-pin fast-paged, 80ns or faster.
- 1MB ROM

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 160MB hard disk
- Internal AppleCD 300i double-speed CD-ROM drive

Video Display

- Integrated Macintosh Color Display with 14-inch Trinitron CRT
- Resolution: 640 x 480 pixels, 69 dpi
- 768K (512K on main board and 256K SIMM) VRAM supports 32,768 colors (16-bit color)

Software

- System Software version 7.1P5
- Educational and productivity software installed on hard drive

Interfaces

- Internal expansion slot for one Macintosh LC processor-direct expansion card. Compatible with Apple IIe Card.
- SCSI interface for connecting up to five external peripheral devices
- Two serial (RS-232/RS-422) ports
- One stereo sound-output port for external audio amplifier or headphones
- Two Apple Desktop Bus (ADB) ports for keyboard, mouse, and other devices
- Front headphone jack
- Built-in electret microphone above display
- One sound-input port for four sources: internal or external* microphone, internal CD-ROM, or external audio

*NOTE:
The Apple PlainTalk Microphone, which is sold as a standalone product, is compatible with these systems. These products cannot use the older style low-level output microphone used on previous Macintosh models.

Sound Generator

- Stereo 8-bit digital-analog conversion using 22-kHz sample rate - capable of driving stereo headphones or other stereo equipment through the sound jack and headphone jack
- Built-in stereo speakers

Keyboard and Mouse

- ADB Mouse II
- Apple Keyboard II

Clock/Calendar

- Custom integrated circuit with long-life lithium battery

Disability Access

- CloseView, Easy Access, and visible-beep software are built in.
- Third-party options provide alternative input and output devices

Power Requirements

- Line voltage: 90 to 264 V AC, RMS single phase, automatically configured
- Frequency: 47 to 63 Hz
- Power: 40 W maximum, not including display
  60 W maximum, including display

- Energy-saving feature reduces power consumption by 50%
- One AC outlet powers computer, display, drives, and speakers

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 mA (three ADB devices maximum is recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA, depending model used

Size and Weight

Main unit:
- Height: 17.9 in. (45.5 cm)
- Width: 13.5 in. (34.4 cm)
- Depth: 16.5 in. (42.0 cm)
- Weight: 40.5 lbs (18.4 kg)

Mouse:
- Height: 1.3 in. (3.3 cm)
- Width: 2.4 in. (6.2 cm)
- Depth: 4.2 in. (10.7 cm)
- Weight: 4.0 oz. (0.10 kg)

Keyboard:
- Weight: 2.2 lb. (1 kg)
- Height: 1.8 inches (44 mm)
- Width: 16.5 inches (418 mm)
- Depth: 5.6 inches (142 mm)

Operating Environment

- Operating temperature: 50 to 104° F (10 to 40° C)
- Storage temperature: –40 to 116.6° F (–40 to 47° C)
- Relative humidity: 20% to 85% noncondensing
- Maximum altitude: 15,000 ft. (4,722 m)

Article Change History:
01 Nov 1995 - Corrected VRAM size.
15 Aug 1995 - Included information about PlainTalk microphone.

Support Information Services

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Tech Info Library Article Number:13647

Tech Info Library

Macintosh LC 520 and Performa 550: How They Differ (10/93)

Revised: 10/15/93
Security: Everyone

Macintosh LC 520 and Performa 550: How They Differ (10/93)

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Article Created: 18 October 1993

TOPIC -----

This article provides a table of the differences between two similar Apple computer systems: the Macintosh LC 520 and the Performa 550.

DISCUSSION -----

	LC 520	Performa 550
Market	Education	Home
Clock speed	25 MHz	33 MHz
Standard RAM	4MB	5MB
Hard drive	80 or 160MB	160MB
Keyboard	Sold separately	Apple Keyboard II included

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Tech Info Library Article Number:13648

Tech Info Library

DAL TSO Connection/Logoff Problem (10/93)

Revised: 10/18/93
Security: Everyone

DAL TSO Connection/Logoff Problem (10/93)

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Article Created: 15 October 1993

TOPIC ----------

I'm having a problem logging out of a DAL TSO session when connected with SNA•ps 3270 network connection. Logout works only when a certain time has elapsed where the IBM mainframe drops the session by itself.

DISCUSSION ----------

This is a problem of the network connection completely before the logoff from TSO has completed. You are experiencing the mainframe system's automatic timeout feature, when it will actually log you out of TSO after a certain pre-determined number of minutes of inactivity.

When we originally discovered this problem (that the DAL and SNA•ps 3270 network adapter does not log a user completely out of TSO after the DAL Server session is terminated by the DAL CLient), the only workaround seemed to be to log on to TSO and reconnect, which would then actually complete the "logoff".

However, now we have a better solution. The problem seems to be that the DAL Client is getting out of the SNA•ps network connection a bit too quickly.

Fortunately, the solution is simple. At the end of the logout sequence of the DAL connection script, add a match for something unique on the VTAM Splash Screen. This will cause the network connection to remain open until the exit from TSO has been completed all the way through to the VTAM Splash Screen.

This results in a clean logoff from TSO which will allow subsequent DAL TSO connections without failures, such as the "user is already connected" TSO error message.

A sample logout sequence would look like:

```
   :\mREADY\w1\slogoff\r\mLogon:
```

rather than:

```
   :\mREADY\w1\slogoff\r:
```

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Tech Info Library Article Number:13655

Tech Info Library

MS Word: Embedding PostScript Code (10/93)

Revised: 10/18/93
Security: Everyone

MS Word: Embedding PostScript Code (10/93)

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Article Created: 18 October 1993

TOPIC ----------

I'm doing a mail merge in MS Word. I would like to print the first page of the merge on letterhead and the second page on regular paper. The "First from" and "Remaining from" selections in my LaserWriter 8 driver don't seem to be recognized by Word, so what I've been trying to do is embed PostScript commands in the header for the first and second page of the document. These commands would tell the printer to use a specified paper tray for each page. In the LaserWriter Pro Developer's notes I found the 'setpapertray' command, and, judging by the description for that operator, it looks to be what I need.

How would I embed that operator into the Word document?

DISCUSSION ----------

Unfortunately, what you're trying to do is NOT possible. You were on the right track by trying to embed PostScript into the MS Word document, HOWEVER, the driver controls paper trays and thus overrides any tray selection when a print job is sent.

Basically, the print driver is treating the mail merge document as one single print job and is sending down PostScript code to manage the trays according to what is selected in the Print Dialog for that "one" job.

Apple engineering said that it would be very difficult to create PostScript code to work around this. Our only suggestion would be to see if other applications also handle mail merges as one large print job, or as individual ones.

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Tech Info Library Article Number:13656

Tech Info Library

LaserWriter NTR: Recommended Parallel Cable Length (10/93)

Revised: 10/18/93
Security: Everyone

LaserWriter NTR: Recommended Parallel Cable Length (10/93)

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Article Created: 18 October 1993

TOPIC -----

Using a parallel connection, to any PC, what would be the maximum length of cable allowed?

DISCUSSION -----

The maximum recommended length for a parallel cable is 20 feet. Mixed results will occur for distances greater than this depending on the type of cable (shielded vs. ribbon) used and the quality of the connectors. There are other solutions available.

In the United States there is a company called Black Box that sells a product called PC Parallel Hypercable which allows parallel cables to be extended up to a maximum length of 150 feet. Each cable incorporates an integrated amplifier circuit that boosts signal strength and filters noise. The circuit is powered off of the 5 volt signal that is available on pins 13, 14, 15, or 16 of standard parallel interfaces.

For more information look in the Technical Information Library, using "Black Box" as your search string. Similar information may be available from European companies.

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Tech Info Library Article Number:13658

Tech Info Library

Personal LaserWriter NT: Downloading Fonts(10/93)

Revised: 10/18/93
Security: Everyone

Personal LaserWriter NT: Downloading Fonts(10/93)

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Article Created: 18 October 1993

TOPIC----------

Can TrueType fonts be downloaded to the Personal LaserWriter NT, specifically Delphian and Lucida Bright?

Also, is there a way to download the TrueType rasterizer?

DISCUSSION ----------

Yes, Delphian and Lucida Bright TrueType fonts can be downloaded successfully to a Personal LaserWriter NT. We (Apple) used LaserWriter driver 8.0 and LaserWriter Utility 7.4.1. The font download seemed to take longer than usual, but was completed. We printed some documents including Delphian and Lucida Bright and as expected, the print job seemed to take less time since the fonts were already resident in RAM.

Something to consider is the limited amount of RAM on a 2MB Personal LaserWriter NT. There is approximately 430K bytes available for fonts and program memory after a fresh restart. Depending on the size of the fonts to be downloaded, there may theoretically be a point where printer performance will degrade with less RAM available. We did not try to print any complex documents (many fonts/graphics) after downloading the TrueType fonts, so we are not sure if lessening the amount of available RAM had an effect.

It is not possible to download the TrueType rasterizer. The rasterizer is downloaded automatically with the print job when TrueType fonts are used and the printer is a Class B (TrueType Scalar is not present in the printer, though can be downloaded) device.

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Tech Info Library Article Number:13659

Tech Info Library

Macintosh Color Display: Design Changes (10/93)

Revised: 10/21/93
Security: Everyone

Macintosh Color Display: Design Changes (10/93)

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Article Created: 18 October 1993
Article Reviewed/Updated: 21 October 1993

TOPIC ----------

Were there changes made to the Macintosh Color Display (14-inch)?

DISCUSSION----------

Yes, there have been changes made to the design of the original Macintosh Color Display.

The differences between the Macintosh Color Display, M1198LL /A and /B monitors are that the /B monitor contains additional circuitry so that the monitor is Energy Star compliant, which is a voluntary international agreement that was signed in June 1993. This agreement focuses on making electronic equipment more energy efficient.

Despite the circuitry difference, the monitor specifications and performance is identical to the /A version. They use the exact same ciruitry that produces the video signal and they use the same CRT.

These design changes are not unusual. It is Apple's policy to not only manufacture monitors with the latest technology, but to also make design improvements throughout the life of the product.

Article Change History:
21 October 1993 - added M1198LL /A and /B notations

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Tech Info Library Article Number:13660

Radius RocketShare: PowerTalk Incompatibility (10/93)

Revised: 10/18/93
Security: Everyone

Radius RocketShare: PowerTalk Incompatibility (10/93)

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Article Created: 15 October 1993

TOPIC -----

I'm using Radius RocketShare on a Quadra running PowerTalk. My computer hangs when launching Mission Control. It only happens if PowerTalk services are turned on.

DISCUSSION -----

Some change in the handling of the EFS made RocketShare look to the Mail Enclosures as a Rocket Disk (without of course identifying it as such.)

Radius is testing a maintenance update to be called 1.1.1 that will be posted to AppleLink, AOL, Compuserve and Radius Anonymous FTP.

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Tech Info Library Article Number:13662

Tech Info Library

AudioVision Display: Changing S-video Output Default 10/93

Revised: 10/20/93
Security: Everyone

AudioVision Display: Changing S-video Output Default 10/93

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Article Created: 20 October 1993

TOPIC ----------

I connected the S-video output of a Macintosh 840AV to a Sharp projector unit. The menu bar was cut off at the top. I tried every adjustment on the Sharp, and could not get the menu bar back. I switched over to Composite out, and to the Sharp's composite in, and everything worked fine.

The Sharp unit checked out just fine with S-video coming from an S-video tape deck and nothing was missing at the top.

DISCUSSION ----------

When the S-Video output is selected from the 840AV computer, the screen default setting is 640 x 480. This causes the display to overscan and that is why the menu bar is off the screen.

To remedy this situation, go into the control panel and double click on the monitor icon. Select the "option" button and a new window will appear. Select the 512 x 380 resolution and reboot the computer. The computer will now drive the display in the underscan mode and the entire screen will be visible.

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Tech Info Library Article Number:13676

Tech Info Library

LC 475, 476, 520, Performa 550, Quadra 605 Ext. Mic (8/95)

Revised: 8/30/95
Security: Everyone

LC 475, 476, 520, Performa 550, Quadra 605 Ext. Mic (8/95)

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Article Created: 19 October 1993
Article Reviewed/Updated: 30 August 1995

TOPIC ----------

No microphone is bundled with the Macintosh LC 475, Performa 475 and 476, and Quadra 605 computers. This article describes the microphone, sold separately, that you need in order to record sounds using the built-in microphone port.

DISCUSSION ----------

The Macintosh LC 475, Performa 475 and 476, and Quadra 605 computers require the new PlainTalk microphone. Microphones bundled with earlier Macintosh models do not work with these computers.

The Macintosh LC 520 and Performa 550 computers use the PlainTalk microphone. Both of these computers have built-in microphones, but also have external microphone jacks. To use the external microphone jack, you need a PlainTalk microphone.

The PlainTalk microphone and the older microphone share a 3.5mm phono plug, but the PlainTalk microphone has a longer plug (.75 inch vs. .5 inch). Consequently, the old microphone does not seat fully in the microphone socket of the PlainTalk microphone.

Ordering Information

M9060Z/A Apple PlainTalk Microphone

Article Change History:
30 Aug 1995 - Changed diameter of microphone plug.
17 Jan 1994 - Added LC 520 and Performa 550 info.

Support Information Services

..TIL13677-LC_475_476_520_Performa_550_Quadra_605_ExtMic_8-95_(TA30378).pdf

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Tech Info Library Article Number:13677

Tech Info Library

LaserWriter Pro 810: Changing the Default Settings (11/93)

Revised: 11/15/93
Security: Everyone

LaserWriter Pro 810: Changing the Default Settings (11/93)

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Article Created: 1 October 1993
Articel Reviewed/Updated: 15 November 1993

TOPIC ----------

The printer has a set of default settings that are applied at the factory. You can change these default settings by using the control panel menu. For example, if you want to change the default paper tray, you'd have to take the printer offline and press the menu key to select the paper source menu. See detailed information below.

DISCUSSION ----------

Use the keys on the control panel to display menu options and to change printer settings.

Keys on control panel:

ONLINE	FORM FEED	MENU	UP ARROW
RESET	PRINT STATUS	ENTER	DOWN ARROW

The printer's control panel settings are grouped into several menus.

- The Input Port menu allows you to select the way your printer communicates with the host.
- The Paper Source menu is used to select how your printer will use it's paper cassettes, manual feed tray and optional multimedia power feeder.
- The PostScript Resolution menu lets you set your printer's resolution to 300, 400, 600, or 800 dots per inch.
- The Miscellaneous menu contains a variety of printer settings.

FOLLOW THE STEPS BELOW TO CHANGE THE PRINTER SETTINGS:

1. If the printer is on line, take it off line by pressing the ONLINE key.

2. Press the MENU key to display the printer's main menu.

3. Press one of the arrow keys until you see the menu you want, then press ENTER. (The first option for that menu appears in the display window.)

4. Press one of the arrow keys to select the option you want to change.

5. Press ENTER.

6. Press the arrow keys to select the new value, then press ENTER.

7. If you want to change another setting, press ENTER until the main menu appears again, then repeat steps 3-6.

8. When you have finished selecting options, press ENTER until the menu appears then press the ONLINE button.

Article Change History:
11/15/93 - Added more information on changing settings and menus selections

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Tech Info Library Article Number:13678

Tech Info Library

LaserWriter Pro 810: Using the Printer's Control Panel (10/93)

Revised: 10/19/93
Security: Everyone

LaserWriter Pro 810: Using the Printer's Control Panel (10/93)

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Article Created: 1 October 1993

TOPIC ----------

This article describes the operator control panel key switches and their functions.

The printer's control panel lets you take the printer off line (to change settings) or on line (to print) and access menus for changing the printer's connection port, paper source, or resolution.

DISCUSSION ----------

Use the keys on the control panel to display menu options and to change printer settings. An asterisk (*) appears in the display window next to any menu item currently selected.

KEY	FUNCTION
ONLINE	Places the printer online or offline. Note, the printer must be offline for the other switches to be functional.
FORM FEED	Ejects the current page from the printer.
MENU	Displays the printer setup menu.
Up and Down arrows	Scrolls up or down through the setup menu.
RESET	Returns the selected menu item to the default value.
PRINT STATUS	Produces a report that supplements the information on the startup page; includes the total copy count, amount of memory on the printer, and the downloaded fonts.

ENTER Selects a menu item to display or select an option.

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Tech Info Library Article Number:13679

Tech Info Library

LW Pro 810: Control Panel Menu & Options Description (8/94)

Revised: 8/23/94
Security: Everyone

LW Pro 810: Control Panel Menu & Options Description (8/94)

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Article Created: 1 October 1993
Article Reviewed/Updated: 23 August 1994

TOPIC ----------

The printer's control panel settings are grouped into several menus. This article describes the menus & options in more detail.

DISCUSSION ----------

- The Input Port menu: allows you to select the way your printer communicates with the host.
- The Paper Source menu: this menu is used to select how your printer will use its paper cassettes, manual feed tray, and optional multimedia power feeder.
- The PostScript Resolution menu: this lets you set your printer's resolution to 300, 400, 600, or 800 dpi.
- The Miscellaneous menu: contains a variety of printer settings.

The following table shows the menus, the options on each menu, and the values you can select. Default values are marked with an asterisk (*).

MENU	Sub-menu	Option	Values
Input Port	RS-232	RS-232 Enable	Yes, No
		RS-232 Printer Type	PostScript* LJETIIP
		Baud Rate	300, 600, 1200 2400, 4800,

			9600*, 19200, 38400
		Parity	None*, Even, Odd, Mark, Space
		Flow Control	XON-XOFF*, DTR
		Stop Bits	1* or 2
		Data Bits	8* or 7
	LocalTalk	LocalTalk Enable	Yes, No
		Printer Type	PostScript or LJETIIP
Paper Source			Tray 1, Tray 2, Tray 3 Manual Feed, Auto Cascade MM Power Feeder
Miscellaneous		Restore Factory Setup	
		Exit Jam Reprint	Enable*, Disable
		Startup Page	Enable*, Disable
		SCSI Delay	Off*, 20, 40, 60
PostScript Resolution			300, 400, 600, 800 (dots per inch)

NOTE: When the Auto Cascade option is selected, the printer uses any of the selected paper trays when the first one runs out of paper. Auto Cascade works only if all paper trays in the set you select contain the same size paper. If one of the selected paper trays contains a different size paper, the LaserWriter Pro skips it.

NOTE: If HPLJIIP is selected as the printer type, the printer always prints at 300 dpi and this menu selection has no effect.

NOTE: Some settings can be selected using either the printer control panel or the printer software - for example the LaserWriter Utility program. The printer uses the most recent setting. For example, if you select 800 dpi resolution in the LaserWriter Pro utility software and then you select 600 dpi resolution on the control panel, the printer prints at 600 dpi.

Article Change History:
23 Aug 1994 - Review for accuracy.

Support Information Services

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Tech Info Library Article Number:13680

Tech Info Library

LaserWriter Pro 810: Control Panel Status Messages (10/93)

Revised: 10/19/93
Security: Everyone

LaserWriter Pro 810: Control Panel Status Messages (10/93)

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Article Created: 1 October 1993

TOPIC ----------

This article describes the operator control panel status messages.

DISCUSSION ----------

MESSAGE	MEANING
INTERNAL SELF TEST	Places the printer online or offline. Note, the printer must be offline for the other switches to be functional.
READY TO PRINT	Eject the current page from the printer.
PROCESSING	Displays the printer setup menu.
WAITING FOR DATA	Printer is waiting for data from the host system.
OFFLINE	Printer is offline.
MANUAL FEED	The manual feed option is selected and printer is waiting for paper to be inserted.
INSTALL TRAY	The selected cassette is out of paper or not installed.
REMOVE PAPER FROM MANUAL TRAY	Another paper source has been selected and paper was left in the manual feed.
PAPER JAM: PAPER ENTRY	Paper is jammed in the cassette area.

PAPER JAM: PAPER EXIT	Paper is jammed in the fuser or paper exit area.
PAPER JAM: OPEN TOP COVER	Paper is jammed inside the top of the printer.
TONER LOW	Toner in the EP Cartridge is low.
REPLACE EP KIT	Toner in the EP Cartridge is expelled, replace the EP Cartridge, Transfer Charger, and Roller Cleaner.
EP CARTRIDGE NOT IN POSITION	The EP Cartridge is not installed correctly.

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Tech Info Library Article Number:13681

Tech Info Library

LaserWriter Pro 810: Fonts Shipping with the 810 (10/93)

Revised: 10/19/93
Security: Everyone

LaserWriter Pro 810: Fonts Shipping with the 810 (10/93)

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Article Created: 1 October 1993

TOPIC ----------

What fonts are included with the LaserWriter Pro 810?

DISCUSSION ----------

The LaserWriter Pro 810 printer will ship with 35 PostScript Type 1 fonts in ROM and a disk version of the Apple Font Library with 64 TrueType fonts.

The Type 1 fonts will benefit the mixed-Macintosh environment customers when working in Windows and DOS. In the PCL mode 33 of the 35 Type 1 fonts are utilized and rasterized as the expected font. Only ZapfDingbats and Symbol fonts cannot be utilized in PCL.

35 ROM fonts

Avant Garde (4 typefaces)
Bookman (4 typefaces)
Chicago
Courier (4 typefaces)
Helvetica (4 typefaces)
Helvetica Narrow (4 typefaces)
New Century Schoolbook (4 typefaces)
Palatino (4typefaces)
Symbol
Times (4 typefaces)
Zapf Chancery
Zapf Dingbats

64 Disk Fonts

Avant Garde (4 typefaces)

Bookman (4 typefaces)
Chicago
Courier (4 typefaces)
Delphian
Garamond Narrow (4 type faces)
Geneva
Helvetica (4 typefaces)
Helvetica Black (2 typefaces)
Helvetica Compressed (2 typefaces)
Helvetica Narrow (4 typefaces)
Lubalin Graph (4 type faces)
Lucida Bright (4 type faces)
Machine
Monaco
Nadianne (2 typefaces)
New Century Schoolbook (4 typefaces)
New York
Old English Text
Onyx
Oxford
Palatino (4 typefaces)
Swing
Symbol
Times (4 typefaces)
Zapf Chancery
Zapf Dingbats
Zeal

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Tech Info Library Article Number:13682

Tech Info Library

LaserWriter Pro 810: Memory Upgrades (11/93)

Revised: 11/9/93
Security: Everyone

LaserWriter Pro 810: Memory Upgrades (11/93)

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Article Created: 1 October 1993
Article Reviewed/Updated: 9 November 1993

TOPIC ----------

Printer memory is upgradable with 4 MB or 8 MB modules, up to 32 MB total printer memory (see chart below). Upgrade kits should be installed by your authorized Apple dealer.

DISCUSSION ----------

The LaserWriter Pro 810 printer comes standard with 8 MB RAM and 3 MB ROM. The 8 MB RAM allows for rasterizing and printing resolutions up to 800 dpi in letter and A4, and 600 dpi rasterizing and printing in paper sizes up to legal. Memory upgrades are available for printing high resolutions on to large paper sizes, for example, to rasterize pages for printing at 600 dpi on ledger or A3 requires 12 MB RAM and to effectively rasterize and print at 800 dpi on ledger or A3 sized pages requires 16 MB RAM. To achieve the maximum memory capacity requires three 8 MB RAM upgrades.

RAM upgrades provide the following benefits

- faster performance on complex documents (the RAM provides more space to store the calculations needed for large or complex images)
- faster performance when downloading fonts
- faster performance when printing documents that have been scaled down from larger originals (complex organization charts, maps, flow charts)
- the ability to increase the imageable area of a document (you can use more of a sheet of ledger paper, for example)
- the ability to print at higher resolutions

Memory Upgrade Consideration

- The LaserWriter Pro 810 requires a memory upgrade to print at 600 or 800 dpi on certain sizes of paper.

The LaserWriter Pro 810 uses custom memory modules developed specifically for this printer. Each memory module interfaces to the controller board via two connectors which are 40 and 50 pins each. The controller board has room for three memory modules allowing for a total of 32 megabytes of on board DRAM. The following chart describes the supported configurations:

The following memory configurations are supported by the LaserWriter Pro 810:

Total Memory	On-Board Memory	Bank 1 Memory	Bank 2 Memory	Bank 3 Memory
8 MB	8 MB	n/a	n/a	n/a
12 MB	8 MB	4 MB	n/a	n/a
16 MB	8 MB	4 MB	4 MB	n/a
	8 MB	8 MB	n/a	n/a
20 MB	8 MB	4 MB	4 MB	4 MB
	8 MB	8 MB	4 MB	n/a
24 MB	8 MB	8 MB	4 MB	4 MB
	8 MB	8 MB	8 MB	n/a
28 MB	8 MB	8 MB	8 MB	4 MB
32 MB	8 MB	8 MB	8 MB	8 MB

NOTE:

- Always fill the lowest numbered banks first. It doesn't matter what order the 4 MB or 8 MB memory modules go in as long as the lower banks are filled first.

- Do not use RAM from another laser printer with a LaserWriter Pro 810.

- Once you have upgraded your printer's memory, you need to reconfigure the printer driver to take advantage of the additional memory. Open the the Chooser's Setup box. Click More Choices in the Setup box. Click Configure, Choose the options installed on your printer and click OK.

Ordering Information

- LaserWriter Pro 4MB Memory Upgrade (Part No. M1442G/A)
- LaserWriter Pro 8MB Memory Upgrade (Part No. M1443G/A)

Article Change History:

9 November 1993 - corrected memory upgrade information
28 October 1993 - Updated memory upgrade chart

..TIL13683-LaserWriter_Pro_810-Memory_Upgrades_11-93.pdf

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Tech Info Library Article Number:13683

Tech Info Library

LaserWriter Pro 810: Pinouts (7/94)

Revised: 7/18/94
Security: Everyone

LaserWriter Pro 810: Pinouts (7/94)

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Article Created: 1 October 1993
Article Reviewed/Updated: 18 July 1994

TOPIC ----------

This article gives the printer port pinouts for the following connectors: Mini DIN-8 Serial, DB9 Serial, and the SCSI interface.

DISCUSSION ----------

Mini DIN-8 Serial Connector Signal Descriptions

Pin	Signal	Description
1	CLK	Rxd and Txd clock (output)
2	NC	No Connection
3	TxD	Transmitted Data (output)
4	SG	Signal Ground
5	RxD	Received Data (input)
6	TxD+	Balanced transmit (output)
7	Vcc	+5 VDC regulated, 300 mA max (output power)
8	RxD+	Balanced receive (input)
Shield	PG	Protective Ground

9 Pin RS-232 Serial Connector Signal Descriptions

Pin	Signal	Description
1	DCD	Data Carrier Detect
2	RXD	Received data
3	TXD	Transmitted Data
4	DTR	Data Terminal Ready
5	GND	Frame Ground
6	DSR	Data Set Ready
7	RTS	Request To Send

8	CTS	Clear To Send
9	RING	Ring Indicator–Not Used

SCSI Interface Signal Descriptions

Pin	Signal	Description
1	REQ	Request data transfer
2	MSG	Message signal from target device
3	I/O	Controls direction of valid data
4	RST	SCSI bus RESET condition
5	ACK	Acknowledgment for data transfer handshake
6	BSY	Indicates the SCSI bus is in use
7.9,14,16,18,24	GND	Logic Ground
8	DB0	Data bit 0
10	DB3	Data bit 3
11	DB5	Data bit 5
12	DB6	Data bit 6
13	DB7	Data bit 7
15	C/D	Indicates Control or Data is on the SCSI bus
17	ATN	An Attention condition exist
19	SEL	Select a target or reselects the initiator
20	PARITY	A data bit generated to maintain an odd number of bits
21	DB1	Data bit 1
22	DB2	Data bit 2
23	DB4	Data bit 4
25	NC	No Connection

Article Change History:
18 Jul 1994 - Removed references to a Parallel Port.

Support Information Services

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Tech Info Library Article Number:13684

Tech Info Library

LaserWriter Pro 810: Questions and Answers (11/95)

Revised: 11/21/95
Security: Everyone

LaserWriter Pro 810: Questions and Answers (11/95)

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Article Created: 1 October 1993
Article Revised/Updated: 23 March 1995

TOPIC ----------

This article addresses questions on the LaserWriter Pro 810.

DISCUSSION ----------

Question: Who is the target customer for the LaserWriter Pro 810?

Answer: The LaserWriter Pro 810 is tailored to the networked professionals who work continually in mixed environments of Unix, DOS, Windows and Macintosh, and need fast, crisp text printing.

Question: How much faster is the LaserWriter Pro 810 than the LaserWriter Pro 600 and 630?

Answer: The answer to that depends on the complexity of the print job, and the size of the file from which you print. On average, a LaserWriter Pro 810 will image 20% faster than a LaserWriter 600 or 630, and prints at speeds up to 20 pages per minute.

Question: What are the differences between the LaserWriter Pro 600 Series and the LaserWriter Pro 810?

Answer: LaserWriter Pro 600 Series is intended for desktop use by workgroups in graphics intensive Ethertalk environments. LaserWriter Pro 810 is intended for tabletop use in departments with massive printing requirements, and for those requiring seamless integration into many operating systems and network environments.

Question: Can a LaserWriter Pro 600 or 630 be upgraded to a LaserWriter 810?

Answer: No. These printers are based on a completely different design, with different capabilities and benefits to customers.

Question: What network operating systems are supported?

Answer: Mac OS, Apple A/UX, Novell, HPUX, Sun Solaris, SCO Unix, DEC Ultrix, IBM AIX, Interactive Unix, Windows, and DEC VMS are currently supported.

Question: What networking protocols are supported?

Answer: Over Twisted Pair and Thin Wire Ethernet, Ethertalk, TCP/IP, Netware IPX, and DEC LAT are supported. All of our protocols are enabled at once, simultaneously active and accessible over the network.

Question: Why is it important to have multiple, simultaneously active protocols implemented in a network printer?

Answer: The printer needs to have the same protocols as the users' systems or they won't be able to communicate directly and efficiently. If the protocol isn't supported by the printer, additional network software and capabilities are required, adding cost and processing overhead to the network. Clearly, all the needed protocols must be available all the time, or the benefit of offering them at all diminishes greatly.

Question: How fast is a LaserWriter Pro 810 over the network?

Answer: The I/O bandwidth is not a factor in the printers' speed, that is the interface won't slow down the printing. Depending on what the resource allocation of the network by the system administrator is to the printer, LaserWriter Pro 810's have demonstrated capability to accept data at 350K bytes a second.

Question: What print quality capabilities are available?

Answer: Users can software select 300, 400, 600 or 800 dpi print resolutions.

Question: Is TrueType installed in the printer?

Answer: No, the printer has only Type 1 PostScript fonts installed. However, the LaserWriter Pro 810 ships with 64 TrueType fonts on disk.

Question: Does it support PhotoGrade or FinePrint?

Answer: No, this printer uses other proprietary third-party resolution enhancement techniques to improve the image resolution beyond the 400 DPI

capabilities of the print engine.

Question: What fonts are in the printer?

Answer: 35 ROM fonts: Avant Garde (4 typefaces), Palatino (4typefaces), Bookman (4 typefaces), Symbol, Courier (4 typefaces), Times (4 typefaces) Helvetica (4 typefaces), Zapf Chancery, Helvetica Narrow (4 typefaces), Zapf Dingbats, New Century Schoolbook (4 typefaces), and Chicago.

64 Disk Fonts: Avant Garde (4 typefaces) Geneva, Bookman (4 typefaces), Helvetica Black (2 typefaces), Courier (4 typefaces), New York, Helvetica (4 typefaces), Lubalin Graph (4 type faces), Helvetica Narrow (4 typefaces), Lucida Bright (4 type faces), New Century Schoolbook (4 typefaces), Machine, Palatino (4 typefaces), Monaco, Symbol, Nadianne (2 typefaces), Times (4 typefaces), Helvetica Compressed (2 typefaces), Zapf Chancery, Old English Text, Zapf Dingbats, Onyx, Chicago, Oxford, Delphian, Swing, Garamond Narrow (4 type faces), and Zeal.

Question: Does the LaserWriter Pro 810 support automatic emulation switching?

Answer: Yes. The LaserWriter Pro 810 utilizes a brilliant exciting new technology called Virtual Printer, which, among other things, provides a fool-proof means of recognizing PCL from PostScript, by determining the network's IP address of the queue or the PC sending the print command, and printing jobs accordingly as a DOS printer or a PostScript printer.

Question: Does the LaserWriter Pro 810 support PCL Level 5?

Answer: No, it supports PCL with Level 4+.

Question: What processor does this printer use?

Answer: The processor is a RISC based Weitek 8200 chip.

Question: What kind of RAM does it use?

Answer: The printer uses 4MB and 8MB RAM Modules, not to be mistaken for SIMM modules.

Question: What RAM configurations are possible?

Answer: All printers are equipped with 8MB standard, and can be upgraded with 4MB or 8MB RAM up to a maximum of 32 MB RAM achieved by 4x8MB RAM.

Question: How much ROM and RAM are standard?

Answer: 3 MB ROM and 8MB RAM.

Question: Is software for Windows users included?

Answer: Yes. There are drivers included to support Windows 3.0 and Windows 3.1.

Question: What network management tools does the LaserWriter 810 offer?

Answer: The LaserWriter Pro 810 offers SNMP, the only viable non-proprietary network management facility used. The printer also has a Remote Console Facility, useful for tasks performed by the network manager.

Question: What is SNMP?

Answer: The acronym stands for Simple Network Management Protocol. By being SNMP capable the LaserWriter Pro 810 will be a recognized agent to a network management program like HP Open View, DEC MccDirector and PolyCenter, console programs of Sun, and others.

Question: What is the Remote Console Facility and what does it do?

Answer: The network manager can log in to the facility and obtain status information, can configure and manage the network printer for the enterprise much like this administrator would expect to manage other devices on the network. The manager can log in from IPX, LAT, LAT, or Ethertalk.

Question: What engine is the LaserWriter Pro 810 based on?

Answer: The engine is a Fuji Xerox XP 20.

Question: Is this a duplex printer?

Answer: No duplexing capabilities or options are available at this time.

Article Change History:
21 Nov 1995 - Reviewed for technical accuracy.
23 Mar 1995 - Reformatted and made minor typographical changes.

Support Information Services

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Tech Info Library Article Number:13685

Tech Info Library

LaserWriter Pro 810: Specifications (4/94)

Revised: 4/11/94
Security: Everyone

LaserWriter Pro 810: Specifications (4/94)

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Article Created: 1 October 1993
Article Reviewed/Updated: 11 April 1994

Topic ----------

This article gives the technical specifications for the Laserwriter Pro 810.

Discussion ----------

Print engine

- Fuji Xerox XP 20 laser xerographic

Print quality

- 400 dot-per-inch native engine resolution with controller technology allowing 600 and 800 dot-per-inch resolutions
- 300-dot-per-inch available in PCL mode
- 64 scalable fonts for printing a wide range of styles and sizes

Speed

- 20 page-per-minute maximum print speed. Actual speed depends on the image complexity

Controller

- Weitek 7.25 MHz 8200 RISC processor

Printer Memory

- 8 MB of RAM standard, expandable to 32 via 4 MB and 8 MB expansion kits
- 8MB required for 800-dpi letter size
- 12MB required for 800-dpi legal size
- 16MB required for 800-dpi tabloid size

Fonts

• 64 TrueType fonts on disks from the following font families:
  Avant Garde, Bookman, Chicago, Courier, Geneva, Helvetica,
  Helvetica Narrow, Monaco, New Century Schoolbook, New York,
  Palatino, Symbol, Times, Zapf Chancery, and Zapf Dingbats
• 35 PostScript Type 1 fonts in ROM
• 33 scalable fonts for PCL mode

Imageable Area

• Minimum top and bottom margin: .2 inches (5 mm)
• Minimum left and right margin: .2 inches (5 mm)

Interfaces

• LocalTalk: standard
• RS 232 serial: standard
• Ethernet: thin wire or twisted pair
• External SCSI port

Dimensions

• Height: 19.2 inches (48.7 cm)
• Width: 20.4 inches (51.9 cm)
• Depth: 16.1 inches (41 cm)

Weight

• 81 pounds (37 kg)

Recommended duty cycle

• 600,000 pages minimum
• Toner cartridge: 11,000 pages at 5% density

Operating environment

• Temperature: 50° to 93°F (10° to 35°C)
• Humidity: 15% to 85%, noncondensing

Storage environment
---
engine:
• Temperature: -4° to 131°F (-20° to 55°C)
• Humidity: 15% to 85%, noncondensing

EP cartridge
• Temperature: 32° to 95° F (0° to 35°C)
• Humidity: 35% to 85%, noncondensing

Power requirements

• U.S./Japan: 100 -115 VAC (± 10%), 50-60 Hz (± 2 Hz)
• Europe/Australia: 220-240 V (± 10%), 50 Hz (± 2 Hz)

Power consumption

• 850 W maximum at 115 or 220 VAC

Paper handling capacity

• Three Universal cassettes standard
  - Capacity: 250 sheets
  - Type: Plain, transparency, label
  - Weight: 16 - 28 pound
  - Supports: Letter (8.5"x 11"), Legal (8.5"x 14"), Ledger (11"x17"), A3 (297mm x 420mm), A4 (210mm x 297mm), B4 (257mm x 364mm), B5 (257mm x 182mm)

• Manual Feed
  - Tray Capacity: 1 sheet
  - Type: Plain, transparency, label, envelope
  - Weight: Paper, 16 - 50.7 pound
  - Envelope: 28 pound maximum
  - Supports: Letter (8.5"x 11"), Legal (8.5"x 14"), Executive (7.25"x 10.5"), Invoice (5.5" x 8.5"), A4 (210mm x 297mm), A5 (210mm x 148mm), Monarch (3.875" x 7.5"), Comm 10 (4.125"x 9.5"), Folio (210mm x 330mm), B4 (257mm x 364mm), B5 (257mm x 182mm)

• Automated Media Feeder (optional)
  - Capacity: 100 sheets, 15 envelopes
  - Type: plain, transparency, label, envelope, post card
  - Weight: paper, 16 - 36 pound
  - Envelope: 28 pound maximum

• Optional cassettes: Executive and folio

Envelope sizes supported

• Monarch (3.875" x 7.5")
• Comm 10 (4.125"x 9.5")
• International DL (110mm x 220mm)
• International C5 (162mm x 229mm)

Media output

• Standard face down output tray – 250 sheet capacity
• Optional face up output tray – 50 sheet capacity

Network management

• Supports SNMP, allowing the printer to be recognized as a network element and managed by system administrators

- Features Remote Console Facility (RCF), allowing network managers in TCP/IP, NetWare, and LAT environments to recognize, diagnose, and manage the printer

Internal Adobe PostScript fax cartridge option

- Send and receive capabilities
- Adobe PostScript fax compatible
- Group 3 fax compatible
- Prints up to 800 dpi PostScript faxes on plain paper

Ordering Information

Apple LaserWriter Pro 810 (U.S.)
Twisted-pair Ethernet version
Order No. B1322LL/A
- Apple LaserWriter Pro 810 printer
- Toner cartridge
- LaserWriter Pro Accessory Kit: Installation software and fonts disk set, User’s Guide, power cable, limited warranty statement

Thin-wire Ethernet version
Order No. B1321LL/A (includes bulleted items above)

Toner Cartridge
Order No. M1853G/A

PostScript Fax Cartridge
(U.S. and Canada availability only)
Order No. M1772LL/A

4MB Memory Expansion Card
Order No. M1442G/A

8MB Memory Expansion Card
Order No. M1443G/A

Automated Media Feeder
Order No. M1763G/A

Universal Cassette
Order No. M1857G/A

Executive Cassette
Order No. M1851G/A

Folio Cassette
Order No. M1854G/A

Article Change History:
11 April 1994 - Added speed of processor to specifications.

..TIL13686-LaserWriter_Pro_810-Specifications_4-94.pdf

Support Information Services

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Tech Info Library Article Number:13686

Tech Info Library

LaserWriter Pro 810: Description (10/93)

Revised: 10/19/93
Security: Everyone

LaserWriter Pro 810: Description (10/93)

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Article Created: 1 October 1993

TOPIC ----------

This article describes the LaserWriter Pro 810 printer.

DISCUSSION ----------

The LaserWriter Pro 810 is based on the Fuji Xerox 20 page per minute xerographic engine. Designed for enterprise-wide connectivity, it delivers high quality output, expanded paper handling, and flexibility in mixed environments. The LaserWriter Pro 810 uses 400-dot-per-inch engine technology combined with controller technology that supports up to 800-dot-per-inch print resolution, providing the highest quality available from a LaserWriter.

It can print on a wide variety of paper sizes with three, 250-sheet universal cassettes standard. Optional cassettes and an automated feeder are available for additional sizes and paper thicknesses.

This printer provides advanced connectivity required in high end laser printers. With its built-in Ethernet, LocalTalk, and Serial ports it can print documents generated by many different types of computers, including those running Macintosh, MS-DOS, Windows, or UNIX operating systems. The built-in network card allows the printer to communicate with many network operating systems concurrently via multiple protocols, including TCP/IP, EtherTalk, NetWare IPX, and Digital LAT, further increasing your connectivity options.

FEATURES

Print quality

- 400-dot-per-inch resolution default
- Up to 800-dot-per-inch resolution for high-quality text and graphics

Power and Speed

- Weitek 8200 RISC processor
- 20-page-per-minute maximum print speed

Connectivity

- RS-232 serial, LocalTalk, and Ethernet ports for compatibility in mixed environments
- Built-in network card for transparent, simultaneous printing over Ethernet from multiple operating systems using four concurrent protocols: IPX, TCP/IP, Ethertalk, and Digital LAT
- Virtual Printer Technology provides switching between PostScript Level 2 and PCL emulations
- Twisted-pair (10BaseT) or thin-wire Ethernet (10Base2) transceiver configurations available to meet your requirements
- A SCSI interface that can be used to attach an external hard drive for additional font storage
- Necessary software drivers and utilities to support DOS and Windows are included

Fonts

- 64 TrueType fonts on disks from the following font families: Avant Garde, Bookman, Chicago, Courier, Geneva, Helvetica, Helvetica Narrow, Monaco, New Century Schoolbook, New York, Palatino, Symbol, Times, Zapf Chancery, and Zapf Dingbats
- 35 PostScript Type 1 fonts in ROM
- 33 scalable fonts for PCL mode

Memory

- Standard 8 MB of RAM and 3 MB of ROM
- Printer memory is upgradable with 4 MB or 8 MB modules, up to 32 MB total printer memory

Paper Handling

- Three 250-sheet universal cassettes support multiple paper sizes, including tabloid, A3, A4, A5, B4, B5, letter and legal
- Single sheet manual feed tray
- Optional cassettes support executive and folio paper sizes
- Allows printing on envelopes, labels, transparencies, and letterhead or plain paper

Versatility

- Uses Virtual Printer technology, the controller automatically switches to the appropriate emulation, in accordance with the network source address of the incoming data stream
- NetWare IPX, AppleTalk, TCP/IP, and Digital LAT protocol support over Ethernet
- Supports PostScript Level 2 and PCL 4+, offers seamless transfer between

page description languages
- 400-dot-per-inch native engine resolution with controller technology allowing 600 and 800-dot-per-inch resolutions
- Optional Internal PostScript fax cartridge is available to take advantage of printer's fax send/recieve capability and allow up to 800-dot-per-inch crisp, plain paper printing of PostScript faxes as well as standard faxes

Ordering Information

Apple LaserWriter Pro 810 (U.S.)
Twisted-pair Ethernet version
Order No. B1322LL/A
- Apple LaserWriter Pro 810 printer
- Toner cartridge
- LaserWriter Pro Accessory Kit: Installation software and fonts disk set, user’s guide, power cable, limited warranty statement

Apple LaserWriter Pro 810 (U.S.)
Thin-wire Ethernet version
Order No. B1321LL/A (includes bulleted items above)

Toner Cartridge
Order No. M1853G/A

PostScript Fax Cartridge
(U.S. and Canada availability only)
Order No. M1772LL/A

4MB Memory Expansion Card
Order No. M1442G/A

8MB Memory Expansion Card
Order No. M1443G/A

Automated Media Feeder
Order No. M1763G/A

Universal Cassette
Order No. M1857G/A

Executive Cassette
Order No. M1851G/A

Folio Cassette
Order No. M1854G/A

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Tech Info Library Article Number:13687

Tech Info Library

LW Pro 810: Internal PostScript Fax Modem Option (8/94)

Revised: 8/23/94
Security: Everyone

LW Pro 810: Internal PostScript Fax Modem Option (8/94)

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Article Created: 28 September 1993
Article Reviewed/Updated: 23 August 1994

TOPIC ----------

This article describes the (optional) internal fax modem for the LaserWriter Pro 810.

DISCUSSION ----------

The LaserWriter Pro 810 Internal PostScript Fax Modem gives you the ability to send and receive facsimiles (faxes) with fax machines and other printers equipped with PostScript fax cards. When the fax modem is installed (user installable), your printer is called a LaserWriter Pro 810f.

The LaserWriter Pro 810f:

- Sends documents to and from other Adobe PostScript printers, and to all CCITT (International Telephone and Telegraph Consultative Committee) Group III fax devices from an Apple Macintosh or IBM PC or compatible computer

- Sends and receives faxes 9600 baud

- Receives and prints fax transmissions at 600 dots per inch (dpi) from other printers equipped with PostScript fax cards

- Receives and prints fax transmissions at 200 dpi - the Group III standard - from Group III - compatible fax machines

- Sends PostScript language files to other printers equipped with PostScript fax cards at the resolution of the receiving printer

- Broadcasts a fax to multiple destinations with one command

- Delays fax transmission up to 24 hours

- Enables all users on a network connected to the printer to send and receive faxes

System requirements

- An Apple Macintosh computer running system software version 6.0.7 or later
  or
  an IBM PC or compatible computer with at least 640 K or memory running DOS 3.1
  or
  an IBM PC or compatible computer with at least 1 MB of memory (2 MB recommended) running Microsoft Windows 3.0

- A LaserWriter Pro 810 printer

- A phone receptacle that accepts an ordinary RJ-11 or CA-11 telephone cable

NOTE: The fax modem will not work if you connect it to a digital phone line, which is intended to carry computer data exclusively, and it may not work if connected to a digital private exchange (PBX) system.

Ordering Information

- Internal Adobe PostScript Fax Modem (Part Number M1772LL/A)

Article Change History:
23 Aug 1994 - Review for accuracy.

Support Information Services

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Tech Info Library Article Number:13688

RBC Incorporated (10/93)

Revised: 10/19/93
Security: Everyone

RBC Incorporated (10/93)

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Article Created: 19 October 1993

RBC Incorporated

2101 Wilson Blvd., Suite 801
Arlington, VA 22201

703-243-9550

Company Profile:
Produces a cross platform network based scheduling software called CalScan. It offers a way to communicate meeting information between Macintosh and DOS users.

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Tech Info Library Article Number:13690

..TIL13691-Quadra_610_and_650-A-UX_Compatibility_10-93_(TA30387).pdf

Quadra 610 and 650: A/UX Compatibility (10/93)

Revised: 10/19/93
Security: Everyone

Quadra 610 and 650: A/UX Compatibility (10/93)

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Article Created: 21 October 1993

TOPIC -----

Can the Macintosh Quadra 610 and 650 run A/UX?

DISCUSSION -----

Yes. A/UX 3.0.1 is designed to run on the Quadra 610 and Quadra 650.

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Tech Info Library Article Number:13691

Tech Info Library

Centris 610 & Quadra 610: How They Differ (10/93)

Revised: 10/19/93
Security: Everyone

Centris 610 & Quadra 610: How They Differ (10/93)

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Article Created: 21 October 1993

TOPIC -----

This article provides a quick-reference table of differences between two similar Macintosh models: Centris 610 and Quadra 610. The Quadra 610 operates up to 22% faster than the Centris 610, which it replaces.

DISCUSSION -----

	Centris 610	Quadra 610
Clock speed	20 MHz	25 MHz
Integrated FPU	no	most configurations
Standard RAM	4MB	8MB
Hard Drive	80, 230, or 500MB	160MB or 230MB

In all other respects, these two systems are identical.

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Tech Info Library Article Number:13692

Tech Info Library

Centris 650 & Quadra 650: How They Differ (10/93)

Revised: 7/28/94
Security: Everyone

Centris 650 & Quadra 650: How They Differ (10/93)

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Article Created: 21 October 1993

TOPIC -----

This article provides a quick-reference table of differences between two similar Macintosh models: Centris 650 and Quadra 650. The Quadra 650 operates up to 22% faster than the Centris 650, which it replaces.

DISCUSSION -----

	Centris 650	Quadra 650
Clock speed	25 MHz	33 MHz
Integrated FPU	optional	standard
Standard RAM	4MB	8MB
Maximum RAM	132MB	136MB
Hard Drive	80, 230, or 500MB	230MB or 500MB
Ethernet connector	optional	standard

In all other respects, these two systems are identical.

Support Information Services

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Tech Info Library Article Number:13693

Tech Info Library

Quadra 610: Description (5/96) (Discontinued)

Revised: 5/28/96
Security: Everyone

Quadra 610: Description (5/96) (Discontinued)

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Article Created: 21 October 1993
Article Reviewed/Updated: 28 May 1996

TOPIC ----------

This article describes the Macintosh Quadra 610 computer.

DISCUSSION ----------

Overview

Based on the fast 25-mHz Motorola 68040 processor, the Macintosh Quadra 610 provides affordable high performance. It comes with 8MB of RAM and an integral math coprocessor (no FPU in the USA's 8/160 configuration). You can expand memory to up to 68MB for sophisticated graphics and multimedia applications as well as mainstream business programs.

The Quadra 610 provides high-speed Ethernet support on-board.

For convenience, the Quadra 610 supports all Apple displays and almost any commonly available third-party display, including monochrome or color, portrait or landscape, RGB or VGA, and any screen size. You can display up to 256 colors on all Apple color monitors and, with additional video RAM, more than 32,000 colors on most Apple monitors. Which means you get more colors than ever from your display without having to purchase an additional video card.

The Quadra 610 is easy to expand. It comes with eight built-in ports and an expansion slot, so you can set up a system that meets your exact needs, as well as increase your computing power as your needs grow.

The Quadra 610 includes an internal hard drive. Its high-speed SCSI interface lets you add high-volume storage devices, such as the AppleCD 300i internal CD-ROM drive, so you can run hundreds of CD-ROM titles.

Features

- 25-MHz 68040 processor with integral math coprocessor
- 8MB of RAM, expandable to 68MB
- 512K of VRAM, expandable to 1MB
- Works with all Apple monitors as well as many third-party NTSC, PAL, VGA, and SuperVGA displays

Expansion

- With 512K VRAM upgrade, supports 16-bit color, allowing for display of thousands of colors
- Eight built-in ports to support a wide range of peripherals
- Slot for processor-direct or NuBus expansion card (requires adapter)
- Optional internal CD-ROM drive
- On-board Ethernet (AAUI)

Compatibility & Networking

- Runs thousands of Macintosh applications
- Reads Macintosh, Windows, MS-DOS, OS/2, and ProDOS floppy disk formats
- Built-in AppleTalk networking
- File sharing without a dedicated server
- On-board Ethernet (AAUI)

Ordering Information

Order No. M2319LL/A

- Macintosh Quadra 610 computer with 8MB RAM, 512K of VRAM, built-in 1.4MB Apple SuperDrive, and internal 160MB hard disk drive
- Ethernet
- Mouse
- System software version 7.1
- Complete setup, learning, and reference documentation
- Limited warranty

Order No. M2099LL/A

- Macintosh Quadra 610 computer with 8MB RAM, 1MB of VRAM, FPU, built-in 1.4MB Apple SuperDrive, and internal 230MB hard disk drive
- Ethernet
- AppleCD 300i
- Mouse
- System software version 7.1
- Complete setup, learning, and reference documentation
- Limited warranty

Order No. M1402LL/A

- NuBus Adapter for Quadra 610 (same as Macintosh Centris 610 NuBus adapter)
- MC68040, 25-MHz clock speed, 32-bit data bus, integral floating point unit (FPU)

Article Change History:
28 May 1996 - Rearranged information for easier retrieval.

..TIL13694-Quadra_610-Description_5-96_Discontinued.pdf

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Tech Info Library Article Number:13694

Tech Info Library

Quadra 650: Description (10/93) (Discontinued)

Revised: 6/2/94
Security: Everyone

Quadra 650: Description (10/93) (Discontinued)

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Article Created: 21 October 1993

TOPIC ----------

This article describes the Macintosh Quadra 650 computer.

DISCUSSION ----------

Overview

Based on the fast 33-megahertz Motorola 68040 processor, the Quadra 650 provides affordable high performance. It comes with 8MB RAM and an integral math coprocessor. For increased performance, you can expand memory to up to 136MB.

For performance and convenience, the Macintosh Quadra 650 works with all Apple displays. The standard Macintosh Quadra 650 can display 256 crisp colors on the Macintosh 16-inch Color Display. When you want to work with photographic-quality images, a simple video upgrade lets you show 32,768 colors.

You can use the Quadra 650's expandability to set up a system that meets your exact needs, as well as to increase your computing power as your needs grow. Customize your system by adding NuBus expansion cards in the three expansion slots provided. It even provides high-speed Ethernet support on-board.

The Quadra 650 comes standard with an internal hard drive. Its high-speed SCSI interface lets you add high-volume storage devices, such as the AppleCD 300i internal CD-ROM drive, so you can run hundreds of CD-ROM titles.

Features

- 33-MHz 68040 processor with integral math coprocessor
- 8MB RAM, expandable to 136MB
- 512K VRAM, expandable to 1MB
- Works with all Apple and many third-party displays
- With 512K VRAM upgrade, supports 16-bit color, allowing for display of

thousands of colors

Expansion

- Eight built-in ports to support a wide range of peripherals
- Three NuBus slots for expansion cards
- Optional internal CD-ROM drive
- One inline 68040 processor-direct slot
- On-board Ethernet (AAUI)

Compatibility & Networking

- Runs thousands of Macintosh applications
- Reads Macintosh, Windows, MS-DOS, OS/2, and ProDOS floppy disk formats
- Built-in AppleTalk networking
- File sharing without a dedicated server

Ordering Information

Order No. M2107LL/A
- Macintosh Quadra 650 computer with 8MB RAM, 512K VRAM, built-in 1.4MB Apple SuperDrive, 230MB internal hard disk drive
- Mouse
- System software version 7.1
- Complete setup, learning, and reference documentation
- Limited warranty

Order No. M2106LL/A
- Macintosh Quadra 650 computer with 8MB RAM, 1MB VRAM, 230MB hard disk, internal CD

Order No. M2104LL/A
- Macintosh Quadra 650 computer with 8MB RAM, 1MB VRAM, 500MB hard disk, internal CD

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Tech Info Library Article Number:13695

Tech Info Library

Quadra 610: Specifications 3/94 (Discontinued)

Revised: 6/20/94
Security: Everyone

Quadra 610: Specifications 3/94 (Discontinued)

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Article Created: 21 October 1993
Article Reviewed/Updated: 18 March 1994

TOPIC ----------

This article provides technical specifications for the Macintosh Quadra 610 computer.

DISCUSSION ----------

Microprocessor

- MC68040, 25-MHz clock speed, 32-bit data bus
- Integral FPU (floating-point unit), except in the USA's 8/160 configuration
- Integral PMMU (Paged Memory Management Unit) and 8K-cache architecture

Memory

- Comes with 8MB of RAM on the logic board
- Expandable to 68MB of RAM by adding Single Inline Memory Modules (SIMMs) to two 72-pin slots. (Doesn't support 1MB, 2MB, or 64MB 72-pin SIMMs.) RAM must be 80 ns or faster.
- Includes RAM disk software
- 1MB ROM

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 160MB or 230MB
- Accommodates one 5.25-inch half-height device, such as the AppleCD 300i internal CD-ROM drive

Video Display

- Supports all Apple displays
- Works with a wide range of third-party displays, including some 19-in.,

VGA, SVGA, NTSC, and PAL monitors

Video RAM (VRAM)

VRAM must be 80 ns or faster.
512K Standard Supports:
- 32,768 colors on the Macintosh 12-inch RGB Display
- 256 colors on the AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16-inch Color Display
- 256 shades of gray on the Macintosh 12-inch Monochrome Display
- 16 shades of gray on the Macintosh Portrait Display (15")
- 16 colors on the Macintosh 21-inch Color Display

1MB Option Supports:
- 32,768 colors on the Macintosh 12-inch RGB Display, AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16-inch Color Display
- 256 shades of gray on the Macintosh 12-inch Monochrome Display and Macintosh Portrait Display (15")
- 256 colors on the Macintosh 21-inch Color Display

System Software

Macintosh System software version 7.1 with System Enabler 040 ver. 1.1

Interfaces

- Internal expansion slot for one processor-direct or 7-inch NuBus expansion card (requires adaptor)
- SCSI interface for connecting up to six external peripheral devices
- AAUI-15 Ethernet connector (optional)
- Two serial (RS-232/RS-422) ports
- One video port for color and monochrome displays of various sizes and resolutions
- One sound-output port (stereo) for external amplifier or headphones, and CD playthrough
- One sound-input port for monaural sound input
- Two Apple Desktop Bus (ADB) ports for a keyboard, mouse, and other devices

Sound Generator

- Custom integrated circuit that drives a stereo miniature headphone jack (22 kHz sample rate)

Keyboard and Mouse

- Several ADB keyboards with numeric keypads available
- Apple Desktop Bus Mouse II

Clock/Calendar

• Custom integrated circuit with long-life lithium battery

Disability Access

CloseView, Easy Access, and visible-beep software are built in. These and third-party options provide alternative input and output devices

Power Requirements

• Line voltage: 100 to 240 V AC, RMS single phase, automatically configured
• Frequency: 47 to 63 Hz
• Power: 210 W maximum, not including display power

ADB power Requirements

• Maximum current draw for all ADB devices: 500 mA
  (three ADB devices maximum recommended)
• Mouse draws 10 mA
• Keyboard draws 25 to 80 mA (depending on the model used)

Size and Weight

Main Unit:
• Height: 3.4 in. (8.5 cm)
• Width: 16.3 in. (41.5 cm)
• Depth: 15.6 in. (39.7 cm)
• Weight: 14.0 lbs (6.4 kg) Weight varies depending internal devices installed.

Mouse:
• Height: 1.3 in. (3.3 cm)
• Width: 2.4 in. (6.2 cm)
• Depth: 4.2 in. (10.7 cm)
• Weight: 4.0 oz. (0.10 kg)

Operating Environment

• Operating temperature: 50 to 104° F (10 to 40° C)
• Storage temperature: –40 to 116.6° F (–40 to 47 °C)
• Relative humidity: 5% to 95% noncondensing
• Maximum altitude: 10,000 ft. (3,048 m)

Article Change History:
26 October 1993 - added reference to lack of FPU in 8/160 configuration.

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Tech Info Library Article Number:13696

Tech Info Library

Macintosh Quadra 650: Specifications (3/94)

Revised: 3/18/94
Security: Everyone

Macintosh Quadra 650: Specifications (3/94)

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Article Created: 21 October 1993
Article Reviewed/Updated: 18 March 1994

TOPIC ----------

This article provides technical specifications for the Macintosh Quadra 650 computer.

DISCUSSION ----------

Microprocessor

- MC68040, running at 33 MHz
- Integrated 33-MHz math coprocessor (FPU)
- Integral Paged Memory Management Unit (PMMU), and 8K-cache architecture

Memory

- Comes with 8MB of RAM on the logic board
- Expandable to 136MB of RAM by adding SIMMs to four 72-pin slots. (Doesn't support 1MB, 2MB, or 64MB 72-pin SIMMs.)
- Includes RAM disk software
- 1MB ROM
- DRAM must be 80 ns or faster.

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 230MB or 500MB hard disk drive
- Accommodates one 5.25-in., half-height device, such as the AppleCD 300i internal CD-ROM drive

Video Display

- Supports all Apple displays

- Works with a wide range of third-party displays including some 19-in., VGA, SVGA, NTSC, and PAL monitors

Video RAM (VRAM)

VRAM must be 80 ns or faster.
512K standard supports:

- 32,768 colors on the Macintosh 12-inch RGB Display
- 256 colors on the AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16-inch Color Display
- 256 shades of gray on the Macintosh 12-inch Monochrome Display
- 16 shades of gray on the Macintosh Portrait Display (15")
- 16 colors on the Macintosh 21-inch Color Display

1MB option supports:

- 32,768 colors on the Macintosh 12-inch RGB Display, AppleColor High-Resolution RGB Display (13"), Macintosh Color Display (14"), and Macintosh 16-inch Color Display
- 256 shades of gray on the Macintosh 12-inch Monochrome Display and Macintosh Portrait Display (15")
- 256 colors on the Macintosh 21-inch Color Display

System Software

Macintosh System software 7.1 with System Enabler 040 ver. 1.1

Interfaces

- Three internal NuBus expansion slots
- One 68040 processor-direct slot
- SCSI interface for connecting up to six external devices
- AAUI-15 Ethernet connector (Ethernet itself is built in)
- Two serial (RS-232/RS-422) ports
- One video port for color and monochrome displays of various sizes and resolutions
- One sound-output port for stereo playback from CDs and stereo playback of Macintosh sound
- One monaural sound-input port
- Two Apple Desktop Bus (ADB) ports for a keyboard, mouse, and other devices

Sound generator

- Custom integrated circuit that drives a stereo miniature headphone jack (22 kHz sample rate)

Keyboard and mouse

- Works with several ADB keyboards
- Apple Desktop Bus Mouse II

Clock/Calendar

• Custom integrated circuit with long-life lithium battery

Disability Access

• CloseView, Easy Access, and visible-beep soft-ware are built in. These and third-party options provide alternative input and output devices.

Power Requirements

• Line voltage: 100 to 240 V AC, RMS, automatically configured
• Frequency: 50 to 60 Hz
• Power: 112 W maximum, not including display power

ADB power requirements

• Maximum current draw for all ADB devices: 500 mA (three ADB devices maximum recommended)
• Mouse draws 10 mA
• Keyboard draws 25 to 80 mA, depending on the model used

Size and weight

Main unit:
• Height: 6.0 in. (15.2 cm)
• Width: 13.0 in. (33.0 cm)
• Depth: 16.5 in. (41.9 cm)
• Weight: 25 lb. (11.3 kg) Varies depending on internal devices installed.

Mouse:
• Height: 1.3 in. (3.3 cm)
• Width: 2.4 in. (6.2 cm)
• Depth: 4.2 in. (10.7 cm)
• Weight: 4.0 oz. (0.10 kg)

Operating environment

• Operating temperature: 50 to 104° F (10 to 40° C)
• Storage temperature: –40 to 116.6° F (–40 to 47° C)
• Relative humidity: 5% to 95% noncondensing
• Maximum altitude: 10,000 ft. (3,048 m)

Article Change History:
18 March 1994 - Added "Macintosh" to title.
2 November 1993 - Corrected speed of FPU (33 MHz, not 25 MHz).
24 December 1993 - Corrected power requirement (112 W, not 325 W).

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Tech Info Library Article Number:13697

Tech Info Library

LW Pro 810: Network Connectors (10/93)

Revised: 10/19/93
Security: Everyone

LW Pro 810: Network Connectors (10/93)

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Article Created: 21 October 1993

TOPIC ----------

This article describes the network connectors on the LaserWriter Pro 810.

DISCUSSION ----------

The LaserWriter Pro 810 provides Ethernet, LocalTalk, & Serial ports for seamless integration into virtually any computing environment.

Interface	Comments
LocalTalk	Standard (Mini DIN-8 Connector)
RS-232 Serial	Standard (plug connector attached to printer, the cable connecting to the printer is a socket connector)
Ethernet	Thin wire (10Base-2, T connector) or Twisted Pair (10Base-T)

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Tech Info Library Article Number:13698

Tech Info Library

LW Pro 810: Media Kits For Hosts (11/93)

Revised: 11/29/93
Security: Everyone

LW Pro 810: Media Kits For Hosts (11/93)

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Article Created: 21 October 1993
Article Reviewed/Updated: 29 November 1993

TOPIC ----------

This article describes the media kits for non-Macintosh host on the LaserWriter Pro 810.

DISCUSSION ----------

Customers purchasing a LaserWriter Pro 810 will require Media Kits for each type of non-Macintosh host system. The software to be installed will supplement application drivers already on the host system for direct printing to the LaserWriter Pro 810 over the network. These kits contain the binary images, the actual software to be downloaded to the network. Included in the kit is a guide and the actual media. The media itself varies according to the host requirements shown below.

The table below shows the media kits:

System Type	Ships with LW Pro 810	Optional Media Kit
Macintosh	All necessary software	NA
UNIX host	Unix TAR format on 3.5" diskettes	QIC kit
DEC host	DOS format of VMS install on 3.5" diskettes	TK50 kit

Article Change History:
29 November 1993: Added Optional Media Kit information

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Tech Info Library Article Number:13700

Tech Info Library

LW Pro 810: Concurrent Protocol Multiplexing (9/94)

Revised: 9/22/94
Security: Everyone

LW Pro 810: Concurrent Protocol Multiplexing (9/94)

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Article Created: 21 October 1993
Article Reviewed/Updated: 22 September 1994

TOPIC ----------

This article describes the concurrent protocol multiplexing of the LaserWriter Pro 810.

DISCUSSION ----------

A LaserWriter Pro 810 will simultaneously talk to all the environments to which it is networked. All protocols, whether running over Thin Wire Ethernet or Twisted Pair Ethernet will run concurrently.

Below is a table of the supported environments:

Environment	Ethernet
Macintosh	EtherTalk
Novell	IPX
UNIX	TCP/IP
DEC VMS	LAT

Article Change History:
22 Sep 1994 - Removed LAN Manager
29 Aug 1994 - Removed Token Ring.

Support Information Services

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Tech Info Library Article Number:13701

Tech Info Library

LW Pro 810: Remote Console Facility (10/93)

Revised: 10/19/93
Security: Everyone

LW Pro 810: Remote Console Facility (10/93)

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Article Created: 21 October 1993

TOPIC ----------

This article describes the Remote Console Facility or the Apple LaserWriter Pro 810.

DISCUSSION ----------

The Remote Console Facility (RCF) is a tool used by network managers and system administrators to support mixed environments, principally DEC's LAT, UNIX's TCP/IP, and Novell's IPX environments. In these environments the network manager can log-in to the print server via the Remote Console Facility to retrieve and modify printer information. When logged-on the network manager can retrieve status, configure, and manage the network printer for the enterprise much like an administrator in those environments would expect to manage other devices on the network. The network manager can log in over IPX, LAT, TCP/IP.

Remote Console Facility is not required in a pure Macintosh environment because necessary Network management functions can be achieved from the Macintosh using the LaserWriter Utility, Vanguard, and Print Monitor utilities. The LaserWriter Utility will be used for printer name changes, Vanguard to support all bin selection and printer resolution options, and Print Monitor to get the status of a LaserWriter on the network.

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Tech Info Library Article Number:13702

Tech Info Library

LW Pro 810: Virtual Printer Tech Key Points (7/94)

Revised: 7/18/94
Security: Everyone

LW Pro 810: Virtual Printer Tech Key Points (7/94)

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Article Created: 21 October 1993
Article Reviewed/Updated: 18 July 1994

TOPIC ----------

This article describes the key points about Virtual Printer Technology (VPT) on the LaserWriter Pro 810.

DISCUSSION ----------

The key points about Virtual Printer Technology (VPT) are increased reliability and flexibility, multiple protocol management, printer resource accounting and management, and implementation by supplemental device drivers and no host software modification.

Personal printer flexibility

The printer will automatically configure itself to the configuration requirements of individual users or work groups sharing the printer. It will also save and restore any down loaded fonts, forms, macros, etc. for individual users or work groups.

Multiple concurrent protocols

VPT will concurrently support multiple network protocols allowing seamless communications with major network operating systems in a heterogeneous enterprise network environment.

Host software

VPT does not require replacement of any network operating system software. This means no custom code is required for Novell or VMS operating systems. You are not locked into proprietary software from your printer vendor.

Device driver assistance

VPT provides a means of supplementing device drivers by automatically enabling selected printer capabilities without modifying the device driver. This is particularly important to operating systems with applications specific device drivers such as MS-DOS, UNIX and VMS.

Increased reliability

VPT can reduce the likelihood of printer hangs by having the imaging controller automatically determine if it has reached an abnormal state and instructing the network interface to discard the current print job and go on to the next.

Resource accounting

Many installations require printer resource accounting for charge back purposes or to measure printer utilization. VPT can count the total of bytes, page images, and physical pages for each virtual printer.

Remote Console Facility (RCF)

VPT equipped printers can be managed and configured over the network. Network Administrators can check the status of and configure individual virtual printers and all network configuration parameters for the printer. Printer resource accounting information is also available through the RCF.

Simple Network Management Protocol (SNMP) compliance

VPT is SNMP compliant, initially with Management Information Block(MIB) II, Character MIB, and RS-232 MIB. Future plans call for proprietary MIBs for full printer management through SNMP management stations.

Article Change History:
18 Jul 1994 - Removed reference to Parallel Port.

Support Information Services

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Tech Info Library Article Number:13704

Tech Info Library

LaserWriter Pro 810: Windows, DOS Software Drivers (3/95)

Revised: 3/3/95
Security: Everyone

LaserWriter Pro 810: Windows, DOS Software Drivers (3/95)

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Article Created: 21 October 1993
Article Reviewed/Updated: 3 March 1995

TOPIC ----------

This article describes the software drivers for Windows or DOS.

DISCUSSION ----------

Windows Software Drivers

Windows 3.0 and 3.1 drivers have been developed to support the LaserWriter Pro 810 printer. These LaserWriter Pro 810 specific drivers include a great deal of the functionality found in Macintosh utilities, and will allow the user to access all standard and optional paper trays as well as select the desired print quality.

DOS Software Drivers

In DOS, individual applications ship with their own drivers, providing optimal support for the actual software application. However, some select customized applications' drivers have been developed for LaserWriter Pro 810 printers, maximizing the benefits of the printers for users of these applications: AutoCAD, Word 5.0 (DOS), Word Perfect 5.1 (DOS), and PC Send (used to download to the serial port).

Locating Printer Drivers

The LaserWriter Pro 810 printer drivers can be found on the "LaserWriter Pro, Software for DOS" disk that came with the printer.

Article Change History:
03 Mar 1995 - Added where to to locate printer drivers.
18 Jul 1994 - Removed reference to a parallel port.

..TIL13705-LaserWriter_Pro_810-Windows_DOS_Software_Drivers_3-95_(TA30396).pdf

Support Information Services

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Tech Info Library Article Number:13705

Tech Info Library

LaserWriter Select 360: Specifications (7/95)

Revised: 7/25/95
Security: Everyone

LaserWriter Select 360: Specifications (7/95)

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Article Created: 1 October 1993
Article Reviewed/Updated: 25 July 1995

Topic ----------

This article provides the technical specifications for the LaserWriter Select 360.

Discussion ----------

Marking Engine

Fuji Xerox laser-xerographic

Print Quality

- PostScript: 300 or 600 dots per inch, selectable
- LaserJet III Emulation: 300 or 600 dots per inch

Printer Memory
---
7 MB of RAM Standard, upgradable to 16 MB

Printer Fonts
---
64 Fonts Are Provided, Including Such Fonts As ITC Avant Garde, ITC Bookman, Chicago, Courier, Delphian, Garamond Condensed, Geneva, Helvetica, Helvetica Black, Helvetica Narrow, Lubalin Graph, Lucinda Bright, Machine, Monaco, Nadianne, New Century Schoolbook, New York, Old English Text, Onyx, Oxford, Palatino, Swing, Symbol, Times, ITC Zapf Chancery, ITC Zapf Dingbats, And Zeal.

Laser

- Type: semiconductor laser
- Wavelength: 780 nanometers
- Output Power: 5 milliwatts maximum

Speed

Ten pages per minute maximum. Actual speed depends on the images printed and the computer used.

Interfaces

- One LocalTalk port
- One Parallel (36-pin Centronics) port
- One RS-232 serial port

Recommended Duty Cycle

Minimum life expectancy is 300,000 pages, with no monthly page limit.

Paper Feed

Automatic feed from paper cassettes and multipurpose tray; manual feed for single sheets

Energy Star

The LaserWriter Select 360 is EPA Energy Star-compliant

Printing Materials

Apple recommends 20-lb.photocopy or typewriter bond. You can use 16-lb. to 28-lb. paper in the cassette trays, and 16-lb. to 36-lb. paper via manual feed. The printer accepts most letterhead and colored stock, and medium-weight photocopier transparencies. Print labels or transparencies using manual feed or the multipurpose tray. Use envelopes recommended for Laser printers. Print envelopes using manual feed or automatically if you have the optional envelope cassette installed. Paper made with talc is not recommended for use with this printer.

Paper Capacity

- Standard Cassette: Holds up to 250 sheets of U.S. Letter, A4, or B5 paper Sizes.

- Optional Cassettes are available for 250 sheets of U.S. legal paper and 500 sheets of U.S. Letter or A4 paper.

- Multipurpose Tray: Holds up to 50 sheets of U.S.legal, A4, U.S. letter B5, or executive paper, or 5 envelopes.

- Envelope Cassette: Holds up to 30 Com-10, Monarch, Dl, or C5 envelopes.

Imageable Area

- Maximum printable line: 8.1 inches (207.7 mm)
- Minimum top, left and right margins: .194 inches (4.9 mm)

- Minimum bottom margin: .167 inches (4.2 mm)

Actual imageable area may vary depending on the application program. The printer senses cassette size and adjusts to maintain these margins.

Paper Sizes

Width: Minimum - 97mm (3.82 in) Maximum - 216mm (8.5 in)
Length: Minimum - 148mm (5.83 in) Maximum - 356mm (14.0 in)

Dimensions

Height: 8.0 inches (25.8 Cm)
Width: 15 inches (38 Cm)
Depth: 18.3 inches (45.8 Cm)

Weight
---
29 pounds (13.2 Kg)

Acoustic noise levels (bystander position)

Standby: 36dBA
Printing: 47 dBA

Operating Environment
==========

Humidity
---
20 To 80 percent, noncondensing

Toner cartridge transit environment

-4 to 104 deg. F (-20 to +40 deg. C)

Input Electrical Requirements

U.S./Japan: 100-115 V (+/- 10%), 50-60 Hz (+/-2 Hz)
Europe/Australia: 220-240 V (+/-10%), 50 Hz (+/-2 Hz)

Power Consumption

Operating: 450 W maximum at 115 V or 220 V

Ozone Emission

0.05 parts per million maximum, measured in accordance with ECMA 129 of UL114 standards for ozone measurement

System Requirements

Macintosh:
System software 7 or later
- Minimum 2 MB of memory (4 MB recommended)

System software 6.0.7 or 6.0.8
- Minimum 2 MB of memory

MS-DOS/Windows:
Windows 3.0 or later
- Minimum 2 MB of memory (4 MB recommended)

Ordering Information

LaserWriter 360 & accessory kit: M2049LL/A

LaserWriter 360 Bundle (printer, accessory kit & toner cartridge): B1333LL/B

LaserWriter Select Toner cartridge: M1960G/A

LaserWriter 360 PostScript Fax Card: M2345LL/A

LaserWriter Select 250-Sheet Feeder/Cassette: M2041G/A
. (supports A4, U.S. letter, A5, and executive paper sizes)

LaserWriter Select 500-Sheet Feeder/Cassette: M2042G/A
. (supports A4 and U.S. letter paper sizes)

LaserWriter Select 250-Sheet Letter Cassette: M2034G/A

LaserWriter Select Envelope Cassette (holds 30 envelopes): M2031G/A

LaserWriter Select Legal Cassette (holds 250 sheets): M2032G/A

Article Change History:
25 Jul 1995 - Revised maximum paper weights
20 Mar 1995 - Added paper sizes
13 Mar 1995 - Added System software requirements.

Support Information Services

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Tech Info Library Article Number:13706

Tech Info Library

LaserWriter Select 360: Adding PostScript Fax (12/93)

Revised: 12/3/93
Security: Everyone

LaserWriter Select 360: Adding PostScript Fax (12/93)

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Article Created: 5 October 1993
Article Reviewed/Updated: 3 December 1993

TOPIC ----------

Can you tell me more information about the fax capability on my LaserWriter 360?

DISCUSSION ----------

The optional PostScript Fax card offered with the LaserWriter Select 360 can send and receive faxes with traditional fax machines, computers with fax cards, and other PostScript Fax capable printers. A networked LaserWriter Select 360 printer is available to anyone on the network and therefore is a multi-user fax solution.

When communicating with other fax machines, PostScript Fax printers will produce 200 dpi and deliver the best results possible, given the limitations of a fax machine. However, when communicating with another PostScript Fax capable printer, the LaserWriter Select 360 can deliver and receive faxes that are of the same quality of the original. If the original is sent as a 600 dpi PostScript Fax, that is what is received and printed. This is accomplished by actually sending the other printer a PostScript file instead of a fax image. PostScript Fax to PostScript Fax interaction guarantees top quality images at both ends of the connection.

The LaserWriter Select 360's PostScript Level 2 driver provides for fax communication via the print dialog. This allows any user connected to the LaserWriter Select 360 directly or over the network to fax a document from an application by simply invoking the print command from the file menu. The driver also facilitates the use of an address book feature for frequently used fax destinations.

It is important to understand that by adding the optional fax board when purchasing a LaserWriter Select 360, a business will acquire not

only a fast, networkable, high-quality laser printer, but also a plain paper fax machine that is capable of matching the quality of the original document.

NOTE:
• The PostScript Fax option must be installed by an Apple-authorized service provider.

• The Fax software shipping with the LaserWriter Select 360 Fax option card will not work with 68000-based Macintosh systems. Customers must use the LaserWriter FAX software version 1.0.1 to FAX documents via the 360 and 810 from a 68000 based Macintosh. This new version is not required if the customer is printing from a Macintosh with a 68020 or above.

Ordering Information

LaserWriter Select 360 PostScript Fax Card
Order No. M2345LL/A

Article Change History:
3 December 1993 - Added information on Fax software compatibility with 68000-based Macintosh computers

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Tech Info Library Article Number:13707

Tech Info Library

LaserWriter Select 360: Automatic Language Sensing (10/93)

Revised: 10/19/93
Security: Everyone

LaserWriter Select 360: Automatic Language Sensing (10/93)

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Article Created: 5 October 1993

TOPIC ----------

This article discusses Automatic Language Sensing on the LaserWriter Select 360.

DISCUSSION ----------

The LaserWriter Select 360 can use two-page description languages: PostScript and PCL5. If you use a Macintosh computer, your documents are printed using the PostScript language. If you use an IBM PC or compatible computer, your documents may be printed using either PostScript or PCL5. When you send a document to the LaserWriter, a feature called Adobe IntelliSelect (AIS) automatically determines which language is used for the document.

Your printer has three interface ports (LocalTalk, parallel, and serial). Each port can be set up to use AIS or not, as you choose. For example, if you use the printer's LocalTalk port to connect a Macintosh computer, and the parallel port to connect an IBM PC or compatible computer, you can turn AIS off for the LocalTalk port and turn it on for the parallel port. This is because all Macintosh programs print using PostScript, and programs on PCs may use PostScript or PCL5.

Each port has three possible AIS settings:
1. AutoSelect (AIS is turned on)
2. PostScript (AIS is turned off and the port is set to PostScript only)
3. PCL5 (AIS is turned off and the port is set to PCL5 only).

When a port is set to PostScript only, you cannot use it to print PCL5 documents. When a port is set to PCL5 only, you cannot use it to print PostScript documents.

You use the rotary switch on the back of the printer to change the settings of the interface ports. AIS is one of the settings you can change. The switch is set at the factory to position 0, which is what most users will need. To find out what the settings are and how to change them, reference an article titled "Interface Configuration Settings."

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Tech Info Library Article Number:13708

Tech Info Library

LaserWriter Select 360: Automatic Tray Switching (10/93)

Revised: 10/19/93
Security: Everyone

LaserWriter Select 360: Automatic Tray Switching (10/93)

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Article Created: 5 October 1993

TOPIC ----------

This article discusses automatic tray switching which is incorporated into the LaserWriter Select 360.

DISCUSSION ----------

When the LaserWriter Select 360 runs out of paper in one tray it can automatically switch between the paper cassette and the multipurpose tray. Using automatic tray switching between the 250-sheet paper cassette and the 50-sheet multipurpose tray, you can print 300 sheets without reloading paper.

You can use automatic tray switching with the optional cassettes, as well.

Tray Switching Default:
A tray switch can occur if and only if the following two criteria are met:
1. The tray it's switching to has the same media (same size paper, transparency, and so on.).
2. The tray it's switching to is not empty.

The possible default switching procedures that can be executed depend on whether the optional 250 or 500 sheet feeder is installed.

If an optional feeder is not installed, the printer, upon running out of paper in either tray, checks the other available tray to see if the tray switching criteria is met. If so, it automatically switches to that tray.

If the optional feeder is installed, the printer, upon running out of paper, checks the other two trays using the following priority: the standard cassette, the multipurpose tray, the optional cassette, and

then the envelope tray. If the first tray checked matches the above criteria, the printer automatically switches to that tray. If it does not, the printer checks the other available tray for a criteria match and switches to it if the criteria is met.

Note: The Multipurpose tray can not be sensed for media type (only for the availability of media) so it is assumed that it contains only the default paper size. The user should not enable automatic tray switching if it is not known whether the multipurpose tray contains paper that matches the default paper size.

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Tech Info Library Article Number:13709

LaserWriter Select 360: Automatic Emulation Switching (8/94)

Revised: 8/23/94
Security: Everyone

LaserWriter Select 360: Automatic Emulation Switching (8/94)

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Article Created: 1 October 1993
Article Reviewed/Updated: 23 August 1994

TOPIC ----------

This article discusses the automatic emulation switching technology incorporated into the LaserWriter Select 360.

DISCUSSION ----------

The LaserWriter Select 360 has the ability to sense an interface port data stream to determine the start and end of PostScript print jobs, PCL 5 print jobs, PC DOS PrtScn dumps, Hewlett Packard TBCP (Tagged Binary) and raw text dumps. This function is the key to providing simultaneously active ports and seamless switching between PCL 5, PostScript, and raw text printing.

Each interface port has the ability to process either a single emulation or multiple emulations. If an interface port is assigned multiple emulation responsibilities, all data sent to it is processed by the data sensing function. Ports configured for single emulation responsibility have the data sent directly to the assigned emulation processor.

Fonts that are downloaded for specific jobs remain in memory for the PostScript environment and the PCL 5 environment. If the active environment (either PostScript or PCL 5) runs out of virtual memory, inactive downloaded fonts are released as needed to regain enough memory to perform the current job.

The success of automatic emulation switching is tied to the correct usage of the Hewlett-Packard Printer Job Language, the use of PCL 5 print job delimiters, and proper implementations of the Adobe Document Structuring Conventions. Job streams that do not abide by the protocols produce print data that can't be properly sensed and processed.

Article Change History:
23 Aug 1994 - Review for accuracy.

Support Information Services

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Tech Info Library Article Number:13710

Tech Info Library

LaserWriter Select 360: Installing/Loading Multipurpose Tray

Revised: 10/19/93
Security: Everyone

LaserWriter Select 360: Installing/Loading Multipurpose Tray

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Article Created: 4 October 1993

TOPIC ----------

Do I need to install the multipurpose tray on my LaserWriter 360?

DISCUSSION ----------

You can use the multipurpose tray to automatically feed envelopes and various sizes of paper into the printer. You don't have to install the tray if you don't want to use it. If you don't want to install it, you can feed individual sheets of paper with the manual feed tray.

The tray fits into the manual feed opening and feeds up to 50 sheets or 5 envelopes.

INSTALLING THE MULTIPURPOSE TRAY

1. Open the flap door (front) of printer as if you're going to do a manual feed.

2. As you're facing the opened flap door, hold the multipurpose tray (folded up), and insert the left side first (see User's Guide for more details).

3. Push the black latch (located on the right side of the manual feed opening) to the left, position the tray, and release the latch.
   Note: You can remove the multipurpose tray by pushing the latch to the left and gently pulling it out.

LOADING THE MULTIPURPOSE TRAY

1. Pull out the extension on the multipurpose tray.

2. Stack the paper on the multipurpose tray and adjust the paper guides so they just touch the paper, but still allow it to lie flat. Again, the multipurpose tray holds and feeds up to 50 sheets

or 5 envelopes. The tray can accept U.S. Legal, A4, U.S. Letter, B5 (JIS), and Executive paper.
Note: Do not stack the paper above the tab (left side) on the multipurpose tray.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:13711

Tech Info Library

LaserWriter Select 360: Interface Configuration Settings 10/93

Revised: 10/19/93
Security: Everyone

LaserWriter Select 360: Interface Configuration Settings 10/93

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Article Created: 5 October 1993

TOPIC ----------

Each of the LaserWriter Select 360's interface ports (LocalTalk, serial, and parallel) has some associated configuration parameters that you can set. This article discusses the switch settings.

DISCUSSION ----------

The rotary switch on the back of the printer allows you to easily select one of nine commonly-used interface configurations. If one of these switch positions doesn't meet your needs, you can customize the configuration of switch position 8 using the LaserWriter Utility program for Macintosh or IBM PC and compatible computers.

To change the setting, press the rotary switch. Each time you press, the switch rotates forward or backward one setting. You can change the switch position when the printer is on. The new configuration takes effect within a few seconds. Changing the switch position while a job is being printed may produce unpredictable results.

NOTE: This is NOT a SCSI switch, and the number displayed is not a SCSI ID.

The table that follows summarizes the fixed interface configurations for switch positions 0 through 7, and the factory-default configuration for customizable switch position 8. Switch 9 is reserved. When the printer is turned on with the switch in position 4, an interface configuration page is printed instead of the usual startup page.

Position	Interface	Serial Parameters	Protocol	AIS
0	Serial	9600,N 8,1,DTR	Raw	AutoSelect
	LocalTalk			PostScript
	Parallel		Raw	AutoSelect

1	Serial	9600,N 8,1,DTR	Normal	PostScript
	LocalTalk			PostScript
	Parallel		Normal	PostScript
2	Serial	9600,N 8,1,DTR	Raw	PCL5
	LocalTalk			PostScript
	Parallel		Raw	PCL5
3	Serial	9600,N 8,1,	Normal	PostScript
	LocalTalk	XON/XOFF		PostScript
	Parallel		Raw	AutoSelect
4	Serial	19200,N 8,1,DTR	Normal	PCL5
	LocalTalk			PostScript
	Parallel		Raw	PCL5
5	Serial	19200,N 8,1,DTR	Raw	AutoSelect
	LocalTalk			PostScript
	Parallel		Raw	AutoSelect
6	Serial	19200,N 8,1,DTR	Normal	PostScript
	LocalTalk			PostScript
	Parallel		Normal	PostScript
7	Serial	19200,N 8,1,	Normal	PostScript
	LocalTalk	XON/XOFF		PostScript
	Parallel		Raw	AutoSelect
8	Serial	38400,N 8,1,	Raw	AutoSelect
	LocalTalk	DTR		PostScript
	Parallel		Raw	AutoSelect

Note: In the AIS column in the table above:

- PostScript mean that the port is configured to accept only PostScript jobs.
- PCL5 means that the port is configured to accept only PCL5 jobs.
- AutoSelect means that the port can accept either PostScript or PCL5 and can automatically switch back and forth between them.

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:13712

Tech Info Library

LaserWriter Select 360: Q & A (6/96)

Revised: 6/20/96
Security: Everyone

LaserWriter Select 360: Q & A (6/96)

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Article Created: 4 October 1993
Article Reviewed/Updated: 20 June 1996

TOPIC -----

This article answers questions on the LaserWriter Select 360 printer.

DISCUSSION -----

Q: Does the LaserWriter Select 360 replace the Personal LaserWriter NTR?
A: Yes, the LaserWriter Select 360 is a feature enhanced replacement for the Personal LaserWriter NTR. It offers advanced print quality (FinePrint and true 600 x 600 dots per inch printing) an optional PostScript Fax card for full fax send and receive capability (at up to 600 dpi if communicating with a similarly capable PostScript Fax printer), and a RISC-processor controlled 10 page-per-minute engine.

Q: Is the LaserWriter Select 360 a PostScript printer?
A: Yes. The LaserWriter Select 360 uses Adobe PostScript Level 2. It also offers PCL 5 (Hewlett-Packard LaserJet III emulation) for non-PostScript PC users. PC-DOS PrtScn and HP's Tagged Binary (TBCP) are also available.

Q: What is the print speed of LaserWriter Select 360?
A: Depending on the application and the complexity of the document being printed, the printer is designed to print up to 10 ppm.

Q: What are the paper handling capabilities?
A: Paper input capacity is 250 sheets and can be expanded to support an additional 50, 250, or 500 sheets of paper. When all the paper handling options are installed the printer can have up to 800 sheet input capacity.

Q: Is the LaserWriter Select 360 compatible with the LaserWriter Select 300/310 toner cartridge and accessories?
A: No. The LaserWriter Select 360 is based on a new 600 dpi print

engine. It is not compatible with the LaserWriter Select 300/310 toner cartridge.

Q: Is there a LaserWriter Select 360 upgrade for the LaserWriter Select 300 and 310?
A: No. Due to severe schedule restrictions and low customer demand for past upgrade options, there is no planned upgrade path from the LaserWriter Select 300 or 310.

Q: Can the LaserWriter Select 360 be upgraded to a LaserWriter Pro 630?
A: No, the LaserWriter Pro 630 is based on an entirely different engine.

Q: Won't the LaserWriter Select 360 impact LaserWriter Pro 600 sales?
A: Yes, because of the faster engine and equivalent resolutions, automatic emulation switching and the optional PostScript Fax capability. The LaserWriter Pro 600 will still be available because of the upgrade path it provides to the LaserWriter Pro 630.

Q: Is the LaserWriter Select 360 memory upgradeable?
A: Yes, a user can upgrade the memory by replacing the 72-pin 4 MB SIMM with a 72-pin 16 MB SIMM. This upgrade boosts the usable RAM from 7 MB to 16 MB. The 3 MB of RAM on the logic board is not used when a 16 MB SIMM is installed.

Q: Why isn't PhotoGrade supported in the LaserWriter Select 360?
A: Due to severe schedule restrictions and some engineering difficulties with 300 dpi PhotoGrade quality, the option was not included.

Q: What expansion options are available for the printer?
A: The expansion options include the PostScript Fax card for plain paper fax capability and various paper handling accessories which provide an input capacity of up to 800 sheets.

Q: Does the LaserWriter Select 360 support LocalTalk?
A: Yes. The LaserWriter Select 360 was designed to be an upgraded version of the Personal LaserWriter NTR and as such, supports LocalTalk, serial and parallel interfaces.

Q: Does the LaserWriter Select 360 printer support TrueType?
A: Yes, the ROM includes the TrueType scaler and the disk set includes 64 TrueType font faces.

Q: Is the LaserWriter Select 360 compatible with ATM (Adobe Type Manager)?
A: Yes, ATM and TrueType can both be used.

Q: When QuickDraw GX is available will the LaserWriter Select 360 support it?
A: As soon as QuickDraw GX is available Apple will add the appropriate driver to the in-box materials and modify the Installer script to install the appropriate driver depending on the system software present on the user's Macintosh.

Q. Who is the target customer?

A. The LaserWriter Select 360 is targeted for small to medium workgroups, small to mainstream businesses and power users who need high-quality, high-performance and network capability. The PostScript Fax option is ideal for each of the target customer segments.

Q. How much faster is the LaserWriter Select 360 than the Personal LaserWriter NTR?
A. The answer to that depends on the complexity of the print job, and the size of the file form which you print. On average, a LaserWriter Select 360 will image 60% faster than a Personal LaserWriter NTR.

Q. What print quality capabilities are available?
A. Users can select 300x300 dpi or 600x600 dpi. FinePrint can be employed in 300x300dpi.

Q. What fonts are in the printer?
A. All standard 35 Type 1 fonts for PostScript applications in UNIX, Windows, and Macintosh applications are ROM resident.

Q. Does the printer support automatic emulation switching?
A. Yes, it supports automatic emulation switching. If the data stream being sent to a port follows standards for each emulation, it can detect emulation switching needs and correctly route the data to the proper emulation logic.

Q. Does it support PCL Level 5 (HP LaserJet III emulation)?
A. Yes.

Q. What processor does the LaserWriter Select 360 use?
A. The processor is a RISC based AMD 29200 15 MHz chip.

Q. What kind of RAM does it use?
A. The LaserWriter Select 360 uses 72-pin, 80 ns, fast page mode DRAM. Three 1 MB banks of memory are soldered to the logic board. One 72-pin SIMM holds a 4 MB SIMM which may be replaced with a 16 MB SIMM.

Q. What RAM configurations are possible?
A. The LaserWriter Select 360 is equipped with 7 MB standard, and can be upgraded with one 16 MB SIMM (which replaces the 4 MB SIMM) to provide a maximum of 16 MB RAM. In the 16 MB configuration, the 3 MB of on-board DRAM are unused.

Q. How much ROM and RAM are standard?
A. 4 MB ROM and 7MB RAM.

Q. Does Apple include software for Windows users?
A. Yes. We have drivers to support Windows 3.0 and Windows 3.1.

Q. Does the LaserWriter Select 360 have duplex printing capability?
A. No.

Q. How does the LaserWriter Select 360 compare with the HP LaserJet 4M or 4P?

A. At this time, it is the only mainstream laser printer that offers the PostScript Fax option. Otherwise, the LaserWriter Select 360 and the Hewlett-Packard LaserJet 4M have similar features and abilities. The LaserWriter Select 360 has a faster engine than the HP LaserJet 4P (10 ppm to 4 ppm). All three printers have all ports active interfaces with automatic emulation switching capability.

Article Change History:
20 Jun 1996 - Updated FinePrint information.

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Tech Info Library Article Number:13713

Tech Info Library

LaserWriter Select: Toner Cartridge Compatiblilty (11/95)

Revised: 11/7/95
Security: Everyone

LaserWriter Select: Toner Cartridge Compatiblilty (11/95)

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Article Created: 4 October 1993
Article Reviewed/Updated: 7 November 1995

TOPIC ----------

Is the LaserWriter Select 300/310 toner cartridge compatible with the LaserWriter Select 360 printer?

DISCUSSION ----------

The LaserWriter Select 360 is based on a new 600 dpi print engine, and it is not compatible with the original LaserWriter Select 300/310 toner cartridge (M2029G/A). However, a universal LaserWriter Select toner cartridge (M1960G/A) is compatible with the LaserWriter Select 360, LaserWriter Select 310, and LaserWriter Select 300 printers. The universal LaserWriter Select toner cartridge is also compatible with the LaserWriter Select 610, which is only available outside the United States.

Article Change History:
07 Nov 1995 - Combined multiple articles on the same topic.
06 Jun 1995 - Added information on current compatibility.

Support Information Services

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Tech Info Library Article Number:13714

Tech Info Library

LaserWriter Select 360: Upgrading Printer Memory (2/95)

Revised: 2/22/95
Security: Everyone

LaserWriter Select 360: Upgrading Printer Memory (2/95)

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Article Created: 4 October 1993
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

Can I upgrade my LaserWriter Select 360 with more memory?

DISCUSSION ----------

Yes, the LaserWriter Select 360 can be upgraded with more RAM (memory), which lets you print more complex documents and improves performance on documents that contain many fonts.

The printer's standard memory size is 7 MB (megabytes), 4 MB of which are contained on a removable SIMM (Single Inline Memory Module). The printer may be upgraded to 16 MB total (the largest size supported by the printer) by removing the 4 MB SIMM and replacing it with a 16 MB SIMM. The remaining 3 MB of memory is disabled by the controller whenever a 16 MB SIMM is installed.

The 16 MB SIMM may be purchased from your Apple-authorized Service Provider. SIMMs must meet the following specifications:

- Size: 16 MB (4 Mbit x 32 bit)
- Access Time: 80 ns or less
- SIMM Type: 72-pin
- Refresh: 2K Row (11 bit x 11 bit)

There are a wide range of 16MB SIMMs available. Just because a 16MB SIMM is being used does not mean that it is the correct one for use in the LaserWriter Select 360. Contact the SIMM vendor to confirm that the proper SIMM is being used.

Article Change History:
22 Feb 1995 - Added keyword; made minor technical updates.
12 Dec 1994 - Added additional SIMM information.

10 Jun 1994 - Removed incorrect ordering information

Support Information Services

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Tech Info Library Article Number:13715

Tech Info Library

LaserWriter Select 360: Description (2/94)

Revised: 2/23/94
Security: Everyone

LaserWriter Select 360: Description (2/94)

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Article Created: 1 October 1993
Article Reviewed/Updated: 22 February 1994

TOPIC ----------

This article describes the LaserWriter 360.

DISCUSSION ----------

The LaserWriter Select 360 printer is a low-cost, high performance printer that features a 10 page-per-minute (ppm) engine. The first thing you'll notice about the LaserWriter Select 360 is its outstanding print quality. Offering 600-dot-per-inch (dpi) resolution, the LaserWriter Select 360 produces consistently superior output with crisp text, rich graphics and perfect curves.

The LaserWriter Select 360, which is based on an AMD 29200 RISC microprocessor, is significantly faster than the Personal LaserWriter NTR, and approximately 16% faster than the LaserWriter Pro 630. It has LocalTalk, RS-232, and parallel (Centronics) ports, but no SCSI port for attaching an external hard drive.

Whether you use Macintosh, Windows, or MS-DOS computers, the LaserWriter Select 360 provides the plug-and-play simplicity you need. All ports stay active simultaneously, so the printer can accept jobs from all types of computers without you having to change a single setting. The LaserWriter Select 360 also automatically switches between PostScript Level 2 and PCL 5 languages.

When you add the PostScript Fax Card, the LaserWriter Select 360 offers another big advantage, you can use it to receive and send faxes as easily as you can print from both Macintosh and Windows computers. What's more, you can print them on plain paper at up to 600-dpi resolution. Everyone on the network can use the LaserWriter Select 360 to send faxes to any PostScript or standard Group 3 fax machine and know they'll arrive looking their best.

With two versatile paper trays built-in, plus an optional third tray, the LaserWriter Select 360 supports a total paper capacity of 800 sheets.

FEATURES:

Print quality

- 600-dot-per-inch (dpi) resolution for high quality text and graphics -- even with the standard RAM configuration.
- 64 scalable fonts

Performance

- Up to 10 page-per-minute print speed
- AMD Am29200 RISC processor
- EPA Energy Star compliant; automatic sleep mode when the printer is idle

Target Customer

- Small to medium workgroups in Macintosh and mixed Macintosh/Windows environments

Optional PostScript fax capability

- Optional PostScript Fax Card for adding plain-paper fax capability to the printer
- Allows all Macintosh and PC users on a network to send and receive faxes at up to 600 dpi

Compatibility

- Simple plug-in connection to Macintosh, MS-DOS, and Windows computers
- Simultaneous connection to parallel, LocalTalk, and serial ports
- Automatic emulation switching between PostScript Level 2 and PCL 5

Paper handling

- Two paper trays included (50 and 250 sheet capacity)
- Optional 250 or 500 sheet tray
- Maximum capacity with options: 800 sheets
- Paper sizes: Supports U.S. letter, U.S. legal, A4, B5, Labels, envelopes, most textured stock and transparencies

Interfaces

- Simultaneous connection to parallel, LocalTalk, and RS-232 serial interfaces
- Connector for optional PostScript Fax Card

Fonts

• Apple Font Library (64 fonts total)
—35 fonts in ROM from the following font families:
Avant Garde, Bookman, Courier, Helvetica, Helvetica Narrow, New Century Schoolbook, Palatino, Symbol, Times, Zapf Chancery, and Zapf Dingbats
—29 fonts on Macintosh disk from the following font families: Chicago, Delphian, Garamond Narrow, Geneva, Helvetica Black, Helvetica Compressed, Lubalin Graph, Lucida Bright, Machine, Monaco, Nadianne, New York, Old English Text, Onyx, Oxford, Swing, and Zeal

• Compatible with any TrueType or PostScript font

Ordering Information

LaserWriter 360 & accessory kit (no toner cartridge)
Order No. M2049LL/A

LaserWriter 360 Bundle (printer, accessory kit & toner cartridge)
Order No. B1333LL/A

LaserWriter 360 Toner cartridge
Order No. M1960G/A

LaserWriter 360 PostScript Fax Card
Order No. M2345LL/A

Apple LaserWriter Select 250-Sheet Feeder/Cassette
(supports A4, U.S. letter, A5, and executive paper sizes)
Order No. M2041G/A

Apple LaserWriter Select 500-Sheet Feeder/Cassette
(supports A4 and U.S. letter paper sizes)
Order No. M2042G/A

Apple LaserWriter Select 250-Sheet Letter Cassette
Order No. M2034G/A

Apple LaserWriter Select Envelope Cassette
(holds 30 envelopes)
Order No. M2031G/A

Apple LaserWriter Select Legal Cassette
(holds 250 sheets)
Order No. M2032G/A

Article Change History:
22 February 1994 - added "600 dpi even with standard RAM"

Support Information Services

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Tech Info Library Article Number:13716

Tech Info Library

Centris Series: Replaced by Similar Quadra Models (10/93)

Revised: 10/19/93
Security: Everyone

Centris Series: Replaced by Similar Quadra Models (10/93)

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Article Created: 21 October 1993

TOPIC ----------

What became of the Centris 610, Centris 650, and Centris 660AV?

DISCUSSION ----------

On 21 October 1993, the Centris name was discontinued, and the three Centris models were replaced by three Macintosh Quadra models.

The Quadra 610 and 650 offer improved performance compared to the Centris models they replace. Separate Tech Info Library articles list the differences between the Centris 610 and the Quadra 610, and between the Centris 650 and the Quadra 650. The Centris 660AV and the Quadra 660AV are identical.

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Tech Info Library Article Number:13717

Tech Info Library

Apple External Hard Drive: Description (9/94) (Discontinued)

Revised: 5/23/95
Security: Everyone

Apple External Hard Drive: Description (9/94) (Discontinued)

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Article Created: 27 September 1993
Article Reviewed/Updated: 23 May 1995

TOPIC ----------

This article describes the Apple External Hard Drive.

NOTE:
This drive was never released or supported by Apple Computer, Inc. LaCie sold this drive in multiple hard drive sizes, and provided all support for it.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

DISCUSSION ----------

The Apple External Hard Drive provides Macintosh owners with a convenient, easy storage upgrade option that comes in capacities of up to 1 gigabyte. It incorporates design and support features that make it the clear choice for additional storage capacity for your computer—or additional font storage for your laser printer.

Featuring a flexible, aesthetic design, the Apple External Hard Drive can be set up either vertically or horizontally. Its front-panel controls make it convenient to use no matter how it’s positioned.

To help you get started quickly, the Apple External Hard Drive includes everything you need to set it up. It’s packaged with a power cable, a SCSI cable, and even a terminator. In addition, the drive comes with a variety of utility software, so operation is also a snap. Programs include an easy-to-use setup function, powerful disk-repair utilities, file-compression software, and even a comprehensive backup utility to ensure the continued safety and security of your files.

FEATURES

Front-panel controls

- Provides unique front-panel SCSI ID display, which makes it easy to check or change SCSI ID as needed
- Offers front-panel power-on switch for easy operation

Bundled utility software

- Comes with easy setup program
- Includes powerful disk-repair utilities
- Enables data compression for storage efficiency
- Provides comprehensive backup capacity

Rapid, reliable service options

- Lets you call a toll-free number for support as needed
- Provides for repairs by Apple-authorized service professionals

Convenience

- Comes with everything required to get it running right away; includes power cable, SCSI cable, and terminator

Compatibility

- Supports Macintosh SE 30 and later models — no potential problems or need for complicated retrofits

System software

- Bundled software requires system software version 6.0.5 or later

System requirements

- Any Apple Macintosh computer with a SCSI connector

Ordering Information

Apple External Hard Drive:
Order No. M1861LL/A 160MB HD SC
Order No. M1862LL/A 230MB HD SC
Order No. M1863LL/A 500MB HD SC
Order No. M1864LL/A 1GB HD SC

All products include

- Apple External Hard Drive, with preinstalled DiskDoubler, Safe & Sound and Central Point Backup utilities, Apple HD SC Setup, and Apple Disk First Aid software
- 25- to-50-pin SCSI cable
- Terminator

- Power cord
- Apple External Hard Drive User’s Guide
- DiskDoubler documentation
- Documentation for Central Point Utilities software (Safe & Sound and Backup)
- Limited warranty
- Product registration card
- Software licensing agreement

Article Change History:
23 May 1995 - Added note to article.
23 Sep 1994 - Discontinued product.

Support Information Services

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Tech Info Library Article Number:13719

Tech Info Library

Ethernet and Twisted-Pair NB Card: Description (10/93)

Revised: 11/5/93
Security: Everyone

Ethernet and Twisted-Pair NB Card: Description (10/93)

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Article Created: 21 October 1993

TOPIC ----------

This article describes the Apple Ethernet NB Card and Apple Ethernet NB Twisted-Pair Card and it's features.

DISCUSSION ----------

The Apple Ethernet NB Cards (Apple Ethernet NB Card and Apple Ethernet NB Twisted-Pair Card) provide Macintosh II and Macintosh Quadra computers with the ideal Ethernet connectivity solution for all of your networking needs.

The Apple Ethernet NB Card is a NuBus master network interface card that has its own 68000 microprocessor and includes an Apple Ethernet port. With the appropriate Apple Ethernet cable system media adapter, which plugs into the port, you can connect to any standard Ethernet cabling environment: thin coax Ethernet networks, using the Apple Thin Coax Transceiver; and thick coax or other media (such as fiber-optic cable) Ethernet networks, using the Apple Ethernet AUI Adapter.

The Apple Ethernet NB Twisted-Pair Card is a bus master network interface card that includes a built-in, industry-standard, 10Base-T network port. When used in conjunction with an unshielded twisted-pair cable and an IEEE-compatible hub, it allows you to connect to IEEE 802.3 10Base-T networks.

These convenient, easy-to-install cards feature uncompromised network performance and afford the flexibility of connection to any standard Ethernet media. They support a variety of net-working protocols, including AppleTalk, TCP/IP, Mac IPX, and DECnet, and offer seamless interoperability in multivendor environments.

Features

Ease of use

- Takes only minutes to install
- Includes all the necessary software

Compatibility
- Works with all Macintosh II and Macintosh Quadra models
- Complies with IEEE 802.3 standards
- Supports a variety of popular networking protocols, including AppleTalk, TCP/IP, Mac IPX and DECnet
- Easily integrates into multivendor environments
- Adapts to any standard Ethernet cable environment using the appropriate Apple Ethernet cable system media adapter (Ethernet NB Card)

High performance
- Allows concurrent execution of multiple networking protocols to optimize network performance
- Offers the highest available network buffer memory
- Features a robust, multiprocessor, bus master architecture (Ethernet NB Card)

Convenience
- Makes it easy to administer and troubleshoot the network
- Lets you take advantage of existing unshielded twisted-pair cabling (Ethernet NB Twisted-Pair Card)

Reliability
- Offers high network reliability because of the point-to-point nature of 10Base-T networks (Ethernet NB Twisted-Pair Card)

Additional search string: twisted pair

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Tech Info Library Article Number:13724

Tech Info Library

Ethernet and Twisted-Pair NB Card: Specifications (10/93)

Revised: 11/5/93
Security: Everyone

Ethernet and Twisted-Pair NB Card: Specifications (10/93)

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Article Created: 21 October 1993

TOPIC ----------

This article provides the specifications and order information of the Apple Ethernet NB Card and Apple Ethernet NB Twisted-Pair Card.

DISCUSSION ----------

Apple Ethernet NB Card Technical Specifications

Connector
• Apple Ethernet

Transmit/receive data rate
• 10-megabit-per-second maximum data rate

Processor
• 10-MHz Motorola 68000

RAM
• 512K standard

Environmental requirements
• Operating temperature: 50° to 104° F (10° to 40° C)
• Humidity: 20% to 95% noncondensing, at a temperature range of 77° to 104° F (25° to 40° C)

Power dissipation
• 7.5 W or less (average is 4 W)

Ethernet controller
• National Semiconductor DP83932

System requirements
• One available NuBus slot; NuBus adapters required for the Macintosh IIsi

and Macintosh Quadra 610
• Appropriate Apple Ethernet cable system media adapter

Apple Ethernet NB Twisted-Pair Card Technical Specifications

Connector
• Ethernet 10Base-T compliant RJ-45 port

Transmit/receive data rate
• 10-megabit-per-second maximum data rate

RAM
• 128K standard

Environmental requirements
• Operating temperature: 50° to 104° F (10° to 40° C)
• Humidity: 20% to 95% noncondensing at a temperature range of 77° to 104° F (25° to 40° C)

Power dissipation
• 3.75 W or less (average is 2 W)

Ethernet controller
• National Semiconductor DP83934-SONIC-T

System requirements
• One available NuBus slot; NuBus adapters required for the Macintosh IIsi and Macintosh Quadra 610
• Unshielded twisted-pair cable
• IEEE 802.3-compatible 10Base-T hub

Ordering Information

Apple Ethernet NB Card - Order No. M0417LL/B
• Apple Ethernet NB Card
• Network Software Installer Disk
• User's guide
• Limited warranty

Apple Ethernet NB Twisted-Pair Card - Order No. M1768Z/A
• Apple Ethernet NB Twisted-Pair Card
• Network Software Installer Disk
• User's guide
• Limited warranty

Apple Ethernet Thin Coax Transceiver - Order No. M0329Z/B

Apple Ethernet Twisted-Pair Transceiver - Order No. M0437Z/B

Apple Ethernet AUI Adapter - Order No. M0432LL/A

Apple Ethernet 5-meter Thin Coax Cable - Order No. M0833LL/A

Apple Ethernet 13-meter Thin Coax Plenum Cable - Order No. M0436LL/A

For the Latest version of AppleTalk software
AppleTalk Connection for Macintosh - Order No. M80692/A

For more information about AppleTalk network design and management, see:
Planning and Managing AppleTalk Networks by Apple Computer, Inc., published by Addison-Wesley Publishing Company, Inc.

Additional search string: twisted pair

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Tech Info Library Article Number:13725

Tech Info Library

External Hard Drive Update: Positioning Horizontally (2/95)

Revised: 2/2/95
Security: Everyone

External Hard Drive Update: Positioning Horizontally (2/95)

==========

Article Created: 27 September 1993
Article Reviewed/Updated: 02 February 1995

TOPIC ----------

This article gives updated information about positioning the hard disk horizontally and attaching the feet on the Hard drive.

DISCUSSION ----------

The Apple External Hard Drive can be positioned vertically or horizontally. However, pages 3 and 4 of the Apple External Hard Drive User's Guide contain some outdated information about positioning the hard disk horizontally.

To position the hard disk horizontally, DO NOT attach the feet. Apple DOES NOT recommend stacking one hard disk on top of another.

The information about positioning the hard disk vertically is still correct.

Article Change History:
02 Feb 1995 - Changed access privileges of article.

Support Information Services

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Tech Info Library Article Number:13726

Tech Info Library

PowerBook Duo 250: Description (Discontinued)

Revised: 3/14/95
Security: Everyone

PowerBook Duo 250: Description (Discontinued)

==========

Article Created: 21 October 1993
Article Reviewed/Updated: 14 March 1995

TOPIC ----------

This article describes the Apple PowerBook Duo 250 computer.

DISCUSSION ----------

The PowerBook Duo 250 offers a high-speed processor, an active matrix screen, large RAM expansion, and desktop expansion in a package that weighs 4.2 pounds. It features a 68030 microprocessor that runs at 33 megahertz, and supports up to 24 megabytes of RAM. The PowerBook Duo 250 also includes a 9-inch (229-millimeter) backlit, active-matrix display.

The PowerBook Duo 250 can be transformed into a desktop Macintosh by attaching it to an optional PowerBook Duo Dock or MiniDock. You can then work with a large color display, expanded keyboard, printers, and network servers.

Features

Power and speed

• 33-MHz 68030 microprocessor

Memory

• 4MB of RAM, expandable to 24MB

Display

• Bright, backlit, active-matrix display (640 by 400 pixels)
• Full-page-width, 9-in. diagonal; 16-level gray scale
• Adjustable brightness and contrast controls

Battery life

• 2.5 to 6 hours on a single charge

Expansion

• Built-in high-speed serial port for peri-pheral devices, including LocalTalk network and printers
• Slots for internal modem and RAM
• Docking connector
• Optional PowerBook Express Modem

Usability

• Runs thousands of Macintosh applications
• Easy to set up, learn, use, and expand

System software

• System software version 7, with multitasking, file sharing, Balloon Help, TrueType fonts, and more

Networking

• Built-in LocalTalk networking
• File sharing without a dedicated server

Compatibility

• Reads and writes Macintosh, Windows, MS-DOS, OS/2, and ProDOS floppy disk formats with appropriate software

Ordering Information

PowerBook Duo 250 4/200
Order No. M1933LL/A
• PowerBook Duo 250 computer with 4MB of RAM and internal 200MB hard disk
• Battery and AC adapter
• System software version 7.1
• Complete setup, learning, and reference documentation
• Training software
• Limited warranty

Optional PowerBook Duo 250 configuration
Order No. M4189LL/A
• PowerBook Duo 250 computer with 12MB of RAM, internal 200MB hard disk and internal PowerBook Express Modem with Express Fax software

PowerBook Duo 4MB Memory
Expansion Kit*
Order No. M4184LL/A

PowerBook Duo 8MB Memory
Expansion Kit*
Order No. M4185LL/A

PowerBook Duo Fax/Data Modem
(U.S., Canada, Japan)
Order No. M0970LL/A

Express Modem for PowerBook Duo*
(U.S., Canada, Japan)
Order No. M4186LL/A

PowerBook Duo Rechargeable Battery
Order No. M1835LL/A

PowerBook Duo AC Adapter
Order No. M4174LL/A

PowerBook Duo Battery Recharger
Order No. M4178LL/A
Service Part 922-0576

Apple HDI-30 SCSI Disk Adapter
Order No. M2539LL/A

Apple HDI-30 SCSI System Cable
Order No. M2538LL/A

*Dealer installation recommended

Article Change History:
14 Mar 1995 - Corrected wording of MiniDock.
26 Aug 1994 - Corrected part number for PowerBook Duo Battery Recharger.

Support Information Services

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Tech Info Library Article Number:13727

Tech Info Library

PowerBook Duo 250: Technical Specifications (10/93)

Revised: 7/8/94
Security: Everyone

PowerBook Duo 250: Technical Specifications (10/93)

==========

Article Created: 21 October 1993

TOPIC ----------

This article provides the technical specifications for the Apple PowerBook Duo 250.

DISCUSSION ----------

Microprocessor

- Motorola 68030, running at 33 MHz

Memory

- Comes with 4MB of RAM
- Can be expanded to up to 24MB of RAM with PowerBook Duo 4MB or 8MB Memory Expansion Kits, or third-party memory expansion cards

Disk Drive

- One internal 200MB hard disk

Display

- 9-in. (229-mm) diagonal
- Backlit, active-matrix display, 640 by 400 pixels
- 16 shades of gray

Battery

- Nickel-metal-hydride High Capacity Type II battery provides 2.5 to 6 hours of computer use before recharging is necessary
- EverWatch Battery Saver technology

Keyboard

- Built-in, 2.5-mm travel, 18-mm pitch
- Two-level tilt adjustment
- LED light when caps lock is engaged

Trackball

- 19-mm diameter, dual-button trackball

Clock/Calendar

- CMOS custom-integrated circuit with long-life lithium battery

Microphone

- Built-in omnidirectional electret; output voltage of 4 mV, peak-to-peak, at normal volume

Interfaces

- Power adapter port
- 152-pin PDS connector for connecting PowerBook Duo Dock, PowerBook Duo MiniDock, PowerBook Floppy Adapter, or other expansion devices
- RS-422 serial port for LocalTalk networking, printers, modems, and other devices
- Port for optional internal modem

File-Transfer Options

- LocalTalk cables and System 7 file sharing
- Serial cable and System 7 file sharing
- Fax/data modem and AppleTalk Remote Access software
- Duo MiniDock with external Apple SuperDrive, SCSI Disk Adapter, and HDI-30 SCSI system cable
- Duo Dock internal Apple SuperDrive, optional internal hard drive, and HDI-30 SCSI system cable

Docking Options

- PowerBook Duo Dock
- PowerBook Duo MiniDock
- PowerBook Duo Floppy Adapter
- Docking solutions from third-party vendors

Modem

- Optional internal PowerBook Express Modem; sends and receives data at 14,400 bps and sends and receives faxes at 9,600 bps. Includes Express Fax software.

Subframe

- Magnesium subframe structural rigidity and heat sink

Sound Generator

- Built-in speaker
- Apple Sound Chip provides monophonic 8-bit sound and is capable of driving stereo headphones or other stereo equipment with the same signal supplied to both channels through optional PowerBook Duo Dock or PowerBook Duo MiniDock

Sound Input

- 4-voice sound with 8-bit analog-to-digital conversion recording at 11 or 22 kHz sampling rate

Disability Access

- CloseView, Easy Access, and visible-beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

Electrical Requirements

- Line voltage: 85 to 270 VAC, RMS single phase, automatically configured
- Frequency: 47 to 63 Hz, single phase
- Power: 25 W maximum

ADB Power Requirements

- Maximum current draw for all ADB devices is 200 mA (a maximum of three ADB devices is recommended)

Size and Weight

- Thickness: 1.4 in. (3.6 cm)
- Width: 10.9 in. (27.7 cm)
- Depth: 8.5 in. (21.6 cm)
- Weight: 4.2 lb. (1.9 kg)

Operating Environment

- Operating temperature: 50° to 104° F (10° C to 40° C)
- Storage temperature: –40° to 116° F (–40° C to 47° C)
- Relative humidity: 20% to 80% noncondensing
- Operating altitude: 0 to 10,000 ft. (0 to 3,048 m)
- Maximum storage altitude: 15,000 ft. (4,722 m)

Support Information Services

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Tech Info Library Article Number:13728

Tech Info Library

PowerBook Duo 270c: Description (Discontinued)

Revised: 3/14/95
Security: Everyone

PowerBook Duo 270c: Description (Discontinued)

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Article Created: 21 October 1993
Article Reviewed/Updated: 14 March 1995

TOPIC ----------

This article describes the Apple PowerBook Duo 270c computer.

DISCUSSION ----------

The PowerBook Duo 270c is Apple’s top-of-the-line color PowerBook Duo computer and is the industry’s first 16-bit color notebook. It has a 8.4-inch, backlit, active-matrix color display which can display thousands of colors. Yet the PowerBook Duo 270c weighs just 4.8 pounds and fits easily into a briefcase.

The PowerBook Duo 270c combines the power of a 33-megahertz 68030 microprocessor with an additional math coprocessor, and supports up to 32 megabytes of RAM.

The PowerBook Duo 270c can be transformed into a desktop Macintosh by attaching it to an optional PowerBook Duo Dock or MiniDock. You can then work with a large color display, expanded keyboard, printers, and network servers.

Features

Power and speed

• 33-MHz 68030 microprocessor
• 33-MHz 68882 math coprocessor

Memory

• 4MB of RAM, expandable to 32MB

Display

• Bright, backlit, active-matrix display

- 8.4-in. diagonal
- Two display modes: 640 by 400 with thousands of colors; 640 by 480 with 256 colors

Battery life

- 2 to 4 hours on a single charge

Expansion

- Built-in high-speed serial port for peripheral devices, including LocalTalk network and printers
- Slots for internal modem and RAM
- Docking connector
- Optional PowerBook Express Modem

Usability

- Runs thousands of Macintosh applications
- Easy to set up, learn, use, and expand

System software

- System software version 7, with multitasking, file sharing, Balloon Help, TrueType fonts, and more

Networking

- Built-in LocalTalk networking
- File sharing without a dedicated server

Compatibility

- Reads and writes Macintosh, Windows, MS-DOS, OS/2, and ProDOS floppy disk formats with appropriate software

Ordering Information

PowerBook Duo 270c 4/240
Order No. M1752LL/A

- PowerBook Duo 270c computer with 4MB of RAM and internal 240MB hard disk
- Battery and AC adapter
- System software version 7.1
- Complete setup, learning, and reference documentation
- Limited warranty

Optional PowerBook Duo 270 configuration
Order No. M2124LL/A

- PowerBook Duo 270c computer with 12MB of RAM, internal 240MB hard drive, and internal PowerBook Duo Express Modem with Express Fax software

PowerBook Duo 4MB Memory
Expansion Kit*
Order No. M4184LL/A

PowerBook Duo 8MB Memory
Expansion Kit*
Order No. M4185LL/A

PowerBook Duo Fax/Data Modem
(U.S., Canada, Japan)
Order No. M0970LL/A

Express Modem for PowerBook Duo*
(U.S., Canada, Japan)
Order No. M4186LL/A

PowerBook Duo Rechargeable Battery
Order No. M1835LL/A

PowerBook Duo AC Adapter
Order No. M4174LL/A

PowerBook Duo Battery Recharger
Order No. M4178LL/A
Service Part 922-0576

Apple HDI-30 SCSI Disk Adapter
Order No. M2539LL/A

Apple HDI-30 SCSI System Cable
Order No. M2538LL/A

*Dealer installation recommended

Article Change History:
14 Mar 1995 - Corrected wording of MiniDock.
26 Aug 1994 - Corrected part number for PowerBook Duo Battery Recharger.

Support Information Services

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Tech Info Library Article Number:13729

Tech Info Library

PowerBook Duo 270c: Technical Specifications (Discontinued)

Revised: 6/3/94
Security: Everyone

PowerBook Duo 270c: Technical Specifications (Discontinued)

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Article Created: 21 October 1993

TOPIC ----------

This article provides the technical specifications for the Apple PowerBook Duo 270c.

DISCUSSION ----------

Microprocessor

- Motorola 68030, running at 33 MHz
- 68882 math coprocessor, running at 33 MHz

Memory

- Comes with 4MB of RAM
- Expands to up to 32MB of RAM with the addition of PowerBook Duo 4MB or 8MB Memory Expansion Kits, or third-party memory expansion cards

Disk Storage

- One internal 240MB hard disk

Display

- 8.4-in. diagonal
- Backlit, active-matrix, color liquid crystal display, 640 by 480 pixels
- Two display modes: 640 by 400 with thousands of colors; 640 by 480 with 256 colors
- LED indicator when computer is in sleep mode

Battery

- Nickel-metal-hydride High Capacity Type II battery provides 2 to 4 hours of computer use before recharging is necessary

- EverWatch Battery Saver technology

Keyboard

- Built-in, 2.4-mm travel, 18-mm pitch
- Two-level tilt adjustment
- LED light when caps lock is engaged

Trackball

- 19-mm diameter, dual-button trackball

Clock/Calendar

- CMOS custom-integrated circuit with long-life lithium battery

Microphone

- Built-in omnidirectional electret; output voltage of 4 mV, peak-to-peak, at normal volume

Interfaces

- Power adapter port
- 152-pin PDS connector for connecting PowerBook Duo Dock, PowerBook Duo MiniDock, PowerBook Floppy Adapter, or other expansion devices
- RS-422 serial port for LocalTalk networking, printers, modems, and other devices
- Port for optional internal modem

File-Transfer Options

- LocalTalk cables and System 7 file sharing
- Serial cable and System 7 file sharing
- Fax/data modem and AppleTalk Remote Access software
- Duo MiniDock with external Apple SuperDrive, SCSI disk adapter, and HDI-30 SCSI system cables
- Duo Dock internal Apple SuperDrive, optional internal hard drive, and HDI-30 SCSI system cable

Docking Options

- PowerBook Duo Dock
- PowerBook Duo MiniDock
- PowerBook Floppy Adapter
- Docking systems from third-party vendors

Modem

- Optional internal PowerBook Express Modem; sends and receives data at 14,400 bps and sends and receives faxes at 9,600 bps. Includes Express Fax software.

Magnesium Subframe

• Provides structural rigidity and heat sink

Sound Generator

• Built-in speaker
• Apple Sound Chip provides monophonic 8-bit sound and is capable of driving stereo headphones or other stereo equipment with the same signal supplied to both channels through any optional PowerBook Duo Dock or PowerBook Duo MiniDock

Sound Input

• 4-voice sound with 8-bit analog-to-digital conversion recording, sampled at 11 or 22 kHz

Disability Access

• CloseView, Easy Access, and visible-beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

Electrical Requirements

• Line voltage: 85 to 270 VAC, RMS single phase, automatically configured
• Frequency: 47 to 63 Hz, single phase
• Power: 25 W maximum

ADB Power Requirements

• Maximum current draw for all ADB devices is 100 mA with Powerbook Duo MiniDock or PowerBook Floppy Adapter or 500 mA with PowerBook Duo Dock (a maximum of three ADB devices is recommended)

Environmental Requirements

• Operating temperature: 50° to 104° F (10° to 40° C)
• Storage temperature: –13° to 140° F (–25° to 60° C)
• Relative humidity: 20% to 80% noncondensing
• Operating altitude: 0 to 10,000 ft. (0 to 3,048 m)
• Maximum storage altitude: 15,000 ft. (4,722 m)

Size and Weight

• Thickness: 1.5 in. (3.8 cm)
• Width: 10.9 in. (27.7 cm)
• Depth: 8.5 in. (21.6 cm)
• Weight: 4.8 lb. (2.2 kg)

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Tech Info Library Article Number:13731

Tech Info Library

PowerBook Duo 250 and 270c: Upgrades (6/94)

Revised: 6/22/94
Security: Everyone

PowerBook Duo 250 and 270c: Upgrades (6/94)

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Article Created: 21 October 1993
Article Reviewed/Updated: 11 May 1994

TOPIC ----------

This article discusses upgrades options for Macintosh PowerBook Duo 250 and 270c computers.

DISCUSSION ----------

The PowerBook Duo 250 can be upgraded to the Duo 280 and the PowerBook Duo 270c can be upgraded to the Duo 280c through a logic board upgrade. The Duo 280 upgrade replaces the Duo 250's logic board with Duo 280 logic board. Upgrade from a black and white display to an active-matrix color display is not available.

The Duo 280 logic board upgrade does not include a replacement display bezel and as a result, the unit will show the older model name after the upgrade. It is possible to identify an upgraded system by a newer FCC identification label affixed to the bottom of the unit.

To upgrade your PowerBook Duo in the United States, contact the Apple Assistance Center at 1-800-SOS-APPL, service providers cannot perform either upgrade. In other countries, contact your local Apple authorized service provider.

Article Change History:
22 Jun 1994 - Clarified wording, noted that upgrade must be performed at Apple.
11 May 1994 - Updated to include info for Duo 280 and Duo 280c upgrades and remove Duo 250 logic board upgrade which was discontinued.
04 May 1994 - Updated to remove information regarding Duo 270c upgrade which was discontinued

Support Information Services

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Tech Info Library Article Number:13732

Tech Info Library

PowerBook Duo: Battery Reconditioning (12/94)

Revised: 12/6/94
Security: Everyone

PowerBook Duo: Battery Reconditioning (12/94)

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Article Created: 21 October 1993
Article Reviewed/Updated: 06 December 1994

TOPIC ----------

This article discusses battery reconditioning for the PowerBook Duo 270c, Duo 280, and Duo 280c.

DISCUSSION ----------

Battery reconditioning is a deep discharge of a battery to avoid “memory effect” which, over time, can reduce the battery's power capacity.

The PowerBook Duo 270c, Duo 280, and Duo 280c have a modified power system which can recondition its battery. This allows it to draw power exclusively from either the AC source or the main batteries. When you recondition the battery, the Duo disconnects external power to avoid recharging, draws power from the internal battery only, and ignores all low power level alerts, including hardware shutdown. The Duo then senses when the battery is completely exhausted and fully recharges it. The entire process should take a few hours.

During battery reconditioning, you cannot use the Duo for any other purpose. While the Duo is reconditioning its battery, it goes into a screen saver mode where a black and white battery icon moves around the screen. Note that the power adapter must be plugged in for reconditioning to work.

You should recondition your battery no more than once a month. The battery reconditioning software (located on the Disk Tools diskette) keeps track of the last reconditioning performed by checking the battery's serial number. PowerBook systems prior to the Duo 270c, Duo 280, or Duo 280c cannot use the battery reconditioning software.

Please note that the Battery Reconditioning software is not on the system diskettes that come with the PowerBook Duo. You should make a backup of your software or download the software from one of the online services.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
06 Dec 1994 - Noted that Battery Recond. software is not on system disks.
05 May 1994 - Updated to include PowerBook 280 and 280c products

Support Information Services

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Tech Info Library Article Number:13733

Tech Info Library

Macintosh Hardware System Update 2.0: Components (10/93)

Revised: 1/26/95
Security: Everyone

Macintosh Hardware System Update 2.0: Components (10/93)

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Article Created: 19 October 1993

TOPIC ----------

The Macintosh Hardware System Update provides software improvements and enhancements for Macintosh systems. The update requires Macintosh System Software version 7.1, and isn't intended for Macintosh Performa users. This article describes the components of this update.

DISCUSSION ----------

The Hardware System Update is distributed on a single 1.4 high-density floppy disk. The disk includes a simple Installer program which allows users to install files in the System Folder. The Installer automatically determines which enhancements are appropriate for your computer. To install the update, double-click on the Hardware System Update Read Me icon and follow the steps listed there. Note: The Connectix Enabler Patch may interfere with the Hardware System Update 2.0. You should remove it before installing the update.

The Apple Macintosh Hardware System Update is licensed to customers free of charge through 40 on-line services, including America-Online and CompuServe. Normal connect and/or download charges apply. User groups that make the update available may charge for duplication.

Files on the Hardware System Update

The single 1.4MB high density disk contains the following listed files. Please note that the Installer only installs those files appropriate to your specific computer.

- Hardware System Update 2.0 extension (6K)
- Hardware System Update Read Me (3K)
- Memory Control Panel 7.1.1 (39K)
- The PowerBook Display Control Panel 1.0.4 (33K)
- The PowerBook Control Panel 7.1.2 (62K)

This feature includes new versions of the PowerBook Display Control Panel (version 1.0.4) and the PowerBook Control Panel (version 7.1.2).
- System Enabler 131 1.0.2 for PowerBooks (45K)
- Express Modem 1.0.4 (296K)
  Supports a broader range of standard communications packages.
- Express Modem Tool 1.0.2 (53K)
  Supports a broader range of standard communications packages.
- DiskInit Extension (41K)
- Record Button extension [Apple Adjustable Keyboard] (6K)
- System Enabler 401 v1.0.5 (28K)
  This enables adding the Apple IIe Card and software to the Macintosh Color Classic. In addition, the System Enabler improves mouse performance on the Color Classic.
- Apple Adjustable Keyboard resources (3K)
  This feature allows users to connect the keyboard to any Macintosh computer without separately installing special keyboard software.
- Sound Control Panel 8.0.1 (32K)
- GrayShare serial driver patches [shipped with StyleWriter II software] (90K)
- HDSC Setup 7.2 (82K)
  This feature gives more flexibility to format large hard disks between 1 and 2 gigabytes.
- Disk First Aid 7.1.1 (47K)
  This is an updated version of the utility that repairs damaged disks. The new version repairs hard disks which may appear to be damaged, but aren't really damaged.
- Sound Manager 3.0 (95K)
  This feature enhances sound performance on most Macintosh computers (all models except Macintosh Plus, SE, and Classic).
- Installer 3.4 (141K)
- Install Script (3K)
- TeachText 7.1 (36K)
- 720KB Floppy Disk Formatter Extension.
  This feature allows users to format low-density (double-sided) floppy disks as 720K MFM disks. This feature is included to support certain third-party floppy disk drives.

Improvements in Version 2.0

Here's a list of improvements:

- Improves system memory management by storing fonts in the computer's memory more efficiently.
- Solves problems sometimes encountered when using the Apple Basic Color monitor with Macintosh Centris and Quadra computers. (The monitor may appear to be green or a washed-out blue color.)
- Removes horizontal white lines which may appear on Macintosh Centris and Quadra computers with a Macintosh 16-inch Color Display. (Horizontal white lines appear when users are scrolling through text.)
- Corrects certain problems users may have when manipulating large data items (greater than 8MB) in high-end graphics or multimedia

applications. Macintosh models affected: Macintosh IIci, IIfx, all Macintosh Quadra computers, all Macintosh Centris computers, and Macintosh PowerBooks in 32-bit mode.
- Corrects certain problems with cursor/mouse coordination. Removes difficulties when the cursor and mouse do not track together properly. Macintosh models affected: Macintosh Centris 610 and 650, Quadra 800, and Macintosh LC III.
- Corrects incompatibilities with certain utilities and some applications. Fixes crashing problems users may have with Connectix PowerBook Utilities, Suitcase 2.1.2, and ATM 3.0.
- Adds additional support for GrayShare and the StyleWriter II printer. Provides better printer and serial performance with GrayShare and the StyleWriter II printer in applications that take advantage of new serial driver support.

Features from the Hardware System Update 1.0

Here's a list of improvements retained in the 2.0 release from the 1.0 version:

- Improves the reliability of high-speed modems and similar devices.
- Improves the accuracy of the system's clock.
- Corrects problems ejecting floppy disks when the computer is shut down.
- Corrects sound input problems on the Macintosh Color Classic.
- Corrects problems users may have with SCSI devices.
- Updates the Memory Control Panel to version 7.1.1, which improves performance in certain low memory conditions.

Support Information Services

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Tech Info Library Article Number:13734

PowerBook Duo 250 and 270c: Displays (10/93)

Revised: 7/8/94
Security: Everyone

PowerBook Duo 250 and 270c: Displays (10/93)

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Article Created: 21 October 1993

TOPIC -----

This article discussed the displays used in the PowerBook Duo 250 and 270c.

DISCUSSION -----

The PowerBook Duo 250 has an active-matrix display which has 16 grayscales, while the PowerBook Duo 270c has a color active-matrix display with 256 colors at 640 by 480 pixel resolution and thousands of colors at 640 by 400 pixel resolution.

The PowerBook Duo 270c defaults to the 640 by 480 pixel, 256 color mode. By making a selection under Options in the Monitor control panel, then restarting, the Duo 270c can be switched to show 640 by 400 pixels in thousands of colors. When in this mode, a black band will appear at the top and the bottom of the screen.

Since contrast adjustment produces little effect on a color active-matrix display, the Duo 270c does not have a contrast control, while the Duo 250 does.

Support Information Services

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Tech Info Library Article Number:13736

Tech Info Library

PowerBook Duo 250 and 270c: Differences (3/95)

Revised: 3/22/95
Security: Everyone

PowerBook Duo 250 and 270c: Differences (3/95)

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Article Created: 21 October 1993
Article Reviewed/Updated: 22 March 1995

TOPIC ----------

This article outlines the differences between the PowerBook Duo 250 and 270c.

DISCUSSION ----------

Here are the differences between the PowerBook Duo 250 and 270c. The PowerBook Duo 230 has been included for illustrative purposes.

	Duo 250	Duo 270c	Duo 230
CPU	68030 @ 33MHz	68030 @ 33MHz	68030 @ 33MHz
FPU	no	yes	no
Display	9" grayscale active-matrix	8.4" color active-matrix	9" grayscale FSTN (Supertwist)
Colors/Grays Supported	16 grayscales	thousands of colors @ 640 x 400 256 colors @ 640 x 480	16 grayscales
RAM Capacity	4 to 24MB	4 to 32MB	4 to 24MB
Hard Drive Size	200MB	240MB	80/120MB
Battery Type	Type II NiMh	Type II NiMh	Type I NiMh (Type II compatible with software)

Battery Life	2.5 to 6 hrs (Type II)	2 to 4 hrs (Type II)	2 to 4.5 hrs (Type I)
Battery Reconditioning	no	yes	no
Weight	4.2 lbs	4.8 lbs	4.2 lbs
Sleep LED	no	yes	no
Duo Dock Compatibility	yes	no, needs Top Cover Retrofit (Order # M1814Z/A)	yes

Article Change History:
22 Mar 1995 - Corrected wording of Duo Dock.

Support Information Services

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Tech Info Library Article Number:13737

Tech Info Library

PowerBook Duo 270c and 280c: Sleep Indicator (2/95)

Revised: 2/2/95
Security: Everyone

PowerBook Duo 270c and 280c: Sleep Indicator (2/95)

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Article Created: 21 October 1993
Article Reviewed/Updated: 02 February 1995

TOPIC ----------

This article discusses the sleep indicator of the PowerBook Duo 270c and Duo 280c.

DISCUSSION ----------

The PowerBook Duo 270c and 280c has a light-emitting diode (LED) in the upper-right side of its display to indicate whether the unit is in sleep mode. This LED, called the sleep indicator, flashes when the Duo computer is asleep. The sleep indicator is visible whether the display is open or closed.

Article Change History:
02 Feb 1995 - Changed access privileges of article.
11 May 1994 - Updated to include PowerBook Duo 280c.

Support Information Services

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Tech Info Library Article Number:13738

PowerBook Duo Battery Recharger: Compatibility (8/95)

Revised: 8/29/95
Security: Everyone

PowerBook Duo Battery Recharger: Compatibility (8/95)

==========

Article Created: 21 October 1993
Article Reviewed/Updated: 29 August 1995

TOPIC ----------

Is the PowerBook Duo Battery Recharger compatible with Type I and Type II batteries?

DISCUSSION ----------

The original PowerBook Duo Battery Recharger (M4178LL/A) is only compatible with Type I PowerBook Duo batteries and will not charge the high-capacity Type II PowerBook Duo batteries.

The revised PowerBook Duo Battery Recharger (M4178LL/B) is compatible with both Type I, Type II, and Type III Duo batteries.

To achieve full compatibility with Type III batteries, you must update the firmware in the charger. If you have a recharger model M1812 and you need to update it, follow these steps:

Step 1
Shut down the PowerBook Duo computer, make sure the Type III battery and any necessary software has been installed. If you are running System 7.5.1 the Type III Battery extension must be installed.

Step 2
Plug the power adapter into an AC outlet using the power cord that came with the computer.

Step 3
Snap the recharger onto the side of the power adapter.

Step 4
Plug the power adapter cable into the power adapter port on the back of the Duo computer.

Step 5
Turn on the PowerBook Duo to download the update to the charger.

Article Change History:
29 Aug 1995 - Added information about the Type III Battery extension.
03 Apr 1995 - Added steps to update older chargers.

Support Information Services

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Tech Info Library Article Number:13739

Tech Info Library

PowerBook 200 & 2300 Series: Duo Dock Compatibility (1/96)

Revised: 1/11/96
Security: Everyone

PowerBook 200 & 2300 Series: Duo Dock Compatibility (1/96)

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Article Created: 21 October 1993
Article Reviewed/Updated: 11 January 1996

TOPIC ----------

The following chart provides the compatibility of PowerBook Duo systems with the PowerBook Duo Dock, Duo Dock II, and Duo Dock Plus.

DISCUSSION ----------

Begin_Table

Duo Computer	Compatible with Duo Dock	Compatible with Duo Dock II	Compatible with Duo Dock Plus	Compatible with Duo MiniDock
PowerBook Duo 210	Yes	Yes	Yes	Yes
PowerBook Duo 230	Yes	Yes	Yes	Yes
PowerBook Duo 250	Yes	Yes	Yes	Yes
PowerBook Duo 270c	Yes, 1	Yes	Yes	Yes
PowerBook Duo 280	Yes, 2	Yes, 2	Yes	Yes
PowerBook Duo 280c	Yes, 1,2	Yes, 2	Yes	Yes
PowerBook Duo 2300c	Yes, 1,2	Yes, 2	Yes	Yes

End_Table

1- This system is slightly thicker than other PowerBook Duo computers and will not physically fit into the original Duo Dock. The PowerBook Duo Top Cover Upgrade (p/n M1814Z/A) is an enlarged top cover which will allow the Duo Dock to accommodate all of PowerBook Duo computers. An upgraded Duo Dock will also support a monitor of up to 85 pounds such as an Apple 21" Color Display. Without retrofitting, the Duo Dock will support a monitor of up to 35 pounds, such as an Apple 14" Color Display.

2- This system cannot utilize the 68882 math coprocessor (FPU) if installed in the Duo Dock.

Article Change History:
11 Jan 1996 - Corrected minor typo.
03 Oct 1995 - Updated with information for 2300c, Duo Dock Plus and MiniDock.
03 Apr 1995 - Updated compatibility info for 280/280c and Duo Dock II.

Support Information Services

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Tech Info Library Article Number:13740

LaserWriter Pro 810: Imageable Area (10/93)

Revised: 10/20/93
Security: Everyone

LaserWriter Pro 810: Imageable Area (10/93)

==========

Article Created: 20 October 1993

TOPIC --

What are the page sizes and memory requirements available for the LaserWriter Pro 810?

DISCUSSION --

	Imageable Area (inches)		Memory Requirements in Bytes			
Page Description	Width	Length	300 DPI	400 DPI	600 DPI	800 DPI
Letter/US Letter	8.05	10.61	960134	1706905	3840537	6827621
LetterSmall/US Letter	7.67	10.14	874479	1554630	3497917	6218519
Transverse/US Letter	8.05	10.61	960134	1706905	3840537	6827621
Legal/US Legal	8.06	13.68	1240382	2205123	4961526	8820491
LegalSmall/US Legal	6.72	12.50	945313	1680556	3781250	6722222
Tabloid/Ledger	10.61	16.61	1982951	3525247	7931806	14100988
A3	11.25	16.19	2049205	3643030	8196818	14572121
A4	7.82	11.24	988424	1757198	3953695	7028790
A4Small/A4	7.47	10.85	911845	1621057	3647378	6484228
A4.Transverse/A4	7.82	11.26	990378	1760672	3961512	7042689
A5	5.46	7.81	480127	853559	1920507	3414235
B4	9.74	14.01	1535298	2729418	6141190	10917672
B5	6.83	9.74	748616	1330872	2994463	5323489
Postcard	3.60	5.52	223560	397440	894240	1589760
Invoice/Statement	4.89	8.04	442292	786296	1769167	3145185
Folio	7.75	12.66	1103895	1962481	4415581	7849923
Executive	6.88	10.19	788416	1401628	3153663	5606511
Comm10/Comm #10 Envelope	3.65	9.15	376122	668661	1504488	2674645
Monarch/Monarch Envelope	3.46	7.13	277430	493208	1109719	1972833
DL/DL Envelope	3.88	8.21	358653	637605	1434611	2550420
C5/C5 Envelope	5.96	8.57	574421	1021192	2297682	4084769

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Tech Info Library Article Number:13747

Tech Info Library

Macintosh AV Computers: PlainTalk Installation Problems (10/93)

Revised: 10/20/93
Security: Everyone

Macintosh AV Computers: PlainTalk Installation Problems (10/93)

==========

Article Created: 20 October 1993

TOPIC --------------------

Installation of PlainTalk software on an AV CPU using the installer on the PlainTalk disk generates a dialog box asking for the PlainTalk 5 or Introduction to Speech disk. These disks weren't included with AV computers configured for the United States.

DISCUSSION --------------------

You can successfully install just the PlainTalk software by doing a Custom Install from the Install Me First disk included with System 7.1.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13748

Tech Info Library

System 7 Pro: Read Me Incorrect About Apple IIe Card SW (10/93)

Revised: 10/20/93
Security: Everyone

System 7 Pro: Read Me Incorrect About Apple IIe Card SW (10/93)

==========

Article Created: 20 October 1993

TOPIC -----

The information about how to obtain Apple IIe Card Software in the Read Me file for System 7 Pro is incorrect. This article explains the best ways to obtain this software.

DISCUSSION -----

The Read Me file that is installed when updating to System 7 Pro reads as follows:

"APPLE IIe CARD SOFTWARE FOR THE MACINTOSH LC II

To use the Apple IIe Card with System 7 Pro on a Macintosh LC II, you need version 2.2 of Apple IIe Card Software. You should upgrade to version 2.2 only if you are using your LC II with System 7 Pro. Apple IIe Card Software 2.2 may also be used with the original Macintosh LC, but it is not required.

You can obtain the upgrade package from an authorized Apple Reseller. In the United States, you can call the Apple Customer Assistance Center at 1-800-776-2333 to request Apple IIe Card Software version 2.2. The new software is also available on AppleLink (AppleLink path: Apple Products: Apple II: Apple II Product Information: Apple IIe Card)."

These instructions aren't correct.

Contact an Apple Reseller to purchase the IIe software update, or download it from AppleLink. You can all the Apple Referral Center at 1-800-538-9696 to locate a reseller near you to purchase Apple part M1222LL/C, Apple IIe card Software Update.

Apple IIe Card (2.2.1) software is available for customers on AppleLink using the following path:

Software Sampler
Apple SW Updates
Macintosh
Peripheral Software
Apple IIe Card (2.2.1)

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Tech Info Library Article Number:13749

Tech Info Library

At Ease: Stuffit Deluxe 3.0.7 Corrects Incompatibility (3/94)

Revised: 3/7/94
Security: Everyone

At Ease: Stuffit Deluxe 3.0.7 Corrects Incompatibility (3/94)

==========

Article Created: 18 October 1993
Article Reviewed/Updated: 7 March 1994

TOPIC ----------

There are a couple of incompatibilities between At Ease for Workgroups 2.0 and Aladdin's StuffIt Deluxe 3.0 with SpaceSaver(SpaceSaver is compression software that stores unused applications and documents in a compressed state. But when the application or document icon is double-clicked, it launches as if it weren't compressed):

- With SpaceSaver software installed, At Ease can't see any applications at all (probably because they are compressed). The Finder can launch these compressed applications without any trouble.

- Magic Menu doesn't appear in the menu when the Finder is available. (Magic Menu is a custom menu that supplies immediate menu access to StuffIt Deluxe features from the Finder.)

DISCUSSION ----------

The work around for the first issue would be to use the 'find item' option in At Ease and to add the compressed application to the setup. There is no other solution.

Aladdin Systems reports they have corrected the second problem with the 3.0.7 version of StuffIt Deluxe (includes StuffIt SpaceSaver 3.0.6). The free update is available on most on-line systems, including Aladdin's bulletin board on AppleLink.

Please contact Aladdin Systems directly if you have any questions. To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
7 March 1994 - Corrected misinformation about both bugs being addressed.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:13750

Tech Info Library

Macintosh TV: Description (10/93)

Revised: 11/8/93
Security: Everyone

Macintosh TV: Description (10/93)

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Article Created: 25 October 1993

TOPIC ----------

This article describes the Macintosh TV product. At introduction, Macintosh TV is available in limited distribution and only in the U.S. It is sold through a limited number of consumer electronics and higher-education retailers, and through the Apple Catalog.

DISCUSSION ----------

Macintosh TV is a Macintosh computer -- and it's a television receiver and CD player. In one unit, it combines all of these capabilities:

- An affordable Macintosh computer
- Cable-ready 14-inch color TV with remote control
- Video-input port to connect VCR, camcorder, or video game player
- Stereo CD player with remote control
- Stereo speakers

Macintosh TV can be used to view and capture frames from broadcast television and video sources. It can function as a video game platform. It can be used as a CD player with enhanced stereo sound. Interaction with the system is not limited to the keyboard and mouse: Macintosh TV comes equipped with an infrared remote that controls both the TV and CD player.

Ordering Information

Part M1581LL/A

Article Change History:
8 November 1993 - added part number

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13751

Tech Info Library

Macintosh TV: Specifications (11/93)

Revised: 11/30/93
Security: Everyone

Macintosh TV: Specifications (11/93)

==========

Article Created: 25 October 1993
Article Revised/Updated: 30 Novmeber 1993

TOPIC ----------

This article gives technical specifications for the Macintosh TV. The keyboard and mouse are included with the system.

Notes: at introduction, Macintosh TV is:
- the only computer from Apple with a matte-black case.
- available only in the U.S. There is no PAL or SECAM version for other countries.

DISCUSSION ----------

Microprocessor

- MC68030, 32 MHz clock doubled, 32-bit data bus
- Integrated PMMU (memory-management unit)

Memory

- 5MB RAM standard
- RAM expandable (by authorized Apple dealer) to 8MB with 72-pin fast-paged 80ns SIMMs
- 1MB ROM

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 160MB SCSI hard disk drive
- Internal AppleCD 300i double-speed CD-ROM drive for CD-ROMs, audio CDs, and Kodak Photo CDs

Television Tuner

- NTSC tuner
- 181 channels
- Cable-ready
- RCA-type video abd sound input for VCR, camcorder, laser disc, or game player
- Coaxial port for television antenna or cable service
- TV Setup control panel allows the user to listen to TV or video sound (but not the video) while using the Macintosh TV as a computer.

Video Display

- Integrated Macintosh Color Display with 14-inch Trinitron CRT
- Resolution: 640 x 480 pixels (640 x 240 for television mode with 16-bit color), 69 dpi, .26mm dot pitch
- 512K VRAM supports 256 colors (8-bit color)

Interfaces

- SCSI interface for connecting up to six external peripheral devices
- Two serial (RS-232/RS-422) ports
- One stereo sound-output port for external audio amplifier or headphones
- Two Apple Desktop Bus (ADB) ports for keyboard, mouse, and other devices
- Front headphone jack for sound output
- Hand-held remote-control unit for CD and TV

Sound Generator

- Stereo 8-bit digital-analog conversion using 22-kHz sample rate - capable of driving stereo headphones or other stereo equipment through the sound jack and headphone jack
- Built-in stereo speakers

Clock/Calendar

- Custom integrated circuit with long-life lithium battery

Software

- Macintosh System software 7.1, including HyperCard Player, MacBasics, MacCheck, and QuickTime. System Enabler 404.
- A variety of educational and productivity titles installed on hard drive
- A selection of CD-ROM titles
- CloseView, Easy Access, and visible-beep for disability access.
- TV software supports frame capture, closed captions, channel scanning, and password protection

Power Requirements

- Line voltage: 90 to 264 V AC, RMS single phase, automatically configured
- Frequency: 47 to 63 Hz
- Power: 40 W maximum, not including display

60 W maximum, including display
• Energy-saving feature reduces power consumption by 50%
• One AC outlet powers computer, display, drives, and speakers

ADB Power Requirements

• Maximum current draw for all ADB devices: 500 mA (three ADB devices maximum is recommended)
• Mouse draws 10 mA
• Keyboard draws 25 mA

Size and Weight

Main unit:
• Height: 17.5 in. (44.5 cm)
• Width: 13.5 in. (34.4 cm)
• Depth: 16.5 in. (42.0 cm)
• Weight: 41.5 lbs (18.9 kg)

Keyboard:
• Height: 1.3 in. (3.3 cm)
• Width: 16.0 in. (40.6 cm)
• Depth: 5.9 in. (15.0 cm)
• Weight: 1.96 lbs (0.89 kg)

Mouse:
• Height: 1.3 in. (3.3 cm)
• Width: 2.4 in. (6.2 cm)
• Depth: 4.2 in. (10.7 cm)
• Weight: 4.0 oz. (0.10 kg)

Operating Environment

• Operating temperature: 50 to 104° F (10 to 40° C)
• Storage temperature: –40 to 116.6° F (-40 to 47° C)
• Relative humidity: 20% to 85% noncondensing
• Maximum altitude: 15,000 ft. (4,722 m)

Article Change History:
23 November 1993 - Added "16 bit color" to resolution information for TV mode; added "System Enabler 404"
30 November 1993 - Deleted incorrect sound-input information.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13752

Tech Info Library

Macintosh TV: Upgrading RAM to 8MB (10/93)

Revised: 10/20/93
Security: Everyone

Macintosh TV: Upgrading RAM to 8MB (10/93)

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Article Created: 18 October 1993

TOPIC ----------

This article describes how to upgrade the RAM in a Macintosh TV from 5MB to 8MB. This procedure should be performed only by an Apple-authorized service provider.

DISCUSSION ----------

To upgrade the RAM in Macintosh TV:

1) Remove the 1MB SIMM.

2) Install a Centris 610/650 4MB DRAM expansion kit, bringing the Macintosh TV's memory to 8MB.

   DRAM Expansion Kit: M1507LL/A 4MB expansion kit

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Tech Info Library Article Number:13753

Tech Info Library

Macintosh LC 475 & Quadra 605: LC-PDS Slot Q&A (10/93)

Revised: 10/20/93
Security: Everyone

Macintosh LC 475 & Quadra 605: LC-PDS Slot Q&A (10/93)

==========

Article Created: 21 October 1993

TOPIC ----------

This article answers basic questions about the LC-PDS slot in the Macintosh LC 475 and Quadra 605 computers.

DISCUSSION ----------

Q) Why isn't the Macintosh LC 475 PDS slot an 040 PDS slot?

A) Because of the popularity of the Macintosh LC computers, many third-party developers have created expansion cards based on the LC-PDS. Like the other members of the Macintosh LC series the LC 475 can take advantage of many of the LC cards on the market, such as the video-out, Ethernet, and Apple IIe cards. Compatibility among the Macintosh LC 475, LC, LC II, and LC III slots means that a customer can simply take most cards out of an LC II slot, and place it in an LC 475 slot.

Q) What cards do, and do not, work with the "LC-PDS compatible" slot?

A) The expansion slot is an LC III compatible expansion connector, and almost all cards that work with Macintosh LC III also work with the LC 475. Examples include video-out, Ethernet, and Apple IIe cards. Cards that are 030-specific, such as 030 accelerators or 030 cache cards, do not work with the LC 475 because they require direct access to the 68030 microprocessor. However, those cards are intended to speed the 68030 microprocessor to higher performance levels, which are already attainable with the 68040 microprocessor.

Q) Why isn't the Quadra 605 slot NuBus or 040 PDS?

A) Apple uses the same logic board in three product families: Performa, LC, and Quadra. It was necessary to select one standard type of expansion slot. Because the LC-PDS has been extremely successful with

both education and business customers -- through the LC, LC II, LC III, and LC 520 -- the LC-PDS technology was adopted.

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Tech Info Library Article Number:13754

Tech Info Library

Macintosh AV Systems: Powerkey Conflict (12/93)

Revised: 12/7/93
Security: Everyone

Macintosh AV Systems: Powerkey Conflict (12/93)

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Article Created: 20 October 1993
Article Reviewed/Updated: 7 December 1993

TOPIC -----

I have a Macintosh AV computer, and a PowerKey. I frequently get the message "Are you sure you want to shut down?" when selecting menu items. Zapping PRAM and booting with extensions off has no effect. The problem goes away when the PowerKey hardware is removed.

DISCUSSION -----

This is a problem with older versions of the PowerKey. Contact the vendor, Sophisticated Circuits, Inc., for a solution.

To locate a vendor's address and phone numbers, use the vendor's name as a search string.

Article Change History:
12/7/93 - Deleted specific reference to a new control panel, which is not the solution.

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Tech Info Library Article Number:13755

Tech Info Library

Macintosh Basics: Out Of Memory Message (10/93)

Revised: 10/20/93
Security: Everyone

Macintosh Basics: Out Of Memory Message (10/93)

==========

Article Created: 20 October 1993

TOPIC ----------

I'm trying to run Macintosh Basics, and I get a message that I'm out of memory. My Mac seems to have plenty of RAM available. Why won't it work?

DISCUSSION ----------

First try increasing the memory allocation in the Get Information box to 2500K - 5500K. If that doesn't work, or if that much RAM isn't available, make sure the Monitors Control Panel is set to 8-bit (256 Colors) or less.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13756

Tech Info Library

660AV and 840AV: Remote Launch Crashes (11/93)

Revised: 11/23/93
Security: Everyone

660AV and 840AV: Remote Launch Crashes (11/93)

==========

Article Created: 21 October 1993
Article Review/Update: 23 November 1993

TOPIC ----------

I'm having trouble launching applications from a remote server with the 660AV and 840AV computers. In both cases, the computers crash, sometimes with a Bus Error, other times with a freeze, or Errors of Type 1, 2, and 3 when launching applications.

The 660AV is connected via LocalTalk and the 840AV is connected via TokenTalk to a Novell Server.

In both cases, setting the Cache Control Panel to More Compatible enabled the machines to operate properly.

Is there an incompatibility of this sort when launching applications or files on an AV computer from a remote volume?

DISCUSSION ----------

Apple Support tested with a Centris 660AV and a Quadra 840AV and verified that some applications will crash or hang these computers when launched remotely with LocalTalk.

Launch of the application locally, or turn the cache OFF as a workaround for this problem.

The Novell situation is the same in that it is a remote launch of an application, and the same workarounds will work for it.

Article Change History:
23 Nov 1993 - Additional information.

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Tech Info Library Article Number:13757

Tech Info Library

Ofoto Version 2 Update 2.0.2 for Apple Scanners (10/93)

Revised: 10/21/93
Security: Everyone

Ofoto Version 2 Update 2.0.2 for Apple Scanners (10/93)

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Article Created: 21 October 1993

TOPIC ----------

This article explains how to obtain Ofoto version 2, update 2.0.2.

DISCUSSION ----------

This update has been mailed to everyone who bought the Ofoto Version 2 upgrade for Apple scanners directly from Light Source. In addition, the update will be sent to new Apple scanner owners who register Ofoto before October 31, 1993. If you have Ofoto release 2.0 and an Apple scanner, and you would like the revision, please mail in your registration card before October 31, 1993, and it will be sent to you automatically.

After October 31st, call Light Source at 800-231-7226 to order the update for an $8 shipping charge. Outside the United States and Canada, call Light Source in Scotland at 44-506-462-444 (shipping is $25). Be sure to have your Ofoto disks handy.

Please note that Light Source Technical Support now has its own AppleLink address: LS.SUPPORT

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Tech Info Library Article Number:13763

Apple Color Plus 14 Display: Description (12/93)

Revised: 1/4/94
Security: Everyone

Apple Color Plus 14" Display: Description (12/93)

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Article Created: 15 December 1993
Article Reviewed/Updated: 4 January 1994

TOPIC ----------

This article describes the Apple Color Plus 14" Display.

DISCUSSION ----------

The Apple Color Plus 14" Display is Apple's most affordable RGB color monitor. It features high-quality resolution, ergonomic design, ease of use, and compatibility with all of the modular Macintosh computers, as well as with most PowerBook models.

With its 640 by 480 pixel resolution and 0.28-millimeter dot pitch, the Apple Color Plus 14" Display offers the image quality you need to get your work done, whether you're a home user, a student, or a professional working with text, images, or both. The RGB design delivers colors that are crisp, sharp, and clear, while the 67-hertz screen re-fresh rate provides flicker-free viewing. And the tilt-and-swivel base allows you to adjust your Apple Color Plus 14" Display to just the right angle.

The Apple Color Plus 14" Display is optimized for the modular Macintosh systems—the Macintosh LC computers, the Macintosh Centris line, and the Macintosh Quadra family—and also works with most Apple PowerBook models. It attaches directly to your computer's monitor port, offering plug-and-play simplicity. And it's easy to use, with conveniently located, front-panel on/off, brightness, and contrast controls.

As the most economical member of the Macintosh Color Display family, the Apple Color Plus 14" Display provides an alternative to the Macintosh Color Display, Apple's highest performance 14-inch, half-page RGB display with 0.26-millimeter dot pitch that offers superior clarity. The flat, high-contrast screen of the Macintosh

..TIL13764-Apple_Color_Plus_14_Display-Description_12-93.pdf

Color Display delivers crystal-clear resolution over the entire screen area—for even the most finely detailed images. In short, the Apple Color Plus 14" Display is ideally suited for value-conscious users who want RGB performance and Apple quality at the most affordable price. And the Macintosh Color Display is the perfect choice for those who require even sharper color and exceptional resolution.

Features

High display quality

- Provides 640- by 480-pixel resolution
- Features a dot pitch of 0.28 millimeters
- Uses shadow-mask technology

Ergonomic design

- Comes with a tilt-and-swivel base that allows you to adjust the viewing angle
- Features a 67-hertz screen refresh rate for flicker-free performance
- Meets requirements for low-frequency (ELF and VLF) magnetic and electric emissions

Ease of use

- Provides "plug-and-play" simplicity with any modular Macintosh computer, as well as with most PowerBook models
- Offers easy access to brightness, contrast, and on/off controls

Safety

- Meets or exceeds the Swedish MMPR II standard.

Article Change History:
4 January 1994 - Added Swedish MMPR information

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13764

Macintosh TV: Expansion & Upgrade Q & A (10/93)

Revised: 10/21/93
Security: Everyone

Macintosh TV: Expansion & Upgrade Q & A (10/93)

==========

Article Created: 25 October 1993

TOPIC ----------

This article answers several questions about the expansion and upgrade possibilities of the Macintosh TV.

DISCUSSION ----------

Q) What is the computing performance of Macintosh TV?

A) Macintosh TV is targeted at new users and provides entry-level performance similar to that of the Performa 600, or about 15% less than a Macintosh LC 520. Although the Macintosh TV's case is similar to the LC 520's, the internal architecture is the same as the Performa 600 and Macintosh IIvx.

Q) Why is the performance of Macintosh TV less than the Macintosh LC 520, even though the clock speed of the processor is faster?

A) As with the Performa 600 and Macintosh IIvx, the bus on the logic board operates at half the speed of the processor. On the Macintosh LC 520 and LC III, the bus operates at the same clock speed as the processor.

Q) Can I upgrade a Macintosh LC 520 to a Macintosh TV?

A) There is no upgrade from Macintosh LC 520 to Macintosh TV.

Q) How can I expand the RAM in a Macintosh TV?

A) To expand RAM to the maximum 8MB, have an authorized service provider replace the 1MB SIMM with a 4MB SIMM. The SIMM must be a 72-pin design

that also works in the LC III.

Q) Does Macintosh TV have a PDS slot?

A) The television tuner in Macintosh TV is on a card in a special PDS-like slot on the logic board. There is no other slot for expansion cards. The tuner card can neither be installed in the PDS slot in other Macintosh models, not can other PDS cards be installed into Macintosh TV.

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Tech Info Library Article Number:13765

Macintosh TV: Controls (10/93)

Revised: 10/28/93
Security: Everyone

Macintosh TV: Controls (10/93)

==========

Article Created: 25 October 1993

TOPIC ----------

This article answers several questions about the Macintosh TV's controls and its remote control.

DISCUSSION ----------

Q) Can the TV tuner work without the computer being on?

A) No. The computer and television share the same power source and video circuitry. You must turn on the computer to access the TV features. (You can use the remote control to turn the computer on.)

Q) What does the remote control do?

A) You can use the remote control to:
Change television stations
Control volume and mute sound
Shut down or restart the computer
Switch between computer and television mode
Play, pause, fast forward, rewind, or eject an audio CD

Q) Will other remote controls work if I lose my remote control?

A) Yes, a standard replacement remote control, available from consumer electronic stores, can be used to control a Macintosh TV. Any remote that can control a Sony television can work with Macintosh TV.

Q) What software controls the television receiver in Macintosh TV?

A) The TV Setup Control Panel is used to:
Automatically enable channels that have valid signal strength

Turn on closed caption capabilities
Configure a "hot key" to switch to and from TV mode
Set a password for switching to TV mode
Play sound from television or video source in computer mode

Ignore this line (added to this article as a test) Macintosh Television

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13766

Tech Info Library

Macintosh TV: Video Q & A (10/93)

Revised: 10/21/93
Security: Everyone

Macintosh TV: Video Q & A (10/93)

==========

Article Created: 25 October 1993

TOPIC ----------

This article answers several questions about the video capabilities of the Macintosh TV.

DISCUSSION ----------

Q) Is Macintosh TV considered an AV system?

A) Although Macintosh TV includes video-in capabilities, it lacks some AV features, such as speech recognition and GeoPort.

Q) How is Macintosh TV's video different from the video in the Macintosh AV products?

A) The Macintosh Quadra 660AV and Quadra 840AV can display video input in a resizeable window on the display. You can see this window while you work with other applications. Macintosh TV's video, on the other hand, takes up the entire display. Although applications can be running in the computer mode while you view video, you can see only the computer or only the video mode at one time.

Q) Do I need a VCR or cable service to watch TV on Macintosh TV?

A) No. Macintosh TV includes a cable-ready tuner, along with video input ports. Just connect an antenna to watch TV.

Q) What is the quality of video on Macintosh TV?

A) Macintosh TV has the same video-display quality as the Quadra 660AV, at the same resolution (640 x 480). At a viewing distance close to the

display, video images may look slightly "pixelated" due to displaying the video at a resolution of 640 x 240 at 16 bits per pixel. Displaying half the lines at twice the bit-depth is called "line doubling." From a normal television viewing distance, the quality is quite good.

Q) Can I capture a video image to use in applications? What about QuickTime movies?

A) To capture a screen image, use the Command-Shift-3 key combination. The resulting image can be viewed by TeachText and pasted into any application that supports PICT. Macintosh TV does not support recording of QuickTime video movies.

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Tech Info Library Article Number:13767

Tech Info Library

Macintosh TV, LC/Performa 550, LC 520: How They Differ (4/95)

Revised: 4/20/95
Security: Everyone

Macintosh TV, LC/Performa 550, LC 520: How They Differ (4/95)

==========

Article Created: 25 October 1993
Article Reviewed/Updated: 20 April 1995

TOPIC ----------

This article provides a quick-reference table of differences among three similar Macintosh models: Macintosh LC 520, Macintosh LC/Performa 550, and Macintosh TV.

These three products share an all-in-one design with 14-inch Trinitron display.

DISCUSSION ----------

	LC/Performa 550	LC 520	Macintosh TV
Market	Home	Education	Home & Education
Case color	platinum	platinum	matte black
Clock speed	33 MHz	25 MHz	32 MHz (clock doubled)
FPU Socket	yes	yes	no
Standard RAM	5MB	4MB	5MB
Maximum RAM	36MB	36MB	8MB
VRAM	512K or 1 MB	512K or 768K	512K
Bit depth-Max.	16-bit	16-bit	8-bit
Display colors	32,000	32,000	256
Hard Drive	160MB	80MB or 160MB	160MB
AppleCD 300i	standard	optional	standard
Expansion slot	one	one	none
TV tuner	no	no	yes

Microphone	yes	yes	no
Sound	stereo in & out	mono in, stereo out	mono in, stereo out
Remote control	no	no	yes
Keyboard	included	sold separately	included

Article Change History:
20 Apr 1995 - Corrected Macintosh LC/Performa 550 VRAM configurations.
25 Oct 1993 - Expanded scope of article to include Macintosh TV.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13768

Tech Info Library

PageMaker 5.0: Faxing From Within the Application (7/94)

Revised: 7/21/94
Security: Everyone

PageMaker 5.0: Faxing From Within the Application (7/94)

==========

Article Reviewed/Updated: 21 July 1994
Article Created: 10 October 1993

TOPIC ----------

I cannot fax from PageMaker 5.0 with Express Modem Fax Sender software. The following symptoms occur whether I'm using Fax Sender software on a GeoPort Telecom Adapter, an Express Modem on a 68K or Power Macintosh system, or on an Express Modem in a PowerBook.

Symptoms:
When I use the fax shortcut (pressing Control and Shift keys while selecting Fax from the File Menu), the following message appears:

"Cannot build printer list. No valid PPD files were found.
Check the 'Printer Descriptions' folder in the System Folder. Continue."

If I select 'Fax Sender' in the Chooser, then try to Fax from the File Menu, the print dialog box appears and hangs when I press the Print button.

If I hold down the option key while selecting Print from the File Menu, the machine hangs.

DISCUSSION ----------

Use this workaround when faxing documents from PageMaker 5.0 using Fax Sender software:

1) Use the Fax Sender as you would with any other application. Open the Chooser and select 'Fax Sender'
2) Select 'Fax' from the File Menu and press the 'Setup' button in the print dialog box.
3) The 'Fax Sender Page Setup' dialog box now appears. Make any changes necessary. Press 'OK'
4) The 'Fax Sender' dialog box now appears. Type in the fax receiver's phone number or choose one from the address book.

5) Press 'Send' to transmit the document.

Article Change History:
21 Jul 1994 - Updated article. Included more specific instructions.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13769

HSU, SUU, SU3.0, Enablers: Component SW Versions (6/94)

Revised: 6/6/94
Security: Everyone

HSU, SUU, SU3.0, Enablers: Component SW Versions (6/94)

==========

Article Created: 21 October 1993
Article Reviewed/Updated: 6 Jun 1994

TOPIC ----------

The matrix below compares the contents and versions of the Hardware System Update (HSU) versions 2.0 through 2.0.1, Software Utility Update (SUU) 1.0 through 1.0.1, the Enablers Collection 1.0, and System Update Disk v 3.0.

DISCUSSION ----------

	Hardware System Update		Software Utilities Update		Enablers Collection	System Update
	2.0	2.0.1	1.0	1.0.1	1.0	3.0
UTILITIES						
HDSC Setup	7.2	7.2.2	7.2	7.2.2	...	7.3.1
Disk First Aid	7.1.1	7.2	7.2	7.2	...	7.2
MacCheck	...	...	1.0.4	1.0.4	...	...
SimpleText	...	...	...	...	...	1.1
CONTROL PANELS						
Memory	7.1.1	7.1.1	...	...	7.1.1	7.3
PowerBook Display	1.0.4	1.0.4	...	...	1.0.4	1.1
PowerBook	7.1.2	7.1.3	...	...	7.1.1	7.3.1
PowerBook Setup	...	...	...	...	...	7.3.1
Sound	8.0.1	8.0.1	...	...	7.1.1	8.0.1
Easy Access	...	...	...	...	...	7.2
Express Modem	1.0.4	1.1.2	...	...	...	
AutoRemounter	...	1.2	...	...	1.0	1.2
Screen	...	...	...	...	1.0	1.0.4
TV Setup	...	...	...	...	...	1.0.1
PC Setup	...	...	...	...	...	1.0.2

EXTENSIONS						
Duo Battery Patch	...	...	...	...	...	1.0
Sound Manager	3.0	3.0	...	...	...	...
HSU	2.0	2.0.1	...	...	...	...
System Update 3.0	...	...	...	...	...	3.0
720K Formatter	1.0	1.0	...	...	...	...
Record Button	1.0	1.0	...	...	...	...
Express Modem Tool	1.0.2	1.1.2	...	...	...	
Caps Lock	...	...	...	...	7.1.2	...
DESK ACCESSORY						
Battery DA	...	...	...	...	7.1.1	7.1.1
ENABLERS						
Enabler 131	1.0.2	1.0.3	...	...	...	1.0.3
Enabler 401	1.0.5	1.0.5	...	...	1.0.5	1.0.5
Enabler 403	...	...	...	...	...	1.0.2
Enabler 003	...	...	...	...	1.0	1.1
Enabler 040	...	...	...	...	1.0	1.1
Enabler 001	...	...	...	...	1.0.1	...
Enabler 111	...	...	...	...	1.0.1	...
Enabler 121	...	...	...	...	1.0	...
Enabler 201	...	...	...	...	1.0.1	...
Enabler 065	...	...	...	...	...	1.2
Enabler 088	...	...	...	...	...	1.2
32-bit Enabler	...	...	...	...	1.0.3	...
PowerBook Duo	...	...	...	...	...	1.0
PowerPC	...	...	...	...	...	1.0.1
PowerPC Upgrade Cd	...	...	...	...	...	1.0.1

Article Change History:
6 Jun 1994 - Added info on System Update Disk v 3.0 and removed HSU 1.0 information.

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13770

Tech Info Library

Video Mirroring and PowerLink Presentor Issue (10/93)

Revised: 10/25/93
Security: Everyone

Video Mirroring and PowerLink Presentor Issue (10/93)

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Article Created: 20 October 1993

TOPIC -----

When I purchased E-Machines' PowerLink Presentor there was a Release Note document giving me the latest information not covered in the Owner's Guide. Under Video Mirroring, it stated: "Some user's report problems with Apple's video mirroring feature with Presentor. The problem is caused by a bug in Apple's PowerBook Display control panel software. We recommend that you do not use this feature until you receive updated software from Apple."

Is this a known bug and is Apple sending out new software?

DISCUSSION -----

It is reported that E-Machines', a division of SuperMac Technology, latest software release of PowerLink Presentor version 1.0.2 solves this problem. We downloaded it from their BBS at 408-541-6190. You can also look on AmericaOnline and CompuServe.

To locate a E-Machines' address and phone number, use SuperMac Technology as a search string.

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Tech Info Library Article Number:13771

Tech Info Library

Disk Doubler 3.7.7i: System 7 Pro (10/93)

Revised: 10/22/93
Security: Everyone

Disk Doubler 3.7.7i: System 7 Pro (10/93)

==========

Article Created: 22 October 1993

TOPIC --

DiskDoubler version 3.7.7.i comes bundled on Apple external hard drives. Fifth Generation System's DiskDoubler v 3.7.7i compresses files, saving storage space. This article describes a problem with DiskDoubler 3.7.7i and System 7 Pro.

DISCUSSION --

The only known problem occurs during installation in 24-bit Memory mode. If you restart your computer with the DiskDoubler INIT loading before the new Finder creates its Preferences file, your system will crash. The solution is to start up without extensions, letting the Finder create the preferences file, and then restart so your extensions load.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13772

Tech Info Library

AppleDesign Powered Speakers: Sound Cuts Out (4/94)

Revised: 7/15/94
Security: Everyone

AppleDesign Powered Speakers: Sound Cuts Out (4/94)

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Article Created: 25 October 1993
Article Reviewed/Updated: 15 July 1994

TOPIC ----------

I am using the AppleDesign Powered Speakers with a Macintosh computer. On some CD audio tracks, where there are very soft passages, the sound will cut out. Other third party powered speakers do not cut out like this. I exchanged the speakers and the second set does the same thing.

DISCUSSION ----------

There is noise gate circuitry internal to the AppleDesign Powered Speakers that reduces the noise level of the output of the speakers. This noise gate is in place to reduce the amount of noise heard through the speakers while the speakers are just amplifying the sounds from the CPU, such as alert beeps. This noise gate turns off the sound to the speakers when the input level (at the CPU input jack, located on the AppleDesign Powered Speakers) falls below a set voltage level. This circuitry is only connected to the 1/8" stereo jack (CPU Input Jack) and not to the dual phono plugs (CD Stereo Cable Jacks).

The noise level from other sources such as CD players, televisions and compact cassette players should be low enough that the noise gate would not be necessary on the CD Stereo Jack inputs.

Replacement Cable

Using a Y adapter cable from the computer's sound out port to the CD Stereo Cable/RCA Jacks on the speakers will eliminate the sound drop outs, but you will lose out on the noise limiting feature of the noise gate.

You can get a Y adapter cable at Radio Shack and similar electronics stores. As of 7/15/94, the Radio Shack Catalog part numbers for the replacement cables were as follows:
3 ft cable.....42-2475
6 ft cable.....42-2481

Please contact Radio Shack for further information.

Turn Up the Volume

The best way to handle this situation without having to buy any new cables is to turn up the volume in the Sound control panel and use the volume knob on the speakers to control the speakers volume. If you do this the problem of sound drop outs will be eliminated.

The problem occurs on all Power Macintosh computers and Macintosh computers. The sound drops occur in both application programs and when playing audio CD's.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for the content pertaining to that product. Please contact the vendor for additional information.

Article Change History:
15 Jul 1994 - Added Radio Shack part number information.
19 April 1994 - Added Power Macintosh computers to list of computers.

Support Information Services

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Tech Info Library Article Number:13778

Tech Info Library

Apple Workgroup Server 60 Changes (10/93)

Revised: 10/25/93
Security: Everyone

Apple Workgroup Server 60 Changes (10/93)

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Article Created: 21 October 1993

TOPIC ----------

This article describes the changes in the Apple Workgroup Server (AWS) 60 with it's October 1993 product release.

DISCUSSION ----------

The October 1993 release of the AWS 60 provides a faster CPU from 20 MHz to 25 MHz. You will see AppleShare 4.0 performance similar to the 20MHz system, however, CPU intensive applications running on the server will be faster. (The benchmark for how much faster will be dependent on those applications.)

Below is a table showing the differences between the two:

	Discontinued AWS 60	AWS 60
CPU:	20 MHz 68040	25 MHz 68040, with FPU
Name:	Apple Workgroup Server 60	Apple Workgroup Server 60
Part Number:	M1780xx/A M1781xx/A M1911Z/A	M1780xx/B M1781xx/B M1911Z/B
Software:	AppleShare 4.0 System 7.1	AppleShare 4.0 System 7.1

Documentation will NOT change. We will add a sticker to the front of the manual notifying customers that the speed has been improved which will differ from their documentation.

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Tech Info Library Article Number:13780

Tech Info Library

Performa: Shut Down Desk Accessory (10/93)

Revised: 10/25/93
Security: Everyone

Performa: Shut Down Desk Accessory (10/93)

==========

Article Created: 25 October 1993

TOPIC -----

My Macintosh Performa has a desk accessory called Shut Down in its Apple menu.

What does it do?

DISCUSSION -----

The ShutDown DA allows you to properly shutdown your Performa from any application which supports the Apple Menu. You simply open the DA and select Shut Down, instead of switching out of your current application to the Finder, then selecting Shut Down from the Special menu.

The Shut Down DA doesn't disable the normal shutdown method; you can still switch to the Finder and select Shut Down from the Special menu.

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Tech Info Library Article Number:13781

Tech Info Library

PlainTalk: Installation and Plaintalk Disk 5 (10/93)

Revised: 10/25/93
Security: Everyone

PlainTalk: Installation and Plaintalk Disk 5 (10/93)

==========

Article Created: 25 October 1993

TOPIC ----------

When I try to install the PlainTalk software on my Centris/Quadra 660AV or Quadra 840AV, the Installer asks for either the PlainTalk Disk 5 or the Introduction to Speech disk. Neither of these disks were included with the computer.

How do I install PlainTalk?

DISCUSSION ----------

The Installer will ask for the PlainTalk Disk 5 or the Introduction to Speech disk if you try to install PlainTalk from the PlainTalk diskettes.

You must install PlainTalk from the System Software diskettes that came with your AV computer. Do NOT attempt to install PlainTalk from the PlainTalk diskettes.

To install PlainTalk, you must perform a custom System Software install. To do this, follow these steps:

1) Boot your Macintosh with the Install Me First diskette.

2) Select a custom installation.

3) Select PlainTalk only, then click Install. Swap diskettes as directed by the software.

This will install all the necessary PlainTalk files without asking for the nonexistent disks.

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Tech Info Library Article Number:13782

Tech Info Library

Newton MessagePad: Be Careful When Pressing Reset Switch (10/93)

Revised: 10/25/93
Security: Everyone

Newton MessagePad: Be Careful When Pressing Reset Switch (10/93)

==========

Article Created: 25 October 1993

TOPIC -----

What happens if I press my Newton MessagePad's reset too hard?

DISCUSSION -----

If you press the reset switch too hard, you may damage your MessagePad. Since the Newton MessagePad's reset switch produces no audible or physical response (like a 'click') when you press it, some users may expect some sort of response and press harder than normal.

You should use no more pressure on the reset switch than you use to write on the Newton's touchpad screen.

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Tech Info Library Article Number:13783

Tech Info Library

Flashing Question Mark on the Screen: Causes and Cures (11/95)

Revised: 11/15/95
Security: Everyone

Flashing Question Mark on the Screen: Causes and Cures (11/95)

==========

Article Created: 25 October 1993
Article Reviewed/Updated: 15 November 1995

TOPIC ----------

This article tells you what to do when you see a blinking or flashing question mark on your screen when you startup a Macintosh or Macintosh Performa computer (assuming you are using System 7.x).

The flashing question mark indicates that the computer cannot locate the valid system software. Each of the possible causes has a specific solution.

DISCUSSION ----------

Typically blinking question marks are caused by:

- Damaged or missing System Software
- SCSI configuration problems
- Third Party software conflict
- Corrupted PRAM
- Damaged Hardware

System Software Improperly Configured
==========

Sometimes a System Folder is on the hard drive, but its components are not configured properly, are damaged, or there may be two or more System Folders present. Use the steps in the following table to correct this problem:

Step 1

Restart your system using Disk Tools (if this fails, go to the next section "Attached Peripherals (SCSI Devices) Improperly Configured").

Step 2

Open the hard disk's icon.

Step 3

Open the System Folder. Ensure that the System and Finder are present and at the root level of the System Folder.

Step 4

Double-click the System file to confirm that it can open. If there is an error, perform a clean install.

Step 5

Make sure that you have only one System Folder on your hard drive. The active System Folder icon should contain a little picture of a Macintosh. If you find an extra System Folder, move it to the Trash icon and choose Empty Trash from the Special menu.

Step 6

If you are a Performa user, and have a previous back up of your system, turn on the computer and insert the Utilities Disk, run Apple Restore, and restore your System Software. If you have not had a chance to back up your system, contact the Apple Assistance Center (1-800-SOS-APPL) for further assistance.

Attached Peripherals (SCSI Devices) Improperly Configured

A chain of SCSI devices, called a SCSI bus, might include peripherals, such as external hard drives, CD-ROM drives, scanners, and printers, linked together with SCSI cables. To determine whether you have a SCSI configuration problem, complete the following steps:

Step 1

Turn off the computer.

Step 2

Turn off all attached devices.

Step 3

Completely disconnect the SCSI bus from your computer.

Step 4

Start up the computer.

If your computer starts up properly, you know the problem is with your SCSI

chain. For more information on troubleshooting SCSI problems, search on "How to Connect Macintosh SCSI Devices."

Third Party Software Conflicts

If you have recently added or modified your system by adding any additional software, you may be experiencing a software conflict. If starting from Disk Tools was successful, then try restarting without Disk Tools, and hold down the Shift key. If this is successful, then you most likely have an Extension or Control Panel problem, and you should remove any third party software from your System Folder. You can also use the Extension Manager or another third party utility to turn off Extensions or Control Panels. If you still cannot restart from the System Folder on your hard drive (but were successful when starting with Disk Tools), then a Clean Install is recommended.

Corrupted PRAM

One of the factors that causes a flashing question mark is a corrupt PRAM or logic board setting. Steps to resolve this problem include zapping PRAM by holding down the Command-Option-p-r keys at system startup. If this does not resolve the problem, you can remove the logic board battery for 10 minutes. This should only be done by an authorized service provider, since damage to the logic board is possible if not done properly.

By pulling the battery, the PRAM is completely cleared and other logic board components are reset. Causes for this corruption could be a faulty ADB device, or AudioVision displays.

Hardware Problems

If none of the preceding solves your problem, you may need to take your computer to an authorized Service Provider for repair.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
15 Nov 1995 - Reviewed for technical accuracy.

Support Information Services

..TIL13784-Flashing_Question_Mark_on_the_Screen-Causes_and_Cures_11-95.pdf

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13784

Tech Info Library

Apple Color OneScanner: LED Error Flashes Twice (10/93)

Revised: 10/26/93
Security: Everyone

Apple Color OneScanner: LED Error Flashes Twice (10/93)

==========

Article Created: 26 October 1993

TOPIC -----

Upon turning on my Apple Color OneScanner the error LED flashes twice. This indicates a lamp error, but replacement of the lamp and logic board does not repair the unit.

DISCUSSION -----

Vendor evaluation of the scanner and 20 optical assemblies determined that the optical assembly can be at fault when the two flashing LED error signal occurs.

Do the following steps:
1 Clean the glass cover assembly
2. Check the lamp holder connection, be sure the label of the florescent lamp faces down into lamp holder
3. If that doesn't solve the problem, then replace the lamp, and finally the optical assembly.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13785

Does AppleMail Support AppleScript (1/95)

Revised: 1/19/95
Security: Everyone

Does AppleMail Support AppleScript (1/95)

==========

Article Created: 25 October 1993
Article Reviewed/Updated: 19 January 1995

TOPIC --------------------

I'm doing some testing and evaluating of Apple Mail that comes with System 7 Pro and System 7.5. I want to automate the moving of mail into different folders on the network. However, the AppleMail application as delivered by Apple is not scriptable. Is this true, and if so will it be scriptable, script aware, or recordable in the future?

DISCUSSION --------------------

There are two functional areas of scripting being discussed here. Being able to move and sort mail from the PowerTalk Mailbox which is a function of Finder scriptability, and the AppleMail application, which is a text editor with a PowerTalk mail header capability.

AppleMail is not scriptable, script aware, or recordable. AppleMail was never meant to be THE messaging application, it is a bare bones tool. AppleMail as a word processor will probably never attain the scriptability of say, Scriptable Text Editor. In other words, everyone should think of AppleMail as the TeachText of messaging.

If you need a scriptable word processor, then MacWrite Pro, WordPerfect, or Microsoft Word as well as other are all candidates. These three all support AppleScript and PowerTalk mail headers.

The Scriptable Finder can be installed into the System 7 Pro environment, but the capabilities of managing mail through AppleScript are still extremely limited. New Mailbox APIs will be made public to enable development of better managers and filters for the PowerTalk Mailbox.

Article Change History:
19 Jan 1995 - Complete update of article.

Support Information Services

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Tech Info Library Article Number:13786

Tech Info Library

Apple Installer: Right Name, But Wrong Disk Message (3/94)

Revised: 3/9/94
Security: Everyone

Apple Installer: "Right Name, But Wrong Disk" Message (3/94)

==========

Article Created: 22 October 1993
Article Reviewed/Updated: 8 March 1994

TOPIC ----------

The Apple Installer application is used for most software that Apple distributes, including System 7. Sometimes installation halts on a specific disk, and it gives an error message saying the disk "has the right name, but it is the wrong disk."

DISCUSSION ----------

Check the hard drive to be sure that there is not a folder or file with the same name as one of the disks that you are trying to install. You should check the root level of the hard drive and the desktop for items with identical names to those of the disks the installer will be using.

Inspect the disk for a file moved from its proper location or renamed. Once you move the file back to its correct location and/or properly rename it, installation should run successfully.

This will require verification of file locations using another set of the installation disks, or a file or directory description for each disk. Any installation using the Apple Installer could be an applicable situation, assuming there aren't other factors affecting the suspect disk.

For non-Apple software, you should check with the appropriate vendor. To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
8 March 1994 - Added information on checking names of folders and hard drives

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13788

SNA•ps 5250 1.0 and OfficeVision/400 (10/93)

Revised: 10/28/93
Security: Everyone

SNA•ps 5250 1.0 and OfficeVision/400 (10/93)

==========

Article Created: 26 October 1993

TOPIC ----------

When using SNA•ps 5250 in OfficeVision/400 (OV/400), and I use the word processing feature, the attributes (underline, and bold) don't work. Also other standard word processing functions like (insert, backspace, paragraph insert, margin ajust) don't exist. The Notes window doesn't scroll. The end of line word wrap doesn't work correctly.

With TokenAccess, I don't have this problem. Is something wrong with my configuration, or do these features in OV/400 simply not work with SNA•ps 5250?

DISCUSSION ----------

To support Text Assist, the emulation must support additional structured fields in the SNA data stream. SNA•ps 5250 does not support them so it gets the Notes window in OV/400 as a straight text window. Using InterAxcess or an IBM terminal (3196), the Notes message window does scroll within the total Notes window. The SNA•ps Notes window does not word wrap correctly at the end of the line, it just divides the word into two pieces. We would assume any other "standard" OV/400 word processing features would not work either.

The reason for not including Text Assist with SNA•ps emulation is the very low use of OV/400 as a word processor, when you can use a Macintosh Word Processing Application rather than the AS/400 resources. There have been marketing discussions about adding Text Assist to the SNA•ps 5250 product but no decision has been made, and no product is available as of October 1993 with a development schedule to include it.

We have advised Macintosh customers to use InterAxcess as their 5250 emulation if Text Assist support is essential. There is no other workaround.

..TIL13792-SNA-ps_5250_1-0_and_OfficeVision-400_10-93_(TA30453).pdf

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13792

Tech Info Library

Publish-It Easy: Use LW Driver 7.2 or 7.1.2 (10/93)

Revised: 10/28/93
Security: Everyone

Publish-It Easy: Use LW Driver 7.2 or 7.1.2 (10/93)

==========

Article Created: 28 October 1993

TOPIC----------

I'm having trouble printing from Publish-It Easy. I am able to print text files properly, but files with graphics and more complicated page layouts give the PostScript error "flushed by LaserWriter, no current point, offending command current point."

Are PostScript errors like this generated by the application, the driver, or the printer?

DISCUSSION ----------

Apple contacted TimeWorks, Inc. who develops Publish-It Easy and they are aware of the "no current point" PostScript errors.

Publish-It Easy is only compatible with PostScript Level I print drivers. You're most likely using LaserWriter driver 8.0 or 8.1.1. Apple recommends using LaserWriter driver 7.2 or 7.1.2 instead.

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Tech Info Library Article Number:13793

Tech Info Library

Composite Sync on Green: Which Apple Computers Have It? (9/95)

Revised: 9/13/95
Security: Everyone

Composite Sync on Green: Which Apple Computers Have It? (9/95)

==========

Article Created: 28 October 1993
Article Reviewed/Updated: 13 September 1995

TOPIC ----------

Could you provide information about which Apple computers have a Composite Sync on Green and which models do not? This function is helpful when connecting third party monitors to Macintosh computers.

DISCUSSION ----------

Sync on green refers to the practice of sending the video synchronization signal along with the green color signal. Previously released Macintosh models with built-in video have supported sync on green.

For computers without sync on green, a third party adapter is necessary if you wish to connect a third party monitor which requires sync on green.

No Sync On Green

LC III
LC 475
LC 575
LC 550
Performa 550/560/575/577/578
Performa 460/466/467
Performa 475/476
Quadra 605
Quadra 840AV
Quadra 660AV
Macintosh 630 family
All portable computers (also no blanking)
Duo Dock (also no blanking)
Duo Dock II (programmable *)
All Power Macintosh models

Sync On Green

Quadra 700 (programmable *)
Quadra 800
Quadra 900 (programmable *)
Quadra 950 (programmable *)
Centris 610
Centris 650
Quadra 610
Quadra 650

Note:
* - The programmable feature refers to the fact that the computer automatically disables the sync on green signal whenever the sense lines detect that a VGA monitor is connected.

Questions and Answers
==========

Question:
Why is Sync on Green not supported on all computers?

Answer:
1) Many users have had problems with sync on green when hooking up third- party monitors; mainly multi-frequency displays from the PC world. Since these displays are increasingly being used with Macintosh, the lack of sync on green increases the number and compatibility of displays available.

2) The current popular video standards, VGA and VESA, dictate using separate sync signals, not sync on the green video.

3) No current Apple monitors support sync on green.

4) The new monitors with power-saving modes (monitors which can be put to sleep, thus consuming less energy) typically use the separate sync lines to signal the monitor to enter a low power state. Since separate sync lines run to the monitor anyway, sync on green does not make sense.

5) The ability to strip sync off the green video adds cost and complexity to a monitor.

Question:
My monitor will not work without sync on green, how can I get

Unfortunately, there is very little you can do about this problem. This seems to affect only one or two major Macintosh display manufacturers, and affects only some of their displays.

The cable or adapter doesn't pass separate sync lines to the monitor

---

This is easily fixed by replacing/altering the cable or adapter. Companies such as Griffin Communications provide adapters to provide the sync on green capability.

PLEASE NOTE: One of the main reasons cables and adapters don't pass through the separate sync lines is because sync on green is there in the first place. Since the sync signal on green video causes some monitors to display a greenish tint when they see (and therefore use) the separate sync signals, simply not passing the separate sync signals to the monitor cures the problem. This workaround will fix the problem on a majority of the monitors available.

Article Change History:
13 Sep 1995 - Combined several articles.
22 Mar 1995 - Corrected wording of Duo Dock.
09 Mar 1995 - Additional Macintosh models documented.

Support Information Services

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Tech Info Library Article Number:13798

Tech Info Library

Newton MessagePad: No Support For LaserWriter Select 310 (10/93)

Revised: 10/28/93
Security: Everyone

Newton MessagePad: No Support For LaserWriter Select 310 (10/93)

==========

Article Created: 28 October 1993

TOPIC -----

Will the Newton MessagePad print to a LaserWriter Select 310?

DISCUSSION -----

No. The only printers supported by the MessagePad are those that you can explicitly choose. The available options are the Personal LaserWriter 300, the StyleWriter II, and Networkable PostScript Apple laser printers.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13799

Tech Info Library

LaserWriter Pro: Parallel Cable Connection (10/93)

Revised: 10/28/93
Security: Everyone

LaserWriter Pro: Parallel Cable Connection (10/93)

==========

Article Created: 27 October 1993

TOPIC ----------

I have a LaserWriter Pro 600 connected to a PC ZENITH 486 via the parallel port, and two Macintosh LCII computers connected to the printer via LocalTalk.

When I power on the printer, all the lights flash in a random pattern and the printer never comes ready. The printer only works properly when we power on the PC.

DISCUSSION ----------

The problem lies in the parallel cable being used, and has nothing to do with the printer or associated software. Apple has verified that some parallel cables cause this problem. Unfortunately, we don't have any specifications as to what makes a "good" parallel cable, though Apple support assumes higher quality cables have a better chance of working.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13801

ABS Tech Note: AS02 AppleSearch Q&A (4/95)

Revised: 4/18/95
Security: Everyone

ABS Tech Note: AS02 AppleSearch Q&A (4/95)

==========

Article Created: 23 December 1993
Article Reviewed/Updated: 18 April 1995

TOPIC ----------

This technical note discusses the most common questions asked about AppleSearch.

DISCUSSION ----------

Question: I've got everything set up properly, but when I try to log on to AppleSearch, I'm told "Sorry. This user name refused." What's wrong?

Answer: The server does not have program linking enabled for that user, so the client cannot connect to the server.

Question: When I restart AppleSearch on my Apple Workgroup Server 95, I get the message. "Can't run AppleSearch. Please reinstall." I tried reinstalling and it still wouldn't start. What is wrong?

Answer: AppleSearch creates some temporary files when it runs in the "Temporary Files" folder. If the Macintosh crashes, when you restart this folder gets moved into the Trash so you have the option of recovering files if needed (this isn't needed with AppleSearch). Unfortunately, under A/UX on the AWS 95, if a file or folder exists in the trash, it can't be created again until the trash is empty, which causes AppleSearch to abort.

The solution on the AWS 95 is to empty the trash, not to re-install. The error message is incorrect under A/UX because it is making an assumption it is running on Mac OS.

Question: I wrote our XTND that accepts all file types, (type transparency flags in the FTYP resource all set on). Our XTND works fine if the MacLinkPlus AppleSearch XTND is not installed. If the MacLinkPlus AppleSearch IS installed,

our XTND is NEVER called. Why am I having this problem?

Answer: If both the DataViz translator and another translator say they are able to translate the file, then AppleSearch will use the DataViz translator. AppleSearch should only call your translator if the file was in a format not supported by DataViz. If you only want to search on the information returned by your translator, then you should throw out the MacLinkPlus AppleSearch file. By doing this, you will no longer be able to search on any text in the document that is not returned by your translator. This is because XTND only allows one translator to read a particular file, and since the server has no way to ask a user which translator should be used when there are multiple translators for the same file we always try to prefer the DataViz translators.

Question: I'm having trouble with my scheduled reporters not being run. Why?

Answer: The usual reason why scheduled searches don't run is because the client has been disconnected from the server for some reason. Even if you quit the AppleSearch client software, the Macintosh remains attached to the server. If you disconnect the client, or if the client or server machines are restarted, that connection is lost and needs to be re-initialized.

Question: AppleSearch is forcing my indexes onto the root directory of my AWS 95. How do I move them to some other location?

Answer: AppleSearch 1.0 forces the "AppleSearch Indexes" folder to be at the root of HFS partition. This is fine for HFS disks, but for the UFS disks there are times when you want to move them (if, for instance, /users is a separate disk and you want the indexes there). There is a workaround you can use:

1. Start AppleSearch and create the information source indexes in /

2. Quit AppleSearch

3. Move the index to wherever you want them to exist.

4. Restart AppleSearch. It will ask you where the indexes are, and then remember the new location.

5. Index as usual.

Article Change History:
18 Apr 1995 - Made correction of typographical errors.

Support Information Services

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Tech Info Library Article Number:13803

ABS Tech Note: AS03 Search on AWS95 In Non-Root Accounts (9/93)

Revised: 10/28/93
Security: Everyone

ABS Tech Note: AS03 Search on AWS95 In Non-Root Accounts (9/93)

==========

Article Created: 30 September 1993

TOPIC

This article describes the possibility of installing AppleSearch and operating it in a non-root account.

DISCUSSION

While AppleSearch is designed to be operated as part of the server environment on the Apple Workgroup Server (AWS) 95 using the super-user account, it is possible to install AppleSearch and operate it in a non-root account. While this isn't a recommended configuration, it is sometimes useful for testing purposes.

To do this, AppleSearch must be installed using the Installer while logged onto the Workgroup Server as root as you would for a normal install. Then execute the command:

```
mkdir /AppleSearch\ Indexes
```

from CommandShell (note: command is case sensitive, and make sure you use the slash and backslash correctly).

When that directory is created, you can then use the chown command to assign ownership to whatever account will be using AppleSearch. You will then be able to use AppleSearch from that account, although AppleSearch will only be able to index files that can be read by that account.

Finally, if your account or the root account are using a custom System Folder, remember to copy the Claris Folder from root's System Folder to your own so that AppleSearch will have access to the XTND translators.

Note: because AppleShare Pro does not work under any account except root on the AWS 95, you will need to use filesharing for your permissions and access instead.

..TIL13804-ABS_Tech_Note-AS03_Search_on_AWS95_In_Non-Root_Accounts_9-93_(TA30462

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Tech Info Library Article Number:13804

Tech Info Library

Macintosh AV Systems: Connecting to Large TVs (10/93)

Revised: 10/28/93
Security: Everyone

Macintosh AV Systems: Connecting to Large TVs (10/93)

==========

Article Created: 28 October 1993

TOPIC --

This article describes how to connect a large-screen television monitor to a Macintosh AV system. (At this writing, these are the Centris 660AV, Quadra 660AV, and Quadra 840AV.)

DISCUSSION --

1) Connect an RCA-type cable from the NTSC video-out port to the TV monitor that you wish to use.

2) In the Monitors control panel, click the Options button, then:
   - choose Display video on Television.
   - choose either NTSC or PAL
   - choose flicker-free format

3) Click OK.

The video-out will then change from the normal display to the TV Monitor that is connected to the computer.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13805

Tech Info Library

Multimedia Kit for Macintosh: No PMMU Required (10/93)

Revised: 10/29/93
Security: Everyone

Multimedia Kit for Macintosh: No PMMU Required (10/93)

==========

Article Created: 28 October 1993

TOPIC --

The press release for the Multimedia Kit for Macintosh says that a PMMU is required. Why is that? The AppleCD 300 and the AppleDesign speakers individually don't require it.

DISCUSSION --

The press release is in error: a PMMU is not needed. The kit should work with any 68020-class systems with 5MB RAM or more.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13806

Tech Info Library

System 7 Pro 7.1.1: Mailbox Delivery Frequency (12/93)

Revised: 12/13/93
Security: Everyone

System 7 Pro 7.1.1: Mailbox Delivery Frequency (12/93)

==========

Article Created: 29 October 1993
Article Revised/Updated: 13 December 1993

TOPIC ----------

Mail sent via mail-enabled applications is copied to the Outbasket. The document is then sent to the destination device. If the destination device isn't available, how often does it attempt to deliver mail? How much time must pass before it returns mail as undeliverable?

Mail connection settings in the "I'm At…" dialog box may delay mail delivery. Does a disabled connection prolong the time PowerTalk will wait for the destination device?

DISCUSSION ----------

The mailbox attempts delivery approximately every 15 minutes. For server-less mail, the messages are never considered undeliverable. You have to manually delete items in your Outbasket to get rid of them.

Since server-less mail is never considered undeliverable it doesn't matter if the connection is disabled or not. It won't affect the time PowerTalk will wait for the destination device.

Direct AppleTalk mail and mail sent through PMSAMs will attempt delivery indefinitely. Server-based mail is returned as soon as the mail is determined undeliverable or after five days.

Mail with Waiting status in the out-tray isn't deleted automatically. Mail with Done status is deleted after aging the number of days indicated in Mailbox preferences. The only exception is when mail is sent using a PMSAM and the PMSAM is removed from the key chain. In this situation all mail sent to the PMSAM is deleted along with the PMSAM.

Article Change History:

13 December 1993 - Added information about direct AppleTalk mail sent through PMSAMs.
23 November 1993 - changed title

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13808

Tech Info Library

System 7 Pro: IPM Bin Folder (10/93)

Revised: 11/2/93
Security: Everyone

System 7 Pro: IPM Bin Folder (10/93)

==========

Article Created: 29 October 1993

TOPIC -----

I'm using System 7 Pro on a Macintosh IIfx with 20MB of RAM. A folder called "IPM Bin" is inside the PowerTalk Data folder, which is inside the System Folder. This folder occupies approximately 7MB. It contains many files that have numbers for names. A few of these files are as large as 1.2MB. I believe the files in the IPM Bin folder use more disk space as the computer sits idle.

DISCUSSION -----

The IPM Bin folder is where all the incoming and outgoing messages are saved. (Without a server the messages must be stored locally.) If you start deleting items in the Out Tray and/or In Tray you'll see that the files with the number names will be deleted.

Although the computer may be sitting idle, it can be receiving mail which would create a new file in the IPM Bin folder. This accounts for an increase in disk space used.

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Tech Info Library Article Number:13809

Tech Info Library

ABS Tech Note: AWS12 Retrospect on AWS 95 Q&A (9/93)

Revised: 10/29/93
Security: Everyone

ABS Tech Note: AWS12 Retrospect on AWS 95 Q&A (9/93)

==========

Article Created: 30 September 1993

TOPIC ----------

This technical note answers some common questions on the Retrospect program that runs on the Apple Workgroup Server (AWS) 95.

DISCUSSION ----------

Q) Why are my DAT tapes write-locked?
A) The AWS 95 DAT drive requires MRS (Media Recognition System) format DAT tapes. Standard audio-quality DAT tapes are not MRS format, so the tape drive shows them as read-only, which allows an AWS 95 to read previously written tapes but not to modify them.

Q) Should a StorageSet be placed on a Macintosh Filesystem or a UNIX Filesystem?
A) It is recommended that the Macintosh File StorageSet be located on a Macintosh partition rather than on a UNIX partition. This is because when Retrospect updates a StorageSet, it appends the backup data to the file's data fork, then goes back and writes the catalog data to the file's resource fork. Retrospect displays the message "Updating Catalog" in the status window while this latter stage is happening.

Because Macintosh File StorageSets are created in AppleSingle format, the UNIX file system wants to write the resource fork contiguously. Which requires it to move all the backup data in the data fork. This causes delays, sometimes long enough to make people think Retrospect is hung.

Q) Retrospect isn't backing up my AppleShare.PDS file. Why?
A) Certain files are excluded from backups with Retrospect 2.0. These include AppleShare.PDS, Desktop files and the VM Storage file. None of them can usefully be restored because they're part of the active system

and a restored copy of the file is useless, and they will usually cause compare errors in the log during the verify cycle. Because of this, and because it makes no sense to waste backup media on them, it was decided to exclude them.

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Tech Info Library Article Number:13810

Tech Info Library

ABS Tech Note: AWS14 Tune-up Install of AppleShare Pro (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AWS14 Tune-up Install of AppleShare Pro (6/94)

==========

Article Created: 23 June 1994

TOPIC ----------

This article describes the tune-up installation of AppleShare Pro on an Apple Workgroup Server (AWS) 95.

DISCUSSION ----------

The AWS 95 Tune-Up 1.0 and the AWS 95 software upgrade will not update the AppleShare Pro File Server and Admin programs if the customer has changed the location of these programs on the root volume; for example, they may have changed the name of the " Applications" folder or placed the programs in sub-folders. This will result in an incomplete installation of the Tune-Up software.

Unfortunately, the Installer will not advise the customer that an error has occurred, since it was designed to update systems without AppleShare Pro, that is, database configurations.

The customer can complete the installation by "dragging" the File Server and Admin programs (inside the AppleShare Pro folder) from Disk 2 of the AWS 95 Tune-Up 1.0 or the upgrade CD to the folder(s) they have created or re-named. These programs must not be running when the new copies are installed. There is no need to install the File Server extension by hand, unless the extension itself has been re-named, which shouldn't occur.

If you're unsure whether or not your AppleShare has been updated properly, check the release number in the Get Info dialog for each application. Both AppleShare File Server and AppleShare Admin should be release 1.0.1. If they aren't, install updated copies from the Tune-Up disks by hand. Upgrade customers are upgraded to version 1.1

Support Information Services

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Tech Info Library Article Number:13812

ABS Tech Note: DAL33 IN Clause Limitations (9/93)

Revised: 10/29/93
Security: Everyone

ABS Tech Note: DAL33 IN Clause Limitations (9/93)

==========

Article Created: 30 September 1993

TOPIC ----------

This article describes IN clause limitations.

DISCUSSION ----------

The following code shows a limitation in DAL (all releases through 1.4) when using the SQL IN verb in a DAL procedure. As DAL is currently implemented, you can't pass a parameter to a DAL procedure and use it in the IN clause:

```
procedure testit(inclause)
argument varchar inclause;
{
print inclause;

op;
select * from emp where empno in (inclause);
printall;

}
```

and the following calling sequence:

```
testit('3476,1556')
```

this should resolve itself to:

```
select * from emp where empno in (3476, 1556);
```

which is a legal SQL statement (and works). Trying to do this from a procedure, however, returns the error:

```
ORA-01722: invalid number.
```

under A/UX (oracle 7.0), and

- Error: incompatible operands for operator (-401)
  "network", line 1 : DSNT408I SQLCODE = -401, ERROR: THE OPERANDS OF AN ARITHMETIC OR COMPARISON OPERATION ARE NOT COMPARABLE
  DSNT415I SQLERRP = DSNXODTI SQL PROCEDURE DETECTING ERROR

under DB2.

This limitation will be removed in a future version of DAL.

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Tech Info Library Article Number:13814

ABS Tech Note: DAL34 SHARED READONLY SELECT coredump

Revised: 10/29/93
Security: Everyone

ABS Tech Note: DAL34 SHARED READONLY SELECT coredump (9/93)

==========

Article Created: 30 September 1993

TOPIC ----------

This article describes SHARED READONLY SELECT coredump.

DISCUSSION ----------

If you open a database in DAL (in all releases through 1.4) for SHARED READONLY, and then attempt to SELECT data from a non-existent table, the DAL server will coredump. This causes the client to lock up.

At this time, there is no patch or workaround for this problem. It will be resolved in a future release of DAL.

This is an example of the problem:

```
%   idal
Apple Computer Interactive DAL (A/UX)
Execution begins...
DAL version 1.4b5 07/24/93 ORACLE7
Execution Completed Successfully(161)
begin> open oracle dbms.
Execution begins...
Execution Completed Successfully(220)
begin> open database "oracle" as user "scott" password "tiger" for shared
readonly.
Execution begins...
Execution Completed Successfully(360)
begin> select * from foobar; printall.
Execution begins...
Segmentation fault (core dumped)
%
```

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13815

Tech Info Library

Setting Up An AWS 95 Server For ORACLE7 for A/UX (10/93)

Revised: 12/20/93
Security: Everyone

Setting Up An AWS 95 Server For ORACLE7 for A/UX (10/93)

==========

Article Created: 28 October 1993

TOPIC ----------

This technical information was provided by Oracle. This document was not written by Apple or tested for accuracy, but it's included because we feel you might find it useful.

DISCUSSION ----------

Setting Up An AWS 95 Server For ORACLE7 for A/UX Desktop
Victor Grigorieff
September 20, 1993 Apple A/UX 3.0.1

Revised 10/28/93 by Victor Grigorieff

This bulletin explains how to configure an Apple Workgroup Server (AWS) 95 (running A/UX 3.0.1) for use with the product "ORACLE7 Server for A/UX version 7.0". This document contains information which details steps to follow before installing any Oracle software.

Note: This document describes the installation process for A/UX 3.0.1. The process will most likely be different with future versions of A/UX.

This document does not assume that the reader has UNIX experience, but it does assume that the reader has basic Macintosh experience.

Conventions used in this Bulletin
---

* Directories: On the Macintosh, people are familiar with folders. Every Macintosh (running the English language) has by default a folder named "System Folder". A file can be referenced by a full path description. An example path

on a Macintosh would be: "Macintosh HD:Word Processing:My Letter". This path would refer to a file named "My Letter", in the "Word Processing" folder of the disk named "Macintosh HD".

Under A/UX's Macintosh environment, the hard disk is named "/". Under A/UX, and example path would look like: "/:Word Processing:My Letter"

On UNIX, people are familiar with directories. All directories are inside the root directory, "/". An example path would be "/users/oracle/dbs /initSAMP.ora".

* Userid: A userid is an account on a UNIX machine. To log into a UNIX machine, you must provide a username and the appropriate password. Once you have logged into a UNIX machine, you have access to all of the programs and files to which that userid has access.

The superuser, "root", has access to all files and programs. Be very careful when you are logged in as that user.

* Processes: A process is a running image of an executable program. On the AWS 95, you can run 300 processes at once by default. Before you log in, A/UX already has several processes active, performing system functions.

When you run the CommandShell application (or telnet to the AWS 95), a shell process is started to accept the commands you type. If you run a UNIX program, a separate process is created for that program, and will run until it exits or is killed.

On UNIX systems, some programs and files are accessible only by certain users. In general, a process runs with the same permissions as the user who created it. If you set the setuid bit on a program, no matter who runs the program, the process will run with the same permissions as the owner of the program. Some Oracle programs must run with the setuid bit set.

Sometimes processes on UNIX machines will get into a state where they will never exit on their own, and will need to be killed by the system administrator.

* Shell: A shell is a program that looks at the commands you type, and performs the appropriate tasks. There are several shells available on A/UX, each with different features. The root user uses the Bourne shell (/bin/sh). All of the other users use the C-shell (/bin/csh). The different shells have different command languages, so

some commands will work in one shell and not others. Each user has a default shell which A/UX will run when they log in.

The shell is run each time you bring up a new window in the CommandShell application.

* Arguments — an argument is an option that you can specify at the time you invoke a UNIX command that affects the way that command behaves. When you read the description of a UNIX command, it will list the various options available. If you were interested in the -a, -b, and -c options, you could use the command "some_command -a -b -c" or "some_command -abc".

* Environment — An environment is a set of variables and their values. You can view the current environment with the command 'env'. From time to time, you will need to set environment variables to have different values.

* Path — A path is a list of directories where UNIX will look for an executable program. Any command which is not a shell command will be looked for in each of the directories in the path. People usually add the directory which contains the oracle programs to their path to have access to the oracle tools.

* TextEditor — On UNIX machines, you will often have the need to edit text files. People who are familiar with UNIX tend to prefer 'vi' which is a standard UNIX text editor. People who are familiar with the Macintosh tend to use the Macintosh-based "TextEditor" from the Macintosh environment of the AWS 95. Text Editor is located in "/:Applications" and behaves much like TeachText, except you can edit multiple documents at a time.

  You may log in to the console of the AWS 95, and simply double-click on a text file to bring up TextEditor to edit that file.

* Commando — The term Commando refers to the way A/UX brings up a dialog box with a Macintosh interface to common UNIX commands. You do not need to know anything about Commando except that it is there, and can make your life a lot easier. You must be logged into the Macintosh environment of the AWS 95 for this option to be available. You can also bring up the Commando interface from within the CommandShell by typing a command, and hitting command-K instead of enter.

The Workgroup Server 95

The Apple Workgroup Server 95 (AWS 95) is a Macintosh Quadra 950 with special hardware additions, and an enhanced version of the UNIX operating system, A/UX 3.0.1.

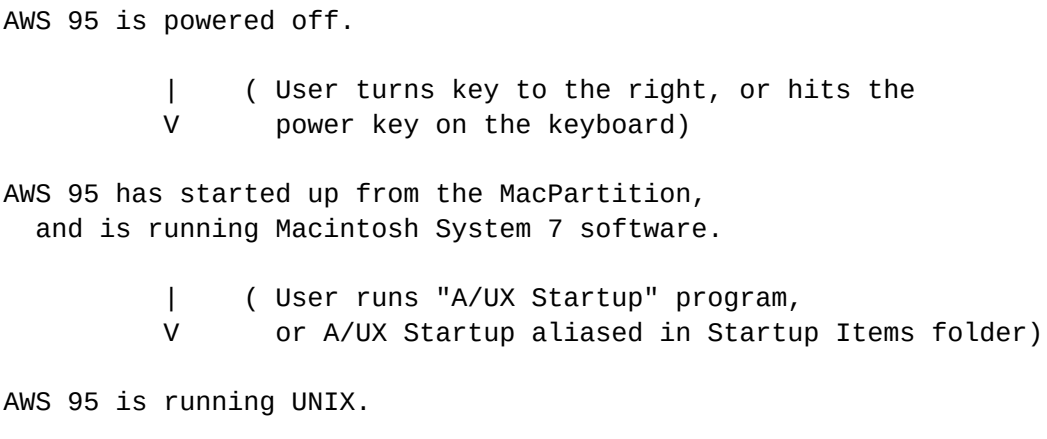
The AWS 95 has a PDS (Processor Direct Slot) card on its motherboard. This card provides faster access to the main memory by using a static RAM cache. The PDS card also provides two extra SCSI buses which are capable of DMA (Direct Memory Access). These two extra SCSI buses are significantly faster than the buses on the motherboard of the machine, and should be used for the drives that contain the database files.

A/UX 3.0.1 is a mix of System V release 2 UNIX, and the Macintosh System Software. When the machine first boots, it reads a Macintosh Partition of the boot disk, and loads the standard Macintosh operating system. A/UX 3.0.1 is then launched by a program called "A/UX Startup". The "A/UX Startup" application unloads the Macintosh operating system and loads in the UNIX operating system. This process is usually automated by placing an alias to the "A/UX Startup" program into the "Startup Items" folder of the System Folder on the Macintosh Partition.

Once the AWS 95 is started under A/UX, there will be a dialog box to log in. When A/UX is first installed, you can log in with the username 'root' with no password. Once you have logged in, the AWS will look like a normal Macintosh. You can then run normal Macintosh applications, including Oracle tools that can connect to the UNIX-based database.

When you are logged in to the console (actually sitting at the machine) and using the AWS 95's Macintosh environment, the AWS is allocating UNIX memory to run the Macintosh environment. You can adjust the amount of memory allocated to this finder environment by adjusting the Virtual Memory size, under the Memory Control Panel. When logged in as root, choose "Control Panels" from the Apple menu (the picture of the apple in the upper-left corner of the screen). Then you can double-click on the Memory icon. You will see a setting called "After Logout" which has arrows to change the number. By default this is set at 16 Megabytes. If you do not intend to run large applications in the Macintosh environment of the AWS, then you can safely set the size down to 8 Megabytes.

The AWS follows this chain of events when it starts up.



```
          * Remote users can log in with telnet.
          * Oracle databases may be started if configured to do so.

                  |    ( User logs into console of the AWS 95 by entering
                  V      UNIX userid and password - root is the superuser)

        AWS 95 is running Macintosh Finder under A/UX
          *  User can now run Macintosh applications, like Oracle Tools.
          *  User can now insert and mount CD-ROM disks, allowing her/him
             to run the A/UX Installer from the ORACLE7 CD Install.
          *  The AWS is now running like it should be for day-to-day use.

                  |    ( User chooses Logout from the Special menu )
                  V

        AWS 95 is still running UNIX, but memory used by the Macintosh
          environment has been freed, allowing more memory to be used
          by other services, like the Oracle database(s).

         | ( User chooses  | ( * WARNING -- this is an emergency measure:
         |   Shutdown from |     User turns key to the left.
         |   Special menu) |      This forces powerdown of the AWS 95.
         |                 |      If it still does not power down, try
         | This is normal. |      hitting button with the triangle on it.
         |                 |
         V                 V

        AWS 95 is powered down.


Installing A/UX on the AWS 95
-----------------------------

A/UX is usually installed on the AWS 95 when it arrives from Apple.  You
MUST install another option before you can successfully install the Oracle7
Server for A/UX.

To Install A/UX:
  *  Power down the AWS 95.
  *  Insert the floppy disk labelled "Apple Workgroup Server 95
     Installation Boot Disk"
  *  Insert the CD-ROM disk labelled
     "System Software Installer Database Service Environment"
  *  Power up the AWS 95.

An A/UX installation consists of 3 parts:
  *  Disk Setup
  *  MacPartion A/UX Startup Files
  *  A/UX Software Setup

  You will want to do custom installs on Disk Setup and A/UX Software
  Setup.  You can do an Easy Install of the Macintosh System Software
  Setup.
```

```
**  Disk Setup
    ----------
    You must partition each of your hard disks for use with A/UX.
    There are several kinds of partitions, and each partition of a disk
      must have a "Slice Number" assigned to it.

    These are the types of slices, and their common uses:

    * MacPartition
      This is a small portion of the startup disk (4 Megabytes) that
      holds a small System Folder.  Don't worry about making this
      partion any larger, as it only needs to be 4 MB to startup A/UX.

      *** When you log into A/UX to run the Macintosh environment,
      *** A different System Folder is used.  If you want to use any
      *** system extensions on your AWS 95's Macintosh environment,
      *** you need to place them in /:mac:sys:System Folder.

    * Root (Slice 0)
      Has the UNIX operating system -- must be present to start A/UX.
      If this file system is "dirty", A/UX will not start.

    * Swap (Slice 1)
      This is a partition which makes up swap space.  The UNIX
      kernel (name for the core of the UNIX operating system) uses
      swap space to complement the physical memory on the machine.
      A/UX can move processes from physical memory (RAM) to disk (swap)
      to make room for other processes.  NEVER try to put a filesystem on
      a swap partition.

        *** Note: Shared memory cannot be swapped out of main memory
                  The ORACLE7 SGA uses shared memory.  This is discussed
                  in greater detail in part 2 of this bulletin.

    * Usr (Slice 2)
      This is a UNIX filesystem which can be mounted on a directory, and
      used for UNIX files.  When you create a Usr slice using the program
      "Apple HD SC Setup", it automatically puts a BSD 4.2 filesystem
      on the partition (which is the equivalent of running newfs).

    * Free (Slice 3 or higher)
      This is a partition with no filesystem on it.  It cannot be mounted
      unless a filesystem is built on it using newfs (BSD 4.2) or
      mkfs (System V)

      A/UX supports two kinds of filesystems-- BSD 4.2 and System V.
      It is more convenient to use BSD 4.2 filesystems, because they
      support longer filenames.  BSD 4.2 filesystems are the default.

    * Database Partition
      This is a partition of the disk with no filesystem on it.  You can
```

configure the A/UX kernel to allow the ORACLE7 database to write directly to database partitions. Using raw database partitions can provide better performance, as the rdbms can bypass the UNIX file buffers. The drawback is that you also bypass the convenient mechanisms for backing up these partitions. Backing up raw partitions is more complex than backing up UNIX filesystems.

*** Warning: Raw database partitions are more difficult to back
*** up, and require familiarity with UNIX administration.

You can choose a custom partitioning scheme that best suits your needs. On a machine with a single 1 Gigabyte hard disk, you might choose the following partition scheme:

Note: 1 MB is 1 Megabyte, which is 1024K. If you are trying to figure out how many megabytes are available on a partition, remember to divide by 1024 (NOT 1000). A partition with 1,000,000 K is actually only 976 MB. This becomes important when you are adding datafiles to the Oracle database.

```
Mac Driver         16 K   (This is required)
MacPartition        4 MB
Swap (Slice 1)     50 MB
Root (Slice 0)    120 MB
Usr  (Slice 2)    825 MB
```

In this scheme, the database files and executables will be placed on the UNIX file system on slice 2. This leaves the A/UX operating system on its own slice 0. It is a very good idea to keep the database on a separate filesystem from the operating system. If the Server ever crashes while the rdbms is running, having the rdbms on a separate filesystem makes the server more likely to start up properly.

Also note in this scheme we did not use Raw database partitions.

In the process of partitioning disks, it is a good idea to keep a notebook where you write down all the information for every slice of every hard disk.

The AWS 95 has 4 separate SCSI buses. For each hard disk and tape drive, it is important to know the bus number and the SCSI ID. Below is a listing of the scsi buses.

	Bus	ID	
	Internal Motherboard	1	
	External Motherboard	2	
*	Internal Cache Card	3	(This is the primary bus)
*	External Cache Card	4	(Good place for CD-ROM and HD's)

* Indicates that the bus is significantly faster. These buses are connected to the cache card in the AWS 95. These buses are

capable of DMA (Direct Memory Access). The Fast external port is the 5th slot from the bottom of the machine. The Slow bus is the 25-pin connector on the right side of the back of the machine, on the edge.

It is important to know the bus and SCSI ID of your hard disks so you can configure your system to use those disks. A slice of a hard disk is referenced by a file in the /dev/dsk directory.

/dev/dsk/cX0Yd0sZ is the generic format for a slice, where:
X refers to the bus number, and
Y refers to the SCSI id, and
Z refers to the slice number.

Examples:
/dev/dsk/c300d0s2 (Usr slice 2, on SCSI id 0 of fast internal bus)
/dev/dsk/c401d0s2 (Usr slice 2, on SCSI id 1 of fast external bus)
/dev/dsk/c302d0s4 (Raw partition 4, on SCSI id 2, of fast internal)

You will need this information when you write the file /etc/fstab, which is necessary to access more than the default root filesystem. This information is also necessary if you intend to use raw database partitions.

** MacPartition A/UX Startup Files

The default Easy Install options for the MacPartition A/UX Startup Files are fine.

** A/UX Software Install

You ** MUST ** perform a CUSTOM install of A/UX to enable the options which are REQUIRED for Oracle7 Server for A/UX

It is a good idea to install at least all of the following options:

* Core A/UX System
* More UNIX Utilities
* Networking Capability
* Network Server Capability
* Manual Pages
* Basic C Programming
* Debugging and Version
* Extended C Programming

If you like, you can install every option, and they do fit comfortably in a partition that is 120 MB.

Post Installation Tasks

* Once the install is complete, the machine will restart, and the CD will be ejected. The machine will boot up to a point where it prompts you to log in.

* Log in with the userid root.
  YOU MUST BE ROOT TO PERFORM THE NEXT SET OF TASKS.

* Choose "Control Panels" from the Apple Menu, and double-click on the "General Controls" control panel. Set the date and time and close the control panel.

  *** It is important to have the date and time set properly before you
  *** run Oracle databases.

* Filesystem Setup:

  You need to set up your machine to mount the filesystems that were created when you partitioned the hard disks. When an A/UX machine boots up, it attempts to mount any filesystems that are listed in the /etc/fstab file. Initially, the fstab file has one entry:

  ```
  /dev/dsk/c300d0s0       /       ignore  rw      1 0
  ```

  The first three columns are the ones which are important:

  /dev/dsk/c300d0s0 This is the disk device file to be mounted. This particular entry refers to Slice 0 of SCSI ID 0 of SCSI bus 3, which is the fast internal bus. (See the Disk Setup section above for more info.

  / This describes where to mount the filesystem. In this case, the slice is being mounted as the root of the filesystem. Other directories could be used as well, like "/data, "/oracle", or "/u1".

  ignore This is the type of filesystem to be mounted.

  * ignore means that the device should not be mounted ignore is used for the / partition, as the fstab file itself is on the / partition, so the / partition must already be mounted if the file is being read. ignore is useful as a placeholder in the file.

  *** 4.2 means that the filesystem is the default BSD 4.2 file system created by either newfs, Apple HD SC Setup, or the A/UX Install process.

  *** The Oracle software requires 4.2 filesystems,
  *** as the names of some files exceed the limits of

*** System V (5.2) filesystems.

* 5.2 means that the filesystem is a System V filesystem. A/UX machines do not normally use these.

* nfs means that the filesystem is actually on an NFS server. NFS is the Network File Service, which allows machines to mount filesystems which are on other machines that are acting as NFS servers.

rw — This specifies a readable and writable filesystem, which is what you want.

1 0 — These parameters affect the checking and backing up of the filesystem, and generally do not need to be changed.

You will need to add an entry for each filesystem other than '/' that you intend to use. Before you mount a filesystem, you need to choose a directory to mount the filesystem on.

Example of setting up a filesystem

It is convenient to make directories in / which follow a consistent naming scheme. For the first filesystem, you could call it 'u1', or any other name you come up with. The name is not important, as long as you use a consistent naming convention.

*** Note: DO NOT MOUNT FILESYSTEMS on the directory called " Shared
*** Data" because the Oracle database will not be able to handle
*** directories with the spaces in their names.

While logged in to the console of the AWS 95 in the Macintosh environment, you could double-click on the '/' disk icon, and then choose "New Folder" from the File menu. You could then type in the name for the new directory, like 'u1'. At this point you will have created a directory on which you can mount a filesystem.

Then you need to remember what disk file corresponds to the filesystem you want to mount. /dev/dsk/c300d0s2 would be the Usr slice 2 of the hard disk at SCSI ID 0 on bus 3. The filesystem is probably a BSD 4.2 filesystem (this is discussed above), so the filesystem type is 4.2.

You would then add the following line to the file and save the file.

```
/dev/dsk/c300d0s2       /u1     4.2     rw      1 0
```

You can use the A/UX command '/etc/fsentry' to automate the editing of the fstab file. If you type the command from the UNIX prompt, it will ask you a few questions. If you double-click on the fsentry icon, you

will be presented with a Commando dialog box with your options. In either case, fsentry will add a line to the /etc/fstab file, and mount the newly entered filesystem.

At the UNIX prompt, type the following command:

df -B (The -B must be a capital 'B')

You should see output like this:

```
Filesystem        kbytes    used   avail %used  Mounted on
/dev/dsk/c0d0s0   140519  119247   14246   89%  /
```

This means that you have only one filesystem mounted. It is mounted on /, and it is almost full (89%).

To mount any filesystems you added to the /etc/fstab file, use the following command:

mount -a

If you see nothing happen that means that it completed successfully, and that all filesystems listed in the /etc/fstab file are mounted. If errors reported, you may have made an error identifying a slice of a disk, or entered a mount point that is not an available directory.

Now the 'df -B' should list several filesystems.

```
Filesystem        kbytes    used   avail %used  Mounted on
/dev/dsk/c0d0s0   140519  119247   14246   89%  /
/dev/dsk/c300d0s  637015      12  637003    1%  /u1
```

In this case, the / filesystem is almost full, and does not have enough room to install an Oracle database. The filesystem mounted on /u1 has over 600 megabytes available, and would be a good place to install the Oracle database. When you run the A/UX Installer to install the database on the server, make sure you are installing in a directory which is in a filesystem with enough available space. In this case, I could make a directory called oracle in /u1, and install the database there.

Note: The sample Oracle installation requires 60 megabytes of space.

* UNIX kernel configuration to enable networking:

If you intend to use TCP/IP, you must configure the UNIX kernel to do so.

If you are only using SQL*Net AppleTalk (and not TCP/IP), you do not need to reconfigure the UNIX kernel, and you could skip this section.

Before you attempt this, you need to make sure that no one else is using the machine, and that you have the following information:

* IP address (A series of 4 numbers, separated by periods (.) that identifies the machine on the network. Also called an Internet address. This unique number is assigned by your network administrator, and must not be used by any other machine on the network. An example address would be 128.20.2.17.)
* Hostname (A name for the machine on the network. This is different from the "Macintosh Name" in the "Sharing Setup" control panel. Hostnames cannot have punctuation characters in them. Example hostnames would be "squid", "aws95", or "saleserver".)
* Domain name (On larger networks, domains may be defined. Most universities, government agencies, and larger companies are on the Internet. This large network is divided into domains. Example domain names would be "us.oracle.com" or "cs.some_college.edu". It is useful to know this information, but it is not required.
  *** Note: This has nothing to do with AppleTalk Zones.)
* Subnet Mask (A series of 4 numbers, separated by periods (.) that tells the machine how to broadcast information to the network. Your network administrator should give you this information, as an error in this parameter can cause problems for your machine and others on the network. The most common masks are 255.255.0.0 and 255.255.255.0. It is extremely rare that a digit in the mask is anything but 255 or 0.)
* NIS Domain (Your site may use NIS (Network Information Services), previously known as yp (Yellow Pages). This is not required, and will cause problems if not properly configured. NIS allows your machine to ask servers on the network for help resolving symbolic names, delivering electronic mail, and other similar tasks.
  *** Warning: If you configure your machine to use NIS and a ypserver is not present on your network, your machine WILL NOT BOOT. If this happens, you will have to rename /etc/ypbind to disable yp.

Once you have this information (and have it written down in your log), you are ready to run the following command:

```
newconfig bnet
```

newconfig will ask you several questions. You give it answers based on the information gathered from your network administrator. In general, when you are asked "Do you want this machine to be an NIS client?", you will answer NO. This avoids the problem described in the warning above.

When newconfig finishes a few minutes later, you should restart the AWS 95 immediately.

Now the A/UX machine has a properly installed and configured operating system, and is ready for an Oracle Installation.

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Tech Info Library Article Number:13817

Tech Info Library

PowerCD: Specifications (10/93) (Discontinued)

Revised: 6/10/94
Security: Everyone

PowerCD: Specifications (10/93) (Discontinued)

==========

Article Created: 29 October 1993
Article Reviewed/Updated: 7 June 1994

TOPIC ----------

This article gives the technical specifications for the PowerCD.

DISCUSSION ----------

GENERAL DESCRIPTION:

Weight

• 1.4 kg

Dimensions (assembled)

• 6.5 inches high
  8.6 inches wide
  4.9 inches deep

Operating temperature

• +41° F to 104 ° F (+5° C to 40° C)

Operating Humidity

• 5% to 90% (no condensation)

Interfaces

• One video/audio port
• One 50-pin SCSI interface port
• One stereo output port
• One headphone port

POWER:

Power Adapter

- One of the following:
  120 V AC, 60 Hz
  230 V AC, 50 Hz
  100 V AC, 50/60 Hz
  240 V AC, 50 Hz

DC Input

- 7 to 11 V, 1.2 A

Power Consumption

- 15 W

VIDEO:

Video Out (CVBS)

- 1 Vpp (75-ohm load)

Signal-to-noise ratio

- >4.5 MHz (PAL)
  >4.2 MHz (NTSC)

AUDIO:

Analog output

- 2 Vrms+/- 2dB

Headphones output power

- ≥ 30 mW (47-ohm load)

Signal-to-noise ratio

- ≥ 95 dB (speakers)
- ≥ 82 bB (headphones)

Dynamic range

- ≥ 80 dB (speakers)
  ≥ 84 dB (headphones)

Channel separation

- ≥ 90 dB (speakers)
  ≥ 75 dB (headphones)

Total harmonic distortion

• ≤ 70 dB (speakers)
  ≤ 75 dB (headphones)

DATA
Data capacity

• 656 MB, Mode 1
  748 MB, Mode 2

Number of blocks per disc

• 270,000 (typical)

Data per block

• 2,048 bytes, Mode 1
  2,336 bytes, Mode 2

Address description

• Minutes, seconds, frames

DATA STREAMING

Blocks per second

• 75

User bytes per second

• 153.6K, Mode 1
  175.2K, Mode 2

SCSI transfer rate

• 2.1 MB per second

Buffer size

• 256K

LASER

Type

• Semiconductor laser GaAIAs

Wavelength

• 780 nm

Output power

• 0.6 mW

Beam divergence

• 54.8°

CD Formats Supported

• Macintosh HFS
• ISO-9660/High Sierra
• Standard CD-DA Audio
• CD-ROM XA, Multisession Kodak Photo CD

Article Change History:
7 June 1994 - Added CD Formats

Support Information Services

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Tech Info Library Article Number:13818

Tech Info Library

PowerCD: Available in Two Colors ? (10/93)

Revised: 11/1/93
Security: Everyone

PowerCD: Available in Two Colors ? (10/93)

==========

Article Created: 1 November 1993

TOPIC ----------

Does the PowerCD come in two colors?

DISCUSSION ----------

There were two models (by color) in NTSC and PAL. The Gray was for the business and education channels and the Blue for the consumer. This was the initial strategy. It has since changed. The Blue is no longer available. In Apple USA, model HOO14ll/A, which was Blue, changed to H0014LL/B, which is Gray. The only difference today between the business and consumer channel models are the CDs that come with the PowerCD.

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Tech Info Library Article Number:13819

Tech Info Library

Macintosh AV Systems: Using with Television Monitor (11/93)

Revised: 11/1/93
Security: Everyone

Macintosh AV Systems: Using with Television Monitor (11/93)

==========

Article Created: 1 November 1993

TOPIC ----------

When I connect my Quadra 660AV to a television monitor (I've tried several different monitors) through S-video or composite, the image is pretty clear. But if I select a solid desktop pattern, the color is off. For example, a red desktop starts out blue at the top of the screen, but fades to red and to purple. This happens at all bit depths.

DISCUSSION ----------

Some discoloration can occur because televisions have marginal purity specifications, compared to computers. You can see some improvement by correctly setting the gamma setting. Here's how:

1) Open the Monitors control panel.

2) While holding down the keyboard's Option key, click the control panel's Options button.

3) Gamma settings will appear. Select the one for television, and the color should improve.

Gamma correction is used to match the computer color tables to the monitor or television set it is connected to. This is necessary because all monitors and television sets do not reproduce color identically.

Remember that the gamma setting for televisions is a "best guess gamma" because the gamma varies significantly from one television to another.

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Tech Info Library Article Number:13823

Tech Info Library

SIMMs: Double-Sided vs. Composite (11/93)

Revised: 11/1/93
Security: Everyone

SIMMs: Double-Sided vs. Composite (11/93)

==========

Article Created: 1 November 1993

TOPIC ----------

This article clarifies the difference between composite SIMMs and double-sided SIMMs.

DISCUSSION ----------

Composite SIMMs

A composite SIMM uses lower-density components to construct a single bank of memory. An example would be a 16MB SIMM that uses 4MB components to construct one or two banks of memory. A non-composite 16MB SIMM uses 16MB components to construct one bank of memory. If a SIMM uses lower-density components to make up a bank of memory, it is a composite SIMM -- and is not recommended nor supported by Apple.

It has always been Apple's position that composite SIMMs are, by design, incompatible with all Macintosh systems.

Double-sided SIMMs

The double-sided SIMMs available for use in the newer Macintosh systems are not the same thing. A double-sided SIMM consists of two separate banks of memory using the correct density components for each bank. An example would be a double-sided 8MB SIMM, which uses 4MB components to construct two separate banks of 4MB each. These SIMMs can be used in Quadra and Centris systems, because the design of the logic board allows each SIMM slot to contain two banks of memory, not just one as in previous systems.

If a bank of memory is to contain 4MB, the components for that bank should be 4MB. If the bank is to contain 16MB, the components that make up that bank must be 16MB.

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..TIL13824-SIMMs-Double-Sided_vsComposite_11-93_(TA30476).pdf

Tech Info Library Article Number:13824

Tech Info Library

Macintosh TV: If You Forget Your Password (11/93)

Revised: 11/1/93
Security: Everyone

Macintosh TV: If You Forget Your Password (11/93)

==========

Article Created: 1 November 1993

TOPIC -----

If you create a password to lock out the TV mode of your Macintosh TV, and then forget the password, here's what to do.

DISCUSSION -----

1) Find the file named "TV Preferences" and drag it into the Trash.

2) Restart your Macintosh TV.

3) After the computer starts up, the TV Setup control panel will create a new "TV Preferences" file.

4) Set up the channels, name them, and create a new password if you wish.

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Tech Info Library Article Number:13826

Tech Info Library

MacTCP 1.1.1 and Hebrew (11/93)

Revised: 11/2/93
Security: Everyone

MacTCP 1.1.1 and Hebrew (11/93)

==========

Article Created: 1 November 1993

TOPIC --

I'm unable to configure MacTCP 1.1.1 when using the Hebrew version of System 6.0.7. When I pull up the MacTCP Control Panel, the numeric fields are black and do not accept entry of configuration information.

Is this a known problem?

DISCUSSION --

We've duplicated the problem you reported with the Hebrew Operating System (OS) and believe to have found the workaround.

After you've installed both the Network Software Installer and MacTCP on your Macintosh running Hebrew 6.0.7, prior to configuring MacTCP you'll need to do the following:

1) Via the Hebrew Interface System Control Panels device, select left-to-right.

2) Select the Roman Script Manager (click on the Hebrew "Star" and the Roman "Diamond" will appear in its place).

After configuring your Operating System in this fashion, you should then be able to configure MacTCP.

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Tech Info Library Article Number:13828

Tech Info Library

PowerBook: Using with LCD Projection Panels (12/93)

Revised: 7/8/94
Security: Everyone

PowerBook: Using with LCD Projection Panels (12/93)

==========

Article Created: 22 December 1993

TOPIC -----

Can a PowerBook 180c be used with an LCD display from 3M or nView?

DISCUSSION -----

In addition to the PowerBook 180c, the following information applies to PowerBook models EXCEPT 100, 140, 170, 145, 145B, and Duos.

nView Corp.

All of their ViewFrame LCD projection panels are compatible. One configures the panel in the PowerBook Display CDEV as an 'optional' monitor. One known problem they are aware of is with their II+2 panel: when the PowerBook's screen dims, the video signal "is lost" necessitating you to restart your PowerBook. They recommend turning dimming off when using a ViewFrame II+2 panel with a PowerBook.

3M Visual Systems Division

3M distributes series 5000 and 4000 panels. The series 4000 panels are plug-and-play, except that one configures the PowerBook Display control panel to 'mirror.' The series 5000 panels ship with their own Y-cables, and if you don't have a monitor connected to the Y-cable along with the LCD panel, you then must connect a terminator to this cable. If you don't have a (12, 13 or 14") display nor terminator connected, then no video signal is sent to the LCD panel. Terminators are available from 3M. Configure the PowerBook Display control panel for the 5000 series panels as you would for the 4000 series panels.

Support Information Services

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Tech Info Library Article Number:13830

Tech Info Library

Problem with A/UX lpr Queue (11/93)

Revised: 11/9/93
Security: Everyone

Problem with A/UX "lpr" Queue (11/93)

==========

Article Created: 1 November 1993

TOPIC ----------

Under A/UX 3.0.2, I did the following:

"lpr -PLP1 /spoolin/long" and got error message " lpr: /spoolin/long: copy file is too large". How can I fix this? I need to spool files bigger then 800K, and that seems to be a limit set in A/UX somewhere? Has this got to do with ulimit?

DISCUSSION ----------

The problem you are seeing is not caused by ulimit. The lpr spooling system has a default maximum "copy size" of 1000 blocks. This is the largest file size it can print.

This can be increased by modifying the /etc/printcap file. All that is needed is to add a field to the entry for the queue where the large print jobs will be printed.

The field to be added is "mx". If the value of "mx" is set to 0 (zero), then it sets the size to unlimited.

For example,

```
lp|at|AppleTalk|postscript|PostScript:\
        :mx=0:\
        :lp=/dev/null:\
        :if=/usr/spool/lpd/AppleTalk/ifilter:\
        :of=/usr/spool/lpd/AppleTalk/ofilter:\
        :nf=/usr/spool/lpd/AppleTalk/nfilter:\
        :sd=/usr/spool/lpd/AppleTalk:
```

Please note that the second line says

```
    :mx=0:\
```

The lpr system will create temporary files before sending them to the printer, if you set the value of "mx" to 0 (zero), you could run out of disk space on the volume where the spool directory is located.

There are a couple of options to prevent this from happening.

One option is to create the file "minfree" in each spool directory for a queue set as unlimited.

The file minfree in each spool directory contains the number of disk blocks to leave free so that the line printer queue won't completely fill the disk. You can edit the minfree file with your favorite text editor.

The file should only contain one line with the number of blocks, for example:

```
5000
```

What this will do is prevent the lpr spool system from creating temporary files if the disk had less than 5000 blocks free.

The other option is to use the "-s" flag of the lpr command. This flag causes symbolic links to be created in the spooler directories instead of copies of the files to be printed. By creating the symbolic links, this option conserves the file-system space available.

```
$ lpr -s -PLP1 ...
```

For more information consult the A/UX manual page for lpr(1).

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Tech Info Library Article Number:13831

Newton MessagePad: Date Book Error -48009 (8/94)

Revised: 8/2/94
Security: Everyone

Newton MessagePad: Date Book Error -48009 (8/94)

==========

Article Created: 2 November 1993
Article Reviewed/Updated: 2 August 1994

TOPIC

When I open a Date Book appointment, my Newton MessagePad displays a -48009 error. What causes this and how can I recover from it?

DISCUSSION

This error occurred in version 1.0, 1.02, and 1.03 of the Newton Operating System. You should upgrade to version 1.05 of the Newton Operating System to permanently correct this problem.

These articles can help you locate the software update mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

If you are using a Newton Operating System older that 1.05, your Date Book appointment has become corrupted. Whenever this appointment is opened, your MessagePad displays the -48009 error message. If you receive this error message, you must reset your MessagePad.

To cure this problem, you must delete the appointment. Since the error occurs when you view the slip for the damaged appointment, you can't delete the appointment within the Date Book application. Try these steps to delete the appointment:

1) Select a word in the text of the corrupted appointment that you can use with the Find command.

2) Create a new note in the Notepad with the word selected above.

3) Tap the Find button, enter the selected word, then tap All. The Find command will search through the Name File, Notepad, and Date Book. When the find is complete, an overview window will appear with all the found items.

4) If any of the items found are outside the Date Book, such as a Name File or Note Pad entry, go to each item and remove the selected word. Do this for all items except for the note created in step 2.

5) Repeat steps 3 & 4 until the overview only shows the note created in step 2 and the corrupted Date Book item.

6) Tap on the envelope button in the bottom right corner of the screen and choose Delete. This will delete the sample note and the corrupted Date Book item.

7) Repeat the above steps for other Date Book items that are producing the error.

Article Change History:
02 Aug 1994 - Added Newton OS 1.05 which corrects this problem.

Support Information Services

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Tech Info Library Article Number:13854

Tech Info Library

Newton MessagePad: Installing System Updates (10/94)

Revised: 6/5/96
Security: Everyone

Newton MessagePad: Installing System Updates (10/94)

==========

Article Created: 2 November 1993
Article Revised/Updated: 24 October 1994

TOPIC -----

How do I install system updates onto my Newton MessagePad?

DISCUSSION -----

Apple is currently distributing system updates for your Newton MessagePad by the following methods:

- If you have the Newton Connection Kit for Macintosh or Windows, you can:

  1) Call the Newton Fulfillment Center at 1-800-242-3374 and order a floppy disk containing the system update. You can then use your Newton Connection Kit to download the system update from your personal computer to your Newton.

  2) Download the system update from on-line services, such as AppleLink, Compuserve, America Online and others. You can then use your Newton Connection Kit to download the system update from your personal computer to your Newton.

- If you do not have the Newton Connection Kit, you can call the Newton Fulfillment Center at 1-800-242-3374 and order the system update on a PCMCIA card. You can then transfer the system update from the PCMCIA card to your Newton.

The instructions below work with Newton System Update 1.05. Earlier system updates had other distribution methods and slightly different installation instructions.

Installing by Connection Kit

To install a system update with the Newton Connection Kit, follow these steps:

1) Connect your personal computer to your Newton. (See your Newton Connection Kit manual for instructions.)

2) Open the Newton Connection Kit on your personal computer.

3) Synchronize and back up the information in your Newton.

NOTE: You must back up the information in your Newton BEFORE installing the update. Installing System Update 1.05 will erase all information in your Newton. Earlier system updates did not erase your Newton's information.

4) Click the Install Package icon on your personal computer.

5) Select the system update in the dialog box, then click OK. For System Update 1.05, select "Update 1.05 for Connection."

6) On your Newton, open the Extras drawer and tap Connection.

7) Tap the type of connection you are making between your Newton and your personal computer, then tap Connect

8) Your Newton will ask if you have backed up your information, because installing the update will erase your information. If you have made a backup, tap OK.

9) Your Newton will ask you to confirm that you have backed up your information. Tap OK. The update is now installed.

   Once the update is installed, your Newton will restart.

10) Follow the instructions that ask you to tap several Xs on your Newton screen.

11) On your personal computer, click OK in the dialog box telling you that installation was successful.

12) Click Restore. In the dialog box that appears, locate and select your backup file to restore your information.

You've now installed the system update and restored the information in your Newton. The version number at the bottom of your Newton's Prefs should now be 1.05.

NOTE: Be sure to reset the date and time in the Date and Time preferences.

Installing by PCMCIA Card

To install a system update with a PCMCIA card, follow these steps:

1) Back up the information in your Newton using Newton Connection or a Memory Card. (See your Newton MessagePad or Newton Connection Kit

documentation for instructions.)

NOTE: You must back up the information in your Newton BEFORE installing the update. Installing System Update 1.05 will erase all information in your Newton. Earlier system updates did not erase your Newton's information.

2) Turn off your MessagePad and remove your current PCMCIA card.

3) Insert the PCMCIA card which contains the system update and close the card lock switch. The system update will automatically download.

4) Your Newton will ask if you have backed up your information. If you have made a backup, tap OK. If not, back up your information as described above and begin this procedure again.

5) Newton asks you to confirm that you have backed up your information. Tap OK. The system update is installed.

   Once the update is installed, your Newton will restart.

6) Follow the instructions that ask you tap several Xs on your Newton screen.

7) Restore your information either from your card or from the Newton Connection Kit.

You've now installed the system update and restored the information in your Newton. The version number at the bottom of your Newton's Prefs should now be 1.05.

NOTE: Be sure to reset the date and time in the Date and Time preferences.

If have any problems following these instructions, you can call 1-800-871-6633 or 1-800-SOS APPL (767-2775) for assistance.

Article Change History:
24 Oct 1994 - Reviewed for consistency and updated format.
25 Jan 1994 - Revised methods and sources of Newton System Updates.

Support Information Services

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Tech Info Library Article Number:13855

Tech Info Library

Newton MessagePad: Dialing Options and Personal Prefs (11/93)

Revised: 11/2/93
Security: Everyone

Newton MessagePad: Dialing Options and Personal Prefs (11/93)

==========

Article Created: 2 November 1993

TOPIC -----

When I dial a local telephone number, the area code is shown in the call slip. I checked the Local Dialing Information dialog box and the local area code is set properly.

Also, when I dial a long distance number, a "1" is not appended to the telephone number.

Why is this?

DISCUSSION -----

Both of these situations are caused by settings in your MessagePad's Extras drawer. To ensure that telephone numbers are properly displayed, follow these steps:

1) Tap the Time Zones button in the Extras drawer, then tap your location on the world map.

2) Tap the I'm Here button, then tap X to close the window.

Also, be sure that the Country blank in the Personal and Locale Preferences is set to your home country.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13856

Tech Info Library

Imagewriter I/II: Minimum Margins (5/94)

Revised: 5/4/94
Security: Everyone

Imagewriter I/II: Minimum Margins (5/94)

==========

Article Created: 3 November 1993
Article Reviewed/Updated: 4 May 1994

TOPIC ----------

What are the minimum margins for the ImageWriter I? I am printing from a Macintosh Plus to an ImageWriter I in landscape mode and the top .50" of each page is being clipped. I need 1/8" margins.

DISCUSSION ----------

Here are the minimum margins for the ImageWriter I or ImageWriter II printer:

Top and Bottom - .25"
Left and Right - .50"

With these margins the maximum printable line is 7.5-in. not 8-in. as the manual states.

NOTE: These margins depend on correct placement of the paper on the platen, and may only be achieved if the application supports it.

With regard to the image being clipped, this is because the margins have been set to be less than the minimum. Some applications will warn the user that they have set the margins to less than the minimum, but some will not and the resulting "clippage" will occur.

Article Change History:
4 May 1994 - Added maximum pritable area.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:13860

Tech Info Library

LaserWriter Select 310: With PC Windows 3.1 (11/93)

Revised: 11/3/93
Security: Everyone

LaserWriter Select 310: With PC Windows 3.1 (11/93)

==========

Article Created: 3 November 1993

TOPIC ----------

I am trying to get a LaserWriter Select 310 to work with a PC running Windows v3.1. I have run through the installation for Windows and everything seems to be fine. However, when a job is sent to the printer, the LaserWriter Select just flashes its green light and nothing happens.

DISCUSSION----------

With the green light flashing, it seems that the printer is not receiving the CTRL-D (EOF) character that it needs to print the job. The CTRL-D should be taken care of by the Windows PostScript driver. The only other things to check are:

- The parallel cable is bad. There have confirmed reports of bad parallel cables "disabling" the printer. You might want to try at least a couple different cables.

- Incorrect installation of the software. A very important step is installing the Windows Postscript driver from Windows Disk #6 (this is step 10 and 11 in Chapter 1, page 9 of the LaserWriter Select 310 User's Guide). The latest PostScript driver version is at least v3.53.

- A bad or incorrectly configured parallel interface card. Apple has heard that some cards have configuration DIP switches or jumpers.

- A bad printer I/O board. Does the test page print? Does the printer work if connected to a Macintosh?

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Tech Info Library Article Number:13862

Performa Computers: Display Support (7/94)

Revised: 7/6/94
Security: Everyone

Performa Computers: Display Support (7/94)

==========

Article Created: 3 November 1993
Article Reviewed/Updated: 06 July 1994

TOPIC ----------

This article lists the various monitors supported by Performa computers which will drive an external monitor.

DISCUSSION----------

The Performa 410 supports:

Apple Basic Color Display: (256K/8-bit, .5MB/thousands)
Macintosh Monochrome RGB Displays: (256K/4-bit, 0.5MB/8-bit)
Macintosh 13 & 14-inch Displays: (256K/4-bit, 0.5MB/8-bit)

The Performa 460, 466, & 467 supports:

Apple Basic Color Display: (0.5MB/8bit, 768K/thousands)
Macintosh Monochrome Displays: (0.5MB/8bit, 768K/8-bit)
Macintosh 13 & 14-inch RGB Displays: (0.5MB/8bit, 768K/thousands)
Portrait Display: (0.5MB/4-bit, 768K/8-bit)
Macintosh 16-inch RGB Display: (0.5MB/8bit, 768K/8-bit)

The Performa 475 & 476 supports:

Apple Basic Color Display: (0.5MB/8-bit, 1MB/thousands)
Macintosh Monochrome Displays: (0.5MB/8-bit, 1MB/8-bit)
Macintosh 13 & 14-inch RGB Displays: (0.5MB/8-bit, 1MB/thousands)
Portrait Display: (0.5MB/4-bit, 1MB/8-bit)
Macintosh 16-inch RGB Display: (0.5MB/8-bit, 1MB/thousands)
19-inch landscape: (third party): (0.5MB/4-bit, 1MB/8-bit)

Macintosh 21-inch RGB Display: (0.5MB/4-bit, 1MB/8-bit)

Article Change History:
06 Jul 1994 - Reviewed for technical accuracy, revised topic to more accurately reflect the contents of the article.

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Tech Info Library Article Number:13863

Tech Info Library

SCSI Disk Mode: Quitting SCSI Disk Mode (11/93)

Revised: 7/8/94
Security: Everyone

SCSI Disk Mode: Quitting SCSI Disk Mode (11/93)

==========

Article Created: 2 November 1993

TOPIC ----------

When I used SCSI disk mode my PowerBook hard drive crashed. Now I have to reformat the hard drive because Norton Utilities and Disk First Aid couldn't fix it. What may have caused this crash?

DISCUSSION ----------

Follow the steps in the Macintosh User's Guide (for your PowerBook) for connecting and disconnecting SCSI devices to avoid loss of information and damage to your equipment.

When using SCSI Disk Mode, the proper way to quit SCSI Disk Mode is to:

- Shut Down the Macintosh your PowerBook is connected to.
- Press the power button on the back of the PowerBook to turn it off.
- Turn off any other SCSI devices in the chain.
- Disconnect the PowerBook from the adapter cable.
- Disconnect the cables from the Macintosh.

NOTE:
1) If you leave the adapter cable attached to the PowerBook, the computer will behave as though it is still in SCSI disk mode when you try to restart.

2) If you unmount the PowerBook's SCSI icon by dragging it to the trash it may lock up the computer and possibly damage the directory information on any mounted hard drive. The damage may only be repaired by reformatting.

..TIL13865-SCSI_Disk_Mode-Quitting_SCSI_Disk_Mode_11-93.pdf

Support Information Services

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:13865

Tech Info Library

Newton MessagePad: Erasing a Corrupted PCMCIA Card (11/93)

Revised: 11/3/93
Security: Everyone

Newton MessagePad: Erasing a Corrupted PCMCIA Card (11/93)

==========

Article Created: 3 November 1993

TOPIC -----

This article discusses how to erase a corrupted PCMCIA card.

DISCUSSION -----

If you have a corrupted PCMCIA card that your Newton MessagePad that won't recognize follow these steps:

1) Remove the PCMCIA card from your MessagePad and restart the MessagePad.

2) Tap the Extras button, then tap Prefs.

3) Insert the corrupted PCMCIA card into your MessagePad. A dialog will appear which asks if you want to erase your card. Tap Yes.

Your card should now work correctly.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13866

Tech Info Library

At Ease 2.0: GrayShare 1.0 (8/95)

Revised: 8/9/95
Security: Everyone

At Ease 2.0: GrayShare 1.0 (8/95)

==========

Article Created: 4 November 1993
Article Reviewed/Updated: 9 August 1995

TOPIC -----

I have a ten Macintosh LC 520 computers running At Ease 2.0. Four StyleWriter II printers are connected directly to four of the LC 520 computers and they print fine. Other users trying to print (to a StyleWriter II) through GrayShare software, version 1.0 cannot find the printer in the Chooser.

If I turn off At Ease 2.0, and startup into the Finder, remote users can print to the StyleWriter II with GrayShare just fine.

DISCUSSION -----

Install version 1.1 or later of Printer Share (GrayShare's system extension), and everything should work fine.

Apple was able to reproduce the problem and determined that it's a problem with the 1.0 version of Printer Share.

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:13868

Tech Info Library

Centris, Quadra 610 and 660AV: Internal Pinouts

Revised: 11/8/93
Security: Everyone

Centris, Quadra 610 and 660AV: Internal Pinouts

==========

Article Created: 4 November 1993

TOPIC -----

This article supplies the internal pinouts (for the internal cord connecting the power supply to the logic board) for four Macintosh systems:

- Centris 610
- Quadra 610
- Centris 660AV
- Quadra 660AV

(The Quadra 650 and Centris 650 have a different power supply.)

DISCUSSION -----

The power supply provides three connectors: one for the hard drive, one for the CD-ROM drive, and one for the logic board.

Logic Board Connector

The pinouts for the 10-pin power connector that plugs into the logic board at J30 are (the location of Pin 1 and 10 are marked on the logic board):

1 - +5V
2 - +5V
3 - +5V
4 - Gnd
5 - Gnd
6 - N/C
7 - Gnd
8 - Gnd
9 - +12V
10 - -12V

Hard Drive and CD-ROM Drive

The pinouts for the power connector for the hard drive and CD-ROM drive:

1 - +12V
2 - Gnd
3 - Gnd
4 - +5V

PLEASE POST BY: 11/03/93
AVAILABLE UNTIL: INDEFINITE
POSTING DISTRIBUTION: Public(Everyone)
REQUEST ID#: 103770
ASSIGNED ENGINEER: 68
MINITEAM: Hardware Escalation

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13870

Tech Info Library

Apple Color Plus 14 Display: Specifications (12/93)

Revised: 12/10/93
Security: Everyone

Apple Color Plus 14" Display: Specifications (12/93)

==========

Article Created: 4 November 1993
Article Reviewed/Updated: 10 December 1993

TOPIC ----------

What are the specifications for the Color Plus 14" Display?

DISCUSSION ----------

Picture Tube

- Shadow Mask
- 14-inch diagonal, 13-inch viewable CRT
- 0.28 mm dot pitch

Scanning and refresh rates

- 35-kHz Horizontal frequency
- 67 Hz Vertical refresh rate

Video

- Resolution: 640 horizontal by 480 vertical pixels
- Active raster width: 9.4 inches (nominal)
- Active raster height: 7 inches (nominal)

Controls

- Brightness
- Contrast
- Power on/off
- Horizontal and Vertical Shift Controls on the front of the unit.

Physical Measurements

- Weight: 25.3 lbs (11.5 Kg)

- Height: 12.9 inches (32.8 cm)
- Width: 14.5 inches (36.8 cm)
- Depth: 15.2 inches (38.5 cm)

Power Supply

- Input voltage: AC 100-125V
- Input frequency: 50-60Hz
- Input current: 1.2A max. (at 120VAC)
- Consumption: 70W

BTU/hour

- 273.2 BTUs per hour

Environmental Requirements

- Operating ambient temperature: 5° C to 35° C
- Humidity: 10% to 80% (non-condensing)
- Altitude: to 7,000 feet
- Storage temperature: -40° C to 65° C

CIE coordinates

- Red x = 0.625 +-0.020, y = 0.340 +-0.020
- Green x = 0.280 +-0.020, y = 0.595 +-0.020
- Blue x = 0.155 +-0.015, y = 0.070 +-0.015

Luminance

- 25 foot lamberts (+-3 foot lambers)

Input Voltage Range

- 90-134 Vrms, USA version
- 200-265 Vrms, Euro version

Signal Connector

- 15-pin D shell connector

Pin	Function
1	Red signal
2	Green signal
3	Blue signal
4	Jumper to pin 10
5	Self test
6	Red return
7	Green return
8	Blue return
9	No pin

10	Digital ground
11	Jumper to pin 10
12	No pin
13	Horizontal sync.
14	Vertical sync.
15	No pin

Safety

• Meets strict SWEDAC MPR-2 requirements for low-frequency (ELF and VLF) magnetic and electric emissions.

Order Number

• M2346LL/A

Article Change History:
10 December 1993 - Added BTU information
12 November 1993 - Removed information on being VGA compatible (with adapter), added control information

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Tech Info Library Article Number:13871

Tech Info Library

LaserWriter Pro: Smudging with Duplex Printing 11/93

Revised: 11/4/93
Security: Everyone

LaserWriter Pro: Smudging with Duplex Printing 11/93

==========

Article Created: 4 November 1993

TOPIC ----------

When attempting duplex printing the top inch of the second side is smudged.

DISCUSSION----------

The cause of the smudging on the second side is due to the top edge paper curl that the paper gets on the first pass. This curling is due to humidity, type of paper used and the heat of fusing.

One work around is to print the second side by:

1) Use "Page Setup" to flip the image both vertically and horizontally
2) Use the Multipurpose Tray
3) Feed the trail edge first into the printer

By flipping the image vertically and horizontally in the "Page Setup" menu, the original trailing edge of the page is fed into the printer rather than the original leading edge.

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Tech Info Library Article Number:13872

Tech Info Library

AWS 95, Retrospect, and ADIC Autochanger (11/94)

Revised: 11/23/94
Security: Everyone

AWS 95, Retrospect, and ADIC Autochanger (11/94)

==========

Article Created: 3 November 1993
Article Reviewed/Updated: 23 November 1994

TOPIC ----------

ADIC 1200C autochanger makes a DAT Jukebox, will this work on an Apple Workgroup Server (AWS) 95 with Retrospect for backup purposes?

DISCUSSION ----------

This device is fully supported by Retrospect 2.0 and later. We talked with ADIC and Dantz to verify that this drive would work with an AWS 95, and both companies confirmed that it would work. The only thing you need to know is that when they configure the drive and autoloader, is to set the SCSI ID of the tape drive to 0, 1, 2, or 3 and then set the SCSI ID of the autoloader to 3 ID's higher (3, 4, 5, or 6) in relation to the tape drive SCSI ID.

Potential Problems

Opening the door to the autoloader (inserting tape cartridges) takes the mechanism off the SCSI bus. The SCSI bus must be scanned again with the door closed for Retrospect to recognize the autoloader.

Article Change History:
23 Nov 1994 - Added Potential problems section.

Support Information Services

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Tech Info Library Article Number:13873

Tech Info Library

SNA•ps 2.0 Gateway: Configuring Mixed Session Types (11/93)

Revised: 11/5/93
Security: Everyone

SNA•ps 2.0 Gateway: Configuring Mixed Session Types (11/93)

==========

Article Created: 3 November 1993

TOPIC ----------

Is the 70 session license limit on a per SNA•ps gateway basis? In other words: Can I run a single Token Ring card and get a total of 70 sessions (mixed 3270 and APPC), or do I have to run multiple gateways to get both 3270 and APPC functionality?

DISCUSSION ----------

There is no such thing as a 70 session gateway, it is a 70 AppleTalk client limited gateway. It does not matter how many sessions are configured on the SNA•ps 2.0 Gateway. The only limit is 70 attached Macintosh computers over AppleTalk.

You can run a single Token Ring card with both 3270 and 5250 (APPC) services at the same time. This is how our demonstration gateways and our test gateways are configured. The session limit will be determined by the RAM size on the Token Ring card. In this environment we strongly suggest buying the 2MB upgrade memory chips.

This is done by configuring two separate SNA•ps Token Ring Lines and Partners. The first pair of lines and partners would be for 3270 services. It would be a Host type PU 5 connection for a PU2 gateway. The customer then does an NCP and VTAM config for the PU 2.0 (3270, 3287) devices and the SNA•ps gateway is matched with 3270 resources.

The second pair of lines and partners would be a PU 2.1 Peer-to-peer device which supports APPC sessions to the AS/400. You would configure a Controller, device, and mode description to support this attachment. Obviously, there are two Token Ring addresses as destination addresses (one for the source of the 3270 datastreams and one for the source of the AS/400 datastreams. The Macintosh Token Ring card will be given one Token Ring address and it will be used as the destination for both the 3270 and AS/400 datastreams. When this is all said and done, there is one gateway with one

AppleTalk name projected on the LAN for both types of services. This can be done all on one card.

As an example: you could have 50 3270 sessions and 55 APPC sessions to support 5250 in the SNA•ps Config. Lets say a Macintosh AppleTalk client attaches to the SNA•ps gateway and opens three 3270 sessions, two 5250 sessions, one SNA•ps Print 3287 session, and one DAL AS/400 session. This SINGLE AppleTalk client has used 3 + 2 + 1 + 1 = 7 sessions.

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Tech Info Library Article Number:13874

Tech Info Library

MacTCP 2.0.4 Patch (7/94)

Revised: 7/21/94
Security: Everyone

MacTCP 2.0.4 Patch (7/94)

==========

Article Created: 3 November 1993
Article Reviewed/Updated: 21 July 1994

TOPIC --------------------

Is MacTCP 2.0.4 now shipping with TCP/IP Connection for Macintosh? If not, how can it be accessed?

DISCUSSION --------------------

There are no plans to roll the MacTCP 2.0.4 update into the TCP/IP Connection for Macintosh product. The 2.0.4 release is being made available as a free "Patcher/Updater" and you will find it as an enclosure to this document.

If you are reading this article on an online service other than AppleLink, these articles can help you locate the software update mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
21 Jul 1994 - Changed where to find software update section.

Support Information Services

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Tech Info Library Article Number:13875

Tech Info Library

Quadra 610: How to Tell If It Has An FPU, How to Upgrade (11/93)

Revised: 11/30/93
Security: Everyone

Quadra 610: How to Tell If It Has An FPU, How to Upgrade (11/93)

==========

Article Created: 11 November 1993
Article Reviewed/Updated: 16 November 1993

TOPIC ----------

Some Quadra 610 configurations come with an FPU, and some don't. How can I tell whether one of these systems contains an FPU?

DISCUSSION ----------

Background

There are three different Quadra 610 configurations sold the in the U.S.

- Two of them contain a Motorola 68040 processor, which has an integral FPU (floating-point unit, or math coprocessor).
  M2098LL/A* Macintosh Quadra 610 (8MB RAM, 230MB HD)
  M2099LL/A* Macintosh Quadra 610 (8MB RAM, 230MB HD, AppleCD 300i)

- One contains a Motorola 68LC040 processor, which has no integral FPU. This configuration is sold only in the U.S.
  M2319LL/A* Macintosh Quadra 610 (8MB RAM, 160MB HD, no FPU)

How to Tell If a Quadra 610 Has an FPU

- Run MacCheck or other utility that reports whether an FPU is present.

- Run a program that requires an FPU -- such as some rendering or CAD/CAM applications.

- Open the case and examine the processor. A processor without an FPU will be labelled "68LC040".

How to Upgrade

If your Quadra 610 has no FPU and you wish to upgrade, you need to purchase a

third-party upgrade kit, as Apple does not offer this upgrade.

Article Change History:
11/16/93 - Corrected reversed definitions of 68040 and 68LC040.

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Tech Info Library Article Number:13877

Tech Info Library

A/UX and MacTCP: Only One Network Available To Finder (11/93)

Revised: 11/5/93
Security: Everyone

A/UX and MacTCP: Only One Network Available To Finder (11/93)

==========

Article Created: 4 November 1993

TOPIC -----

I have two Ethernet cards for accessing two different networks, 1 internal and 1 to Internet). I have set up bnet properly and can use "command shell" ping, ftp, and so on to either network. However, I can't use the Finder to access both networks simultaneously. I can only access the one indicated in the MacTCP control panel.

Questions:

1) Is this possible from the A/UX Finder to access different networks on different IP nets? I don't believe it is possible from the system 7.0.1 finder.

2) How can I change what IP network is accessible from the A/UX Finder if only one is accessible at a time?

DISCUSSION -----

That is the correct behavior for MacTCP running under A/UX. The only way to access both networks without switching interfaces in the MacTCP control panel is to make the A/UX system into an IP router. Refer to the A/UX manuals for information on how to turn A/UX into an IP router. The manual neglects to mention the need to turn on the "ipforwarding" variable in the kernel to enable routing, so that information is included below.

As a super user, you can turn the "ipforwarding" parameter on by doing the following adb (kernel debugger) command:

```
     # adb -w /unix
 ===> a.out file = /unix (COFF format)
 ===> cannot open core
 ===> ready
      ipforwarding?D
```

```
 ===> ipforwarding:   0
      ipforwarding?W 1
 ===> ipforwarding:   0x0      =     0x1
      $w
      $q
 ===> #
```

Then reboot A/UX so that the change will take effect. You might also want to make the same change to the /etc/install.d/boot.d/bnet_dr file (adb -w bnet_dr) in case you build a new kernel via newconfig at some later date.

If you would rather not reboot, do

```
     # adb -w -w /unix /dev/kmem
 ===> a.out file = /unix (COFF format)
 ===> core file = /dev/kmem
 ===> ready
      ipforwarding/W 1
 ===> ipforwarding:   0x0        =    0x1
      $w
      $q
```

This changes the running kernel (/dev/kmem) without affecting what will happen after the next boot. You can do both changes in one session. The "-k" flag is recommended when working on stand alone programs such as the kernel.

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Tech Info Library Article Number:13878

Tech Info Library

Using ARA and FAX On A PowerBook Duo and Dock (11/93)

Revised: 7/8/94
Security: Everyone

Using ARA and FAX On A PowerBook Duo and Dock (11/93)

==========

Article Created: 4 November 1993

TOPIC ----------

On a PowerBook Duo, when I use the Express modem for AppleTalk Remote Access (ARA), an external modem for FAX receive, the other serial port cannot be used for a serial printer, right? I know the Express modem is a bus modem, not a serial modem, but I thought it precluded the use of the serial port. In any case this is not working, and I just want know what configuration should work.

I'm setting this up for my CEO who wants to receive and send FAXes, and have ARA access to his machine. I have two modems because I haven't been able to set up ARA to receive calls and FAXes on the same modem.

The only other question I have is version numbers of software.

DISCUSSION ----------

Below are some test results we ran for setting up a PowerBook Duo and Duo Dock to achieve the functionality you desire:

- We tested with what we feel is the most straight-forward configuration when using two modems and it worked fine:

    Internal Express Modem for FAX
    External V.32 modem in Modem Port for ARA (data)
    Serially connected Printer in Printer Port

  We printed, connected with ARA, and then FAXed in what we had printed while ARA was still up. We feel that it would work fine with the modem and printer reversed in the ports, but that the standard (modem in modem, printer in printer) makes more sense.

  Setup:

    PowerBook Control Panel set to "External Modem"

```
Remote Access Control Panel setup:
     Modem in Modem Port
     Proper modem type selected in Modem Name (NOT Express Modem)
FAX Terminal application's Preferences set to answer
StyleWriter II set to Printer Port
```

- Another possibility is, since our Express Modem software works well with most third party modems, to set the Duo Dock up as:

```
Internal Express Modem for FAX
External ?? modem for ARA (data)
Serially connected Printer
```

  If the problem is the printer working out of the printer port, then the following should work:

```
Internal Express Modem for FAX
External ?? modem in Printer Port for ARA (data)
Serially connected Printer in Modem Port
```

- However, if the user expects heavy usage, we would recommend that they use the internal Express Modem for both the FAX and ARA features at the same time. A heavy load on the serial ports increases the risk of performance degradation and this risk is bypassed by the internal modem. In addition, the Express Modem will handle 9600 for the FAX transmission, and 14.4 for the data/ARA transmission, at the same time.

  We feel this solution of having one modem - the internal Express Modem - will handle everything you wish to do:

```
ARA in
ARA out -- with, or without, call back
FAX in
```

  We received a FAX, received an ARA connection, received another FAX and then made two ARA connections out to other ARA servers, all one right after the other. (This Duo had both the ARA Client and Server software installed.) We tested with a Duo 230 and the Duo was docked. All the desired functions worked well together.

Here is the list of the software releases we used:

```
System  7.1
System Enabler 201  v 1.0.1
ARA  v 1.0
FAX Terminal  v 1.2
FAX Extension  v 1.2
FAX Sender  v 1.2
FAX Viewer  v 1.3
Express Modem ( ARA CCL ) 1.0
  Note: All the Express Modem and FAX software came from the "Express
        Modem"  v 1.1.2 disk
```

Here is what the setup/configuration needs to be:

```
  Remote Access Setup:
       Answer = yes
       Modem  = Express Modem
       Port   = Internal
  FAX Terminal
       Preferences
           Set to "answer calls"
  PowerBook Control Panel
       Modem  = Internal
```

Support Information Services

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Tech Info Library Article Number:13879

Tech Info Library

PageMaker 5.0: LW Driver 8.0 and Onyx/Zeal Bug (11/93)

Revised: 11/8/93
Security: Everyone

PageMaker 5.0: LW Driver 8.0 and Onyx/Zeal Bug (11/93)

==========

Article Created: 8 November 1993

TOPIC ----------

I'm having a problem with the following combination: Apple TrueType "Onyx" Font, PageMaker 5.0, and LaserWriter driver 8.0.

An "unimplemented trap" error occurs as soon as the print dialog box is opened and "Print" is selected. Printing from any other application such as MacWrite Pro and MS Word print fine with those fonts.

DISCUSSION ----------

This bug has been reported to Apple and Aldus engineering. Apparently, the problem occurs with the Zeal font as well.

Currently, there are a couple of workarounds to the problem:

- Printing with the Option key held down (bypassing the Aldus driver) will not cause the problem.

- A more permanent solution is to quit all applications, go to the Fonts folder, and drop the Onyx suitcase onto any other suitcase to merge it. Dropping another font suitcase onto the Onyx suitcase does not solve the problem, the Onyx suitcase must be merged into another.

This problem doesn't occur all the time, and varies with computer configurations. It seems to occur more with 040 machines than with 030 machines.

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Tech Info Library Article Number:13881

Tech Info Library

Centris Series Replaced by Similar Quadra Models (10/93)

Revised: 11/8/93
Security: Everyone

Centris Series Replaced by Similar Quadra Models (10/93)

==========

Article Created: 21 October 1993

TOPIC -----

On November 8, 1993, the Centris name was discontinued from the Macintosh product line.

DISCUSSION -----

- The Centris 610 was replaced by the similar, but faster, Quadra 610.
- The Centris 650 was replaced by the similar, but faster, Quadra 650.
- The Centris 660AV was replaced by the identical Quadra 660AV.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13882

Tech Info Library

Quadra 610, DOS Compatible: Description (2/94)

Revised: 9/29/95
Security: Everyone

Quadra 610, DOS Compatible: Description (2/94)

==========

Article Created: 15 November 1993
Article Reviewed/Updated: 17 February 1994

TOPIC ----------

This article describes the Macintosh Quadra 610, DOS Compatible computer.

DISCUSSION ----------

Two Processors

Two microprocessors:

- 25-MHz Motorola 68LC040
- 25-MHz Intel 486SX

Because the processors work independently, you can run Macintosh and DOS (or Windows) applications simultaneously -- and copy and paste data between the two environments. MS-DOS version 6.2 is installed on the hard drive, along with the Macintosh operating system (system software version 7.1).

RAM and VRAM

- 8MB of RAM, expandable to 100MB
- 512K of VRAM, expandable to 1MB (Macintosh environment)
- 512K of RAM for video (DOS environment)

Flexible Display Options

You can switch instantly from the Macintosh environment to the DOS environment and vice versa on one display. Or you can add a second display to view both environments simultaneously.

- Features built-in support for one or two displays

- Works with all Apple displays as well as third-party NTSC, PAL, VGA, and SuperVGA displays (Macintosh environment)
- Works with Apple 13-inch, 14-inch, and 16-inch displays as well as third-party VGA and SuperVGA displays (DOS environment)

Expansion Capabilities

- Comes with eight built-in ports to support a wide range of peripherals
- Features an external PC game port
- Offers the option of an internal CD-ROM drive
- Includes on-board Ethernet (AAUI) (Macintosh environment)

Printing

DOS and Windows applications print to any Apple or other Macintosh-compatible printer through the built-in serial port or Ethernet port.

Centris 610 and Quadra 610 Upgrades

A DOS Compatibility Card for Macintosh allows upgrading Quadra 610 and Centris 610 computers to make their systems DOS- and Windows-compatible.

Order Numbers

- Macintosh Quadra 610 DOS Compatible
  M2322LL/A

- DOS Compatibility Card for Macintosh for Macintosh Centris or Quadra 610
  M2153LL/A

Article Change History:
17 February 1994 - Changed preliminary description to final description.

Support Information Services

Copyright 1993, 1994, Apple Computer, Inc.

Tech Info Library Article Number:13884

Tech Info Library

Quadra 840AV & 660AV, System 7 Pro, and AIR 3.0 (11/93)

Revised: 11/10/93
Security: Everyone

Quadra 840AV & 660AV, System 7 Pro, and AIR 3.0 (11/93)

==========

Article Created: 11 November 1993

TOPIC -----

Are there any compatibility issues for the Macintosh Quadra 840AV or Quadra 660AV computers, System 7 Pro, and Apple Internet Router 3.0?

DISCUSSION -----

System 7 Pro, the Macintosh Quadra 840AV or 660AV, and Apple Internet Router 3.0 are compatible with each other. The key is to install the software in the correct order. The problem here is the Apple Internet Router 3.0 installs a version of AppleTalk that is not compatible with System 7 Pro. The easiest way to solve the problem is to install the software in this order:

1) Install System 7 Pro
2) Install Apple Internet Router 3.0
3) Install NSI 1.4 or later

Step 3 insures that AppleTalk 58.1 or later is installed and this is what System 7 Pro requires.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13887

Tech Info Library

Duo Type II Recharger: Marketing Number Correction (11/93)

Revised: 7/8/94
Security: Everyone

Duo Type II Recharger: Marketing Number Correction (11/93)

==========

Article Created: 11 November 1993

TOPIC ----------

I bought a PowerBook Duo Rechargeable Battery High Capacity Type II (M1835LL/A). It came with a slip of paper advising me to use "M1812" to charge the battery. I assumed this was a new battery recharger, but it's not in the product list.

DISCUSSION ----------

The marketing number M1812 is inaccurate. The correct number for the Type II Duo Battery Recharger is M4178LL/B (Service Part 922-0576).

Support Information Services

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13889

Tech Info Library

Loading A/UX 3.0.1 On Quadra 610 and Quadra 650 (11/93)

Revised: 11/9/93
Security: Everyone

Loading A/UX 3.0.1 On Quadra 610 and Quadra 650 (11/93)

==========

Article Created: 8 November 1993

TOPIC ----------

I need the installer disk for the Quadra 610 and Quadra 650 not the Centris computers. Because of the version difference in the enablers of both Quadra 610, 650 and Centris 610, 650, I cannot boot the Quadra 610, 650 from the current A/UX Installation disk.

DISCUSSION ----------

The Quadra 610 and Quadra 650 were anticipated in 3.0.1, so the kernel recognizes their machine ids, but the installation floppy did not contain the necessary enabler. Keep in mind that A/UX will not work with 68LC040-based Quadra 610 computers. The low-end Quadra 610 (8/160) has the 68LC040.

Here's how to get A/UX running on a Quadra 610 and Quadra 650:

1) Make a copy of the A/UX install boot floppy.
2) Put the enabler for the Quadra 610 and Quadra 650 on the new install floppy.
3) Boot up and install normally.
4) Boot off a boot floppy or boot CD. Install the Quadra 610 and Quadra 650 enabler on the A/UX boot partition.

Things should now work fine. The only glitch is that the A/UX Finder won't give the correct name for your computer in "About This Macintosh" since their final names were not available when A/UX 3.0.1 came out.

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Tech Info Library Article Number:13890

Tech Info Library

AWS 95: NFS File Copy and Slow Finder Visibility (11/93)

Revised: 11/9/93
Security: Everyone

AWS 95: NFS File Copy and Slow Finder Visibility (11/93)

==========

Article Created: 8 November 1993

TOPIC --

I'm using NFS between a SGI UNIX computer and an Apple Workgroup Server (AWS) 95.

The volume is exported from the AWS 95, and mounted on the SGI. I copy files from the SGI onto the mounted volume, 6 at a time. The desktop on the AWS 95 doesn't get refreshed for an hour, so the files aren't visible until then. The copied files can be found with Find, or are visible in the command shell, but I want to know why the refresh takes so long. Is there anything that can be done to speed this up? The time it takes increases with the number of people attached.

DISCUSSION ---

There is no good way to correct this situation. We recommend that NFS volumes be kept separate from volumes used for AppleShare for this very reason. The changes made by an NFS client are done behind the Finder's back and require the folder be closed and reopened before the changes will be reflected on the server and then the client. The problem is that there are 3 different caches involved that store information on files and there locations.

A workaround is to turn off the AppleShare Pro Folder Cache. With the Folder cache off, the folders on the server and the clients will sync up within 90 seconds. It is not necessary to do any window manipulation on the server or the clients.

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Tech Info Library Article Number:13892

Tech Info Library

At Ease: PowerTalk Incompatibility (8/95)

Revised: 8/14/95
Security: Everyone

At Ease: PowerTalk Incompatibility (8/95)

==========

Article Created: 2 November 1993
Article Reviewed/Updated: 14 August 1995

TOPIC -----

On a PowerMacintosh, if a user switches from At Ease into the Finder, uses a PowerTalk mailbox, and then switches back to At Ease, the CPU may crash.

DISCUSSION -----

An incompatibility has been found between At Ease 2.0.x and PowerTalk. Engineering is aware of the problem, and is working on a solution. Apple is not recommending that PowerTalk and At Ease be used together.

For those users who require this solution, the workaround is to restart the computer rather than returning to At Ease after using PowerTalk mail.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword; reviewed and reformatted article.
18 Aug 1994 - Modified article to include PowerMacintosh

Support Information Services

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Tech Info Library Article Number:13893

Tech Info Library

Ofoto: Resetting Window Locations (11/93)

Revised: 11/9/93
Security: Everyone

Ofoto: Resetting Window Locations (11/93)

==========

Article Created: 2 November 1993

TOPIC ----------

While in the Ofoto application, some window title bars are under the menu bar and I can't move them. How do I reset the window locations?

DISCUSSION ----------

According to Light Source, all you need to do is quit Ofoto and throw away the Preferences file. The path is:

System Folder
  Preferences
    Ofoto Folder
      PreferencesFolder
        Ofoto Preferences

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13894

Tech Info Library

PostScript Level 2: Benefits (11/93)

Revised: 11/10/93
Security: Everyone

PostScript Level 2: Benefits (11/93)

==========

Article Created: 10 November 1993

TOPIC ----------

What are the benefits of PostScript Level 2?

DISCUSSION ----------

To get more in-depth information on the what PostScript Level 2 provides over PostScript Level 1, Apple would suggest referring to the "PostScript Language Reference Manual, Second Edition" by Adobe Systems Incorporated (Addison Wesley). We have taken excerpts and/or paraphrased an overview of PostScript Level 2 features outlined in the reference manual, chapter 1, pages 7-9.

Here is a list of the new language features of PostScript Level 2, which include previous language extension features:

- Dictionaries
  Many Level 2 operators expect a dictionary operand. This allows for optional parameters and future extensibility.

- Memory Management
  In general, memory is more efficiently shared among different uses and arbitrary memory restrictions have been eliminated.

- Resources
  The language includes convenient facilities for locating and managing resources.

- Filters
  The language supports filters for ASCII encoding of binary data, compression and decompression, and embedded subfiles.

- Binary Encoding

In addition to the standard ASCII encoding, the language syntax includes two binary-encoded representations.

- User Paths
  User path operators perform path construction and painting as a single operation for convenience and efficiency. There is also a user path cache and some convenience operators for painting rectangles.

- Forms
  There is a form cache to optimize repeated uses of the same form.

- Color Spaces
  Colors can be specified according to a variety of color systems (that is, gray scale, RGB, CMYK, and CIE based). The color space is now an explicit parameter of the graphics state.

- CIE-based color spaces
  The language supports several device-independent color spaces based on the CIE 1931 (XYZ)-space.

- Patterns
  It is possible to paint with patterns as well as with solid colors. There is a pattern cache to optimize repeated uses of the same pattern.

- Images
  There are several enhancements to the facilities for painting sampled images: use of any color space, 12-bit component values, direct use of files as data sources, and additional decoding and rendering options.

- Other text and graphic operators
  There are several other new operators optimized for performance: graphic state objects, automatic stroke adjustment, new variants of "show", and a new "selectfont" operator.

- Device Setup
  The setpagedevice operator provides a device-independent framework for specifying the requirements of a page description and for controlling both standard and optional features of a device.

- Interpreter Parameters
  Administrative operations such as system configuration and changing input-output device parameters are now organized in a more systematic way.

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Tech Info Library Article Number:13895

Tech Info Library

HP Emulation: Setting Lines Per Page and Lines Per Inch 11/93

Revised: 11/10/93
Security: Everyone

HP Emulation: Setting Lines Per Page and Lines Per Inch 11/93

==========

Article Cerated: 11 November 1993

TOPIC ----------

Can the number of lines per inch and lines per page be set when using the LaserJet emulation mode on LaserWriter printers?

DISCUSSION ----------

The number of lines per inch and lines per page can be configured using the standard PCL escape code sequences. The value can be changed from within the HP emulation mode using the following PCL escape code sequence:

<ESC>&l#e##F

Where:

l is a lower case L
is the top margin
is the page length (default is 60)

In addition, the following escape sequence can be used to set the number of lines per inch, allowing more lines per page by decreasing the empty space between each line.

<esc>&l#D

Where:

l is a lower case L
is the number of lines per inch (default is 6)

There are several methods for downloading the information to the printer. From a standard PC that has BASIC available the following program will work. Be sure to replace the # and ## with the desired option values.

Program for setting the lines per page

```
10 REM This program allows the number of lines per page 20 REM to be
set while in the LaserJet emulation mode. 30 REM Replace the # with
the desired top margin. (1 is the 40 REM minimum recommended value to
avoid losing lines off

50 REM the top of the page) 55 REM Replace the ## with the desired
number of lines per page. 60 LPRINT CHR$(27)"&l#e##F"
```

Program for setting the lines per inch

```
70 REM This program allows the number of lines per inch 80 REM to be
set while in the LaserJet emulation mode. 90 REM Replace the # with
the desired number of lines per inch. 100 REM The default value is 6.
Options are 1,2,3,4,6,8,12,18,24,48. 110 LPRINT CHR$(27)"&l#eD"
```

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Tech Info Library Article Number:13899

Tech Info Library

Macintosh 21-inch Display: Image Shaking (11/93)

Revised: 11/10/93
Security: Everyone

Macintosh 21-inch Display: Image Shaking (11/93)

==========

Article Created: 10 November 1993

TOPIC ----------

I have a Macintosh 21-inch Display near some florescent lights and it causes the image on my monitor to shake and jump. I cannot move the monitor any further away from the lights. Is there any magnetic shield or anything else that can be used to prevent the image from shaking so violently?

DISCUSSION ----------

There is no practical method of shielding the monitor from this type of external interference. However, since you have localized the problem to fluorescent lighting fixtures, a solution to your problem should not be difficult.

A fluorescent fixture that is functioning correctly should not interfere with a monitor's operation. It is not uncommon for these lamps to arc internally. In many cases this action is readily apparent because the lamps have a discernible flicker. In most cases, the internal arcing does not affect the light output of the lamp. The best way to isolate a defective lamp is by disconnecting one lamp at a time until the symptom disappears or becomes less severe. When following this procedure be aware that the problem may involve more than one lamp. If the lamps check good but the symptom persists, the problem is associated with one of the ballasts that drives the lamps. The defective ballast should be replaced.

The reason that fluorescent fixtures interfere with monitor performance is due to the monitor's refresh rate. Because the lamps tend to arc at a 60 hz rate (because they are driven from a 60 hz power source--the wall outlet), they transmit noise at this rate. Therefore, if the monitor does not operate at the identical 60 hz refresh rate (our monitors usually operate at a higher rate), it interprets these pulses as synchronizing signals which causes the

display to jitter.

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Tech Info Library Article Number:13901

Tech Info Library

MacX, AppleTalk-DECnet Over ARA and Zone Problem (11/93)

Revised: 11/10/93
Security: Everyone

MacX, AppleTalk-DECnet Over ARA and Zone Problem (11/93)

==========

Article Created: 9 November 1993

TOPIC ----------

I'm interested in doing DECWindows emulation with MacX 1.2 in a PowerBook 180c running System 7.1, connected to a VAX (VMS 5.5 with PATHWORKS for Macintosh v1.1) through AppleTalk Remote Access (ARA). The problem arises when trying to connect by using the following Host definition in the XWindown command:

  Tool: AppleTalk-DECnet Tool v1.1
  Gateway: DECnet on VMAD01 (VMAD01 is the DECnet name for the MicroVAX)
  Service: VMAD01 (we want to connect to this node)
  ADSP entity (as seen in the tool dialog): Kiko:X11@SPA Servidores

When the command is started the msax$client DECnet object starts and fails in finding back the PowerBook 180c node. The reason is that the string arriving at the VAX with the ADSP node address is "Kiko:X11@*" as I can see in the netserver.log file which is shown below:

```
$ ! Copyright (c) 1987 Digital Equipment Corporation. All rights reserved.
$ IF "" .NES. "" THEN NETSERVER$COMMAND
$ IF ""  .EQS. "" THEN NETSERVER$VERIFY = 0
$ V = F$VERIFY(NETSERVER$VERIFY)

        ------------------------------------------------------

        Connect request received at 20-SEP-1993 16:01:17.37
            from remote process VMAD01::"0=ATKGW$USER"
            for object "SYS$SYSTEM:MSAX$CLIENT.COM"

        ------------------------------------------------------

        ------------------------------------------
        PID=00000274    20-SEP-1993 16:01:18.24
        Remote=Kiko:X11@*       Local=VMAD01
```

```
        Create Display  Node:      Kiko:X11@*
                        Transport: ADSP
                        Server:    0
                        Screen:    0
        ------------------------------------------

%MSAX-F-NAMLOOKUPERR, error looking up name "Kiko:X11@*"
-ATK-E-NBP_NAMNOTFOU, Name was not found
X Toolkit Error: Can't Open display
%DWT-F-DWTABORT, xtoolkit fatal error
%MSAX-E-DCL_FAILURE, SET_DISPLAY_SUB DCL Subroutine failure
$ SET DISPLAY   /CREATE -
                /NODE =         "Kiko:X11@*" -
                /TRANSPORT =    "ADSP" -
                /SERVER =       "0" -
                /SCREEN =       "0" -
                /SUPER
$ RUN SYS$SYSTEM:MSAX$VERIFY
%MSAX-F-NAMLOOKUPERR, error looking up name "Kiko:X11@*"
-ATK-E-NBP_NAMNOTFOU, Name was not found
%DWT-F-DWTABORT, xtoolkit fatal error
        ------------------------------------------
        PID=00000274    20-SEP-1993 16:01:29.81
        Remote=Kiko:X11@*       Local=VMAD01
        Logout - not caching this networked process
        ------------------------------------------
```

Obviously if the ARA server and the VAX are not in the same AppleTalk zone, therefore the node Kiko:X11@* cannot be reached by the VAX.

I have checked by selecting the "Remote Only" icon in the network control panel and I have the same problem.

On the other hand if MacX 1.2 is open, and by using terminal emulation I do the following in the MicroVAX:

```
 $SET DISPLAY/CREATE/USER/TRANSPORT="ADSP"/NODE="Kiko:X11@SPA Servidores"
 $RUN SYS$SYSTEM:VUE$MASTER
```

a new XWindow client opens in the Macintosh, which means that everything is working from the connectivity point of view.

Am I doing something wrong? Is this a known bug of MacX 1.2 or the AppleTalk DECnet Tool? Is there any work around for this problem?

DISCUSSION ----------

We have duplicated the problem and Digital has confirmed it. When the ARA Server and the VAX are NOT in the same zone, the VAX looks for the remote Macintosh in the VAX's zone, instead of the ARA server zone. Digital will add this to the bug database to be fixed in the next release of the AppleTalk-DECnet Tool.

The workaround is to put the VAX and the ARA server in the same zone.

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Tech Info Library Article Number:13903

Tech Info Library

Performa 550: Screen Turns Off (11/93)

Revised: 11/10/93
Security: Everyone

Performa 550: Screen Turns Off (11/93)

==========

Article Created: 10 November 1993

TOPIC----------

Performa retailers are reporting that the Performa 550 screen will turn off while running the In-Store demo.

DISCUSSION----------

The Performa 550 is Energy Star compliant, which turns off the screen after a few minutes. For example, if you choose 15 minutes, the screen will darken after the computer has been inactive for 15 minutes.

Workaround: Turn off the energy saving features by:

- Choosing the Control Panels from the Apple Menu.
- Open the Screen control panel.
- Turn off the Screen Power Saver.

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Tech Info Library Article Number:13904

Tech Info Library

LaserWriter Select 360 for Windows: Specifications (11/93)

Revised: 11/10/93
Security: Everyone

LaserWriter Select 360 for Windows: Specifications (11/93)

==========

Article Created: 10 November 1993

Topic ----------

This article gives the technical specifications for the LaserWriter Select 360 for Windows.

Discussion ----------

Marking Engine

• Fuji Xerox laser-xerographic

Print Quality

• PostScript: 300 or 600 dots per inch, selectable
• LaserJet IIIP (PCL 5) Emulation

Printer Memory

• 7 MB of RAM Standard, upgradable to 16 MB
• 4 MB of ROM

Printer Fonts

• 64 Fonts Are Provided, Including Such Fonts As ITC Avant Garde®, ITC Bookman®, Chicago, Courier, Delphian, Garamond Condensed, Geneva, Helvetica, Helvetica Black, Helvetica Narrow, Lubalin Graph, Lucinda Bright, Machine, Monaco, Nadianne, New Century Schoolbook, New York, Old English Text, Onyx, Oxford, Palatino®, Swing, Symbol, Times, ITC Zapf Chancery®, ITC Zapf Dingbats®, And Zeal.

• 40 additional TrueType fonts on disk from the Bitstream TrueType Font Pack

Laser

• Type: semiconductor laser
• Wavelength: 780 nanometers
• Output Power: 5 milliwatts maximum

Speed

• 10 pages per minute maximum. Actual speed depends on the images printed and the computer used.

Interfaces

• Simultaneous connection to parallel, LocalTalk and RS-232 serial interfaces

Recommended Duty Cycle

• Minimum life expectancy is 300,000 pages, with no monthly page limit

Paper Feed

• Automatic feed from paper cassettes and multipurpose tray; manual feed for single sheets

Energy Star

• The LaserWriter Select 360 for Windows is EPA Energy Star-compliant

Printing Materials

• Media: 20 to 24-lb. from 250-sheet feeder, up to 32-lb. from 50-sheet multipurpose tray

Paper Capacity

• Standard Cassette: Holds up to 250 sheets of U.S. Letter, A4, or B5 paper Sizes.
• Multipurpose Tray: Holds up to 50 sheets of U.S.legal, A4, U.S. letter B5, or executive paper, or 5 envelopes.
• Envelope Cassette: Holds up to 30 Com-10, Monarch, Dl, or C5 envelopes.
• Optional Cassettes are available for 250 sheets of U.S. legal paper and 500 sheets of U.S. Letter or A4 paper.

Imageable Area

• Maximum printable line: 8.1 inches (207.7 mm)
• Minimum top and bottom margins: .18 inches (4.5 mm)
• Minimum left and right margins: 18 inches (4.5 mm)

Actual imageable area may vary depending on the application program. The printer senses cassette size and adjusts to maintain these margins.

Dimensions

• Height: 8.0 inches (25.8 Cm)
• Width: 15 inches (38 Cm)
• Depth: 18.3 inches (45.8 Cm)

Weight

• 26 pounds

Acoustic noise levels (bystander position)

• Standby: 36dBA
• Printing: 47 dBA

Operating Environment:
Humidity

• 20 To 80 percent, noncondensing

Toner cartridge transit environment

• -4° to 104° F (-20° to +40° C)

Input Electrical Requirements:
U.S./Japan

• 100-115 V (± 10%), 50-60 Hz (±2 Hz)

Europe/Australia

• 220-240 V (±10%), 50 Hz (±2 Hz)

Power Consumption:
Operating

• 450 W maximum at 115 V or 220 V

Ozone Emission:
• 0.05 parts per million maximum, measured in accordance with ECMA 129 of UL114 standards for ozone measurement

Ordering Information

LaserWriter Select 360 for Windows
Order No. M2729LL/A
- Apple LaserWriter Select 360 for Windows
- Toner sold separately
- Installation software and fonts disks
- Complete setup, learning, and reference documentation

- Limited warranty

LaserWriter 360 Toner cartridge
Order No. M1960G/A

LaserWriter 360 PostScript Fax Card
Order No. M2345LL/A

- Fax software for Windows, MS-DOS, and Macintosh systems
- RJ-11 phone connector standard
- Supports PostScript language and Group 3 standards

Apple LaserWriter Select 250-Sheet Feeder/Cassette
(supports A4, U.S. letter, A5, and executive paper sizes)
Order No. M2041G/A

Apple LaserWriter Select 500-Sheet Feeder/Cassette
(supports A4 and U.S. letter paper sizes)
Order No. M2042G/A

Apple LaserWriter Select 250-Sheet Letter Cassette
Order No. M2034G/A

Apple LaserWriter Select Envelope Cassette
(holds 30 envelopes)
Order No. M2031G/A

Apple LaserWriter Select Legal Cassette
(holds 250 sheets)
Order No. M2032G/A

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Tech Info Library Article Number:13905

Tech Info Library

Quadra 605 & LC 475: 8MB SIMMs Are Supported (11/93)

Revised: 11/11/93
Security: Everyone

Quadra 605 & LC 475: 8MB SIMMs Are Supported (11/93)

==========

Article Created: 10 November 1993

TOPIC ----------

Can I use 8MB DRAM SIMMs in a Macintosh LC 475 or Quadra 605? Some Apple documentation omits the 8MB SIMM as a supported size, and I've heard of systems that didn't work after 8MB SIMMs were installed.

DISCUSSION ----------

Yes, 8MB SIMMs are supported by the Macintosh LC 475 and Quadra 605.

4MB of 80ns DRAM is soldered on board, and one 72-pin RAM SIMM socket is available for expansion. The sockets can accommodate both single- and double-sided SIMMs. Each single-sided SIMM can hold 1MB, 4MB, or 16MB using 1-, 4-, or 16-Mbit DRAM technology, respectively. Each double-sided SIMM holds twice that amount of memory.

Because the DRAM SIMM in the Quadra 605 and the LC 475 sits at a severe angle in the SIMM socket, there may be an interference problem with some third-party double-sided SIMMs. With the Quadra 605 and LC 475, there is minimal clearance between some of the components on the main logic board and the SIMM. You may also encounter interference with third-party SIMMs that have ICs placed too close to the edge of the PCB.

Remember, although several vendors make composite SIMMs that may work with your particular computer and application, Apple does not support composite SIMMs in any Macintosh. And 100ns SIMMs do not work in these Macintosh models: SIMMs must be have an access time of 80ns or better.

Before purchasing any third-party SIMMs, verify with the manufacturer that the SIMMs conform to Apple's specifications for your specific Macintosh product.

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Tech Info Library Article Number:13906

Tech Info Library

Elographics Intellitouch: Macintosh AV Compatibility (11/93)

Revised: 11/11/93
Security: Everyone

Elographics Intellitouch: Macintosh AV Compatibility (11/93)

==========

Article Created: 11 November 1993

TOPIC ----------

Is Elographics' Intellitouch screen compatible with the Quadra 840AV? I've used this product successfully with a Quadra 700, but when I try it with a Quadra 840AV, the touch-screen function couldn't be activated.

DISCUSSION ----------

Elographics provides the following information:

- Their original software does not work with Macintosh AV systems.
- Contact Elographics for the new "MonitorMouse for Macintosh, version 2.0", which is AV-compatible.

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Tech Info Library Article Number:13908

Tech Info Library

MacTCP: More Than One IP Gateway and AppleTalk Zones (11/93)

Revised: 11/11/93
Security: Everyone

MacTCP: More Than One IP Gateway and AppleTalk Zones (11/93)

==========

Article Created: 10 November 1993

TOPIC ----------

Is there any reason why a network administrator couldn't have more than one IP gateway in a given AppleTalk zone? Are the existence of AppleTalk zones even an issue? I want to serve more than the 64 dynamic IP addresses my gateway allows to Macintosh clients on the network segment. I propose to do this by establishing two gateways each serving 64 addresses from different ranges. What is the limitation of MacTCP on a given zone for Dynamic addressing? Is there any? If so, does it differ by version of MacTCP?

DISCUSSION ----------

There is a limit of 1 DDP/IP gateway per zone. All versions of MacTCP have the same limit, it's not really a limitation of MacTCP as much as it is of the DDP/IP gateway. It's fairly involved but the bottom line is that the DDP/IP gateway specification is not clearly defined and currently offers no way to arbitrate requests from multiple gateways located in the same zone.

There are answers however, you could use a DDP/IP gateway that offers more than 64 addresses such as a cisco router. The cisco imposes no limits on the number of addresses you can configure other than those imposed by the amount of physical RAM you have to accommodate the table. The other solution for gateways with limited addresses would be to configure multiple zones on the same cable (ddpip1, ddpip2, ddpip3, etc.) and place one gateway in each zone. You could arbitrate which users used which gateways or you could just tell them to use one of the gateways in any of the ddpip zones. If one gateway was unable to give the Macintosh an address the user could simply choose the next zone until they were able to get an IP address.

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Tech Info Library Article Number:13909

Tech Info Library

PostScript: Printing Process (11/93)

Revised: 11/11/93
Security: Everyone

PostScript: Printing Process (11/93)

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Article Created: 11 November 1993

TOPIC ----------

Are there any documents that explain the printing process in detail? What is going on inside the Macintosh from the moment the print command is initiated until the page comes out of the printer?

Also, does the type of Macintosh one uses plays a big role in printing speed?

DISCUSSION ----------

With regard to the questions on the printing process and varying print speed from different Macintoshes, there is no single document we are aware of that goes into detail about this.

To start off, here is a brief outline of the printing process.

1. User selects Print from the File menu.

2. The LaserWriter driver then utilizes QuickDraw bottleneck procedures to transform the QuickDraw screen image into PostScript commands.

3. If background printing is selected, then the resulting PostScript output is spooled to disk, and PrintMonitor is launched in the background to communicate with the printer.

4. PrintMonitor makes a connection with the printer and sends the PostScript file to the LaserWriter. PrintMonitor is actually making calls to the AppleTalk stack to open the PAP connection and "packetize" the PostScript file.

5. The PostScript interpreter in the LaserWriter then takes the PostScript input stream and renders the resulting image on paper.

In terms of how different computers affect printing speed, you can refer to the outline above to realize where a faster computer might have an advantage. To summarize, speed gains can be achieved in the overall "processing of data" before it gets to the printer:

- faster conversion from QuickDraw to PostScript.
- faster spooling the PostScript file to disk.
- larger number of processor time-slices to PrintMonitor due to finishing tasks faster.
- faster "packetizing" of the data by the AppleTalk stack.
- if Ethernet is being used, built-in Ethernet (as in the Quadra) will be faster than Nubus Ethernet cards.

Thus, what you are seeing in terms of increased speed with a Macintosh Quadra, as opposed to a Macintosh IIcx, is expected.

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Tech Info Library Article Number:13910

Tech Info Library

LaserWriter Pro 810 for Windows: Specifications (11/93)

Revised: 11/11/93
Security: Everyone

LaserWriter Pro 810 for Windows: Specifications (11/93)

==========

Article Created: 11 November 1993

TOPIC ----------

This article gives the specifications for the LaserWriter Pro 810 for Windows printer.

DISCUSSION ----------

Print engine

- Fuji Xerox XP 20

Print quality

- 800-, 600-, 400-, and 300-dot-per-inch (user selectable) available in PostScript mode; 300-dot-per-inch available in PCL mode

Print speed

- Up to 20 pages per minute (varies with image complexity)

Controller

- Weitek 8200 RISC processor

Ports

- Serial, LocalTalk, and Ethernet ports
- External SCSI port

Memory

- 8MB standard; expandable to 32 via 4MB and 8MB Expansion Kits
- 8MB required for 800-dpi letter size
- 12MB required for 800-dpi legal size

- 16MB required for 800-dpi tabloid size

Fonts

- 64 TrueType fonts on disks from the following font families: ITC Avant Garde, ITC Bookman, Chicago, Courier, Delphian, Garamond Narrow, Geneva, Helvetica, Helvetica Narrow, Lubalin Graph, Lucida Bright, ITC Machine, Nadianne, Monaco, New Century Schoolbook, New York, Old English Text, Onyx, Palatino, Swing Bold, Symbol, Times, ITC Zapf Chancery, ITC Zapf Dingbats, and Zeal

- 40 additional fonts on disk from the Bitstream TrueType Font Pack, including fonts from the following families: Bitstream Oz Handicraft, Clarendon, English, Fraktur, Freehand, Geometric, Humanist, Huxley Vertical, Imperial, Impress, Incised, Informal, Nuptial, Poster Bodoni, Revival, Square Slabserif, Staccato, Umbra, and Vineta

- 35 PostScript Type 1 fonts
- 32 fonts in PCL mode
- Any TrueType or PostScript font

Drivers

- Windows, MS-DOS, and Macintosh

Page description languages

- PostScript Level 2
- PCL 4+
- Auto-emulation switching provided through Virtual Printer Technology

Recommended duty cycle

- Minimum life expectancy: 600,000 pages
- Toner cartridge: 11,000 pages at 5% density

Print materials

- #10 business envelopes (9.5" x 4.25")
- Most standard labels
- Paper sizes: U.S. letter, U.S. legal, tabloid, A3, A4, A5, B4, B5, folio, and executive
- Most letterhead and colored stock
- Medium-weight photocopier transparencies

Paper handling

- Three universal cassettes standard: each holds 250 sheets and supports letter, legal, and tabloid paper sizes
- Optional cassettes: executive and folio
- Optional automated media feeder

Output tray

- 250-sheet face-down stacker

Network management

- Supports SNMP, allowing the printer to be recognized as a network element and managed by system administrators
- Features Remote Console Facility (RCF), allowing network managers in TCP/IP, NetWare, and LAT environments to recognize, diagnose, and manage the printer

Internal Adobe PostScript fax cartridge option

- Send and receive capabilities
- Adobe PostScript fax compatible
- Group 3 fax compatible
- Prints up to 800 dpi PostScript faxes on plain paper

Electrical requirements

- U.S./Japan: 100 to 115 V, 50 to 60 Hz
- Europe/Australia: 220 to 240 V, 50 Hz

Power consumption

- 850 W maximum at 115 or 220 V

Environmental requirements

- Operating temperature: 60° to 90° F (15° to 32° C)
- Relative humidity: 20% to 80% noncondensing
- Toner cartridge transit environment: –4° to 104° F (–20° to 40° C)

Size and weight

- Height: 19.5 in. (49.5 cm)
- Width: 20.5 in. (52.0 cm)
- Depth: 21.5 in. (54.6 cm)
- Weight: 81 lbs (37 kg)

Ordering Information

Apple LaserWriter Pro 810 (U.S.)
Twisted-pair Ethernet version
Order No. B1322LL/A

Thin-wire Ethernet version
Order No. B1321LL/A

- Apple LaserWriter Pro 810 printer
- Toner cartridge
- LaserWriter Pro Accessory Kit: Installation software and fonts disk set, user’s guide, power cable, limited warranty

Toner Cartridge
Order No. M1853G/A

PostScript Fax Cartridge (U.S. and Canada availability only)
Order No. M1772LL/A

4MB Memory Expansion Card
Order No. M1442G/A

8MB Memory Expansion Card
Order No. M1443G/A

Automated Media Feeder
Order No. M1763G/A

Universal Cassette
Order No. M1857G/A

Executive Cassette
Order No. M1851G/A

Folio Cassette
Order No. M1854G/A

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Tech Info Library Article Number:13911

Tech Info Library

LaserWriter Pro 810 for Windows: Description (11/93)

Revised: 11/11/93
Security: Everyone

LaserWriter Pro 810 for Windows: Description (11/93)

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Article Created: 11 November 1993

TOPIC ----------

This article describes the LaserWriter Pro 810 for Windows printer.

DISCUSSION ----------

The Apple LaserWriter Pro 810 for Windows is the ideal high-performance printing solution for large workgroups. It delivers exceptional print quality and speed, comes with extensive paper-handling options, and provides the networking flexibility required for enterprise-wide computing environments. In addition, with the optional PostScript Fax cartridge, everyone on the network can use the LaserWriter Pro 810 to send faxes to any PostScript or standard Group 3 fax machine and know they'll arrive looking their best.

The LaserWriter Pro 810 for Windows is well equipped to handle the printing needs of the most demanding environments. Not only does it print camera-ready text and graphics at up to 800-dot-per-inch resolution, it's also one of the fastest laser printers available, printing up to 20 pages per minute. And dozens of scalable fonts that come with the printer make it easy for users to print documents in many different styles and sizes.

Another important advantage of the LaserWriter Pro 810 for Windows is its ability to print documents generated by many different types of computers, including those running MS-DOS, Windows, Macintosh, or UNIX operating systems. Built-in Ethernet, serial, and LocalTalk ports stay active, so users can simultaneously send documents to the printer without having to change settings. And with a built-in network card, the printer can communicate on Ethernet networks utilizing multiple concurrent protocols, including TCP/IP, NetWare IPX, and Digital LAT.

For flexibility in paper handling, the LaserWriter Pro 810 comes with three cassettes that support up to 750 sheets of paper as large as 11 by 17 inches. In addition, optional cassettes are available for special paper

sizes and thicknesses.

The LaserWriter Pro 810 for Windows supports PCL 4+ for MS-DOS application compatibility, as well as PostScript Level 2. PostScript Level 2 offers improved performance, memory management, and pattern caching. Using its Virtual Printer Technology, the LaserWriter Pro 810 automatically switches between PCL and the PostScript language, so users never need to worry about changing settings or dip switches.

With a rated duty cycle of 600,000 pages, the LaserWriter Pro 810 for Windows can handle the most demanding challenges—today and well into the future.

FEATURES

Print quality

- 800, 600, 400 (default), or 300 dpi; user selectable
- 35 scalable PostScript fonts, 32 PCL fonts, and 104 TrueType fonts

Performance

- Up to 20-page-per-minute print speed
- Weitek 8200 RISC processor

Connectivity

- Ethernet and serial ports for plug-and-play compatibility with MS-DOS and Windows computers
- Built-in Ethernet support for NetWare IPX, TCP/IP, EtherTalk, and Digital LAT protocols
- Automatic switching between PCL emulation and PostScript Level 2
- Support for twisted-pair or thin-wire Ethernet transceiver configurations
- SCSI port for hard disk font storage

Optional PostScript fax capability

- Optional PostScript Fax Cartridge for adding plain-paper fax capability to the printer
- Allows all users on the network to send and receive faxes at up to 800 dpi

Paper handling

- Three paper trays support multiple paper sizes
- Printing on envelopes, labels, transparencies, letterhead, and paper up to 11 by 17 inches
- Maximum capacity: 750 sheets

Memory

- 8MB standard; expandable to 32 via 4MB and 8MB Expansion Kits

- 8MB required for 800-dpi letter size
- 12MB required for 800-dpi legal size
- 16MB required for 800-dpi tabloid size

Ordering Information

Apple LaserWriter Pro 810 (U.S.)
Twisted-pair Ethernet version
Order No. B1322LL/A

- Apple LaserWriter Pro 810 printer
- Toner cartridge
- LaserWriter Pro Accessory Kit: Installation software and fonts disk set, user’s guide, power cable, limited warranty

Apple LaserWriter Pro 810
Thin-wire Ethernet version
Order No. B1321LL/A

Toner Cartridge
Order No. M1853G/A

PostScript Fax Cartridge (U.S. and Canada availability only)
Order No. M1772LL/A

4MB Memory Expansion Card
Order No. M1442G/A

8MB Memory Expansion Card
Order No. M1443G/A

Automated Media Feeder
Order No. M1763G/A

Universal Cassette
Order No. M1857G/A

Executive Cassette
Order No. M1851G/A

Folio Cassette
Order No. M1854G/A

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Tech Info Library Article Number:13912

Tech Info Library

PowerBook 200 Series: Symptoms of Bent Magnesium Frame (8/94)

Revised: 8/31/94
Security: Everyone

PowerBook 200 Series: Symptoms of Bent Magnesium Frame (8/94)

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Article Created: 11 November 1993
Article Reviewed/Updated: 31 August 1994

TOPIC ----------

The PowerBook Duo 210, Duo 230, Duo 250, Duo 270c, 280, and 280c have a lightweight magnesium inner subframe, also known as CPU stiffener. This article describes some problems that may result from a bent magnesium frame.

DISCUSSION ----------

- Docking problem. If one particular Duo fails to properly interface with a docking device, where other Duos work fine, the one Duo's frame may be bent slightly.

- Battery seating. If the Duo's battery requires frequent reseating, and the power manager requires frequent resets, the frame may not be holding the battery tight against the logic board contacts.

- Duo won't run on battery power. If a logic board replacement temporarily corrects the problem, but needs repeated repair, the magnesium frame may be shorting against the logic board. If the Duo fails to start up on a charged battery, it may be a failed logic board caused by a shorting magnesium frame.

If you encounter any of these conditions, and you feel the problem is intermittent, the problem may be caused by a bent magnesium frame. Consider this component when dispatching. Obviously the magnesium frame won't always need replacement -- but a repeat failure for the same symptom may be a clue.

Article Change History:
31 Aug 1994 - Added new models, changed name of magnesium frame to reflect actual service name of part.

Support Information Services

..TIL13913-PowerBook_200_Series-Symptoms_of_Bent_Magnesium_Frame_8-94_(TA30530).pd

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Tech Info Library Article Number:13913

Tech Info Library

PowerBook Duo Batteries: Compatibility and Installation (8/95)

Revised: 8/29/95
Security: Everyone

PowerBook Duo Batteries: Compatibility and Installation (8/95)

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Article Created: 11 November 1993
Article Reviewed/Updated: 13 December 1994

TOPIC

Are the Type II and Type III PowerBook Duo batteries compatible with all Duo computers? Can I use the battery conditioning software on all PowerBook Duo computers?

DISCUSSION

The Type II and Type III batteries can be used on all PowerBook Duo computers when the appropriate software has been installed. The Battery Reconditioning software can only be used on the PowerBook 270c, 280, and 280c.

The Type II battery is no longer available as a separate part. With a Type III Duo Battery, part number M2780LL/A, you receive:

* Type III battery
* PowerBook Duo Enabler 2.0
* Battery case

Installation for Type II Batteries

Installation of the Type II battery and software on a Duo running System 7.1 or System 7 Pro requires a fresh install of system software utilizing the diskettes that came with the Type II battery.

Below are the directions for those versions of system software.

- For System 7.1, follow the "clean install" instructions (search on "Clean Install" to find instructions). Substitute the Install Me First diskette that came with the battery for the one with System 7.1. If the diskettes are not available, as a temporary measure, follow the steps below for System 7 Pro.

- For System 7 Pro, copy the new enabler, the new control panels, (PowerBook Display, PowerBook, PowerBook Setup, and AutoRemounter) from the Install Me First diskette to your System folder. Copy the additional files from the Extras disk (Network Control Panel, A/Rose, EtherTalk Phase 2, EtherTalk Prep and New Network Resources) to your System Folder as well, and restart.

- System 7.5 has the software built in so no additional software is necessary.

Installation for Type III Batteries

With the exception of System 7.5 which has the software built in, to utilize the Type III battery, you need only install the new Enabler in your system folder. After restarting the Duo, the installation process is complete.

Power Adapter and Recharger Information

Type I, II, and III Duo batteries can be recharged in the recharger model M1812 (Marketing number M4178LL/B). The Type I recharger, model M7778, only supports Type I batteries. Contact Apple or an Apple authorized reseller to obtain the correct model. The model number of the recharger is printed on the bottom of it.

If a red light appears when you place a Type III battery into your recharger, the recharger is either the older model or it needs to be updated.

If you have a recharger model M1812 and you need to update it, follow these steps:

Step 1
Shut down the PowerBook Duo computer, make sure the Type III battery and any necessary software has been installed. If you're running System 7.5.1 the Type III Battery extension must be installed.

Step 2
Plug the power adapter into an AC outlet using the power cord that came with the computer.

Step 3
Snap the recharger onto the side of the power adapter.

Step 4
Plug the power adapter cable into the power adapter port on the back of the Duo computer.

Step 5
Turn on the PowerBook Duo to download the update to the charger.

Article Change History:
29 Aug 1995 - Reviewed for technical accuracy.

13 Dec 1994 - Added info on Type III battery and software, and System 7.5.
04 Mar 1994 - Noted Battery reconditioning applies only to 270c.

Support Information Services

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Tech Info Library Article Number:13914

DAL for VAX/VMS 1.4: TCP/IP Support (11/93)

Revised: 11/12/93
Security: Everyone

DAL for VAX/VMS 1.4: TCP/IP Support (11/93)

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Article Created: 11 November 1993

TOPIC ----------

What is the status of TCP/IP access to DAL on VMS? Is this a feature of the latest release, or is it due for the next release of DAL?

DISCUSSION ----------

The latest version of DAL for VAX/VMS 1.4 supports the following TCP products:

Digital's TCP/IP Services for OpenVMS V2.0
Process Software's TCPware V3.1
TGV's Multinet V3.2
Wollongong's WIN/TCP V5.2.1

To locate a vendor's address and phone number, use the vendor name as a search string.

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Tech Info Library Article Number:13915

Tech Info Library

Palatino Fonts: Not Displaying Bold 11/93

Revised: 3/16/94
Security: Everyone

Palatino Fonts: Not Displaying Bold 11/93

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Article Created: 12 November 1993

TOPIC -----

The screen representation of Palatino Bold (for odd sizes) doesn't appear in Bold on the screen (TrueType). For example, Palatino 11 point Bold, is not appearing bold on the screen.

DISCUSSION -----

The behavior you describe only occurs when the TrueType Palatino is installed. The reason this happens is fairly straightforward. One of the main features of TrueType is to provide an "as readable as possible" screen representation of a font, in the size selected.

In some cases, TrueType will decide that it is not possible to bold a font and still have it be readable. This is the case with Palatino. However, this particular trait does not always appear to be logical. For example, Palatino 4 can be bold on the screen and it is certainly not readable.

In any case, selecting to bold Palatino will change the spacing of the font to preserve the margins for the document.

There is no way to change this behavior.

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Tech Info Library Article Number:13916

LaserWriter Select 360: PCL emulation (11/93)

Revised: 11/12/93
Security: Everyone

LaserWriter Select 360: PCL emulation (11/93)

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Article Created: 12 November 1993

TOPIC -----

The LaserWriter Select 360 supports HP PCL5 emulation. Which of the printer's ROM fonts are directly accessable via PCL5?

DISCUSSION -----

As it turns out, not all fonts in the LaserWriter Select 360's ROM are accessible while in LaserJet III PCL5 emulation mode. There are only four fonts available, two are bitmap fonts (with a couple fixed-pitch point sizes), and the other two are scalable fonts. The fonts are:

Bitmap fonts (fixed pitch)

Courier
Line Printer

Scalable fonts

Times
Univers

Information regarding these fonts is actually built into the ROMs of the LaserWriter Select 360. The information provided includes such things as available point sizes, pitches, styles, and the PCL5 escape sequence necessary to access the font. To get a printout of this information, just download the following two lines of PostScript:

```
/LaserJetIII  /ProcSet findresource
/FontReport get exec
```

NOTE: In the escape code sequence for scalable fonts, the "_" (underscore) character is where you fill in the point size you need, since it is a scalable font.

..TIL13917-LaserWriter_Select_360-PCL_emulation_11-93_(TA30533).pdf

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Tech Info Library Article Number:13917

Tech Info Library

LW Driver 8.x: PPDs Job Control/Page Control Commands (11/93)

Revised: 11/12/93
Security: Everyone

LW Driver 8.x: PPDs Job Control/Page Control Commands (11/93)

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Article Created: 12 November 1993

TOPIC ----------

1) Does Apple use/support "Type 4.1" PPD files?

2) Do the LaserWriter 8 PPDs support HP PCL Job Control Language (JCL) and Printer Job Language (PJL)?

3) What is Job Control Language (JCL) and Printer Job Language (PJL)?

DISCUSSION----------

Here are the answers to your questions:

1) Yes. Starting with LaserWriter driver 8.1.1, Apple started using Type 4.1 PPD files.

2) You must be referring to PCL Job Control Commands and Page Control Commands. These commands are actually not a function of the PPD's, but are of the respective PCL emulator in the various LaserWriters. Most of Apple's LaserWriter printers, except for the LaserWriter Select 360, provide HP LaserJet IIp, PCL 4+ emulation.

   The LaserWriter Select 360 provides HP LaserJet III, PCL 5 emulation.

   In terms of what PCL Job Control Commands and Page Control Commands are supported, there is an article in the Tech Info Library ("LaserWriters: Differences in HP Emulation") that outlines the differences between our HP LaserJet IIp emulation and the actual printer. With regard to our HP LaserJet III (PCL 5) emulation, there is no information on differences (if any) to the actual printer, though Apple has tried a lot of the commands and they work fine.

3) We have provided an outline below of what PCL Job Control Commands and Page Control Commands provide. For more in-depth information, refer to the PCL 5 Printer Language Technical Reference Manual, Manual part# 5961-0509, published by Hewlett Packard.

Here are some excerpts from the PCL 5 Printer Language Technical Reference Manual. These would apply mostly to the LaserWriter Select 360 since it has PCL 5 emulation.

Job control commands are usually grouped together and sent at the beginning of a job. Page control commands and data are associated with each printed page of a job.

JOB CONTROL COMMANDS include the following:
- Printer Reset.
- Universal End of Language/Start of PJL
- Number of Copies.
- Simplex/Duplex Print
- Left and Top Offset Registration
- Duplex Page Side Selection
- Job Separation
- Output Bin Selection
- Unit of Measure.

PAGE CONTROL COMMANDS include the following:
- Page Size
- Paper Source
- Logical Page Orientation
- Print Direction
- Text Area
- Left Margin
- Right Margin
- Clear Horizontal Margins
- Top Margin
- Text Length
- Perforation Skip
- Horizontal Motion Index
- Vertical Motion Index
- Line Spacing

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Tech Info Library Article Number:13918

Tech Info Library

Portable StyleWriter: Printing Difficulty and PowerBooks (11/93)

Revised: 7/8/94
Security: Everyone

Portable StyleWriter: Printing Difficulty and PowerBooks (11/93)

==========

Article Created: 12 November 1993

TOPIC ----------

I am having trouble printing from my Macintosh PowerBook 170 to a Portable StyleWriter.

Here are some specific question I have:

1) Does the Powerbook have to be turned on before the Portable Stylewriter?

2) Does the Powerbook have to stay awake while the Portable Stylewriter is printing?

3) How does the Spoolmaster react when you change applications after it has started to print?

DISCUSSION ----------

Here are the answers to your questions:

1) Does the Powerbook have to be turned on before the Portable StyleWriter?

ANSWER: No. The only thing you must do is make sure that if the Portable StyleWriter is connected to the printer port, you should have Appletalk turned OFF. Otherwise, the Portable StyleWriter will print gibberish when the computer is turned ON, this is because Appletalk sends out packets as part of its initialization.

2) Does the Powerbook have to stay awake while the Portable StyleWriter is printing?

ANSWER: Yes, otherwise the current line being printed will look "warped." Unfortunately, there is no code in Spoolmaster to warn users about putting Powerbooks to sleep while printing.

3) How does the Spoolmaster react when you change applications after it has started to print?

ANSWER: We were unable to verify any problems while switching out of Spoolmaster. We even had our PowerBook Control Panel set to "Maximum Conservation," and did not have any trouble printing. The only suggestion we have is to try a clean install of system software (by throwing away the old System Folder first).

Support Information Services

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Tech Info Library Article Number:13919

Tech Info Library

Apple Remote Access: Ways To Access The Modem Ports (5/96)

Revised: 5/30/96
Security: Everyone

Apple Remote Access: Ways To Access The Modem Ports (5/96)

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Article Created: 15 November 1993
Article Reviewed/Updated: 30 May 1996

TOPIC -----

This article describes the three basic ways of accessing the modem ports in Apple Remote Access MultiPort Servers.

DISCUSSION -----

There are three basic ways to configure the modem ports: Dial-in access, Dial-in and transfer, and Callback only. Also, users cannot access a configured port until it has been turned on in the Port Configuration window.

The ARA Multiport Server does not support the built-in serial ports. The ARA Multiport Server will only function over NuBus communication cards such as the ARA Serial Card for modem connections.

"Dial-in access" allows dial-in and/or callback access on the same port. With this method, a user who does not have callback enabled is able to dial in and remain connected. This is useful if you have a number of users who are on the road and cannot provide you with a callback number. If the user has callback enabled, when the user dials in, the server checks that the user name and password are correct. If they are correct, the user is disconnected, and the server calls him or her back on the same port.

Ports set to "Dial-in and transfer" are intended only for users who have callback enabled. When such a user dials in, the server checks that the user name and password are correct. If they are correct, the user is disconnected, and the server calls him or her back through a different, "Callback only" port. Users for whom you have not set up callback can dial in to "Dial-in and transfer" ports, but they will be disconnected. Users who do not have callback enabled must use "Dial-in access" ports.

"Callback only" ports cannot receive calls. They are used only in

conjunction with ports that have been configured for "Dial-in and transfer" and the rest for "Callback only." Thus, you can have a maximum of 15 callback lines, depending on the number of Remote Access Serial Cards installed and modems connected to the ports. This method allows you to provide only one telephone number to your users.

Article Change History:
30 May 1996 - Updated for clarity.

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Tech Info Library Article Number:13920

Tech Info Library

Apple Remote Access: Remote Access Manager (11/93)

Revised: 11/12/93
Security: Everyone

Apple Remote Access: Remote Access Manager (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article provides a brief description the tasks Remote Access Manager provides.

DISCUSSION -----

The remote access server administrator uses Remote Access Manager software to set up and administer the server. These tasks include the following:

- Setting server preferences
- Registering users
- Configuring ports for dial-in and/or callback access
- Establishing server security

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Tech Info Library Article Number:13921

Tech Info Library

Apple Remote Access Client for Macintosh Features (11/93)

Revised: 11/12/93
Security: Everyone

Apple Remote Access Client for Macintosh Features (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article describes the features for Apple Remote Access Client for Macintosh.

DISCUSSION -----

Ease of installation and use

- Lets users get started in only minutes
- Allows users to access services remotely, in the same intuitive way as they work with services locally
- Provides built-in context-sensitive help

Adaptability

- Works with all Apple Remote Access–compatible servers, including both the Apple Remote Access Personal Server and the Apple Remote Access MultiPort Server
- Supports both Apple Remote Access 1.0- and 2.0-compatible servers
- Offers a range of dialing and connection options
- Supports a variety of leading modems

Remote productivity

- Supports System 7, so users can work with such familiar features as the Chooser, Finder, and Alias Manager
- Helps users manage everything from repeat connections to connection time
- Masks the complexities of the worldwide telephone system through its integrated DialAssist technology

Powerful security features

- Allows administrators to select the level of security that's most

appropriate for their organization's needs (when used in conjunction with the Apple Remote Access MultiPort Server software)
- Provides users with a secure method of access, whether they're connecting from home or from a hotel outside the country

Apple Remote Access Client for Macintosh provides an easy, productive, and secure way to connect a desktop Apple Macintosh or PowerBook computer to information and resources at a remote location. And because it works with all Apple Remote Access–compatible products—including the Apple Remote Access MultiPort Server and Personal Server software—it lets you choose the level of server support you need, whether you belong to a small workgroup or a multinational corporation.

Apple Remote Access Client for Macintosh software is designed with efficiency and productivity in mind. It installs in minutes and is remarkably easy to use, minimizing the need for ongoing support. For example, the software's built-in DialAssist technology makes dialing back to the office network simple, even for international travelers. It lets you build dialing sequences that help mask the complexities of worldwide telephone system—so you can connect easily from anywhere in the world. And Apple Remote Access Client for Macintosh has features that help you manage everything from repeat connections to connection time.

In addition, because it supports System 7, Apple Remote Access Client software lets you work with such familiar features as the Chooser, the Finder, and the Alias Manager. In short, it provides everything Macintosh or PowerBook users need to help them to get their work done easily and efficiently—wherever they are.

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Tech Info Library Article Number:13922

Tech Info Library

ARA 2.0 MultiPort Server: Configuring Modem Ports (5/96)

Revised: 5/30/96
Security: Everyone

ARA 2.0 MultiPort Server: Configuring Modem Ports (5/96)

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Article Created: 15 November 1993
Article Reviewed/Updated: 30 May 1996

TOPIC ----------

This article describes how to configure the modem ports for regular telephone lines on the Apple Remote Access MultiPort Server.

DISCUSSION ----------

To configure modem ports do the following steps:

1) Choose Configure Ports from the Server menu.

   The Port Configuration window appears. This window contains information about services installed on the server computer and the configuration of each port.

2) Click the triangle next to Modem Service (or double-click the line) to display all installed cards.

3) Click the triangle next to the Apple Remote Access Serial Card (or double-click the line) to display the name, status, and configuration of each port.

   The port name is determined by the slot in the computer in which the card is installed and the number of the port on the card. For example, Slot 1 Port 1A indicates that the Remote Access Serial Card is installed in Slot 1 in the server computer, and that Port 1A is selected. Each connector on the cable is labeled 1A or 1B, 2A or 2B to match the ports on the card. This identifies what port is used when a modem is connected to the card.

4) Select the port you want to configure by clicking it.

   The Open button becomes active. Initially ports are turned off; that

is, they are inactive. Once you configure each port, you can turn it on to make it active.

5) Click the Open button. You can also double-click the port name to open the Port window.

   The Port window appears for each port you select. The name of the port appears in the title bar.

6) Enter text in the Port Info text box, such as the name of the modem connected to the port and the telephone number of the line connected to the modem.

7) From the Port Access pop-up menu, select on the following options:
   - Dial-in Access
   - Dial-in and Transfer
   - Callback

8) From the Modem pop-up menu, select the modem script for the modem you've attached to the port.

   See the Read Me file in the Apple Remote Access MP Folder for a list of supported modems. If your modem does not appear on that list, see the Apple Remote Access Modem Scripting Guide, included in the package, for information on writing your own script. To write your own script, you will need the Modem Workshop, which is included in the Apple Remote Access MultiPort Server Toolkit disk.

9) Turn the modem speaker on or off by clicking the On or Off button.

   When the modem speaker is on, you can hear when the modem is making a connection with another modem. However, if modem noise is a concern, you can turn off the modem speaker.

10) Select Tone or Pulse for the dialing capability of your telephone line.

    Select Tone if the telephone line to which the modem is connected supports touch-tone dialing Select Pulse if the telephone line to which the modem is connected supports pulse or rotary dialing.

11) Click the Ignore Dial Tone checkbox if you always want the modem to dial, regardless of its ability to recognize the tone provided on the telephone line.

12) Click Save to save these settings for the port.

    If you click Revert, the contents of the window are not saved.

13) Click the close box to close the Port window.

    The Port Configuration window is still visible. Now that you've configured the port, you must turn it on to make it active for receiving and/or making calls.

14) Select the port and click the Turn On button to turn on the port.

    Note: If you are using the Security Zone software, you will be required to enter a password at this point. You will only be required to enter this password the first time you turn on a port.

Note: The ARA MultiPort Server does not support the built-in serial ports. The ARA MultiPort Server will only function over NuBus communication cards such as the ARA Serial Card for modem connections.

Article Change History:
30 May 1996 - Added note for clarity.

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Tech Info Library Article Number:13924

Tech Info Library

ARA 2.0 MultiPort Server: Creating New Users (11/93)

Revised: 11/12/93
Security: Everyone

ARA 2.0 MultiPort Server: Creating New Users (11/93)

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Article Created: 15 November 1993

TOPIC ----------

This article describes creating new users on the Apple Remote Access MultiPort Server.

DISCUSSION ----------

1) If the User List is displayed, click the New button; otherwise, choose Create User from the Users menu.

   A New User information window appears. Require New Password on Next Login and maximum connection time set to 60 minutes are selected by default.

2) Enter the user's name.

   For sorting to work properly, enter user names first name first (for example, Joe User).

3) Type a password in the Password text box.

   The user must enter this password when calling the server. Make sure to inform the user of the exact password, including capitalization.

4) Use the Remarks text box to enter information about the user, such as a department or project name.

   This information is included in the server activity log when the user connects to the server and can be useful for call accounting or chargeback applications.

5) Click the Dial-in Access Enabled checkbox so that the user can log in to the server.

If you want to revoke the user's dial-in access at a later time, you can click the checkbox again to deselect this option.

6) Click the Change Password Enabled checkbox if you want to allow the user to change his or her password after logging in.

   This allows the user to make user-initiated password changes. The administrator can also change passwords for any user in the User information window.

7) Click the Require New Password on Next Login checkbox to force the user to create a new password at the next login time.

   This option is deselected once the user changes his or her password. This option works even if the Change Password Enabled option is not selected.

8) If necessary, click the "Maximum connection time" checkbox and enter a time in minutes if you want to limit the amount of time for which the user can connect to the server.

   The default connection time is 60 minutes. You can enter another time if you wish. Deselecting this option will give the user unlimited access time.

9) If you want to require callbacks, click the "Call Back at #" checkbox and type in the callback number.

   The callback number is the telephone number provided to you by a user for remote access. Selecting this option means that when the user calls the server, the server computer will temporarily disconnect the user, then immediately call the user at the number you've entered. The callback feature is optional; it provides an extra level of security, because the user must call from a specific phone number.

   You enter the phone number as if you were dialing directly. Type in any dialing prefixes, such as "1" for long distance calling in the U.S. and an area code. If the server needs to dial an outside line (as in many business phone systems), type the outside line number, followed by a comma. For example, type "9,1-415-555-1234". The comma in this example indicates a pause during dialing so that the modem can connect to an outside telephone line from a PBX. The hyphens are included for readability but are not required.

10) If you selected an external security module in the Server Preferences dialog box, the name of the module appears in this dialog box with a checkbox next to it. Click the checkbox to enable the security feature for this user.

    Note: If you selected the External Security Required for All Users option in the Server Preferences dialog box, the security option will already be selected. The name of the module will be dimmed, and you will not be able to deselect this option.

11) Click the Configure button to configure external security.

    A dialog box appears in which you can set security parameters. Click OK when you have finished.

12) Enable access to one or more zones by making a selection from the "Allow Access to" pop-up menu in the Zones area.

    You can determine which, if any, zone on your network a user can access by selecting an option from the "Allow Access to" pop-up menu. There are four options for user zone access:

    - This Macintosh Only. The user has access only to the services available on the server Macintosh.
    - Only Zones Listed. The user has access to the zones listed in the Zone List in the User information window. The server zone is always part of the list and cannot be deleted.
    - Entire Network. The user has access to all the zones on the network.
    - All Zones Except Listed. The user has access to all the zones on the network except the ones listed in the Zone List in the User information window. The zone the server is in cannot be put on this list because the user always has access to the server zone.

    If you choose Only Zones Listed or All Zones Except Listed, a dialog box appears from which you select which zones will appear on the user's Zone List.

13) Select one of more zones and click Add to add these zones to the Zone List in the User information window.

14) Click Save.

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Tech Info Library Article Number:13925

Tech Info Library

ARA 2.0 MultiPort Server: How To Export User Lists (11/93)

Revised: 11/12/93
Security: Everyone

ARA 2.0 MultiPort Server: How To Export User Lists (11/93)

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Article Created: 15 November 1993

TOPIC ----------

This article describes how to export the User List into a tab delimited text file, which you can then import to another server.

DISCUSSION ----------

To export the User List:

1) Make sure that the User List window is active.

2) Choose Export User List from the Users menu.

   A directory dialog box appears in which you can name the exported User List and save it.

3) Enter a name and click Save.

   The exported list is saved. You can view the list in any application that accepts tab delimited data.

IMPORTANT: Although a Password header appears in the document, passwords are not exported.

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Tech Info Library Article Number:13926

ARA 2.0 MultiPort Server: Getting Users Ready To Use (11/93)

Revised: 11/12/93
Security: Everyone

ARA 2.0 MultiPort Server: Getting Users Ready To Use (11/93)

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Article Created: 15 November 1993

TOPIC ----------

This article describes getting users ready to use the Apple Remote Access MultiPort Server.

DISCUSSION ----------

Make sure that you provide Apple Remote Access Client for Macintosh version 2.0 software and documentation to all registered Remote Access users. Installation instructions are provided with the Apple Remote Access Client for Macintosh User's Guide.

A license and documentation for four clients is included with each Apple Remote Access MultiPort Server you purchase. Additional copies may be purchased individually or in volume through Apple's Volume licensing program.

Before users can log in to the server, you must tell them their login names and passwords. You should also briefly explain what they can expect during the first login. Make sure that the Dial-In Access Enabled option is selected for all users to whom you want to provide dial-in access, and that you have provided them with the dial-in number for the server.

Finally, if your server is using any external security modules, make sure that this software has also been provided to users, and that you have explained how to use it.

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Tech Info Library Article Number:13927

ARA 2.0 MultiPort Server: Importing User List Info (11/93)

Revised: 11/12/93
Security: Everyone

ARA 2.0 MultiPort Server: Importing User List Info (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article describes how to import User List information on the Apple Remote Access MultiPort Server.

DISCUSSION -----

To Import information to a User List:

1) Create a user database file and save it.

2) Choose Import User List from the Users menu.

3) Select a file from the directory dialog box and click Open.

4) Select an option to continue.

   Once the information is imported, the current User List is updated. Any errors that occur during the import are written to the server activity log.

More Detail

You can create a tab delimited text file containing user information, such as names, password, and login access, and then import the information into Remote Access Manager to create a new User List or to add users to the current User List.

NOTE: You cannot import zone information or external security settings.

The first record in the imported file is a header record that contains the names of the fields that are to be imported. The only mandatory field is the Name field, which must be the first field specified. It is used as the key for matching the record in the imported file with the users existing in

the user List. All fields in the header record must have corresponding values in the imported file, or processing will stop at the record with the missing data.

Any record in the imported file that has no match in the existing User List is inserted into the User List. Any fields not included in the header record are replaced with the default values.

To import the information in the tab delimited text file to the current User List, use the Import User List command from the File menu. Once you begin the import operation, a dialog box appears containing the following four options:

- Merge
- Replace
- Ignore
- Cancel

Select one of these options to determine how the information will be imported.

If new records exist in the imported file but do not exist in the User List, they are added to the User List. Fields in new records that do not contain information are filled with the default values. However, if a user name appears in both the file you are importing and in the current User List, the results of the import operation differ depending on the option you select.

Merge

Select Merge to combine the records from the imported file with the records from the User List. Fields in the existing User List are replaced by the fields from the imported file. Any fields that are not specific in the header record remain unchanged and retain the values from the existing User List.

Use the Merge option to add data to an existing User List while retaining some of the existing values. For example, you could change the callback numbers for a set of users without changing their passwords or zone access.

Replace

Select Replace to replace matching records in the existing User List with matching record from the imported file. Fields that are not present in the header record are filled with the default values.

Use Replace if you need to make changes that affect every field in matching records. For example, you can quickly change maximum connection time to the default value.

WARNING: Using the Replace option can cause you to lose information. For example, if the imported file does not specify passwords and you select Replace, the passwords for the matching records in the User List are lost.

Ignore

When Ignore is selected, any record in the imported file that matches an existing record in the User List is skipped, and import continues with the next record in the file. No values in the existing record are changed.

Cancel

Cancels the operation.

IMPORTANT: When you import User List information, you change your current User & Groups Data File. Make sure that you back up this file by duplicating and renaming it in the Preferences folder.

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Tech Info Library Article Number:13928

ARA 2.0 MultiPort Server Features (11/93)

Revised: 11/12/93
Security: Everyone

ARA 2.0 MultiPort Server Features (11/93)

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Article Created: 15 November 1993

TOPIC ----------

This article describes the features for Apple Remote Access MultiPort Server.

DISCUSSION ----------

Ease of installation and use

- Takes only minutes to set up a server and to add users or ports as needed
- Provides built-in context-sensitive help

Multilevel security

- Provides a variety of sophisticated security features, making it one of the most secure remote access servers available
- Is supported by leading third-party security vendors, so administrators can choose to augment its built-in capabilities with additional security modules

Scalable solution

- Turns a single Macintosh computer into a server that can support from 4 to 16 simultaneous connections*
- Runs on a variety of Macintosh computers, so you can choose the system that's appropriate for your needs

Powerful administrative capabilities

- Allows flexible port configurations
- Offers comprehensive user-management facilities
- Supports industry-standard SNMP
- Tracks resource usage and automatically generates an activity log that can be exported for further analysis

Flexible client capabilities

- Supports a variety of connections, including cellular, X.25, and ISDN**
- Is fully integrated with Macintosh System 7, so remote users can work with such familiar tools as the Chooser, Alias Manager, and the Finder

The Apple Remote Access MultiPort Server provides a flexible, scalable, and secure way to offer network access to large numbers of remote or mobile users. Used in conjunction with one or more Apple Remote Access Serial Cards, it converts a single Apple Macintosh computer into a server that can support from 4 to 16 simultaneous connections.* This makes it an ideal solution for workgroups or entire organizations that want to enable employees to work productively and efficiently no matter what their location, whether they're in the office, out of town, or even out of the country.

Unlike conventional complex server software, the Apple Remote Access MultiPort Server is designed to streamline administrative tasks, while maximizing administrator productivity and control. The software installs in minutes and features sophisticated management capabilities, including industry-standard Simple Network Management Protocol (SNMP) support. This allows administrators to flexibly manage and maintain connections. Adding ports is simple, and the server features an automatically generated activity log that can be exported to a variety of programs for further analysis.

On the client side, the Apple Remote Access Client for Macintosh software is also designed with efficiency and productivity in mind. From its single-step installation to such productivity-enhancing features as full System 7 integration and extensive connection-management capabilities, it provides everything users need to help them get their work done easily and efficiently—wherever they are.

Users can also rest assured that their work will be secure. The Apple Remote Access MultiPort Server offers a host of sophisticated security features that allow administrators to maintain the integrity of the network. These features, such as password aging, location validation, and the ability to filter access to services, make it one of the most secure remote access servers available. And because its security architecture is supported by leading third-party security vendors, administrators can choose to augment the server's built-in security features with additional challenge-and-response security modules.

* The Apple Remote Access MultiPort Server includes support for 4 ports. Support for 8, 12, or 16 ports requires purchase of 1, 2, or 3 Apple Remote Access MultiPort Server 4-Port Expansion Kits (respectively) and additional Apple Remote Access Serial Cards and Apple RS-232 cables.

** X.25, ISDN, and cellular connections require additional Apple or third-party products.

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Tech Info Library Article Number:13929

Tech Info Library

ARA 2.0: Requirements, Remote Access MultiPort Server (5/95)

Revised: 5/24/95
Security: Everyone

ARA 2.0: Requirements, Remote Access MultiPort Server (5/95)

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Article Created: 15 November 1993
Article Reviewed/Updated: 24 May 1995

TOPIC ----------

This article describes the minimum requirements for using the Remote Access MultiPort Server.

DISCUSSION ----------

Hardware requirements

The following are the hardware requirements for setting up and running a Remote Access MultiPort Server:

- Any Macintosh computer with slots for 12-inch NuBus cards and an Apple SuperDrive for high-density floppy disks.
- 5MB RAM for a 4-port server; 8MB RAM for a 16-port server
- A hard disk
- An Apple Remote Access Serial Card and an Apple RS-232 cable
- One or more high-speed modems
- A telephone line for each modem

Software requirements

Your Remote Access MultiPort Server package includes installer disks, which contain all the software you need to run the Remote Access MultiPort Server and Remote Access Manager application. Additionally, you must be running system software version 7.0 or later on your server computer (7.1 is recommended).

Macintosh clients need to run System 7 and should have either Apple Remote Access Personal Service for Macintosh version 2.0, or Apple Remote Access Client for Macintosh version 2.0 software installed.

Network requirements

Connect your Remote Access MultiPort Server to an AppleTalk network using the same type of networking software and cable types as used with other devices on your network. Any AppleTalk network is capable of supporting a Remote Access MultiPort Server. The most common network choices are LocalTalk, Ethernet, and Token Ring.

Article Change History:
24 May 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:13930

ARA 2.0 Personal Service or Client and PowerBook (11/93)

Revised: 11/12/93
Security: Everyone

ARA 2.0 Personal Service or Client and PowerBook (11/93)

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Article Created: 15 November 1993

TOPIC ----------

This article describes potential problems you may encounter while using Apple Remote Access Personal Service or Client on PowerBook computers and offers suggestions for solving these problems.

DISCUSSION ----------

1) When running Remote Access Personal Service or Client on any PowerBook with an internal modem:

   Remember that the PowerBook control panel controls which physical modem port the PowerBook will use. Make sure your port selection in the Remote Access Setup window and modem script selection are consistent with the PowerBook control panel.

   For example, if you want to use your internal Apple Data Modem, you must do the following:

   - In the PowerBook control panel, click the Internal Modem button.

   - In the Remote Access Setup window, choose Apple Modem 2400 from the Modem pup-up menu.

2) When running Apple Remote Access Personal Service or Client on any model PowerBook with an Express Modem:

   - In the PowerBook control panel you change from Internal to External Modem. Then you go to the Remote Access Setup window to select the appropriate port and there is no external modem pop-up selection. You need to close the Remote Access Setup window, then open it again to get both selections.

   - You have an active Remote Access connection using the Express Modem.

If the PowerBook goes to sleep (either because you put it to sleep or because it went to sleep automatically) the PowerBook will freeze. Restart your computer by pressing the reset button. In order to have the Sleep option function correctly, you must first disconnect your Remote Access connection.

- Disregard the Express Modem Read Me which states that you should automatically remove the Serial Port Arbitrator from the Extensions fold in the System Folder. Only remove the Serial Port Arbitrator if it is causing problems (for instance, other programs that use the serial port don't function properly, you see a dialog box that says the serial port is in use, or your PowerBook freezes during shutdown).

3) When running Apple Remote Access Personal Service on any model PowerBook that contains an Express Modem:

- You have the "Answer Calls" checkbox selected in the Remote Access Setup window and change from External to Internal Modem in the PowerBook control panel. An alert box appears which states, "This setting cannot be changed while the Internal Modem is in use." Click the Cancel button and then:

  - In the Remote Access Setup window, deselect the "Answer Calls" checkbox
  - In the PowerBook control panel, click the Internal Modem button
  - In the Remote Access Setup window, click the "Answer Calls' checkbox

- You have the "Answer Calls" checkbox selected in the Remote Access Setup window. If you go to the Express Modem control panel and click the Off button and then click the On button, you will have disabled you ability to answer or make calls. You must restart your computer.

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Tech Info Library Article Number:13932

Tech Info Library

ARA 2.0 Personal Server for Macintosh Features (11/93)

Revised: 11/12/93
Security: Everyone

ARA 2.0 Personal Server for Macintosh Features (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article describes the features for Apple Remote Access (ARA) Personal Server for Macintosh.

DISCUSSION -----

Ease of use

- Installs in only minutes
- Provides everything you need for both the calling and the answering Macintosh computers—client and server software—in one convenient package*
- Lets individuals or small organizations access services remotely, in the same intuitive way as they work with services locally
- Requires no specialized equipment

Adaptability

- Enables individuals or small organizations to take advantage of remote access to a single Macintosh computer or an entire AppleTalk network
- Supports a variety of leading modems
- Supports a range of network types, including LocalTalk, Ethernet, and Token Ring

High performance

- Features built-in industry-standard data compression and error detection
- Provides increased efficiency, with Apple's smart-buffering technology
- Is optimized for a variety of connection types

Built-in security

- Includes several security options that allow you to restrict access to information

- Generates an activity log to track usage

Flexible client capabilities

- Supports a variety of connections, including cellular, X.25, and ISDN**
- Is fully integrated with Macintosh System 7, so remote users can work with such familiar tools as the Chooser, Alias Manager, and the Finder

ARA Personal Server software includes everything you need to allow a Macintosh computer to communicate with another Macintosh or an entire AppleTalk network over standard telephone lines. It takes only minutes to set up and offers powerful capabilities that can help make an individual or a small workgroup of Macintosh users even more productive, no matter where they are.**

With ARA Personal Server, you can work wherever you like, at home or on the road, and retain access to all of the resources of your office computer or network. You and your colleagues can send and receive electronic mail, collaborate on a shared project, or print to a network-connected printer. Yet doing all of this is as simple as if you were working at your office.

Getting started with ARA Personal Server is easy. The software features single-step installation that requires no special technical knowledge. And ARA Personal Server adjusts automatically to the type of network you're calling, leaving you free to focus on your own work instead of worrying about the details of networking.

In today's increasingly complex and mobile world, ARA Personal Server provides convenient, direct access to information and resources at a remote location for computer users on the go. So, whether you want to share files with a neighbor or collaborate on a project with colleagues around the world, ARA Personal Server can help you get the job done quickly, easily, and affordably.

* Includes software for one client. Additional client software must be purchased or licensed separately.

** X.25, ISDN, and cellular connections require additional Apple or third-party products.

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Tech Info Library

ARA 2.0 Personal Server Tech Specifications (11/93)

Revised: 11/12/93
Security: Everyone

ARA 2.0 Personal Server Tech Specifications (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article describes the technical specifications for Apple Remote Access (ARA) Personal Server for Macintosh.

DISCUSSION -----

Modem support and scripts

- Supports any Hayes-compatible 2400-bps, 9600-bps, or higher-speed modem with the appropriate script. Modem scripts for many popular modems are included:

  - V.32bis modems (14,400 bps): Apple Express Modem, Global Village PowerPort Gold, Global Village TelePort Gold, Hayes Optima 144, Microcom QX4232bis, Prometheus ProModem 144e, PSI Powermodem IV, Supra SupraFax v.32bis, Telebit T3000, Telebit WorldBlazer

  - V.32 modems (9,600 bps): Global Village PowerPort Silver, Global Village TelePort Silver, Prometheus Promodem 96, PSI Powermodem III, Supra SupraFax Modem Plus, Telebit QBlazer , Telebit T1600, US Robotics Sportster, US Robotics Worldport

  - V.22bis modems (2400 bps): Apple 2400, Global Village PowerPort Bronze, Global Village TelePort Bronze, Hayes Optima 2400, Microcom AX 2400C, Prometheus Promodem 24, PSI PowerModem II

- Cellular Support: Applied Engineering DataLink PB and Applied Engineering Axcell Cellular Interface, Microcom Cellular Data Link 300

- ISDN support: Hayes ISDN adapter

- Additional scripts may be available. Contact an authorized Apple dealer or representative or your modem manufacturer for more details.

- If you understand connection control languages (CCLs) and are an experienced programmer, you may be able to write the necessary modem script yourself.

Network types supported

- Support for any AppleTalk network; the most common network choices include:
  - LocalTalk
  - Ethernet
  - Token Ring

Connection types supported

- Standard telephone
- Cellular*
- ISDN*

Error detection, Data compression

- Support for several built-in components that allow for error-free and optimized delivery of data
  - Smart buffering (developed by Apple Computer) for data-transfer optimization
  - MNP, an industry standard for error detection
  - V.42bis, an industry standard for data compression

Security

- User name and password authentication
- Callback feature that verifies the user's identity by returning calls to a predetermined phone number
- Activity log for recording calling and answering activities
- User account disabled after seven incorrect password attempts

Specifications

- Maximum number of simultaneous connections: 1
- User name maximum length: 31 characters
- Password maximum length: 8 characters
- Maximum connect time: selectable
- Total number of user records: 100
- Maximum number of activity log entries:1,000

Licensing information

- Comes with license to copy and install the Apple Remote Access Personal Server software for your own use on up to two Apple computers owned and/or operated by you.
- Additional client software must be purchased or licensed separately; consult your authorized Apple reseller or representative for information.

System requirements

- A Macintosh Plus or later model with at least 4MB of RAM
- A hard disk drive
- Macintosh system software version 7.0 or later
- An Apple or other Hayes-compatible modem (2400 bps minimum; 9600 bps or higher speed recommended) and appropriate modem cable, if needed
- Apple Remote Access Client for Macintosh version 2.0

Ordering Information

Apple Remote Access Personal Server for Macintosh
Order No. M2726Z/A

- Apple Remote Access Personal Server software and installer
- Apple Remote Access Personal Server for Macintosh User's Guide
- Apple Remote Access DialAssist quick-reference card
- Modem scripts for a range of Hayes-compatible modems (additional modem scripts may be available; contact an authorized Apple reseller or representative, or your modem manufacturer, for details)

Apple Remote Access Personal Server Upgrade Kit
Order No. M2678Z/A
Upgrades AppleTalk Remote Access Personal Service version 1.0 to Apple Remote Access Personal Server software version 2.0

Apple Remote Access Client for Macintosh (single-pack)
Order No. M5227Z/A

Apple Remote Access Client for Macintosh 10-Pack
Order No. M2692Z/A

Apple Remote Access Modem Toolkit version 2.0
Order No. R0129LL/C

This product is available from APDA.

* ISDN and cellular connections require additional third party products.

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Tech Info Library

ARA MultiPort Server: Basic Security Information (11/93)

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ARA MultiPort Server: Basic Security Information (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article provides basic information about the Apple Remote Access MultiPort server's security.

DISCUSSION -----

You can establish and control server security through a number of features in the Remote Access Manager software.

User Registration

Guest User is a generic account for guest users of remote access service. Anyone on the network can be a guest; a guest is not assigned a password and generally has limited network access. In the interest of security, you should limit the amount of access that guests have on your network.

A registered user is anyone for whom you have assigned a user name, password, and security options.

Password and callback security

You can increase the security of your network by requiring that each registered user enter a password to access the server. You should provide registered users with a unique password the first time they log in and require that they change the password at that time. Selecting the Require New Password on Next Login option in the User information window will ensure that all users must change their passwords after the first time they log in.

Requiring a callback number for users further ensures security because users can only connect to the server using a telephone number that they have provided to you. When a user successfully logs in, he or she is immediately disconnected from the server. The server then attempts to make

a connection at the callback number listed for that user. If the telephone number is valid, a connection is made.

Zone access

Zones are logical subdivisions of a network in which services such as file servers, printers, and other individual Macintosh computers reside. Zones appear in the Chooser window. You can use zones to organize services into logical groups. The Apple Remote Access MultiPort Server administrator can assign each user access to specified zones on the network.

Security Zone

The Security Zone feature prevents individuals from setting up an Apple Remote Access MultiPort Server or Apple Remote Access Personal Service without an authorizing password. Security Zone software is provided on the Apple Remote Access MultiPort Server Toolkit disk. For instructions on how to implement this feature, see the Read Me file provided with the software.

External security

You can provide an additional level of security by implementing third-party, external security. For example, additional security would be appropriate for those who need roving access (for PowerBook users). Two types of external security are available: line-level security and protocol-level security.

Line-level security provides security at the telephone line level and usually consists of hardware that is connected to the server and security software module that is placed on the clients' workstation.

Protocol-level security provides security at the software level and usually consists of security software modules that are placed on both the server and the clients' workstations. You can install more that one security module on both the server and clients' workstations, but you can activate only one security module at a time.

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Tech Info Library Article Number:13935

ARA MultiPort Server Shares User Data With AppleShare (11/93)

Revised: 11/12/93
Security: Everyone

ARA MultiPort Server Shares User Data With AppleShare (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article describes the sharing of user database information between AppleShare and Apple Remote Access (ARA).

DISCUSSION -----

If you have installed the Apple Remote Access MultiPort Server on the same computer as your AppleShare server, the user database is shared between them. The user database is called the "User List" in ARA and the "Users & Groups Data File" in AppleShare.

All users from the AppleShare Users & Groups Data File appear in the Remote Access Manager User List as registered users, but you must select login and callback options for them. Remote Access Manager does not support the AppleShare Groups feature; any groups that you have created with AppleShare do not appear in the User List.

IMPORTANT: Any changes you make to the User List, such as adding or deleting users, will affect the AppleShare Users & Groups Data File.

Any changes that you make to a User information window, such as changing the login name or password, also affects the AppleShare Users & Groups Data File.

IMPORTANT: Since AppleShare Admin and Remote Access Manager use the same user database, you cannot run both applications at the same time. However, if you lock the Remote Access Manager, you can run the AppleShare Admin application. To lock the Remote Access Manager, choose Lock Server Manager from the Server menu.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13936

Tech Info Library

ARA 2.0: Starting the MultiPort Server After Booting (11/93)

Revised: 11/12/93
Security: Everyone

ARA 2.0: Starting the MultiPort Server After Booting (11/93)

==========

Article Created: 15 November 1993

TOPIC -----

This article describes what needs to be done to start the Apple Remote Access MultiPort Server immediately after the server's computer boots.

DISCUSSION -----

The Remote Access Manager application does not have to running for the server to be active. However, the Remote Access Manager must be run once to start up the server. After that, you can quit the Remote Access Manager and the server will keep running.

If you want the server to automatically start up when the server's computer is booted up, place the Remote Access Manager application (or an alias) in the Startup Items folder, located in the System Folder.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13937

Apple Remote Access: Underlying Technology (11/93)

Revised: 11/12/93
Security: Everyone

Apple Remote Access: Underlying Technology (11/93)

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Article Created: 15 November 1993

TOPIC ----------

This article describes the underlying technology of Apple Remote Access for Macintosh.

DISCUSSION ----------

ARAP 2.0

The AppleTalk Remote Access Protocol (ARAP) provides efficient AppleTalk services on a per client basis over slow links. It defines the login and authentication sequences. The ARAP specification has been enhanced to include the ability to change passwords, to allow password retries, to authenticate a user using external third-party security devices, and to send out-of-band messages such as alerts and greetings. In addition to the above enhancements, ARAP Version 2.0 will now allow administrators of the Apple Remote Access Server to set the specific zones each user can see.

Note: The protocol enhancements are what allow for the new functionality; therefore, the client side of Apple Remote Access is compatible with ARAP 1.0 based products, however, users will not be able to take advantage of the ARAP 2.0 features when connecting to ARA 1.0 servers.

Also the client side of ARA 1.0 is not compatible with the ARA 2.0 servers.

Remote password change

Provides a method for a user to remotely change their password (without having to use AppleShare as was necessary with 1.0). Allows the administrator to set the number of retries allowed before user logon is disabled. Also allows the administrator to force users to change their

passwords via the "New password required" dialog.

Roving access security

Dial-back is not satisfactory for everyone who wants both security and mobility. We now add mobile security to our feature list by allowing for the use of third-party "security cards". With some "security cards" the user must type in a personal code and a requestor code into a credit card size calculator like device. The device will then return the SecureID. Other "security cards" are time based and constantly display current SecureID information. When trying to make a connection to a secure server, the user will see a dialog box requesting a SecureID. Without the SecureID and the standard username and password the user will not be able to get in to the network.

The ARAP 2.0 protocol was defined such that security extensions can be added as drop-in modules. Several third party security vendors have agreed to write the extensions that will allow their products to work with our servers.

X.25 connectivity

The new server software contains extensions that allow a user to connect to Remote Access through an X.25 network. This type of access is valuable in situations where the cost of X.25 asynchronous dial-up service is less than the cost of end-to-end service through the phone companies.

Remote administration

Since the initial release of ARA 1.0, large business users have requested enhanced remote administration and management capability. Remote administration allows for the servers to be locked up in a secure area and still be managed from the administrators desk. Customers often have many servers and would prefer to maintain only one database of registered users. Remote administration addresses this need by providing for the remote location of a shared user database. Integrated network management via SNMP is now a part of the MultiPort servers as well.

DialAssistant

This is a client software feature that makes long distance, credit card, international, and private PBX calling extremely easy for the user. The software is preconfigured with all of the most common dialing codes so that a user only has to select items from two pop-up menus.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13938

System 7.1 Commonly Asked Questions (9/94)

Revised: 9/28/94
Security: Everyone

System 7.1 Commonly Asked Questions (9/94)

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Article Created: 12 November 1993
Article Reviewed/Updated: 28 September 1994

TOPIC ----------

This article presents common customer questions about system software version 7.1, and the answers.

DISCUSSION ----------

Q. What is WorldScript?
A. WorldScript supports most written languages in the base system software. WorldScript includes support for text input and display, as well as for incorporating language attributes, such as date and time formats.

This technology is incorporated into System 7.1 to provide the same system-level support for non-Roman languages, such as Japanese and Arabic, that Apple has always provided for Roman languages, such as English, French, German, and Spanish.

Q. Why am I getting a message about a 128-file limit on the Fonts folder?
A. The Fonts folder can hold a maximum of 128 files. This includes font suitcases, and individual font files like bitmapped (or screen) fonts and TrueType fonts. It doesn't include PostScript (or printer) fonts.

Suitcases can contain multiple font families and can be as large as 16MB. If you have more than 128 files, place individual bitmap or TrueType font files into suitcases, or merge suitcases. Merge suitcase files by dragging one suitcase file on top of another suitcase file.

Q. How do I create a font suitcase?
A. You can't create a font suitcase with System 7.1, but you can

duplicate an existing suitcase. If you need an empty suitcase, duplicate a suitcase and throw away its contents. You can duplicate the remaining suitcase as many times as you need.

Q. Is System 7.1 slower than System 7.0?
A. No. There are a few things you should check if performance seems slow:

- Make sure File Sharing and Virtual Memory are off when not in use.
- Check all third-party extensions for compatibility with System 7.1.
- Check the Views control panel to make sure "Calculate Folder Sizes" isn't checked.

Q. I'm using Adobe Type Manager and Suitcase with System 7.1. Do I need an upgrade?
A. System 7.1 requires version 3.0 or later of Adobe Type Manager (from Adobe Systems) and version 2.1.2 or later of Suitcase (from Fifth Generation Systems). Contact the manufacturers for specific upgrade information.

Q. I just upgraded from System 6, and now I'm getting random system errors.
A. Make sure all devices in the SCSI chain attached to your Macintosh computer are powered on before you start it up.

Try starting your Macintosh computer while holding down the Shift key to turn all extensions off. This will identify an extension (or INIT) conflict. If no errors result, an extension probably conflicts with the system or other extensions.

If your computer crashes when you have Virtual Memory on, contact your hard drive vendor to verify that your hard drive formatting software is compatible with System 7.1.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
28 Sep 1994 - Reviewed for consistency and fixed format.

Support Information Services

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Tech Info Library Article Number:13939

Tech Info Library

MODE32: Boot Drive SCSI ID Must Be Zero (9/94)

Revised: 9/12/94
Security: Everyone

MODE32: Boot Drive SCSI ID Must Be Zero (9/94)

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Article Created: 15 November 1993
Article Reviewed/Updated: 12 September 1994

TOPIC ----------

My Macintosh seems to continually restart if I install MODE32. If I boot from a floppy, the problem goes away so it appears to be related to MODE32. I need to use MODE32, what's wrong?

DISCUSSION ----------

If your boot drive uses software to change the SCSI ID, then you will need to set the ID to 0 if you are using MODE32, otherwise the machine just seems to continually restart.

Here is the technical explanation of what is going on. MODE32 must "stutter-start" the machine since the ROMs only have a 24-bit memory manager and some software (like the disk's driver) have already loaded and would have loaded in a different place if 32-bit addressing had been enabled. So, as soon as possible in the boot process, MODE32 gives the machine a 32-bit memory manager, and effectively restarts the machine to let things load in their proper space.

A potential problem exists here however. What if the machine then restarts off another disk? Perhaps it didn't spin-up quickly enough, or the user inserted a floppy at the wrong instant. The new disk may not even have MODE32 on it! So, if MODE32 detects restarts from a different SCSI ID, it does a full restart, figuring that by now all the disks should be up to speed, and the machine will consistently choose the same startup disk.

Some SCSI drives, however, use software to control their SCSI ID, and effectively restart (for a moment) as SCSI ID 0 no matter what the jumpers are set to. The only way MODE32 can work with these disks is to change the SCSI ID to 0 so it will be the same on both boots.

Article Change History:
12 Sep 1994 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:13945

Tech Info Library

Newton Fax Modem: No Modem Connected Message (11/93

Revised: 11/15/93
Security: Everyone

Newton Fax Modem: "No Modem Connected" Message (11/93

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)Article Created: 15 November 1993

TOPIC ----------

I connected my Newton Fax Modem to my Newton MessagePad and to the telephone line. When I try to dial a phone number with the modem, my Newton displays the message "No Modem Connected."

What do I do now?

DISCUSSION ----------

If you see the message "No Modem Connected" when you try to dial a phone number, follow these steps:

1) Reset your Newton by pressing its reset switch.

2) Check your Fax Modem's power source. If the battery status light (the red LED) is on, your batteries are low. Replace the batteries or connect the AC adapter.

   Note: If the Fax Modem's batteries are completely discharged, the LED won't light.

3) Reset your Fax Modem by removing the batteries and disconnecting the AC adapter. Then replace the batteries and/or reconnect the AC adapter.

   This will reset the internal modem circuitry. Your Fax Modem should now work.

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Tech Info Library Article Number:13947

Tech Info Library

Newton Battery Booster Pack: When To Change Batteries (11/93)

Revised: 11/15/93
Security: Everyone

Newton Battery Booster Pack: When To Change Batteries (11/93)

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Article Created: 15 November 1993

TOPIC --------------------

How do I know when to change the batteries in the Newton Battery Booster Pack?

DISCUSSION --------------------

The battery gauge inside the Extras drawer displays the remaining capacity of all the Newton MessagePad's batteries. When the batteries are exhausted, the battery gauge's display bar will disappear and you will see a warning message on MessagePad's display.

The battery gauge reports the combined status of both the Booster Pack batteries and Newton's internal battery pack. When you see the low battery warning message, you must:

- Change all eight Booster Pack batteries

  and

- Either remove the internal battery pack or replace its batteries.

You do not need the internal battery pack in the Newton MessagePad while you are using the Battery Booster Pack. If your MessagePad has alkaline batteries in its battery pack, Newton will draw power from its internal battery pack and from the Booster Pack.

Do NOT attach a Battery Booster Pack to a MessagePad that contains a rechargeable internal battery pack, since this will shorten the life of the Booster Pack Batteries.

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Tech Info Library Article Number:13948

Tech Info Library

Newton Connection Kit: Connecting to Undocked Duo (11/93)

Revised: 2/23/94
Security: Everyone

Newton Connection Kit: Connecting to Undocked Duo (11/93)

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Article Created: 15 November 1993
Article Revised/Updated: 23 February 1994

TOPIC ----------

Whenever I use the Newton Connection Kit to synchronize my Newton MessagePad with an undocked PowerBook Duo, the Connection Kit returns an error message that says no connection could be established.

How can I make this configuration work?

DISCUSSION ----------

To use the Newton Connection Kit with an undocked PowerBook Duo, follow these steps:

1) Turn AppleTalk off by opening the Chooser application from the Apple Menu and clicking the AppleTalk Inactive radio button.

2) Connect one end of the serial communications cable to the Duo's modem/printer port.

3) If you are using a Duo 250 or 270c, open the PowerBook Setup Control Panel and set the modem setting to Normal; otherwise, set the Modem Control Panel settings to External Modem.

4) Connect the other end of the serial communications cable to the Newton's communications port.

You should now be able to operate the Newton Connection Kit with your PowerBook Duo.

Article Change History -
23 February 1994 - Added information on the Duo 250 and 270c Control Panel.

..TIL13949-Newton_Connection_Kit-Connecting_to_Undocked_Duo_11-93_(TA30564).pdf

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Tech Info Library Article Number:13949

Tech Info Library

Newton MessagePad: 0011 Prefix Before Phone Number (11/93)

Revised: 11/15/93
Security: Everyone

Newton MessagePad: 0011 Prefix Before Phone Number (11/93)

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Article Created: 15 November 1993

TOPIC ----------

When I use the Assist button to place a phone call, the numbers '0011' are inserted before the phone number.

How can I stop this from happening?

DISCUSSION ----------

The numbers '0011' are being inserted in the Assist slip because your Newton MessagePad thinks this is an international call.

When you set your Country preference in your Personal Preferences, you must tap Country, then select a country from the list that appears.

If you write the country name in the Country preference blank instead of selecting from the list, your MessagePad will not understand what country you are in and this problem will occur.

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Tech Info Library Article Number:13950

Tech Info Library

Newton MessagePad: How to Avoid Scratching the Touchpad (11/93)

Revised: 11/15/93
Security: Everyone

Newton MessagePad: How to Avoid Scratching the Touchpad (11/93)

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Article Created: 15 November 1993

TOPIC -----

How do I avoid scratching the Newton MessagePad's touchpad?

DISCUSSION -----

The Newton MessagePad's touchpad (or screen) can be scratched quite easily. Here are some useful tips you can use to avoid scratching the touchpad.

- Only use the pen that was included with the Newton or other plastic-tipped pens designed for use with touch-sensitive screens, on the Newton's touchpad.
- Only clean the touchpad with a clean, soft, dry cloth. A chamois cloth works well.
- Do NOT use any solvent or cleaner on your Newton's touchpad!
- Clean your Newton's touchpad and pen often.
- Cover the touchpad when you're not using it to avoid the buildup of dust.
- If the touchpad has been exposed to dust for any length of time, clean it and your pen before writing.
- If, while writing, you discover that the pen seems to 'feel' different, IMMEDIATELY stop writing and clean both the touchpad and the pen. Debris on either device can cause the pen to 'feel' different when writing and scratch the touchpad.

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Tech Info Library Article Number:13951

Tech Info Library

Newton 1 MB Storage Card: How to Replace the Battery (1/97)

Revised: 1/24/97
Security: Everyone

Newton 1 MB Storage Card: How to Replace the Battery (1/97)

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Article Created: 15 November 1993
Article Reviewed/Updated: 24 January 1997

TOPIC ----------

How do I change my Apple MessagePad devices 1 MB SRAM Storage Card's backup battery without losing the card’s contents?

DISCUSSION ----------

As a Static RAM card, the 1 MB card requires a battery to maintain the contents when it is not installed in Newton. Storage cards that use batteries should have their battery life closely monitored and should have their batteries replaced approximately once a year. The Newton hardware warns you if the battery needs replacement. Apple 2MB Flash Storage Card and 4MB Flash Storage Cards use Flash memory technology, which does not need batteries to preserve memory.

Apple originally shipped the 1 MB card with a 3-volt Duracell DL 2325 lithium disk battery. This battery is no longer made by Duracell. The equivlant battery is Panasonic and Rayovac BR-2325.

If possible, leave the 1 MB card inside your Newton to maintain contents when replacing the battery. If you replace the backup battery with outside the Newton, replace the battery in 10 minutes or you may cause data loss.

To replace your storage card's battery, follow these steps:

1) Slide the switch on the top edge of the card into the unlocked position.

2) On the top edge of the card, you'll find a small slot.Using acoin or a fingernail for leverage in the slot, pull the battery carriage out of the card.

3) Place the battery in the carriage slot, making sure the plus (+) side is facing up. Wipe your fingerprints from the surface of the battery.

4) Gently push the carriage back into the slot until you hear a small click.

Article Change History:
24 Jan 1997 - Added current battery information.
18 Jun 1996 - Added battery type information.

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Tech Info Library Article Number:13953

Tech Info Library

Newton MessagePad: Separating Imported Name File Data (11/93)

Revised: 11/15/93
Security: Everyone

Newton MessagePad: Separating Imported Name File Data (11/93)

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Article Created: 4 November 1993

TOPIC -----

When I import data from my Sharp Wizard OZ/IQ 9600 to my Newton MessagePad, a single field in my Names application receives ALL of the imported data.

How can I separate this data string without losing any of the data?

DISCUSSION -----

There are three different methods to separate your data. One method uses the Newton Connection Kit, while the other two methods use the MessagePad's clipboard.

If you own the Newton Connection Kit, follow these steps:

1) Synchronize your data with your Macintosh or MS-DOS/Windows-compatible computer.

2) Copy and paste individual pieces of the string to their appropriate fields using your computer.

3) Save all files and re-synchronize after you've finished copying your data.

If you do not own the Newton Connection Kit Software, you can use the MessagePad's clipboard to separate data. Here is the first method:

1) Select the first piece of information from the combined data string.

2) Drag the selected piece of data to the upper-right corner of the MessagePad screen.

3) Expand the field that you wish to place your data into by tapping on it.

4) Drag your data from the clipboard into the expanded field.

5) Repeat the process for the remainder of the string.

The other method is to:

1) Select the entire data string and drag it to the upper-right corner of the MessagePad's screen.

2) Open the Note Pad application and drag the data string into the Note Pad.

3) Divide the data string into its appropriate items.

4) Select each data item and drag them to the upper-right corner of the screen.

5) Move each data item back into the appropriate field in the Names file.

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Tech Info Library Article Number:13954

Tech Info Library

Newton Fax Modem Card: Description (11/93)

Revised: 11/15/93
Security: Everyone

Newton Fax Modem Card: Description (11/93)

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Article Created: 15 November 1993

TOPIC ----------

This article describes the Newton Fax Modem Card.

DISCUSSION ----------

The Newton Fax Modem Card is a PCMCIA-based data/fax modem. It has all the features and functionality of the external Newton Fax Modem, but is built into a type II PCMCIA card.

The Newton Fax Modem Card communicates data at 2400 bits per second and sends faxes at 9600 bits per second. It's compatible with the Hayes AT command set, Group 3 fax standard, MNP 2 and 4 error correction, and V.42bis and MNP 5 data compression.

The Newton Fax Modem Card can be inserted into the Newton MessagePad and allows users to send faxes or communicate via NewtonMail and other online services.

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Tech Info Library Article Number:13956

ARA 2.0: Third-Party Vendor Support (11/93)

Revised: 11/16/93
Security: Everyone

ARA 2.0: Third-Party Vendor Support (11/93)

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Article Created: 15 November 1993

TOPIC

This article provides information on Third-Party vendor support for Apple Remote Access product family.

DISCUSSION

More than 12 leading third-party vendors will be shipping products built upon the Apple Remote Access product family architecture. The Apple Remote Access product family architecture consists of the new AppleTalk Remote Access Protocol (ARAP) 2.0 and Application Programming Interfaces (APIs). Third-party vendors utilizing the Apple Remote Access product family architecture offer Apple Remote Access users a wide variety of solutions, enhancements and options.

The Apple Remote Access architecture empower third-party vendors to create a variety of service solutions including: the building of stand-alone remote access servers, security enhancements, and reporting applications.

To locate a vendor's address and phone number, use the vendor name as a search string.

Apple Remote Access Portability

Leading companies such as APT Communications, Inc.; Cayman Systems; Cisco Systems, Inc.; Computer Methods Corporation; FCR Software, Inc.; Global Village Communication, Inc.; Pacer Software, Inc.; Shiva Corporation; Telebit; Webster Computer Corporation; and Xylogics, Inc. have announced independent products that support ARAP 2.0. These companies are building server functionality into other devices such as: dial-in communication equipment, routers, bridges, print and file servers and other computer systems or stand alone products.

Integrated Security Solutions

Key security vendors such as Digital Pathways, Inc.; MicroFrame, Inc.; Open Computing Security Group (OCSG); and Security Dynamics, Inc. have announced Apple Remote Access security products. These security products augment the advanced security features already found in the Apple Remote Access MultiPort Server and adhere to recognized security standards such as Kerberos network access security, Digital Encryption Standard (DES) password scrambling, and other token and card-based systems. The security functionality is added by the vendors through the Apple Remote Access security architecture which includes a Client and Server Security Application Programming Interface (API).

Reporting and Call Accounting

Additional third-party opportunities are available through the Apple Remote Access MultiPort Server logging system. They can incorporate the logging information into network management and resource allocation solutions. This information is readily available to any solution since it is stored as tab-delimited text. Examples of accessible information include: date and time of connections, disconnection, and connection-attempts events. Other available information includes user IDs, optional accounting and charge back identification information.

Remote Access Client Interfaces

Third-parties can also hook their applications directly into the Apple Remote Access Client through the architecture's API for the customization of commercial and in-house applications. This allows third-party applications to dial-out and make connections transparently to remote networks without the users knowledge or training of Apple Remote Access Client software. Examples of companies developing these kinds of products include Farallon Computing, Inc. and No Hands Software.

Modem and Terminal Adapter Support

While Apple has included automated modem scripts in it's new products for most of the leading modem and ISDN terminal adapter companies, it has also created the Apple Remote Modem Access Scripting Guide and the Modem Workshop Software, which allows modem vendors, in-house developers, and other technical users to write scripts for their particular modems, terminal adapters or PBX systems.

Apple Remote Access Architecture Products and Availability

The Apple Remote Access architecture consist of the enhanced AppleTalk Remote Access Protocol (ARAP) 2.0 specification and Application Programming Interfaces (APIs). The ARAP 2.0 specification provides the necessary interfaces for building compliant servers. The APIs include the security and client application interfaces. The protocol specifications and APIs are available in the AppleTalk Remote Access Protocol Developers Kit V.2.0. The Modem Scripting Guide and Modem Workshop software are available in the AppleTalk Remote Access Modem Tool Kit V.2.0. Each of these tool kits are available from APDA, Apple's source for developer tools.

..TIL13958-ARA_2-0-Third-Party_Vendor_Support_11-93_(TA30570).pdf

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Tech Info Library Article Number:13958

Tech Info Library

Apple Remote Access General Q&A (11/93)

Revised: 11/16/93
Security: Everyone

Apple Remote Access General Q&A (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article contains general questions and answers on Apple Remote Access for Macintosh.

DISCUSSION -----

Q) What is Apple announcing at Comdex in regards to remote access?
A) Apple is introducing a new family of remote access products. The new Apple Remote Access product family allows individuals and workgroups of any size to easily access information and services remotely over a variety of connections, ranging from standard telephone lines to ISDN.

Q) What are the new products?
A) The new product family includes the Apple Remote Access MultiPort Server, Apple Remote Access Personal Server for Macintosh and Apple Remote Access Client for Macintosh. The product family also includes several associated remote access products, including the Apple Remote Access MultiPort Server X.25 Extension Kit, the Apple Remote Access Client for Macintosh 10-Pack, Apple Remote Access Client for Macintosh Upgrade Kit and the Apple Remote Access Personal Server for Macintosh Upgrade Kit.

Q) What is the difference between these products?
A) Each product in the family is designed to provide a solution for different customer needs. The Apple Remote Access MultiPort Server is a multiline solution offering the most versatile and secure way to provide remote network access for a large number of dial-in users. The Apple Remote Access Personal Server for Macintosh is a single-line all-in-one remote access solution providing the easiest and most affordable way to offer remote network information and resources for individuals and small organizations. Apple Remote Access Client for Macintosh is the best way to connect to remote network services—anytime, anywhere, and with any Apple Remote Access-compatible server, including Apple's MultiPort and

Personal Server products.

Q) What are the specific differences between AppleTalk Remote Access version 1.0 and Apple Remote Access Personal Server?

A) The major differences lie in two areas: product positioning and client-side features. Apple's original offering targeted anyone who needed remote access to an AppleTalk network.. Now that we have a product family, the positioning for Apple Remote Access Personal Server has become more specific: It provides a single-line solution for individuals and small workgroups that have relatively low-volume remote access needs. Apple's feature enhancements were to the "client side" Apple Remote Access Client for Macintosh. Those features include:

- DialAssist™ technology (this is a big addition)
- Complete new set (broader range) of supported modems
- Ignore dial tone option for non-standard telephone equipment
- Alternate connection support (Cellular, ISDN, X.25, etc.)
- Manual and automatic dialing options give you more flexibility when using more obscure telephone systems
- Original and alternate number redialing options
- Settable connection reminder via menu or dialog box
- Universally available disconnect via the "Remote Access Disconnect" Desk Accessory
- 1.0 and 2.0 Remote Access Server Compatibility
- User initiated change password option
- Built-in support for third-party external security modules

Q) How does the MultiPort Server differ from the Apple Remote Access Personal Server?

A) The Apple Remote Access Personal Server answers only one call at a time and is designed for individuals or small workgroups who want a very affordable, no fuss, all-in-one remote access solution. The Apple Remote Access MultiPort Server, on the other hand, provides multiple users simultaneous dial-in access through a single Macintosh computer-based server. The MultiPort Server is also targeted at workgroups which expect to have "high volume" dial-in usage.

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Tech Info Library Article Number:13959

Tech Info Library

Apple Remote Access Technology Q&A (11/93)

Revised: 11/16/93
Security: Everyone

Apple Remote Access Technology Q&A (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article contains technology questions and answers on Apple Remote Access for Macintosh.

DISCUSSION -----

Q) What is Apple Remote Access and what does it do?
A) Apple Remote Access is a remote node technology (that is; allowing you to be a full peer on the network) which enables users to access all network resources, including file servers, electronic mail, calendars, applications, and network printers, from a remote location. Users of remote access include business travelers who need to check their electronic mail system back at the office or a person who telecommutes; working at home, yet needing to be "connected" back to the office.

Q) Is there a limit to the distance possible for a remote connection?
A) There is no physical limit. Users can call to and from anywhere in the world as long as they have access to a phone and a modem. The quality of the connection (that is: noise on the line) is the only factor that has an effect on the remote connection.

Q) Can Apple Remote Access products function over other connections such as ISDN or X.25?
A) Yes. The Apple Remote Access Client for Macintosh and MultiPort Server products have both been designed to accommodate a variety of connection options , including X.25 or ISDN services. Currently, Apple offers an Apple Remote Access MultiPort Server X.25 Extension which adds X.25 support to the Apple Remote Access MultiPort Sever and Client for Macintosh. Other connection options, such as ISDN, are expected to be offered by third-party developers.

Q) Why did Apple drop the "Talk" from the Apple Remote Access product name?
A) When AppleTalk Remote Access was first introduced in October 1991, it

was intended for use with AppleTalk networks only. AppleTalk is Apple's local area network protocol suite that is built into every Macintosh computer and networked LaserWriter printer. Because we recognize the growing demand for remote access solutions that include computers from a variety of vendors, we plan to introduce cross-platform capability for Apple Remote Access in the future. Apple Remote Access will run on computer systems other than the Macintosh computer, and consequently, LAN protocol suites other than AppleTalk. Thus, we dropped "Talk" from the name to parallel our new direction for Apple Remote Access.

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Tech Info Library Article Number:13960

Tech Info Library

Apple Remote Access Client For Macintosh Q&A (11/93)

Revised: 11/16/93
Security: Everyone

Apple Remote Access Client For Macintosh Q&A (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article contains questions and answers on Apple Remote Access Client for Macintosh.

DISCUSSION -----

Q) What does the Apple Remote Access Client for Macintosh do?
A) The Apple Remote Access Client for Macintosh software allows users to connect to any Apple Remote Access-compatible server -- easily, flexibly, and productively. It can be used with the single-line Apple Remote Access Personal Server to support a small workgroup or with the multiline Apple Remote Access MultiPort Server to support larger numbers of remote or mobile users.

Q) What are the key benefits of the Apple Remote Access Client for Macintosh?
A) Key advantages include:
- Easy to use software gets you up and running fast
- Access information anytime, anywhere
- Connects to any Apple Remote Access—compatible server
- DialAssist technology makes dialing back to the office effortless

Q) Who will use the Apple Remote Access Client for Macintosh?
A: Apple Remote Access Client for Macintosh software will be purchased by anyone who is looking to capitalize on the resources of an existing Apple Remote Access Personal Server or MultiPort Server. In addition, customers who purchase third-party Apple Remote Access-compatible solutions may require the Apple Remote Access client software.

Q) What other features does the "client side" have?
A) Client-side features include:
- DialAssist technology
- Complete new set of supported modems

- Ignore dial tone option for non-standard telephone equipment
- Alternate connection support (Cellular, ISDN, X.25, and so on)
- Manual and automatic dialing options give you more flexibility when using more obscure telephone systems
- Original and alternate number redialing options
- Settable connection reminder via menu or dialog box
- Universally available disconnect via the "Remote Access Disconnect" Desk Accessory
- 1.0 and 2.0 Remote Access server compatibility
  NOTE: Users will not be able to take advantage of all ARAP 2.0 features when connecting to ARA 1.0 servers. Also the client side of ARA 1.0 is not compatible with the ARA 2.0 servers.
- User initiated change password option
- Built-in support for third-party external security modules

Q) What is DialAssist?
A) DialAssist is a technology Apple developed and built-into the Apple Remote Access Client for Macintosh product which makes dialing back to the office network simple, even for international travelers. It lets you build dialing sequences that help mask the complexities of worldwide telephone system—so you can connect easily from anywhere in the world. For instance, if you're in the France and need to access remote information on your network in California. You can enter your current location information into DialAssist and it will automatically add the appropriate dialing sequences (for example, outside line from hotel, country code, credit card number, and so on) around the telephone number in your Apple Remote Access connection document.

Q) What are the system requirements?
A) To use Apple Remote Access Client for Macintosh, users must have a Macintosh Plus computer or later model with at least 4 megabytes of RAM, and a hard disk drive, running system software version 7.0 or later. They also need an Apple or other Hayes-compatible modem (2400 bps minimum; 9600 bps or higher recommended) and appropriate modem cable, if necessary.

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Tech Info Library Article Number:13962

Tech Info Library

Apple Remote Access and Client/Client/Server Q&A (11/93)

Revised: 11/16/93
Security: Everyone

Apple Remote Access and Client/Client/Server Q&A (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article contains questions and answers about Apple Remote Access for Macintosh and the Client/Client/Server.

DISCUSSION -----

Q) What do you mean by client/client/server?
A) The rise of mobile computing devices such as laptop computers and Personal Digital Assistants (PDAs), means the client/server model needs to be extended to take into account information access from these remote clients. This concept embraces the belief that both the mobile and desktop, or hard-wired network client, need to be equal partners in information exchange across networks and between each other. Infrastructure, both networking and distributed applications, need to take into account the requirements of people who need to get data remotely and exchange this with their co-workers, whether they are in the same office or whether they are using a mobile device in another country.

Q) What evidence does Apple have to back up this strategy and definition?
A) Lots of evidence: work trends; the rise of mobile communications devices such as cellular phones, pagers, mobile FAXes, and laptop computers; and the huge interest in Personal Digital Assistants. All these as well as Apple's successful AppleTalk Remote Access product clearly indicate a trend. Information access needs to be ubiquitous.

A main way of doing business today is collaboration. These work trends show that if people are going to collaborate successfully, their computing devices must be designed and tuned to work collaboratively. This means that no matter what computing device you are using, or where, you should be able to exchange data with fellow workers, access information and generally provide users with the same experience you get using a desktop machine and hard-wired networks. It's clear that to be

truly useful, mobile clients cannot be regarded as second class computing devices.

Q) Client/Client/Server is not just an Apple phenomenon; it's also happening in the DOS/Windows world. What makes Apple believe it has better solutions?

A) The ability to provide integrated solutions across computing platforms, as well as Apple's proven track record in hiding machine and network complexities from users. Client/Client/Server is more than just an operating system issue, it's a question of the approach to computing various vendors take.

You need to see computing in a systems setting. PDA's do not lend themselves to desktop GUI metaphors because they are being used in different ways, mainly on-the-move (for example meetings) to capture information, rather than manipulating information like desktop systems. Similarly, the OS, networking, applications and information management metaphors across PDAs, servers and desktop systems need to be optimized and 'harmonized' so that the strengths of each computing device add to a total systems approach that makes it easy for the customer to do what they want to do.

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Tech Info Library Article Number:13963

Tech Info Library

Apple Remote Access: Compatibility Q&A (8/94)

Revised: 8/11/94
Security: Everyone

Apple Remote Access: Compatibility Q&A (8/94)

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Article Created: 15 November 1993
Article Reviewed/Updated: 11 August 1994

TOPIC -----

This article contains questions and answers about compatibility on Apple Remote Access for Macintosh (ARA).

DISCUSSION -----

Q) Are the new ARA products compatible with AppleTalk Remote Access 1.0?
A) The new ARA Client for Macintosh can be set for server compatibility with any product compatible with the AppleTalk Remote Access Protocol (ARAP), including AppleTalk Remote Access 1.0. However, because of the significant enhancements we've made to ARAP 2.0, the AppleTalk Remote Access 1.0 client does not support connecting into Apple's newest server products—the ARA Personal Server or MultiPort Server or any ARAP 2.0 server. Affordable upgrades are available to customers with AppleTalk Remote Access version 1.0 who want to upgrade to the new ARA Personal Server or Client for Macintosh.

Q) Does the ARA MultiPort Server have to run dedicated on a Macintosh or can it run with other services? What about the Personal Server?
A) No. Both the ARA MultiPort Server and Personal Server operate in the background allowing the Macintosh to be used for other foreground applications. For optimal performance, however, it is always best to run the ARA servers products alone.

Q) Can the ARA MultiPort Server and the Personal Server run concurrently with AppleShare? Apple Internet Router? File Sharing?
A) In order to run AppleShare Server software and Apple Internet Router Basic Connectivity Package concurrently with the ARA MultiPort Server you must use AppleShare Server software version 4.0.1 or greater and the Apple Internet Router Basic Connectivity Package version 3.0.1 or greater. System 7 File Sharing cannot run concurrently with the ARA MultiPort Server. The ARA Personal Server can run concurrently with

Macintosh File Sharing, AppleShare 3.0 and greater but cannot run concurrently with any version of the Apple Internet Router.

Q) Does the ARA MultiPort Server run on all Macintosh Systems? What about the Personal Server?
A) The ARA MultiPort Server runs on any System 7 capable Macintosh which can accommodate 12-inch NuBus cards. The current Serial NuBus card was tested in a Power Macintosh 6100 with ARA MultiPort Server 2.0.1 and is compatible. To get the Serial NuBus card to fit in the Power Macintosh 6100, or similar form factor computer (Centris or Quadra 610), it is necessary to remove the internal hard disk which is located in the left front bay. Obviously, this is not an ideal solution, but it is all that exists as of Aug. 1994. The Personal Server works on all System 7 capable Macintosh computers.

Q) Does the ARA MultiPort Server support the built-in serial ports?
A) No. The ARA MultiPort Server will only function over NuBus communication cards such as the ARA Serial Card for modem connections.

Article Change History:
11 Aug 1994 - Corrected answer to MultiPort Server running on all Macintosh Systems.
06 May 1994 - Made clarification for technical accuracy.

Support Information Services

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Tech Info Library Article Number:13964

Tech Info Library

Apple Remote Access: Competitive Profile (11/93)

Revised: 11/16/93
Security: Everyone

Apple Remote Access: Competitive Profile (11/93)

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Article Created: 15 November 1993

TOPIC -----

Why should customers buy Apple's Remote Access solutions over other competitive solutions? Why should customers buy the Apple Remote Access MultiPort Server over other competitive products?

DISCUSSION -----

1) Ease of setup and use: Apple Remote Access products excel over the competition in terms of ease of setup, use and administration—reflecting Apple's well-known user-centered design principles.

2) Very scalable: The fact that Apple's remote access products are software-only solutions both protects customers' investment and allows for easy scalability: Customers can choose to move to a higher-performance system or expand their system to offer additional ports as needed. In contrast, competing dedicated hardware systems generally require customers to commit to a particular level of remote access support, so expansion necessitates purchase of an entire new system.

3) Wide Connectivity Options: The Apple Remote Access MultiPort Server can connect to any AppleTalk network (for example, LocalTalk, Ethernet, or Token Ring, and so on.), giving customers wider network connectivity options than is provided by competitive products.

4) Extremely Secure: The Apple Remote Access MultiPort Server includes the most comprehensive security offerings available. It is designed to allow administrators to augment its built-in security features with additional security modules. This allows administrators to choose the level of security best suited to their organization.

5) Variety of Solutions: Apple offers a family of products, which provide different solutions to meet the range of needs from the individual user

to workgroups of any size.

6) Integrated/Flexible Solutions: Apple is more than just a "remote access" provider and can offer customers a set of workgroup solutions, such as AppleShare, Apple Internet Router, AppleSearch, Apple Remote Access, PowerTalk, PowerShare, and the Apple Workgroup Servers. Since all of these services work together, customers do not need to dedicate a single system for each service. They can choose to consolidate one or more of Apple's services on a single Macintosh computer or Apple Workgroup Server to maximize their system investment.

7) Affordable: With competitively priced products and integrated workgroup services that have an overall lower cost-of-ownership than the competition, Apple Remote Access products are extremely cost-effective.

8) Market Leadership: Apple is considered a technology leader in the area of remote access and our new product family offering shows our continued commitment to maintain this technology leadership.

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Tech Info Library Article Number:13965

Tech Info Library

Apple Remote Access and Cross-Platform Support Q&A (11/93)

Revised: 11/16/93
Security: Everyone

Apple Remote Access and Cross-Platform Support Q&A (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article contains questions and answers on Apple Remote Access and cross-platform support.

DISCUSSION -----

Q) Will Apple support multivendor networks within large organizations?
A) This initial release of the Apple Remote Access product family is designed for and to complement "Macintosh mostly" workgroups of any size. In future product releases, customers can expect to see support for multivendor environments with cross-platform client support (such as a remote access client for Windows), multiprotocol dial-in adoption and even more powerful expansion capabilities.

Q) Will Apple provide point-to-point protocol (PPP) support?
A) Yes. Apple recognizes the growing demand for remote access solutions that include computers from a variety of vendors. To that end, Apple earlier this year announced its intention to support PPP to ensure that a cross-platform protocol will be available in its remote access products. Apple intends to introduce PPP supported products in 1994. Apple's support for PPP will be designed to allow multiprotocol remote access to a variety of network types, such as IPX, TCP/IP and AppleTalk.

Q) What is PPP?
A) PPP is an Internet Engineering Task Force (IETF) standard (RFC 1331) for encapsulating data packets over a serial communications link. Transport of any specific network protocol—-such as AppleTalk, IPX or TCP/IP—-with PPP requires an additional higher-level protocol, known as a Network Control Protocol or NCP. AppleTalk over PPP (the NCP for AppleTalk) is already a publicly available IETF standard, detailed in RFC 1378.

Q) How does Apple's announcement about support for Point-to-Point Protocol (PPP) affect ARAP? Will support for PPP nullify ARAP?

A) No. PPP support will not nullify ARAP. ARAP, or AppleTalk Remote Access Protocol, is Apple's protocol for accessing AppleTalk networks remotely. This protocol will still be used by Macintosh computers accessing AppleTalk networks remotely. At the same time, supporting PPP will allow multiprotocol remote access to a variety of network types, such as IPX, TCP/IP and AppleTalk.

Q) What is ARAP?
A) AppleTalk Remote Access Protocol, or ARAP, is the protocol used for accessing AppleTalk networks remotely. ARAP was introduced in conjunction with AppleTalk Remote Access in 1991. Like all AppleTalk protocols, ARAP is an open protocol, and specifications are available for third-party developers. In its latest versions of the Apple Remote Access product family, the AppleTalk Remote Access Protocol has been enhanced to provide superior performance and configuration flexibility.

Q) Is Apple going to sell a Windows version of Apple Remote Access?
A) Apple has announced its intention to bring to market an Apple Remote Access Client for Windows in 1994.

Q) Will Apple Remote Access work with the Newton MessagePad?
A) Since AppleTalk is built-into every Newton, it is a logical extension to provide remote access services to Newton users with Apple's remote access products. However, we have nothing to announce at this time.

Q) Will Apple Remote Access products work with Apple's PowerPC?
A) Yes. Apple plans to produce versions of the Apple Remote Access product family, AppleShare file and print server software and AppleSearch and that will run on its PowerPC processor-based servers.

Q) Are there other companies that make Apple Remote Access compliant software?
A) Yes. Apple has announced that more than 12 leading third-party vendors will be shipping products built on the Apple Remote Access product family architecture. The Apple Remote Access product family architecture consists of the new AppleTalk Remote Access Protocol (ARAP) 2.0 and client and security Application Programming Interfaces (APIs). Third party vendors utilizing the Apple Remote Access product family architecture offer Apple Remote Access users a wide variety of solutions, enhancements and options, such as security enhancements and reporting applications.

Q) Are third-parties making products that are compatible with the AppleTalk Remote Access Protocol and Apple Remote Access Client for Macintosh?
A) Yes. It is Apple's understanding that several companies intend to build stand-alone remote access servers that will compete with Apple's Apple Remote Access product family.

Q) Are the Apple Remote Access products compatible with the Apple Workgroup Servers (AWS)?
A) Yes. The Apple Remote Access Personal Server does not require any special card and therefore runs on any Macintosh computer, including the Apple Workgroup Server 60 and 80. The Apple Remote Access MultiPort

Server is compatible with any NuBus equipped Macintosh server and the Apple Workgroup Server 80. Currently the Apple Remote Access MultiPort Server does not support the AWS 60 because it requires a 7" NuBus card and the Apple Remote Access Serial Card is 12 inches. However, Apple is planning to have a 7" version of its Apple Remote Access Serial Card in the early part of 1994 which will be compatible with the AWS 60. The Apple Remote Access MultiPort Server is currently designed to operate on Macintosh operating systems only, and consequently, does not run on the Apple Workgroup Server 95, which is based on A/UX, Apple's implementation of the UNIX operating system.

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Tech Info Library Article Number:13966

Tech Info Library

Apple Remote Access: MultiPort Server Q&A (5/96)

Revised: 5/30/96
Security: Everyone

Apple Remote Access: MultiPort Server Q&A (5/96)

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Article Created: 15 November 1993
Article Reviewed/Updated: 30 May 1996

TOPIC ----------

This article contains questions and answers about the Apple Remote Access MultiPort Server.

DISCUSSION ----------

Q) What is the Apple Remote Access MultiPort Server?
A) Apple Remote Access MultiPort Server software provides a simple, secure, and efficient way to offer multiline remote network access for large numbers of mobile professionals. Used in conjunction with one or more Apple Remote Access Serial Cards, Apple Remote Access MultiPort Server 4-Port Expansion Kits, and Apple RS-232 cables, the server software converts a single Macintosh computer into a server that can support from 4 to 16 simultaneous dial-up connections.

Q) Who will use the Apple Remote Access MultiPort Server?
A) The Apple Remote Access MultiPort Server is designed to meet the remote access needs of large workgroups who are more security conscientious, need more powerful systems management and desire broader expansion capabilities. Likely purchasers will be people whose job is to provide technical support services for organizations, such as IS managers, network managers, systems analysts, and workgroup administrators. In addition, independent consultants/systems integrators may be interested in this product as a component of a larger custom solution.

Q) What are the key features of the Apple Remote Access MultiPort Server?
A) Key features include:
- Easy to install and use
- "Multiline" scalable solution that can support up to 16 simultaneous connections
- Offers a comprehensive set of security features
- Powerful and comprehensive administrative capabilities.

Q) How many ports are included in the Apple Remote Access MultiPort Server?
A) The Apple Remote Access MultiPort Server includes four ports and is expandable to eight, 12 and 16 ports with the addition of 1, 2 or 3 Apple Remote Access MultiPort Server 4-Port Expansion Kit, respectively.

Q) Does the ARA MultiPort Server support the built-in serial ports?
A) No. The ARA MultiPort Server will only function over NuBus communication cards such as the ARA Serial Card for modem connections.

Q) What are the software licensing options for the MultiPort Server?
A) The Apple Remote Access MultiPort Server comes with a license to install Apple Remote Access MultiPort software on a single Macintosh and to install Apple Remote Access Client for Macintosh software on up to four systems. Additional Apple Remote Access Client for Macintosh software can be purchased as single packs or 10-packs. For 50 or more, the Apple Remote Access Client software can be volume licensed.

Q) What level of support does Apple offer for this product?
A) For U.S. customers, the Apple Remote Access MultiPort Server product includes lifetime, basic up and running support at no charge during regular business hours Monday through Friday. Additional support is available through the Interactive Voice Response System which offers a 24 hour common questions & answers line and is available 24 hours a day, 7 days a week by calling 1-800-SOS-APPL. For information about product support outside the U.S., contact the local Apple subsidiary or distributor.

Q) Will network administrators be able to monitor the MultiPort Server with SNMP network management consoles?
A) Since the Apple Remote Access MultiPort Server supports the Simple Network Management Protocol—an industry-standard network management protocol—network administrators can monitor the Apple Remote Access MultiPort Server from any SNMP-based console. However, the SNMP console must support the MIB for Apple's MultiPort Server.

Q) What makes the Apple Remote Access MultiPort Server so secure?
A) The Apple Remote Access MultiPort Server offers a host of sophisticated security features that allow administrators to maintain the integrity of the network. These features—such as password aging, location validation, and the ability to filter access to services—make it one of the most secure remote access servers available. And because its security architecture is supported by leading third-party security vendors, administrators can choose to augment the server's built-in security features with additional challenge-and-response or roving access security modules.

Q) What is challenge-and-response or roving access security ?
A) Challenge-and-response or roving access security uses credit card or palm-size computers, provided by companies, such as Security Dynamics or Digital Pathways. These cards or small computers generate random passwords or access codes that users must input to gain access to a remote network. Providing this type of "roving access" security enables

an additional level of security for Apple Remote Access users who are traveling and are unable to utilize the built-in call-back feature.

Q) What are the Operating requirements of the Apple Remote Access MultiPort Server?

A) Operating requirements include:

- A Macintosh computer with one or more NuBus slots and at least 5 MB of RAM (for configurations with more than four ports, additional memory is required, and a high-performance system is recommended)*
- Macintosh system software version 7.0 or later (version 7.1 or later recommended)
- A hard disk drive and an Apple SuperDrive floppy disk drive
- Apple Remote Access Serial Card and Apple RS-232 Cable (for each set of four ports)
- One or more Apple or other Hayes-compatible 9600 bps/V.32 or higher speed modems
- The dial-in client software must be the Apple Remote Access Client software version 2.0 or greater.

* Support for Macintosh computers that require 7-inch NuBus cards may not be available at this time; consult your authorized Apple reseller or representative.

Article Change History:
30 May 1996 - Updated for technical accuracy.

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Tech Info Library Article Number:13967

Tech Info Library

Apple Remote Access Personal Server Q&A (11/93)

Revised: 11/16/93
Security: Everyone

Apple Remote Access Personal Server Q&A (11/93)

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Article Created: 15 November 1993

TOPIC ----------

This article contains questions and answers about the Apple Remote Access Personal Server.

DISCUSSION ----------

Q) What are the key features of the Apple Remote Access Personal Server for Macintosh?

A) Key features include:

- Ease of use
- "Single-line" all-in-one software solution
- Supports a variety of modems and networks
- Built-in security keeps information secure.

Q) What are the specific differences between AppleTalk Remote Access version 1.0 and Apple Remote Access Personal Server?

A) The major differences lie in two areas: product positioning and client-side features. Apple's original offering targeted anyone who needed remote access to an AppleTalk network. Now that we have a product family, the positioning for Apple Remote Access Personal Server has become more specific: It provides a single-line solution for individuals and small workgroups that have relatively low-volume remote access needs. Apple's feature enhancements were to the "client side" Apple Remote Access Client for Macintosh. Those features include:

- DialAssist technology (this is a big addition)
- Complete new set (broader range) of supported modems
- Ignore dial tone option for non-standard telephone equipment
- Alternate connection support (Cellular, ISDN, X.25, and so on)
- Manual and automatic dialing options give you more flexibility when using more obscure telephone systems
- Original and alternate number redialing options
- Settable connection reminder via menu or dialog box
- Universally available disconnect via the "Remote Access Disconnect"

Desk Accessory
- 1.0 and 2.0 Remote Access Server Compatibility, however the client side of ARA 1.0 is not compatible with the ARA 2.0 servers.
- User initiated change password option
- Built-in support for third-party external security modules

Q) Who will use the Apple Remote Access Personal Server?
A) The Apple Remote Access Personal Server makes it easy for even non-technical Macintosh users to get started with remote access computing. Because of its ease of setup and use--as well as its single-package convenience and low price--it's ideal for individuals with home offices, telecommuters, traveling professionals, salespeople, students, and small organizations.

Q) Can current users of AppleTalk Remote Access upgrade to Apple Remote Access Personal Server?
A) Yes. Plans call for upgrades to be available for users of the original AppleTalk Remote Access 1.0.

Q) Is there a difference between the client for the MultiPort Server and the Apple Remote Access Personal Server client?
A) No, they're the same. The only difference is that the Personal Server product has a integrated client for Macintosh built into the software so we can offer an "all-in-one" solution for individuals on the go. Other than that, anyone using an Apple Remote Access Client for Macintosh can dial into either server.

Q) What level of support does Apple offer for this product?
A) For U.S. customers, the Apple Remote Access Personal Server product includes lifetime, basic up and running support at no charge during regular business hours Monday through Friday. Additional support is available through the Interactive Voice Response System which offers a 24 hour common questions & answers line and is available 24 hours a day, 7 days a week by calling 1-800-SOS-APPL. For information about product support outside the U.S., contact the local Apple subsidiary or distributor.

Q) What are the system requirements?
A) To use Apple Remote Access Personal Server, users must have a Macintosh Plus computer or later model with at least 4 megabytes of RAM, and a hard disk drive, running system software version 7.0 or later. They also need an Apple or other Hayes-compatible modem (2400 baud minimum; 9600 bps or higher recommended) and appropriate modem cable, if necessary.

Q) How will this product be sold?
A) The Apple Remote Access Personal Server is available through all authorized Apple resellers and major mail order catalogs including the Apple catalog.

Q) Why would someone buy the Apple Remote Access Personal Server over a competitive product?
A) For the individual, the Apple Remote Access Personal Server solution is

unique in the industry. No other company offers an "all-in-one" peer-to-peer remote access software solution. If two Macintosh users (at their homes or at the different offices) just wanted to easily collaborate remotely, Apple offers the only solution for this.

For the small workgroup, no one can offer a solution as simple, eloquent or cost effective as Apple's. With the Apple Remote Access Personal Server software, a customer can have remote users dialing into their workgroup network in minutes without any costly and complex hardware to setup. If their needs every expand beyond the Apple Remote Access Personal Server, they can move up to the Apple Remote Access MultiPort Server without any disruption to their user community.

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Tech Info Library Article Number:13968

Tech Info Library

Apple Remote Access and The PowerBook Bundle Q&A (11/93)

Revised: 11/16/93
Security: Everyone

Apple Remote Access and The PowerBook Bundle Q&A (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article contains questions and answers about Apple Remote Access Client being bundled with PowerBooks.

DISCUSSION -----

Q) Will the Apple Remote Access Client for Macintosh be bundled with the PowerBooks?
A) Yes. Apple has begun bundling the Apple Remote Access Client for Macintosh with new models of its PowerBook notebook computers in the U.S. As Apple introduces new PowerBook models, it will evaluate whether to include value-added software based on the needs of its target customers.

Q) Why isn't Apple bundling the remote access client outside the U.S.?
A) We expect many of Apple's market geographies outside the U.S. will bundle the Apple Remote Access Client for Macintosh, although this is a decision being made at the local level. At this time, Apple is only prepared to commit to bundling the remote access client in the U.S.

Q) What client version is currently being shipped with PowerBook computers? When will the newest version come bundled on PowerBook computers?
A) Apple is currently supplying remote access client version 1.0. Now that the latest client version is now shipping, Apple will begin to bundle the new Apple Remote Access Client for Macintosh onto its PowerBook computers. Affordable upgrades are available to customers with AppleTalk Remote Access version 1.0 who want to upgrade to the new Apple Remote Access Personal Server or Client for Macintosh.

Q) Will Apple Remote Access Personal Server come bundled with PowerBook systems?
A) No. Apple only intends to bundle the Apple Remote Access Client for Macintosh on PowerBook notebook computers in the U.S. The Apple Remote

Access Personal Server is sold separately for those individuals or organizations who need a single-line server solution.

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Tech Info Library Article Number:13969

Tech Info Library

Apple Remote Access and PowerTalk Q&A (11/93)

Revised: 11/16/93
Security: Everyone

Apple Remote Access and PowerTalk Q&A (11/93)

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Article Created: 15 November 1993

TOPIC -----

This article contains questions and answers on Apple Remote Access and PowerTalk.

DISCUSSION -----

Q) Will the new Apple Remote Access Client and Personal Server software work with Apple's PowerTalk Direct Dialup Mail?
A) Yes. The products can run concurrently.

Q) What is the relationship of PowerTalk Direct Dialup Mail and Apple Remote Access Client and Personal Server software?
A) PowerTalk Direct Dialup Mail is an application level service that includes Apple Remote Access technology. The Apple Remote Access product family is a remote node service—which can run concurrently with PowerTalk Direct Dialup—but provides broader access to a variety of applications and services while PowerTalk Direct Dialup Mail is specifically designed to allow PowerTalk users to exchange electronic mail and documents.

Q) Is PowerTalk Direct Dialup Software compatible with AppleTalk Remote Access version 1.0
A) No. Customers who want to run PowerTalk Direct Dialup software concurrently with remote access must upgrade to the latest version Apple Remote Access Personal Server software or Client for Macintosh software.

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Tech Info Library Article Number:13970

Tech Info Library

PowerTalk Key Chain: Resetting a Forgotten Password (10/95)

Revised: 10/20/95
Security: Everyone

PowerTalk Key Chain: Resetting a Forgotten Password (10/95)

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Article Created: 16 November 1993
Article Reviewed/Updated: 20 October 1995

TOPIC ----------

This article tells how to reset a PowerTalk password if a user forgets it.

DISCUSSION ----------

Follow these steps:

Step 1
Turn off collaboration services in the PowerTalk Setup control panel.

Step 2
Throw away the PowerTalk Setup Preferences file in the Preferences folder.

WARNING: All Key Chain, Preferred Personal Catalog, Mailbox Preferences, I'm at, and PMSAMs (Personal Message Access Modules) will be lost when you delete the PowerTalk Setup Preferences. Please make a note of your settings.

Step 3
Restart the computer.

Step 4
Turn on collaboration services in the PowerTalk Setup control panel.

Step 5
Restart the computer

Step 6
Double-click on the mailbox to redefine PowerTalk services.

Article Change History:
20 Oct 1995 - Included two additional steps.

19 Jan 1995 - Added words forgot and forget.
08 Dec 1994 - Provided more information on PowerTalk Setup Preferences.

Support Information Services

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Tech Info Library Article Number:13971

Tech Info Library

ClarisWorks 2.0 & At Ease 2.x Bug (8/95)

Revised: 8/14/95
Security: Everyone

ClarisWorks 2.0 & At Ease 2.x Bug (8/95)

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Article Created: 16 November 1993
Article Reviewed/Updated: 14 August 1995

TOPIC----------

When accessing an item from the Apple Menu while using ClarisWorks 2.0 with At Ease 2.x installed, some documents do not print all their pages.

DISCUSSION----------

There is a known problem with ClarisWorks 2.0 and At Ease when printing a document. If you switch out of ClarisWorks by selecting an Apple Menu Item or switching to another application, and return to print, the document does not print properly. Approximately the first two-thirds of the page prints, cutting or clipping the text on the last one-third of the page.

A workaround is to save the document, close and reopen it, and then print it (without going to the Chooser). You can also select New View from the View menu, then print the new view.

At Ease 2.0.3 fixes this problem.

Article Change History:
14 Aug 1995 - Reviewed for technical accuracy.
07 Feb 1995 - Added keyword and updated the text.
11 Mar 1994 - Added problem information and the proposed fix information.

Support Information Services

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Tech Info Library Article Number:13972

Tech Info Library

Macintosh TV: Closed Caption Interference Using Antenna (11/93)

Revised: 11/16/93
Security: Everyone

Macintosh TV: Closed Caption Interference Using Antenna (11/93)

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Article Created: 16 November 1993

TOPIC ----------

When using a Macintosh TV with an antenna, closed captioning can be corrupted.

DISCUSSION ----------

This does not necessarily mean that the Macintosh TV is working incorrectly. It's likely that you need to adjust the antenna to compensate for interference or poor transmission quality.

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Tech Info Library Article Number:13975

Newton Connection Kit for Windows: Description (11/93)

Revised: 11/16/93
Security: Everyone

Newton Connection Kit for Windows: Description (11/93)

==========

Article Created: 16 November 1993

TOPIC -----

This article describes the Newton Connection Kit for Windows.

DISCUSSION -----

With the Newton Connection Kit for Windows, you can connect your Newton to a Microsoft Windows-based personal computer (PC) and create, view, edit, back up and synchronize information created on the MessagePad.

Synchronization

The Connection Kit automatically synchronizes information between the Newton and the computer. The information is stored by files and includes both data and applications.

The information in the Windows-based PC can be viewed and edited, then downloaded back to the Newton. Templates are used to view and edit the information, so you can do text-intensive work with a keyboard and move it directly to your Newton.

Synchronization creates three files. One is the Windows-based PC's view of Newton's memory. An archive file keeps an accumulative copy of all files synchronized. A backup file keeps only those files which changed from the last synchronization.

Any files created during synchronization can be restored back into Newton.

Install Package

This option allows Newton applications (packages) to be downloaded from a Windows-based PC into the Newton. Newton software can be distributed on Microsoft Windows-standard floppy disks, installed on the computer and then downloaded. The packages can be removed just as easily, using the Newton

Memory preference button labeled "Remove Software."

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13976

Tech Info Library

Modem Software for AV Computers: Supports 14.4kbps. (11/93)

Revised: 11/17/93
Security: Everyone

Modem Software for AV Computers: Supports 14.4kbps. (11/93)

==========

Article Created: 17 November 1993

TOPIC ----------

When will the modem software for the AV machines be upgraded to 14.4 Kbps (Kilobits per second)?

DISCUSSION----------

At the time the manuals were written, Apple could only guarantee 9600, and that was put in the manuals. After that point, we were able to implement 14.4, so Apple does support 14.4 Kbps (Kilobits per second.)

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13978

Tech Info Library

Apple Monitors: Symptoms Associated w/EMF (5/95)

Revised: 5/5/95
Security: Everyone

Apple Monitors: Symptoms Associated w/EMF (5/95)

==========

Article Created: 17 November 1993
Article Reviewed/Updated: 5 May 1995

TOPIC ----------

I am having severe Extremely Low Level Magnetic Field (EMF) interference problems with Apple 14" AV Color Displays connected to Centris 660AV, Centris 650, and Macintosh LC III computers.

Symptom: continuous vertical undulating interference on the monitor.

DISCUSSION ----------

Apple monitors are no more susceptible to EMF than any other monitor on the market today. All monitors demonstrate symptoms associated with EMF if the source is of sufficient strength.

Here are a few possible solutions:

1. Check the AC power line for noise. Apple has seen instances where noisy power lines induced the exact symptom you describe.

2. Locate the source of the EMF and then shield the wall between the source and the equipment.

3. Rotate the position of the monitors slightly, this may decrease the effect of the EMF field.

4. Shield the monitors with special five sided mu metal shields. However, please note that this is a very expensive solution.

Article Change History:
05 May 1995 - Made minor corrections and reformatted.

Support Information Services

..TIL13979-Apple_Monitors-Symptoms_Associated_w-EMF_5-95_(TA30589).pdf

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13979

Tech Info Library

Apple Directory DA: Sold as Verisoft Lookup (11/93)

Revised: 11/29/93
Security: Everyone

Apple Directory DA: Sold as Verisoft Lookup (11/93)

==========

Article Created: 24 November 1993

TOPIC --------------------

Where can I buy the commercial version of Apple Directory DA called Verisoft Lookup?

DISCUSSION --------------------

Ask for Paul Sutter, Director of Marketing at Verisoft. To locate the vendor's address and phone numbers, use the vendor name as a search string.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13980

Tech Info Library

Map Control Panel: Limits to Storage (11/93)

Revised: 11/17/93
Security: Everyone

Map Control Panel: Limits to Storage (11/93)

==========

Article Created: 17 November 1993

TOPIC ----------

Is there a limit to the number of cities that can be added to the Map control panel?

DISCUSSION ----------

The theoretical maximum number of cities that can be stored in the Map CDEV (Control Panel) is 32,767. However, lack of disk space could limit the quantity to a lesser amount.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13981

Tech Info Library

PowerBook 270c and StyleWriter II (6/94)

Revised: 6/20/94
Security: Everyone

PowerBook 270c and StyleWriter II (6/94)

==========

Article Created: 2 December 1993
Article Reviewed/Updated: 20 Jun 1994

TOPIC ----------

I'm having trouble printing from a PowerBook 270c to a StyleWriter II. (It prints if the Dock is attached.)

DISCUSSION ----------

Here are the settings you need:

- AppleTalk must be inactive

  or

  Remote Only (or EtherTalk, if that's installed) must be selected in the Network control panel.

- The Modem Port must be selected in the StyleWriter II Chooser document. Press the "Setup" button and then say OK, even though you don't plan to "share" the printer.

- The PowerBook Setup control panel must be set to "Normal". The default setting is "Compatible"

Article Change History:
20 Jun 1994 - Changed control panel contents to the correct information.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13982

Tech Info Library

At Ease 1.0 Commonly Asked Questions (2/95)

Revised: 3/27/95
Security: Everyone

At Ease 1.0 Commonly Asked Questions (2/95)

==========

Article Created: 17 November 1993
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

This article presents commonly asked customer questions and answers relative to At Ease version 1.0.

DISCUSSION ----------

Question: When I try to launch an application from At Ease, it quits and takes me to the Finder. What's wrong?

Answer: Most likely you have an extension or INIT conflict. Check your Extensions and Control Panels folders for any non-Apple items and contact their manufacturers for update information. In particular, check for older versions of Virex or AutoDoubler.

Question: I forgot my password. What do I do?

Answer: Follow these steps:

Step 1
Start from a floppy disk such as Disk Tools.

Step 2
Open the System Folder on your hard drive.

Step 3
Open the Preferences folder.

Step 4
Drag At Ease Preferences to the Trash.

Step 5

Restart the computer.

Question: Why can't I save into a folder on a floppy disk?

Answer:
You have the "Require a floppy disk" option on. To turn it off:

Step 1
Open the At Ease control panel.

Step 2
Click "Set Up Documents...", and uncheck this option.

With this option set, some applications will allow saving into folders on floppy disks, and some won't.

Question: How can I use At Ease to keep my children from deleting my important information?

Answer: If your children have access to an application, they will be able to change all documents that application can read. You want to prevent them from using the application that has your important information.

To do this:

Step 1
Set a password in the At Ease control panel.

Step 2
Uncheck the "Add a button to At Ease" option in "Set Up Documents...", and only add the applications and documents to At Ease that you want your children to use.

Question: Is At Ease a security program?

Answer: No. It provides a minimal level of security designed to prevent accidental deletion of documents. If security is a major concern, you should purchase a third-party security package.

Article Change History:
28 Feb 1995 - Clarified title to reflect contents of article.
16 Feb 1995 - Changed dates and reformatted Q & A.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:13983

Tech Info Library

AWS 95 and TextEditor 1.3a1 (1/97)

Revised: 1/17/97
Security: Everyone

AWS 95 and TextEditor 1.3a1 (1/97)

==========

Article Created: 17 November 1993
Article Reviewed/Updated: 17 January 1997

TOPIC ----------

This article describes a problem found with TextEditor 1.2 and the Apple Workgroup Server (AWS) 95 that can cause a loss of data.

DISCUSSION ----------

When launched, TextEditor 1.2 is issuing a pbSetEOF with a value of zero on the file with a refnum of 1. Normally, this is not a problem since a file refnum of 1 is not used. However, when AppleShare Pro is running on the AWS 95, an extended fcb pool is used and a file refnum of 1 is available. In fact, the first file opened by an AFP client is assigned a file refnum of 1. If a file with a file refnum of 1 is open on the AWS 95 with write permissions, when TextEditor 1.2 is launched, the data fork of that file will be set to zero bytes in length. This would not be a problem if the data fork of that file is not used.

TextEditor 1.3a1 fixes this problem and is available on AppleLink. This new version will be included in the next release of the AWS 95 software. Please replace all copies of TextEditor on AWS 95 systems with this version.

TextEditor 1.3a1 is also available on Apple SW Updates areas on the Internet, CompuServe and America Online:

America Online - keyword: applecomputer

CompuServe - GO APLSUP

Internet -
Worldwide Web: <http://www.info.apple.com/swupdates>
ftp: <ftp://ftp.info.apple.com>

Anyone that has an AWS 95 should not use TextEditor 1.2 while AppleShare is running. They should use TextEditor 1.3a1.

Article Change History:
17 Jan 1997 - Revised Online References

Copyright 1993-97, Apple Computer, Inc.

Tech Info Library Article Number:13986

Tech Info Library

Display Card 24AC: Description (6/95)

Revised: 6/28/95
Security: Everyone

Display Card 24AC: Description (6/95)

==========

Article Created: 16 November 1993
Article Reviewed/Updated: 28 June 1995

TOPIC ----------

This article describes the Display Card 24AC.

DISCUSSION ----------

The Macintosh Display Card 24AC is a 24-bit NuBus color/grayscale display card with QuickDraw acceleration.

Features

- Supports all of Apple's Macintosh-compatible color displays at 24-bit resolution (16.7 million colors) and grayscale monitors at 8-bit resolution (256 grayscales).
- QuickDraw Acceleration
- Compatible with all Quadra, Centris and Macintosh II family CPUs, PowerPC CPUs with an available NuBus slot, and the Apple Duo Dock.
- Meets 7 inch NuBus card standard
- Supports multiple scan VGA monitors (may require third-party adapter to connect)

Article Change History:
28 Jun 1995 - Changed multiscan to multiple scan. Reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:13987

Tech Info Library

NewtonMail: Description (11/93)

Revised: 11/17/93
Security: Everyone

NewtonMail: Description (11/93)

==========

Article Created: 17 November 1993

TOPIC ----------

This article describes the NewtonMail communications service.

DISCUSSION ----------

NewtonMail is an electronic communications service for Newton users which allows the exchange of text messages and Newton documents.

With NewtonMail, Newton users can exchange text messages with other Newton users and with users of these online services: CompuServe, America Online, MCI Mail, AppleLink, SprintMail, EasyLink, and other online services accessible via the Internet. NewtonMail also enables the electronic exchange of Newton information such as notepad messages (including graphics), business cards, and calendar appointments between subscribers.

The NewtonMail service will be available 24 hours a day, 7 days a week, except for regularly scheduled periods of maintenance. NewtonMail is expected to be accessible from locations around the world, providing convenient local access to global communications networks.

To use NewtonMail, you need a Newton device, a Newton Fax Modem, a phone line and a NewtonMail account.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13988

Tech Info Library

At Ease 2.0 For Workgroups Save To Floppy (8/95)

Revised: 8/9/95
Security: Everyone

At Ease 2.0 For Workgroups Save To Floppy (8/95)

==========

Article Created: 9 November 1993
Article Reviewed/Updated: 9 August 1995

TOPIC -----

I'm using At Ease 2.0 for Workgroups at my school, and I want the students to ONLY be able to open and save from a floppy. I have set the control panel to require a floppy disk, but the students can still open and save files to the hard drive or floppy. Also there is no prompt to insert a floppy when creating a new document, or trying to open an existing one, what's wrong?

DISCUSSION -----

If you installed Norton's Directory Assistance II on your computer, what you describe can happen. It attempts to override the Finder and lets users open and save from other directories. Removal of Directory Assistance II or similar programs is necessary for At Ease to properly prohibit this from occurring.

Note: The same is true for other programs that access files without using standard file manager. They, too, will be able to view the disks contents without regard to At Ease security.

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:13989

Tech Info Library

Connectix CPU Q&A (11/93)

Revised: 7/8/94
Security: Everyone

Connectix CPU Q&A (11/93)

==========

Article Created: 16 November 1993

TOPIC ----------

Below are the most common questions about CPU. You may refer customers, with these questions, to the CPU Troubleshooting document which is on the CPU disk or to Connectix directly (800-950-5880).

DISCUSSION ----------

Q) Sometimes when I startup my PowerBook, the startup sound plays twice. Why?
A) On PowerBooks that can switch from normal processor speed to 16MHz, CPU switches the processor speed automatically at sleep or restart depending upon whether or not the AC charger is plugged in. On most PowerBooks, you must restart to make the change in clock speed. At boot, CPU checks to see if the charger is connected, sets the PowerBook to boot at the desired clock speed (full speed when the charger is plugged in, 16MHz if not) and restarts the PowerBook if necessary. This is why the PowerBook startup sound is heard twice. Since PowerBook Duos are capable of dynamically switching clock speed, the "stutter-start" never occurs on these computers.

Q) Why doesn't the caps lock key work?
A) CPU allows you to modify the behavior of the caps lock key on the PowerBook's built-in keyboard. You can change caps lock so that it activates only if the shift or control key is held down, or disable caps lock altogether. You can configure this feature in the Extended Keys panel.

Q) Why does only one application show its windows at a time?
A) In order to help you avoid a cluttered desktop, CPU's AppManager can automatically hide an application's windows when it is in the background. If you want to temporarily see all of your applications' windows, select "Show All" from the System 7 Application Menu. You can turn this feature off by unchecking "Hide Background Apps" in

QuickConfigure mode or by unchecking "Hide Background Applications" in the AppManager panel in FineTune mode.

Support Information Services

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Tech Info Library Article Number:13991

Tech Info Library

DOS Compatibility Card: Emulating Two-Button Mouse (5/96)

Revised: 5/20/96
Security: Everyone

DOS Compatibility Card: Emulating Two-Button Mouse (5/96)

==========

Article Created: 2 December 1993
Article Reviewed/Updated: 20 May 1996

TOPIC ----------

How can I perform Window functions that require a two-button mouse with my Macintosh DOS Compatibility Card?

DISCUSSION ----------

The DOS Compatibility Card software emulates the two-button mouse on all versions of the DOS Compatibility Card. You must use the keyboard in conjunction with the Macintosh mouse to emulate the second mouse button.

The = key (equal sign key) on the keypad acts as the second mouse button.

Position the mouse and hit the = key. To click with both buttons, press the mouse button and the = key at the same time.

Article Change History:
20 May 1996 - Revised to include all versions of DOS Compatibility Card.
05 May 1994 - Removed references to Houdini.

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Tech Info Library Article Number:13992

LaserWriter: Print Density Adjustment Utility (11/93)

Revised: 11/18/93
Security: Everyone

LaserWriter: Print Density Adjustment Utility (11/93)

==========

Article Created: 18 November 1993

TOPIC----------

The print density adjustments that are available on most of the LaserWriter printers do not seem to make much of a change in the toner density. Are there any other methods for altering the toner density in order to save toner when printing rough drafts?

DISCUSSION----------

The toner density adjustment on most of our LaserWriter products generate only slight visual changes. Depending on the type of documented being printed there may be no visible changes between the maximum and minimum density settings.

For more control over toner density there is a third-party product system extension called Toner Tuner™, from Working Software, Inc., that provides additional control of the toner density. Toner Tuner™ is a system extension that uses PostScript and QuickDraw commands to set the grayscale values for printed pages. The Toner Tuner™ software supports system 6 and 7, and all QuickDraw and PostScript based printers.

For more information search the Technical Information Library, using "Working Software, Inc." as search words.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13993

Tech Info Library

Quadra 605, LC 475, Performa 475 476: Sound (11/93)

Revised: 11/18/93
Security: Everyone

Quadra 605, LC 475, Performa 475 476: Sound (11/93)

==========

Article Created: 18 November 1993

TOPIC ----------

This article provides details about the sound capabilities of the Performa 475, Performa 476, Macintosh LC 475, and Quadra 605 computers.

DISCUSSION ----------

The Performa 475 and 476, Macintosh LC 475, and Quadra 605 sound systems allow users to play back 8-bit stereo sound, and to record single-channel (mono) 8-bit sound input from a microphone or line input devices (for example, home stereo equipment) using a stereo adapter cable. The stereo adapter cable may be obtained separately.

The sound output jack is a stereo connector, stereo miniature phone jack, three conductor tip/ring/sleeve (TRS).

Note: The Apple PlainTalk Microphone, which is sold as a standalone product, is compatible with these systems. These products cannot use the older style low-level output microphone used on previous Macintosh models.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13995

Tech Info Library

Apple Basic Color Monitor and Centris & Quadra Computers (11/93)

Revised: 11/18/93
Security: Everyone

Apple Basic Color Monitor and Centris & Quadra Computers (11/93)

==========

Article Created: 18 November 1993

TOPIC -----

I have a Macintosh Centris 610 and Apple Basic Color Monitor. I selected 800x600 in the options panel of the Monitors control panel. The screen is now completely black, and I can't even see or use the Finder. Restarting from Disk Tools doesn't help.

DISCUSSION -----

The Problem

With any of these computers -- Quadra 610, Centris 610, Quadra 660AV, Centris 660AV, Quadra 800, or Quadra 840AV -- is used with the Apple Basic Color Monitor, 1152x870 and 800x600 at two different hertz values are available in the options portion of the Monitors control panel. If any of these values are selected, the screen will turn black or a distorted image of the screen will appear.

What To Do

Zapping (resetting) PRAM, which resets the system to the default 640x480, is the only known fix.

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Tech Info Library Article Number:13996

Tech Info Library

Columbia Computing Services, Inc. (9/93)

Revised: 11/18/93
Security: Everyone

Columbia Computing Services, Inc. (9/93)

==========

Article Created: 18 November 1993

Columbia Computing Services, Inc.

Division of CTB/MacMillan McGraw-Hill School Publishing Co.

8101 E. Prentice Ave., Ste. 700
Englewood, CO 80111-2911

800-663-0544

303-773-6440

303-773-9630 FAX

Company Profile:
Providers of Osiris School Administration System, a Netware based education administration solution for MS-DOC/IPX clients. Includes System Attendance Monitor, Scheduler, Grade Reporter, Data Exchange Program and Discipline Reporting System modules.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:13997

Tech Info Library

Macintosh to Performa Comparison Chart (2/97)

Revised: 2/24/97
Security: Everyone

Macintosh to Performa Comparison Chart (2/97)

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Article Created: 18 November 1993
Article Reviewed/Updated: 24 February 1997

TOPIC --------------------

This chart lists the equivalent Macintosh and Performa computer models and their corresponding processors and speeds.

DISCUSSION --------------------

Begin_Table

Macintosh Performa	Comparable Macintosh	Processor	Intro Date
Performa 200	Classic II	68030 @ 16 MHz	9/92
Performa 400	LC II	68030 @ 16 MHz	9/92
Performa 600,600CD	IIvx 5/120/512	68030 @ 32 MHz	9/92
Performa 405	LC II	68030 @ 16 MHz	4/93
Performa 430	LC II	68030 @ 16 MHz	4/93
Performa 450	LC III	68030 @ 25 MHz	4/93
Performa 410	LC II	68030 @ 16 MHz	10/93
Performa 460,466,467	LC III	68030 @ 33 MHz	10/93
Performa 475,476	LC 475	68LC040 @ 25 MHz	10/93
Performa 550	LC 550	68030 @ 33 MHz	10/93
Performa 560	LC 550	68030 @ 33 MHz	1/94

Performa 575,577,578	LC 575 CD	68LC040 @ 33 MHz	4/94
Performa 630 Series	LC 630	68LC040 @ 66 MHz	7/94
Performa 6100 Series	Pwr Macintosh 6100/60	PowerPC 601 @ 60 MHz	10/94
Performa 580CD	LC 580	68LC040 @ 66 MHz	5/95
Performa 640DOS	LC 630 DOS	68LC040 @ 66 MHz	5/95
Performa 5200CD	Pwr Macintosh 5200/75 LC	PowerPC 603 @ 75 MHz	5/95
Performa 5215CD	Pwr Macintosh 5200/75 LC	PowerPC 603 @ 75 MHz	7/95
Performa 631CD	LC 630	68LC040 @ 66 MHz	7/95
Performa 6200 Series	N/A	PowerPC 603 @ 75 MHz	8/95
Performa 5300CD	Pwr Macintosh 5300/100 LC	PowerPC603e @100 MHz	10/95
Performa 6300CD	N/A	PowerPC603e @100 MHz	10/95
Performa 6290	N/A	PowerPC603e @100 MHz	1/96
Performa 6320	N/A	PowerPC 603 @ 75 MHz	4/96
Performa 6400/180	N/A	PowerPC603e @180 MHz	8/96
Performa 6400/200	Power Macintosh 6400/200	PowerPC603e @200 MHz	8/96
Performa 6360/160	N/A	PowerPC603e @160 MHz	10/96

End_Table

Notes:
------
* The Macintosh Performa 630 series includes the Macintosh Performa 630 and 630, 635, 636, 637, and 638.

* The Performa 611x series includes the Performa 6110, 6112, 6115, 6117, and 6118.

* The Performa 6200 series includes the Performa 6200, 6214, 6216, 6218, 6220, and 6230.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
24 Feb 1997 - Added 6400.
22 Oct 1996 - Added 6360.
19 Aug 1996 - Completely reformatted and updated.

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Tech Info Library Article Number:13998

Tech Info Library

PowerBook: Radius PowerView Discontinued 11/93

Revised: 7/8/94
Security: Everyone

PowerBook: Radius PowerView Discontinued 11/93

==========

Article Created: 16 November 1993

TOPIC --

The Radius PowerView External Display Interface has been discontinued. This will effect certain PowerBook users (see below.) Please do not refer callers to Radius for this product.

DISCUSSION --

PowerBook computers effected will be all models without video out capabilities, specifically the 100,140,170,145, and 145B PowerBook models.

Support Information Services

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:14001

Tech Info Library

CD Improperly Mastered: Cause Problems on Startup (3/94)

Revised: 5/13/94
Security: Everyone

CD Improperly Mastered: Cause Problems on Startup (3/94)

==========

Article Created: 18 November 1993
Article Reviewed/Updated: 21 March 1994

TOPIC ----------

If the Performa 550 or LC 520 unit is shut down incorrectly (that is, power switched off without using the Shut Down command) while a CD is loaded, the computer will behave strangely at start up.

Symptom/Solution: The screen will go grey and all you'll see is the cursor. If you use a paper clip to manually eject the caddy and restart the computer the problem is fixed.

DISCUSSION ----------

This problem occurs on any Apple CD unit (whether internal or external) if the CD-ROM is improperly mastered. However this problem is amplified in the CD 300 Plus because the drawer retracts on shutdown making the problem more likely.

Apple uses the signature in the boot blocks to determine if the CD has a driver. Those CDs which do not clear these blocks before mastering will attempt to be booted. Apple tested 127 CDs currently shipping and four were found to have problems. This problem is especially prevalent in the current Software Toolworks titles; San Diego Zoo Presents The Animals!, World Atlas, U.S. Atlas, and Space Shuttle.

Apple is working with CD manufacturers to ensure that future CDs will not have this problem.

Article Change History:
21 March 1994: Added CD 300 Plus information and Software Toolworks CD-ROM titles.

Support Information Services

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Tech Info Library Article Number:14002

Tech Info Library

LC 475, Quadra 605, Performa 475 476: Serial Ports (11/93)

Revised: 11/19/93
Security: Everyone

LC 475, Quadra 605, Performa 475 476: Serial Ports (11/93)

==========

Article Created: 18 November 1993

TOPIC ----------

This article describes the two serial ports in the Macintosh LC 475, Quadra 605, Performa 475, and Performa 476.

DISCUSSION ----------

These four Macintosh models have two serial ports, one for a printer and one for a modem. They ports are not identical.

- The printer port uses the standard 8-pin mini-DIN socket.

- The modem port uses a 9-pin mini-DIN socket.

Both sockets accept 8-pin plugs, but only the modem port accepts a 9-pin plug. Pin 9 on the modem connector provides +5V power from the ADB power supply. An attached modem should draw no more than 100mA from that pin. The total current available for all devices connected to the +5V supply for the ADB and the modem port is 500mA.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14003

Tech Info Library

LaserWriter Pro 810 and VAX Platform Questions (11/95)

Revised: 11/21/95
Security: Everyone

LaserWriter Pro 810 and VAX Platform Questions (11/95)

==========

Article Created: 18 November 1993
Article Reviewed/Updated: 21 November 1995

TOPIC ----------

I'm interested in purchasing a LaserWriter Pro 810 for use on my Ethernet network. I have a VAX and about 60 Macintosh computers, and I want to know some specifics about how the LaserWriter Pro 810 supports the Dec LAT protocol.

1) Does the LaserWriter Pro 810 support LNO3 VAX printer emulation?

2) Does the LaserWriter Pro 810 support the WPS VAX-based word processing system?

3) How do third-party products such as Alisa Systems software and PATHWORKS interface with the DEC LAT support on the LaserWriter Pro 810?

DISCUSSION ----------

1) No, the LaserWriter Pro 810 does not support LN03 printer emulation. LN03 uses Digital's own escape characters. However being a PostScript printer, the LaserWriter Pro 810 can be used in place of many other PostScript printers, including the Digital LN03R, the PostScript version of the LN03. For an application that does not use the PostScript language, the LaserWriter Pro 810 also supports HP LaserJet II emulation.

2) To print to the LaserWriter Pro 810, the output has to be PostScript of HP PCL 4 mode. If you use the LaserWriter Pro 810 with a product such as PATHWORKS, PATHWORKS components will convert VAX text files to PostScript so VAX/VMS users can print their files to the printer. I am not familiar with WPS word processing system, but if it can support PostScript or HP PCL 4 printer, it can print to the LaserWriter Pro 810.

3) If you have PATHWORKS, you just need to define the printer just like any other Apple PostScript printer, and PATHWORKS will set up a print queue to talk

to the printer via AppleTalk. Digital has informally tested PATHWORKS 1.2 with the LaserWriter Pro 810 and it worked fine. I would assume Alisa will work the same way.

Even if you don't have PATHWORKS or Alisa, you can still interface to the printer via LAT. This is done by setting up an application port in LATCP and start a queue using the /PROCESSOR=LATSYM. This procedure is fully documented in the Network Installation and Configuration Manual.

Article Change History:
21 Nov 1995 - Updated format.

Support Information Services

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Tech Info Library Article Number:14004

Tech Info Library

Personal LW NTR: Postscript and Setting Tray Defaults

Revised: 11/19/93
Security: Everyone

Personal LW NTR: Postscript and Setting Tray Defaults

==========

Article Created: 18 November 1993

TOPIC----------

I'm getting a PostScript error when trying to set the paper tray format in the A4 paper tray. I'm using a SUN Workstation with UNIX and a Personal LaserWriter NTR.

When I print documents from the A4 tray, the printer driver uses a "Letter" format and margins are different.

This is the PostScript code I'm using:

```
%! /str 60 string def statusdict begin 60
defaultmultipurposepapertraysize str cvs print job end ( ) print
statusdict begin 60 defaultmultipurposepapertraysize pop str cvs print
end servedict begin O exitserver statusdict begin a4 true
defaultmultipurposepapertraysize end
```

DISCUSSION ----------

The operators for returning and setting the default multipurpose tray paper size are spelled incorrectly in the "Personal LaserWriter NTR Printer Developer Note". The correct spellings, respectively, are:

   defaultmultipurposetraysize

   and

   setdefaultmultipurposetraysize

This PostScript code will print a page showing the default multipurpose tray paper size:

```
/Times-Roman findfont
15 scalefont
setfont
72 700 moveto
/str 20 string def
(Default multipurpose tray paper size:  ) show
statusdict begin
defaultmultipurposetraysize pop str cvs show
showpage
```

This PostScript code changes the default multipurpose tray paper size based on the values used for "NAME" and "BOOL":

```
serverdict begin 0 exitserver
statusdict begin
NAME BOOL setdefaultmultipurposetraysize
```

The allowable values for "NAME" are the standard device setup procedures:

```
   /letter
   /legal
   /a4
   /b5
```

The standard device setup procedures /lettersmall and /a4small are not allowed.

The "BOOL" parameter is included for compatibility with other PostScript printers. It specifies whether the paper is to be fed long edge first or short edge first. For all paper sizes on the Personal LaserWriter NTR, the value of "BOOL" must be true, meaning short edge first.

The following PostScript code changes the default multipurpose tray paper size to a4:

```
serverdict begin 0 exitserver
statusdict begin
/a4 true setdefaultmultipurposetraysize
```

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14005

Tech Info Library

Super ATM 3.6: Works Fine with Macintosh AV Computers (11/93)

Revised: 11/19/93
Security: Everyone

Super ATM 3.6: Works Fine with Macintosh AV Computers (11/93)

==========

Article Created: 18 November 1993

TOPIC ----------

I have problems using Adobe's Super ATM, version 3.5 on a Macintosh 660AV or 840AV. The scenario is as following :

- Adobe uses the Apple Installer to install SuperATM,
- at the end of the installation, you must reboot your Macintosh,
- the Macintosh reboots correctly, except that the system freezes with the clock mouse and the menu bar staying white.

Does the Hardware System Update 2.0.1 solve this problem? I've tried to install this extension after installation of Super ATM and it doesn't change anything.

DISCUSSION ----------

Apple just learned that Super ATM, version 3.6 works fine with the AV computers (660AV and 840AV). Upgrade to version 3.6 and there should be no more problems.

In regard to Hardware System Update 2.0.1, that release does not actually load anything on the AV computers. You can run it, but nothing will change. It would not have fixed the problem you were experiencing.

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Tech Info Library Article Number:14006

Tech Info Library

System 7.1 Overview (7/96)

Revised: 7/1/96
Security: Everyone

System 7.1 Overview (7/96)

==========

Article Created: 19 November 1993
Article Reviewed/Updated: 01 July 1996

TOPIC ----------

System 7.1 is the first "world ready" reference release of System 7. It combines functionality introduced since the debut of System 7.0 along with a number of enhancements which support multiple languages or scripts running on a single Macintosh computer at one time.

To users of System 7.0 and 7.0.1, there are a few changes in the core system software package that you need to be aware of. These enhancements are:

- 5 new control panels
- Fonts folder
- Disk First Aid 7.1
- System 7 Tune-Up v1.1.1 now part of System 7.1
- QuickTime 1.5 extension

Please Note: This article doesn't cover WorldScript.

DISCUSSION ----------

New Control Panels

- General Controls control panel
  The major change to the General Controls control panel is the icon. You can still change date and time values here as well as in the new Date & Time control panel.

- Date & Time control panel
  This new control panel allows you to change the values for current date and time, as well as allowing customization of the date and time formats.

  Clicking on the Date Formats… button brings up a dialog box which

allows shifting the display of weekday, month, day, and year.

Clicking on the Time Formats… button brings up the following dialog box which allows shifting the display of 12 or 24 hour clocks, the display of AM or PM suffixes, as well as placing leading zeros in front of the current hour:

- Numbers control panel
  This control panel allows you to set separators for large numbers as well as to set currency symbols.

- Text control panel
  This control panel is for use with WorldScript I and WorldScript II. It provides the ability to switch between languages installed on the system, thus picking a primary viewing and editing language.

- PowerBook control panel
  This control panel replaces the Portable control panel which came with System 7.0 and 7.0.1. It incorporates several new features for Battery Conservation. In addition, it provides SCSI Disk Mode for those PowerBooks capable of SCSI Disk Mode, as well as Automatic Wake-Up settings previously available in the Portable control panel.

  One slider bar gives the choice of "Maximum Performance" or "Maximum Conservation" to replace the twin slider bars for cycling off the hard disk and the screen.

Battery Conservation

Clicking the options button below the slider bar brings up a dialog box. This dialog box allows you to set the PowerBook to never sleep when it's plugged into an electrical outlet, as well as to turn the processor cycling feature on or off.

Fonts Folder

The Fonts folder is a special folder located within the System Folder, similar to other folders such as the Control Panels folder. The Fonts folder provides a common place for all bitmapped, TrueType, and Adobe Type 1 fonts to reside. You can also place font suitcases in this folder. During the startup process, the system opens up to 128 files containing bitmapped and TrueType fonts in the Fonts folder, and makes them available for use.

You can add and remove fonts from the Fonts folder while other applications are open. Fonts added to the Fonts Folder won't appear in already running applications.

However, you can't drop fonts onto the system suitcase in System 7.1. The system treats font files like normal files. Since the font files are always open, the Finder won't permit replacing a font file in the Fonts Folder with another file of the same name. You can merge font suitcases by dropping one onto another, and you can remove fonts from a suitcase.

Disk First Aid 7.1

Disk First Aid 7.1 now repairs the disappearing folders and files problem. However, to prevent the problem from re-emerging, please install System 7.1 or install System 7 Tune-Up v1.1.1 over System 7.0 or 7.0.1.

System 7 Tune-Up Rolled into System 7.1

System 7.1 includes the contents of the System 7 Tune-Up disk v1.1.1.

QuickTime 1.5 Included

The QuickTime 1.5 extension is included as a part of System 7.1.

Compatibility Issues

You need to update the following Apple software to work properly with System 7.1:

- AppleShare File Server 3.0 – update to AppleShare File Server 3.0.1.
- MacTCP 1.1 – update to MacTCP 1.1.1.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
01 Jul 1996 - Added Fax Doc Word
26 Aug 1994 - Updated for FAX/TIL/QRG maintenance project.
11 Feb 1994 - Provided text-only version of the article.

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Tech Info Library Article Number:14010

Tech Info Library

PageMaker 5.0: Customers Needing LW Utility 7.4.1 (11/93)

Revised: 11/22/93
Security: Everyone

PageMaker 5.0: Customers Needing LW Utility 7.4.1 (11/93)

==========

Article Created: 22 November 1993

TOPIC ----------

Apple Support is getting calls from customers who have purchased PageMaker 5.0 and need the LaserWriter Utility 7.4.1. Aldus apparently has licensed LaserWriter 8.0 and has bundled it with PageMaker 5.0 but they did not license or bundle LaserWriter Utility 7.4.1.

DISCUSSION ----------

Apple Product Management and Aldus came up with a solution on handling the LW 8.1.1 and LW Utility situation.

- Both LW 8.1.1 and the LW Utility are posted on Compuserve and AOL in the Aldus folders.

- LW 8.1.1 and the LW Utility 7.4.1 are being added to PageMaker 5.0. Copies of PageMaker 5.0 with LW 8.1.1 and the LW Utility 7.4.1 should be on dealer's shelves around mid-January.

- Aldus will sell a software update kit with LW 8.1.1 and LW Utility to PageMaker 5.0 owners for $9.95. This should be available by early January.

- Aldus does not expect Apple to supply PageMaker 5.0 customers with LW 8.1.1 or LW Utility. Aldus will inform their customers about the above ways of getting LW 8.1.1 and the LW Utility.

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Tech Info Library Article Number:14011

Tech Info Library

Macintosh: Chinese and English on One System (11/93)

Revised: 12/1/93
Security: Everyone

Macintosh: Chinese and English on One System (11/93)

==========

Article Created: 19 November 1993
Article Reviewed/Updated: 30 November 1993

TOPIC ----------

1) I'm a teacher and I want to bring Chinese writing into the classroom. While in China, I bought Chinese System 7.1 and successfully installed the system on my PowerBook 100. I now have two System folders: US and Chinese. Can I consolidate the files into one System folder (such as control panels, extensions, etc.) or should I have to keep the systems separate and use System Picker to switch systems?

2) Alternatively, I own ChineseTalk II. Can I enable word processing in Chinese simply by eliminating Chinese System 7.1 and instead installing the fonts in the Apple Product, ChineseTalk II?

3) Finally, all instructions for Chinese System 7.1 and ChineseTalk II are in Chinese but are incomplete and confusing. Where can I find complete documentation in Chinese and English?

DISCUSSION ----------

You might be a prime candidate for the Chinese Language Kit, and not the fully localized Chinese System 7.1 purchased in China. By installing the Chinese Language Kit on a Macintosh running U.S. System 7.1, you retain the English Finder and menus, but are able to input Chinese characters when using Chinese and World Script compatible applications. The Installer consolidates all necessary files and resources into one System Folder; afterwards, choose your desired script from the menu that is to the right of the Balloon Help menu. The Chinese Language Kit was built with the WorldScript technologies developed with System 7.1.

Chinese System 7.1 ships with Roman fonts, but it has a Chinese language Finder and menus.

Apple does not recommend more than one System Folder on a startup volume,

requiring the use of utilities such as System Picker, or manually blessing/deblessing different System Folders.

Apple does not recommend the use of ChineseTalk II or any of its specific resources, files or fonts that accompanied it, as ChineseTalk II was a stopgap product between System 6.x and Chinese System 7.1.

Further, ChineseTalk II automatically added a thin space character to each Chinese character when non-Script Manager compatible applications are used. This resulted in unique (non-standard) fonts which:

- Increases document sizes by one-third.
- Increases transfer and printing times
- Causes problems when moving text between different applications

Both the Chinese Language Kit and Chinese System 7.1 use Chinese TrueType fonts and can use Roman (U.S.) fonts: simply drag them to the Fonts Folder.

The Chinese Language Kit documentation is in English and Chinese.

For further information on WorldScript in the Tech Info Library, use WorldScript as a search string.

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Tech Info Library Article Number:14013

Tech Info Library

Refurbishment & Life Cycle: For LW Models (1/94)

Revised: 1/12/94
Security: Everyone

Refurbishment & Life Cycle: For LW Models (1/94)

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Article Created: 22 November 1993
Article Revised/Updated: 11 January 1994

TOPIC ----------

Are there refurbishment kits for Apple Laser printers? If not, is there a List of parts that are "recommended for replacement"?

Also, what is the expected life of these printers?

DISCUSSION ----------

The LaserWriter II engine is the only Apple printer that has a refurbishment kit.

LaserWriter II
• Refurbishment kit part number: 652-0597
• Minimum life expectancy is 3OOK pages.

Personal LaserWriter SC/NT/NTR/LS
• Has a life of 150K pages
• Recommended that the fuser be changed after 100K pages.

Select 300/310:
• Has a life of 150K pages or five years.
• Recommended that the fuser be changed after 100K pages.

Select 360:
• Has a life of 300K pages or five years.
• Recommended that the fuser be changed after 100K pages.

LaserWriter Pro 600/630:
• Has a life of 450K pages or five years.
• For that engine the following parts are recommended for replacement after 200K pages: Fuser Assembly
  Transfer Roller

MP Tray Pickup Rollers
MP Tray Guide Assembly
Cassette Pickup Rollers

Personal LaserWriter 320:
• Print engine life: Up to 8K pages monthly maximum recommended

Article Change HIstory:
11 January 1994 - Added LW II and PLW families

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Tech Info Library Article Number:14015

Tech Info Library

SNA•ps: Automating IND$FILE File Transfers (11/93)

Revised: 11/23/93
Security: Everyone

SNA•ps: Automating IND$FILE File Transfers (11/93)

==========

Article Created: 22 November 1993

TOPIC ----------

I'm looking for an automatically solution for doing file transfer with IND$FILE. SNA•ps 3270 can do file transfer with IND$FILE, but it can't do them automatically.

I want that the Macintosh to send or get a text file to or from the host at a certain hour automatically. For example, at 5:00 PM every day check the host with an IND$FILE file transfer Tool.

DISCUSSION ----------

You'll need a third party product such as QuicKeys to automate file transfers. Information on QuicKeys by CE Software, Inc. follows for your convenience.

QuicKeys 3.0

Business And Professional Software
Macro Generators
QuicKeys 3.0
Keyboard enhancer
Macintosh Plus or larger; hard disk drive.

QuicKeys allows assignment of commands or actions to keystrokes. The program can define key presses to run documents and programs, select menu items, run Fkeys, insert current date and/or time, execute more than a dozen mouse movements, insert text strings, perform click and drag sequences and perform combinations of these commands or actions — all with a key press. DialogKeys, a companion program, lets a user use key presses to "click-in" buttons, check boxes or radio buttons in dialog boxes. QuickAccess is the utility program specifically designed for QuicKeys to create, modify and combine sets of defined keystrokes. It will also install sets into QuicKeys and print keyboard templates for easy reference. $169

retail

To locate a vendor's address and phone number, use the vendor name as a search string.

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Tech Info Library Article Number:14016

Tech Info Library

PowerBook 165, System Enabler, & Added Hard Drive (11/93)

Revised: 7/8/94
Security: Everyone

PowerBook 165, System Enabler, & Added Hard Drive (11/93)

==========

Article Created: 23 November 1993

TOPIC -----

I received a PowerBook 165 to be repaired containing an added internal 160MB hard drive. The user complained of an inoperative Global Village PowerPort Gold internal modem, which was confirmed. I installed the PowerPort Gold into another PowerBook 165 and the fax/modem worked normally. I then installed the PowerPort along with the 80MB hard drive from the working PowerBook into the one received from the user, and the users PowerBook worked properly. Why does the 80MB hard drive work, but not the 160MB hard drive? Is it an incompatibility with the fax/modem, or a defect in the 160MB hard drive?

DISCUSSION -----

The PowerBook 165 uses an updated System Enabler 131, version 1.0.3. This enabler, along with other System Software, is provided on the hard drive that comes with the PowerBook 165 we ship. If the internal hard drive is added later, the proper System Enabler may not be present. System disks from another PowerBook, including the System Hardware Updater 2.0, only contains version 1.0.2, you need version 1.0.3.

Support Information Services

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Tech Info Library Article Number:14017

Tech Info Library

Attach Apple Adjustable Keyboard: Quadra 660AV/840AV (1/94)

Revised: 1/20/94
Security: Everyone

Attach Apple Adjustable Keyboard: Quadra 660AV/840AV (1/94)

==========

Article Created: 23 November 1993
Article Reviewed/Updated: 7 January 1994

TOPIC ----------

Customers that purchase the Adjustable Keyboard for the Quadra 660AV/840AV will not have full functionality of the keyboard. Currently during the "Happy Mac" process for Quadra 660AV/840AV systems we do not load the "Record Button" extension. Therefore, customers who plug in the keyboard out of the box will not be able to use the record button on the Adjustable Keyboard to record sounds.

Furthermore, customers will not be able to use the installer disk that is shipped with the Apple Adjustable Keyboard because some of the resources included on the Adjustable Keyboard Installer disk are older than what is currently being shipped with the Quadra 660AV/840AV systems. Customers will get a message saying "The software to be installed is older than the software on the currently selected system, this installation is not allowed." The only option for the customer is to quit the installation process.

DISCUSSION ----------

WORKAROUNDS:

In order for customers to take advantage of all of the features of the Apple Adjustable Keyboard they will need to do either one of two things:

Option 1

Use the "System Update 2.0.1" diskette to install the Adjustable Keyboard resources. The customer will need to do a "Customize" install and select the "Apple Adjustable Keyboard Update." This will also update the "Sound" control panel from v8.0 to v8.0.1.

Option 2

Drag copy the "Record Button" Extension to the "Extensions" folder of the Quadra 660AV/840AV. The file is located on the Adjustable Keyboard Installer diskette in a folder called "Keyboard Files."

NOTE: It is NOT necessary for AV customers without the Apple Adjustable Keyboard to run the "System Update 2.0.1" installer disk.

Article Change History:
7 January 1994 - Changed Access to General Public

Support Information Services

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Tech Info Library Article Number:14021

Tech Info Library

System 7 Finder Description (8/94)

Revised: 6/5/96
Security: Everyone

System 7 Finder Description (8/94)

==========

Article Created: 24 November 1993
Article Reviewed/Updated: 26 August 1994

TOPIC ----------

The Finder in system software version 7.0 or 7.0.1 is very similar to the System 6 MultiFinder. (Note that there's only one environment with System 7. It's called Finder, but it has the features of the old MultiFinder.)

DISCUSSION ----------

System 7 Finder additions and improvements are too numerous to mention here, so here's a short list to get you started.

Some New Features of System 7

- System Folder
  Items are organized into specific subfolders. Drag files onto the closed System Folder, and the System automatically installs them for you.

- Finder windows
  In List view, folders and subfolders are displayed hierarchically in a single window. Click the triangle to expand or collapse a folder's contents.

  Clicking the zoom box opens windows just wide enough to see all the contents. Windows scroll when you move items beyond the boundaries.

- Apple menu
  Just about anything can reside in this menu -- desk accessories, documents, applications, folders, aliases, control panel devices (cdevs), even AppleShare volumes.

  To put an item in the Apple menu, drag it into the Apple Menu Items

folder within the System Folder.

- Desk Accessories
  To install them under the Apple menu, drag the files onto the closed System Folder. They're put in the Apple Menu Items folder within the System Folder.

- Fonts
  Install them by dragging the files onto the System Folder. They're put in the System file.

- INITs and cdevs
  INITs are called extensions under System 7. Extensions reside in the Extensions folder within the System Folder; cdevs reside in the Control Panels folder within the System Folder.

- Trash
  The Trash functions as a folder. It doesn't empty, even after you shut down the computer. It only empties when you choose Empty Trash from the Special menu.

- Balloon help
  The Finder provides a form of interactive on-line help for you. Click the question mark icon at the far right of the menu bar. Choose Show Balloons from the menu. Move the cursor over a window, folder, document, or icon, and a pop-up balloon gives you information about that item.

Getting System Information

1) At the desktop, click the Apple menu. You'll see About This Macintosh... at the top of the menu.

2) Choose About This Macintosh... from the Apple menu.

The window that appears is similar to the About the Finder... window when you're running MultiFinder in System 6. It not only shows memory allocated to the System and Finder, but also to other programs loaded in RAM. (Note that you can scroll and move this window.) You always want to see some white space for applications on this graphic barometer.

To see the names of applications loaded into RAM, click the mini-icon at the far right of the menu bar. The application menu appears. The check mark shows which application you're currently running.

Switching Between Applications

MultiFinder lets you switch between applications in several ways:

- Choose the application name from the Application menu at the far right of the menu bar.

- Click the visible portion of another layer.

- Double-click an application icon (even if dimmed).

- Drag the icon of a document onto the icon of an application (provided the application supports the document's format).

Memory Allocation

As with System 6 , each application in System 7 gets its own memory allocation. Even so, sometimes you'll get a message that there isn't enough memory to run the program, or that the application has unexpectedly quit. You can fix this by changing the program's memory allocation. Here's how:

1) Quit the application (no need to do this if the application has unexpectedly quit).

2) At the Desktop, select the application icon.

3) Choose Get Info from the File menu (or press Command-I). The Get Info window appears.

4) Select the Current size box.

5) Type a new number in the box. Make sure the number you use isn't less than the Suggested size. It's best to increase the memory size by only 50K to 100K at a time. (You can always repeat the procedure if it isn't enough.)

6) Close the Get Info window.

You can now launch the application again. The application will get this new memory size until you change it.

Hints and Help

- If an extension doesn't work properly in the Extensions folder, try moving it to the root level of the System Folder.

- While in Finder windows, you can drag a marquee around several files to select them.

- You can navigate without the mouse by using the arrow keys or by typing the first few letters of the folder or file name.

- Choose Finder Shortcuts from the Balloon Help menu to get a list of keyboard equivalents for Finder operations.

Article Change History:
26 Aug 1994 - Updated for FAX/TIL/QRG maintenance.
21 Feb 1994 - Provided the text version as well as the binary file.

..TIL14022-System_7_Finder_Description_8-94_(TA30623).pdf

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Tech Info Library Article Number:14022

MacX Mapping DECwindows Keys To Macintosh Keyboard (11/93)

Revised: 11/30/93
Security: Everyone

MacX Mapping DECwindows Keys To Macintosh Keyboard (11/93)

==========

Article Created: 24 November 1993

TOPIC ----------

I'm using MacX 1.2 to connect to a VAX/VMS. When in VT100 editing mode on the VAX' X-client application, some keys don't work using the Macintosh extended keyboard. The top four keys "clear", "=", "/", and "*" on the numeric keypad are the ones I'm have trouble with. Here is an example or the key's functionality:

* deletes a line
Clear 4 goes to end of file
Clear/ is used to find something.

I also have VersaTerm-Pro, and with VersaTerm-Pro these keys work fine. Remote command is:

set display/create/transport=tcpip/node=s10222
Second line: /create/term/detatch

I hope this information is sufficient to diagnose the problem and tell me what is wrong.

DISCUSSION ----------

This is not a MacX problem. DECwindows applications may have features that require keys not available on Macintosh keyboards. The keys you are talking about are the top row of the numeric keypad. In an editor such as EDT, these keys send the PFn keysyms and require special mapping. VersaTerm-Pro works fine because it is a terminal emulator that correctly sends the keysyms for these numeric keypad keys.

Page 17 of the PATHWORKS MacX User's Guide discussed this keyboard mapping using a VAX/VMS application called MSAX$MODMAP. MSAX$MODMAP modifies and displays mapping tables used by the X11 server to translate keystrokes to key symbols. A mapping table tells the X Window System -- in this case,

MacX -- how to translate the keystrokes. The term keysymbol (or keysym) refers to the individual location of a key as defined by the software. MacX captures the signals generated by the keys specified in the mapping table and translates them to key symbols that can be recognized by X11 client applications.

The remote command you used is fine. Once you are at the DECterm window and before you start EDT, you should run the following command to map the keyboard:

```
$ MCR MSAX$MODMAP MSA$EXAMPLES:MSAX$POSITIONAL_EXTENDED_KEYBOARD.DAT
```

You can choose to put this command in a command procedure to save typing.

I strongly suggest that you read about MacX keyboard mapping from the manual to understand the other options available.

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Tech Info Library Article Number:14026

Tech Info Library

Apple Internet Router 3.0 and X.25 Wide Area Extension (11/93)

Revised: 11/30/93
Security: Everyone

Apple Internet Router 3.0 and X.25 Wide Area Extension (11/93)

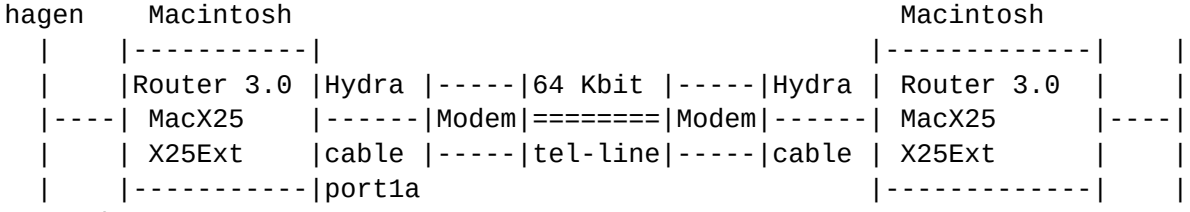
==========

Article Created: 24 November 1993

TOPIC ----------

I'm having trouble connecting two Apple Internet Routers, version 3.0, with the AppleTalk/X.25 Wide Area Extension, and MacX25 v1.2 using a 64 kbps line.

CONFIGURATION:



Parameter File	"Apple DCE"	"Apple DTE"
X.25 addr	2382XXXXXXXXX	2382XXXXXXXXX
MODE	Call	Answer

Question 1:

Is this configuration supported using a 64 kbps line between two Apple Internet Routers without a real X.25 network node in between?

Question 2:

Where should the calling address be configured?

I'm able to bring up level 1 and level 2, but virtual circuits are not being established because the packets do not contain the address of the origin (calling address).

I can easily configure the called/answered address in the PORT INFO window of the Internet Router Manager. By double-clicking on the X.25 (1) port access method, and in the field "Remote X.25 ID" to specify the X.25 address of the other Macintosh.

```
COPENHAGEN:  Call-mode      Remote X.25 := "2382XXXXXXXXX"  No password
Aarhus:      Answer-mode    Remote X.25 := "2382XXXXXXXXX"  No password
```

But I can't find a place to configure the calling/answering address (the address of the local Macintosh). I would expect it to be configured in MacX25 Admin, because the address is related to the allocated address of the Macintosh node on an X.25 network.

DISCUSSION ----------

The calling DTE address is the address that your computer uses to identify itself when initiating an X.25 call. Almost all public and private X.25 networks automatically insert this address in the call packet. However, if you are connected to a network that does not do this, such as yours, you need to use the Router Tuner utility to enter this address.

The Router Tuner is distributed in the AppleTalk Internet Router Administrator's Toolkit (RO490LL/A) by APDA.

Though we aren't familiar with your requirements, you may not need to use the AppleTalk/X.25 Wide Area Extension at all. A direct asynchronous or synchronous serial connect at 64 kbps would be substantially more efficient because it would not be burdened by the additional X.25 protocol overhead.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14027

Tech Info Library

Verisoft (11/93)

Revised: 11/29/93
Security: Everyone

Verisoft (11/93)

==========

Article Created: 24 November 1993

Verisoft

20863 Stevens Creek, Suite 330
Cupertino, CA 95014

800-998-6452 voice

408-366-8240 voice

408-255-1146 fax

Company Profile: Sell directory software called Verisoft Lookup.

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Tech Info Library Article Number:14028

Tech Info Library

System 7.0 or 7.0.1 Installation (5/96)

Revised: 6/6/96
Security: Everyone

System 7.0 or 7.0.1 Installation (5/96)

==========

Article Created: 30 November 1993
Article Reviewed/Updated: 27 May 1996

TOPIC ----------

System 7.0 and 7.0.1 run on all Macintosh Plus and later Macintosh models that have 2 MB RAM (4 MB recommended) and a hard drive. However, some features are not available on all models. In addition, if you have a 68030 microprocessor or a 68020 microprocessor with a Paged Memory Management Unit (PMMU) installed, you can use the virtual memory feature.

DISCUSSION ----------

BACK UP YOUR HARD DISK

Copy the data on your hard disk to another hard disk or to floppy disks. There are several software utilities available that perform this operation. Or you can select the items you want to copy, and then drag them to the disk where you want to copy them. If you can't copy everything, at least copy your System Folder to another disk.

RUN COMPATIBILITY CHECKER

If you do not have HyperCard 2.1, copy the application and the Home Card to your hard disk before proceeding.

1) Copy the Compatibility Checker HyperCard stack to your hard disk.
2) Double-click the Compatibility Checker stack to open it. The Introduction screen appears.
3) Click the Start Checking button. Compatibility Checker scans your hard disk. Progress messages appear on your screen. If Compatibility Checker finds potentially incompatible items, a screen appears.
4) Click one of the two buttons at the bottom of the screen. If you click the Move Items button, a dialog box appears.
5) Click the OK button. Compatibility Checker's report screen appears.

6) Click one of the four buttons at the bottom of the screen. (It's best to print the report and use it as a guide to update your software if necessary.)
7) When you're finished with Compatibility Checker, click the Quit button. If you previously moved items out of your System Folder, a message appears.
8) Click the OK button.
9) Choose Restart from the Special menu.
10) Update your software according to the four categories outlined in the Compatibility Report:

- Compatible -- No action needed.
- Mostly compatible -- No action needed. It's optional to get the more recent version.
- Must upgrade -- You must upgrade to a compatible version to use this item with System 7.0 or 7.0.1.
- Not available -- No information available. Contact the software developer directly.

VIRUS AND SECURITY SOFTWARE

If you have installed virus protection or security software, you will need to remove them from the system. Follow removal instructions in the user manual provided with the software.

RUN DISK FIRST AID

Disk First Aid software can detect and repair problems on a hard disk.

1) Double-click on Disk First Aid, and make sure the startup disk is selected. If it isn't, click the Drive button to select the startup hard disk.

2) Click on Open and then on Start. Disk First Aid will check your hard disk for any potential problems. If it finds problems, you should let the software repair them.

3) Repeat this procedure for each hard disk attached to the system.

4) When you're finished verifying the hard disks, choose Quit from the File menu to return to the desktop.

If Disk First Aid can't repair a hard disk, you should back up the hard disk and reinitialize it using the appropriate formatting utility for that drive. For Apple drives, use Apple HD SC Setup.

UPDATE HARD DISK DRIVERS

If you do not have an Apple hard disk or use third-party software to format your disk, do not use the Apple HD SC Setup Utility. However, you should contact your

hard disk vendor to verify that your formatting software is compatible with system software version 7.0 or 7.0.1.

If you have an Apple hard drive, you should update the drivers with the version of Apple HD SC Setup that's on the Disk Tools disk, following these steps:

1) Double-click the HD SC Setup icon to launch it.

2) Click on the Update button.

3) When you're finished, click Quit to return to the desktop.

If HD SC Setup can't update the hard disk driver (indicated by a "dimmed" Update button), consider these possibilities:

- If a third-party utility formatted your hard disk, you should obtain the latest version of the utility to update your hard disk.

- If a version of Apple HD SC Setup more recent than the version on the Disk Tools disk formatted your hard disk, don't update the hard disk drivers.

- If an earlier version of Apple HD SC Setup formatted the drive, it may not have left enough room for the updated driver. You don't have to update hard disk drivers. However, if you intend to use file sharing or have a Macintosh that can use virtual memory, then you need to back up the disk and reinitialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

- If the driver is corrupt, the Macintosh doesn't recognize the drive (that is, the disk doesn't show on the desktop). You may wish to reinitialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

- If the driver has been modified with compression or security software you will not be able to update the driver. Contact the vendor for additional help.

INSTALLING SYSTEM SOFTWARE

System 7.0 and 7.0.1 software come as a set of 800K or high-density disks:

- The eight 800K disk set includes Disk Tools, Install 1, Install 2, Install 3, Printing, Fonts, Tidbits, and More Tidbits.

- The set of six 1.44MB high-density (or FDHD) disks includes Disk Tools, Install 1, Install 2, Printing, Fonts, and Tidbits.

1) Start up with the Install 1 disk. To do this, put the Install 1 disk in the startup floppy drive and turn on your Macintosh. A welcome message appears.

2) Click the OK button. The Easy Install screen appears.

At this point you have two options:

• Easy Install, which installs the Macintosh system software and printer software recommended for your computer

OR

• Customize Install, which lets you override the recommended software and choose exactly what to install.

Easy Install

1) Click the Switch Disk button to select the disk where you want to install system software.
2) Click the Install button to do the Easy Install.
3) Follow the instructions on the screen. Messages appear, prompting you for the proper disks. When installation finishes, a dialog box appears.
4) Click the Quit Button.
5) Choose Restart from the Special menu.

Customize Install

1) Click the Customize button.
2) Click the Switch Disk button to select the disk where you want to install system software.
3) Select the items you want to install. Shift-click to select multiple items. Your selections appear beneath the scrolling window.
4) When you've made your selections, click the Install button. Messages appear, prompting you for the proper disks. When installation finishes, a message appears.
5) Click the Quit button.

Net Install

If someone has previously set it up, you can install system software over a network:

1) Connect to the shared disk that contains the Net Install folder.
2) Open the Net Install folder. A window appears.
3) Double-click the Installer icon.
4) Follow the instructions under Easy Install or Customize Install, which appear earlier in this document.

IF INSTALLATION FAILS

If a normal installation fails, you need to do a clean system software installation. If you want to use the fonts installed in your old System file, you'll have to temporarily remove them. With versions of System 6, use Font/DA Mover to save fonts and desk accessories to a font suitcase.

1) Start up with the Disk Tools disk. To do this, shut down the

Macintosh, insert the Disk Tools disk into the floppy drive, then start up your Macintosh.

If the computer ejects the Disk Tools disk and won't start up from it, be sure you have an Apple SuperDrive (formerly called FDHD). If your computer doesn't have a SuperDrive, you need 800K disks. Call the Apple Order Center to get them.

The Tech Info Library article titled "Locating Vendor Information" can help you search for the Apple Order Center's phone number.

If you already have 800K disks, and your computer won't start up from the Disk Tools disk, you may have a computer that won't start from System 6. Use the Disk Tools disk that shipped with your Macintosh and continue with the following steps:

2) Double-click your hard disk icon to open it.
3) Double-click the System Folder to open it.
4) Create a new folder within the System Folder and name it "Old Finder."
5) Drag the Finder file within the System Folder to this new folder.
6) Restart your Macintosh. You should see a blinking question mark, indicating that the computer couldn't locate a valid System Folder on your hard disk.
7) Insert the first Install disk.
8) Reinstall system software following the instructions in the Install System Software section.
9) Reinstall the fonts you removed from the old System file. Drag the fonts to the System file.

INSTALL SYSTEM 7 TUNE-UP 1.1.1

Install System 7 Tune-Up 1.1.1 on all Macintosh systems running system software version 7.0 or 7.0.1. Before installing System 7 Tune-Up 1.1.1 on your Macintosh, read the entire Read Me file on the Tune-Up disk or the System 7 Tune-Up Version 1.1.1 Installation Instructions included in the Tune-Up 1.1.1 package.

To insure proper software installation, always install system, printer, or network software, including System 7 Tune-Up 1.1.1, via the Installer. Be sure to install the System 7 Tune-Up software last.

During System 7 Tune-Up installation, AppleTalk is set to "Inactive" in the Chooser. You need to set AppleTalk to "Active" in the Chooser, and restart your Macintosh. Then you can open the Network control panel avoiding the message that "AppleTalk Remote Access has not been properly installed."

The first time you start your computer with Extensions on with Tune Up 1.1.1 installed, the System 7 Tuner installs an INIT resource into the System file. You can only see this INIT resource with a tool like ResEdit. After that first installation, you can start up with Extensions off.

The INIT loads from the System file, but the System 7 Tuner must be in the

Extensions folder. If you throw away your system software and reinstall, you must start up with Extensions on with Tune-Up 1.1.1 installed.

System 7 Tune-Up 1.1.1 installs these files:

- System 7 Tuner 1.1 extension
- LaserWriter 7.1.1 driver
- StyleWriter 7.2.2 driver
- Chooser 7.1

Article Change History:
27 May 1996 - Updated for technical accuracy.
07 Feb 1995 - Included information about compression and security software.
29 Aug 1994 - Updated for FAX/TIL/QRG maintenance.

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Tech Info Library Article Number:14033

HyperCard 2.2: File Type Menu Missing from Save a Copy Dialog

Revised: 5/3/95
Security: Everyone

HyperCard 2.2: File Type Menu Missing from Save a Copy Dialog

==========

Article Created: 29 November 1993
Article Reviewed/Updated: 3 May 1995

TOPIC ----------

With HyperCard 2.2, if the "StackToApp" extension is not in the proper place, the "Save a Copy" dialog doesn't include a pop-up menu for file type choice. Instead it displays "Stack" as static text.

DISCUSSION ----------

NOTE: StackToApp does not work on 68000 based Macintosh Computers such as the Macintosh Plus, SE, Classic and Portable. Also, StackToApp REQUIRES System 7.1 or later to function.

To use this feature, a system extension called "StackToApp" must be located in one of these places:

• Root folder where the HyperCard application resides.

• The Stack Translators folder in the same folder as the HyperCard 2.2 application, or

• The Extensions folder on the startup disk (NOTE: this is the least preferable location for the extension. If there is any extension conflict, and if the StackToApp extension is NOT in the Extensions Folder, then the user can boot with extensions off to isolate an extension conflict).

Article Change History:
03 May 1995 - Added additional requirement: only runs on System 7.1 or later.
11 Apr 1994 - Added that the root level was OK, and that Extensions folder should be the third choice.

Support Information Services

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Tech Info Library Article Number:14034

Tech Info Library

AppleScript: Displaying Custom Icons (11/93)

Revised: 11/30/93
Security: Everyone

AppleScript: Displaying Custom Icons (11/93)

==========

Article Created: 29 November 1993

TOPIC -----

How can I display custom icons? I can display the yield sign, stopping hand, and talking man, but other icons won't display.

DISCUSSION -----

The icon you want to display has to be in one of three places:

- In the resource fork of the script file
- In the system file, or
- In the current application.

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Tech Info Library Article Number:14035

Tech Info Library

AppleScript: Dialog Box Displays 255 Characters Maximum (11/93)

Revised: 12/1/93
Security: Everyone

AppleScript: Dialog Box Displays 255 Characters Maximum (11/93)

==========

Article Created: 29 November 1993

TOPIC --------------------

Can I make the dialog box bigger? I want to display about three paragraphs of information. Currently I can display about three lines.

DISCUSSION --------------------

With the built-in display dialog, you can't make the dialog box bigger. It will grow to display a maximum of 255 characters.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14036

Tech Info Library

Memory Technologies

Revised: 11/30/93
Security: Everyone

Memory Technologies

==========

Article Created: 30 November 1993

Memory Technologies

3007 North Lamar Blvd.
Austin, Texas 78705

800-950-8411

512-451-2600

512-451-3323 Fax

Company Profile:
Specialize in memory for the Macintosh. In addition they sell Spanish, French and German keyboards and hard disk drives.

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Tech Info Library Article Number:14037

Tech Info Library

Macintosh Portable: Used in Space Shuttle (11/93)

Revised: 12/1/93
Security: Everyone

Macintosh Portable: Used in Space Shuttle (11/93)

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Article Created: 1 December 1993

TOPIC ----------

I would like more information about the Macintosh Portable used in the space shuttle by the NASA some years ago.

DISCUSSION ----------

We believe you are referring to shuttle launch STS-43. The primary mission of STS-43 was to deploy a fourth TDRS satellite (Tracking and Data Relay Satellite). The shuttle was launched at 11:02 AM EST on Friday August 2, 1991, and landed at about 8:30 AM EST on Sunday August 11, 1991.

The shuttle carried a Macintosh Portable (nonbacklite) system on board. It was used for four primary purposes:

1) Testing four cursor control devices:
    a) the Portable’s built-in trackball
    b) a modified aircraft control stick fitted with a thumb ball at top
    c) a 2-inch trackball
    d) an optical mouse

Some bushings were placed under the trackball for experiment 1a to take up the small amount of slack. Experiments 1b-d were performed with third party products.

2) Connecting to AppleLink and sending mail and disk files. The very first electronic mail message from space was sent by the crew of the space shuttle mission on Friday, August 9, 1991. You may be interested in that message:

"Hello Earth ! Greetings from the STS-43 Crew. This is the first AppleLink from space. Having a __GREAT__ time, wish you were here,... send cry, and CS! Have a nice day..... Haste la vista, baby,... we'll be back!"

editor's note:
cry = cryogenics (meaning, send more fuel for life support--air, etc.)
CS = Reaction Control System (meaning, send more fuel for maneuvering/control) In other words, they wanted to stay up there!

To connect to AppleLink the modem was modified by NASA to work with their synchronous DCE equipment. AppleLink modifications were made to deal with, among other things, routing and packet delays.

3) Recording LB NP (lower body negative pressure) medical results along with other mission notes and provided procedures for doing medical experiments.

4) Shuttle flight path tracking using an application called (Shuttle Portable Computer). It presents a real-time display of the shuttle's orbital position against a world map along with day and night cycles, tracking stations, and emergency reentry information.

In addition, the Macintosh acted as an alarm clock (in tandem with the WristMac™) alerting the crew when it is time to do certain experiments, and so on.

Modifications were also made by NASA to the battery system (we believe a circuit breaker was added to meet the safety requirements and regulations for personal gear transported into space). Since this date, Apple portable computers are continued to be used in other NASA space missions; we have no details on those missions. MacWEEK published an article in late 1991 on mission STS-43 you may wish to pursue. In general, the Portable was basically a stock Macintosh with very few modifications.

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Tech Info Library Article Number:14039

Tech Info Library

Macintosh Screen Freeze, Lock Up: Resetting & Restarting (12/93)

Revised: 12/1/93
Security: Everyone

Macintosh Screen Freeze, Lock Up: Resetting & Restarting (12/93)

==========

Article Created: 1 December 1993

TOPIC ----------

My Performa 450 has locked up (screen is frozen) and I've heard that turning the power switch off and on is not the only way to restart my Macintosh. Are there any alternatives?

DISCUSSION ----------

There are several alternatives regardless of your Macintosh model. Try these in the following order:

1) If you have System 7.0 or later, attempt to "force quit" the application you were using. Hold down the Command (Apple), Option, and Escape keys. Your Macintosh should present a dialog box which states: "Force <application name> to quit? Unsaved changes will be lost." If you can move the mouse cursor, click the "Force Quit" button.

2) If the "force quit" is successful, you should return to the Finder. Restart your Macintosh from the Special menu. If the cursor is still frozen, refer to 3) and 4) below.

3) If your Macintosh is still locked up, (screen frozen) check and see if your Macintosh has a reset button. Most compact Macintosh models have a reset button (also known as a programmer's switch on the left or right side of the computer. Some modular Macintosh models have reset buttons on the front lower left hand side. (Examples are: Macintosh IIcx, IIci.) Push the button marked "reset."

4) If your Macintosh is still locked up, (screen frozen) and your Macintosh does not have a reset button, you can do a "warm restart." Hold down the Command, Option, and Power On Key (button at the very top of the keyboard). Your Macintosh should restart. This action is the equivalent of turning your computer off and then back on.

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Tech Info Library Article Number:14040

Tech Info Library

System 7: Personal File Sharing (8/96)

Revised: 8/9/96
Security: Everyone

System 7: Personal File Sharing (8/96)

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Article Created: 1 December 1993
Article Reviewed/Updated: 9 August 1996

TOPIC ----------

File sharing with System 7.0 and later versions turns your Macintosh into a file server, letting others access information on your hard disk. This article provides a general description of file sharing followed by the specific steps you follow to set up file sharing on your Macintosh. A brief list of troubleshooting tips follows the sharing setup steps.

DISCUSSION ----------

Defining File Sharing
==========

You can define file sharing in System 7 for up to 10 top-level items (drives and parent folders - folders inside folders don't count toward this limit). (This article uses the term "files" when a specific distinction is not important.)

You can define file sharing for a maximum of 100 users and a maximum of 100 groups in Users and Groups. Up to 10 users (specific or guest) can be connected, however 5 can be "actively" accessing files.

Setting up sharing includes these steps:

Turning file sharing on for your Macintosh
- Defining users and groups (if you want to restrict access)
- Defining the files you want to share
- Monitoring and managing file sharing once you have activated it

Setting Up Sharing

The first thing you need to do is turn sharing capability on for your Macintosh. To do this, select the Sharing Setup Control Panel. Enter the owner and system names, click on the Start button for File Sharing, and close the Control Panel.

Defining Users and Groups

To restrict access to your shared files you must define the users and groups who will have access. If no restriction is necessary, then you simply permit "guest" access.

You define users and groups using the Users & Groups Control Panel. This Control Panel initially includes two items: one for you, as the owner, and one for guest access.

To allow guest access, double click on the <guest> icon, which displays a small dialog box that gives you two options:

- Allow guests to connect
- Allow guest to link to programs on this Macintosh

Click on the options you want and then close the box.

To add additional users and groups, you select New User or New Group from the File menu. Both of these actions creates a new item in the Users & Groups folder.

If you create a New User, define the name as the name you want the user to use when accessing your shared files. To set specific access for the user, you double click on the user's icon, which displays a personalized dialog box.

You specify the type of file sharing access to have, whether they belong to a Group folder (described next), and whether they have program linking capability. You also define an access password, if desired.

If you create a New Group, define the name as the name of the group. You then select and drag the applicable user icon(s) into the group folder. If you double click on the group folder, you see the users who belong to the group.

Sharing Drives and Folders

You define the drives and folders you want to share by highlighting the item and selecting the Sharing option from the File menu. A file sharing dialog box displays. This dialog box lets you:

- Share this item and its contents
  For drives, this includes all files and top-level folders on the drive.
  For folders, this includes all files and sub-folders within the folder.
- Select who will have shared access
  You can change the Owner to someone other than yourself. You can also define access for a specific user or group. Or you can let everyone have access (as "guest").
- Define the level of access
  You can restrict access for each user or group to seeing folders, seeing files, and making changes, or any combination of these.
- Share access "down the folder tree"
  For folders, you can provide access to the folder and its immediate

contents, or to all folders within the selected folder (by selecting "Make all currently enclosed folders like this one").

- Restrict modification
  You can let users access information in your files and still restrict their ability to move, rename, or delete them (by selecting "Can't be moved, renamed or deleted").

Monitoring and Managing File Sharing

The File Sharing Monitor Control Panel lets you see what has been shared and shows you the name of any connected users (actually the names you have allowed users to connect with). In addition, the monitor lets you disconnect any connected users. A thermometer-style meter indicates the activity level of the server.

Viewing File Sharing Status

To see whether file sharing is turned on, simply open the File Sharing Monitor Control Panel. Information in the File Sharing Monitor updates as the status of file sharing on your Macintosh changes.

Disconnecting a File Sharing User

To disconnect a user from file sharing on your Macintosh, open the File Sharing Monitor Control Panel. Highlight the user or user names you want to disconnect and click on the Disconnect button. At the prompt, enter the number of minutes to wait before the disconnect (enter 0 for immediate disconnect) and click on OK.

A message announcing the pending disconnect displays on the monitor of each Macintosh that is currently sharing files on your system, or you can turn off your system to disconnect them all.

Steps For Setting Up File Sharing

Turn on File Sharing

1) Choose Control Panels from the Apple menu.

2) Double-click Sharing Setup in the Control Panels window.
   The Sharing Setup window opens.

3) Type your name in the Owner Name box. Your Macintosh uses this name to identify you over the network, like the Chooser name in versions of System 6.

4) Type a password you can remember, and that other users will not easily guess. (Upper case and lower case MUST match.)

   NOTE: With file sharing active, persons having access to your password can log on to your Macintosh and access the entire contents

of your hard disk.

5) Type a name for your Macintosh. The name you give your Macintosh becomes the file server name when file sharing is on.

6) Click the Start button on the File Sharing portion of the Sharing Setup window. The Start button changes to Cancel, and the Status window says that file sharing is starting up.

7) Close the Sharing Setup window.

Configure Guest Access
---
1) Choose Control Panels from the Apple menu.

2) Double-click the Users & Groups icon. The Users & Groups window opens.

NOTE: The window shows two users -- Guest, and the name you typed in the Sharing Setup Owner Name field.

3) Double-click the Guest icon. The Guest window opens.

Be certain that the box titled "Allow guests to connect" IS NOT checked, unless you are certain that you want to allow guest access.

4) Close the Guest window.

Create a New User
---
1) If the Users & Groups window is already open, skip to step 4.

2) Choose Control Panels from the Apple menu.

3) Double-click the Users & Groups control panel. The Users & Groups window opens.

4) Choose New User from the File menu. A New User is added to the Users & Groups window.

5) Click the mouse in the text area just below the New User icon. The cursor changes from an arrow to a text cursor, and an outline box appears around the text.

6) Type the appropriate user name.

7) Double-click the New User icon. The New User window opens.

8) Set the User's password by typing the password in the field titled User Password.

9) Set the User's privileges by clicking the mouse in the Allow User to Connect and/or Allow User to Change Password boxes.

10) Close the User's window.

Create a New Group
---

1) Open the Users & Groups control panel window.

2) Choose New Group from the File menu. A New Group is added to the Users & Groups window:

3) Click the mouse in the text area just below the New Group icon. The cursor changes from a pointer to a text cursor.

4) Type in the appropriate group name.

5) To add users to the group, select the User's icon and drag it onto the group until the Group's icon is highlighted. Release the User icon. The User is added to the Group.

6) To see the members of the group, double-click the Group icon. The Group window shows icons of all users who are members of the group.

Configure a Folder for Sharing
---

1) Create a folder for the files and folders you plan to share. The folder should contain files and folders to be shared with users with identical access privileges.

2) Select the items to share and drag them into the new folder. To share a copy rather than the original, hold down the Option key, select the item, and drag it to the folder. This creates a duplicate of the item(s) selected.

3) Click the folder you wish to share. The folder is highlighted.

4) Choose Sharing from the File menu. The Sharing window opens.

5) Click the box titled "Share this item and its contents."

6) Click the Everyone boxes to turn OFF access for guests.

7) If you wish to make the folder available to a group, click the User/Group pop-up menu.

8) Select the appropriate group and release the mouse button. The group you have selected should now be visible in the User/Group menu.

9) Close the folder's sharing window.

Troubleshooting Tips
==========

Here are the most common problems and the things you should verify first.

Users cannot see a shared volume or folder

- Make sure that File Sharing is turned on
- Make sure the volume or folder has the "Share this item..." box selected
- Check your network connections and make sure both you and the user have access to the same network

Users can't log on

- Make sure the user has the correct name and password (see Defining Users and Groups earlier in this article)
- Make sure the Caps Lock key is not down since passwords are case-sensitive
- Make sure the user has permission to connect (see Defining Users and Groups)
- Make sure the user has access to the same volume or folder that has been shared

Unexpected disconnects

- Make sure the Macintosh acting as a server has not gone down or been turned off
- Check for network problems

Cannot turn System 7 File Sharing on

- Make sure there is at least 340K of memory available on the hard disk.
- Make sure there are no DOS volumes mounted with PC Exchange. If there are, eject the volume and try again.
- Zap Parameter RAM (PRAM) by restarting the Macintosh and holding down the COMMAND-OPTION-P-R keys. Wait for the second startup chime then release the keys and let the computer startup. This resets the serial ports so you will have to reactivate AppleShare and reset your network interface (Ethernet or Token Ring) on most Macintosh computers.
- Delete the Users & Groups Data File in the Preferences folder. (NOTE: Deleting the Users & Groups Data File will remove all existing users and groups.) Restart the Macintosh and enter the Owner Name, Owner Password, and Macintosh Name in the Sharing Setup control panel then start File Sharing. Restart the computer and a new Users & Groups data file will be created. Recreate the user and group information.
- Delete the File Sharing folder in the Preferences folder, restart the Macintosh, and turn File Sharing on.
- If any media is formatted with a third-party utility, check with the vendor to be sure it is compatible with System 7 File Sharing.
- Delete the invisible AppleShare PDS file at the root of any volume being shared. (NOTE: Deleting the AppleShare PDS file will remove all existing file and folder access privileges.) Restart the Macintosh and start File Sharing. Re-establish folder and file access privileges. The AppleShare PDS file can be deleted by using ResEdit or other third-party utility that can view invisible files. Use the utility to make the file visible

on the desktop. The now visible AppleShare PDS file can now be dragged to the trash.

- Backup the data and reformat the drive. The issue may be caused by bad blocks on the drive.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
09 Aug 1996 - Included additional troubleshooting tips.
15 Jun 1996 - Change title for clarity.
27 Jun 1995 - Made corrections for technical accuracy.

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Tech Info Library Article Number:14041

Tech Info Library

Macintosh TV: New Control Panel for HRC Cable (12/93)

Revised: 12/1/93
Security: Everyone

Macintosh TV: New Control Panel for HRC Cable (12/93)

==========

Article Created: 1 December 1993

TOPIC ----------

Macintosh TV users may find that they cannot receive television signals from their cable system. The solution is to get the revised TV Set Up control panel.

DISCUSSION ----------

Background

About 30 percent of the cable systems in the United States use Harmonically Related Carrier frequency, which is different from air-transmitted television signals and from the remaining 70 percent of cable systems. HRC reduces interference when many channels are transmitted over cable. Most television receivers that are labeled "cable-ready" are compatible with HRC.

Macintosh TV, however, cannot receive an HRC signal -- because each channel's frequency is shifted down by 1.25 MHz from the standard channel frequencies recognized by Macintosh TV.

Solution: A New Control Panel

A revised TV Set Up control panel that allows Macintosh TV to pick up the HRC frequency will be available starting November 30, 1993. Here's where to get it:

- From authorized Apple resellers (who may charge a downloading fee).

- From the Apple Assistance Center.

- From AppleLink. Here's the path:
  Software Sampler
  Apple SW Updates

Macintosh
Supplemental System Software
TV Setup (1.0.1).

This new control panel also fixes a problem that would sometimes cause the screen to darken after returning from TV mode.

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Tech Info Library Article Number:14042

Tech Info Library

Fonts and Desk Accessories Installation (7/96)

Revised: 7/1/96
Security: Everyone

Fonts and Desk Accessories Installation (7/96)

==========

Article Created: 1 December 1993
Article Reviewed/Updated: 01 July 1996

TOPIC ----------

This article tells you how to install fonts and desk accessories (DAs) for versions of System 6 and System 7.

DISCUSSION ----------

System 7 Installation
---

1) Close all open applications except the Finder.

2) When the System Folder is open, you must install fonts and desk accessories in their proper places within the System Folder. If you have a suitcase file of multiple fonts or DAs, and you don't want to install all of them, you must first double-click it to open the suitcase file. Select the fonts or DAs you want to install and install them as follows:

   • For versions of System 7 later than 7.1, drag the font files to the Fonts folder.

   • For versions of System 7 prior to 7.1, drag fonts onto the System file.

   • Drag desk accessories (DAs) to the Apple Menu Items folder.

   When the System Folder is closed, you can drag font files onto the System Folder icon, and the system places the fonts in the proper location.

System 7 Hints and Help

• DAs no longer have to reside only under the Apple menu. Instead of

the Apple menu, you can put them in folders or on the desktop.

- TrueType and fixed-size fonts (such as Helvetica 18) go in the System file for System 7 versions earlier than 7.1. They go in the Fonts folder for 7.1 and later versions.

- PostScript fonts go in the Extensions folder for System 7 versions earlier than 7.1. PostScript fonts go in the Fonts folder for 7.1 and later versions.

- For versions of System 7 earlier than 7.1, you may find your text prints incorrectly on a PostScript printer (like the LaserWriter NT or NTX). If this happens, put the PostScript fonts in the System Folder at the root level rather than in the Extensions folder within the System Folder.

System 6 Installation
---

1) Copy the Font/DA Mover 4.1 application to your hard disk.

   Note: If you have older versions of Font/DA Mover on your hard disk, drag them to the Trash. Using an older version can damage your System file!

2) Double-click the Font/DA Mover 4.1 application. The Font/DA Mover screen appears. The left scroll box shows the fonts currently installed in your System file. The title below the scroll box shows the location of the fonts: System on Macintosh HD.

3) Click the Open... button on the right. A standard file selection dialog box appears.

4) Find the font file (also called suitcase file) with the fonts you want to install, select it, and click the Open button (or press Return). You are taken back to the Font/DA Mover screen.

5) Select the fonts you want to install by dragging over the list on the right. (You also can hold down the Shift key and click each font.) The selected fonts are displayed in reverse type (white letters on a black background). Arrows appear on the Copy button to show the installation direction.

6) Click the Copy button to install the fonts.

7) Click the OK button.

To install desk accessories during the same session, click the Desk Accessory radio button. The left scroll box then shows the DAs currently installed in your System file. Follow steps 3-7, substituting DA(s) wherever you see font(s).

8) When you're finished, click the Quit button to go back to the Desktop (Finder). Restart your Macintosh if you're in MultiFinder.

System 6 Hints and Help

- Hold down the Option key before launching Font/DA Mover to display DAs first rather than fonts.

- System 6 has a limit of 15 desk accessories and 52 fonts.

- You can get around the System 6 limits by using a third-party extender utility such as Suitcase II or MasterJuggler.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
01 Jul 1996 - Added Fax Doc Word
04 Aug 1994 - Removed binary file. Took QRG out of title. Verified against contents of the fax document.
21 Feb 1994 - Made text-only version available.

Support Information Services

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Tech Info Library Article Number:14043

Tech Info Library

Macintosh TV: Television Connection Tips (12/93)

Revised: 12/1/93
Security: Everyone

Macintosh TV: Television Connection Tips (12/93)

==========

Article Created: 1 December 1993

TOPIC ----------

This article provides some tips for connecting a Macintosh TV to cable service.

DISCUSSION ----------

- Basically, anything that can be attached to a regular TV can be attached to Macintosh TV. There are two ports for a video source: coaxial and RCA. Things that have an RCA plug can also be attached to the coaxial port with the proper adapter, and vice-versa. One restriction is that closed caption must come through the coaxial port.

- In the TV Setup control panel, click on Channel Setup and select Cable (as opposed to Antenna for broadcast TV) as the source.

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Tech Info Library Article Number:14045

Tech Info Library

AppleShare Pro and CD-ROMs Created Under System 6.x (12/93)

Revised: 12/2/93
Security: Everyone

AppleShare Pro and CD-ROMs Created Under System 6.x (12/93)

==========

Article Created: 1 December 1993

TOPIC ----------

I have a custom CD-ROM disk that was shareable over AppleShare 3.0.x, but does not seem to be shareable over AppleShare Pro. The problem seems to be with AppleShare Pro not recognizing CD-ROMs that were created with a System 6.x type desktop. The CD-ROM appears on the Apple Workgroup Server (AWS) 95 desktop, but is not being shared.

I tested a CD-ROM that was known to have been mastered on a System 6.x volume. The dialog box message that is given when the (System 6.x type desktop) CD-ROM is inserted into the drive is, "The volume "xxxxx" could not be prepared for use with AppleShare Pro". The only option given is an "OK" button, which dismisses the dialog box and the CD-ROM volume appears on the AWS 95 desktop. If the AppleShare Admin program is then run, the CD-ROM does not appear in the list of available volumes. This CD-ROM cannot therefore be shared over the network.

The CD-ROM I used for testing was the "Bill and Dave's Excellent CD (Release Version)" from the Developer CD series. Interestingly, the Finder window of this mounted CD-ROM showed it to be locked, but didn't show the non-writable (crossed-out-pen) symbol. Another System 7.x formatted CD-ROM (October 93 Developer's CD) was mounted to compare it to the behavior of the System 6.x formatted CD-ROM. This CD-ROM appeared on the desktop and was available for selection in the AppleShare Admin program as a shareable volume. In the Finder, it had a locked icon as well as a non-writable icon in the Finder window for that volume.

Does this mean that System 6.x created CD-ROMs cannot be used with AppleShare Pro?

DISCUSSION ----------

AppleShare Pro is not able to share System 6.x based CD-ROMs. The CD-ROM must have System 7.x style desktop files on it for it to be shared on an

AWS 95. This limitation is a result of A/UX not allowing the desktop files for a volume to be on a separate volume. This is required when System 6.x based CD-ROMs are shared.

To illustrate, when the "Phil and Dave's Excellent CD (Release Version)" CD-ROM is first mounted on a System 7 Macintosh, the Desktop files are created and stored in the "Preferences" folder within the "System Folder". The Desktop files for the CD-ROM are on the boot volume and A/UX can't do this.

Under A/UX, it is not necessary to have System 7 style Desktop files to see the contents of the volume, but they are necessary if the volume is to be shared.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14046

Tech Info Library

AV Computers: Using With Third Party Monitors (12/93)

Revised: 12/2/93
Security: Everyone

AV Computers: Using With Third Party Monitors (12/93)

==========

Article Created: 2 December 1993

TOPIC ----------

I tested a Quadra 840AV with several third party monitors from manufacturers like Eizo and Sony (13", 16", 19" and 21"). I connected the monitors via the built-in video port. They didn't work. I got a black screen. Apple monitors work fine.

Is there a list of display devices that work with the AV models?

DISCUSSION ----------

Apple designs its video circuits to support its own monitors. This task has become increasingly difficult given the many different screen sizes and different types of video signals now supported by Apple computers and video cards (PAL, NTSC, VGA, and so on.). It is entirely up to the third party vendors to build their monitors to conform with Apple video specifications if they choose to make their monitors compatible with Apple CPUs. Because of the almost endless number of third party monitors in the market place, Apple does not keep track of nor maintain a list of which monitors may or may not be compatible with our ever growing CPU line. I recommend you contact the individual vendors who will know if their monitor is compatible with a particular Apple computer.

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Tech Info Library Article Number:14047

Tech Info Library

Using Composite Monitors/TVs: With AV Computers (12/93)

Revised: 12/2/93
Security: Everyone

Using Composite Monitors/TVs: With AV Computers (12/93)

==========

Article Created: 2 December 1993

TOPIC ----------

Does Apple have a listing of Composite Monitors/TV Tuners that are compatible with the 660AV & 840AV computers?. Most monitors seem to scan in such a fashion that the menu bar and right side of the screen are lost. Has Apple tested the AV's to see which monitors compensate for this?

I'm running out of the Video-out RCA jack into the monitor and switching in the control panel according to the AV documentation.

A number of schools have brought this up as an issue. Is there a difference if we use the S-video output?

DISCUSSION ----------

It sounds as though you are using the monitor in the overscan mode. This is exactly how a television set operates--a portion of the video display is off the screen. This is not a problem when watching television but it is a serious inconvenience when using a NTSC receiver (TV) as an output to a computer generated signal. The solution is to operate the TV in the underscan mode. To do this you must open the monitor control panel and select the lower resolution (512 x 384) via the options button. This is the underscan mode and will allow you to see the entire raster when you "switch" to the TV.

Using the S-video output from the computer to drive an S-video compatible monitor will provide a slightly improved signal. However, the improved performance is very subtle and may not even be discernible under certain displays.

Finally, because of the almost endless number of third party monitors in the marketplace, Apple does not keep track of nor maintain a list of those which may or may not be compatible with our ever growing CPU line. I

recommend you contact the individual vendors who will inform you as to their compatibility with a particular Apple computer.

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Tech Info Library Article Number:14049

Tech Info Library

HyperCard: Sending HyperTalk in AppleScript (12/93)

Revised: 12/2/93
Security: Everyone

HyperCard: Sending HyperTalk in AppleScript (12/93)

==========

Article Created: 2 December 1993

TOPIC --------------------

How do I embed HyperTalk code in a script that is in the AppleScript environment?

DISCUSSION --------------------

After setting the language environment to AppleScript:

- Use the command "do script" and enclose the HyperTalk code in quotes. For example:

  ```
  do script "send mouseUp to card button 5"
  ```

- Or put AppleScript code in a field, then use something like this:

  ```
  do card field scriptText as AppleScript
  ```

  If the field scriptText has AppleScript code in it, the HyperTalk command will execute it as AppleScript.

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Tech Info Library Article Number:14050

Tech Info Library

PowerBook Batteries: Memory Effect (6/94)

Revised: 6/30/94
Security: Everyone

PowerBook Batteries: Memory Effect (6/94)

==========

Article Created: 2 December 1993
Article Reviewed/Updated: 29 June 1994

TOPIC ----------

Is there really a battery "memory effect" and are PowerBook batteries susceptible? The Tech Info Library contains an article from Apple Developer Tech Support that says there isn't.

DISCUSSION ----------

Yes, there is disagreement on this topic. This article does contradict the other article you refer to, but it supports the statement in the PowerBook owner's manuals. This information provided by the Battery Technology group.

Apple uses three different types of batteries in its PowerBook computers. Note that these are not interchangeable. Only use the batteries intended for your PowerBook model:

PowerBook 100 - Lead-Acid

Other PowerBook 100 series computers - Nickel Cadmium (NiCad)

PowerBook 500 series computers - Nickel-Metal-Hydride (NiHy)

PowerBook Duo 200 series computers - Nickel-Metal-Hydride (NiHy)

Lead-Acid

Recharge lead-acid batteries when they become depleted. Never fully discharge the battery. These batteries should always be kept fully charged. If a lead-acid battery becomes fully discharged, it may undergo sulfation, which means the lead electrode inside the battery converts to lead sulfate. Sulfation destroys the battery by making it unable to hold a charge.

Nickel-Cadmium

Recharge nickel-cadmium (NiCad) batteries when they become depleted. Fully discharge and recharge the battery every 90 days.
Ni-Cad rechargeable batteries suffer from an effect commonly called "memory", where if the battery is partially discharged, then recharged, it will reach a point where the perceived capacity of the battery is that level to which it has been draining to. If the battery is fully drained periodically, this effect can be minimized or eliminated. The earlier Ni-Cads had more of a problem than the ones used now.

Therefore, on PowerBooks, if a customer follows the dialog warning and plugs in the AC Adapter at that first warning, the battery will begin to develop a memory effect. It takes 50 to 100 cycles to develop the effect to the point that it will begin to affect battery life. The recommended procedure is that every 10 to 20 cycles, the battery should be allowed to drain all the way to the 3rd battery warning (the shut-off message). The machine should be left in sleep for several hours to fully drain the battery (down to 5.7 V or so), then be charged for 2 to 3 hours before attempting to use the machine again.

Best case would be to use an external battery charger to drain the battery, so that the PowerBook itself can be used. The Apple external battery charger can be used to discharge by putting the battery in the charger while the charger is disconnected from the power source. 3rd party rechargers that cycle the battery are not recommended on a regular basis, since they typically do a fast discharge, and this will degrade the battery over time. If they have a setting to disable the discharge effect, that effect should only be used every 10 to 20 times the battery is charged.

If a battery is encountered that had significantly less life than can be expected, the above procedure should be tried to make sure this memory effect isn't the problem. It should be used even if the battery is very new.

Nickel-Metal-Hydride

Recharge Ni-Hy batteries when they become depleted. Fully discharge and recharge the battery about every 30 days. Ni-Hy batteries are also subject to the “memory effect” and should be treated like NiCad batteries, as explained above.

Article Change History:
29 Jun 1994 - Included information on all three types of batteries used in PowerBook models.

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Tech Info Library Article Number:14051

Performa 550: Video Out Solution (12/93)

Revised: 12/2/93
Security: Everyone

Performa 550: Video Out Solution (12/93)

==========

Article Created: 2 December 1993

TOPIC ----------

I received a Performa 550 for my classroom and wish to use it for class presentations by connecting an external monitor. Is this possible?

DISCUSSION ----------

Power R, Inc. has developed a video out solution for the LC 520/Performa 550 called the Presenter 520. The Presenter 520 allows for output to an external monitor or LCD (liquid crystal display) panel, making it easy to display the LC 520 screen in a classroom setting.

The PowerR Presenter 520 installs in minutes with no tools and drives color or monochrome LCD panels and monitors. It installs directly onto the logic board (the video chip), leaving the LC 520 PDS slot available for an additional card. The PowerR Presenter 520 has both D-15 (Macintosh) and HD-15 (VGA) connectors for external monitors or LCD panels.

NOTE: The Presenter 520 is NOT compatible with non-multisync VGA monitors such as the Apple Basic Color Monitor.

PowerR Presenter 520 has a special educator price of $116.10.

For More Information

Contact Power R, Inc. at 800-729-6970 or 206-547-8000.

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Tech Info Library Article Number:14053

Tech Info Library

DOS Compatibility Card: Hard Drive Partitioning (5/96)

Revised: 5/6/96
Security: Everyone

DOS Compatibility Card: Hard Drive Partitioning (5/96)

==========

Article Created: 2 December 1993
Article Reviewed/Updated: 6 May 1996

TOPIC ----------

How can I partition the hard drive so it works properly with the DOS Compatibility Card, in the DOS environment and still use the hard disk for the Mac OS?

DISCUSSION ----------

The PC hard drive is very flexible. It can be a "Drive Container," which is a large file that exists on a Macintosh partition or server; it can be a physical DOS partition on a SCSI device created with a third party utility; or it can be a SCSI DOS medium (such as a hard disk, SyQuest, etc.).

Creating a Drive Container

To create a drive container, use the PC Setup Control Panel.

1) Select either the C or D drive icon
2) Select New drive file from the menu
3) Select the location for the drive container
4) Name the drive container
5) Check the Initialize Drive File box

Using a DOS Partition

To use a DOS partition, it is necessary to have a SCSI drive attached that has a DOS partition on it. Some Macintosh hard disk formatting programs allow the creation of MS-DOS partitions. You can also use an existing MS-DOS formatted SCSI drive.

Once you connect the hard disk:
1) Open the PC Setup Control Panel
2) Select the appropriate drive letter

3) Select Drive Container
4) Select the appropriate drive from the list of available choices

If the partition is new or the drive has not been used by MS-DOS before, it is necessary to use the DOS FDISK command to create the DOS partitioning information for that drive. After using FDISK, you need to format the drive using the MS-DOS FORMAT command.

This article appeared in the 6 May 1996 issue of Information Alley.

Article Change History:
06 May 1996 - Reviewed for technical accuracy.
05 May 1994 - Removed references to Houdini
25 May 1994 - Added information on creating a disk container and hard disk partitions.

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Tech Info Library Article Number:14055

Tech Info Library

Peter & Santa Claus CD: QuickTime Alert (12/93)

Revised: 12/2/93
Security: Everyone

Peter & Santa Claus CD: QuickTime Alert (12/93)

==========

Article Created: 2 December 1993

TOPIC ----------

Why does an alert appear saying that I need QuickTime installed when I launch Peter & Santa Claus?

DISCUSSION ----------

Answer:

1) Peter requires at least version 1.5 of QuickTime to run (QuickTime is an extension that plays the movies found on Peter & Santa Claus). The Peter & Santa Claus CD comes with QuickTime 1.6.1. To install it, drag it to your System Folder (press OK when your Macintosh asks if it should put QuickTime into the Extensions folder), and restart your computer.

2) If you already have QuickTime installed on your computer, perhaps the extensions were not loaded on start-up. Try restarting your Macintosh. If this still does not work, check the version of QuickTime that you are using by selecting it and choosing "Get Info" from the File Menu.

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Tech Info Library Article Number:14056

Tech Info Library

Peter & Santa Claus CD: Configuration Requirements (12/93)

Revised: 12/2/93
Security: Everyone

Peter & Santa Claus CD: Configuration Requirements (12/93)

==========

Article Created: 2 December 1993

TOPIC ----------

Why do I get an alert stating that I need 256 colors and 640x480 pixel resolution to run Peter & Santa Claus?

DISCUSSION ----------

Answer:

1) Peter & Santa Claus requires a resolution of at least 640x480 pixels. An Apple 12 inch RGB display does not support this resolution. This may be why you are receiving this alert. You must use a 13 or 14 inch RGB display or larger. If you are using a large enough monitor, perhaps you are running in something other than 256 colors.

2) Peter & Santa Claus requires 256 colors to run. You can set your Macintosh to run under 256 colors by going to the Monitors Control Panel and selecting 256 colors. If you do not have 256 colors available to you, you need to buy more VRAM, or a video board that supports 256 colors.

Reference: Peter & Santa Claus Configuration Requirements

Copyright 1993, Apple Computer, Inc

Tech Info Library Article Number:14057

Tech Info Library

Peter & Santa Claus CD: Sound Problems (12/93)

Revised: 12/2/93
Security: Everyone

Peter & Santa Claus CD: Sound Problems (12/93)

==========

Article Created: 2 December 1993

TOPIC --------------------

Why doesn’t the Peter & Santa Claus audio always play?

DISCUSSION --------------------

Answer:

Peter & Santa Claus works with either the system sound or Sound Manager 3.0. It is true that Sound Manager 3.0 offers superior sound quality. However, Sound Manager 3.0 requires a little more memory. It seems that Sound Manager 3.0 takes an additional 10-30K of system memory when sound is being played. If this memory is not available to your system, some audio may not be heard.

To free up some memory, try the following:

1) Close all windows in Finder.
2) Quit any running applications.
3) Remove items in your System Folder that are not needed by Peter & Santa Claus (for example: Extensions and Control Panels).
4) If all else fails, try taking out Sound Manager 3.0 and using System 7.x Sound instead. Note: The goal is to have at least a 10-30K largest unused block (instead of 0K) AFTER launching Peter and Santa Claus.

Reference: Peter & Santa Claus Configuration Requirements

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Tech Info Library Article Number:14058

Tech Info Library

Peter & Santa Claus CD: Sound & Animation Is Erratic (3/95)

Revised: 3/17/95
Security: Everyone

Peter & Santa Claus CD: Sound & Animation Is Erratic (3/95)

==========

Article Created: 2 December 1993
Article Reviewed/Updated: 17 March 1995

TOPIC ----------

Why does Peter & Santa Claus CD-ROM sound and animation play erratically?

DISCUSSION ----------

Erratic play from the CD could be a result of any one or more of the following:

• The CD-ROM disk may be dirty (fingerprints dust and so on). Try cleaning your disk.

• There may be applications running in the background (quit all applications besides Peter).

• Sharing may be on (ensure that sharing is off).

• Peter may be accessing Virtual Memory (ensure that Virtual Memory is off). If you do not have enough memory you may want to consider purchasing more.

• If you are using an older/slower Macintosh such as an LC or LC II Peter & Santa Claus may occasionally behave erratically. If you are planning on using a significant amount of CD-ROM multimedia and want optimum performance consider upgrading.

• If you are using an early or single speed CD player such as an Apple CDSC, CD 150, or PowerCD, Peter may behave erratically. You may want to consider upgrading to an AppleCD 300.

Reference: CD-ROM Drive Manual, Technical information concerning the use of multimedia CD-ROM disks

Article Change History:

17 Mar 1995 - Corrected product name and updated format.

Support Information Services

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Tech Info Library Article Number:14059

..TIL14060-Apple_File_Exchange-Users_Guide_Error_12-93_(TA30657).pdf

Apple File Exchange: Users Guide Error (12/93)

Revised: 12/13/93
Security: Everyone

Apple File Exchange: Users Guide Error (12/93)

==========

Article Created: 6 December 1993

TOPIC -----

On page 256, the Macintosh Users Guide for desktop Macintosh computers (#030-2651-A) says that Apple File Exchange (AFE) comes with three translator files, but it only ships with one translator file.

DISCUSSION -----

It's correct that AFE ships with only one separate translator. However, there are two built-in translators and one separate translator (DCA-RFT/MacWrite). I believe that the author counted the built-in text and binary translators as separate translators because on page 258 the manual contradicts what was written on page 256 and reads that AFE ships with one translator.

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Tech Info Library Article Number:14060

Tech Info Library

68040, PowerPC 601: Integrated FPU Is IEEE 754 Compliant (12/93)

Revised: 12/6/93
Security: Everyone

68040, PowerPC 601: Integrated FPU Is IEEE 754 Compliant (12/93)

==========

Article Created: 6 December 1993

TOPIC ----------

The U.S. federal government specification for personal computer purchases requires an FPU that is "IEEE 754 compliant, with precision ranging at least 10E+38 and 10E-38 (8 significant digits) to at least 10E+308 and 10E-308 (16 significant digits)."

Does the 68040's FPU meet this specification? Will PowerPC 601?

DISCUSSION ----------

Both the MC68040 and the PowerPC 601 microprocessors are fully compliant with IEEE 754 floating-point standards. The following tables show the approximate precision ranges for the two processors:

Single-Precision Real Format

Maximum Positive Normalized	3.4 x 10E38
Minimum Positive Normalized	1.2 x 10E-38
Minimum Positive Denormalized	1.4 x 10E-45

Double-Precision Real Format

Maximum Positive Normalized	1.8 x 10E308
Minimum Positive Normalized	2.2 x 10E-308
Minimum Positive Denormalized	4.9 x 10E-324

Extended-Precision Real Format

Maximum Positive Normalized	1.2 x 10E4932
Minimum Positive Normalized	1.7 x 10E-4932
Minimum Positive Denormalized	3.7 x 10E-4951

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Tech Info Library Article Number:14061

HyperCard 1.2.5: Conflicts with System 6.0.7 (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 1.2.5: Conflicts with System 6.0.7 (7/92)

==========

Article Created: 19 October 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

There is an incompatibility between HyperCard 1.2.5 and the Sound Manager in all system software beginning with System 6.0.6.

DISCUSSION ----------

HyperCard 1.2.5 can run on 6.0.6/6.0.7 if the sound is set to 0 in the Control Panel before starting HyperCard. This incompatibility has been fixed in HyperCard 2.0.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14062

HyperCard 2.0: Summary of Visual Effects (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 2.0: Summary of Visual Effects (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Visual effects in HyperCard 2.0 now work with monitors in modes other than 1-bit black and white. Specifically, monitors in 2-, 4-, and 8-bit modes (4, 16, or 256 colors) are supported. Previous versions of HyperCard (before 2.0) supported fewer visual effects, and only did so in the black and white mode. The visual effects also work on secondary monitors as long as the card window does not extend into both displays.

DISCUSSION ----------

Visual effects may now be added to button scripts by means of a visual effect selection dialog. The dialog is activated by clicking the Effect button in the Button Info dialog. After you choose the visual effect, HyperCard 2.0 looks in the button script for the first Go command to go to another card or stack. The chosen visual effect is automatically added to the button script. If a Go command is not found, HyperCard 2.0 adds the visual effect to the script, followed by the command " this card".

Two new visual effects have been added to HyperCard 2.0: Stretch and Shrink. The stretch effect appears to pull the new card image from the top, bottom or center of the current card. Shrink appears to collapse the current card image to the top, bottom or center as specified by the script. For example:

```
on mouseUp
 visual stretch from top
 go to next card
end mouseUp
```

or:

```
on mouseUp
 visual effect shrink to center
```

```
 go to stack ""
end mouseUp
```

Notice that the word "effect" after the HyperTalk phrase "visual" is optional.

You can also control these two new effects like this:

```
visual shrink to center
Or: visual shrink from center
Or: visual shrink to top
Or: visual shrink to bottom
Or: visual stretch from center
Or: visual stretch from top
Or: visual stretch from bottom
```

You can also control the speed of these effects. Examples:

```
visual dissolve slowly
Or: visual dissolve very slowly
Or: visual dissolve fast
Or: visual dissolve very fast
```

You can also add color (sort of):

```
visual barn door open slowly to grey (or gray)
visual iris open slowly to black
visual venetian blinds slowly to white---inverts card
visual venetian blinds slowly to inverse ---inverts card
```

Visuals can also be combined, however, you must "go" either to black, white, or gray; or to another stack or card for all of the effects to appear:

```
visual dissolve slowly to white
visual dissolve very slowly to gray
visual dissolve fast to black
visual dissolve very fast
go next card
```

Note: In HyperCard 2.0 the following visual attribute speeds have been changed to execute differently: "Very fast" now means "as fast as the CPU can go." "Fast" now means "twice as fast as normal".

Here's a list of these visual effects that were unique to HyperCard before version 2.0 (v.1.0-1.2.5z):

```
barn door open
barn door close
iris open
iris close
checkerboard
dissolve
scroll up
scroll down
scroll left
scroll right
venetian blinds
wipe up
```

```
wipe down
wipe right
wipe left
zoom open
zoom close
zoom in
zoom out
Flash
```

The "Flash" visual effect is actually an XCMD built into HyperCard itself by Apple. To invoke it, you would use a handler such as:

```
on mouseUp
  Flash 9 -- (any number can be used, or a repeat forever loop)
end mouseUp
```

In all releases of HyperCard before 2.0, you could also specify with colors and speed with the scripts cited above.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14063

Tech Info Library

HyperCard 2.0x: A/UX Compatibility (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 2.0x: A/UX Compatibility (7/92)

==========

Article Created: 13 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

HyperCard 2.0x is not 100% A/UX 2.0 Compatible.

DISCUSSION ----------

The only incompatibility relates to Sound formats. A/UX will be revised by Apple around System 7.0's release to be compatible with HyperCard 2.1.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14064

Tech Info Library

HyperCard: Handlers for Automatic Compacting (8/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Handlers for Automatic Compacting (8/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 28 August 1992

TOPIC --------------------

Whenever you leave a stack that has too much free space, the initAutoCompact handler (below) will automatically ask if you want to compact it.

You can tell it to shut up, too. You can adjust the number of free bytes in a stack that this handler will allow before asking you whether you want to compact by editing the field to the right.

DISCUSSION --------------------

```
on initAutoCompact
  global autoCompactEnabled,maxFreeSizeOfStack
  put true into autoCompactEnabled
  lock screen
  push card
  go to card "AutoCompact" of stack "Cookbook Reference"
  if the result is empty -- card exists
  then put card field "MaxFreeSizeOfStack" into maxFreeSizeOfStack
  else put 25000 into maxFreeSizeOfStack
  pop card
  unlock screen
end initAutoCompact

on autoCompact
  -- Automatic stack compaction that can stop asking
  -- Whenever you leave a stack that has too much free space,
  -- this handler will automatically ask if you want to compact it.
  -- You can tell it to shut up, too.

  global autoCompactEnabled,maxFreeSizeOfStack
  if autoCompactEnabled is not true then exit autoCompact
```

```
  get the freeSize of this stack
  if it > maxFreeSizeOfStack then
    put "Compact this stack? (" & it div 1024 & "K free)" into prompt
    answer prompt with "Yes" or "No" or "Stop Asking"
    if it is "Stop Asking" then put false into autoCompactEnabled
    if it is not "Yes" then exit autoCompact
    doMenu "Compact Stack"
  end if
end autoCompact
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14065

HyperCard: Commands Sent Automatically in HyperCard (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Commands Sent Automatically in HyperCard (7/92)

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Article Created: 16 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This article describes how HyperCard sends events automatically.

DISCUSSION --------------------

HyperCard sends some commands automatically in response to events, just like system messages. But unlike system messages, if the command passes all the way to HyperCard without being handled, HyperCard performs a built-in action.

HyperCard sends choose and doMenu as messages when the user chooses a tool or an item from one of HyperCard's menus. It sends close as a message when the user clicks the close box of a window.

HyperCard sends help as a message when the user chooses Help from the Go menu (or presses Command-?).

HyperCard sends arrowKey, commandKeyDown, controlKey, enterInField, enterKey, functionKey, keyDown, returnInField, returnKey, and tabKey as messages when the user presses one of those keys key.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14066

Tech Info Library

HyperCard: If You're Not Able to Modify a Stack (10/95)

Revised: 10/27/95
Security: Everyone

HyperCard: If You're Not Able to Modify a Stack (10/95)

==========

Article Created: 15 November 1990
Article Reviewed/Updated: 27 October 1995

TOPIC ----------

I have some HyperCard stacks that will not let me make any changes to them.

DISCUSSION ----------

Here are a few possibilities why you cannot make any changes in a HyperCard stack.

Stack may be protected

The stack author or another user may have used the Protect Stack menu item in the File menu to lock the stack. To unlock the stack, hold down the Command key before you click on the File menu; continue holding down the Command key while selecting Protect Stack... from the File menu. You will be prompted for a password if one has been assigned to this stack. After entering the password, if there is one, the Protect Stack window will open. Here you can change the stack protection settings, the user level limits, and the password.

UserLevel not high enough

Before you can write your own scripts or change stacks, you must first set your user level to Scripting (userlevel 5). To do this, go to the Preferences card of your Home stack. If the option for Scripting is visible, select it. If this option is not visible, there are several ways to set the userLevel.

Type "Magic" in the message box and hit Return. If this does not work, type "Set the userLevel to 5" in the message box. This will give you access to the tools palette. Select the button tool. You should then see the outline of a big button covering part of the card. Select this button and delete it, then set the userLevel to 5.

The stack may be from an earlier version of HyperCard

The stack might be a HyperCard 1.x stack. If this is the case, there will be a small picture of a padlock on the menu bar. If you choose "Convert Stack" from the File menu, the stack will be converted to HyperCard 2.x format, and you will then be able to make changes.

This article is adapted from the Claris Tech Info database.

Article Change History:
27 Oct 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:14067

Tech Info Library

HyperCard: Card Windows and Positions (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Card Windows and Positions (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

The card window position is now saved whenever a stack is closed (by leaving the stack or quitting, for example).

DISCUSSION --------------------

Thus, opening a stack always moves the card window to the last saved window position for that stack. This behavior brings HyperCard in line with standard recommendations for window handling in the Mac operating system.

Although HyperCard 2.0 can have multiple windows/stacks open simultaneously, only the loc and visible properties can be set for inactive card windows. " window," for example, no longer works on inactive card windows.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14068

Tech Info Library

HyperCard: Closing Script Windows (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Closing Script Windows (7/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

What happens when I close a HyperCard script window?

DISCUSSION ----------

To close a script window:
• Click the window's close box.
• Choose Close from the Edit menu (or press Command-W).
• Hold down Command-Option and click.
If you close a window in which you've made changes, HyperCard asks you if you want to save the changes before it closes the window.

Shortcuts

To close a script window without saving your changes, press Command-period.

To close a script window and save your changes, press Enter.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14069

Tech Info Library

HyperTalk: Adding Comments to Scripts (7/92)

Revised: 12/8/93
Security: Everyone

HyperTalk: Adding Comments to Scripts (7/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

In HyperTalk scripts, a string of two hyphens (--) indicate a comment. HyperTalk ignores all characters that follow the double-hyphen.

DISCUSSION --------------------

In the following example, the strings "Displays a dialog box" and "the user's reply" are ignored by HyperTalk.

```
on mouseUp
   -- Displays a dialog box
   answer "What?" with "No" or "Yes"
   put it -- the user's reply
end mouseUp
```

Shortcuts

- To comment several lines at once, drag to select the lines you want to comment, then choose Comment from the Script menu (or press Command-hyphen).

- To uncomment several lines at once, drag to select the lines you want to uncomment and then choose Uncomment from the Script menu (or press Command-=).

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14070

Tech Info Library

HyperCard: Converting Stacks to Version 2.x (11/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Converting Stacks to Version 2.x (11/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 30 November 1992

TOPIC ----------

The file format for HyperCard 2.x differs from that of earlier versions. Stacks in the old format can be opened read-only by HyperCard 2.x. When such a stack is opened, a standard Macintosh padlock symbol appears in the menu bar, indicating the stack is read-only, and the Compact Stack item from the File menu becomes Convert Stack... instead.

DISCUSSION ----------

In order to convert a stack to HyperCard 2.x format, open the stack, choose the Convert Stack... item, and click OK in the confirmation dialog box.

NOTE: Once the stack is converted to HyperCard 2.x format, it can no longer be opened by earlier versions of HyperCard without using third party utilities.

Before converting a stack, keep in mind that you can always save a copy of it by choosing Save A Copy... from the File menu. Because the copy is an exact duplicate of the current stack, you can use Save A Copy... to archive versions of your stacks in the old format or any other.

Most operations on stacks, such as entering text into fields, creating new buttons, or editing graphics, are not allowed until the stack is converted. When you attempt to perform such operations within a stack in the old format, a dialog box appears informing you that you must first convert the stack before performing the operation.

Cards from converted stacks do not retain their background ID number the first time they are copied. Original 2.0 stacks are not a problem.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14071

Tech Info Library

HyperCard: Tips for Creating Menus (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Tips for Creating Menus (7/92)

==========

Article Created: 9 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

During the creation or modification of menus, or when menus are addressed from scripts, menu items must be referenced by exact name or number. To avoid the error "No such menu item", remember these simple rules.

DISCUSSION --------------------

- "MenuItem" (single word) is the correct way to refer to a menu item in a HyperTalk script.

- Menu items may be referred to by name or number. Names must be exact. For example, in the standard HyperCard menus, menuItem 1 of menu "File" is "New Stack..." . The three periods must be used in the name when referring to this menuItem.

  NOTE: Although all standard menu items with three dots use simple periods, try an ellipsis (Option-semicolon) if your menuItem command fails.)

  To refer to a menu item by number, count the first menu item as 1, and be sure to count menu separators (--------------) as you would any other menu item. (menuItem 4 of menu "File" is "-----------------")

- In the Style menu, the "9" (for point size) is actually " 9" -- that's TWO spaces in front of the nine. So to reference point size 9 from the Style menu, the script needs to do something like doMenu " 9". If you omit the leading space ("9"), HyperCard will be unable to identify the menu item.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14072

Tech Info Library

HyperCard: Date Formats (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Date Formats (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This article shows examples of the various forms of dates in HyperCard.

DISCUSSION --------------------

Date Expression	What it Returns
the date	11/3/90
the short date	11/3/90
the abbrev date	Sun, November 3, 1990
the long date	Sunday, November 3, 1990

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14073

Tech Info Library

HyperCard: Debugging Scripts (11/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Debugging Scripts (11/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 30 November 1992

TOPIC ----------

HyperCard provides some useful tools for troubleshooting your scripts. These debugging tools let you step through a handler line by line as it runs, inspect the values of variables, and trace the flow of messages.

DISCUSSION ----------

Debugging a Handler

To debug a handler, follow these steps:

1) Open the script that contains the message or function handler you want to debug.

2) Click to place the insertion point on the line with the on or function statement that defines the handler.

   Or, depending on where you want to start, place the insertion point on any statement of the handler that is not a comment.

3) Choose Set Checkpoint from the Script menu (or press Command-D) to set a temporary checkpoint.

   A checkpoint tells HyperTalk where you want to start watching the script as it runs.

4) Press Enter to save the script and close the script editor window.

5) Perform the action in HyperCard that activates the script (for example, click a button).

   When HyperCard hits the checkpoint, it opens the script and puts a box

around the current statement. HyperCard also displays the Debugger menu.

HyperCard does not enter the script editor itself: All HyperCard menus remain in the menu bar. (Since the script is still running, HyperCard must preserve the current context.) But only the Debugger menu is active.

6) Choose commands from the Debugger menu to proceed.

The Step Menu

- Runs the current statement and moves to the next one.

- If the current statement calls another message or function handler, Step does not switch to the new handler and step through it. It just gets the result of that call.

Step Into

- Runs the current statement and moves to the next one.

- If the current statement calls another message or function handler, Step Into does switch to the new handler so you can step through it.

Trace

- Runs through the rest of the statements one line at a time, but without pausing after each statement.

- If the current statement calls another message or function handler, Trace does not switch to the new handler and trace it.

Trace Into

- Runs through the rest of the statements one line at a time, but without pausing after each statement.

- If any statement calls another message or function handler, Trace Into will switch to the new handlers and trace them as well.

Go

- Runs the remainder of the script from the current statement without stepping.

- After a Go command, HyperCard leaves the Script Editor window open, but activates the window containing the current card.

Trace Delay...

- Displays a dialog in which you can specify the number of ticks that HyperCard will pause between each statement as it traces a handler.

Set Checkpoint

- Places a checkpoint at the current line of a handler.

- This command changes to Clear Checkpoint if you've already set a checkpoint on the line.

Abort

- Stops the script from running. After an Abort command, HyperCard leaves the Script Editor window open and active.

Variable Watcher

- Shows or hides the Variable Watcher, a window that allows you to inspect the values of parameter variables or global and local variables as they are set during the execution of a handler.

- To change the value of a variable using the Variable Watcher, click to select a variable. Its value appears in the bottom panel. Edit the value and press Enter to save it.

Message Watcher

- Shows or hides the Message Watcher, a window that allows you to watch what messages HyperCard sends as it runs the script.

- For example, if you step through a statement such as doMenu "New Card", the Message Watcher will show the closeCard and openCard messages that run when the new card is added to the stack.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14074

Tech Info Library

HyperCard: Determining Available Disk Space (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Determining Available Disk Space (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Can I determine, from HyperCard, how much space there is on my hard drive?

DISCUSSION --------------------

If you're in HyperCard and you want to check how much space you have left on your storage volume, type "the diskSpace" (it's not case sensitive) into the message box. HyperCard (versions 1.x through 2.1x) will display the total amount of disk space free (in kilobytes) on the active volume.

This script works in all versions of HyperCard up through 2.1.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14075

Tech Info Library

HyperCard 2.0v2: Divide by Zero Error Fixed in 2.1 (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 2.0v2: Divide by Zero Error Fixed in 2.1 (7/92)

==========

Article Created: 13 December 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Any use of the div function by 0 will cause HyperCard to bomb. Simply entering the string "put 1 div 0" into the message box will reproduce it.

DISCUSSION ----------

This problem is fixed in HyperCard 2.1.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14076

Tech Info Library

HyperCard 2.1: Sending Apple Events to Claris Resolve (11/92)

Revised: 12/8/93
Security: Everyone

HyperCard 2.1: Sending Apple Events to Claris Resolve (11/92)

==========

Article Created: 12 August 1991
Article Reviewed/Updated: 30 November 1992

TOPIC --

You can send almost any Claris Resolve Script command from HyperCard 2.1 to Claris Resolve using Apple Events. Claris Resolve, however, has a 254 character limit for each "dosc" event (the event which HyperCard sends with the HyperTalk "Send" command.

You will generally receive a -1708 error as theResult of your Send command if you exceed this limit.

The following handler will allow you to send scripts of any length from HyperCard to Claris Resolve in the most efficient manner possible. It sends as many lines as possible within the 254 character limit.

DISCUSSION ---

```
on mouseUp
  put empty into scriptChunk
  put 0 into counter
  put 1 into i
  repeat until i > the number of lines in field "Script"
    add ( the number of chars in line i of field "Script" + 1 ) to counter
    if counter > 254 then
      send scriptChunk to program "Claris Resolve"
      If the result is not empty then
        answer the result
        exit mouseUp
      end if
      put empty into scriptChunk
      put 0 into counter
    else
      put ( line i of field "Script" & space ) after scriptChunk
      add 1 to i
```

```
    end if
  end repeat
  send scriptChunk to program "Claris Resolve"
  answer "Your script is complete!"
end mouseUp
```

Where:

- Field "Script" is a field containing the Claris Resolve script you wish to send (you may need to specify it as a card field if it is not a background field).
- It is assumed in this example that Claris Resolve is already running on the same machine.
- Modifications to this script are required if you wish it to launch Claris Resolve or if it resides on a different machine. In the second case, you need to specify the full network pathname of the application.
- This method does not allow for logical structures such as For loops or IF statements. Logical structures must be sent in one complete chunk or errors will occur.

You can also create a simple loop that sends the commands one line at a time. This method, however, will be slower - especially when sending events across a network.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14077

Tech Info Library

HyperCard: Formatting Phone Numbers Consistently (5/93)

Revised: 12/8/93
Security: Everyone

HyperCard: Formatting Phone Numbers Consistently (5/93)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 3 May 1993

TOPIC --

Here's a short HyperTalk script that will automatically convert phone numbers to a consistent format on data entry.

DISCUSSION --

Here' a basic script that formats U.S. phone numbers to appear in the consistent formats 1-408-555-0000, (408) 555-0000, or 555-0000. If you try to format something that doesn't look like a phone number, the script will leave the value as you entered it. To use the script, attach it to any field that contains a telephone number. The number will be reformatted whenever you make a new entry or change text in that field. This script is an example. Modify it to create your own customized version or to format numbers for your area.

```
on closeField
  – Assuming first line contains phone number.
  put line 1 of me into PhoneNum
  -– Remove non-dial characters.
  repeat with CurChar = length of PhoneNum down to 1
    if char CurChar of PhoneNum is in ")(-" & space & tab
    then delete char CurChar of PhoneNum
  end repeat
  -– Format a phone number.
  if length of word 1 of PhoneNum is 11 –
  and char 1 of PhoneNum is "" then
    put "-" after char 7 of PhoneNum
    put "-" after char 4 of PhoneNum
    put "-" after char 1 of PhoneNum
  else if length of word 1 of PhoneNum is 10 then
    put "-" after char 6 of PhoneNum
    put ")" after char 3 of PhoneNum
```

```
    put "(" before PhoneNum
    put PhoneNum into line 1 of me
  else if length of word 1 of PhoneNum is 7 then
    put "-" after char 3 of PhoneNum
    put PhoneNum into line 1 of me
  -- end if
  If the number does not match, then do nothing.
  pass closeField
end closeField
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14078

Tech Info Library

HyperCard: Writing Function Handlers (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Writing Function Handlers (7/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

How do I write function handlers?

DISCUSSION --------------------

When you write a handler for a function, you specify statements that compute and return a value to the handler that calls the function. Each function handler has the following form:

```
function functionName
   statements
end functionName
```

HyperCard has many built-in functions, and you can write your own:

```
  put square(5) into the Message box
end mouseUp

function square x
  return (x * x)
end square
```

The function square receives a number through its parameter variable, x. It then returns the value of x * x to the handler that called it (mouseUp) using the return keyword.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14079

Tech Info Library

HyperCard: Reacting to AM and PM in the Time (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Reacting to AM and PM in the Time (7/92)

==========

Article Created: 21 December 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

How can HyperCard be taught to respond differently, depending on whether it's morning or afternoon?

DISCUSSION --------------------

Here's a handler that, when its stack is opened, says either "Good Morning" or "Good Afternoon", whichever is appropriate:

```
On OpenStack
  global openfirst
  if openfirst <> "yes" then
    get the time
    if it contains "PM" then
      play SoundName --plays "Good afternoon sound" if it is PM
    else
      if it contains "AM" then
       play soundName --plays "Good afternoon sound" if it is PM
      end if
    end if
    put "yes" into openfirst
  end if
end OpenStack
```

The reason you declare you "global" up front (in addition to the fact that in all programming you must declare your globals first before using them) is so that when the user leaves the stack and re-enters it, it won't execute the script "from scratch" all over again.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14080

HyperCard: Converting HyperCard Data to FileMaker (2/93)

Revised: 12/8/93
Security: Everyone

HyperCard: Converting HyperCard Data to FileMaker (2/93)

==========

Article Created: 24 January 1990
Article Reviewed/Updated: 25 February 1993

TOPIC --

The following HyperCard script is a general approach to converting stack data to FileMaker format. To use it, create a new button on any card, then enter the text below into the script area of the button. When you are done entering the script, click the new button to begin the export process.

DISCUSSION --

```
on mouseUp
  put the short name of this stack & ".txt" into fileName
  ask "Send text to what file?" with fileName
  if it is empty then exit mouseUp
  put it into fileName
  open file fileName
  repeat with i=1 to the number of cards
    go to card i
    repeat with j=1 to the number of background fields
      repeat with k=1 to the number of lines of bg field j
        if k > 1 then write numToChar(11) to file fileName
        write line k of background field j to file fileName
      end repeat
      write tab to file fileName
    end repeat
    write return to file fileName
  end repeat
  close file fileName
end mouseUp
```

How it Works
The text contents of the HyperCard stack will be put into a text file that will read into FileMaker in exactly the same format as it existed in HyperCard. Create a new FileMaker file with the same number of fields as

in the HyperCard stack and use the "Input From" command to read in the text file. After the file is read in, examine the data in the fields and rename the fields as appropriate.

This script converts all the Returns pressed inside the HyperCard fields to vertical tabs for the benefit of FileMaker. Thus, large fields with many lines will become large fields with many lines in FileMaker. If you want to break field data up into more meaningful chunks (for example, "City," "State," and "Zip" instead of "Address") you must either modify this script or create a calculation field in FileMaker to parse the fields using text manipulation functions (left, middle, right, and position). Most people find working in FileMaker more comfortable. Without writing the appropriate script in HyperCard or building the proper formulas in FileMaker, there is no way to "magically" convert such items into separate fields, since the structure can vary so much.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14081

Tech Info Library

HyperCard: Exporting Text with Page Breaks to MacWrite II (8/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Exporting Text with Page Breaks to MacWrite II (8/92)

==========

Article Created: 31 July 1992
Article Reviewed/Updated: 26 August 1992

TOPIC --------------------

Here's how to export a field from HyperCard to a text file that will be read into MacWrite II with page breaks between lines.

DISCUSSION --------------------

```
on mouseUp
  ask "export data to what file"
  if it is not empty then
    put it into filename
    open file fileName
    repeat with i = 1 to the number of lines of field 1
      write line i of field 1 & numtochar(12) to file filename
    end repeat
    close file fileName
  end if
end mouseUp
```

The key line is "write .... numToChar(12)...", because that's what does the page break. Ascii 12 is a page break.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14082

Tech Info Library

HyperCard: Handler for Specifying a Help Topic (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Handler for Specifying a Help Topic (7/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Here's a handler that lets you specify a topic when you ask for help with the standard Help stack.

DISCUSSION --------------------

```
on help topic
  -- More helpful help (help with a topic).
  -- This handler lets you specify a topic when you
  -- ask for help with the standard Help stack.

  debug checkPoint
  if topic is empty then
    ask "What topic would you like help on?" with "Anything"
    if it is "Anything" then pass help
    put it into topic
  end if

  go to card 1 of bkgnd "Content" of stack "HyperTalk Reference"
  find topic in field "Title"
  if the result is not empty then -- not found, try other stack
    lock screen
    go to card 1 of bkgnd "Content" of stack "HyperCard Help"
    find topic in field "Title"
    if the result is not empty  -- still not found, go back
    then go back
  end if
end help
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14083

Tech Info Library

HyperCard: Problems Selecting and Highlighting Text (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Problems Selecting and Highlighting Text (7/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

If I select some text in a field and then click a button, the selection goes away. What can I do?

DISCUSSION ----------

You can turn off the autohiliting in the button. (Choose the Button tool and double click on the button. In the dialog that opens up, uncheck the "hilite" box.) The Human Interface Guidelines state that only one item (text, a button, etc.) can be hilited at a time.

This article is adapted from the Claris Tech Info database.

alternate search terms: highlight hilite highlighting autohilite autohightlight hilite

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Tech Info Library Article Number:14084

Tech Info Library

HyperCard 2.x: Hot Text, Group Text, Shared Text (11/92)

Revised: 12/8/93
Security: Everyone

HyperCard 2.x: Hot Text, Group Text, Shared Text (11/92)

==========

Article Created: 6 November 1990
Article Reviewed/Updated: 30 November 1992

TOPIC ----------

This article describes the hot text features of HyperCard 2.x:
• the clickText, clickChunk, and clickLine functions
• the Group text style
• Shared text

DISCUSSION ----------

Functions

In HyperCard 2.x, as in previous versions of HyperCard, once a field is locked, it can handle mouse clicks just as HyperCard buttons. In HyperCard 2.x, all of the text within a locked field becomes eligible for use as a trigger for action. When a user clicks within the text of a locked field, three new HyperTalk functions, the clickText, the clickChunk, and the clickLine, are available to return information about the click. With these functions, a handler can determine which text string the user clicked and respond accordingly.

• The clickText function returns the actual text that was clicked.

• The clickChunk function returns a chunk expression that describes the text that was clicked -- for example, "char 1 to 3 of bkgnd field 3".

• The clickLine function returns a chunk expression describing the line that was clicked -- for example, "line 5 of card field 2".

Remember that the HyperTalk definition of a line is determined by carriage returns, not by the way the lines are wrapped in a field. By default, all text is grouped into words, and the clickText and clickChunk functions will return information about the word that was clicked.

The following example handler -- which can be placed in the script of a locked field, a card, a background, or a stack -- performs a simple glossary lookup using hot text.

```
on mouseUp
 lock screen
 put the clickText into whatWasClicked -- must be done before leaving card
 go stack ""
 find whatWasClicked in field "" -- is it a glossary entry?
 if the result is not empty then -- not found
       go back
       unlock screen -- looks like nothing happened
    else unlock screen with visual effect dissolve -- shows glossary entry
end mouseUp
```

Other examples of hot text:

```
on mouseUp
 if the clickText is "" then show card field ""
 -- pops up definition of ""
end mouseUp

on mouseUp
 if the textStyle of the clickChunk is bold then show cd fld ""
 if the textStyle of the clickChunk is italic then show cd fld ""
 -- In this field, a click on an italicized word has a different effect
 -- from a click on a bold word.
 -- This works because clickChunk returns a chunk expression,
 -- and in HyperCard 2.0 chunks of text have properties.
end mouseUp
```

Group Text Style

As a way to override the standard grouping of text, HyperCard 2.x introduces a new text style: Group. By selecting a string of text within a field and choosing Group from the Style menu, designers can "stick" words or characters together so that they can be used more intelligently within scripts.

Grouping affects only the value of the clickText, the clickChunk, and the clickLine functions when text within the string is clicked. When such a click occurs, the clickText and clickChunk functions return information about the entire group, instead of just the individual word that was clicked. The clickLine function returns the line number of the first character of the group.

To illustrate the effect of grouping text, say we have a list containing the names Billy Bob, Billy "Bob" Smith, and Billy Smith, and we wish to have more information about each of these individuals appear on the screen when his name is clicked. Unless their names were grouped, HyperCard wouldn't know what to do when the user clicked the word Billy -- the clickText function would return only that single word. If we select each of the full names and set its text style to Group from the Style menu, the

clickText function will return the full name when any part of it is clicked.

By itself, the Group text style makes no visible change to the appearance of text -- but you can find the grouped text in a field through the commands Show and Hide. The command "show groups" will draw a 2-pixel high gray line under all grouped text. Grouped text will be shown throughout the current session with HyperCard until the Hide Groups command is sent. For example:

```
show groups -- shows a 2-pixel gray line under all grouped text on the card
hide groups -- hides the gray lines
```

Keep in mind that showing groups will not necessarily identify all Hot Text, as hypertext responses from text in fields can be keyed to words, line number, character position, text style, text size, font, or special characters in words.

Note the differences: with Hot text, HyperCard always knows exactly which words in a field a user clicked: you can then tell HyperCard how to respond to that click. For example, you can write a script that tells HyperCard to display a hidden pop-up field that appears only when a user clicks on a specific word. When using Grouped Text, you can write scripts that tell HyperCard what to do when users click entire groups of words.

Shared Text

This feature appears in the Field Info dialog box. Shared text means that you only need to enter text once in a background field and the text will appear on every card with that background. Shared text can be activated as Hot Text.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14085

Tech Info Library

HyperCard: HyperTalk, Script, and Handler Defined (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: HyperTalk, Script, and Handler Defined (7/92)

==========

Article Created: 15 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

What is HyperTalk?

DISCUSSION ----------

HyperTalk is the HyperCard scripting language. It lets you write English-like statements that respond to events (such as when the user clicks a button or goes to a new card).

In HyperTalk, responding to an event is called handling the event. As a scripter, you will write a specific handler for each event that you want your stack to handle. A collection of handlers is called a script.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14086

Tech Info Library

HyperCard: Placing Insertion Point in a New Card (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Placing Insertion Point in a New Card (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Users often want to open a new card and have HyperCard automatically place the cursor (I-beam insertion point) on the first line of the first field on the card, rather than having to click at this location with their mouse or having to use their Tab key. Here's a handler that does it automatically.

DISCUSSION --------------------

```
on openCard
   tabKey
end openCard
```

The tabKey function places the cursor automatically in the first line of the first field in the Tab order or a HyperCard stack. If the field is not empty, the whole text of the first line will be selected.

This script works on all versions of HyperCard from 1.2.5 through 2.1x.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14087

Tech Info Library

HyperCard: Compatibility with Icon Colorizer (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Compatibility with Icon Colorizer (7/92)

==========

Article Created: 29 October 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Customers may have problems when they're running both Icon Colorizer INIT under System 6.0.x and HyperCard, while their monitor is set to color.

DISCUSSION ----------

This combination may cause some icons in HyperCard to appear poorly. It appears that Icon Colorizer is attempting to colorize these icons, while HyperCard, being a black and white program, is not allowing this to happen. The icon which results is a black and white representation of a full color image, and it may therefore lose significant detail.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14088

Tech Info Library

HyperCard: Why Compacting Sometimes Fails (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Why Compacting Sometimes Fails (7/92)

==========

Article Created: 21 December 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

When users set up a user-defined message inheritance path in HyperCard 2.0, and they try to compact their stacks, compacting fails. Why?

DISCUSSION ----------

This happens because stacks cannot be compacted when the "start using" command is in use.

Here's a typical script showing a user-defined message inheritance path:

```
On OpenStack
  start using stack "XYZ"
end OpenStack
```

Now, here's a typical script for compacting stacks:

```
On Mouseup
  doMenu "Compact Stack"
end Mouseup
```

The compact stack script won't work, because the resources of stack "XYZ" are also in use as well.

Here's a "compact stack" handler that does work, and makes the user-definable mess academic:

```
On Mouseup
  stop using stack "XYZ"
  doMenu "Compact Stack"
  start using stack "XYZ"
end Mouseup
```

Here's a "bells and whistles" stack from Claris' "Tech Support Navigator" stack series, which pops text into the message box informing the user what's going on:

```
on mouseUp
  repeat 2
    set cursor to busy
  end repeat
  stop using stack "XYZ"
  put "Now compacting your Stack..."
  repeat 17
    put "  " before msg
  end repeat
  doMenu "Compact Stack"
  wait 90
  repeat 40
    put "  " before msg
  end repeat
  wait 30
  put "Compacting of your Stack was successful..."
  repeat 12
    put "  " before msg
  end repeat
  wait 2 seconds
  repeat 60
    put "  " before msg
  end repeat
  hide msg
end mouseUp
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14089

Tech Info Library

HyperCard: Handler to Make a New Card the First Card (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Handler to Make a New Card the First Card (7/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Here's a handler that provides a quick and easy way to make a new card be the first card in a stack.

DISCUSSION --------------------

```
on newFirst
  go to card 1
  doMenu "New Card"
  go to card 1
  doMenu "Cut Card"
  doMenu "Paste Card"
  go to card 1
end newFirst
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14090

Tech Info Library

HyperCard: The Message-Passing Order (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: The Message-Passing Order (7/92)

==========

Article Created: 15 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

What is meant by HyperCard's "message-passing order"?

DISCUSSION --------------------

The order in which HyperCard passes a message to objects is called the message-passing order.

Initially, HyperCard sends messages to a specific button or field or to the current card. If a button or field doesn't handle the message, it goes on to the current card. From the current card, the message goes to the following objects, in this order:

- the current background
- the current stack
- the stack script of the Home stack
- HyperCard itself

What happens if an object that receives a message doesn't handle it?
In this case, HyperCard passes the message to other objects and searches their scripts for a message handler that matches the current message.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14091

Tech Info Library

HyperCard: Handler for Moving a Card Between Stacks (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Handler for Moving a Card Between Stacks (7/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

- The moveTo handler provides a quick way to move the current card into another stack.

- The copyTo handler provides a quick and easy way to copy a card between stacks.

DISCUSSION --------------------

```
on moveTo where
  doMenu "Cut Card"
  push card
  set lockMessages to true
  go to last card of stack where
  doMenu "Paste Card"
  pop card
end moveTo

on copyTo where
  doMenu "Copy Card"
  push card
  set lockMessages to true
  go to last card of stack where
  type "v" with commandKey
  pop card
end copyTo
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14092

Tech Info Library

HyperCard: Moving Between Open Scripts (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Moving Between Open Scripts (7/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

In HyperCard, you can have more than one script window open at once. This article describes how to move between them.

DISCUSSION --------------------

To move between the windows that contain scripts:

• Click to activate the script window in which you want to work.

• Choose an open script window from the Go menu.

To move between all open windows (including windows that contain stacks):

• Choose Next Window from the Go menu (or press Command-L).

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14093

Tech Info Library

HyperCard 1.2.5: Microsoft Mail Compatibility (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 1.2.5: Microsoft Mail Compatibility (7/92)

==========

Article Created: 14 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

There is a problem when you receive Microsoft Mail while using HyperCard 1.2.5.

DISCUSSION ----------

When your mail system notifies you with a "beep" that mail arrives, HyperCard intercepts this signal and causes the Macintosh to emit a constant beep, that seemingly cannot be stopped unless you restart the computer. If you find yourself affected by this, remove the MS Mail desk accessory. As soon as the Mail window opens, the beep sound will stop. This does not occur in HyperCard 2.0

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14094

Tech Info Library

HyperCard & MultiFinder: Running Scripts in Background (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard & MultiFinder: Running Scripts in Background (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

With HyperCard 2.x, you can switch to an application under MultiFinder while a script is running, and the script will continue to execute while HyperCard 2.x is in the background. The sorting and compacting operations also work while HyperCard 2.x is suspended.

DISCUSSION ----------

HyperCard 2.x yields time to MultiFinder (and hence other applications) under the following circumstances:

- When HyperTalk handlers execute
- When the busy cursor is rotated (for example, during sorting, compacting, and printing)
- During the Show Cards and Wait commands in scripts

HyperCard 2.x notifies the user when his intervention is required (for example, a script wants to display an Ask or Answer dialog. When this occurs, HyperCard 2.x beeps, puts a diamond next to its name in the Apple menu, and flashes its small icon in the menu bar. A dialog appears when HyperCard 2.x becomes the active program. Because HyperCard needs some working room on the disks you create, make sure you have at least 50K or so of free space on each HyperCard disk you use.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14095

Tech Info Library

HyperCard: How to Open a Script (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: How to Open a Script (7/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

How do I open or edit HyperCard scripts?

DISCUSSION ----------

Three ways to open a background's script window:
- Choose Bkgnd Info... from the Objects menu and click Script.
- Hold down Shift while you choose Bkgnd Info... from the Objects menu.
- Hold down Command-Option and press B. Pressing Command-Option-B again closes the script.

Four ways to open a button's script window:
- Select a button using the Button Tool, choose Button Info from the Objects menu, and click Script.
- Hold down Command-Option to peek at the visible buttons and click one (with the Browse tool).
- Hold down Shift while you double-click a button (with the Button tool).
- Hold down Command-Option to peek at visible and hidden buttons and click one (with the Button tool).

Three ways to open a card's script window:
- Choose Card Info... from the Objects menu, and click Script.
- Hold down Shift while you choose Card Info... from the Objects menu.
- Hold down Command-Option and press C. Pressing Command-Option-C again closes the script.

Four ways to open a field's script window:
- Select a field using the Field Tool, choose Field Info from the Objects menu, and click Script.
- Hold down Command-Shift-Option to peek at the visible fields and click one (with the Browse tool).
- Hold down Shift while you double-click a field (with the Field tool).

- Hold down Command-Shift-Option to peek at visible and hidden fields and click one (with the Field tool).

Three ways to open a stack's script window:

- Choose Stack Info from the Objects menu, and click Script.
- Hold down Shift while you choose Stack Info from the Objects menu.
- Hold down Command-Option and press S. Pressing Command-Option-S again closes the script.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14096

Tech Info Library

HyperCard: Using Parameter Variables (12/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Using Parameter Variables (12/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 10 December 1992

TOPIC ----------

What are parameter variables in HyperCard?

DISCUSSION ----------

A handler can receive values (called parameters) and use them as it runs. You represent each value with a container called a parameter variable. Parameter variables always follow the handler name in a comma-separated list.

For example, when running the following mouseUp handler, HyperCard calls sayMessage with two values, "red" and "apple". It then binds these values to the parameter variables color and fruit in the sayMessage handler.

```
on mouseUp
  sayMessage "red", "apple"
end mouseUp

on sayMessage color, fruit
  put "I want a" && color && fruit
end sayMessage
```

You can use the variables color and fruit anywhere inside the handler. When HyperCard sees them, it uses the values currently bound to them (the variables remain bound only while the handler runs).

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14097

Tech Info Library

HyperCard: Dealing with Pathname Problems (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Dealing with Pathname Problems (7/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Whenever I try to launch an application or another stack from inside HyperCard, I get the standard file dialog asking questions like " is "My Hard Disk:Applications:Excel"?

DISCUSSION --------------------

Even the best scripters run into this now and then. Remember that a path like

: My Applications: HyperCard

is not the same as

:My Applications:HyperCard

You must specify the EXACT pathname, including (or excluding) spaces, trademark symbols, bullets, and the like. In the Finder, make sure that you have the names exactly right; if your script still doesn't work, check the file names to make sure they don't have an extra space at the end, or perhaps two spaces instead of one in the middle.

When you're running a script containing simply " Red Ryder", HyperCard may ask you, the first time you run your script, where " Ryder" is. Once you have pointed " Ryder" out to HyperCard via the standard file dialog, it will store the path information in the Home stack and it won' ask you again unless you run your stack from another system (which would have an entirely different set of paths).

This article is adapted from the Claris Tech Info database.

..TIL14098-HyperCard-Dealing_with_Pathname_Problems_7-92_(TA30698).pdf

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Tech Info Library Article Number:14098

Tech Info Library

HyperCard 2.0: Problem with Phone Dialer Stack (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 2.0: Problem with Phone Dialer Stack (7/92)

==========

Article Created: 1 October 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

This stack does not work with many modems. It does not even work will all of the modems which are listed in the stack.

DISCUSSION ----------

At this point, there is no workaround other than re-writing the script. There are also problems with the HyperCard 2.0 application itself.

Many, but not all, of these problems were resolved in HyperCard 2.1.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14099

Tech Info Library

HyperCard: Preventing Users from Interrupting Scripts (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Preventing Users from Interrupting Scripts (7/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

As a stack developer, how can I stop a user from pressing Command-Period (interrupting an action) during one of my scripts?

DISCUSSION --------------------

You can't. But if your script involves hiding and showing buttons and fields, here's a way you can make sure the stack is returned to normal in the event a user presses Command-Period during the process: at the start of the script, "set the cantModify of this stack to true". Also, in your idle handler, add the line "the cantModify of this stack to false". That way, if the user cancels during the hiding and showing, the stack will revert to the way it was before the user initiated the action.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14100

Tech Info Library

HyperCard: Setting Font and Size of a Script (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Setting Font and Size of a Script (7/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Text in the script windows appears in 9-point Monaco as the default. You can change the default font and size of the text in your script window using two properties:

the scriptTextFont
the scriptTextSize

DISCUSSION ----------

These two properties affect all script windows: you can't set the font and style of each script window separately.

For example, to set the font and size of the script windows to 10-point Geneva, type the following messages into the Message box and press Return:

```
set the scriptTextFont to Geneva
set the scriptTextSize to 10
```

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14102

Tech Info Library

HyperCard: Setting Field's Text Alignment (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Setting Field's Text Alignment (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Here's a script that you can use to set the TextAlign property of a field to determine the way lines of text are aligned in a given field.

DISCUSSION --------------------

```
on mouseUp (or openCard or any other handler)
   set TextAlign of field x to left --(or right, or center).
end mouseUp (or openCard or any other handler)
```

This script works in versions 1.2.5 and 2.0x of HyperCard.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14103

Tech Info Library

HyperCard: Setting Text Fonts (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Setting Text Fonts (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Here's a handler you can use to set the TextFont property of a field in HyperCard to determine which fonts are displayed in a given field.

DISCUSSION --------------------

```
on mouseUp -- (or openCard or any other handler)
   set TextFont of field x to Geneva -- (or some other font)
end mouseUp -- (or openCard or any other handler)
```

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14104

Tech Info Library

HyperCard: Setting Text Height (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Setting Text Height (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Here's a handler you can use to set the space (in points) between baselines of text in a given field.

DISCUSSION --------------------

```
on mouseUp -- (or openCard or any other handler)
  set TextHeight of field x to 18
end mouseUp -- (or openCard or any other handler)
```

This handler works in versions 1.2.5 and 2.0x of HyperCard.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14105

Tech Info Library

HyperCard: Setting Text Size (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Setting Text Size (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Here's a handler you can use to set the font size (in points) of text in a given field.

DISCUSSION --------------------

```
on mouseUp -- (or openCard or any other handler)
   set TextSize of field x to 18 -- (or any specified point size)
end mouseUp -- (or openCard or any other handler)
```

This works in versions 1.2.5 and 2.0x of HyperCard.

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Tech Info Library Article Number:14106

Tech Info Library

HyperCard: Setting Text Style (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Setting Text Style (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Here's a handler you can use to set the style in which text appears in a given field.

DISCUSSION --------------------

```
on mouseUp -- (or openCard or any other handler)
  set the TextStyle of field x to plain -- (or bold, shadow, etc.)
end mouseUp -- (or openCard or any other handler)
```

This works in versions 1.2.5 and 2.0x of HyperCard.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14107

Tech Info Library

HyperCard Player: Some Stacks Don't Work with It (9/93)

Revised: 12/8/93
Security: Everyone

HyperCard Player: Some Stacks Don't Work with It (9/93)

==========

Article Created: 2 September 1993

TOPIC --------------------

This article describes conditions under which a HyperCard stack cannot work with the HyperCard Player.

DISCUSSION --------------------

A stack with an interface and features that depend on running at userlevel 4 or 5 will not function properly with the HyperCard Player because the Player's userLevel is set to 3 on idle. For use with the Player, level 4 and 5 actions have to be scripted by the developer, so the stack would need to be rewritten.

Some of the XCMDs that are included with the HyperCard Development Kit are not included with the Player: message watcher and variable watcher, script editor, etc. If the stack developer has scripted anything related to these XCMDs, the Player generates an error. It is common practice, for example, for developers to call "hide window" for both the variable and message watchers to make sure they are not open when the stack is first opened. Calling a hide window on a window that does not exist, however, will result in an error. While there is no damage in getting the error, pressing OK, and returning to using the stack, it is inconvenient to get frequent errors.

When using the Developer's Licensing Kit tools to merge the Player with a stack to create a standalone application, developers must keep in mind that the housekeeping duties normally handled by the Home card will not be built in automatically, because the embedded stack effectively becomes the Home stack. Chores such as saving and restoring search paths, therefore, need to be added to the stack script of the embedded stack.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14108

Tech Info Library

HyperCard: Finding and Displaying the Application Version (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Finding and Displaying the Application Version (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Can I determine, without leaving HyperCard, what version of HyperCard is running?

DISCUSSION --------------------

In the message box, type "the version". HyperCard will return the exact version or revision number of HyperCard that is running.

This works in version 1.2.5 and 2.x of HyperCard.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14109

Tech Info Library

HyperCard: Invoking the Variable or Message Watcher (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Invoking the Variable or Message Watcher (7/92)

==========

Article Created: 4 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

How can I invoke HyperCard's variable watcher?

DISCUSSION --------------------

Here's how to invoke the Variable Watcher in HyperCard 2.x: In the message box, type "vw" (it's not case sensitive) then press Return.

To invoke the Message Watcher, type "mw" instead.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14110

Tech Info Library

HyperCard: If Wrong Palette Appears (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: If Wrong Palette Appears (7/92)

==========

Article Created: 9 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Sometimes palettes don't appear when they should, or the wrong palette appears. Why is this?

DISCUSSION ----------

If a palette doesn't appear when called, but no error message is generated, then the likely cause is that there is no PICT resource for the palette (or it is corrupted). This may happen if the PLTE resource is installed without its corresponding PICT resource.

Also, if there is no corresponding PICT resource (with the same id number as the PLTE resource), then the palette will appear with the first PICT that it does find in the resource fork of the file. So the wrong palette picture might appear, but the active buttons (which may not be visible) will be for those of the palette that was called.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14111

Compact Macintosh: Power, Reset & Interrupt Buttons (12/93)

Revised: 12/3/93
Security: Everyone

Compact Macintosh: Power, Reset & Interrupt Buttons (12/93)

==========

Article Created: 3 December 1993

TOPIC ----------

This article describes the location of power, reset and interrupt switches on all compact Macintosh models.

DISCUSSION ----------

General Information: Power Switch

Power switches on compact Macintosh models are usually located on the back of the unit, near the left side. When facing the computer, you should be able to use your left hand to reach around to the back of the Macintosh and operate the rocker switch. When the computer is on, the top part of switch, marked with an "I," should be pressed in. The Power switch on the Macintosh Color Classic is on the back of the unit, near the right side.

General Information: Reset Switch

The Reset Switch, also known as the Programmer's Switch is usually located on left side of compact Macintoshes. The exact position varies, but is usually near the rear of the unit, protruding from the vents near the base. There is no Reset switch on the Macintosh Color Classic.

There are two switches or buttons to press. The first, nearest to the front of the unit is the reset switch. Pushing the reset switch is the same as turning the power switch off and then on.

The second switch, nearest to the back of the unit, is the interrupt switch. This switch is used by Macintosh software programmers when writing applications and debugging them. Pushing the interrupt switch will produce a blank dialog box on the Macintosh screen. Programmers can then type codes to obtain the response or information they require from the Macintosh.

Compact Macintosh Model Specifics

• Macintosh 128K, 512K, 512KE, and Macintosh Plus:
- Power Switch: Rocker switch located on the rear side of the unit, near the left side.
- Programmer's Switch: small dark beige or medium gray plastic switch located on left side of the unit near the rear. Reset button is closer to the unit front, interrupt button is closer to the unit rear. User must install switch.

• Macintosh SE, SE/30:
- Power Switch: Rocker switch located on the rear side of the unit, near the left side.
- Programmer's Switch: light gray rectangular plastic switch located on left side of the unit near the rear. Reset button is closer to the unit front, interrupt button is closer to the unit rear. User must install switch.

• Macintosh Classic, Classic II, and Performa 200:
- Power Switch: Rocker switch located on the rear side of the unit, near the left side.
- Programmer's Switch: small light gray rectangular plastic switch located on left side of the unit near the rear. Reset button is closer to the unit front, interrupt button is closer to the unit rear. Switch is preinstalled.

• Macintosh Color Classic:
- Power Switch: Rocker switch located on the rear side of the unit, near the right side. You can also turn the computer by using the power key on the keyboard, as long as the power switch on the back of the unit is in the on position.
- Programmer's Switch: No programmer's switch. To reset, use the following keyboard keys:
  To Restart, hold down the Command, Control and Power keys.
  To interrupt, hold down the Command and Power keys.
  To Shutdown, press the power key.

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Tech Info Library Article Number:14112

..TIL14114-ABS_Tech_Note-AS04_AppleEvent_Data_Limits_11-93_(TA30717).pdf

Tech Info Library

ABS Tech Note: AS04 AppleEvent Data Limits (11/93)

Revised: 12/3/93
Security: Everyone

ABS Tech Note: AS04 AppleEvent Data Limits (11/93)

==========

Article Created: 30 November 1993

TOPIC --------------------

This technical note describes the built-in limit of 32K for returned data.

DISCUSSION --------------------

The AppleEvent programming interface has a built-in limit of 32K for returned data. This affects AppleSearch, because it is unable to return larger amounts of data. In release 1.0, if the data returned is greater than 32K, then the call is never returned and the client is never notified.

Because of this, it is important to keep the data returned by AppleSearch through the AppleEvents API to under 32K bytes, which allows for roughly 300 items.

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Tech Info Library Article Number:14114

Tech Info Library

System 7.1 Clean Installation from 800K Disks (5/95)

Revised: 10/14/96
Security: Everyone

System 7.1 Clean Installation from 800K Disks (5/95)

==========

Article Created: 3 December 1993
Article Reviewed/Updated: 17 May 1995

TOPIC ----------

This article presents the steps necessary to perform a clean installation of system software version 7.1 using 800K installation disks. Follow these instructions in the order presented.

DISCUSSION ----------

Purpose of a Clean Installation

A normal system software installation modifies and updates the existing System Folder. A clean installation disables the existing System Folder, leaving most files in place, and forcing the Installer to create a new System Folder.

A clean system installation brings the system software back to the standard configuration. This is necessary when system software has been damaged or modified, preventing a normal installation. It's also useful in troubleshooting.

Restart with Disk Tools

Shut down your Macintosh computer, insert Disk Tools in the floppy drive, and turn on the computer. At the desktop, the Disk Tools floppy disk should be in the upper-right corner of your screen with your hard disk's icon below it.

NOTE: If you have a Macintosh that requires System 7 (for example, PowerBook or Quadra), you can't start up from the 7.1 Disk Tools 800K disk. Because of the limited disk space, this disk contains system software version 6.0.7. Use the system software version 7.0.1 Disk Tools disk that came with your Macintosh instead.

Run Disk First Aid

Disk First Aid software can detect and repair problems with a hard disk.

1) Double-click on Disk First Aid, and make sure the startup drive is selected. If it isn't, click the Drive button to select the main hard drive.

2) Click on Open and then on Start. Disk First Aid will check your hard drive for any potential problems. If it finds problems, you should let it repair them.

3) Repeat this procedure for each hard drive attached to the system.

4) When you're finished verifying the hard drives, choose Quit from the File menu to return to the desktop.

If Disk First Aid can't repair a hard disk, you should back up the hard disk and re-initialize it using the appropriate formatting utility for that drive. For Apple drives, use Apple HD SC Setup.

Update Hard Disk Drivers

If you don't have an Apple hard disk or use third-party software to format your disk, don't use the Apple HD SC Setup Utility. However, you should contact your hard disk vendor to verify that your formatting software is compatible with system software version 7.1.

If you have an Apple hard drive, you should update the drivers with the version of Apple HD SC Setup that's on the Disk Tools disk, following these steps:

1) Double-click the HD SC Setup icon to launch it.

2) Click on the Update button.

3) When you're finished, click Quit to return to the desktop.

Sometimes HD SC Setup can't update the hard disk driver (indicated by a "dimmed" Update button). Here are some possible causes and solutions:

- If a third-party utility formatted your hard disk, you should obtain the latest version of the utility to update your hard disk.

- If a version of Apple HD SC Setup more recent than the version on the Disk Tools disk formatted your hard disk, don't update the hard disk drivers.

- If an earlier System 6 version of Apple HD SC Setup formatted the drive, it may not have left enough room for the updated driver. You don't have to update hard disk drivers. However, if you intend to use file sharing or have a Macintosh that can use virtual memory, then you need to back up the disk and re-initialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

- If the driver is corrupt, the Macintosh doesn't recognize the drive (that is, the disk doesn't show on the desktop when you start from a floppy disk). You may wish to re-initialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

- If the driver has been modified with compression or security software you will not be able to update the driver. Contact the vendor for additional help.

Check Available Hard Disk Space

Be sure you have at least 5,120K (5MB) available on the disk where you plan to install the system software. To check hard disk space, follow these steps:

1) Choose Control Panels from the Apple menu.

2) Double-click the Views control panel to open it.

3) In the Views control panel, check "Show disk info in header."

4) Open your hard disk's window.

The amount of available disk space appears in the upper-right corner of any open window.

If there's less than 5,120K (5MB) available, you'll need to delete some unnecessary files by dragging them to the Trash. Choose Empty Trash from the Special menu and you'll have more disk space available.

Disable the System Folder

You disable the System Folder by moving the System and renaming the System Folder.

1) Open your hard disk's icon and locate the System Folder.

2) Open the System Folder and locate the System.

3) Move the System into the Preferences folder.

4) Close the System Folder's window and rename the System Folder "Storage."

5) Close all windows that are open on your desktop.

Restart Your Computer

Choose Restart from the Special menu. The system automatically ejects the Disk Tools disk, and after a few seconds you should see a picture of a disk with a flashing question mark.

If your Macintosh starts up from the hard drive, you have an extra System Folder on the hard disk. You need to delete it or disable it as described in the

previous section, then restart.

When you get the disk with the flashing question mark on your screen, you can continue. If you still don't see this on your screen, turn off your Macintosh and all attached peripherals and disconnect the SCSI cable from the back of the Macintosh. Start your Macintosh again.

Install System 7.1

Install system software version 7.1, following these steps:

1) When you see the disk with a flashing question mark, insert Disk Tools into the floppy drive.

2) When the desktop appears, choose Eject Disk from the File menu.

3) Remove Disk Tools, and insert the Install 1 disk.

4) Double-click the Installer on the Install 1 disk. Disk swapping (6 or 7 times usually; more if using the System 7.0.1 Disk Tools disk) between Install 1 and Disk Tools is normal.

5) When the "Welcome to the Apple Installer" message appears, click OK and then click Install.

6) Insert the other disks when the Installer asks you to.

Verify Problem Resolution

After performing a clean installation, verify that you resolved the problem before adding anything to the new System Folder. Adding items to the System Folder before resolving your problem defeats the purpose of this procedure.

Install Non-Standard Items

You can now reinstall the non-standard items from the old System Folder (now named "Storage") such as fonts, screen savers, device drivers, and so on. If possible, you should reinstall these items from their original disks.

If the original disks aren't available, you may move the non-standard items from the Storage folder to the new System Folder. Be careful not to replace anything that's already in the new System Folder. Only move items that aren't already in the new System Folder.

1) Open each corresponding folder within the System Folder and the Storage folder and then compare the contents.

2) Move anything that isn't already in the new System Folder and its subfolders from the Storage folder and its subfolders.

3) Restart your Macintosh.

Troubleshooting Extension Conflicts

If you've installed any system extensions or control panels, you'll probably see their icons line up across the bottom of the screen when you restart. They load into memory at startup time and modify the standard behavior of the operating system.

Verify INIT Conflict

If the Macintosh fails to restart or behaves erratically, you probably have an incompatible, or conflicting, INIT (also known as a system extension or control panel). To verify this problem, follow these steps:

1) Be sure the Caps Lock key is off.

2) Restart, and after you see the picture of a smiling computer hold down the Shift key.

3) Release the Shift key when the "Welcome to Macintosh, Extensions Off" message appears.

4) When the Macintosh is ready, try to recreate the erratic behavior.

If the problem no longer occurs, then you have a conflicting extension or control panel. Continue with the next section.

Remove and Replace INITs in System Folder

1) Create a new folder on the desktop.

2) Open the System Folder, Extensions folder, and Control Panels folder. Choose by Kind from the View menu. Find all items of Kind "system extension" or "control panel" and move them to this new folder.

3) Close the System Folder, and restart the Macintosh.

4) Attempt to recreate the problem.

5) Move one item from the new folder on the desktop to the closed System Folder and restart the Macintosh.

6) Attempt to recreate the original problem.

Repeat steps 5 and 6 for each item in the new folder on the desktop until the problem recurs. The last item returned to the System Folder is probably the cause of the problem.

Final Steps

Verify that your applications are performing normally. If not, refer to the application manual or contact the vendor.

When the Macintosh behaves as expected, drag the Storage folder to the Trash,

and choose Empty Trash from the Special menu.

System Update

After performing a clean installation of System 7.1, you may want to consider installing System Update 3.0 to ensure that you have the most current version of the system software.

System Update 3.0 is available from the Apple Software Updates area of many online services. More specific information about how to find the updates on these services is available in Fax document #20729. If you do not have access to any online services, please call 1-800-SOS-APPL for more information.

Article Change History:
08 Feb 1995 - Added compressed driver information.
27 Oct 1994 - Review for consistency and update format.
28 Jan 1994 - Added more information to the HD SC Setup section.

Support Information Services

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Tech Info Library Article Number:14115

Tech Info Library

PowerBook: Power, Reset & Interrupt Buttons (8/96)

Revised: 8/12/96
Security: Everyone

PowerBook: Power, Reset & Interrupt Buttons (8/96)

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Article Created: 3 December 1993
Article Reviewed/Updated: 12 August 1996

TOPIC ----------

This article describes the location of power, reset, and interrupt buttons on all Macintosh PowerBook models.

DISCUSSION ----------

General Information: Power Buttons

The Power button on PowerBook models is usually located on the back panel of the unit close to the left side. When facing the computer, you should be able to use your left hand to reach around to the back of the PowerBook, open the back panel door, and operate the button. The Power button for PowerBook 200 models is located on the top right side of the keyboard. The PowerBook 100 has no Power button, just press any key on the keyboard to turn it on.

General Information: Reset and Interrupt Buttons

The Reset and Interrupt buttons are usually located in the back panel of the PowerBook, near the left hand side. PowerBook 200 models do not have Reset and Interrupt buttons, see the PowerBook 200 series section below for equivalent keyboard commands. On the PowerBook 100, the Reset and Interrupt buttons are located in a recessed area on the left side.

The Reset button is marked with a small triangle. Pushing the Reset button restarts the PowerBook; it is the same as turning the power switch off and then on.

The Interrupt button is marked with a small circle. It is used by Macintosh software programmers when writing applications and debugging them. Pushing the Interrupt switch produces a blank dialog box on the Macintosh screen.

Programmers can then type codes to obtain the response or information they require from the Macintosh.

PowerBook Model Specifics

• PowerBook 100:
- Power Button: No power button, press any key on the keyboard to turn it on.
- Reset and Interrupt buttons: Located in a recessed area on the left side. The Reset button is the closer of the two to the front of the PowerBook 100.

• PowerBook 140, 145, 145B, 160, 165, 165c, 170, 180, and 180c:
- Power Button: Located on the back of the unit inside the back panel. Open the back panel door to operate the power button.
- Reset and Interrupt buttons: Reset and Interrupt functions are accomplished by using a paper clip to press either button. They are recessed into the case at the back, both are marked as described above.

• PowerBook 520, 520c, 540, 540c:
- Power Button: Located at the upper right of the keyboard. It can be identified by a circle with a vertical bar inside.
- Reset and Interrupt buttons: Use the following keyboard commands:

To restart (Reset), hold down the Command, Control, and Power keys.
To interrupt, hold down the Command and Power keys.
To power down, hold down the Command, Control, Option, and Power keys.

• PowerBook 5300 (all models) and PowerBook 190
- Power Button: There are two - on the upper right of the keyboard and behind the access door on the back of the unit below the video connector.
- Reset and Interrupt buttons: Use the following keyboard commands:

To restart (Reset), hold down the Command, Control, and Power keys.
To interrupt, hold down the Command and Power keys.

• PowerBook Duo 210, 230, 250, 270c, 280, 280c, 2300, 2300c:
- Power Button: There are two - on the upper right of the keyboard and on the back of the unit near the right side when facing the front of the unit.
- Reset and Interrupt buttons: Use the following keyboard commands:

To restart (Reset), hold down the Command, Control, and Power keys.
To Interrupt, hold down the Command and Power keys.

• Duo Dock and Duo MiniDock:
- Power Button: Located on the back of the unit near the left side when you facing the front of the unit.
- Reset and Interrupt buttons: No reset or interrupt buttons. Use the power button to turn the unit off and on again.
- Eject Button on the Duo Dock: Located on the right front of the Duo Dock, next to the opening. The Manual Eject button is located on the

left hand side of the Duo Dock.

Article Change History:
12 Aug 1996 - Added 5300 series.
29 May 1996 - Added how to power off the 500 series.
13 Mar 1995 - Corrected wording of Duo MiniDock.

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Tech Info Library Article Number:14116

Tech Info Library

Modular Macintosh: Power, Reset & Interrupt Buttons (12/96)

Revised: 12/5/96
Security: Everyone

Modular Macintosh: Power, Reset & Interrupt Buttons (12/96)

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Article Created: 3 December 1993
Article Reviewed/Updated: 5 December 1996

TOPIC ----------

This article describes the location of power, reset, and interrupt buttons on all modular Macintosh models.

To determine the equivalent Performa model to those Macintosh models listed below, refer to the Tech Info Library article "Macintosh to Performa Comparison Chart."

DISCUSSION ----------

General Information: Power Buttons

The Power button on modular Macintosh models is typically located on the back of the computer close to the right or left side (depending on the model). When facing the computer, you should be able to reach around to the back of the computer and operate the button.

Exceptions to the standard power button placement are most Macintosh Centris and Quadra models. Please refer to model-specific descriptions below.

Power buttons come in different shapes and sizes. Some are push buttons (round or square), which may be plain, or may include a sideways triangle or a circle with a small straight line inside. Others are toggles, which include a 1 and a 0 (1=On, 0=Off).

General Information: Reset and Interrupt Buttons

The Reset and Interrupt buttons are located in different areas on different models. Please refer to model-specific descriptions below.

The reset button is marked with a small triangle. Pushing the reset button restarts the computer. It is the same as turning the power switch off and then on.

The interrupt button is marked with a circle; if the button is large enough there is a crooked line in the circle. It is used by Macintosh software programmers when writing applications and debugging them. Pushing the interrupt button produces a blank dialog box on the Macintosh screen. Programmers can then type codes to obtain the response or information they require from the Macintosh.

MODULAR MACINTOSH MODEL SPECIFICS

Macintosh II, IIx, IIfx

Power

On the back of the computer, toward right side when facing the front of the computer.

Reset and Interrupt

Light gray rectangular plastic switches located on right side of the computer near the rear. The Reset button is located closer to the computer front, the interrupt button is closer to the rear. You must install the buttons.

Macintosh IIcx, IIci

Power

On the back of the computer, toward right side when facing the computer's front. (Rotate the Power button 90 degrees to enable automatic restart if power is interrupted.)

Reset and Interrupt

Small light gray rectangular plastic switches located on front of the computer close the left side. The Reset button is located on the left, the interrupt button is on the right, as you face the front of the computer. You must install the buttons.

Macintosh IIsi, LC, LC II, LC III, LC 475, Quadra 605, Performa 400 series

Power

On the back of the computer, toward the right side when facing the computer's front.

Reset and Interrupt

None. To restart (reset), hold down the Command, Control, and Power keys. To interrupt, hold down the Command and Power keys.

Macintosh LC 550, Macintosh TV, Performa 550, Performa 560

Power

On the back of the computer, to the right of the power plug when facing the computer's front.

Reset and Interrupt

None. To restart (reset), hold down the Command, Control, and Power keys. To interrupt, hold down the Command and Power keys.

Macintosh LC 575, Macintosh LC 580, Performa 575, 577, 578, 580

Power

On the back of the computer, to the right of the power plug when facing the computer's front.

Reset and Interrupt

None. To restart (reset), hold down the Command, Control, and Power keys. To interrupt, hold down the Command and Power keys.

Power Macintosh 5200/75 LC, 5300/100 LC, 5400, Performa 5200 and 5300 series

Power

On the back of the computer, above the power plug when facing the computer's front.

Reset and Interrupt

None. To restart (reset), hold down the Command, Control, and Power keys. To interrupt, hold down the Command and Power keys.

Macintosh 630 family, Performa 6200, 6300, and 6360 series

Power

On the back of the computer, toward left side when facing the computer's front. It is next to the DB 15 Monitor connector, toward the outside. It is also called the Standby power and is used when the computer will not reset or interrupt.

Reset and Interrupt

None. To restart (reset), hold down the Command, Control, and Power keys. To interrupt, hold down the Command and Power keys.

Macintosh Performa 6400 series

Power

On the back of the computer, toward right side when facing the computer's front. It is next to the Monitor connector, toward the outside. It is also called the Standby power and is used when the computer will not reset or interrupt.

Reset and Interrupt

None. To restart (reset), hold down the Command, Control, and Power keys. To interrupt, hold down the Command and Power keys.

Macintosh IIvx, IIvi, Performa 600, Centris 650, Quadra 650

Power

On the back of the computer, toward right side when facing the computer's front. (Rotate the Power button 90 degrees to enable automatic restart if power is interrupted).

Reset and Interrupt

Small round buttons in a recessed area on the front left of the computer. The Reset button is on the left, the Interrupt button on the right as you face the front of the computer.

Power Macintosh 7100 series

Power

On the back of the computer, toward right side when facing the computer's front.

Reset and Interrupt

1. Small round buttons in a recessed area on the front left of the computer. The Reset button is on the left, the Interrupt button on the right as you face the front of the computer.

- or -

2. To restart (reset), hold down the Command, Control, and Power keys. To interrupt, hold down the Command and Power keys.

Macintosh Centris/Quadra 660AV

Power

On the front of the computer, directly beneath floppy disk drive toward right side.

Reset and Interrupt

None. To restart (reset), hold down the Command, Control, and Power keys. To interrupt, hold down the Command and Power keys.

Macintosh Centris/Quadra 610

Power

On the front of the computer, directly beneath the floppy disk drive toward the right side.

Reset and Interrupt

On the back of the computer, toward the left side, next to the Sound output/input port. See the Getting Started booklet for more details.

Power Macintosh 6100 and Performa 6100 series

Power:

On the front of the computer, directly beneath floppy disk drive toward right side.

Reset and Interrupt

1. On the back of the computer, toward the left side, next to the Sound output/input port. See the manual for more details.

- or -

2. To restart (reset), hold down the Command, Control, and Power keys. To interrupt, hold down the Command and Power keys.

Macintosh Quadra 700, 800

Power

On the back of the computer, toward top when computer is positioned vertically. (Rotate the Power button 90 degrees to enable automatic restart if power is interrupted).

Reset and Interrupt

Small round buttons in a recessed area on front of computer, toward the bottom when the computer is positioned vertically. The Reset button is on the bottom, the Interrupt button on the top when the computer is positioned vertically.

Power Macintosh 8100 series

Power

On the back of the computer, toward top when computer is positioned vertically.

Reset and Interrupt

1. Small round buttons in a recessed area on front of computer, toward the bottom when the computer is positioned vertically. The Reset button is on the bottom, the Interrupt button on the top when the computer is positioned vertically.

- or -

2. To restart (reset), hold down the Command, Control, and Power keys. To interrupt, hold down the Command and Power keys.

Macintosh Quadra 840AV

Power

On the front of the computer, to the right of floppy disk drive. If the computer "locks up," hold the Power button in for three seconds to shut it down.

Reset and Interrupt

None. To restart, hold down the Command, Control, and Power keys. To interrupt, hold down the Command and Power keys.

Power Macintosh 7200, 7500, and 7600 series

Power

On the front of the computer, below the speaker on the left side.

Reset and Interrupt

To restart (reset), hold down the Command-Control and Power keys. To interrupt, hold down the Command and Power keys.

Power Macintosh 8500 and 9500 series

Power

On the front of the computer, toward top when computer is positioned vertically.

Reset and Interrupt

To restart (reset), hold down the Command-Control and Power keys. To interrupt, hold down the Command and Power keys.

Macintosh Quadra 900, 950

Power

None. Equipped with a Key Lock on the front, toward the top left when the computer is positioned vertically. There are three positions for the key lock: Off, On, and Secure. The three positions are marked with a circle, an "I", and a lock icon respectively.

Reset and Interrupt

Small round buttons in a recessed area on the front of the computer, toward the top left when the computer is positioned vertically. The Reset button is on the bottom, the Interrupt button on the top when the computer is positioned vertically.

Article Change History:
05 Dec 1996 - Added 6360.
22 Oct 1996 - Added 6400.
28 Jun 1996 - Added additional computers.

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Tech Info Library Article Number:14117

ABS Tech Note: DAL35 DAL For A/UX Technical Overview (11/93)

Revised: 12/3/93
Security: Everyone

ABS Tech Note: DAL35 DAL For A/UX Technical Overview (11/93)

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Article Created: 30 November 1993

TOPIC

This document describes the files created by installation of Data Access Language 1.4 on the A/UX operating system.

DISCUSSION

Overview

Data Access Language Server 1.4 supports connections to two databases: Oracle, and Informix, using one of three connection protocols: asynchronous via a serial connection, TCP/IP and ADSP. This document gives an overview of DAL under A/UX, describing what the server files are, how they relate to each other, and how each function is accomplished.

Installing DAL

Installation of DAL is straightforward. These examples use Oracle 7.0, but Informix is essentially the same process. First, it is important to install the database first and make sure it's running correctly before installing DAL. It is a common error for someone to try to install both the database and DAL at the same time and try to debug getting them running simultaneously, which is very difficult. By installing them a piece at a time, you make your life much easier.

This is a sample installation. To begin, insert the Oracle server floppy into the server and log on as root. We then create the directory to hold the server software (by default, /users/dal), then use tar to extract the files:

```
# cd /users              (data the user types)
# mkdir dal              (data the user types)
# cd dal                 (data the user types)
# tar xfv /dev/rfloppy0  (data the user types)
```

```
Once the files are copied over, you need to run DALinstall to complete the
installation (Note in this case the user dalsys already exists in
/etc/passwd.  If it doesn't, it's created for you):

# DALinstall             (data the user types)

 - DAL Host Software Installation Script -
 - dalsys user already exists -
 - Setting file permissions -
 - DAL adsp listener already configured -
===
 - Configuring ORACLE -
 |  To install DAL demo data tables for ORACLE (after this install
    completes):
 V  Invoke sqlplus/sqldba as scott/tiger and enter the following command:

      SQLprompt>  @/users/dal/data/oracle_script;

   ORACLE_HOME specifies where ORACLE is installed
   Old setting: ORACLE_HOME=unknown
   New setting: ORACLE_HOME=/users/oracle in oracle.cfg

   ORACLE_SID selects the default ORACLE Instance to use
   Old setting: ORACLE_SID=unknown
   New setting: ORACLE_SID=SAMP in oracle.cfg
===
 - Checking DAL environment settings -
   New setting: DALDEFAULTDBMS=oracle in /etc/dalrc

   DAL specifies where DAL is installed
   Old setting: DAL=/users/dal

   Set DALLOGGING to YES to enable logging to /tmp/dalXXXXXX.log
   Old setting: DALLOGGING=NO

   Set DALDEBUG to YES to send debug info to stderr(idal) or logfile
   Old setting: DALDEBUG=NO

   DALTEMPDIR specifies where DAL creates temporary work files
   Old setting: DALTEMPDIR=/tmp

   DALMESSAGES selects the default host message language to use
   Old setting: DALMESSAGES=unknown
 ! Choose DALMESSAGES from the following: french italian us_english
 >>Please supply a new value for DALMESSAGES (us_english): <return>
   New setting: DALMESSAGES=us_english in /etc/dalrc

   DALDEFAULTDBMS selects the default DBMS server to run
   Old setting: DALDEFAULTDBMS=oracle

   Set DALSERVERLOG to YES to enable ADSP listener logging
   Old setting: DALSERVERLOG=NO
```

```
   Set DALRESTARTADSP to YES to enable autorestart of DAL adsp listener at
   boot
   Old setting: DALRESTARTADSP=unknown
 ! Choose DALRESTARTADSP from the following: NO YES
 >>Please supply a new value for DALRESTARTADSP (YES): <return>
   New setting: DALRESTARTADSP=YES in /etc/dalrc
 - Shutting down DAL adsp listener -
 - Starting up DAL adsp listener -

   DAL Server Version   DBMS Version         Networks
   ------------------   ------------------   --------------------------
   A/UX 1.4 ORACLE7     ORACLE  7.0.12.2.0   PktAsync, AppleTalk, TCP/IP

 - Successful installation -
```

DAL Server files and their purpose

This is a listing of the files installed by DALinstall and their use. Most of the files DAL installs are in the /users/dal directory, but one file is created in /etc and three files are created in /usr/bin.

The file in /etc is:

```
# ls -l /etc | grep dal
-rw-r--r--   1 dalsys   dalsys       221 Oct 26 11:29 dalrc
```

This file sets up the standard configuration for DAL, and can be modified with the DAL command as will be seen below. A typical Oracle configuration would look like this:

```
DAL=/users/dal                          (location of the DAL files)
DALFILE="$DAL/dalprocs"                 (location of the host procedures)
DALLOGGING=NO                           (session logging, YES or NO)
DALDEBUG=NO                             (debugging, YES or NO)
DALTEMPDIR=/tmp                         (where temporary files go)
DALMESSAGES=us_english                  (which message file to use)
DALDEFAULTDBMS=oracle                   (default DBMS, oracle or
                                         informix)
DALSERVERLOG=NO                         (server logging, YES or NO)
DALRESTARTADSP=YES                      (restart ADSP server on reboot)
DALDBMSLIST="oracle"                    (known DBMSes)
DALMSGLIST="french italian us_english"  (known language files for errors)
```

The three files in /usr/bin are actually links to one another:

```
# cd /usr/bin
# dir | grep dalsys
-rwxr-xr-x   3 dalsys   dalsys       216 Oct 26 11:29 DAL*
-rwxr-xr-x   3 dalsys   dalsys       216 Oct 26 11:29 dalsvr*
-rwxr-xr-x   3 dalsys   dalsys       216 Oct 26 11:29 idal*
```

DAL, dalsvr and idal all execute the same shell script:

```
#!/bin/sh
set -a
. /etc/dalrc

if [ X$1 = X-v -o X$1 = Xversions -o `basename $0` = DAL ] ; then
   cd $DAL
   . ./.dal.config
   exit
fi

case `basename $0` in
idal) EXE=idal ;;
*) EXE="" ;;
esac
. $DAL/.dalsvr.run
```

What this script does is the following: it loads in the values in /etc/dalrc and then checks the parameters. If the dalsvr entry point was used, or if it was given the parameter -v or 'versions', then it responds by executing the file $DAL/.dal.config, a shell script which will output a listing of what is available for use with DAL:

```
medraut# dalsvr

DAL Server Version    DBMS Version           Networks
------------------    --------------------   --------------------------
A/UX 1.4 ORACLE7      ORACLE   7.0.12.2.0    PktAsync, AppleTalk, TCP/IP
```

If it doesn't do that, it sets the environment variable EXE to either a null string (if the DAL command are executed) or 'idal' (if idal is executed), and then executes the file $DAL/.dalsvr.run. This starts either the DAL configuration program or the DAL server, depending on which entry point is used.

In /users/dal, we have these files:

```
medraut#  ls -lRa
total 2454
-rwxr-xr-x   1 dalsys   dalsys       216 Jun 18 01:41 .dal.cfg*
```

This is the shell script installed in /usr/bin.

```
-rwxr-xr-x   1 dalsys   dalsys      9439 Sep 28 19:02 .dal.config*
```

This is the shell script executed as /usr/bin/DAL to do configuration.

```
-rwxr-xr-x   1 dalsys   dalsys     10980 Sep 30 17:16 .dal.install*
```

This is the shell script executed by /users/dal/DALinstall or the "DAL install" command.

```
-rw-r--r--   1 dalsys   dalsys      1195 Jun 22 16:13 .dal.usage
```

A text file listing the commands for the DAL program. Listed by "DAL help".

```
-rwxr-xr-x   1 dalsys   dalsys      6832 Jun 12 20:30 .dalprocs.cfg*
A text file storing the template for the /users/dal/dalprocs file. This
is modified during installation for proper configuration..

-rwxr-xr-x   1 dalsys   dalsys       203 Sep 30 13:53 .dalrc.cfg*
A text file storing the template for the /etc/dalrc file. This is
modified during installation for proper configuration.

-rwxr-xr-x   1 dalsys   dalsys       255 Jun 12 20:52 .dalsvr.cfg*
A text file storing the template for the /users/dal/.dalsvr.run file.
This is modified during installation for proper configuration.

-rw-r--r--   1 dalsys   dalsys       253 Oct 26 11:29 .dalsvr.run
This is the shell script executed by idal to start the dal server.

-rwxr-xr-x   1 dalsys   dalsys       495 Sep 22 17:39 .informix.cfg*
A text file storing the template for the /users/dal/informix.cfg file.
This is modified during installation for proper configuration. (note:
this is installed by the Oracle install floppy, but not used).

-rwxr-xr-x   1 dalsys   dalsys       364 Jun  2 11:32 .oracle.cfg*
A text file storing the template for the /users/dal/oracle.cfg file. This
is modified during installation for proper configuration.

-rwxr-xr-x   1 dalsys   dalsys        27 Jun  9 18:41 DALinstall*
This shell script executes /users/dal/.dal.install.

-rw-r--r--   1 dalsys   dalsys         0 Oct  4 15:15 DiskCreationDate
A time stamp that documents what date/time the files on the install
floppy were created.

-rw-r--r--   1 dalsys   dalsys      8394 Oct  5 11:30 README
The latest information on the release.

-rwxr-xr-x   1 dalsys   dalsys     88476 Oct  1 17:07 dal_adsp*
The DAL 1.4 ADSP listener. This is restarted when the system boots from
/etc/inittab using the line "dall:2:once:/usr/bin/DAL boot adsp", which
should be added from the DALinstall command. Whether it is turned on or
not is controlled by the DAL command.

-rwxr-xr-x   1 dalsys   dalsys       220 Sep 22 18:08 dalbrd.sqlexec*
-rwxr-xr-x   1 dalsys   dalsys       220 Sep 22 18:06 dalbrd.sqlturbo*
These two files are installed by the Oracle install floppy, which is a
cosmetic bug in DAL 1.4. They are used to configure the Informix server
for the different versions of Informix. They are not used with Oracle.

-rwxr-xr-x   1 dalsys   dalsys      7369 Jun 24 01:12 dalprocs*
This is a text file containing the host-based DAL procedures. The
commonly used ones are documented later.

-rw-r--r--   1 dalsys   dalsys      8318 Apr 16  1993 msg.french
-rw-r--r--   1 dalsys   dalsys      7980 Apr 16  1993 msg.italian
-rw-r--r--   1 dalsys   dalsys      6121 Apr 16  1993 msg.us_english
```

These files contain the error messages for the server and are set up for easy internationalization. Note that in DAL 1.4, neither the French or Italian files are actually internationalized, so using them won't give you any advantage. They are place holders so they can be modified as appropriate by the international subsidiaries.

```
-rwxr-xr-x   1 dalsys   dalsys       367 Oct 26 11:29 oracle.cfg*
```

This file configures DAL so it can access the oracle DBMS without requiring the user's account to be configured for it.

```
-rwxr-xr-x   1 dalsys   dalsys   1073072 Oct  5 16:06 oracle.dal*
```

The DAL database adapter for Oracle.

```
-rw-r--r--   1 dalsys   dalsys       919 Sep 27 16:10 usage
```

A short text file that explains installation for people who hate reading manuals.

The data/ sub directory holds the demo tables for Informix (which would be accessed with the "USE LOCATION /users/dal/data" clause), and the script needed to create the demo tables in Oracle. Since Oracle stores all data internal to it's database structures, there are no files stored here for that DBMS.

```
drwxr-xr-x   2 dalsys   dalsys       512 Oct 26 11:28 data/
./data:
total 60
drwxr-xr-x   2 dalsys   dalsys       512 Oct 26 11:28 ./
drwxr-xr-x   3 dalsys   dalsys      1024 Oct 26 11:29 ../
-rw-r--r--   1 dalsys   dalsys       140 May 25 00:37 README.oracle
-rw-r--r--   1 dalsys   dalsys     27435 Aug 15  1991 oracle_script.sql
```

This is the end of the overview of DAL server files. The informix server is almost identical, the only changes being the added configuration scripts for the Online vs. SE database versions and the need for the separate demo tables (listed below).

Installing Oracle demo tables

This is an example of how to install Oracle demo tables. To install the demo table in Oracle, you need to log on to Oracle via the program sqldba (this assumes you are in an account configured to use Oracle. The easiest way to do this is log on to the system as user oracle).

```
% cd /users/dal/data
% sqldba

SQL*DBA: Release 7.0.12.2.0 - Production on Fri Oct 29 11:35:44 1993

Copyright (c) Oracle Corporation 1979, 1993.  All rights reserved.

ORACLE7 Server Release 7.0.12.2.0 - Production
With the procedural and distributed options
PL/SQL Release 2.0.14.0.1 - Production
```

```
SQLDBA> connect
Username: scott
Password: tiger     (note: not echoed!)
Connected.
SQLDBA> @oracle_script
set scan off
    *
DBA-00110: illegal SET option
drop table orders
           *
ORA-00942: table or view does not exist
Statement processed.
Statement processed.
1 row processed.
1 row processed.
[[many lines of output supressed]]
1 row processed.
1 row processed.
1 row processed.
Statement processed.
drop table ware_inv
           *
ORA-00942: table or view does not exist
Statement processed.
Statement processed.
1 row processed.
1 row processed.
1 row processed.
1 row processed.
1 row processed.
1 row processed.
Statement processed.SQLDBA> exit
SQL*DBA complete.

Informix demo tables
--------------------
When installing Informix, the following directory is installed, which
contains the demo tables.

drwxrwxrwx   2 dalsys   dalsys      1024 Oct 11 10:14 daldemo.dbs/
./data/daldemo.dbs:
-rw-rw-rw-   1 dalsys   dalsys      8192 Apr 20  1993 custome100.dat
-rw-rw-rw-   1 dalsys   dalsys      2048 Apr 20  1993 custome100.idx
-rw-rw-rw-   1 dalsys   dalsys      1024 Apr 20  1993 offices103.dat
-rw-rw-rw-   1 dalsys   dalsys      2048 Apr 20  1993 offices103.idx
-rw-rw-rw-   1 dalsys   dalsys      3072 Apr 20  1993 orders_101.dat
-rw-rw-rw-   1 dalsys   dalsys      2048 Apr 20  1993 orders_101.idx
-rw-rw-rw-   1 dalsys   dalsys      2048 Apr 20  1993 staff__102.dat
-rw-rw-rw-   1 dalsys   dalsys      2048 Apr 20  1993 staff__102.idx
-rw-rw-rw-   1 dalsys   dalsys      2048 Apr 20  1993 store_i104.dat
-rw-rw-rw-   1 dalsys   dalsys      2048 Apr 20  1993 store_i104.idx
-rw-rw-rw-   1 dalsys   dalsys      3072 Apr 20  1993 stores_105.dat
```

```
-rw-rw-rw-   1 dalsys   dalsys      2048 Apr 20  1993 stores_105.idx
-rw-rw-rw-   1 dalsys   dalsys         0 Apr 20  1993 syscolauth.dat
-rw-rw-rw-   1 dalsys   dalsys      4096 Apr 20  1993 syscolauth.idx
-rw-rw-rw-   1 dalsys   dalsys      4096 Apr 20  1993 syscolumns.dat
-rw-rw-rw-   1 dalsys   dalsys      6144 Apr 20  1993 syscolumns.idx
-rw-rw-rw-   1 dalsys   dalsys         0 Apr 20  1993 sysconstra.dat
-rw-rw-rw-   1 dalsys   dalsys      5120 Apr 20  1993 sysconstra.idx
-rw-rw-rw-   1 dalsys   dalsys         0 Apr 20  1993 sysdepend.dat
-rw-rw-rw-   1 dalsys   dalsys      4096 Apr 20  1993 sysdepend.idx
-rw-rw-rw-   1 dalsys   dalsys      1024 Apr 20  1993 sysindexes.dat
-rw-rw-rw-   1 dalsys   dalsys      4096 Apr 20  1993 sysindexes.idx
-rw-rw-rw-   1 dalsys   dalsys         0 Apr 20  1993 syssynonym.dat
-rw-rw-rw-   1 dalsys   dalsys      4096 Apr 20  1993 syssynonym.idx
-rw-rw-rw-   1 dalsys   dalsys         0 Apr 20  1993 syssyntabl.dat
-rw-rw-rw-   1 dalsys   dalsys      4096 Apr 20  1993 syssyntabl.idx
-rw-rw-rw-   1 dalsys   dalsys      1024 Apr 20  1993 systabauth.dat
-rw-rw-rw-   1 dalsys   dalsys      4096 Apr 20  1993 systabauth.idx
-rw-rw-rw-   1 dalsys   dalsys      4096 Apr 20  1993 systables.dat
-rw-rw-rw-   1 dalsys   dalsys      4096 Apr 20  1993 systables.idx
-rw-rw-rw-   1 dalsys   dalsys      1024 Apr 20  1993 sysusers.dat
-rw-rw-rw-   1 dalsys   dalsys      3072 Apr 20  1993 sysusers.idx
-rw-rw-rw-   1 dalsys   dalsys         0 Apr 20  1993 sysviews.dat
-rw-rw-rw-   1 dalsys   dalsys      3072 Apr 20  1993 sysviews.idx
-rw-rw-rw-   1 dalsys   dalsys      1024 Apr 20  1993 ware_in106.dat
-rw-rw-rw-   1 dalsys   dalsys      2048 Apr 20  1993 ware_in106.idx
-rw-rw-rw-   1 dalsys   dalsys      1024 Apr 20  1993 warehou107.dat
-rw-rw-rw-   1 dalsys   dalsys      2048 Apr 20  1993 warehou107.idx
```

Using DAL

The DAL command is used to configure the server and to look at its current status. A list of the commands supported by DAL are below, and can be printed with the "DAL ?" or "DAL help" commands:

```
medraut#  DAL help
 DAL utility usage:

 DAL start [ adsp ]         ( start the adsp listener)
 DAL stop [ adsp ]          ( stop the adsp listener)
 DAL boot [ adsp ]          ( only start the lstnr if DALRESTARTADSP=YES )
```

These three commands control the ADSP listener. Boot is equivalent to start, but will only start the listener if it is configured to start on system reboot.

```
 DAL sessions                    ( list the active DAL sessions )
```

Describes the current state of the server. This is an example of the output when the server is idle:

```
medraut# DAL sessions
 - DAL adsp listener is running -
 - No DAL sessions currently running -
```

```
    This is an example of a server with one active session:

medraut# DAL
 - DAL adsp listener is running -
 - DAL sessions currently running:

    chuq 6087 289 1 13:52:37 C1 0:00 /users/dal/oracle.dal idal

 DAL config                      ( show all DAL config parameters )
    This lists the contents of /etc/dalrc

 DAL config dalrc                ( edit all parameters in /etc/dalrc )
    This command lets you change the contents of /etc/dalrc by prompting you
    for a new entry for each line (carriage return implies no change).

 DAL config <informix|oracle|ingres>    ( edit all parms for that dbms)
    This command lets you change the contents of the appropriate
    configuration file for supported databases (/users/dal/oracle.cfg for
    oracle, /users/dal/informix.cfg for informix).  Note that Ingres is not
    supported in DAL 1.4.

 DAL config all                  ( edit all DAL parms in DBMSs and dalrc )
    Allows you to configure everything about the server, prompting you as
    appropriate.

 DAL versions                ( show the versions of available DAL servers )
    Lists the currently supported databases and their versions and
    configured network adapters.  Equivalent to the "dalsvr" command.

 DAL <log|lsn>               ( run more on latest /tmp/dalxxx.log or .lsn )
                             ( you must press 'q' to exit, space for more )
 DAL purge <log|lsn>         ( remove all but the latest log/lsn tmp files)
    Prints and purges the .log (logging), .lsn (adsp listener logs) and .dbg
    (DAl debugging) logs.  Note that "DAL dbg" and "DAL purge dbg" are also
    legal options.

 DAL show  <dal env. variable>  ( show the current setting for that var )
    Shows a specific variable in /etc/dalrc.

 DAL DEFAULTDBMS=<dbms-name>    ( make that dbms the default )
    Allows you to change the default DBMS name.

 DAL DALMESSAGES=<language-name>( make that msg language the default )
    Allows you to change the language used for server error messages.

 DAL <var>=<value>         ( change any DAL environment variable )
 DAL -e <var>=<value>      ( explain each variable before prompting )
 DAL -p <var>=<value>      ( force a prompt even if value is already valid)
    Allows you to change any specific variable in /etc/dalrc. The -e option
    outputs a description of what you're changing. The -p option forces DAL
    to prompt you for the changed value.

 DAL install ...           ( run the full DAL installer for reconfig )
```

The same as the DALinstall command.

Common Dalproc procedures

The file /users/dal/dalprocs contains host-based DAL procedures. It can be used to store commonly used and shared DAL functions. DAL 1.4 ships with a set of procedures in the dalprocs file. Some of them are of interest primarily as examples, but some have more general use. The ones you might want to use include:

dal_config: prints the DAL environment from inside idal, so you can see how the server thinks it's configured.
op: opens the default DBMS and then opens the appropriate database so that the demo tables are available.
oo: opens the Oracle DBMS and database as user scott (for demo table access).
oinf: opens the Informix DBMS
closeall: closes all open databases and DBMSes.
tables: prints the name of all available tables.
columns(tablename): prints the columns for a given table.
exp: a quick validity test for the default database.

TCP/IP and Asynchronous connections

Under TCP/IP and Asynchronous connections, the DAL client logs onto the A/UX system like a normal user, and once it is connected to a shell, executes the command idal. TCP/IP makes the connection through the rexec daemon (the rsh function under BSD, the remsh function under System V), which does password checking. This assumes that the user has a valid account on the system and knows the password, and that idal is in the account's default $PATH.

A sample DAL Preferences entry for this is:

```
medraut:MacTCP:AUX:17.190.12.52
medraut:login::::3000:::
```

Medraut is the entry name (in this case, also the name of the machine), and 17.190.12.52 is the IP address for the machine. The client must have MacTCP installed for it to work.

ADSP

When connecting via ADSP, operation is very similar to TCP/IP. The ADSP listener replaces the rexec daemon and shell, doing the password validation and spawning the idal process. All server operations are handled by idal. When the user disconnects, idal exits and the network connection is closed.

A sample DAL Preferences entry for ADSP is:

```
medraut.a:atalk:Chuq's AUX box.De Anza 3/1st Floor
```

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Tech Info Library Article Number:14118

Tech Info Library

Apple Internet Router 3.0: GeoPort Compatibility (12/93)

Revised: 12/6/93
Security: Everyone

Apple Internet Router 3.0: GeoPort Compatibility (12/93)

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Article Created: 6 December 1993

TOPIC -----

When I use Apple Internet Router (AIR) 3.0 on my Quadra 840AV, the router runs properly. If Express Modem for Geoport is loaded, the 840AV crashes at bootup.

Are the Apple Internet Router 3.0 and the GeoPort software compatibile?

DISCUSSION -----

The Centris/Quadra AV computers require Apple Internet Router 3.0.1 when the Express Modem for GeoPort software is installed. AIR 3.0 will either crash at boot (if the router auto-starts at boot) or will crash with a "Type 3" error (if the router is manually started), when the GeoPort software has been installed on the system also.

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Tech Info Library Article Number:14119

Tech Info Library

Apple Color Printer: Canon Cartridge Part Number 12/93

Revised: 12/6/93
Security: Everyone

Apple Color Printer: Canon Cartridge Part Number 12/93

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Article Created: 6 December 1993

TOPIC --------------------

Is there is a Canon cartridge part number that can be used with this printer?

DISCUSSION --------------------

The Canon cartridge part numbers that can be used in the Apple Color Printer are as follows:

- BJI-643 Bk (Black)
- BJI-643 C (Cyan)
- BJI-643 M (Magenta)
- BJI-643 Y (Yellow)

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Tech Info Library Article Number:14120

Tech Info Library

System 7 Pro: Font Issues with Snapshot Format (12/93)

Revised: 12/6/93
Security: Everyone

System 7 Pro: Font Issues with Snapshot Format (12/93)

==========

Article Created: 6 December 1993

TOPIC --------------------

What's supposed to happen when an AppleMail document is sent to someone in the "snapshot" format, and a font that's used on the sender's computer isn't installed on the client's computer?

Does this affect output possibilities, whether to PostScript or QuickDraw printers and fax machines?

DISCUSSION --------------------

An AppleMail snapshot creates a document in PICT format. The PICT format stores the information about the font used originally to create the document. The system that opens the document substitutes the font if the font isn't present. The result is that the recipient's document won't look like the original.

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Tech Info Library Article Number:14123

Tech Info Library

Education Resource CD: QuickTime 1.6 Install Workaround (12/93)

Revised: 12/6/93
Security: Everyone

Education Resource CD: QuickTime 1.6 Install Workaround (12/93)

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Article Created: 3 December 1993

TOPIC --------------------

The program on the Apple Education Resource CD that will update and/or install the QuickTime 1.6 extension isn't working correctly. It keeps the old copy of QuickTime 1.0 in the Extensions folder within the System Folder and just adds QuickTime 1.6 into the Extensions folder. The program doesn't replace the previous version of the QuickTime extension. When you restart the computer a message will appear saying that the QuickTime extension isn't available.

DISCUSSION --------------------

Remove the old QuickTime version from the Extensions folder within the System Folder to work around this.

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Tech Info Library Article Number:14124

Tech Info Library

PowerBook Batteries: Voltage Range (1/95)

Revised: 1/23/95
Security: Everyone

PowerBook Batteries: Voltage Range (1/95)

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Article Created: 6 December 1993
Article Reviewed/Updated: 23 January 1995

TOPIC ----------

What is the voltage range for PowerBook batteries?

DISCUSSION ----------

The voltage for PowerBook batteries varies, depending on how fully charged they are.

• The PowerBook 100 series batteries range between 5.8 volts and 7.5 volts (fully charged).

• PowerBook 200 series batteries range between 10.9 Volts and 16 volts (fully charged).

• PowerBook 500 series batteries range between 8.5 volts and 11.6 volts (fully charged).

Article Change History:
23 Jan 1995 - Added PowerBook 500 series battery voltage.

Support Information Services

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Tech Info Library Article Number:14125

Tech Info Library

AppleShare Print Server & LW 8.x.x: Incompatibilities (12/93)

Revised: 12/23/93
Security: Everyone

AppleShare Print Server & LW 8.x.x: Incompatibilities (12/93)

==========

Article Created: 7 December 1993
Article Reviewed/Updated: 23 December 1993

TOPIC -----

This article addresses questions on AppleShare Print Server 3.0.1 and the LaserWriter 8.x.x driver.

DISCUSSION -----

Question #1

I just installed the LaserWriter 8.0 print driver on my desktop computer and on our AppleShare Print Server 3.0.1, a Macintosh IIx running System 7.1.

The installation seemed to proceed normally, and I was able to print to my LaserWriter IIf. However, when I started the AppleShare Print Server, I received the following alert dialogue box:

"The print server had trouble getting to the LaserWriter file. Please make sure the print drivers are installed correctly."

Does the LaserWriter 8.0 driver print driver not work with AppleShare Print Server 3.0.1?

Answer #1

LaserWrite 8.x.x drivers are not compatible with any of the current AppleShare Print Servers. The AppleShare Print Server 3.0.x, AppleShare Print Server 4.0.x, and AppleShare Pro Print Server 1.0 require one of LaserWriter 7.x.x drivers in the Extensions folder to work correctly. Also note that this driver must have the name "LaserWriter" to be recognized.

Question #2

When a user prints with the LaserWriter 8.0 driver to a printer captured by AppleShare Print Server 3.0.1 and System 7.1, the job creates two items in the queue, and the log shows two print jobs in the log. Why?

Answer #2

The source of this anomaly is the LaserWriter 8.x.x driver on the client Macintosh. When it prints a document, it intentionally creates two print jobs. The first job contains setup information for the printer, the second job contains the PostScript stream for the document. Naturally, the Print Server will display these as two separate print jobs. Apple currently has no plans to change this.

Question #3

I have only been able to use the "Generic" setup in LW 8.0 when printing from a workstation to a LaserWriter that has been captured by AppleShare Print Server 3.0.1. Since the LaserWriter is already captured by AppleShare Print Server, one is unable to do a printer specific configuration.

Doesn't this effectively defeat the purpose of having printer-specific PPDs, and eliminate all of the special advantages and features of LW 8.0 when you use AppleShare Print Server?

Answer #3

No, it does not. The solution here is, when choosing the printer in the Chooser, to manually select the correct PPD for your printer using the "Select PPD..." button in the "Setup" dialog. This will allow you to use any of the features of the selected printer.

Article Change History:
23 Dec 1993 - Updated to include LW Print driver 8.x.x.

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Tech Info Library Article Number:14128

Tech Info Library

Peter & Santa Claus CD: Printing Problems (12/93)

Revised: 12/7/93
Security: Everyone

Peter & Santa Claus CD: Printing Problems (12/93)

==========

Article Created: 2 December 1993

TOPIC --

1. When printing on a StyleWriter II, why does an alert appear saying that an unknown error occurred?

2. My document won't print, any suggestions?

DISCUSSION --

1. You may have background printing turned on. It is known that background printing may cause an error. Try turning background printing off via the Chooser which is located under the Apple Menu.

2. Check the following:
   - Ensure that you have selected a printer in Chooser.
   - Ensure that the printer is turned on.
   - Ensure that the printer is properly connected to your Macintosh.
   - Ensure that there is paper in the printer.
   - If there is not enough memory available to print while the application is running, then the document will not be printed until Peter and Santa Claus is quit.

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Tech Info Library Article Number:14130

Tech Info Library

Peter & Santa Claus CD: Memory Alerts (12/93)

Revised: 12/7/93
Security: Everyone

Peter & Santa Claus CD: Memory Alerts (12/93)

==========

Article Created: 7 December 1993

TOPIC --

1: When trying to run Peter & Santa Claus, why does an alert
appear saying that there's not enough memory?

2: Why do I get an alert saying, "The application 'Peter and Santa Claus
has unexpectedly quit (out of system memory)?"

DISCUSSION --

Answer to Question 1:
- Ensure that there is enough memory available by choosing "About This Macintosh" from the Apple Menu and examining your largest unused block. Peter & Santa Claus requires at least 2300K of memory to run.
- Remove any extensions or control panels that create a low memory situation in the background (such as background compression utilities). This will decrease the amount of memory used by your system software and allow more memory for your CD application.
- If using Virtual Memory, restart the CPU to ensure that memory is not fragmented.
- Close all windows in Finder.
- Quit any running applications.
- If you still do not have enough memory, you may want to consider purchasing more.

Answer to Question 2:
- If you are running under System 6.0.7 MultiFinder and do not have over 5MB of memory available, you will receive this alert.
- Peter and Santa Claus will run properly on a 4MB CPU if you switch over to Finder instead of MultiFinder.

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Tech Info Library Article Number:14131

Tech Info Library

Peter & Santa Claus CD: CD Not Seen on Desktop (12/93)

Revised: 12/7/93
Security: Everyone

Peter & Santa Claus CD: CD Not Seen on Desktop (12/93)

==========

Article Created: 2 December 1993

TOPIC -----

Why can’t I see the Peter & Santa Claus CD on my Desktop?

DISCUSSION -----

One of the following may help you solve your problem:

1) Ensure that your CD-ROM drive is turned on & plugged into an active electrical outlet.

2) Ensure the CD-ROM drive’s SCSI connection is properly connected to your Macintosh (see your CD-ROM drive’s manual for instructions).

3) Ensure the CD-ROM drive’s SCSI ID does not conflict with another SCSI device’s ID number (consult your CD-ROM drive’s manual for further information).

4) Ensure all CD-ROM drivers are installed.

5) Ensure the CD-ROM drive has been turned on before the Macintosh has been turned on (with the CD-ROM Player turned on restart your Macintosh).

6) Try to use another CD-ROM. This will narrow down the problem to either the set-up or the CD-ROM disc. It is highly unlikely that the problem involves the disc.

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Tech Info Library Article Number:14132

Tech Info Library

PowerBook Models 14x, 16x, 170, 18x: Common Q & A (5/95)

Revised: 2/17/97
Security: Everyone

PowerBook Models 14x, 16x, 170, 18x: Common Q & A (5/95)

==========

Article Created: 7 December 1993
Article Reviewed/Updated: 15 May 1995

TOPIC ----------

This article describes common questions and answers compiled by the PowerBook support team in the Apple Assistance Center. It is also available through the Apple FaxInfo system.

DISCUSSION ----------

Question: When I press the power button, my PowerBook does not start up, or flashes the display momentarily.

Answer: Follow the procedure detailed below:

1) Plug in the AC Adapter. If unit will start with the AC Adapter, but not with the battery in the compartment, you probably need to charge the battery. Another possibility is that you may need a new battery.

2) Reset the power management circuitry. This condition can be temporary, and this fix may be all you need. A separate Tech Info Library article details how to do this with various PowerBook and Duo models.

3) If the machine won't start with a recharged or new battery, or won't start with AC Adapter without a battery, then your PowerBook may need servicing. Please call 1-800-SOS-APPL or see your local Apple Authorized Service Provider.

Question: I am trying to connect a SCSI device to my PowerBook. However, when I start up the PowerBook, a diamond icon with a number appears on my screen.

Answer: Make sure you’re using the correct cable, as it appears you have SCSI disk mode enabled. Use the Apple SCSI System Cable, part number: M2538LL/A, and appropriate SCSI termination.

Question: I’m trying to connect my PowerBook as an external hard drive (SCSI Disk Mode) to another Macintosh. When I turn on my PowerBook, I get a flashing question mark or a "Sad Mac" instead of the diamond icon with a SCSI ID number.

Answer: You may have the wrong cable. Use the Apple HDI-30 SCSI disk adapter cable, part number M2539LL/A, in conjunction with an Apple SCSI System Cable appropriate to your other Macintosh along with proper SCSI termination. Please refer to the Apple FaxInfo article on SCSI or refer to Chapter 14 in the User's Guide: "Expanding Your Computer System."

NOTE: SCSI Disk Mode is NOT supported on the following PowerBook models: 140, 145, 145B, 150, and 170.

Question: My battery lasts only a very short time. What can I do?

Answer: Follow the procedure detailed below.

1) Reset the power manager, following the procedure detailed in the first Q and A in this document.

2) Let the battery charge for 8 hours. This procedure should resolve the problem.

3) A few words about ongoing battery care: Completely discharge the battery after approximately 15 to 20 recharges. Here's how to do this:

Let the battery discharge completely until the PowerBook goes into sleep mode. You’ll see three battery warning dialog boxes before this occurs. This process will “recycle” the nickel cadmium (NiCad) battery and eliminate a “memory effect,” which makes the battery appear depleted when it is not.

Question: When starting up, my PowerBook displays the Fax Modem extension icon with an "X" through it. I can’t use my modem to send a fax.

Answer: Open the Preferences folder inside your System Folder and trash the Fax Preferences file, empty the Trash, and restart your PowerBook. The Fax preference file can be corrupted due to a system error or screen freeze, disabling the Fax Modem extension as a result.

Apple recommends using Express Modem software 1.0.4 or later to permanently resolve this problem. Contact your local dealer or call 1-800-SOS-APPL to receive a copy.

Question: My PowerBook 140, 145, 160, or 165 display is blurry or displaying shadowing and ghosting effects. What can I do?

Answer: Open the Monitors control panel and select "Black & White" instead of 16 Shades of Gray. The type of screen technology used on these PowerBook models is

susceptible to shadowing and ghosting, since it doesn't individually address each pixel on the display. These effects are less noticeable in Black & White mode, but cannot be eliminated completely.

You can also try adjusting your brightness and contrast controls to minimize the effect.

Question: How can I get the smiling Macintosh icon (often called "Happy Mac") and the "Welcome to Macintosh" dialog box displayed at startup on my external monitor?

Answer: Open the Monitors control panel, hold down the option key and drag the "Happy Mac" icon which appears to monitor image marked 2. After you restart your PowerBook, the icon and dialog box will appear on your external monitor.

Question: My external monitor is not displaying an image when I start up my PowerBook.

Answer: Follow this procedure:

1) Make sure the video cable connected to both the PowerBook video port and the Monitor video port is secure.

2) Make sure the PowerBook is plugged into the AC Adapter, which is required to use an external monitor.

3) Open the Monitors control panel. You should see images of two monitors, representing the PowerBook display and the external monitor. If don't see the image of the external monitor, repeat steps 1 and 2.

4) In the Monitors control panel, click (and hold) the "Identify" button. A large 2 should be displayed on the external monitor icon.

Tip: If you wish to use the External monitor as your primary monitor, open the Monitors control panel and drag the menu bar image from the internal to the external monitor. The menu bar will be displayed on the external monitor once you restart the PowerBook.

Question: How much does an All-In-One PowerBook weigh?

Answer: All in One PowerBook computers (any PowerBook model with a built in floppy disk drive) weigh 6.8 pounds. The PowerBook 150 weighs 4.5 pounds.

Question: What features are included in an All in One PowerBook?

Answer: All-In-One PowerBook computers (any PowerBook model with a built in floppy disk drive) all have the following features:

• ADB port (for external mouse or keyboard)

- Built-in floppy drive
- External SCSI port
- Internal modem slot
- Microphone port
- Speaker port
- Two serial ports, except the PowerBook 150 (one supports LocalTalk)

Additionally, PowerBook models 160, 165 and 180 have:

- Built-in microphone (The grill located beneath the display.)
- Video out port
- SCSI Disk Mode. SCSI Disk Mode allows you to attach the PowerBook via a special cable to another Macintosh. The PowerBook then appears on the other Macintosh desktop as an external hard disk.

Question: What is a System Enabler, why do I need it, and which version should I use?

Answer: A System Enabler provides system software code for your specific PowerBook to work with System Software. It is required and must be located in your system folder to function. A number of different system enablers have been released:

- System Enabler 111 was released with PowerBook models 160 and 180.
- System Enabler 121 was released with PowerBook model 165c.
- System Enabler 131 was released with PowerBook model 180c.

Additionally, System Enabler 131 supports all PowerBook models listed above. The current version of system enabler 131 is 1.0.3, but this is subject to change.

PowerBook models 100, 140, 145, and 170 do not require a System Enabler, regardless of the system software version they use.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
15 May 1995 - Added PowerBook 145B to list of PowerBook computers that do not support SCSI Disk mode.
31 Mar 1995 - Reviewed for technical accuracy, revised formatting again.
08 Feb 1995 - Reviewed for technical accuracy, revised formatting.

Support Information Services

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Tech Info Library Article Number:14133

Tech Info Library

HyperCard: Script to Convert Dollar Amounts to Words (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Script to Convert Dollar Amounts to Words (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Handler Name: dollarsToWords,numToStr,upperCase

This function converts a number of dollars into words, just as you do when writing a check. Try this: answer dollarsToWords(1234567.89)

DISCUSSION --------------------

```
function dollarsToWords num
  get offset(".",num) -- any cents?
  if it <> 0 then put return into char it of num
  put line 1 of num into dollars
  put line 2 of num into cents
  put numToStr(dollars) into result
  put upperCase(char 1 of result) into char 1 of result
  if cents > 0 then put " and " & cents & "/100" after result
  return result
end dollarsToWords

function numToStr num
  put empty into result

  -- trillions, billions, millions, thousands
  repeat with i = 1 to 4
    put length(num) - (15-3*i) into lastDigit
    if lastDigit <= 0 then next repeat
    put char 1 to lastDigit of num into thisNum
    delete char 1 to lastDigit of num
    if thisNum = 0 then next repeat
    put numToStr(thisNum) after result
    put item i of " trillion, billion, million, thousand" after result
    if num = 0 then return result
```

```
    put ", " after result
  end repeat

  -- hundreds
  if num > 99 then
    put numToStr(char 1 of num) & " hundred" after result
    delete char 1 of num
    if num = 0 then return result
    put " " after result
  else if char 1 of num is 0 then delete char 1 of num

  put "twen,thir,four,fif,six,seven,eigh,nine" into prefixes

  -- twenty..ninety
  if num > 19 then
    put item (char 1 of num) - 1 of prefixes & "ty" after result
    delete char 1 of num
    if num = 0 then return result
    put "-" after result
  end if

  -- thirteen..nineteen
  if num > 12 then
    put item num - 11 of prefixes & "teen" after result
    return result
  end if

  -- zero..twelve
  return result & item num + 1 of ¬
  "zero,one,two,three,four,five,six,seven,eight,nine,ten,eleven,twelve"
end numToStr

function upperCase ch
  get charToNum(ch)
  if it < 97 then return ch
  else return numToChar(it - 32)
end upperCase
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14134

Tech Info Library

HyperCard 2.0v2: Anchored Record in Report Definition (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 2.0v2: Anchored Record in Report Definition (7/92)

==========

Article Created: 10 December 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

There is a feature of 2.0v2 where only the top-left record in the report definition page becomes anchored in the corner. This article describes what to do.

DISCUSSION ----------

1) Choose the ImageWriter, choose Page Setup from the File menu, and choose No gaps between pages.

2) Choose Print Report from the File menu, and drag the top-left record into the top-left corner.

3) Choose the LaserWriter.

4) Choose Print Report, and drag a record other than the top-left one.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14135

Tech Info Library

HyperTalk: Creating an Array of Globals (8/93)

Revised: 12/8/93
Security: Everyone

HyperTalk: Creating an Array of Globals (8/93)

==========

Article Created: 2 August 1993
Article Reviewed/Updated: 3 August 1993

TOPIC --------------------

The following handler creates a global variable array -- a set of consecutively-numbered global variable names: for example X1, X2, X3, and so on.

DISCUSSION --------------------

```
on mouseUp
  repeat with i = 1 to 10
    do "Global X" & i
    do "put 0 into X" & i  -- optional
  end repeat
end mouseUp
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14136

Tech Info Library

HyperCard: Caps Lock Crashes MovieInfo XFCN (8/93)

Revised: 12/8/93
Security: Everyone

HyperCard: Caps Lock Crashes MovieInfo XFCN (8/93)

==========

Article Created: 25 August 1993

TOPIC --------------------

If the Caps Lock key is down when the MovieInfo XFCN is called, HyperCard crashes.

DISCUSSION --------------------

The only workaround is to make sure that the Caps Lock key is not down before calling this function.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14137

Tech Info Library

HyperCard through 2.1: Cards Print Smaller than Expected (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard through 2.1: Cards Print Smaller than Expected (7/92)

==========

Article Created: 1 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

When printing cards to any printer, the card size always prints a fraction of a percentage smaller than specified.

DISCUSSION ----------

This problem exists in every version of HyperCard through 2.1.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14138

Tech Info Library

HyperCard: Behavior of Click Command (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Behavior of Click Command (7/92)

==========

Article Created: 6 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --

There might be a circumstance when HyperCard users set the lockscreen to true, scroll a field, and then click at a location that they think will be a line not currently visible.

This does not work. Next they might try and do the same thing without the lockscreen set to true, and it does work. What's going on?

DISCUSSION --

The click command works only on a REAL screen location rather than an intended one.

In the situation given, HyperCard does store the scroll of the screen in an internal data structure, but it is not available with the click command because it can't access internal data structures -- only the actual screen location. Therefore, try unlocking the screen before clicking at the new location.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14139

Tech Info Library

HyperCard 2.1, 32-Bit Addressing: Distort Crashes HC (3/93)

Revised: 12/8/93
Security: Everyone

HyperCard 2.1, 32-Bit Addressing: Distort Crashes HC (3/93)

==========

Article Created: 9 March 1993
Article Reviewed/Updated: 29 March 1993

TOPIC --------------------

Use of the Distort command in HyperCard 2.1 while 32-bit addressing is on crashes HyperCard. There is currently no workaround.

DISCUSSION --------------------

Distort is available under the Options menu when graphics are selected with the selection rectangle.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14140

Tech Info Library

HyperCard: Script to Execute a Statement for Each Button (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Script to Execute a Statement for Each Button (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This handler repeatedly executes a given statement for each button in the current card or background.

DISCUSSION --------------------

```
on doToEachButton whatToDo,options
  if options is not "bkgndOnly" then
    repeat with i = 1 to the number of buttons
      send whatToDo to button i
    end repeat
  end  if
  if options is not "cardOnly" then
    repeat with i = 1 to the number of bkgnd buttons
      send whatToDo to bkgnd button i
    end repeat
  end if
end doToEachButton
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14141

Tech Info Library

HyperCard: How to Find the Center of a Rectangle (7/92)

Revised: 12/9/93
Security: Everyone

HyperCard: How to Find the Center of a Rectangle (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This little utility script is used to find the point that's at the center of a rectangle.

DISCUSSION --------------------

```
function centerOfRect rect
  put item 3 of rect - item 1 of rect into width
  put item 4 of rect - item 2 of rect into height
  return round(item 1 of rect+width/2)&","&round(item 2 of rect + height/2)
end centerOfRect
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14142

Tech Info Library

HyperCard: Problem with Font/DA Mover Before 3.8 (11/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Problem with Font/DA Mover Before 3.8 (11/92)

==========

Article Created: 4 February 1991
Article Reviewed/Updated: 30 November 1992

TOPIC --

Users of an older version of Font/DA mover (3.6, etc.,) will not see their fonts in the Font menu.

DISCUSSION --

Solution: use Font/DA Mover 3.8 or later.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14143

Tech Info Library

HyperCard: Font Selection Unavailable in Print Report (8/93)

Revised: 12/8/93
Security: Everyone

HyperCard: Font Selection Unavailable in Print Report (8/93)

==========

Article Created: 20 July 1993
Article Reviewed/Updated: 2 August 1993

TOPIC --------------------

If you delete the Font menu in a stack, you will not be able to select a font from the Font pop-up field in the Item Info dialog box under Print Report.

DISCUSSION --------------------

To restore the font selection option, reset the menu bar before going to Print Reports. (Type "Reset Menubar" in the message box and press the Return key.)

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14144

Tech Info Library

HyperCard Correction: Globals Retained After Open Command (7/93)

Revised: 12/8/93
Security: Everyone

HyperCard Correction: Globals Retained After Open Command (7/93)

==========

Article Created: 8 July 1993

TOPIC ----------

It is written that "When you quit the application you go to the card you were on in HyperCard when you executed the Open command. However, any global variables you had previously declared are now gone, and any portions of handlers that remained unfinished when you executed the open command do not finish."

This is not entirely true.

DISCUSSION ----------

Portions of handlers following the Open command will continue to execute in the background. Global variables are retained after quitting an application launched with the Open command.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14145

Tech Info Library

HyperCard: Script to Go Back to Previous Stack (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Script to Go Back to Previous Stack (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

The handler GoBackStack takes you back to the stack you were in before the current one. It uses information that is saved by rememberStack.

RememberStack is called from the closeStack handler in this stack. That means you can only go back to stacks that pass closeStack, so make sure all your favorite stacks do so.

DISCUSSION --------------------

```
on rememberStack
  global backTrackStacks
  get short name of this stack
  if it is not last line of backTrackStacks -- prevent consecutive duplicates
  then put it & return after backTrackStacks
end rememberStack

on goBackStack
  global backTrackStacks
  get backTrackStacks
  put last line of it into dest
  delete last line of it
  if dest is empty then go home else go to stack dest
  put it into backTrackStacks -- global changed during go
end goBackStack
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14146

Tech Info Library

HyperCard: Script to Check for Picture (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Script to Check for Picture (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This function tells you if there is a picture on the current card or background, depending on editBkgnd.

DISCUSSION --------------------

```
function hasPicture
  put the tool into saveTool
  put the lockScreen into saveLockScreen
  lock screen
  choose select tool

  doMenu "Select All"
  doMenu "Select"
  get the tool is "lasso tool"

  choose saveTool
  set lockScreen to saveLockScreen
  return it
end hasPicture
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14147

Tech Info Library

HyperCard: Script to Check for Clicked Object (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Script to Check for Clicked Object (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This function takes a point and tells you which object is at that location. If you pass it the point returned by the clickLoc function, you can tell which object the user clicked on.

DISCUSSION --------------------

```
function hitTest point
  repeat with i = 1 to the number of card buttons
    if point is within rect of card button i
    then return "card button id " & short id of card button i
  end repeat
  repeat with i = 1 to the number of card fields
    if point is within rect of card field i
    then return "card field id " & short id of card field i
  end repeat
  repeat with i = 1 to the number of bkgnd buttons
    if point is within rect of bkgnd button i
    then return "bkgnd button id " & short id of bkgnd button i
  end repeat
  repeat with i = 1 to the number of bkgnd fields
    if point is within rect of bkgnd field i
    then return "bkgnd field id " & short id of bkgnd field i
  end repeat
  if globalPoint(point) is within rect of card window
  then return "card id " & short id of this card
  return empty -- no such object
end hitTest
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14148

Tech Info Library

HyperCard 2.0: Conflict with Icon Wrap INIT (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 2.0: Conflict with Icon Wrap INIT (7/92)

==========

Article Created: 29 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

HyperCard 2.0 crashes when the down-arrow key is pressed.

DISCUSSION ----------

This could be due to a conflict between HyperCard and an INIT called Icon Wrap. If so, remove the INIT, then restart the computer.

Icon Wrap patches a ROM routine called CopyBits, and stays around after loading. A newer version of Icon Wrap solves the problem.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14149

Tech Info Library

HyperCard: Script for Importing Comma-Separated Text (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Script for Importing Comma-Separated Text (7/92)

==========

Article Created: 4 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

This article provides a script that will import a comma-separated text file into HyperCard. It assumes that:

- There is a comma between fields.
- There is a return between records.
- If a field itself contains a comma, then the field has quote marks around (though it will work just as well if ALL fields have quotes around them).

DISCUSSION ----------

```
on mouseUp
  answer file "Import from which file?" of type text
  if it is empty then exit mouseUp
  put it into fileName
  open file fileName
  go to last card
  repeat forever

    read from file fileName until return
    if it is   empty then
      go to first card
      close file fileName
      exit mouseUp
    else
      doMenu "New Card"
      put "," into last char of it
    end if

    repeat with x=1 to the number of fields
      if char 1 of it is quote then
        put char 2 to offset(quote&",",it) - 1 of it into field x
        delete char 1 to offset(quote&",",it) of it
```

```
      else
        put char 1 to offset (",",it) - 1 of it into field x
        delete char 1 to offset (",",it) of it
      end if

    end repeat
  end repeat
end mouseUp
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14150

HyperCard: Importing Tab-Separated Text (8/93)

Revised: 12/8/93
Security: Everyone

HyperCard: Importing Tab-Separated Text (8/93)

==========

Article Created: 22 March 1993
Article Reviewed/Updated: 3 August 1993

TOPIC --------------------

Here is a simple script that will import tab-separated text into a HyperCard 2.1 stack.

DISCUSSION --------------------

```
on mouseUp
  answer file "Choose the file to import" of type TEXT
  if it is empty then exit mouseUp
  put it into fileName
  open file fileName
  repeat
    read from file fileName until return
    if it is empty then
      close file fileName
      answer "Your data has been imported."
      exit mouseUp
    end if
    doMenu "New Card"
    put it into oneRecord
    set the itemDelimiter to tab
    repeat with i = 1 to the number of fields
      put item i of oneRecord into bg fld i
    end repeat
  end repeat
end mouseUp
```

Note: The script will not work with earlier versions of HyperCard because it relies on the new ItemDelimiter property.

..TIL14151-HyperCard-Importing_Tab-Separated_Text_8-93_(TA30753).pdf

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14151

Tech Info Library

HyperCard: Disabling Option-Tab Key Combination (9/93)

Revised: 12/8/93
Security: Everyone

HyperCard: Disabling Option-Tab Key Combination (9/93)

==========

Article Created: 23 September 1993

TOPIC --------------------

How can I disable the keyboard shortcut (Option-Tab) for opening and closing HyperCard's Tools palette?

DISCUSSION --------------------

Here's a handler that does it:

```
on KeyDown TheKey
  if theKey = Tab and the optionKey is down then
    exit keydown
  else
    pass keydown
  end if
end KeyDown
```

By including this handler in your stack script, as part of simple error checking, this will prevent anyone from accidentally hitting the keys to activate the Tool palette.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14152

Tech Info Library

HyperCard: Printing Problem to Kodak Diconix (8/93)

Revised: 12/8/93
Security: Everyone

HyperCard: Printing Problem to Kodak Diconix (8/93)

==========

Article Created: 6 July 1993
Article Reviewed/Updated: 2 August 1993

TOPIC --------------------

My stack has a simple "Print Report" command in a custom menu. This menu item will not print to a Kodak Diconix 180si ink-jet printer from HyperCard 2.1, even though it prints fine to standard Apple printers.

DISCUSSION --------------------

The stack will print to the Diconix if "Print Report" is chosen from the File menu. This represents a probable incompatibility between the Diconix driver and HyperCard. Kodak is aware of this problem. HyperCard is not certified with the Diconix printer.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14153

HyperCard: Script for Drawing Line Charts (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Script for Drawing Line Charts (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This handler draws a line chart when you pass it some values. Try this: lineChart "3,4,5,6"

To erase the chart, type "clearPicture".

DISCUSSION --------------------

```
on lineChart values,frame
  if frame is empty
  then put insetRect(localRect(rect of card window),10) into frame
  clearPicture frame
  put itemArray(values) into values -- convert to comma separated list
  put max(values) into maxValue
  put number of items in values into valueCount
  put item 3 of frame - item 1 of frame into frameWidth
  put frameWidth/valueCount into valueWidth
  put valueWidth/2 into margin
  put item 1 of frame + margin into firstLeft
  put item 4 of frame - item 2 of frame - 2 * margin into frameHeight
  put item 4 of frame - margin into chartBottom
  put 2 into pointSize
  reset paint
  set pattern to 12
  set filled to true
  repeat with i = 1 to valueCount
    put firstLeft + (i - 1) * valueWidth into pointH
    put item i of values / maxValue into ratio
    put chartBottom - ratio * frameHeight into pointV
    choose rect tool
    set centered to true
    drag from round(pointH),round(pointV) to ¬
```

```
    round(pointH)+pointSize,round(pointV)+pointSize
    if i is not 1 then
      choose line tool
      set centered to false
      drag from round(oldH),round(oldV) to round(pointH),round(pointV)
    end if
    put pointH into oldH
    put pointV into oldV
  end repeat
  choose browse tool
end lineChart
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14154

Tech Info Library

HyperCard: Landscape Printing on a LaserWriter IINT (8/95)

Revised: 8/22/95
Security: Everyone

HyperCard: Landscape Printing on a LaserWriter IINT (8/95)

==========

Article Created: 23 January 1991
Article Reviewed/Updated: 22 August 1995

TOPIC --------------------

HyperCard 2.0, 2.0v2, and 2.1 do not print a 640 x 480 card in landscape orientation to a LaserWriter IINT.

DISCUSSION --------------------

The problem does NOT occur when:
• Printing to a Personal LaserWriter NT, or to a LaserWriter IINTX.
• Using Portrait orientation instead of landscape.

This article is adapted from the Claris Tech Info database.

Article Change History:
22 Aug 1995 - Made minor corrections.

Support Information Services

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Tech Info Library Article Number:14155

Tech Info Library

HyperCard: Print Stack Problem w LaserWriter Select 300 (8/93)

Revised: 12/8/93
Security: Everyone

HyperCard: Print Stack Problem w LaserWriter Select 300 (8/93)

==========

Article Created: 9 July 1993
Article Reviewed/Updated: 2 August 1993

TOPIC --------------------

If you have a LaserWriter Select 300 and using driver 1.0, you need to adjust the scaling of pages under Page Setup, or you will get 1-inch by 2-inch cards when you print a stack.

DISCUSSION --------------------

A suggested scaling is 500%. This will print two cards per page when the Print Card size set to Full.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14156

Tech Info Library

HyperCard: Handler for Moving Handlers Between Scripts (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Handler for Moving Handlers Between Scripts (7/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Given the name of a handler and a script, this handler puts the text of the specified handler into the specified script, replacing the previous version of the handler in that script.

DISCUSSION --------------------

```
function putHandler newHandler,scriptText
  -- Place a handler into a script.
  -- Given the name of a handler and a script, this handler puts
  -- the text of the specified handler into the specified script,
  -- replacing the previous version of the handler in that script.

  put word 2 of newHandler into handlerName
  put getHandler(handlerName,scriptText,true) into offsets
  put item 1 of offsets into startChar
  put item 2 of offsets into endChar
  put newHandler & return into char startChar to endChar of scriptText
  return scriptText
end putHandler
```

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Tech Info Library Article Number:14157

Tech Info Library

HyperCard: Script to Move an Object to the Background (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Script to Move an Object to the Background (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

The moveToBkgnd handler asks you what object you want moved to the background. If the object moved is a field, then its text goes with it.

DISCUSSION --------------------

```
on moveToBkgnd
  put "Click on the object to move to the background..."
  wait until the mouseClick
  put empty
  put hitTest(the clickLoc) into object
  if "card button" is not in object and "card field" is not in object
  then exit moveToBkgnd
  select object
  type "x" with commandKey
  set editBkgnd to true
  type "v" with shiftKey,commandKey -- paste text too
  choose browse tool
end moveToBkgnd
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14158

Tech Info Library

HyperCard: Moving Icons Between Stacks (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Moving Icons Between Stacks (7/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

This article describes how to copy icons from one stack to another.

DISCUSSION ----------

- If you understand ResEdit, you can use it to move an icon from one stack to another.

- An easier method is to use ResCopy, an XCMD available on many online services and from user groups.

- The Power Tools stack contains a card that copies resources.

- If you have none of the above, choose the Button tool while inside the stack with the icon you want to copy. Click on the button with that icon, and choose Button from the Edit menu. Go to the stack where you'd like to install the button, and choose Button from the Edit menu. The icon resource will be moved along with the button.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14159

Tech Info Library

Compatibility Checker 7.1: There Is No HyperCard 2.1v1 (8/93)

Revised: 12/8/93
Security: Everyone

Compatibility Checker 7.1: There Is No HyperCard 2.1v1 (8/93)

==========

Article Created: 26 August 1993
Article Reviewed/Updated: 27 August 1993

TOPIC ----------

The Compatibility Checker included with Apple's System 7.1 contains an error as it applies to HyperCard.

DISCUSSION ----------

The Compatibility Checker states that you must have version 2.1v1 of HyperCard in order to be compatible. This is not a valid version number for HyperCard. The latest version of HyperCard is simply 2.1 and it is the correct version to use with System 7.1.

However, labels on the outside of retail packages of HyperCard 2.1 may be labeled in error as "HyperCard 2.1.1".

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14160

Tech Info Library

HyperCard 2.0 Does Not Have numberofchars Feature (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 2.0 Does Not Have numberofchars Feature (7/92)

==========

Article Created: 28 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

The HyperCard Script Language Guide (U90-614-001A) contains an error on page 233. It says you can execute the following command:

```
read from file filename at start for numberofchars
```

DISCUSSION ----------

This feature is part of HyperCard IIGS, but not of HyperCard 2.0.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14161

Tech Info Library

HyperCard 2.0v2, Oracle, and Home Stack Versions (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 2.0v2, Oracle, and Home Stack Versions (7/92)

==========

Article Created: 23 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

The 2.0v.2 Home stack should be used with HyperCard 2.0v.2. The two must run hand-in-hand. Some of the bug fixes from 2.0v.1 to 2.0v.2 contained fixes to the application and the Home stack as well. The same is true of 2.1.

DISCUSSION ----------

This may be a particular problem for Oracle users. Oracle is a mainframe database application that uses HyperCard as an interface or "front-end" for the Macintosh. Installation of the Oracle XCMDs modifies the Home stack.

Oracle users have reported that when they use the Home stack from an older version of HyperCard with HyperCard 2.0, their application slows down considerably.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14162

HyperCard: Script for Drawing Pie Charts (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Script for Drawing Pie Charts (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This handler draws a pie chart when you pass it some values.
Try this: pieChart "3,4,5,6,7,8"

To erase the chart, type "clearPicture".

DISCUSSION --------------------

```
if frame is empty
  then put insetRect(localRect(rect of card window),10) into frame
  clearPicture frame
  put itemArray(values) into values -- convert to comma separated list
  put sum(values) into total
  put number of items in values into valueCount
  put item 3 of frame - item 1 of frame into frameWidth
  put item 4 of frame - item 2 of frame into frameHeight
  put min(frameWidth,frameHeight)/2 into radius
  reset paint
  get centerOfRect(frame)
  put item 1 of it into centerH
  put item 2 of it into centerV
  choose oval tool
  set lineSize to 2
  set centered to true
  drag from centerH,centerV to ¬
  round(centerH+radius),round(centerV+radius)
  choose line tool
  set centered to false
  drag from centerH,centerV to centerH,round(centerV-radius)
  put zero into angle
  repeat with i = 1 to valueCount
    put pi * item i of values / total into halfChange
```

```
      add halfChange to angle
      put centerH + round((radius-3) * sin(angle)) into halfH
      put centerV - round((radius-3) * cos(angle)) into halfV
      add halfChange to angle
      put centerH + round(radius * sin(angle)) into h
      put centerV - round(radius * cos(angle)) into v
      choose line tool
      drag from centerH,centerV to h,v
      if halfChange > .01 then -- don't try to fill very small wedges
        set pattern to item (i mod 12)+1 of "2,13,11,3,14,6,21,17,31,18,4,32"
        choose bucket tool
        click at halfH, halfV
      end if
    end repeat
    choose browse tool
  end pieChart
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14163

Tech Info Library

HyperCard Player: Out of Memory Error or Window Resize (9/93)

Revised: 12/8/93
Security: Everyone

HyperCard Player: Out of Memory Error or Window Resize (9/93)

==========

Article Created: 2 September 1993

TOPIC --------------------

In the Development Kit version of HyperCard 2.x, the handle to an XCMD is only locked when the XCMD is executed. After the XCMD has executed, its handle is unlocked so the memory manager can move the XCMD if it needs to.

DISCUSSION --------------------

The HyperCard Player, however, does not unlock the handle after executing the code. This can result in serious memory fragmentation. The two most common symptoms of this problem are:

- out of memory message
- a stack opened in a new window opens at less than its normal size, which brings up the scroll box.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14164

Tech Info Library

HyperCard: Handler for Protecting Button Scripts (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Handler for Protecting Button Scripts (7/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --

Here's a handler that asks for user confirmation before deleting any button that has a script.

DISCUSSION --

```
on protectButton whichButton
if script of whichButton is empty
  then exit protectButton
  answer "Delete " & whichButton & "?" with "OK" or "Cancel"
  if it is not "OK" then select empty
end protectButton
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14165

Tech Info Library

HyperCard 1.x: Protect Stack Manual Correction (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 1.x: "Protect Stack" Manual Correction (7/92)

==========

Article Created: 29 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

This article corrects a small error in an early version of the HyperCard Reference Manual.

DISCUSSION ----------

Page 120 says that if you check the "Can't Abort" check box in the "Protect Stack" dialog box that it will remain in effect "only until you leave the stack."

This is incorrect. The "Can't Abort" property will stay on even if you leave the stack.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14166

Tech Info Library

QuickTime and HyperCard: Closing External Windows (7/92)

Revised: 12/8/93
Security: Everyone

QuickTime and HyperCard: Closing External Windows (7/92)

==========

Article Created: 17 April 1992
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Both the Palette XCMD and the Picture XCMD -- and now the Movie XCMD -- will send a message to the current card signaling that a window is closing. These messages are, respectively, closePalette, closePicture, and closeMovie.

The parameters sent with the message identify the window that is closing: The first parameter is the window's name and the second parameter is the window's ID (window IDs are new in HyperCard 2.1). The message is sent when the window closes, either via a click in a close box, or by executing a "close window" statement.

DISCUSSION --------------------

Stack designers can define a closePalette, closePicture, or closeMovie handler to take care of any cleaning up or updating when a window is closed.

One restriction: Don't try to close the window again within a closePalette, closePicture, or closeMovie handler. The script can STILL refer to the window, for example, getting (or even setting) the window's location. The script can also close other windows -- but HyperCard will crash if the script tries to close the window (e.g., close window id (the param of 2)).

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14167

Tech Info Library

HyperCard: Script to Sort Multiple Lines (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Script to Sort Multiple Lines (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Handler Name: quickSort, bubbleSort, merge

This handler, called QuickSort, takes a multiple-line expression and sorts it into ascending alphabetical order.

DISCUSSION ----------

```
function quickSort data
  put number of lines in data into lineCount
  if lineCount <= 10 then return bubbleSort(data)
  return merge(quickSort(line 1 to lineCount div 2 of data),¬
  quickSort(line lineCount div 2 + 1 to lineCount of data))
end quickSort

function bubbleSort data
  repeat with i = 1 to the number of lines in data
    repeat with j = i to the number of lines in data
      if line i of data > line j of data then
        get line j of data
        put line i of data into line j of data
        put it into line i of data
      end if
    end repeat
  end repeat
  return data
end bubbleSort

function merge list1,list2
  put empty into resultList
  put 1 into ptr1
  put 1 into ptr2
```

```
  put number of lines in list1 into lineCount1
  put number of lines in list2 into lineCount2
  repeat until ptr1 > lineCount1 and ptr2 > lineCount2
    if ptr1 > lineCount1 then -- use list2
      put line ptr2 of list2 & return after resultList
      add 1 to ptr2
    else if ptr2 > lineCount2 then -- use list1
      put line ptr1 of list1 & return after resultList
      add 1 to ptr1
    else if line ptr1 of list1 < line ptr2 of list2 then
      put line ptr1 of list1 & return after resultList
      add 1 to ptr1
    else
      put line ptr2 of list2 & return after resultList
      add 1 to ptr2
    end if
  end repeat
  return resultList
end merge
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14168

Tech Info Library

HyperCard: Handler to Select Multiple Objects (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Handler to Select Multiple Objects (7/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This handler allows you to select multiple parts (buttons and fields) by specifying the rectangle that contains them. After you've selected them, you can perform operations on all of them using alignParts, deleteParts, offsetParts, and pasteParts.

DISCUSSION --------------------

```
on rectSelectParts
  -- Group selection by specifying a rectangle.
  -- Select a group of parts by clicking at topLeft and bottomRight
  -- of enclosing rectangle.

  global selectedParts,selectedPartsCard
  put empty into selectedParts
  put long name of this card into selectedPartsCard
  put "Click at top left..."
  wait until the mouseClick
  put the clickLoc into topLeft
  put "Click at bottom right..."
  wait until the mouseClick
  put the clickLoc into botRight
  put topLeft & "," & botRight into selectionRect
  repeat with i = 1 to the number of buttons
    if loc of button i is within selectionRect
    then put "card button id " & id of button i & return after selectedParts
  end repeat
  repeat with i = 1 to the number of bkgnd buttons
    if loc of bkgnd button i is within selectionRect
    then put "bg btn id " & id of bg btn i & return after selectedParts
  end repeat
  repeat with i = 1 to the number of fields
```

```
    if loc of field i is within selectionRect
    then put "bkgnd field id " & id of field i & return after selectedParts
  end repeat
  repeat with i = 1 to the number of card fields
    if loc of card field i is within selectionRect
    then put "card field id " & id of card field i & return after selectedParts
  end repeat
  put the number of lines in selectedParts & " parts selected."
end rectSelectParts
```

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Tech Info Library Article Number:14169

Tech Info Library

HyperCard 1.2.5: The Repair Stack (8/92)

Revised: 12/8/93
Security: Everyone

HyperCard 1.2.5: The Repair Stack (8/92)

==========

Article Created: 12 December 1990
Article Reviewed/Updated: 28 August 1992

TOPIC --------------------

Some HyperCard 1.2.5 stacks can become damaged in a way that lets you view all but a few "broken" cards in the stack. When you try to go to a damaged card, you could get the error "Unknown Error 5534" or something similar. These stacks will not convert well into HyperCard 2.0, if they can be opened at all.

DISCUSSION --------------------

There is no way for you to recover the information in the damaged cards. But you might be able to discard the damaged cards and create a new stack that works properly.

Two years ago, Apple Computer released a simple utility, named Recover, that lets you try to salvage the good cards in the stack. It works by copying cards one by one into a new stack, and skipping bad cards.

This utility is available from GEnie, CompuServe, and user groups.

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Tech Info Library Article Number:14170

Tech Info Library

HyperCard: Automatically Returning to First Card on Idle (4/93)

Revised: 12/8/93
Security: Everyone

HyperCard: Automatically Returning to First Card on Idle (4/93)

==========

Article Created: 8 March 1993
Article Reviewed/Updated: 13 April 1993

TOPIC ----------

I'm writing a HyperCard stack to control a directory kiosk for our museum. I would like to have the program automatically return to the first screen if it has not been used for over 30 seconds. How would I go about adding this feature to my stack?"

DISCUSSION ----------

Here is one way to implement this feature. The following script will automatically return to the first card in a stack when it has remained on any card for more than 30 seconds and the mouse has not moved. If you are performing some operations and you would like to reset the time manually, you can call the resetTime handler which has the same affect as moving the cursor. The time will be automatically reset when the user goes to a new card so it is not necessary to reset the time when going to a new card.

Put this code in a stack or background script:

```
  on openCard
    global startTime, cursorLoc
    put the long time into startTime
    convert startTime to seconds
    put the mouseLoc into cursorLoc
  end openCard

  on idle
    global startTime, cursorLoc
    -- Change the next line to set your time limit.
    put 30 into timeLimit
    -- Change the next line to set the return card number.
    put 1 into returnCard
    put the mouseLoc into currentLoc
```

```
    if cursorLoc <> currentLoc then
      put currentLoc into cursorLoc
      resetTime
    end if
    put the long time into endTime
    convert endTime to seconds
    if (endTime - startTime) > timeLimit then
      if the number of this card <> returnCard then
        go to card returnCard
      end if
      resetTime
    end if
  end idle

  on resetTime
    global startTime
    put the long time into startTime
    convert startTime to seconds
  end resetTime
```

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Tech Info Library Article Number:14171

Tech Info Library

HyperCard: Script to Indent Text Automatically (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Script to Indent Text Automatically (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

The returnInField handler makes a field indent its text automatically.

DISCUSSION --------------------

```
on returnInField
  get the value of the selectedLine
  put empty into indent
  repeat with i = 1 to the number of chars in it
    if char i of it is " " then put " " after indent
    else exit repeat
  end repeat
  send returnInField to HyperCard
  put indent after the selection
end returnInField
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14172

Tech Info Library

HyperCard 2.1: Stacks Reverting/Defaulting to Userlevel 2 (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 2.1: Stacks Reverting/Defaulting to Userlevel 2 (7/92)

==========

Article Created: 6 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

The HyperCard binary is automatically set to start up at userlevel 2 in all versions being distributed at this date (Lite, Upgrade, Development Kit).

In the Upgrade and the Development Kit versions, the userlevel is changed by an "on Startup" script in the home card.

DISCUSSION ----------

If you try to start HyperCard by double-clicking a stack of your creation from the Finder, it will start up at userlevel 2, even though you have gone into the Home card during a previous session and changed the userlevel to 5. As a matter of fact, if you go back to the Home card after having done this, the userlevel will be reset to 2.

This will happen if you create an "on Startup" script in your new stack and fail to add a "pass startup" command in the script. Without the "pass startup" command, the Home card never receives the message it needs to invoke the script to set the userlevel to 5. As a result, the userlevel goes to the default userlevel 2. By adding the "pass startup" command everything should work OK.

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Tech Info Library Article Number:14173

Tech Info Library

HyperCard: Handler for Writing Scripts (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Handler for Writing Scripts (7/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This function takes a script as a parameter and returns a script that can reproduce the original script. It's useful for encoding scripts into other scripts.

DISCUSSION --------------------

```
function writeScript sourceScript,varName

if varName is empty then put "scriptVar" into varName
  put quoteLines(sourceScript) into resultScript
  repeat with i = 1 to the number of lines in resultScript
    put "put " before line i of resultScript
    put " after " & varName after line i of resultScript
  end repeat
  put "put empty into " & varName & return before resultScript
  return resultScript
end writeScript
```

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Tech Info Library Article Number:14174

Tech Info Library

HyperCard: Search & Replace Handler (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Search & Replace Handler (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

The replacePrompt handler searches for text, asks for permission, then replaces it with a new string if you let it.

DISCUSSION --------------------

```
on replacePrompt old,new
  repeat
    send "find string" & quote & old & quote to HyperCard -- no overriding
    if the result is not empty then exit replacePrompt -- done
    answer "Replace this one?" with "No" or "Yes"
    if it is "No" then next repeat
    do "put new into " & the foundChunk
  end repeat
end replacePrompt
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14175

Tech Info Library

HyperCard: Handler for Selecting Groups of Cards (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Handler for Selecting Groups of Cards (7/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This handler adds the current card to the list of selected cards. After you've selected a group of cards, you can perform operations on all of them using doToSelectedCards.

DISCUSSION --------------------

```
on selectCard clearSelection
  -- Group selection of cards.
  -- This handler adds the current card to the currently
  -- selected cards or clears the list of currently selected cards:

  global selectedCards
  if clearSelection is not empty then
    put empty into selectedCards
    put "No cards selected."
  else
    get long id of this card
    if it is in selectedCards
    then put word 1 to 3 of it & " is already selected."
    else
      put it  & return after selectedCards
      put word 1 to 3 of it & " is now selected."
    end if
  end if
end selectCard
```

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Tech Info Library Article Number:14176

Tech Info Library

HyperCard: Handler for Selecting Backgrounds (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Handler for Selecting Backgrounds (7/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This handler adds the current background to the list of selected backgrounds. After you've selected a group of backgrounds, you can perform operations on all of them using doToSelectedBkgnds.

DISCUSSION --------------------

```
on selectBkgnd clearSelectionFlag
  -- Group selection of backgrounds.
  -- This handler adds the current background to the
  -- currently selected backgrounds or clears the list
  -- of currently selected bkgnds:

  -- selectBkgnd clear -- any non-empty parameter clears
  --      previous selection
  -- selectBkgnd -- adds current bkgnd to the list of
  --      selected bkgnds

  global selectedBkgnds
  if clearSelectionFlag is not empty
  then put empty into selectedBkgnds
  else -- get around bug in long id of bkgnd
    get "bkgnd id " & id of this bkgnd & " of " & name of this stack
    put it & return after selectedBkgnds
  end if
end selectBkgnd
```

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Tech Info Library Article Number:14177

Tech Info Library

HyperCard: Handler to Select Multiple Objects (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Handler to Select Multiple Objects (7/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --

This handler allows you to select multiple parts (buttons and fields) by clicking on them. After you've selected them, you can perform operations on all of them using alignParts, deleteParts, offsetParts, and pasteParts.

This article is constrained to a shorter line length than HyperCard scripts can have; you'll have to make adjustments.

DISCUSSION --

```
on selectParts
  -- Group selection: click on parts
  -- Set card script to catch mouseDown and eat mouseUp

  global saveCardScript,selectedParts,selectedPartsCard
  put empty into selectedParts
  put long name of this card into selectedPartsCard
  put script of this card into saveCardScript
  choose browse tool
  put "Click on the parts you wish to select. Press enter to stop."

  -- write a script
  put "on mouseDown" & return into scriptVar
  put "  global selectedParts" & return after scriptVar
  put "  put the shiftKey is down into deselectFlag" & return after scriptVar
  put "  if " & quote & "button" & quote & " is not in the target and " & quote
  & "field" & quote & " is not in the target" & return after scriptVar
  put "  then put " & quote & "There is no part there." & quote & return after
  scriptVar
  put "  else" & return after scriptVar
  put "    get the target" & return after scriptVar
  put "    if " & quote & "id" & quote & " is not word 3 of it" & return after
```

```
  scriptVar
  put "    then put " & quote & "id " & quote & " & id of the target into last
  word of it" & return after scriptVar
  put "    if deselectFlag then" & return after scriptVar
  put "      if it is not in selectedParts" & return after scriptVar
  put "      then put the target & " & quote & " is not selected." & quote &
  return after scriptVar
  put "      else" & return after scriptVar
  put "        put offset(it & return,selectedParts) into startChar" & return
  after scriptVar
  put "        delete char startChar to startChar + length(it) of
  selectedParts" & return after scriptVar
  put "        put the target & " & quote & " is now deselected." & quote &
  return after scriptVar
  put "      end if" & return after scriptVar
  put "    else" & return after scriptVar
  put "      if it is in selectedParts" & return after scriptVar
  put "      then put the target & " & quote & " is already selected." & quote
  & return after scriptVar
  put "      else" & return after scriptVar
  put "        put it & return after selectedParts" & return after scriptVar
  put "        put the target & " & quote & " is now selected." & quote &
  return after scriptVar
  put "      end if" & return after scriptVar
  put "    end if" & return after scriptVar
  put "  end if" & return after scriptVar
  put "  exit to HyperCard" & return after scriptVar
  put "end mouseDown" & return after scriptVar
  put return after scriptVar
  put "on doneSelecting" & return after scriptVar
  put "  global saveCardScript,selectedParts" & return after scriptVar
  put "  set script of this card to saveCardScript" & return after scriptVar
  put "  put the number of lines in selectedParts & " & quote & " parts
  selected" & quote & return after scriptVar
  put "end doneSelecting" & return after scriptVar
  put return after scriptVar
  put "on closeCard" & return after scriptVar
  put "  doneSelecting" & return after scriptVar
  put "end closeCard" & return after scriptVar
  put return after scriptVar
  put "on enterKey" & return after scriptVar
  put "  doneSelecting" & return after scriptVar
  put "end enterKey" & return after scriptVar

  set script of this card to scriptVar
end selectParts
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14178

Tech Info Library

HyperCard: doMenu with Shift or Command Key (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: doMenu with Shift or Command Key (7/92)

==========

Article Created: 13 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Although HyperCard does not directly support invoking menu commands that involve keyboard modifiers (Shift and Command, for example) there are ways to circumvent this limitation via HyperTalk. This article provides some sample handlers.

DISCUSSION --------------------

This handler does the same thing as choosing Paste from the Edit menu:

```
on mouseUp
  type "v" with commandKey
end mouseup
```

This handler does the same thing as choosing Cut from the Edit menu:

```
on mouseUp
  type "x" with commandKey
end mouseup
```

This handler does the same thing as choosing Copy from the Edit menu:

```
on mouseUp
  type "c" with commandKey
end mouseup
```

To invoke menu commands which involve keyboard modifiers, you would write a script like this one, which does Shift-Command-Paste:

```
on mouseUp
  type "v" with commandKey,shiftKey
end mouseup
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14179

Tech Info Library

HyperCard: Text Styles Are Lost During Sorting (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Text Styles Are Lost During Sorting (7/92)

==========

Article Created: 7 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Why are text styles lost when I do a sort in HyperCard?

DISCUSSION --------------------

When the contents of a field are sorted, text styles are lost because the sorted text is redrawn using the default text styles for the field.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14180

Tech Info Library

HyperCard Reports: Use Straight, Not Curly, Quotes (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard Reports: Use Straight, Not Curly, Quotes (7/92)

==========

Article Created: 1 March 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

If a report item you're creating in the new report templates area of HyperCard 2.0 is showing up blank no matter what you do to the "item contents," be sure you're not using curly quotes instead of the straight quotes that HyperCard expects to see.

DISCUSSION --------------------

Even a single curly quote (produced with the keyboard's Option-[and Option-Shift-[) will make the item appear blank.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14181

Tech Info Library

HyperCard: Script to Sum a List of Numbers (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard: Script to Sum a List of Numbers (7/92)

==========

Article Created: 16 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This function adds up a series of numbers. It demonstrates how to process both item lists and separate parameters.

DISCUSSION --------------------

```
function sum
   put 0 into total
  repeat with paramNum = 1 to the paramCount
    put param(paramNum) into list
    repeat with i = 1 to the number of items in list
      add item i of list to total
    end repeat
  end repeat
  return total
end sum
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14182

HyperCard: Varying Script Speed to Match Processor Speed (4/93)

Revised: 12/8/93
Security: Everyone

HyperCard: Varying Script Speed to Match Processor Speed (4/93)

==========

Article Created: 13 February 1991
Article Reviewed/Updated: 19 April 1993

TOPIC --------------------

Because the various Macintosh models operate at different clock speeds, some HyperTalk scripts may not execute correctly.

This is especially true regarding visual effects, animated icons, animations in general, searches, going to various cards, etc. And with each new Macintosh varying in speed and performance, the art of writing a "universal" HyperCard script that execute at various speeds depending on the CPU is getting trickier.

This article provides a handler that varies the execution of HyperTalk scripts depending on the CPU.

DISCUSSION --------------------

```
on determineTiming
   global fastCPU
   put the ticks into startTicks
   repeat with i = 1 to 50
   put i into tempCounter
   end repeat
   put the ticks into endTicks
   if endTicks - startTicks < 40 then
      put true into fastCPU
   else
      put false into fastCPU
   end if
end determineTiming
```

You can also add a line such as:

```
  if CPUSpeed then wait 10 ticks
```

This will delay the execution of the script for 1/6 second. Remember to declare the fastCPU global in any handlers that use it.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14183

Tech Info Library

HyperCard Player: Standalone Application & VIREX 3.2 (8/93)

Revised: 12/8/93
Security: Everyone

HyperCard Player: Standalone Application & VIREX 3.2 (8/93)

==========

Article Created: 6 July 1993
Article Reviewed/Updated: 2 August 1993

TOPIC ----------

Having VIREX 3.2 installed when trying to create a standalone application using the Embedding Tool (in the Player Tools stack which accompanies the HyperCard Developer's Licensing Kit) causes problems when opening the standalone.

DISCUSSION ----------

The standalone application asks "Where is Home?" (the Home stack should actually be the embedded stack).

If there is a stack named "Home" in the same folder, the standalone will open that "Home" instead of showing the embedded stack.

SOLUTION: The problem did not occur using VIREX 3.9.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14184

Tech Info Library

HyperCard 2.x: Visual Effects Between Stacks (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard 2.x: Visual Effects Between Stacks (7/92)

==========

Article Created: 6 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

One problem with using visual effects in HyperCard 2.0 is that they don't work if you try to use a visual between two stacks of different sizes. This article provides a workaround.

DISCUSSION ----------

Create a card as the last card in stack A. This card can be either all black, all white, or the same background as the rest of the stack with blank field data.

To get the visual effect to work, the script would read:

```
on mouseUp
  visual effect -- whatever
  go last card -- of stack A
  go stack B
end mouseUp
```

The visual effect works because it is going between two cards in the same stack, and then the change to the new stack appears to occur instantaneously after the visual. If the last card created is a solid color, it will give the appearance of a "fade to black or white" or open to "white or black" and can work really dramatically.

If the last card has the same background, it will look like the data from the fields disappears and then you're in stack B.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14185

Tech Info Library

HyperCard Through 2.1: Word 3 to 1 Correction (7/92)

Revised: 12/8/93
Security: Everyone

HyperCard Through 2.1: "Word 3 to 1" Correction (7/92)

==========

Article Created: 28 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

The next to last paragraph on Page 116 of the Script Language Guide states that

> When the first number in a range is greater than the second, you get an empty string. For example, char 5 to 3 of "Motorcycle" yields "" or empty.

DISCUSSION --------------------

This holds true for char, but not for word. For example, word 2 to 1 of "Motorcycle gang" yields "gang", not empty.

This applies to HyperCard versions 1.x through 2.1.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14186

ImageWriter II: Cable for Network (12/93)

Revised: 12/10/93
Security: Everyone

ImageWriter II: Cable for Network (12/93)

==========

Article Created: 10 December 1993

TOPIC -----

I want to connect (network) two Macintosh Computers, so they will be able to share files. Is it okay to use a DIN-8 serial cable, to connect the two computers?

DISCUSSION -----

In theory it will work. However there are several known cases where it does not. The recommendation is to NOT use it.

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Tech Info Library Article Number:14187

Tech Info Library

PowerBook Control Panel: Adapting to Power Source (12/93)

Revised: 7/8/94
Security: Everyone

PowerBook Control Panel: Adapting to Power Source (12/93)

==========

Article Created: 22 December 1993

TOPIC ----------

In the PowerBook control panel (System 7.1), what happens to the Battery Conservation Options when the system is connected to a power supply?

For instance, if the Processor Speed is set to Reduced Speed, will it still operate on reduced speed even with the PowerBook plugged in?

DISCUSSION ----------

Battery conservation options of early versions of the PowerBook control panel do not adjust according to whether the PowerBook is connected to a power supply.

Beginning with version 7.2 of the PowerBook control panel, you can adjust the settings depending on whether the PowerBook is using the AC power adapter or the battery. Version 7.2 ships with the PowerBook 250 and PowerBook 270c, and is compatible with all PowerBooks.

Support Information Services

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Tech Info Library Article Number:14188

Tech Info Library

Duo & Duo Dock: Frequently Asked Questions (4/97)

Revised: 4/4/97
Security: Everyone

Duo & Duo Dock: Frequently Asked Questions (4/97)

==========

Article Created: 8 December 1993
Article Reviewed/Updated: 04 April 1997

TOPIC ----------

This article lists frequently asked questions (FAQ) and answers on the PowerBook 200 series computers. All information was compiled by the PowerBook Support Group in the Apple Assistance Center. This article is also available from the Apple FaxInfo system.

Questions answered in this FAQ:
==========

1) What does the switch on the battery do?

2) Can I remove the battery while the machine is on?

3) Is the battery recharged if the PowerBook is turned on or in sleep mode?

4) What is the shelf life of a fully charged battery?

5) How do I reset the PowerBook? I cannot find a reset button.

6) I have lost the keys to my Duo Dock, where can I get replacement keys?

7) Do I need a screen saver for my machine?

8) How do I clean the trackball?

9) Can I move the machine while it is on?

10) Can I put my machine through the scanning machine at the airport?

11) Can I use my PowerBook Duo overseas?

12) Can I upgrade my PowerBook Duo memory myself?

13) Can I install a modem myself?

14) My PowerBook Duo will not startup. What can I do?

15) My PowerBook will not go into sleep mode on its own.

16) After installing AppleTalk Remote Access, I get a message that AppleTalk Remote Access is not installed correctly.

17) When do I rebuild the desktop and how do I do it?

18) Can I use the Duo in SCSI Disk Mode?

19) Which cable do I need if I want to hook up a SCSI device to my Duo?

20) How do I zap the PRAM?

21) The space bar does not register at times especially if I am typing very quickly.

22) My Duo does not dock with a floppy drive adapter or MiniDock.

23) My Duo does not undock from the floppy drive adapter or MiniDock.

24) My Duo will not dock in the Duo Dock.

25) My Duo does not startup in the Duo Dock.

26) The Duo Dock display does not come on.

27) When using the Duo in the dock, the machine defaults to the top icon or item in any menu bar or window.

28) I cannot print.

29) I cannot print to the serial printer from the modem port

30) I can not print to my StyleWriter II printer.

31) Can the Duo be inserted into the Duo Dock while in sleep mode?

DISCUSSION ----------

SECTION I: General Duo Questions and Issues
==========

1) Question: What does the switch on the battery do?

Answer: The switch is simply a way to help remind you if the battery is charged or not.

2) Question: Can I remove the battery while the machine is on?

Answer: You can remove the battery if the PowerBook AC Adapter is plugged in. Apple recommends reinserting another battery as soon as possible, since dirt or other foreign materials may enter the battery cavity and damage the battery contacts.

3) Question: Is the battery recharged if the PowerBook is turned on or in sleep mode?

Answer: The battery is recharged whenever the PowerBook is plugged into the AC Adapter. The recharge rate is slower when the PowerBook is in use versus turned off. A fully depleted battery takes two to three hours to recharge if the PowerBook is turned off.

4) Question: What is the shelf life of a fully charged battery?

Answer: A fully charged Duo battery loses approximately half of its charge over the course of a month if it is not used. The warmer the storage conditions, the faster the rate of discharge.

5) Question: How do I reset the PowerBook? I cannot find a reset button.

Answer: To restart (Reset), hold down the Command, Control, and Power keys. To Interrupt, hold down the Command and Power keys.

6) Question: I have lost the keys to my Duo Dock, where can I get replacement keys?

Answer: If you still have one key or have the key number, contact:

Fort Lock Corporation
3000 N. River Road
River Grove, IL 60171
Telephone: 708-456-1100

Be sure to include the code number printed on the tag that came with the keys.

If the keys are both missing and you do not have the key number, Apple must replace the lock and provide new keys. Contact your local reseller, they can order the part and install it for you.

7) Question: Do I need a screen saver for my machine?

Answer: A screen saver is not usually required on a PowerBook Duo as the LCD is less susceptible to burning in an image. If the image on the display seems to have left a shadow from displaying the same image for several hours, turn the

PowerBook off for several hours. This lets the image fade. To help conserve battery life and minimize the possibility of temporarily developing a burned in image, enable the screen dimming feature in the PowerBook Display control panel.

8) Question: How do I clean the trackball?

Answer: Turn the retainer ring 1/4 turn counter-clock-wise (Unscrew). Do not use any liquids in the trackball assembly. Locate the two rollers, one at 6 o'clock and another at 9 o'clock. These should be free from lint and debris. Clean them by scratching horizontally with a fingernail, business card or soft cotton swab. Also clean the three bearings at 11, 4, and 7 o'clock. Clean the Trackball itself with a cotton cloth (Shirt tail or denim pants work well).

9) Question: Can I move the machine while it is on?

Answer: Yes, but be sure the hard drive is not spinning (such as when saving or opening a document.) It is best to put the PowerBook to sleep before moving it, that way you can be certain that the hard drive has been parked and will not be damaged due to motion. If traveling long distances, it is best to turn the PowerBook off just as a precaution.

10) Question: Can I put my machine through the scanning machine at the airport?

Answer: Yes, it does not affect the contents of your hard drive. Just make sure that the person behind you does not put a heavy bag on your PowerBook carrying case!

A few more tips for traveling:

- Always have current backup of your hard disk.
- Do not send diskettes through the x-ray scanner, it can scramble the contents of diskettes.
- Do not walk through the "Bridge" metal detector with any magnetic media.

11) Question: Can I use my PowerBook Duo overseas?

Answer: Yes, PowerBook Duo power adapters are universal, which means it can sense that it is being used in an environment in which the voltage and frequency is different and switches itself over automatically. You may need a special plug or power cord so that the adapter plug can physically fit into the specific outlet.

12) Question: Can I upgrade my PowerBook Duo memory myself?

Answer: Yes, at your own risk, and as long as you are working in a static free environment, have removed all power sources (unplugged the machine and removed the battery), and have the correct tools. Damage caused during an upgrade

performed by non-trained personnel will not be covered by the Apple Limited Product Warranty however.

13) Question: Can I install a modem myself?

Answer: No, you will need to have an Apple authorized dealer install the modem.

14) Question: My PowerBook Duo will not startup. What can I do?

Answer:
a) Make sure the battery is seated properly. Refer to Apple FaxInfo article for instructions on how to reseat the battery.

b) Verify that you are using a known good battery

c) Verify that the AC adapter is a known good adapter and that it is plugged into a live outlet.

d) Verify that the display latch (where the display closes on the keyboard) is not stuck in the down position, thus making the machine think it should stay asleep.

e) Reset the power manager. The Power Manager is a switch on the logic board which controls battery recharging and sleep functions. To reset it:

Step 1

Unplug the computer from AC power and remove the battery.

Step 2

Hold down the power switch on the back (not the one on the keyboard) for 15 seconds.

Step 3

Let the PowerBook sit for one minute.

Step 4

Make sure the battery is seated properly.

Step 5

Remove the battery and try the computer when connected to AC power.

If the PowerBook Duo does not start up, try starting up with the PowerBook Duo AC Adapter plugged in. If the problem continues let the PowerBook recharge for about two hours and try starting up again.

15) Question: My PowerBook will not go into sleep mode on its own.

Answer: Make sure that AppleTalk is turned off in the Chooser. (If you have a FAX modem installed, verify that answer on ring is not selected.)

16) Question: After installing AppleTalk Remote Access, I get a message that AppleTalk Remote Access is not installed correctly.

Answer: Make sure that AppleTalk is turned on in the Chooser.

17) Question: When do I rebuild the desktop and how do I do it?

Answer: Rebuild the desktop when:
• Icons appear generic
• You cannot double click on a document and open it directly.
• The PowerBook does not mount a floppy disk on the desktop.
• The PowerBook does not remember its memory allocation for applications, set in the Get Info window in the Finder.

It makes sense to rebuild the desktop periodically, to clear redundant or irrelevant information from the directory file.

To rebuild the desktop:

Step 1

Restart the PowerBook and hold the Option and Command keys simultaneously immediately after you hear the start-up tone. Hold the keys down until the message "Are you sure you want to rebuild the desktop?" appears.

Step 2

Click the OK button and the desktop is rebuilt.

18) Question: Can I use the Duo in SCSI Disk Mode?

Answer: Yes, but you need a Duo MiniDock, an Apple HDI-30 SCSI Disk Adapter, model number M2539LL/A, a standard SCSI cable, part number M0206, and a SCSI terminator, part number M0209. You CANNOT use SCSI disk mode when using the Duo Dock, floppy drive adapter or PowerBook Duo alone.

19) Question: Which cable do I need if I want to hook up a SCSI device to my Duo?

Answer: If you are using a MiniDock or full dock use the HDI-30 System Cable (Long 18-inch light gray cable with 29 pins on the HDI-30 end) to connect a SCSI device.

20) Question: How do I zap the PRAM?

Answer: To clear the settings stored in the parameter RAM, in other words, to go back to factory default settings:

Step 1

Restart the PowerBook

Step 2

Immediately after the start-up tone, hold down the Command, Option, P, and R keys SIMULTANEOUSLY. Shortly, you hear a second start-up tone and see the machine going through the restart process again.

Step 3

After the second tone release the keys and the PowerBook starts up normally.

21) Question: The space bar does not register at times especially if I am typing very quickly.

Answer: Loosen the screw under the center of the keyboard 1/2 turn. Your service provider can also do this or you can call 1-800-SOS-APPL for technical support.

SECTION II: The Duo and the Duo Dock
==========

22) Question: My Duo does not dock with a floppy drive adapter or MiniDock.

Answer: Verify that the back panel door is open. Verify that the large connector looks clear. There are two small round holes and two small square holes that should be clear as well. Start to insert the dock, lining up the locating pins. Gently rock the dock and Duo until the two connect.

23) Question: My Duo does not undock from the floppy drive adapter or MiniDock.

Answer: Keeping gentle pressure on the release mechanism, gently rock the dock and Duo up and down, and from side to side. They should separate. It is normal for the mechanism to be a little tight when they are new. They loosen up and work in after time.

24) Question: My Duo will not dock in the Duo Dock.

Answer: Verify that the door on the back panel of the Duo is open and that the Dock is unlocked. Verify that AC power is being supplied to the Dock. If the

Duo will not be accepted into the Dock, it should be checked by a trained technician.

25) Question: My Duo does not startup in the Duo Dock.

Answer: Verify that the Duo Dock is plugged into a known good outlet by trying the monitor in to the same outlet. Try powering the dock on from the button in the back, the keyboard may be at fault. Try removing the battery in the PowerBook Duo. If it is low, it may not power up. If memory or a modem have been installed recently, verify that the keyboard does not look lifted on the right side. This may also cause the system not to restart.

26) Question: The Duo Dock display does not come on.

Answer: If the green power light is on, verify that the video cable is plugged in. If the light is not on, try plugging the display into a known good outlet.

27) Question: When using the Duo in the dock, the machine defaults to the top icon or item in any menu bar or window.

Answer: Does the machine have additional memory? If so check the keyboard, does the right side of the keyboard appear to be tilted up? If so the memory card is preventing the keyboard from sitting flush. When the Duo is closed it is putting pressure on the up arrow key.

28) Question: I cannot print.

Answer: Verify that the printer is plugged into the printer port and that the printer icon is selected (highlighted) in the Chooser.

29) Question: I cannot print to the serial printer from the modem port.

Answer: If the machine has an internal modem, be sure to change the setting to external modem in the PowerBook control panel.

30) Question: I can not print to my StyleWriter II printer.

Answer: Verify that the StyleWriter II icon is selected (highlighted) in the Chooser and not the StyleWriter icon. Verify that the StyleWriter II is connected to the printer port. You can also choose to plug the printer cable into the modem port, but make sure you selected the modem port in the Chooser as well. Finally, if you have an internal modem, select "external modem" in the PowerBook control panel. Should it remain non-functional, it is possible that the logic board in the Duo is damaged and needs service.

31) Question: Can the Duo be inserted into the Duo Dock while in sleep mode?

Answer: The Duo can be inserted into the Duo Dock while in sleep but the Duo will be ejected when the Duo Dock is powered on. When you bring the Duo out of sleep mode a dialogue box will appear informing you the Duo must be shut down, not in sleep mode, before it is inserted into the Duo Dock.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
13 Nov 1995 - Changed title.
04 Apr 1995 - Numerous technical corrections.
04 Apr 1997 - Added Question 31

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Tech Info Library Article Number:14189

Tech Info Library

QuickTime: How to Read Macintosh Movies on Windows PCs (3/97)

Revised: 3/11/97
Security: Everyone

QuickTime: How to Read Macintosh Movies on Windows PCs (3/97)

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Article Created: 14 December 1993
Article Reviewed/Updated: 11 March 1997

TOPIC ----------

How do I read QuickTime movies on a Windows-compatible PC which have been made on a Macintosh?

DISCUSSION ----------

When you created a QuickTime movie to be used on both Macintosh and Windows-compatible computers, there are two important things to remember:

First, the movie must be self-contained. That is, the movie must contain all of its video, sound, and all other data in the movie file.

Second, the movie must have a single fork (which is a data fork). This is because MS-DOS has no equivalent to the Macintosh Resource Manager or Alias Manager, which handles movies that reference other movie files. Self-contained, single fork movies can play on both Macs and Windows-compatible PCs with no performance penalties and no conversion required. Macintosh applications like DiVA VideoShop allow users to save movies with these attributes already set.

The Movie Converter utility for Macintosh is included on floppy disk #6 in the QuickTime for Windows Programmer's Guide kit. Use the Save As menu item in Movie Converter to create self-contained, multi-platform Movies.

You can also convert multimedia application data which has been created on a non-Macintosh platform to QuickTime movies playable on a Macintosh with the QuickTime Movie Exchange ToolKit. The ToolKit includes applications for DEC VAX, IBM RS6000, SGI, Sun-4, Cray YMP, and MS-DOS/Windows that let you easily create a QuickTime movie with both sound (8-bit) and images (8- and 24-bit). The APDA part number for this kit is R0190LL/A.

Another Way to Convert a QuickTime Movie

You can also follow these steps to make a movie playable on both Windows and the Mac OS platforms:

1) Open a movie file using Movie Player 2.0 or above on the Macintosh.
2) Choose Save As from the File menu.
3) In the dialog box that appears, click the radio button labeled "Make movie self-contained." This tells the utility to sever any links to other movies after incorporating the relevant video into this movie.
4) Select the checkbox labeled "Playable on non-Apple computers." This causes the movie to be saved as a single fork movie.
5) Rename the movie using PC naming conventions. The filename should be 8 characters in length for maximum portability. Use the extension ".mov." For example: MYMOVIE.MOV

The resulting file is a QuickTime cross-platform movie that can be played on either a Macintosh or any x86-based computer with Windows 3.x, Windows NT, and Windows 95.

Remember, when creating movies on the Macintosh that the following features are not yet available on Windows:

- -MACE, sprites, time code, and modifier tracks
- -Apple Component Video decompressor
- -Multiple video tracks
- -Display of non-burnt text tracks

Article Change History:
11 Mar 97 - Added additional way to convert movies.

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Tech Info Library Article Number:14192

Tech Info Library

System 7.1: Clean Installation for 660AV or 840AV (7/96)

Revised: 7/3/96
Security: Everyone

System 7.1: Clean Installation for 660AV or 840AV (7/96)

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Article Created: 9 December 1993
Article Reviewed/Updated: 02 July 1996

TOPIC

This article gives instructions for performing a clean installation on a Macintosh Centris 660AV, and Quadra 660AV or 840AV computers from the Install Me First CD.

DISCUSSION

Purpose of a Clean Installation

A normal installation modifies and updates the existing System Folder. A clean installation disables the existing System Folder, leaving most files in place, and forcing the Installer to create a new System Folder.

A clean system installation brings the system software back to the standard configuration. This is necessary when system software has been damaged or modified, preventing a normal installation. It's also useful in troubleshooting.

FOLLOW THESE INSTRUCTIONS IN THE ORDER PRESENTED.

Restart with Install Me First CD

1) Shut down your Macintosh computer.

2) Be sure the Caps Lock key is up.

3) Restart the computer while holding down the Command-Option-Shift-Delete keys.

4) When you see the blinking question mark, continue holding down the four keys, and insert the CD into the drive.

The computer should start from the CD. At the desktop, the Install Me First CD should be in the upper-right corner of your screen with your hard disk below it. If the CD icon isn't above the hard drive icon, repeat these four steps.

Run Disk First Aid

Disk First Aid can detect and repair problems that a hard disk might have.

1) Double-click on Disk First Aid, and make sure the main hard drive is selected. If it isn't, click the Drive button to select the main hard drive.

2) Click on Open and then on Start. Disk First Aid will check your hard drive for any potential problems. If it finds problems, you should repair them.

3) Repeat this procedure for each hard drive attached to the system.

4) When you're finished verifying the hard drives, choose Quit from the File menu to return to the desktop.

If Disk First Aid can't repair a hard drive, you should back up the hard drive and reinitialize it using the appropriate formatting utility for that drive. For Apple drives, use Apple HD SC Setup.

Update Hard Disk Drivers

If you don't have an Apple hard drive or use third-party software to format your drive, don't use the Apple HD SC Setup Utility. However, you should contact your hard drive vendor to verify that your formatting software is compatible with SCSI Manager 4.3, preferably using an asynchronous SCSI driver.

If you have an Apple hard drive, you should update the drivers with the version of Apple HD SC Setup that's on the Disk Tools disk, following these steps:

1) Open HD SC Setup.

2) Click on the Update button.

3) When you're finished, click Quit to return to the desktop.

Sometimes HD SC Setup can't update the hard disk driver (indicated by a "dimmed" Update button). If a third-party utility previously formatted the hard disk, you should obtain the latest version of the utility to update your hard drive.

Check Available Hard Drive Space

Be sure you have at least 11MB available on the drive where you plan to install the system software.

1) Choose Control Panels from the Apple menu.

2) Double-click the Views control panel to open it.

3) In the Views control panel, check "Show disk info in header".

4) Open your hard disk's window.

The amount of available space appears in the upper-right corner of any open window.

If there's less than 11MB available, you'll need to delete some unnecessary files by dragging them to the Trash. Empty the Trash from the Special menu and you'll have more disk space available.

Disable the System Folder

You disable the System Folder by moving the System and renaming the System Folder.

1) Open your hard disk's icon and locate the System Folder.

2) Open the System Folder and locate the System file.

3) Move the System file into the Preferences folder.

4) Close the System Folder's window and rename the System Folder "Storage."

5) Close all windows that are open on your desktop.

Install System 7.1

Install system software version 7.1 following these steps:

1) Double-click on the Install System Software icon located on the Install Me First CD.

2) When the "Welcome to the Apple Installer" message appears, click on OK and then on Install.

The Installer determines the required software and reads it from the CD.

Verify Problem Resolution

After performing a clean installation, verify that you resolved the problem before adding ANYTHING to the new System Folder. Adding items to the System Folder before resolving your problem defeats the purpose of this procedure.

Install Non-Standard Items

You can now reinstall the non-standard items from the old System Folder (now named "Storage") such as fonts, screen savers, device drivers, and so on. If possible, you should reinstall these items from their original disks.

If the original disks aren't available, you may move the non-standard items from the Storage folder to the new System Folder. Be aware that reinstalling items from the old Storage folder into the new System Folder may reintroduce damaged or corrupt files. Be careful not to replace anything that's already in the new System Folder. Only move items that aren't already in the new System Folder.

1) Open each corresponding folder within the System Folder and the Storage folder and then compare the contents.

2) Move anything that isn't already in the new System Folder and its subfolders from the Storage folder and its subfolders.

3) Restart your Macintosh.

Troubleshooting Extension Conflicts

If you've installed any system extensions or control panels, you'll probably see their icons line up across the bottom of the screen when you restart. They load at startup time and modify the standard behavior of the operating system.

If the Macintosh fails to restart or behaves erratically, you probably have an incompatible, or conflicting INIT (also known as a system extension or control panel). To verify this problem, follow these steps:

1) Be sure the Caps Lock key is off.

2) Restart, and after you see the "Happy Mac" icon, hold down the Shift key.

3) Release the Shift key when the "Welcome to Macintosh, Extensions Off" message appears.

4) When the Macintosh is ready, try to recreate the erratic behavior.

If the problem no longer occurs, then you have a conflicting extension or control panel. Continue with these steps:

1) Create a new folder on the desktop.

2) Move all items of Kind "system extension" or "control panel" from the System Folder, Extensions folder, and Control Panels folder to this new folder.

3) Close the System Folder, and restart the Macintosh.

4) Attempt to recreate the problem.

5) Move one item from the new folder on the desktop to the closed System Folder and restart the Macintosh.

6) Attempt to recreate the original problem.

Repeat steps 5 and 6 for each item in the new folder on the desktop until the

problem recurs. The last item returned to the System Folder is the cause of the problem.

Final Steps

Verify that your applications are performing normally. If not, refer to the application manual or contact the vendor.

When the Macintosh behaves as expected, drag the Storage folder to the Trash.

Article Change History:
02 Jul 1994 - Removed Fax Information
01 Nov 1994 - Modified process for disabling old system folder.
29 Aug 1994 - Updated for FAX/TIL/QRG maintenance.

Support Information Services

Copyright 1993-96, Apple Computer, Inc.

Tech Info Library Article Number:14193

Tech Info Library

System 7.1: Clean Installation from Macintosh LC 520 CD (2/95)

Revised: 9/26/96
Security: Everyone

System 7.1: Clean Installation from Macintosh LC 520 CD (2/95)

==========

Article Created: 9 December 1993
Article Reviewed/Updated: 8 February 1995

TOPIC ----------

A normal system software installation modifies and updates the existing System Folder. A clean installation disables the existing System Folder, leaving most files in place, and forcing the Installer to create a new System Folder.

A clean system installation brings the system software back to the standard configuration. This is necessary when system software has been damaged or modified, preventing a normal installation. It's also useful in troubleshooting.

DISCUSSION ----------

Follow these instructions in the order presented.

Restart with Install Me First CD
---

1) Shut down your Macintosh computer.

2) Restart the computer while holding down the
   Command-Option-Shift-Delete keys.

3) When you see the blinking question mark, continue holding down the
   four keys, and insert the CD into the drive.

The computer should start from the CD. Then you should see the At Ease menu. If you don't see this menu, repeat the preceding steps.

Run Disk First Aid

Disk First Aid software can detect and repair problems on a hard disk.

1) Click on the Disk First Aid button.

2) In the window that appears, be sure the startup hard drive is selected. If it isn't, click the Drive button to select the startup hard drive.

3) Click on Open and then on Start. Disk First Aid checks your hard disk for any potential problems. If it finds problems, you should let the software repair them.

4) Repeat this procedure for each hard disk attached to the system.

5) When you're finished verifying the hard disks, choose Quit from the File menu to return to the desktop.

If Disk First Aid can't repair a hard disk, you should back up the hard disk and reinitialize it using the appropriate formatting utility for that drive. For Apple drives, use Apple HD SC Setup.

Update Hard Disk Drivers

If you don't have an Apple hard drive or use third-party software to format your disk, don't use the Apple HD SC Setup utility. However, you should contact your hard drive vendor to verify that your formatting software is compatible with System 7.1.

If you have an Apple hard drive, you should update the drivers with the version of Apple HD SC Setup that's on the Disk Tools disk, following these steps:

1) Double-click the HD SC Setup icon to launch it.

2) Click on the Update button.

3) When you're finished, click Quit to return to the desktop.

If HD SC Setup can't update the hard disk driver (indicated by a "dimmed" Update button), consider these possibilities:

- If a third-party utility formatted your hard disk, you should obtain the latest version of the utility to update your hard disk.

- If a version of Apple HD SC Setup more recent than the version on the Disk Tools disk formatted your hard disk, don't update the hard disk drivers.

- If an earlier version of Apple HD SC Setup formatted the drive, it may not have left enough room for the updated driver. You don't have to update the hard disk drivers. However, if you intend to use file sharing or have a Macintosh that can use virtual memory, then you need to back up the disk and reinitialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

- If the driver is corrupt, the Macintosh doesn't recognize the disk (that is, the disk doesn't show on the desktop). You may wish to

reinitialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

- If the driver has been modified with compression or security software you will not be able to update the driver. Contact the vendor for additional help.

Check Available Hard Disk Space

Click on the Go To Finder button to exit At Ease. Be sure you have at least 5MB available on the disk where you plan to install the system software. To check hard disk space, follow these steps:

1) Choose Control Panels from the Apple menu.

2) Double-click the Views control panel to open it.

3) In the Views control panel, check "Show disk info in header."

4) Open your hard disk's window.

The amount of available disk space appears in the upper-right corner of any open window.

If there's less than 5MB available, you'll need to delete some unnecessary files by moving them to the Trash. Choose Empty Trash from the Special menu, and you'll have more disk space available. Or you can copy files onto floppy disks or other media before moving them to the Trash.

Disable the System Folder

You disable the System Folder by moving the System and renaming the System Folder.

1) Open your hard disk's icon and locate the System Folder.

2) Open the System Folder and locate the System file.

3) Move the System file into the Preferences folder.

4) Close the System Folder's window and rename the System Folder "Storage."

5) Close all windows that are open on your desktop.

Restart Your Computer

Choose Restart from the Special menu. The system automatically ejects the CD, and after a few seconds you should see a picture of a disk with a flashing question mark.

If your Macintosh starts up from the hard drive, you have an extra System Folder on the hard disk. You need to delete it (or disable it as described in the

previous section), then restart.

When you get the disk with the flashing question mark on your screen, you can continue. If you still don't see this on your screen, turn off your Macintosh and all attached peripherals and disconnect the SCSI cable from the back of the Macintosh. Start your Macintosh again.

Install System 7.1

Install system software version 7.1, following these steps:

1) When you see the flashing question mark, insert the Install Me First CD.

2) When the At Ease menu appears, click on the button labeled Install System.

3) When the "Welcome to the Apple Installer" message appears, click on OK.

4) When another screen appears, click on Install.

The Installer determines the required software and reads it from the CD.

Verify Problem Resolution

After performing a clean installation, verify that you resolved the problem before adding anything to the new System Folder. Adding items to the System Folder before resolving your problem defeats the purpose of this procedure.

Install Non-Standard Items

You can now reinstall the non-standard items from the old System Folder (now named "Storage") such as fonts, screen savers, device drivers, and so on. If possible, you should reinstall these items from their original disks.

If the original disks aren't available, you may move the non-standard items from the Storage folder to the new System Folder. Be aware that reinstalling items from the old Storage folder into the new System Folder may reintroduce damaged or corrupted files. Be careful not to replace anything that's already in the new System Folder. Only move items that aren't already in the new System Folder.

1) Open each corresponding folder within the System Folder and the Storage folder and then compare the contents.

2) Move anything that isn't already in the new System Folder and its subfolders from the Storage folder and its subfolders to the new System Folder.

3) Restart your Macintosh.

Troubleshooting Extension Conflicts

If you've installed any system extensions or control panels, you'll probably see their icons line up across the bottom of the screen when you restart. They load into memory at startup time and modify the standard behavior of the operating system.

Verify INIT Conflict

If the Macintosh fails to restart or behaves erratically, you probably have an incompatible or conflicting INIT (also known as a system extension or control panel). To verify this problem, follow these steps:

1) Be sure the Caps Lock key is off.

2) Restart, and after you see the picture of a smiling Macintosh, hold down the Shift key.

3) Release the Shift key when the "Welcome to Macintosh, Extensions Off" message appears.

4) When the Macintosh is ready, try to recreate the erratic behavior.

If the problem no longer occurs, then you have a conflicting extension or control panel. Continue with the next section.

Remove and Replace INITs in System Folder

1) Create a new folder on the desktop and name it "INITs."

2) Open the System Folder, Extensions folder, and Control Panels folder, and choose by Kind from the View menu. Find all items of Kind "system extension" or "control panel" under the Kind heading in the windows of the open folders, and move them to the INITs folder.

3) Close the System Folder, and restart the Macintosh.

4) Attempt to recreate the problem.

5) Move one item from the INITs folder to the closed System Folder and restart the Macintosh.

6) Attempt to recreate the original problem.

Repeat steps 5 and 6 for each item in the INITs folder on the desktop until the problem recurs. The last item returned to the System Folder is probably the cause of the problem. Remove it from the System Folder (restart, holding down the Shift key again, if necessary), and contact the developer of the INIT for more information.

Final Steps

Verify that your applications are performing normally. If not, refer to the

application manual or contact the vendor.

When the Macintosh behaves as expected, drag the Storage folder to the Trash, and choose Empty Trash from the Special menu.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
08 Feb 1995 - Added information on compressed drivers.
01 Nov 1994 - Modified process for disabling old system folder.
29 Aug 1994 - Updated for FAX/TIL/QRG maintenance.

Support Information Services

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Tech Info Library Article Number:14205

Tech Info Library

HyperCard 2.2 New Feature: AppleScript Support (12/93)

Revised: 12/24/93
Security: Everyone

HyperCard 2.2 New Feature: AppleScript Support (12/93)

==========

Article Created: 13 December 1993

TOPIC ----------

HyperCard 2.2 supports Open Scripting Architecture (OSA). This means you can write HyperCard scripts either in HyperTalk, or in any language defined by an external scripting system: AppleScript, for example.

DISCUSSION ----------

If you write in AppleScript, you can have your stacks or standalone applications communicate with other scriptable applications such as FileMaker Pro 2.0 and Microsoft Excel 4.0.

Scripts can receive messages as well as send or pass messages to other scripts, regardless of the script's language. So a button script written in HyperTalk can send a message to a card script written in AppleScript, which can, in turn, pass the message to a background script written in UserTalk.

HyperCard 2.2 accommodates scripting components that don't support the optional OSA event handling interface. You can invoke scripts that belong to such components by sending them a run message:

```
send "run" to button 1 -- run an attached QuicKeys script
```

For AppleScript details, see the HyperCard AppleScript Reference stack.

Note: To take advantage of AppleScript code in your stack, the user must be running System 7.0 (or later) and have AppleScript 1.1 installed.

This article was adapted from the HyperCard 2.2 New Features stack.

Article Change History:
24 December 1993 - deleted reference to both Apple Events Manager requirement

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Tech Info Library Article Number:14206

Tech Info Library

HyperCard 2.2 New Feature: Three New Button Styles (12/93)

Revised: 12/10/93
Security: Everyone

HyperCard 2.2 New Feature: Three New Button Styles (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

HyperCard 2.2 offers three new button styles: Default, Oval, and Standard.

DISCUSSION --------------------

- The Default button style is the same type you see for the OK button in most dialog boxes: it's outlined with both a thin (one-pixel) line, and with a thicker line (three pixels thick).

- The Standard style is a rounded rectangle without a shadow. It looks like a Cancel button: its outline is a single one-pixel line.

- The Oval button style is transparent. Use it to overlay circular or oval shapes. Although the boundary of an oval button is rectangular, HyperCard respects its oval shape when tracking the mouse for highlighting and for messages (mouseEnter, mouseWithin, mouseLeave) and mouse clicks.

A separate article describes another new button style: pop-up button.

This article was adapted from the HyperCard 2.2 New Features stack.

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Tech Info Library Article Number:14207

Tech Info Library

HyperCard 2.2 New Feature: Buttons as Containers (12/93)

Revised: 12/10/93
Security: Everyone

HyperCard 2.2 New Feature: Buttons as Containers (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

Starting with HyperCard 2.2, buttons can contain up to 30,000 text characters.

DISCUSSION --------------------

Editing Button Contents

Except for a pop-up button, where each line of a button's contents is an item in the button's pop-up menu, the contents of a button don't show. But you can edit the contents either through scripts (using the put command), or through the Button Contents editor, accessible in the button's Info dialog box. The contents of a button is always stored unformatted.

Pasting With Data

To paste a Clipboard-resident button with its data intact, hold down the Shift key as you paste (or press command-shift-V), just as you would paste a field with its text intact.

Button Expressions

Button expressions evaluate to the button's contents, just as field expressions evaluate to the contents of the specified field.

This article was adapted from the HyperCard 2.2 New Features stack.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14208

Tech Info Library

HyperCard 2.2 New Feature: Button Families (12/93)

Revised: 12/9/93
Security: Everyone

HyperCard 2.2 New Feature: Button Families (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

A button family is a group of two or more buttons, only one of which can be highlighted at a time. When one button in a family is highlighted, all the other buttons in that family are automatically unhighlighted.

DISCUSSION --------------------

You assign a button to a family by giving it the same family number as other members of that family. To assign a family number to a button, use the Family pop-up menu in the Button Info dialog box. You can also assign a button to a family in a script using the family property.

You can create up to 15 families on each card and up to 15 families on each background.

When you add a button to a family (that is, give it a family setting of anything except "none"), its Auto Hilite option is automatically turned on.

This article was adapted from the HyperCard 2.2 New Features stack.

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Tech Info Library Article Number:14209

Tech Info Library

HyperCard 2.2: Requirements & Compatibility (12/93)

Revised: 12/24/93
Security: Everyone

HyperCard 2.2: Requirements & Compatibility (12/93)

==========

Article Created: 13 December 1993
Article Reviewed/Updated: 24 December 1993

TOPIC ----------

HyperCard 2.2 is the third update to HyperCard version 2.0; it supersedes versions 2.0, 2.0v2, and 2.1.

This article, adapted from the HyperCard 2.2 "New Features" stack, lists basic HyperCard 2.2 information.

DISCUSSION ----------

System Software Requirements

HyperCard 2.2 requires Macintosh System Software version 6.0.5 or later, or A/UX version 2.0 or later.

Using HyperCard 2.2 Stacks With Earlier HyperCard Versions

None of the new features of HyperCard 2.2 can work under earlier versions of HyperCard.

WARNING: If under versions of HyperCard earlier than 2.2 you compact a 2.2 stack that contains non-HyperTalk scripts, the non-HyperTalk scripts are likely to be deleted, causing the stacks to behave in unexpected ways.

OSA Compatibility

For features related to Apple Open Scripting Architecture (OSA), you'll need Macintosh System Software version 7.0 or later -- and the AppleScript extension.

AppleScript Requirements

For AppleScript-related functionality, you'll need:

- System Software 7.0 or later
- AppleScript 1.1

For component-related functionality, you'll need:
- QuickTime 1.6 or System Software 7.1

Article Change History:
24 December 1993 - deleted Apple Events Manager requirement,
revised "Earlier HyperCard Versions" section

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Tech Info Library Article Number:14210

Tech Info Library

HyperCard 2.2: General Description (9/94)

Revised: 6/27/96
Security: Everyone

HyperCard 2.2: General Description (9/94)

==========

Article Created: 13 December 1993
Article Reviewed/Updated: 28 September 1994

TOPIC ----------

This article provides an overview of Apple's HyperCard 2.2 software.

A separate Tech Info Library article provides the technical specifications for HyperCard 2.2; and several other articles describe, in detail, features that are new or enhanced in version 2.2 of HyperCard.

DISCUSSION ----------

Overview

HyperCard is a tool for creating custom software solutions for business, education, and media integration. Commercial developers, consultants, in-house programmers, and end-users can use it to acquire, manage, and display information just the way they need to.

HyperCard organizes information in easy-to-use "stacks" of "cards" through which uses can navigate and search for the information they need. Simply by clicking a button, they can view related text, see a graphic, hear a sound, or watch a QuickTime movie.

Easy to Learn

Familiar Macintosh interface elements make HyperCard so easy to learn that beginners can start creating stacks right away. HyperCard also offers extensive online help, as well as ready-to-use stacks, templates, and software objects (buttons, etc.).

Development Environment

HyperCard is an ideal development tool for a wide range of applications, including multimedia presentations, front-ends to data on host computers,

courseware, and computer-based training materials. And its compatibility with Apple's WorldScript system extension helps you easily create multilingual solutions.

Using HyperTalk (HyperCard's built-in scripting language), AppleScript, or any other scripting language that's compatible with Apple's OSA (Open Scripting Architecture), you can write scripts and attach them to HyperCard buttons that launch, control, and exchange data with other off-the-shelf applications, either locally or over a network. This lets you create HyperCard applications that automate repetitive tasks, such as collecting data from multiple sources and generating reports from it.

HyperCard provides a robust prototyping and development environment for professional developers. It comes with powerful scripting tools, a modeless script editor, hypertext support, debugging tools, external commands, and many other features to help you create powerful custom software.

A new option in HyperCard version 2.2 lets you save any stack as a standalone double-clickable Macintosh application that can be distributed without royalty fees.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
28 Sep 1994 - Reviewed for technical accuracy, added fax footer.

Support Information Services

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Tech Info Library Article Number:14211

Tech Info Library

HyperCard 2.2: Enhanced HyperTalk Commands (12/93)

Revised: 12/9/93
Security: Everyone

HyperCard 2.2: Enhanced HyperTalk Commands (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

This article lists 19 HyperTalk features that are enhanced in HyperCard 2.2. For descriptions, syntax, and examples, see the New Features stack that comes with HyperCard 2.2. For more detail, see the new HyperTalk Reference stack.

See also the Tech Info Library article on miscellaneous HyperTalk enhancements.

DISCUSSION --------------------

close
convert
delete
{disable | enable}
diskSpace()
do
doMenu
find
{lock | unlock}
number()
open
put
{read | write}
selectedLine()
selectedText()
sort
the enabled
the visible
there is…

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Tech Info Library Article Number:14212

Tech Info Library

HyperCard 2.2 New Field Style: List Field (12/93)

Revised: 12/9/93
Security: Everyone

HyperCard 2.2 New Field Style: List Field (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

A list field is a field from which a user can make choices. This kind of field is new in HyperCard 2.2.

DISCUSSION --------------------

When a user clicks a line or drags through a series of lines in a list field, the lines are highlighted. A script can detect the highlighted lines and take appropriate action.

The Field Info dialog box has two new options to make list fields possible:
• Auto Select
• Multiple Lines.

To create a list field, select the Auto Select, Don't Wrap, and Lock Text options in the Field Info dialog box. To allow the user to highlight more than one line at a time, you also select the Multiple Lines options.

(The user highlights more than one line either by dragging through several lines or by highlighting one or more lines and then shift-clicking elsewhere in the field.)

This article was adapted from the HyperCard 2.2 New Features stack.

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Tech Info Library Article Number:14213

HyperCard 2.2: Message Box Enhancements (12/93)

Revised: 12/9/93
Security: Everyone

HyperCard 2.2: Message Box Enhancements (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

In HyperCard 2.2, the message box has two new features.

DISCUSSION --------------------

- Command-Shift-A selects all text in the Message box when it's open for editing.

- You can control the font, style, and size of text in the Message box by setting its textFont, textSize, and textStyle properties (but you don't have access to the Text Style dialog box). For example, to make the type in the message box larger, type:

```
set the textSize of the message to 14
```

This article was adapted from the HyperCard 2.2 New Features stack.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14214

Tech Info Library

HyperCard 2.2: Miscellaneous Enhancements (12/93)

Revised: 12/9/93
Security: Everyone

HyperCard 2.2: Miscellaneous Enhancements (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

This article describes a number of new enhancements in HyperCard 2.2 that aren't described in articles of their own.

DISCUSSION --------------------

- You can now undo the deletion of a button or field.
- The maximum number of stacks in use, formerly 10, is now 16.
- The New Stack and Resize Card popup menus now have a PowerBook (640x400) setting.
- The maximum number of open windows is limited only by memory.
- There is now balloon help for all built-in menus, windows, and many dialog boxes.
- You can drag many modal dialog boxes (including the object Info dialog boxes) to where you want them on the screen. If you're running System 7, you now have access to the Edit menu while a modal dialog box is on the screen.
- Four new visual effects are now available: push left, push right, push up, and push down. These visuals are like the wipe set of effects, except that the push effects appear to push the current card off the screen.

This article was adapted from the HyperCard 2.2 New Features stack.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14215

Tech Info Library

HyperCard 2.2: Miscellaneous HyperTalk Enhancements (12/93)

Revised: 12/9/93
Security: Everyone

HyperCard 2.2: Miscellaneous HyperTalk Enhancements (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

This article describes several HyperTalk enhancements that appear with HyperCard 2.2. For more detail, see the new HyperTalk Reference stack. See also the Tech Info Library article on HyperCard 2.2's enhanced HyperTalk commands.

DISCUSSION --------------------

hilite: If a button belongs to a family and its hilite property is set to true from a script, the hilite property of each of the other buttons in the family is set to false.

menu: You can specify a menu by its ID number. You can specify the System 7.x keyboards menu by its name.

menuItem: You can use the adjective "English" to determine the names of menus and menu items in English:

```
if the English name of menuItem 5 of menu "Edit" is "Paste"...
```

play: If a sound fails to play, HyperCard sets the result to "Couldn't load sound". The result gets "Sound is off" if the volume is 0, if HyperCard is running in the background, or if an XCMD is using the sound channel. A note string can now contain as many characters as you want.

program: You can specify a program by its ID, which is its application signature:

```
put the ID of HyperCard -- -> WILD
get there is a program ID "MACS" -- is the Finder running?
```

You can say "this program" when you refer to the current process.

programs: You can get a list of Apple event-aware programs running on remote machines by using the form

```
get the programs of machine zone:Mac
```

rect: You can retrieve (but not set) the complete complement of rect properties of the menu bar: rect, width, height, top, and so on.

value: There is no limit to the character count for value's argument. When the argument of value is a multi-token literal expression, the expression evaluates to itself:

```
put value("HyperCard 2.2") -- -> HyperCard 2.2
```

This article was adapted from the HyperCard 2.2 New Features stack.

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Tech Info Library Article Number:14216

Tech Info Library

HyperCard 2.2: New HyperTalk Features (12/93)

Revised: 12/9/93
Security: Everyone

HyperCard 2.2: New HyperTalk Features (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

This article lists fifteen new HyperTalk features in HyperCard 2.2. For descriptions, syntax, and examples of their use, see the New Features stack that comes with HyperCard 2.2. For more detail, see the new HyperTalk Reference stack.

DISCUSSION --------------------

copy template
destination()
mouseDoubleClick message
part
selectedButton()
sum()
the autoSelect
the dialingVolume
the environment
the family
the multipleLines
the partNumber
the scriptingLanguage
the titleWidth
the zoomed

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Tech Info Library Article Number:14217

Tech Info Library

HyperCard 2.2 New Feature: Part Numbers (12/93)

Revised: 12/9/93
Security: Everyone

HyperCard 2.2 New Feature: Part Numbers (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

The "part number" -- new in HyperCard 2.2 -- is a button or field's ordinal position among all the buttons and fields that share a domain (a card or a background).

For example, if the ordering of parts on a card is card button 1, card button 2, card field 1, card field 2, and card button 3, the part number of card field 1 is 3. (Its layered position is third in a set of five.)

DISCUSSION --------------------

The part number is available in the object's Info dialog box; in a script, it's available in the object's partNumber property.

Changing Part Numbers

When an object's position relative to other objects within a domain changes, its part number changes -- as when it moves closer to, or farther away from, the front.

Lowest and Highest Part Number in a Domain

The object farthest away from the front within its domain has a part number of 1; the object closest to the front in its domain has a part number equal to the total number of objects in that domain.

This article was adapted from the HyperCard 2.2 New Features stack.

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Tech Info Library Article Number:14218

Tech Info Library

HyperCard 2.2 New Feature: Pop-up Buttons (12/93)

Revised: 12/10/93
Security: Everyone

HyperCard 2.2 New Feature: Pop-up Buttons (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

In HyperCard 2.2, the Pop-up button style lets you create buttons that become pop-up menus. Each line within the button's contents is an item in the pop-up menu.

DISCUSSION --------------------

How a Button Appears

The Pop-up button's name appears as the menu title to the left of the collapsed button; the collapsed button's window shows the current selection. To change the space allocated to the title, either drag the left side of the button's content area with the Button tool or change the Title Width setting in the Button Info dialog box.

Editing Button Contents

You enter and edit the items of a button's pop-up menu through the Button Contents editor, accessible in the button's Info dialog box -- or through scripts using the put command. The menu items appear in the same font as the title of the button.

Determining the Selected Menu Item

The description of the currently selected item in the menu is the button's selectedLine and its text is the selectedText. To set a selection, use select line n of button.

This article was adapted from the HyperCard 2.2 New Features stack.

Although Apple's official spelling for the adjective is "pop-up", HyperCard itself spells it "popup".

..TIL14219-HyperCard_2-2_New_Feature-Pop-up_Buttons_12-93_(TA30812).pdf

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14219

Tech Info Library

HyperCard 2.2 New Report Printing Features (12/93)

Revised: 12/9/93
Security: Everyone

HyperCard 2.2 New Report Printing Features (12/93)

==========

Article Created: 13 December 1993

TOPIC ----------

This article describes new report-printing features in HyperCard 2.2.

DISCUSSION ----------

Precision Adjustments for Report Layouts

In previous versions of HyperCard, you could hold down the Command key as you dragged to gain finer control over margins, cell spacing, and cell size. Now you check the newly added Precision Adjustments box, and save wear and tear on your Command-key finger.

Save Button

The Print Report dialog box now has a Save button so that you can immediately save changes you've made to the template.

Report Item Invert Option

The Report Item Info dialog box now has an Invert option. Checking its box inverts the item so that it prints as white text on a black field.

Report Item Framing Option

By checking from one to four boxes of the new Frame option, you can set off an item by drawing a line along any of its left, right, top, and bottom sides.

This article was adapted from the HyperCard 2.2 New Features stack.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14220

Tech Info Library

HyperCard 2.2: Specifications (7/96)

Revised: 7/8/96
Security: Everyone

HyperCard 2.2: Specifications (7/96)

==========

Article Created: 13 December 1993
Article Reviewed/Updated: 02 July 1996

TOPIC --

This article contains technical specifications for HyperCard 2.2 software.

A separate Tech Info Library article provides a general description of HyperCard 2.2, and several separate articles describe, in detail, features that are new in version 2.2 of HyperCard.

DISCUSSION --

System Requirements

- An Apple Macintosh computer: Macintosh Plus or later with at least 2MB RAM (4MB required with System 7)
- Macintosh System software version 6.0.5 or later (AppleScript requires System 7), or A/UX version 2.0 or later
- Hard disk drive
- QuickTime Tools requires System 6.0.7 or later, the QuickTime extension, 4MB RAM, and a 68020 (or later) processor.
- With System 6, Color Tools requires 32-bit QuickDraw extension.

OSA Support

Apple's Open Scripting Architecture (OSA) lets you:

- Use any OSA-compatible scripting language, including HyperTalk, AppleScript, UserTalk (from UserLand), and CEScript (from CE Software).
- Use localized versions of AppleScript system extensions to script in French, Japanese, or other languages (requires additional software)
- Link HyperCard stacks with any of more than 75 OSA-compatible applications, such as Claris FileMaker Pro 2.0 and Microsoft Excel 4.0 (applications must be running under System 7).
- Attach AppleScript scripts to HyperCard objects, such as buttons, to launch and control other applications, exchange data with them, and so on

-- even over a network.
• Take advantage of support for the Required, Core, and HyperCard suites of Apple events to launch and control HyperCard from other applications, as well as exchange data between them.

Multimedia Features

With HyperCard 2.2, you can:
• Add sound, animation, and graphics to stacks.
• Use the QuickTime Tools stack to add QuickTime movies to stacks.

Color Support

With the included Color Tools stack, you can:
• Assign colors to buttons, fields, backgrounds, and cards.
• Select from a palette of 256 colors.
• Import color or grayscale PICT graphics.
• Resize and reposition graphics on the card.
• Apply color transitions between cards and between stacks.
• Layer graphics under or over buttons and fields.

Development Features

The HyperCard development environment lets you:
• Use XCMDs (external commands) to control various systems and equipment, including mainframe computers, networks, videodisc players, and CD-ROM drives.
• Add features and commands to HyperCard applications by using XCMDs to call routines from languages such as C or Pascal.
• Implement hypertext applications through links from a word or group of words.
• Use shared code libraries to quickly add commonly-used sounds, external commands, pictures, and other elements to different stacks and to save disk space.

Scripting and Debugging Tools

HyperCard 2.2 provides several powerful tools:
• The modeless script editor lets you view several scripts and stacks at once and quickly copy and paste HyperTalk or AppleScript code between them.
• The debugging menu lets you set checkpoints in, and step and trace through, a script while it's running -- for fast and easy troubleshooting.
• Background processing lets you continue working in other applications while complex scripts are running or while you compact or sort a stack.
• Variable Watcher shows how variables are used and changed, and lets you edit variables while debugging your scripts.
• Message Watcher lets you view HyperTalk messages as they're sent, so you can see how your program's logic really works.

Flexible Formatting and Reporting

HyperCard 2.2 lets you:
• Design multiple report layouts for each stack -- and copy and paste

report formats between stacks.
- Control the content, appearance (including font, size, and style), and placement of text elements in report formats.
- Define the optimum appearance, order, and functions of menus and menu items for each application.
- Create card sizes ranging from one inch square to 18 inches square.
- Print individual fields, selected parts of a card, a single card, selected cards (those containing a certain word, button, or background), or an entire stack.

Contents

- HyperCard version 2.2 software
- HyperCard example stacks
- AppleScript run-time software
- AppleScript reference and sample stacks
- QuickTime Tools stack
- Color Tools stack
- ADDmotion II (from Motion Works International) for creating and editing animation
- HyperCard reference manuals
- HyperCard Companion Products and Services Directory

Ordering Information

- In the U.S., Order No. M2365LL/A
- Outside the U.S., Order No. M2365Z/A

Article Change History:
02 Jul 1996 - Removed from the Fax system
27 Jan 1995 - Reviewed for technical accuracy, revised formatting.

Support Information Services

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Tech Info Library Article Number:14221

Tech Info Library

HyperCard 2.2 New Feature: Standalone Applications (12/93)

Revised: 12/9/93
Security: Everyone

HyperCard 2.2 New Feature: Standalone Applications (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

If you're using HyperCard 2.2 and Macintosh System 7, you can create a standalone application from any HyperCard stack. Standalone applications work on their own: others can use your stacks even if they don't own HyperCard.

DISCUSSION --------------------

Creating a Standalone Application
---

1) Choose Save A Copy... from the File menu.

2) Choose Application from the "File type" popup menu at the bottom of the Save A Copy dialog box.

3) A dialog box appears into which you can type information for the Finder's Get Info window. You can use this information to keep track of versions of the application as you develop it. You can summon an additional dialog box, of use mainly to advanced developers, into which you can type more detailed version information.

   WARNING: Once a standalone application is created, it cannot become a stack again -- and, from a development point of view, is frozen in its new form.

Script Security

Because standalone applications have no script editor, the user has no access to your scripts.

Custom File Type

HyperCard provides the file type code STAK to standalone applications. You

can provide your own file type code by choosing Custom file type from the "File type" popup menu. Again, this feature is intended for advanced developers.

WARNING: Creating a standalone application with anything other than the default application signature can have unexpected results. For information about avoiding such surprises, see "Create a Standalone Application" in the HyperCard Help stack.

This article was adapted from the HyperCard 2.2 New Features stack.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14222

HyperCard 2.2 New Feature: WorldScript Compatibility (12/93)

Revised: 12/9/93
Security: Everyone

HyperCard 2.2 New Feature: WorldScript Compatibility (12/93)

==========

Article Created: 13 December 1993

TOPIC --------------------

HyperCard 2.2 conforms to WorldScript compatibility requirements.

DISCUSSION --------------------

Sensitive to the current key script or font script (as appropriate), HyperCard invokes special-case code for handling non-Roman text characteristics as necessary.

Additionally, HyperCard 2.2 properly displays fields that contain double-byte characters, bidirectional text, or contextual ligatures, as long as the relevant script is installed on the computer. (The script no longer needs to be the system script.)

This means that HyperCard can now show languages such as Japanese, Arabic, Korean, and Traditional Chinese without the problems of previous versions.

This article was adapted from the HyperCard 2.2 New Features stack.

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Tech Info Library Article Number:14223

LaserWriter Pro 810: Fuser Temperature

Revised: 12/10/93
Security: Everyone

LaserWriter Pro 810: Fuser Temperature

==========

Article Created:10 December 1993

TOPIC ----------

What is the fuser temperature for the LaserWriter Pro 810?

DISCUSSION ----------

The fuser temperature in the standby mode is 392 degrees fahrenheit (200 degrees Celsius). During printing the temperature rises to 410 degrees fahrenheit (210 degrees Celsius). Paper moving through the printer must be able to withstand the printing temperature for 0.1 seconds without discoloring or melting any of the dyes or coatings that may have been used for printing the a letterhead.

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Tech Info Library Article Number:14224

Tech Info Library

Macintosh LC 520: Button Disabler Software (12/93)

Revised: 12/13/93
Security: Everyone

Macintosh LC 520: Button Disabler Software (12/93)

==========

Article Created: 13 December 1993

TOPIC ----------

A flier named "Update to Getting Started With Your Macintosh LC 520" describes a control panel called Button Disabler. It disables the buttons on the front of the Macintosh LC 520, so that students can't adjust the volume or brightness.

The flier also states that the control panel is already installed with the system software, but I don't find this control panel.

DISCUSSION ----------

System Enabler 403 version 1.0 didn't include modifications required for a Button Disabler control panel. Engineering then received feedback from customers requesting a way to disable the front buttons. In order to implement the Button Disabler, they also needed to revise the System Enabler for the Macintosh LC 520. Version 1.0.1 was released, which included three new disks -- the Install Me First disk, the Disk Tools disk, and the Extras disk. If you have System Enabler 403 version 1.0.1, you'll have the Button Disabler.

The documentation for the Macintosh LC 520 couldn't be revised, so a flier describing the Button Disabler was included instead. This flier ships with the Macintosh LC 520 computers that have the Button Disabler software already installed on the computer. A customer shouldn't have one of these fliers unless they have the Button Disabler and System Enabler 403 version 1.0.1.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14227

Tech Info Library

Apple Basic Color Monitor: Medical Specifications (12/93)

Revised: 12/14/93
Security: Everyone

Apple Basic Color Monitor: Medical Specifications (12/93)

==========

Article Created: 14 December 1993

TOPIC ----------

What is the implosion or protection rating on the Apple Basic Color Monitor in regards to complying with the UL 544 (Underwriters Laboratory Specifications)? This knowledge is for the use of the monitor in a medical environment.

DISCUSSION ----------

The UL 544 specification is designed specifically for medical equipment that is directly interfaced to a patient (heart monitor, and so on). The Apple Basic Color display does not fall into this category. However, it does meet or exceed the UL478 and UL1950 standards.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14228

Tech Info Library

HyperCard: Converting 12-Hour Time to 24-Hour (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Converting 12-Hour Time to 24-Hour (7/92)

==========

Article Created: 19 November 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This article provides a script that converts 12-hour time to international 24-hour time:

DISCUSSION --------------------

```
on mouseUp
  put msg box into q
  if last word of q = "PM" then
    repeat with n=1 to (the number of chars of q)
      if char n of q = ":" then put "," into char n of q
    end repeat
    put item 1 of q into z
    put z+12 into z
    put z into item 1 of q
    repeat with n=1 to (the number of chars of q)
      if char n of q = "," then put ":" into char n of q
    end repeat
  end if
  put "" into last word of q
  put q into msg box
end mouseUp
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14232

Tech Info Library

HyperCard 2.1: Power Tools Problems (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard 2.1: Power Tools Problems (7/92)

==========

Article Created: 12 August 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --

This article describes some problems in the HyperCard 2.1 Power Tools stack.

DISCUSSION --

- In the stack script's powerMenuItems function, the line just before "end powerMenuItems" should start with a quote.

- In the stack script's doInUseMenu handler, the line

  {put "goStack" && it & "," after theMsgs}

  should be

  {put "goStack" && quote & it & quote & "," after theMsgs

- When the Power Tools stack is in use, the Undo command will not work in other stacks, although It will continue to work in the Power Tools stack. Power Tools needs to be in use, not just open, to reproduce this problem.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14233

Tech Info Library

HyperCard: Accidental Creation of New Background (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Accidental Creation of New Background (7/92)

==========

Article Created: 16 December 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

If you copy a card to the clipboard, make changes to the background with which that card was associated, then paste the card back into the stack, HyperCard will create a new background for the card.

It will of course look almost identical to the cards of its original background, but it will lack any objects or art created while it was residing in the clipboard, and it will have a new background ID.

DISCUSSION ----------

To test this:

1) Open a test stack.

2) Go to "Bkgnd Info..." under the objects menu and note the background ID, click OK.

3) Choose "Copy Card" from the Edit menu.

4) Choose "Paste card" from the Edit menu, and check "Bkgnd Info..." to see that the background ID number matches the first background ID.

5) Choose "Background" from the Edit menu.

6) Choose the pencil tool, then click anywhere to change just one pixel in the background.

7) Choose "Paste Card" from the Edit menu, and check "Bkgnd Info..." again. You will see that the background ID has changed.

..TIL14234-HyperCard-Accidental_Creation_of_New_Background_7-92_(TA30827).pdf

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14234

Tech Info Library

HyperCard: Answer Command Quirks (8/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Answer Command Quirks (8/92)

==========

Article Created: 2 June 1992
Article Reviewed/Updated: 26 August 1992

TOPIC --------------------

The following anomalous result occurs with the use of specific strings in the answer command:

```
answer "4^2 ="  &&  4^2
```

results in 4 = 16

DISCUSSION --------------------

It turns out that the answer command ignores the substrings "^0","^1","^2", "^3", whenever any of these appear in the text prompt of the answer command (probably for all variations and probably also in the "ask" command.)

This is a feature of the Dialog Manager, which treats these strings as placeholders.

For more technical detail, see the ParamText procedure in Inside Mac Volume I.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14235

Tech Info Library

HyperCard: Trigonometric Arc Cosine (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Trigonometric Arc Cosine (7/92)

==========

Article Created: 17 April 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

There is no trigonometric arc cosine function built in to HyperCard. Therefore, if you want to find the arc cosine of a value use the method shown here.

DISCUSSION --------------------

The following takes the arc cosine of the value in field x and puts it in field Result:

```
put (atan (sqrt (1 - fld"x" * fld"x") / fld"x") * 180)/pi into fld "Result"
```

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14236

Tech Info Library

HyperCard: Calculating Age (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Calculating Age (7/92)

==========

Article Created: 14 May 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Here's a HyperCard handler that accurately calculates a person's age.

DISCUSSION --------------------

```
on calcAge

  put the date into curDate
  convert curDate to seconds
  put curDate + 86400 into curDate
  convert curDate to dateItems
  put item 1 of curDate into curYear

  put background field "BDay" into Birth
  convert Birth to seconds
  put Birth + 86400 into Birth
  convert Birth to dateItems
  put item 1 of Birth into BYear

  put curYear - BYear into tempAge

  Put 1900 into item 1 of curDate
  convert curDate to seconds

  put 1900 into item 1 of birth
  convert birth to seconds

  if curDate < birth then
    put tempAge - 1 into tempAge
  end if

  put tempAge into background field "Age"
```

```
end calcAge
```

Where BDay is a background field containing a birthdate and Age is a background field into which the calculated age will be placed.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14237

Tech Info Library

HyperCard: Color Animation (6/93)

Revised: 12/21/93
Security: Everyone

HyperCard: Color Animation (6/93)

==========

Article Created: 15 May 1991
Article Reviewed/Updated: 11 June 1993

TOPIC --------------------

Several third-party applications allow a color animation to be incorporated into a HyperCard stack. These products vary widely in their features and ease of use. The following is a list of some of these programs.

DISCUSSION --------------------

• ADDmotion, from Motion Works, Inc.

• AnimationWorks

• MacroMind Director

• InterFace, HyperAnimator, from Bright Star Technology, Inc.

To locate a vendor's address and phone numbers, use the vendor's name as a search string.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14238

Tech Info Library

HyperCard 2.0: Color Pictures in HyperCard (6/93)

Revised: 12/20/93
Security: Everyone

HyperCard 2.0: Color Pictures in HyperCard (6/93)

==========

Article Created: 15 May 1991
Article Reviewed/Updated: 11 June 1993

TOPIC ----------

HyperCard 2.0 supports color pictures using the picture command.

DISCUSSION ----------

The syntax is as follows:

```
on mouseUp -- or on cardOpen or stackOpen, etc.
  picture [fileName, fileType, windowStyle, visible, depth]
end mouseUp
```

FileName is the name of a file or resource. These must be either PICT files or PNTG files. To make these files a resource and a permanent part of the stack, the stack must be modified with ResEdit.

FileType is the kind of file the picture is. It can be a resource file, as mentioned above or it can be a separate file on the Macintosh. The file can also be on the clipboard.

WindowStyle is the style of window in which the picture is displayed. You can use any of the types of windows in the Macintosh toolbox: plain, rect, zoom, roundRect, dialog, document, shadow, and windoid. The default type is zoom, which is the kind of window a document is normally shown in with most applications.

Visible is a Boolean value, meaning it can be true or false; true for visible, false for invisible.

Depth is the bit depth of the off-screen buffer that's created by the picture command. See "Picture Command" in the HyperCard Script Language Guide for an explanation of how this works.

```
Example:
    on mouseUp
      picture, "Lake", resource, plain, true, 0
  end mouseUp
```

This would display a picture titled "Lake", which had been made a part of the stack with ResEdit. The picture would be visible and would be painted on the screen with bit depth buffer of zero.

To dismiss a picture created with the picture command, you can either close it using its close box (if there is one in its window) or you can script it. You'd use the following syntax:

```
    on mouseUp
      close window "Lake"
    end mouseUp
```

Note that you must say close window, not close picture.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14239

Tech Info Library

HyperCard: Corrupted Stack (HyperCard Stack Won't Open) (11/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Corrupted Stack (HyperCard Stack Won't Open) (11/92)

==========

Article Created: 19 June 1991
Article Reviewed/Updated: 30 November 1992

TOPIC ----------

When trying to open a HyperCard stack that has been corrupted, one of three things may happen:

- HyperCard opens the Home stack instead of the stack desired, and doesn't let the user open the desired stack at all.

- HyperCard seems to open and load, but instantly quits to the Finder without showing any card windows.

- HyperCard reports an error has occurred with an error number, and exit either to the Home stack or to the Finder.

DISCUSSION ----------

Here are the solutions:

- A utility named CanOpener available from Abbot Systems, Inc., will extract all text, PICT, icon and sound resources from most stacks that have been corrupted. All of the stack scripts, including the scripts of buttons, fields, cards, etc., will be recovered as a text resource.

- If all else fails, restore the most recent back-up of the stack.

And some tips for prevention:

- If possible, avoid creating and modifying stacks on a floppy disk.

- Compact your stack often.

- When developing a stack, work on a copy -- and ALWAYS make back-ups.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14240

Tech Info Library

HyperTalk: Deleting Groups of Objects (7/92)

Revised: 12/21/93
Security: Everyone

HyperTalk: Deleting Groups of Objects (7/92)

==========

Article Created: 30 March 1992
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

I'd like to delete a series of objects when a particular button gets deleted (selecting the button tool, clicking on the button and then pressing the delete key). To accomplish this, I tried using the following handler:

```
on deleteButton
  select cd btn "anotherButton"
  doMenu "Clear Button"
end deleteButton
```

Although the other object[s] get deleted, the original button that has the script in it does not get deleted.

DISCUSSION --------------------

The following handler will do what you expect.

```
on deleteButton
  select cd btn "anotherButton"
  doMenu "Clear Button"
  select me
  pass deleteButton
end deleteButton
```

As you might guess, having a script delete other objects after receiving a deleteButton message can create some problems and bring up some tricky issues. The main point here is that when HyperCard sends certain messages like deleteButton and deleteField, the object has not yet been deleted. Therefore, HyperCard currently deletes the selected/current object after this message is sent (this may change so do not rely on it). So, when you have a script that does something on a delete message, just make sure that the object selection does not change after this message is sent. Example,

if you have

```
on deleteButton
  select cd fld 1
end deleteButton
```

the first field will be deleted. Also, no "deleteField" message will be sent because you tricked HyperCard into deleting a field when it thought it was going to delete a button.

A final note: Watch out for unexpected recursion. The example script you included can easily become recursive by putting this anywhere but in a button or a field script.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14241

Tech Info Library

HyperCard and Diacritical Characters (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard and Diacritical Characters (7/92)

==========

Article Created: 10 April 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --

In sorting and finding, HyperCard treats characters with diacriticals the same as other characters.

DISCUSSION --

For example, the French e with accent is treated as an e without accent, and German vowels with Umlaut are treated the same as vowels without Umlaut. (These characters are not reproduced here because AppleLink is limited to plain ASCII text.)

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14242

Tech Info Library

HyperCard: Cause of Disappearing Heap Space (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Cause of Disappearing Heap Space (7/92)

==========

Article Created: 17 January 1992
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

If two HyperCard stacks are open simultaneously, and one of them has a resource fork, is locked and in use -- switching back and forth between the stacks (even just clicking on their windows alternately in the Finder) will gradually diminish HyperCard Heap Space.

DISCUSSION ----------

The stack in use has to be locked and have a resource fork (new stacks that have not been created with a copied background have no resource fork). It does NOT have to contain resources. (It can get into this state by opening it in ResEdit or by adding and deleting a resource.)

The other stack does not have to be locked.

The Cause

HyperCard is opening a new access path to the stack in use every time you switch stacks.

To the Macintosh operating system, every time you switch stacks it looks like you are opening another file. In System 6.0.7, there is a limit of 40 open files (actually, it's 40 open forks), so HyperCard will eventually refuse to switch stacks. In System 7.0 and later, there is no limit, so heap space will simply continue to drop until HyperCard runs out of memory.

This behavior is confirmed in HyperCard 2.1 and we know of no workaround.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14243

Tech Info Library

HyperCard: Disconnecting Modem After Dialing (10/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Disconnecting Modem After Dialing (10/92)

==========

Article Created: 24 March 1992
Article Reviewed/Updated: 30 October 1992

TOPIC --------------------

The following line of HyperTalk will disconnect the modem after dialing:

```
 dial "" with modem "ATH"
```

DISCUSSION --------------------

This string can be placed in a button and clicked on when the dialing is done. Another method is to use the Phone Dialer stack which shipped with HyperCard 2.1 and adjust when this command is sent on the Modem Options card.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14244

Tech Info Library

HyperCard 2.1: DOS Mounter Compatibility (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard 2.1: DOS Mounter Compatibility (7/92)

==========

Article Created: 30 July 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

A customer was unable to open HyperCard 2.1 while DOS Mounter was present.

DISCUSSION ----------

This is not to say that DOS Mounter is incompatible with HyperCard. It may be that a combination of DOS Mounter with one or more other INITs or CDEVs in incompatible with HyperCard 2.1. In one case, removing DOS Mounter 2.01 from the System Folder enabled the customer to open HyperCard 2.1.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14245

HyperCard: Finding Hidden Objects (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Finding Hidden Objects (7/92)

==========

Article Created: 15 May 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

This article describes how to make visible hidden HyperCard objects.

DISCUSSION ----------

- To find hidden buttons, select the button tool, then hold down the Command and Option keys. All of the buttons, both hidden and visible, will appear in gray outline.

- To find hidden fields, repeat the same process but choose the Field tool.

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Tech Info Library Article Number:14246

Tech Info Library

HyperCard: Finding Text in Scripts (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Finding Text in Scripts (7/92)

==========

Article Created: 15 May 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This article describes how find a string of text in a script.

DISCUSSION --------------------

To find a string of text in a script (no matter where it's located), type the following into the message box:

```
ss "search string "
```

For example, in order to find a handler called MoveItAround, type

```
ss "MoveItAround"
```

into the message box. HyperCard will search all scripts in the open stack. When it finds the script containing the string, it will stop and open the script up. To find exactly where the string is within the script, choose "Find" under the "Go" menu or type command-F. HyperCard will have automatically copied and pasted the string into the Find window. At this point, hitting the Enter key will find it and show you exactly where it is in the script.

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Tech Info Library Article Number:14247

Tech Info Library

HyperCard 2.x: Focal Point Compatibility (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard 2.x: Focal Point Compatibility (7/92)

==========

Article Created: 10 September 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Focal Point is a product that was written using HyperCard 1.x. It's designed to help people keep track of appointments and contact lists. In its original form, the product does not work with any version of HyperCard 2.x.

DISCUSSION ----------

Nine to Five Software sells a fix for the product that provides compatibility with System 7 and HyperCard 2.x. To locate a vendor's address and phone numbers, use the vendor's name as a search string.

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Tech Info Library Article Number:14248

Tech Info Library

HyperCard: getHandler Script (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: getHandler Script (7/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Given the name of a handler and a script, the following handler gets the text of the specified handler. Optionally, it will return starting and ending character expressions of the handler.

DISCUSSION --------------------

Script:

```
function getHandler handlerName,scriptText,returnOffsets
  -- Extracts a handler from a script.
  -- Given the name of a handler and a script, this handler gets
  -- the text of the specified handler.  Optionally, it will
  -- return starting and ending character expressions of the handler.
  -- check for function first because on is a substring of function

get offset("function " & handlerName,scriptText)
  if it is zero then get offset("on " & handlerName,scriptText)
  put it into startChar
  put return & "end " & handlerName into footer
  put offset(footer,scriptText) into endChar
  if endChar is not zero then
    add length(footer) to endChar
    repeat until char endChar of scriptText is return ¬
      or char endChar of scriptText is empty -- skip comment
      add 1 to endChar
    end repeat
    repeat while char endChar + 1 of scriptText is return
      add 1 to endChar -- take trailing returns
    end repeat
  end if
  if returnOffsets is true
```

```
  then return startChar & "," & endChar
  else return char startChar to endChar of scriptText
end getHandler
```

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Tech Info Library Article Number:14249

Tech Info Library

HyperCard Sound and After Dark Screen Saver (5/93)

Revised: 12/21/93
Security: Everyone

HyperCard Sound and After Dark Screen Saver (5/93)

==========

Article Created: 24 June 1991
Article Reviewed/Updated: 27 May 1993

TOPIC ----------

This article describes two small anomalies involving HyperCard and After Dark.

DISCUSSION ----------

The screen saver After Dark v. 2.0, runs silently if HyperCard is the application that's open when After Dark kicks in. This is because HyperCard takes control over sound while it is running.

After Dark, v.2.0u (for System 7) may also cause the cursor to change to After Dark's "never sleep" icon. This has been reported to Berkeley Systems.

additional search term: AfterDark

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Tech Info Library Article Number:14250

Tech Info Library

HyperCard and QuickTime (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard and QuickTime (7/92)

==========

Article Created: 23 January 1992
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

What is QuickTime, and how does it relate to HyperCard?

DISCUSSION ----------

QuickTime is Apple's technology for storing and displaying digital "movies" on the Macintosh screen. Movies can be compressed still images, animations, or captured video. QuickTime provides Macintosh developers and customers with a software-only solution for integrating motion video into Macintosh applications.

What Do I Need to Run HyperCard with QuickTime?

• A Macintosh computer with a 68020 processor or better.

• The QuickTime stack is a high-level authoring tool for users to integrate movies into their HyperCard applications. You must have Apple QuickTime software before the HyperCard QuickTime tool will function.

• System 7.0 or better, and Apple QuickTime extension 1.0 or later.

• HyperCard 2.1 or later (HyperCard memory allocation must be 2MB or more.)

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Tech Info Library Article Number:14251

Tech Info Library

HyperCard: How It Does Math (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: How It Does Math (7/92)

==========

Article Created: 24 March 1992
Article Reviewed/Updated: 23 July 1992

TOPIC --

This article has four sections:
- HyperCard Uses SANE
- Floating-point Numbers
- NaNs and INFs
- Mixing Reals and Integers

(A related Tech Info Library article deals with HyperCard's round, trunc, and random functions.)

DISCUSSION --

HyperCard Uses SANE

HyperCard uses SANE (Standard Apple Numerics Environment) routines for doing math in HyperTalk. See Apple Numerics Manual, Second Edition, for any details.

Floating-point Numbers

Any floating-point (or real) number used by HyperCard is stored as an extended type. Each number is represented in 80 bits (10 bytes) and has a precision of roughly 19-20 decimal places. Because an extended type is allotted a fixed amount of memory, only a finite number of values can be represented exactly.

Example: type "1000000000000000000+1" into the message box. HyperCard evaluates this expression to 10000000000000000000.

NaNs and INFs

Calculations via SANE can produce infinities and NaNs (Not-a-Number). Such

results may be passed back in HyperTalk. Consult the Apple Numerics Manual for the specifics.

Examples in HyperCard:
sqrt(-1)-> "NAN(001)"
ln(0)-> "INF"
ln(-1)-> "NAN(036)"
-1/0-> "-INF"
(-1)^(-.5)-> "NAN(037)"
1/ln(0)-> 0

Mixing Reals and Integers

HyperTalk, being an untyped language, lets scripters mix real and integer values. Sometimes this can produce unexpected results.

Examples:
(.3 * 10) DIV 1-> 2
(.3 * 10) MOD 1-> 1
trunc(.59*100) < 59-> true

The reason behind the unexpected result is that, internally, HyperCard is applying the math operations to extended type numbers. For example, ".3*10" is not equal to 3 (because .3 cannot be represented exactly by an extended type). The solution to such problems is to have HyperCard evaluate expressions first. This can be accomplished by putting the value into a field or by taking the value of the expression. Evaluating an expression converts it to a "practical" precision (using the numberFormat property).

Example:
value(.3*10) DIV 1-> 3

This behavior is exactly what one would expect if doing math in any high-level language. Both of the following, the first in Pascal and the second in HyperTalk, produce the same results:

```
program Math;

var
    x:extended;
    factor, truncX, K: integer;

begin
    ShowText;{ for THINK Pascal }
     factor := 1000;
     x := 0.0;
     for K := 1 to factor do
    begin
              x := K / factor;
             truncX := trunc( factor * x );
             if (truncX <> K) then
           writeln(K);
     end;
```

```
end.

on mouseUp
   set cursor to watch
   put 1000 into factor
   put EMPTY into cd field "Table"
   put EMPTY into theTable
    repeat with K = 1 to 1000
       put K/factor into x
        if (trunc(factor*x) <> K) then
             put K & return after theTable
       end if
    end repeat
     put theTable into cd field "Table"
end mouseUp
```

Both of these produce the list:

```
1
2
4
8
16
32
63
64
126
128
252
256
504
507
512
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14252

Tech Info Library

HyperCard: Calculating Interval Between Two Dates (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Calculating Interval Between Two Dates (7/92)

==========

Article Created: 19 November 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

Here's a handler that calculate the number of days, hours, and minutes between any two dates.

DISCUSSION --------------------

1) Create five fields, one for the first date, one for the second date, and the other three for days, hours and minutes.

2) Use the following handler:

```
on mouseUp
  global numdays,numhours,numminutes,temp
  put "" into cd fld 3
  put "" into cd fld 4
  put "" into cd fld 5
  put cd fld 1 into firstdate
  put cd fld 2 into seconddate
  convert firstdate to seconds
  convert seconddate to seconds
  put seconddate - firstdate into temp
  --how many days worth of seconds
  put 24 * 60 * 60 into secdays
  put temp div secdays into numdays
  put numdays & "days" into cd fld 3
  --check for hours
  put temp-secdays*numdays into temp
  if temp = 0 then put "0 hours" into cd fld 4
  if tem >0 then
    put 60*60 into sechours
    put temp div sechours into numhours
    put numhours & "hours" into cd fld 4
```

```
    --check for minutes
    put temp-sechours*numhours into temp
  end if
  if temp=0 then put "0 minutes" into cd fld 5
  if temp > 0 then
    put 60 into secminutes
    put temp div secminutes into numminutes
    put numminutes & " minutes" into cd fld 5
  end if
end mouseUp
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14253

Tech Info Library

HyperCard: Claris Label Maker Stack (6/93)

Revised: 12/21/93
Security: Everyone

HyperCard: Claris Label Maker Stack (6/93)

==========

Article Created: 9 April 1991
Article Reviewed/Updated: 4 June 1993

TOPIC --------------------

The Label Maker stack was included in a special HyperCard version sent by Claris to only a few educational right-to-copy sites.

DISCUSSION --------------------

This special Label Maker stack was designed to make the job of creating things like mailing labels much easier. It is not supported by Apple.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14254

Tech Info Library

HyperCard 2.x: Keyboard Problem on Macintosh Plus (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard 2.x: Keyboard Problem on Macintosh Plus (7/92)

==========

Article Created: 26 September 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

The =, /, * , and + keys on the Macintosh Plus keyboard do not produce these characters when typed. Instead, they act as arrow keys. (If you look at the Macintosh Hardware Manual, these keys match the "arrow keys" on the original Macintosh 128/512 keypad. Also, the keycodes/charcodes match the arrow keys on the Macintosh Plus keyboard.)

This article provides a workaround.

DISCUSSION ----------

If you trap for all keystrokes with a keydown handler and test for the problem keys, you can make them work properly:

```
on Keydown whichKey
  if whichKey = "*" or whichKey  = "/" or  whichKey = "=" or whichKey  = "+"
  then type whichKey
else
  pass keydown
end keydown
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14255

Tech Info Library

HyperCard: MacinTalk and Speech Recognition (9/95)

Revised: 9/1/95
Security: Everyone

HyperCard: MacinTalk and Speech Recognition (9/95)

==========

Article Created: 11 June 1990
Article Reviewed/Updated: 1 September 1995

TOPIC ----------

Is there anyone out there who has, or knows of, specific XCMDs for HyperCard that make use of the MacinTalk speech synthesis file?

On a similar note, has MacinTalk ever been updated beyond 1.3.1?

DISCUSSION ----------

MacinTalk is used in combination with Apple's Text to Speech software. It enables your Macintosh to provide Text to Speech capabilities for applications that support Text to Speech. SimpleText is an example of an application that supports Text to Speech.

HyperCard 2.2 supports sound better than HyperCard 2.1. There is an XCMD available from Jeff Iverson Software of Burnsville, Minn. that supports HyperCard 2.2 with Sound Manager 3.0.

HyperCard 2.3 does support Text to Speech and includes speech commands.

As of this writing, the current versions of MacinTalk are:

MacinTalk 2 v1.4
MacinTalk 3 v1.4
MacinTalk Pro v1.4
Speech Manager v1.4

Use the search string "plaintalk and macintalk" to locate the TIL article "PlainTalk and MacinTalk: Differences and When to Use" to determine which version of MacinTalk is supported on your computer.

Article Change History:

01 Sep 1995 - Updated article for MacinTalk 3 and HyperCard 2.3.
14 Sep 1994 - Updated article for MacinTalk 2 and MacinTalk Pro.
23 May 1994 - Merged three articles into one. Added third party information.

Support Information Services

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Tech Info Library Article Number:14256

Tech Info Library

HyperCard 2.1: Tools and Font Menus Can't Be Disabled (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard 2.1: Tools and Font Menus Can't Be Disabled (7/92)

==========

Article Created: 12 August 1991
Article Reviewed/Updated: 22 November 1993

TOPIC ----------

In HyperCard 2.1, you cannot use the disable menu command to disable either the Tools or Font menus. You can disable all other menus except the Balloon Help & Applications list menus.

DISCUSSION ----------

These menus could be disabled in HyperCard 2.0v2, and can be disabled in HyperCard 2.2.

The Tools and the Font menu can be deleted in HyperCard 2.1 via a script.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14257

Tech Info Library

HyperCard: How To Pass a Mouse Click Through a Picture (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: How To Pass a Mouse Click Through a Picture (7/92)

==========

Article Created: 30 October 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

You can write a script in HyperCard that will allow you to click on a color picture generated by the Picture command, and 'pass' the click to whatever object lies underneath it.

DISCUSSION ----------

Simply use a handler like the following:

```
on mouseUpInPicture wName, cloc
  add (item 1 of loc of window wname) to item 1 of cloc
  add (item 2 of loc of window wName) to item 2 of cloc
  click at cloc
end mouseUpInPicture
```

So when you click on a picture window, this script will actually click on whatever is directly underneath the picture.

The idea of the script is that the cloc parameter of the mouseUpInPicture message refers to a location within the window generated by the Picture command, and NOT to a coordinate on the card itself. However, if we tell HyperCard to click someplace, it will always use the current card for that. So all we have to do is add the LOC of the window (which is expressed in terms of the card as a whole) to the CLOC of the window (which is the area within the window that we clicked) to find the exact spot on the card underneath the picture that is physically the same as the location of the spot we clicked on the picture.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14258

Tech Info Library

HyperCard: MouseDown in Palettes (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: MouseDown in Palettes (7/92)

==========

Article Created: 31 July 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

In some circumstance a user might want to create a button on a palette that performs a constant action while the mouse button is down: for example, a video disc control with a fast-forward button that fast forwards as the button is down, then resumes playing at normal speed when the mouse is up.

DISCUSSION --------------------

1) If you make sure the "Remain Hilited" check is checked, the palette button will be activated on a mouseDown. This does mean we have to do some additional work to make sure that the button hilite is set to false later, but you will see this in just a second.

2) Create a one-line script, in the button, that will repeat through the fast-forward (or whatever) XCMD. The line should look something like this:

```
do("repeat until the mouse is up" & return & "beep" & return & "end repeat"¬
& return & "set hilitedButton of window bob to 0")
```

This script uses a beep instead of a fast forward, but replacing the two would create the desired results.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14259

Tech Info Library

HyperCard 2.x: Compatibility with Performer and Cue (6/92)

Revised: 12/21/93
Security: Everyone

HyperCard 2.x: Compatibility with Performer and Cue (6/92)

==========

Article Created: 11 September 1991
Article Reviewed/Updated: 5 June 1992

TOPIC ----------

There is a confirmed problem with HyperCard 2.x and two music applications for the Macintosh:
• Performer (from Mark of the Unicorn Software)
• Cue Film Music System (from Opcode Systems, Inc.)

DISCUSSION ----------

If HyperCard is running when you try to launch these applications, the computer freezes. This problem is caused by a bug in the copy-protection scheme in the two applications. For latest information, contact Mark of the Unicorn and Opcode. To locate a vendor's address and phone numbers, use the vendor's name as a search string.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14260

HyperCard Before 2.2: Open File Undocumented Features (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard Before 2.2: Open File Undocumented Features (7/92)

==========

Article Created: 1 March 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

This article describes some undocumented features in the open file procedures in HyperCard.

DISCUSSION ----------

The open file command opens, reads from, writes to, or creates text files on your Macintosh. HyperCard has a limit of three open files at one time.

Although this limitation is documented in the book "HyperTalk 2.0" by Kamins and Winkler, they wrongly inform the user that when a fourth file is opened an error message will appear: "Can't open any more files." They go on to say that when the user clicks the error dialog away, the open files will close, allowing any other files to be opened/created. This is not the case. The dialog never shows.

HyperCard displays an error message only when it tries to write to, or close a file (the fourth on...). "File not open." It will not alert you that your fourth file couldn't be opened in the first place.

Users must be careful to balance their opened files when writing scripts that use this command extensively.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14261

Tech Info Library

HyperCard to 2.0 to 2.1: Limitations in Painted Text (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard to 2.0 to 2.1: Limitations in Painted Text (7/92)

==========

Article Created: 11 October 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

There's a limitation in HyperCard 2.0, 2.0v2 and 2.1.

DISCUSSION --------------------

When using "painted text," you can only type 100 characters wide on a card, and 20 rows deep.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14262

Tech Info Library

HyperCard: No Error Messages from Palette Buttons (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: No Error Messages from Palette Buttons (7/92)

==========

Article Created: 31 July 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

A message sent by a button on a palette seems to disappear, neither correct response nor error message. Checkpoints added to handler are not triggered when the palette button is clicked.

DISCUSSION ----------

Cause: Error messages are not issued by HyperTalk when processing messages from palettes. This causes palettes to appear disabled when carried into irrelevant environments, rather than seeming to have malfunctioned. If the problem is a runtime error, it can be detected by checkpoints in the handler; however, if it is a compilation error (in the nature of "can't understand"), the message is intercepted, but no handler is executed.

Workaround: Create a card button that sends the same message. This allows normal debugging of the problem handler. When you're finished, remove the card button.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14263

Tech Info Library

HyperCard: Palette Design Shortcut (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Palette Design Shortcut (7/92)

==========

Article Created: 30 July 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

When using the Palette Maker in the Power Tools stack, you have to create a card graphic for the appearance of the palette. The intuitive way to control the appearance of a new palette is by selection of button styles and icons, but Palette Maker ignores them.

DISCUSSION --------------------

You can convert an arrangement of buttons into a graphic for use by the Palette Maker. Choose the select tool, drag a box around the buttons, choose Export Paint from the File menu, and park the exported file any place handy. Then Import Paint the same file. This creates a graphic which is an image of the originally selected area, including buttons, fields, and previously existing graphics (card and background).

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14264

Tech Info Library

HyperCard: PICT Compression (8/93)

Revised: 12/21/93
Security: Everyone

HyperCard: PICT Compression (8/93)

==========

Article Created: 30 March 1992
Article Reviewed/Updated: 2 August 1993

TOPIC --------------------

The HyperCard Picture XCMD can open up compressed PICTs created with QuickTime. This is done by making a toolbox call (DrawPicture). QuickTime intercepts the call and does any decompression necessary.

DISCUSSION --------------------

Here are some factors that seem to affect the speed of the Picture XCMD:
- The amount of RAM allocated to HyperCard.
- The size of the picture file.
- The type of compression used.
- The parameters you pass to the Picture XCMD.

The method used to compress an image affects its final size and the speed of decompression. Faster display speed may be achieved by allocating more memory to HyperCard. However, the method of compression is a more important factor.

The Picture XCMD seems to be able to display files quicker if you do not pass a parameter for bit-depth (fifth param). Do so only if memory conservation is important. Instead, let the XCMD figure it out the appropriate bit-depth. If you try to display a file at a lower bit depth, it takes time to convert.

If you pass 0 for the bit-depth parameter, then the XCMD does not set up an offscreen buffer. Hence, the window will seem to appear immediately, but the picture may take some time to get drawn into the window (it is drawn as it is decompressed). This method will give you slower updates.

This article is adapted from the Claris Tech Info database.

..TIL14265-HyperCard-PICT_Compression_8-93_(TA30860).pdf

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Tech Info Library Article Number:14265

Tech Info Library

HyperCard: Preventing the Moving of Windows (4/93)

Revised: 12/21/93
Security: Everyone

HyperCard: Preventing the Moving of Windows (4/93)

==========

Article Created: 30 March 1992
Article Reviewed/Updated: 13 April 1993

TOPIC --------------------

HyperCard 2.0 added the system messages moveWindow and sizeWindow to HyperTalk. Some scripters expect to be able to prevent a user from moving a window (via dragging) by intercepting a moveWindow message. This is not possible.

DISCUSSION --------------------

The moveWindow message is sent to the current card whenever the location of any stack window changes. MoveWindow is a system message, so it serves only to notify that an event has happened, not that it is going to happen if the message reaches HyperCard.

Scripters can use a moveWindow handler to figure out how to reposition other windows.

One way to prevent users from dragging windows is to hide the titlebar of the card window. Use hide titlebar. Restore the titlebar later with show titlebar. Note that any stack that opens in that same window will not have a titlebar (so scripters want to restore the titlebar on closeStack and suspendStack). The command will not affect other windows displaying stacks.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14266

Tech Info Library

HyperCard: Use 2.1 or Later with Macintosh Quadra (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Use 2.1 or Later with Macintosh Quadra (7/92)

==========

Article Created: 11 October 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

HyperCard versions before 2.1 are incompatible with the 040 cache.

DISCUSSION --------------------

Workarounds:

- Use HyperCard 2.1 or later with Macintosh Quadra computers.

- If you must use earlier versions with a Quadra, turn off the cache CDEV in the Control Panel.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14267

Tech Info Library

HyperCard: quoteLines Function (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: quoteLines Function (7/92)

==========

Article Created: 11 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

This function takes a sequence of lines as a parameter and returns a copy of the lines with quotes around each one. It is used by the writeScript function.

DISCUSSION ----------

```
function quoteLines string
  -- script 2-2:  Convert text to a quoted string
  put empty into quotedString
  repeat with i = 1 to the number of lines in string
    get line i of string
    if it is empty then put "return" & return after quotedString
    else if quote is not in it
    then put quote & it & quote & " & return" & return after quotedString
    else
      put quote into expandString
      put " & quote & " & quote into calcQuote
      put number of chars in it into charCount
      repeat with j = 1 to charCount
        put char j of it into thisChar
        put thisChar after expandString
        if thisChar is quote then put calcQuote after expandString
      end repeat
      put expandString & quote & " & return" & return after quotedString
      get " & " & quote & quote
      repeat
        put offset(it,quotedString) into emptyCat
        if emptyCat is 0 then exit repeat
        delete char emptyCat to emptyCat+length(it)-1 of quotedString
      end repeat
    end if
```

```
  end repeat
  return quotedString
end quoteLines
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14268

Tech Info Library

HyperCard: Problem with Volume Names Containing Quotes (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Problem with Volume Names Containing Quotes (7/92)

==========

Article Created: 28 March 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Problem: You get a "No Such Menu" error whenever you open a particular stack.

DISCUSSION ----------

We have documented a case where the WrongStack() function returned True instead of False, and the line "get word 2 of the long name of me" in the WrongStack function returned nothing. This happened because the customer's hard drive was named "Q" (including the quotes). The quotes in the name apparently caused HyperCard to see the long name as all one word so there was no word 2.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14269

Tech Info Library

HyperCard: Quotes in Pathname (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Quotes in Pathname (7/92)

==========

Article Created: 12 August 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --

Some of the stacks provided with HyperCard 2.x do not function properly if the volume name contains quotes (" ").

DISCUSSION --

Quotes in the volume name cause problems in the HyperCard Reference stack as well as any other stack that gets the Long Name of the stack and tries to extract a word from it (second word in the case of the Reference stack).

Errors returned will vary from menu not found errors to missing handler errors like "Can't understand 'FindInTitle'". For the technically oriented, this is because the Reference stack will never open using the "HyperCard Help" stack because the wrongStack function in the openstack command does not function properly -- for reasons stated above.

The solution: Take the quotes out of the volume (HD or floppy) name as well as any folders in the path.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14270

Tech Info Library

HyperCard: Rescue Utility for Recovering Stacks (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Rescue Utility for Recovering Stacks (7/92)

==========

Article Created: 27 January 1992
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

What is Rescue, and how does it releate to HyperCard?

DISCUSSION ----------

Rescue is a commercial product designed to recover damaged HyperCard stacks. It may help when you get a numeric error message, indicating that a stack is corrupt. It's published by Nine to Five software.

To locate a vendor's address and phone numbers, use the vendor's name as a search string.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14271

HyperCard: Round, Trunc, and Random Functions (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Round, Trunc, and Random Functions (7/92)

==========

Article Created: 24 March 1992
Article Reviewed/Updated: 23 July 1992

TOPIC --

This article has two sections:
• The Round and Trunc Functions
• The Random Function

(A related Tech Info Library article describes how HyperCard does Math. It deals with SANE, floating-point numbers, NaNs and INFs, and mixing reals and integers.)

DISCUSSION --

The round and trunc Functions

The round and trunc HyperTalk functions have a long integer range. If passed a number outside this range — less than -231 or greater than 231 - 1 — these functions will return –2147483648 (i.e., -231).

The trunc function rounds toward zero, so that any fractional part is removed. Examples: trunc(2.2) -> 2 ; trunc(-2.2) -> -2.

The round function in HyperCard rounds "to nearest" (see the Apple Numerics Manual). (It is also known as a statistical round.) "To nearest" refers to a number's binary representation. This method is not the usual "round" that we learn in school. Whenever a number is exactly halfway between integers (e.g., 2.5), the "usual" round will round up. The round will round toward the even integer, e.g., round(2.5) -> 2. NOTE: Scripters may notice unexpected results when the numberFormat is imposed upon an expression. Similar rounding occurs in this instance (and it's harder to predict the rounding direction when dealing with fractions).

The random Function

The random function in HyperTalk produces pseudo-random numbers. In HyperCard 1.x, the random function had an integer (e.g., 215 - 1) range. In HyperCard 2.x, this was extended to a long integer range. (It calls SANE directly — using RandomX.) If passed an argument outside its range, the random function will use the maximum instead.

If a non-integer number is passed to random, HyperCard effectively rounds up before returning a random number. If a number less than 1 is passed to random, HyperCard returns 1.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14272

Tech Info Library

HyperCard: SCSI Probe Interfere's with Command-Space Bar (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: SCSI Probe Interfere's with Command-Space Bar (7/92)

==========

Article Created: 16 September 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

The Command-Spacebar keystroke normally hides or displays the menu bar in HyperCard. If, instead, the cursor changes to a watch and the menu bar does not hide/display, the cause may be a Control Panel document in the System Folder called SCSI Probe.

DISCUSSION ----------

SCSI Probe uses Command-Spacebar to mount hard drive volumes. To fix the problem, change the keyboard shortcut for SCSI Probe to something else. (You won't need to restart the computer.)

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14273

Tech Info Library

HyperCard: sharedhilite to True May Limit Button Control (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: sharedhilite to True May Limit Button Control (7/92)

==========

Article Created: 28 April 1992
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

From a script, setting the sharedHilite of a background button to true, then setting the hilite of the button to true, then setting the sharedHilite for that button to false, prevents further script control of the button.

DISCUSSION ----------

This series of steps may be followed if someone wants to quickly set several background buttons of a stack to hilite = true without having to visit each card individually. The button type and characteristics (show name, auto hilite, etc.) have no effect on this problem.

The only way to fix the button is to click on it with the button tool and change any of the button's characteristics in the button info dialog box. The button hilite will once again respond to script control until the above steps are repeated.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14274

Tech Info Library

HyperCard: Using Field-to-Message Feature (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Using Field-to-Message Feature (7/92)

==========

Article Created: 15 November 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

There is a feature in HyperCard that allows you to pick up text and transfer it to the message box. Holding the Command key down while the cursor is in a field (locked or unlocked) will change the cursor to a hand and draw a one-pixel selection box around the text. The selection box will grow, one word at a time, as you drag through the text. When you release the mouse button, the selected text will be placed in the message box.

DISCUSSION ----------

This feature is hard-coded into HyperCard and can't be bypassed through HyperTalk. First of all, in an unlocked field you will never be able to retain the I-beam pointer (insertion point) when the Command key is down, because some idle message will slip through to HyperCard creating a blinking hand to I-beam cursor.

And you can't trap the mousedown in an unlocked field. However, even if you try to trap the mousedown in a locked field and exit to HyperCard after your defined action, the text will still be picked up and placed in the message box.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14275

Tech Info Library

HyperCard 2.0v2: The Suspended Global Variable (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard 2.0v2: "The Suspended" Global Variable (7/92)

==========

Article Created: 23 April 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Here's an undocumented feature of HyperCard 2.0v2. It's a built in global variable called "the suspended." This variable is normally false but is set to true when you open another application using the open[filename with] application command.

DISCUSSION ----------

This is an important feature if you are running under MultiFinder and start a handler that uses the open application command with additional messages after the open command. What will happen is that HyperCard will start launching the application and then continue to finish the other commands while it is running in the background. Therefore, if you want to suspend any pending commands that follow the open application command until after HyperCard gains control you might want to use the following structure:

```
on exampleHandler
   open "Text File" with "MacWrite II"
   wait 1 second -- assure following loop works
   repeat until var is false
     put the suspended into var
   end repeat
   beep
   go next card
end exampleHandler
```

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14276

Tech Info Library

HyperCard: Developing XCMDs with Think Pascal or C (8/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Developing XCMDs with Think Pascal or C (8/92)

==========

Article Created: 10 September 1991
Article Reviewed/Updated: 28 August 1992

TOPIC --------------------

In order to compile XCMDs using Symantec's Think Pascal or C products, special HyperXCMD libraries need to be included with the source code of the external.

DISCUSSION --------------------

For more information, check the Symantec bulletin boards on CompuServe, AppleLink, or America Online -- or contact Symantec directly. To locate a vendor's address and phone numbers, use the vendor's name as a search string.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14277

Tech Info Library

HyperCard: Send Can't Be Trapped (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: "Send" Can't Be Trapped (7/92)

==========

Article Created: 30 March 1992
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Why can't the Send command be trapped?

DISCUSSION ----------

Send isn't a command; it's a keyword, like if, do, etc., and the designers of HyperTalk didn't allow keywords to be trapped by handlers in the same way that commands can be trapped.

Perhaps the simplest way to explain the difference between keywords and commands is that keywords force the compiler to do something out of the ordinary. In the case of "send", the target for the message is potentially different from the default target, so the compiler has to do some extra work to figure out where to send the message.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14278

Tech Info Library

HyperCard: Trunc() Function Limitation (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard: Trunc() Function Limitation (7/92)

==========

Article Created: 30 January 1992
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

The trunc() function may not return correct values when you supply a parameter greater than or equal to 2^31 (2147483648).

For example:

```
trunc(9876543210/2) = -2147483647
trunc(22222222222) = -2147483647
```

DISCUSSION --------------------

This accuracy problem seems to be related to limitations in the way HyperCard handles SANE routines.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14279

Tech Info Library

HyperCard and Virex 3.5: Crash with open file... (7/92)

Revised: 12/21/93
Security: Everyone

HyperCard and Virex 3.5: Crash with "open file..." (7/92)

==========

Article Created: 29 August 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

A user reports that if Virex 3.5 is running, and is configured to examine HyperCard stacks, then HyperCard 2.x will crash if an "open file..." statement is executed.

DISCUSSION --------------------

The solution is to remove Virex, or turn off the examination of HyperCard stacks by Virex.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14280

Tech Info Library

HyperCard: Rare Problem with Visual Effects (1/93)

Revised: 12/21/93
Security: Everyone

HyperCard: Rare Problem with Visual Effects (1/93)

==========

Article Created: 27 September 1991
Article Reviewed/Updated: 22 January 1993

TOPIC ----------

Visual effects cause HyperCard 2.0v1, 2.0v2, and 2.1 to crash if:
• Part of the card is overlapping another display, and
• The display is set to 1-bit depth (monochrome).

DISCUSSION ----------

This has been observed on a Macintosh LC and IIfx, and on PowerBooks. Crashing has not been reproduced on the Macintosh IIsi or Macintosh Classic, nor on any of the pre-IIfx models, though potentially these may be a problem (particularly with third-party video cards).

The crashes do not always occur in the situation described above, and may vary with the system version. It may also depend upon the amount of card area that's not showing through the card window. The best reproducibility occurs when your card rect is very tall (taller than the monitor) and the card window is smaller than the card rect.

This article is adapted from the Claris Tech Info database.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14281

Tech Info Library

AppleScript Scripter's Kit: Description (12/93)

Revised: 12/13/93
Security: Everyone

AppleScript Scripter's Kit: Description (12/93)

==========

Article Created: 13 December 1993

TOPIC -----

The AppleScript Scripter's Kit allows integrating off-the-shelf applications across desktops and networks for increased productivity.

DISCUSSION -----

The AppleScript Scripter's Kit is a software tool that enables end-users to integrate elements of commercial Macintosh software applications across desktops and networks. Since April 1993, AppleScript has been available as a software developer's kit for commercial software developers.

The AppleScript scripting language is integrated into the Macintosh operating system and conforms to Apple's cross-platform Open Scripting Architecture (OSA) standard. Developed in cooperation with third-party developers, the OSA provides a standard way for mainstream applications to interact with any scripting system. OpenDoc is a compound document architecture that enables users to create compound, customizable documents.

AppleScript is an element of Apple's long-term strategy to automate the Macintosh computing environment, improve application interaction and provide a foundation technology for OpenDoc. It builds on System 7 and the cross-platform Open Scripting Architecture (OSA), paving the way toward OpenDoc. The AppleScript Scripter's Kit, targeted at solution providers and end users, contains:

- AppleScript 1.1, an enhanced version of Apple's scripting language.
- An enhanced script editor that automatically generates and edits scripts based on user's actions.
- An interface processor from Software Designs Unlimited, Inc. that

enables building custom interfaces for scripts.

- Support for multiple dialects that provides for scripting in non-English languages (French and Japanese are included).

- A redistribution license for AppleScript system software and interface processor runtime code.

Automation Features

The AppleScript scripting language enables users to tightly integrate the functionality of standard, off-the-shelf applications as well as in-house, enterprise-wide programs to build customized scripts that automate business processes and increase productivity.

For example, with AppleScript, a sales department can automatically generate a weekly report that invokes functions from a series of scriptable applications such as Microsoft Excel, FileMaker Pro and QuarkXPress. AppleScript can gather data from one application, process it in another, and present it in a third automatically at a given time or based on an event, locally or over a network. Before AppleScript, these time-consuming functions needed to be performed manually by launching and working directly in each individual application.

"Scriptable" Applications

Since the AppleScript Software Developer's Kit was introduced in April 1993, over 80 independent software vendors (ISVs) are shipping AppleScript-aware applications. ISVs that provide scriptable applications include: Aldus, Beyond, Claris, Great Plains, Microsoft, Quark, Symantec, UserLand and WordPerfect among others. AppleScript helps ISVs reduce development time and costs by removing the need to create a proprietary scripting language.

How the Software Developer's Kit Differs

The AppleScript Developer's Kit for commercial developers includes the AppleScript Scripter's Kit plus a pre-release version of the scriptable Finder and development tools and a CD-ROM with additional documentation, sample code, and scripts. Apple also licenses the AppleScript runtime software and the script editor to commercial developers for shipment with their products.

Requirements

The AppleScript kits require System 7.0 or later and applications that are scriptable or recordable according to Apple's Open Scripting Architecture.

Compatibility

Compiled scripts created with AppleScript 1.0 may not run under

AppleScript 1.1. Scripters will either need to edit the compiled scripts or recompile scripts from their original text form under version 1.1.

Availability

Here are the order numbers for the AppleScript kits: AppleScript Scripter's Kit 1.1 (M1730LL/A) AppleScript Software Development Toolkit 1.1 (R0175LL/B) AppleScript Software Development Toolkit 1.1 Upgrade (R0557LL/A)

Volume purchases of site licenses are available for the AppleScript Scripter's Kit through the Apple volume licensing program. You can order the kit through software resellers, Apple authorized resellers and APDA -- Apple's source for developer tools. Advanced scripting support is available for a fee by calling (800) 950-2442.

AppleScript 1.0 is bundled with Quadra AV computers and comes as an enabling technology of System 7 Pro. Customers who own either or both of these products must purchase the AppleScript Scripter's Kit 1.1 in order to acquire AppleScript 1.1.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14282

AppleScript: Scriptable Applications (1/95)

Revised: 1/18/95
Security: Everyone

AppleScript: Scriptable Applications (1/95)

==========

Article Created: 13 December 1993
Article Reviewed/Updated: 18 January 1995

TOPIC --------------------

Currently there are many software development companies that make their application AppleScript scriptable. This article tells you how to determine if your application is AppleScript aware, and provides a partial list of known AppleScript aware applications.

DISCUSSION --------------------

Rather than trying to maintain a list of Apple Event-aware applications that would constantly be changing, we recommend using the following procedure to determine whether an application is Apple Event-aware.

Use the Script Editor that comes with the AppleScript software. Choose the Open Dictionary option under the File menu. Only Apple Event-aware applications will appear on the list of applications that AppleScript can open.

You can also call the software manufacturer to ask about Apple Event-aware status.

AppleScript is a system-software-level scripting facility that enables users to integrate the functionality of different applications into a custom solution designed to meet specialized needs.

New vendors announcing support for AppleScript represent a broad range of business and productivity software applications. Here is a partial listing:

ACIUS, Inc.
Advanced Software, Inc.
After Hours Software
Aladdin Systems
Aldus Corporation
Beyond Incorporated

Caere Corporation
Cambridge Science
Canto Software GmbH
CE Software, Inc.
Chang Labs
Chena Software
Claris Corporation
Concurrent Engineering Tools, Inc.
CTM Development
Cypress Research Corporation
Deneba Software
Ex Machina, Inc.
Glen Canyon Communication Software
Great Plains Software
Heizer Software
Imspace Systems Corporation
ISIS International
IT Makers
Linksware Corporation
Main Event
MapInfo Corporation
Microsoft Corporation
Milum Software Group
MotionWorks
Object Factory
Quark, Inc.
SAS Institute, Inc.
Scientific Visions
Shana Corporation
Simple Software
Snow International
Softsync/BLOC Publishing
Software Ventures Communication
Symantec Corporation
TGS Systems
Top Conseil Informatique
UserLand Software
Vividus Corporation
WordPerfect Corporation
Working Software

The AppleScript Scripter's Guide, which lists all scriptable applications, is available by contacting Cunningham Communication, Inc. at AppleLink address: CCI.CALIF.

Article Change History:
18 Jan 1995 - Included alternative for determining scriptable application.

Support Information Services

Copyright 1993-95, Apple Computer, Inc.

Tech Info Library Article Number:14283

HyperCard 2.2: Color and Media Integration (12/93)

Revised: 12/13/93
Security: Everyone

HyperCard 2.2: Color and Media Integration (12/93)

==========

Article Created: 13 December 1993

TOPIC --

This article, extracted from the Apple press release announcing HyperCard 2.2, describes the new Color Tools and media integration features.

DISCUSSION --

HyperCard's new Color Tools enhance the usability and visual appeal of existing and new solutions. In addition to importing and resizing color PICT graphics, users can select from a palette of 256 shades to color HyperCard elements such as buttons, fields, cards, and backgrounds. HyperCard's QuickTime tools allow users to incorporate movies into cards and stacks with point and click simplicity.

HyperCard continues to help multimedia authors differentiate their product by providing comprehensive multimedia capabilities in one environment. With ADDmotion II, HyperCard 2.2 facilitates easy media, color, and sound editing to help users enhance the value of new and existing stacks. ADDmotion II is a 24-bit color paint, animation and sound extension that integrates seamlessly into HyperCard and provides tools for controlling and editing animations and sounds.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14284

Tech Info Library

HyperCard: Again Supported by Apple (1/94)

Revised: 1/31/94
Security: Everyone

HyperCard: Again Supported by Apple (1/94)

==========

Article Created: 13 December 1993
Article Reviewed/Updated: 28 January 1994

TOPIC ----------

Starting December 13, 1993, HyperCard is again sold and supported by Apple Computer. Apple will offer both pre-sales and technical support. This article outlines the levels of HyperCard support offered, and how they can be ordered.

DISCUSSION ----------

Presales Support

For pre-sales support, call the Apple Assistance Center at 1-800-SOS-APPL (1-800-767-2775).

Up and Running Support

Up and running support will be offered free of charge by Apple via the Apple Assistance Center at 1-800-SOS-APPL. Up and Running support includes:
• Help with installation, compatibility, and configuration
• Basic product use: tools, menus, and command syntax

Up and running support is available Monday through Friday from 6 a.m to 6 p.m. Pacific time.

Advanced HyperCard Support (Scripting Support)

Apple will answer scripting questions, on a fee basis, for the current version, and for the immediately preceding version, of HyperCard and AppleScript. At this writing, that means HyperCard 2.1 and 2.2, and AppleScript 1.0 and 1.1.

Scripting support for HyperCard versions before 2.1 will be provided on a best-effort basis. If support cannot be provided, customers will not be

charged.

HyperCard scripting support includes: creating, modifying, and debugging stacks; and using HyperTalk commands.

Not included: stack concept and design, writing and using XCMDs (external commands), project management, or consultation.

Scripting support is available Monday through Friday from 6 a.m to 6 p.m. Pacific time. To order, call Apple at 1-800-950-2442.

Programming-Level Support

For programming-level development support, including use of XCMDs and OSAX, the Apple Macintosh Technology Partners Program is available. For information and/or an application, call the Developer Support Center at 1-408-974-4897.

Article Change History:
28 January 1994 - Scripting Support section re-worded.

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Tech Info Library Article Number:14286

Tech Info Library

Quadra 660AV: Capturing Video Frame Problem (12/93)

Revised: 12/13/93
Security: Everyone

Quadra 660AV: Capturing Video Frame Problem (12/93)

==========

Article Created: 13 December 1993

TOPIC -----

I'm trying to capture a video frame at 640 x 480 using the Video Monitor application. Video Monitor will not let me capture a video frame while my monitor is set to Thousands of Colors. I must set my monitor to 256 colors (8-Bit) to capture a frame of video. How many colors will my frame capture contain once it is saved to the hard disk?

DISCUSSION -----

The Macintosh Centris 660AV and Quadra 660AV come with 1MB of VRAM on the logic board, which is not expandable. When bringing video into the Centris 660AV and Quadra 660AV, you must set your monitor to 256 Colors (8-Bit) when using both Video Monitor and FusionRecorder. Even though your monitor is set to 256 Colors (8-Bit), you will be capturing your image or movie in Thousands of Colors (16-Bit).

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14287

Tech Info Library

DAL for AWS 95: DALInstall Requires 'whoami' (12/93)

Revised: 12/17/93
Security: Everyone

DAL for AWS 95: DALInstall Requires 'whoami' (12/93)

==========

Article Created: 13 December 1993

TOPIC -----

I have DAL 1.4 for the Apple Workgroup Server (AWS) 95. I am trying to install DAL and have it work with Oracle 7. I have followed the instructions, creating the directories, and so on, and then run DALInstall. I get the following error message: DALInstall: whoami not found.

Do you know what is the problem? Do you have any suggestions?

DISCUSSION -----

AAWS 95 installation does not install 'whoami' automatically. The instructions for installing DAL 1.4 on the AWS 95 did not include the information about installing 'whoami'. Once you install 'whoami' everything will work fine. We will forward this information for inclusion in the DALInstall instructions.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14290

Tech Info Library

DAL/VMS 1.4-Invalid Username/Psswd Error, ADSP Connect (12/93)

Revised: 1/11/94
Security: Everyone

DAL/VMS 1.4-Invalid Username/Psswd Error, ADSP Connect (12/93)

==========

Article Created: 13 December 1993

TOPIC ----------

I'm having a problem with DAL for VMS 1.4. Whenever I try to connect I get an error message which indicates an invalid username or password. I was able to use MacTerminal and the c-term tool to connect to the VAX. I used the same userid and password and was able to log on to the system. What am I missing?

DISCUSSION ----------

If you confirm that your username and password are good, one cause of this error message is the "Restricted" flag being set on the UAF record. When you consult the VAX/VMS documentation, it is vague and does not present the flag as a problem. By unsetting this flag, this problem often goes away.

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:14291

Tech Info Library

AV Series: 800K ProDOS Disks and Apple File Exchange (4/95)

Revised: 4/3/95
Security: Everyone

AV Series: 800K ProDOS Disks and Apple File Exchange (4/95)

==========

Article Created: 14 December 1993
Article Reviewed/Updated: 3 April 1995

TOPIC ----------

I have a large number of 800K ProDOS disks containing AppleWorks GS files which I would like to copy to my Quadra 660AV using Apple File Exchange. However, success in both mounting and reading this disks is inconsistent. At times, it takes two to three minutes to mount the disk for translation within Apple File Exchange. Other times, the disk cannot be read at all.

DISCUSSION ----------

ProDOS disks originally formatted on an Apple IIgs and then inserted into an AV Series Macintosh running Apple File Exchange 7.0 can take up to two or three minutes before the contents of the disk are displayed in the right side window of Apple File Exchange.

However, upon inserting a ProDOS disk Apple File Exchange does not indicate that any activity is taking place. For example, the cursor doesn't change into a watch, menus don't respond, or the floppy is accessed intermittently resulting in the appearance that the Macintosh might have frozen or crashed. Once the ProDOS disk contents are displayed however, complete functionality is restored to the Macintosh.

Therefore, Apple recommends patience when attempting to read ProDOS disks when using Apple File Exchange 7.0. Subsitiuting Macintosh PC Exchange version 2.0 or later for Apple File Exchange is a good alternative to waiting for Apple File Exchange, since Macintosh PC Exchange does recognize ProDOS disk formats. However, any version of PC Exchange prior to 2.0 will not work.

Another work around is connect the Apple IIgs to the Centris 660AV using an AppleTalk network and transferring any ProDOS files to the AV Series Macintosh using System 7.x FileSharing.

Article Change History:

03 Apr 1995 - Added information about PC Exchange 2.0.
21 Jul 1994 - Retitled to better describe article.

Support Information Services

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Tech Info Library Article Number:14295

Tech Info Library

AV Series: Virtual Memory conflict with DeskWriter 550c (12/93)

Revised: 12/14/93
Security: Everyone

AV Series: Virtual Memory conflict with DeskWriter 550c (12/93)

==========

Article Created: 14 December 1993

TOPIC --------------------

I have a Centris 660AV computer with 8 MB of RAM and Virtual Memory turned on. I cannot print to my DeskWriter 550c using the DeskWriter 3.9 AppleTalk Driver.

DISCUSSION --------------------

Turn off virtual memory and you'll be able to print to the DeskWriter 550c.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14296

Tech Info Library

Centris/Quadra 660AV: No Heat Sink on the 68040 (4/95)

Revised: 4/25/95
Security: Everyone

Centris/Quadra 660AV: No Heat Sink on the 68040 (4/95)

==========

Article Created: 14 December 1993
Article Reviewed/Updated: 25 April 1995

TOPIC -----

Isn't 68040 CPU (central processing unit) used in the Centris 650 the same as that used in the Centris 660AV and Quadra 660AV?

If so, why is there not a heat sink mounted on the 68040 in the Centris 660AV and Quadra 660AV?

DISCUSSION -----

Both the Centris 650 and the Centris 660AV use a Motorola MC68040 CPU running at 25 MHz.

The original MC68040 25 MHz chips that came from Motorola required the use of a heat sink on the Centris 650 to reduce the amount of heat generated by the chip. A new version of processor now used in Centris 660AV and Quadra 660AV no longer require the heat sink.

Article Change History:
25 Apr 1995 - Corrected spelling of sink.

Support Information Services

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Tech Info Library Article Number:14297

Tech Info Library

Quadra 840AV: Personal LaserWriter NTR Printing Problem (12/93)

Revised: 12/14/93
Security: Everyone

Quadra 840AV: Personal LaserWriter NTR Printing Problem (12/93)

==========

Article Created: 14 December 1993

TOPIC ----------

I have a Quadra 840AV connected to a Personal LaserWriter NTR and I cannot print to the LaserWriter. I have checked the connections between the computer and the printer and have the latest version of the Personal LaserWriter NTR driver software installed. When printing, I either get a postscript error and or a message stating that the printer cannot be found.

DISCUSSION ----------

The following steps have proven successful in restoring the ability to print from a Quadra 840AV to a Personal LaserWriter NTR:

1) Ensure Speech Recognition is turned off.

2) Ensure that Virtual Memory is turned off.

3) Check to see if the Printer is connected to the Quadra 840AV's printer port so that the built in LocalTalk connected can be used.

4) Reinstall the printing software for the Personal LaserWriter NTR.

5) Zap the PRAM of the Quadra 840AV (RAM parameter settings). Hold down the Command, option, P and R keys while starting up the Quadra. The Quadra will start up normally but after several seconds will restart once again.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14299

Tech Info Library

Centris, Quadra 660AV: Video Capture Issues (12/93)

Revised: 12/14/93
Security: Everyone

Centris, Quadra 660AV: Video Capture Issues (12/93)

==========

Article Created: 14 December 1993

TOPIC ----------

I'm attempting to capture quality screen snapshots using the Video Monitor application on my Centris 660AV. I'm experiencing the following strange effects:

1) A black band line (about 3 pixels wide) appears at the bottom of the picture when taking screen snapshots with Video Monitor. This occurs when using both Composite In and S-Video In as the video source. Is there a work around?

2) When capturing S-Video, I get an extremely bright picture when using the lowest video setting in S-Video. When using Composite Video In, it works fine. Is there any way to adjust the brightness beyond the Video Settings?

3) I'm concerned that the Centris 660AV is not utilizing all of the resolution lines that my still camera outputs. The camera is capable of putting out 450 Resolution lines. Does the Centris 660AV utilize all of these lines. Customer is concerned that the Centris 660AV is digitizing with field resolution as opposed to frame resolution. How many of the resolution lines does the Centris 660AV utilize in the Video Monitor application?

DISCUSSION ----------

Of the two Macintosh AV systems (the Centris/Quadra 660AV and the Quadra 840AV), the Quadra 840AV has better capture characteristics largely due to the option to have an additional 1MB of VRAM installed. Given the fact, here are the answers to your questions:

1) The black band is most likely the blanking part of the video frame. The AV digitizer expects a certain number of lines and we've have seen this occur on other video digitizers. The signal contains the blanking

information and is normally outside the display area of the typical television monitors.

Due to the vast amount of history with the NTSC standard, there is some "freedom" about exactly how blanking works. If the number of image lines the AV digitizer is expecting is more than what the source supplies, there will be visible blanking info at the bottom of the image (or at times, on one of the edges).

When capturing still frames it is relatively easy to fix these captured images using an application like Photoshop or Painter. Simply use their tools to Crop out the unwanted area. While not an ideal solution, it is only one available to eliminate this part of the display. Some video capture applications provide a crop rectangle so that cropping can be specified prior to the capture.

2) Based on what the AV expects in a video signal, it is possible to over saturate the bright areas of an image. Over saturatation is easier to introduce with S-video because you have a stronger signal available. Choosing the VCR option (instead of the TV/video disc option) in the video input control panel provides the best setting in such situations. The best way to control the brightness is during the shooting of the video. Keeping the contrast ratio as low as possible will provide the best results.

3) There are two issues to consider in the area of video resolution versus computer pixels. First, the output of the analog video device does not always map directly to the pixel count of the digital device.

Second, concerns the number of pixels that are captured by the AV system. Based on VRAM of 1MB, a true 640x480 image can not be captured. A 640x480 image can be created, but it will use line-doubling from single field to produce the full screen image. To get a full 640x480 image using both fields 2MB of VRAM is required. The 1MB limits the dual field/undoubled line image to 496x372 pixels.

Some additional thoughts to consider on single field versus single frame, which uses both fields: If the capture image is 240 or less lines vertical 1 field is dropped to scale the image. Two examples:

- First case, 1MB VRAM - if the capture image is greater than 240 lines vertical or is equal to/less than 372 lines vertical, then both fields are used. A scalar chip is used to scale the information from the two fields.

- Second case, 2MB VRAM (840AV only) - if the capture image is greater than 240 lines vertical, up to 480 lines vertical, both fields are used. Again a scalar chip is used to scale both fields to the selected image size.

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Tech Info Library Article Number:14300

Tech Info Library

Peter’s Adventure Series: System Requirements (12/93)

Revised: 12/14/93
Security: Everyone

Peter’s Adventure Series: System Requirements (12/93)

==========

Article Created: 14 December 1993

TOPIC -----

What are the system requirements of the Peter's Adventure series of games?

DISCUSSION -----

Peter's Adventure is a series of CD-ROM based games consisting of Peter's Numbers Adventure, Peter's Alphabet Adventure and Peter's Magic Adventure.

The Peter's Adventure series has the following system requirements:

1) A Macintosh LC computer or later with at least 5 megabytes of memory, System 6.0.7 or later, 32-Bit QuickDraw, and QuickTime version 1.5 or later.

2) A Macintosh monitor which displays at least 640 by 480 pixels and 256 colors.

3) A Macintosh-compatible CD-ROM drive.

4) 2560K allocated memory for Peter's Numbers Adventure and Peter's Magic Adventure, and 3072K allocated memory for Peter's Alphabet Adventure.

QuickTime Version

If you do not have QuickTime installed, you will see an error message. Note that each of the Peter's Great Adventure CDs has QuickTime v 1.6, which you can drag to the Extensions Folder inside your Macintosh's System Folder if you don't currently have QuickTime.

Number of Colors

If your Macintosh computer is not set to 256 color mode, you will receive an

error message. To set your Macintosh to display 256 colors, follow these steps:

1) Select Control Panel from the Apple Menu, then double-click on Monitors.

2) Select 256 and click on Color in the Monitor Control Panel, then close the control panel by clicking the close-box.

If your Macintosh does not support 256 colors, you must add VRAM or a video board that supports 256 colors.

Number of Pixels

If your monitor does not display at least 640 by 480 pixels, you will receive an error message. You must attach such a monitor to your Macintosh to play Peter's Adventure.

Memory

If you do not have enough memory available, your system may suddenly "crash" or stop operating. If this happens, follow these steps:

1) Go to the Finder and select About this Macintosh from the Apple Menu. The largest unused block must be at least 2560K for Peter's Numbers Adventure and Peter's Magic Adventure, and 3072K for Peter's Alphabet Adventure.

2) If you do not have this much memory, remove extensions and/or control panels that are not needed to run Peter's Adventure. Do NOT remove the QuickTime extension.

Note that using Virtual Memory will cause Peter's Adventure to run erratically and is not recommended.

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Tech Info Library Article Number:14301

Tech Info Library

Peter’s Adventure Series: Icon Missing from Desktop (12/93)

Revised: 12/14/93
Security: Everyone

Peter’s Adventure Series: Icon Missing from Desktop (12/93)

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Article Created: 14 December 1993

TOPIC --------------------

Why can’t I see the Peter's Adventure icon on my Desktop?

DISCUSSION --------------------

Check your system for the following conditions:

1) Ensure that your CD-ROM drive is turned on and plugged into an live electrical outlet.

2) Ensure the CD-ROM drive is properly connected to your Macintosh computer's SCSI port (consult your CD-ROM drive’s manual for instruction).

3) Ensure the CD-ROM drive’s SCSI ID number does not conflict with another SCSI device’s ID number (consult your CD-ROM drive’s manual for further information).

4) Ensure all CD-ROM drivers are installed.

5) Turn on your CD-ROM drive before your turn on your Macintosh. If your CD-ROM drive is already turned on, restart your Macintosh.

6) Use another CD-ROM disc. This will narrow down the problem to either the your system set-up or your CD-ROM disc.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14302

Tech Info Library

Peter's Adventure Series: Erratic Sound and Animation (12/95)

Revised: 12/12/95
Security: Everyone

Peter's Adventure Series: Erratic Sound and Animation (12/95)

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Article Created: 14 December 1993
Article Reviewed/Updated: 12 December 1995

TOPIC ----------

Why does the sound and animation in the Peter's Adventure series play erratically?

DISCUSSION ----------

Erratic sound and animation can be caused by the following phenomena:

1) The CD-ROM itself may be dirty (fingerprints, dust, etc.). Clean your CD-ROM with a dry, soft, lint-free cloth. Be sure to wipe from the center of the CD straight out (not in a circular motion around the disk).

2) There may be applications running in the background on your Macintosh. You must quit other all applications.

3) You may have turned on File Sharing. Ensure that File Sharing is off before running Peter's Adventure.

4) You may turned on Virtual Memory. Ensure that Virtual Memory is off. If you do not have enough memory, add additional memory

5) If you are using an older and/or slower Macintosh such as an LC or LC II, Peter's Adventure may occasionally behave erratically. If you are planning on using a significant amount of CD-ROM multimedia and want optimum performance, consider upgrading.

6) If you are using an early or single speed CD player, such as an AppleCD SC, AppleCD 150, or PowerCD, Peter's Adventure may behave erratically. You may want to consider upgrading to an AppleCD 300.

7) The Sound Manager 3.0 extension may cause erratic sound with Peter's Adventure Series CD-ROM discs. The only workaround is to remove the Sound

Manager 3.0 extension from the Extensions folder of your System Folder and restart your computer before running a Peter's Adventure disc.

Article Change History:
12 Dec 1995 - Added Sound Manager 3.0 information.
07 Sep 1995 - Made minor corrections.

Support Information Services

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Tech Info Library Article Number:14303

AWS 95, AppleShare Pro and Non-root Users (12/93)

Revised: 12/14/93
Security: Everyone

AWS 95, AppleShare Pro and Non-root Users (12/93)

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Article Created: 14 December 1993

TOPIC ----------

This article describes why the Apple Workgroup Server (AWS) 95 will not allow non-root users to run AppleShare Pro. Also the use of a screen saver with password protection will provide security.

DISCUSSION ----------

There are no plans to implement support for non-root users to run AppleShare Pro on the AWS 95. Its implementation has been investigated and the effort necessary to make such a change would be great.

Several factors were considered before arriving at this decision. Since AppleShare Pro requires write access to the "/" volume for the creation of the PDS file, it needs to be a root process. Other administrative functions require root access as well. For example, mounting file systems, initializing a hard disk, making a new file system, the creation of a new kernel, modifying the A/UX Buffer Cache which changes the A/UX kernel, and so on.

If the AWS 95 is in a situation where security is a concern, we suggest the use of a screen saver which allows for password protection. You must use a module that does not require CPU cycles to work. For example, AfterDark, using the FadeAway module with the SystemIQ monitor enabled. Any other AfterDark module will affect the server performance.

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Tech Info Library Article Number:14304

Tech Info Library

Using America Online with a GeoPort Modem (11/94)

Revised: 11/30/94
Security: Everyone

Using America Online with a GeoPort Modem (11/94)

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Article Created: 14 December 1993
Article Reviewed/Updated: 29 November 1994

TOPIC ----------

This article explains how to set up your GeoPort modem to connect to America Online (AOL).

DISCUSSION ----------

If you have AOL software version 2.51 you should not have any problems connecting. AOL version 2.51 is the version recommended by AOL for the GeoPort modem. The modem set up strings are preconfigured for use with this modem. If you are having problems connecting to America Online with version 2.51, please contact AOL for further assistance.

Using earlier versions of the AOL software can cause the Geoport Telecommunications pod to exhibit a buzzing sound until the pod is disconnected from the computer and reconneted OR until the computer is restarted. This problem would normally be very intermitent.

If you have AOL software prior to version 2.51 and you are having problems connecting to America Online using your GeoPort modem, you may need to take a few simple steps to correct the problem.

1) Go into your Control Panels folder, and double-click on the EXPRESS MODEM Control Panel. Make sure that the "Express Modem:" option is set to "On", and the "Modem Port Setting" option is set to "Use Express Modem".

2) Also in the Control Panels folder, double-click on the "Speech Setup" Control Panel. Make sure that "Speech Recognition" is set to "Off".

3. Finally, you may need to use a "Modem Initialization String" to configure that modem properly for use with America Online.

To enter a modem string in the America Online software:

- Launch America Online by double-clicking the AOL application icon.
- Click on the "Setup" button.
- On the next screen, click on the "Edit Modem Strings" button, and you'll see a screen with 3 (three) boxes for modem strings shown there.
- Enter one of the following strings, in the box labeled "Modem Initialization String":

  AT&F&K0&Q0

  or: AT\N1&Q0

Make sure that the modem string is typed all in capital letters, with no spaces, and always use ZERO for "0", NOT the letter "o".

If you follow all of the steps mentioned above, you should be able to connect to America Online without any further difficulties. If problems persist, see information on this BBS about Software Conflicts, Hard Drive Compression, or other possible problems which may be preventing you from connecting to America Online.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Article Change History:
29 Nov 1994 - Added information about version 2.51 of AOL.
12 Jul 1994 - Added information about version 2.1 of AOL.

Support Information Services

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Tech Info Library Article Number:14305

Tech Info Library

MacTCP 1.1 and Quadra 610 Problem (12/93)

Revised: 12/16/93
Security: Everyone

MacTCP 1.1 and Quadra 610 Problem (12/93)

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Article Created: 14 December 1993

TOPIC ----------

I have MacTCP Version 1.1 and NCSA Telnet 2.5. My new Macintosh Quadra 610 is connected to a GatorStar GXR via LocalTalk which is then being routed to Ethernet. Before we had the Quadra 610 we had a Classic II connected in the same location.

Now, MacTCP is defaulting to Ethernet and we can not connect up to the LocalTalk side for connecting to the Ethernet via the GatorStar. When I open up the MacTCP control panel all is see at the top is the Ethernet Driver.

Is there a way to make MacTCP use the AppleTalk port on a Macintosh with on board Ethernet?

DISCUSSION ----------

MacTCP 1.1 is not compatible with System 7.1. MacTCP 1.1.1 or later should be used instead.

The main problem with MacTCP 1.1 and System 7.1 is that MacTCP 1.1 changes some values in low memory that System 7.1 relies on. With these values changed, System 7.1 will sometime crash and possibly corrupt an internal resource.

Also, MacTCP 1.1 does not display the LocalTalk mdev in the MacTCP Control Panel under System 7.1.

Because of this, MacTCP 1.1 and earlier are not recommended or supported under System 7.1. If you continue to use MacTCP 1.1 with System 7.1, you are doing so at their own risk.

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Tech Info Library Article Number:14306

Tech Info Library

StyleWriter Ink Cartridges: Prevent Clogging (12/93)

Revised: 12/16/93
Security: Everyone

StyleWriter Ink Cartridges: Prevent Clogging (12/93)

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Article Created: 16 December 1993

TOPIC ----------

The StyleWriter ink cartridges (both StyleWriter & StyleWriter II) are clogging. The print head moves but no ink comes out.

DISCUSSION ----------

This is caused by air in the cartridge. When installing a new cartridge be sure the purge function occurs BEFORE any printing is attempted.

For the StyleWriter, this function is initialed by the user.

For StyleWriter II two purges are performed automatically when the cartridge is replaced. In the event that the cartridge does not print have the user check that the purge boot is correctly in place and the orange cartridge tape is removed from the print head. The user should purge the cartridge 5 times. If this does not cure the problem, it is likely the cartridge has been damaged. The damage is due to a film that develops when the heating element inside the print head heats up without ink.

The fix is to replace the cartridge. Always purge a new cartridge 5 times. StyleWriter II customers will get 2 automatic purges, so they will only need 3 additional. This will prevent repeat occurrences.
NOTE: Most StyleWriter II cartridges work fine after the 2 automatic purges.

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Tech Info Library Article Number:14309

A/UX 3.0.2: Software Handshaking With stty (12/93)

Revised: 12/17/93
Security: Everyone

A/UX 3.0.2: Software Handshaking With stty (12/93)

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Article Created: 16 December 1993

TOPIC -----

Under A/UX 3.0.2, when we try to set the /dev/tty0 to use software handshaking (Xon/Xoff) using 'stty', /dev/tty0 seems to accept but ignore whatever 'stty' setting we provide it with, any suggestion?

DISCUSSION -----

In A/UX, some of flow control tty settings such as 'modem', 'dtrflow', and so on are maintained across last close. This means the flow control settings are "remembered" when a tty device is closed and reopened again. However, other termio characteristics like software flow control (ixon, ixoff), speed (50, 75, 1200, and so on), parity (parenb, parodd, and so on), input modes (ignbrk, brkint, istrip, and so on), local modes (echo, echok, and so on) are set to the default settings when the tty line is closed. The default setting for software flow control on tty0 is off.

In order to make the 'stty' settings affected and still keep the tty port open put a sleep statement, 'sleep 99999' for example, after the 'stty' command. In your case, you may do:

```
(stty hupcl ixon ixoff; sleep 99999) < /dev/tty0 &
```

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Tech Info Library Article Number:14310

Tech Info Library

LaserWriter 810 & 360: Fax Option Error Checking (12/93)

Revised: 12/17/93
Security: Everyone

LaserWriter 810 & 360: Fax Option Error Checking (12/93)

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Article Created: 17 December 1993

TOPIC ----------

Do the fax options for the LaserWriter Pro 810 and LaserWriter Select 360 perform any error checking when transmitting and receiving data?

DISCUSSION ----------

Group 3 fax machines incorporate a means for identifying the optional features that are available on the receiving fax machine during the initial connection and identification phase. Better quality fax machines including the LaserWriter Pro 810 and LaserWriter Select 360 fax options support the ECM error correction method in both the group 3 and PostScript fax modes. ECM is a method for error correction where the facsimile data to be transmitted is divided into data units each having a certain length, so that when any error occurs during data transmissions the applicable data unit is resent. Both the sending and receiving fax machines must support ECM for the option to be enabled.

The Group 3 raster fax data is sent in packets with a CRC byte. If the CRC byte is bad then the receiving station will keep requesting retransmission of the packet until it is successfully received.

The above information applies to Group 3 fax jobs. All PostScript fax jobs transmitted to other PostScript fax printers will always use ECM error correction since a single error can prevent a PostScript job from printing.

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Tech Info Library Article Number:14311

Tech Info Library

AppleScript: Apple Event Manager Not Loading (1/95)

Revised: 1/12/95
Security: Everyone

AppleScript: Apple Event Manager Not Loading (1/95)

==========

Article Created: 17 December 1993
Article Reviewed/Updated: 12 January 1995

TOPIC -----

I have a Quadra 800 running System 7.1, Apple Event Manager 1.0.1 and AppleScript 1.0.

Occasionally, on startup, the Apple Event Manager has an red "X" through it, indicating that it's not loading. When this happens there seems to be extra disk activity (after a normal restart) preceding the red "X". Rebooting does not clear up the problem.

Using the Extension Manager (from Apple) to disable all but these two extensions does not clear it up. I have found that to clear this up, I must Zap PRAM and reboot twice! On the first reboot the Apple Event Manager does not load properly. I reset 32-bit addressing and cache size in the Memory Control Panel as well as other settings cleared by resetting the PRAM. On the next startup the Apple Event Manager initialized properly.

What conditions cause this extension not to load?

DISCUSSION -----

Engineering has released version 1.0.3 of the Apple Event Manager which corrects the problem described above. Please be sure to remove all other copies of the Apple Event Manager (note the space in front of the name - a customer might drag 1.0.3 into his Extensions folder, thinking it would replace the older version, but it wouldn't because of the filename difference).

Version 1.0.3 is also on AppleLink:

Software Sampler
Apple SW Updates
Macintosh
Supplemental Software

Please note that this problem goes away with AppleScript 1.1, because the functionality of the Apple Event Manager extension has been rolled into the AppleScript extension.

Article Change History:
12 Jan 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:14313

Tech Info Library

Travelrama: Icon Missing from Desktop (11/95)

Revised: 11/30/95
Security: Everyone

Travelrama: Icon Missing from Desktop (11/95)

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Article Created: 17 December 1993
Article Reviewed/Updated: 30 November 1995

TOPIC ----------

Why can’t I see the Travelrama icon on my Desktop?

DISCUSSION ----------

Check your system for the following conditions:

1) Ensure that your CD-ROM drive is turned on and plugged into a live electrical outlet.

2) Ensure the CD-ROM drive is properly connected to your Macintosh computer's SCSI port (consult your CD-ROM drive’s manual for instruction).

3) Ensure the CD-ROM drive’s SCSI ID number does not conflict with another SCSI device’s ID number (consult your CD-ROM drive’s manual for further information).

4) Ensure all CD-ROM drivers are installed.

5) Turn on your CD-ROM drive before your turn on your Macintosh. If your CD-ROM drive is already turned on, restart your Macintosh.

6) Use another CD-ROM disc. This will narrow down the problem to either your system set-up or your CD-ROM disc.

Article Change History:
30 Nov 1995 - Corrected minor typo.

Support Information Services

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..TIL14315-Travelrama-Icon_Missing_from_Desktop_11-95_(TA30906).pdf

Tech Info Library Article Number:14315

Tech Info Library

Travelrama: System Requirements (11/95)

Revised: 11/30/95
Security: Everyone

Travelrama: System Requirements (11/95)

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Article Created: 17 December 1993
Article Reviewed/Updated: 30 November 1995

TOPIC ----------

What are the system requirements of Travelrama?

DISCUSSION ----------

The Travelrama game has the following system requirements:

1) A Macintosh LC III computer or other color Macintosh with a 68030 or faster processor (68040 recommended), 4 megabytes of memory (5 megabytes recommended), and System 7.1 or later.

2) A Macintosh-compatible 13-inch or larger RGB monitor which displays at least 640 by 480 pixels and 256 colors.

3) A Macintosh-compatible CD-ROM drive (double-speed CD-ROM drive recommended).

4) 2000K minimum allocated memory (2300K preferred) to run the game.

Number of Colors

If your Macintosh computer is not set to 256 color mode, you will receive an error message. To set your Macintosh to display 256 colors, follow these steps:

1) Select Control Panel from the Apple Menu, then double-click on Monitors.

2) Select 256 and click on Color in the Monitor Control Panel, then close the control panel by clicking the close-box.

If your Macintosh does not support 256 colors, you must add VRAM or a video

board that supports 256 colors.

Number of Pixels

If your monitor does not display at least 640 by 480 pixels, you will receive an error message. You must attach such a monitor to your Macintosh to play Travelrama.

Memory

If you do not have enough memory available, your system may suddenly "crash" or stop operating. If this happens, follow these steps:

1) Go to the Finder and select About this Macintosh from the Apple Menu. The largest unused block must be at least 2000K.

2) If you do not have this much memory, remove extensions and/or control panels that are not needed to run Travelrama.

Note that using Virtual Memory will cause Travelrama to run irratically and is not recommended.

Article Change History:
30 Nov 1995 - Updated format.

Support Information Services

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Tech Info Library Article Number:14316

Tech Info Library

Wacky Jacks: Icon Missing from Desktop (12/93)

Revised: 12/17/93
Security: Everyone

Wacky Jacks: Icon Missing from Desktop (12/93)

==========

Article Created: 17 December 1993

TOPIC -----

Why can’t I see the Wacky Jacks icon on my Desktop?

DISCUSSION -----

Check your system for the following conditions:

1) Ensure that your CD-ROM drive is turned on and plugged into an live electrical outlet.

2) Ensure the CD-ROM drive is properly connected to your Macintosh computer's SCSI port (consult your CD-ROM drive’s manual for instruction).

3) Ensure the CD-ROM drive’s SCSI ID number does not conflict with another SCSI device’s ID number (consult your CD-ROM drive’s manual for further information).

4) Ensure all CD-ROM drivers are installed.

5) Turn on your CD-ROM drive before your turn on your Macintosh. If your CD-ROM drive is already turned on, restart your Macintosh.

6) Use another CD-ROM disc. This will narrow down the problem to either the your system set-up or your CD-ROM disc.

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Tech Info Library Article Number:14317

Tech Info Library

Wacky Jacks: System Requirements (12/93)

Revised: 12/17/93
Security: Everyone

Wacky Jacks: System Requirements (12/93)

==========

Article Created: 17 December 1993

TOPIC ----------

What are the system requirements of the CD-ROM game, Wacky Jacks?

DISCUSSION ----------

The Wacky Jacks game has the following system requirements:

1) A Macintosh LC III computer or other color Macintosh with a 68030 or faster processor (68040 recommended), 4 megabytes of memory (5 megabytes recommended), and System 7.1 or later.

2) A Macintosh-compatible 12-inch or larger RGB monitor which displays at least 640 by 480 pixels and 256 colors.

3) A Macintosh-compatible CD-ROM drive (double-speed CD-ROM drive recommended).

4) 1600K minimum allocated memory (1800K preferred) to run the game.

Number of Colors

If your Macintosh computer is not set to 256 color mode, you will receive an error message. To set your Macintosh to display 256 colors, follow these steps:

1) Select Control Panel from the Apple Menu, then double-click on Monitors.

2) Select 256 and click on Color in the Monitor Control Panel, then close the control panel by clicking the close-box.

If your Macintosh does not support 256 colors, you must add VRAM or a video board that supports 256 colors.

Number of Pixels

If your monitor does not display at least 640 by 480 pixels, you will receive an error message. You must attach such a monitor to your Macintosh to play Wacky Jacks. Note that there is a special version of Wacky Jacks which will run on a 12-inch monitor or a Color Classic, but some graphics may be cropped and other items may not be centered on the screen.

Memory

If you do not have enough memory available, your system may suddenly "crash" or stop operating. If this happens, follow these steps:

1) Go to the Finder and select About this Macintosh from the Apple Menu. The largest unused block must be at least 1600K.

2) If you do not have this much memory, remove extensions and/or control panels that are not needed to run Wacky Jacks.

Note that using Virtual Memory will cause Wacky Jacks to run erratically and is not recommended.

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Tech Info Library Article Number:14318

Tech Info Library

Wacky Jacks: Why Do I Lose Sound? (12/93)

Revised: 12/17/93
Security: Everyone

Wacky Jacks: Why Do I Lose Sound? (12/93)

==========

Article Created: 17 December 1993

TOPIC ----------

Why do I sometimes lose sound when I run Wacky Jacks?

DISCUSSION ----------

This is generally caused by a lack of application memory or by not having your computer's sound turned up. Here are some items to check:

1) Ensure that you have enough system memory available to run Wacky Jacks. If you do not, make more memory available by closing other applications or by adding memory to your computer.

2) Set your Minimum and Preferred memory size to 2300K. To do this, create a new folder on your hard drive and copy the Wacky Jacks application into that folder. Then, create aliases of all other Wacky Jacks folders and copy them into the new folder. Finally, click the Wacky Jacks icon, choose Get Info from the File Menu, then change the Minimum and Preferred memory size to 2300K.

3) Remove Sound Manager 3.0 and use the System 7.x sound resources instead. Sound Manager 3.0 offers superior sound quality, but uses slightly more memory.

4) Ensure that you have the volume turned up in your Sound Control Panel.

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Tech Info Library Article Number:14319

ARA MultiPort Server: Read Me File (12/93)

Revised: 12/17/93
Security: Everyone

ARA MultiPort Server: Read Me File (12/93)

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Article Created: 16 December 1993

TOPIC -----

This article contains the Read Me file for the Apple Remote Access Multiport Server.

DISCUSSION -----

APPLE REMOTE ACCESS MULTIPORT SERVER READ ME

This document provides late-breaking news about the Apple Remote Access MultiPort Server not covered in the “Apple Remote Access MultiPort Server Administrator’s Guide.” You may need to refer to that guide to understand the use of several terms in this document.

Modems supported by the Apple Remote Access MultiPort Server

The Remote Access MultiPort Server supports any Hayes-compatible 9600-bps or higher-speed modem with the appropriate script. Modem scripts for many popular modems are provided on the Apple Remote Access MultiPort Server installation disks, including:

United States

V.fast modems:
- Motorola Codex 3260fast

V.32bis modems (14,400 bps):
- Hayes Ultra 144
- Motorola Codex 3260
- US Robotics Courier V.32bis

V.32 modems (9600 bps):
- Hayes Ultra 96

```
  Telebit T1600
  UDS/Motorola 3225
  UDS/Motorola 3227
  US Robotics Sportster
  US Robotics Worldport

ISDN support:
  Hayes ISDN Adapter

Germany
-------
25,000 bps:
  Motorola 326x (Fast) v2

19,200 bps:
  MDG 19K2-31 v2
  MDG14MX-22 v2

14,400 bps:
  euroScout v2
  PriCom 14.4  v2
  TELEJET 14400 v2

9600 bps:
  FURY 9600 TI v2
  MicroLink 9624 v2

2400 bps:
  CN-3532 SA Plus v2
  CN-3532 SA v2
  MicroLink 2410 v2

Switzerland
-----------
19,200 bps:
  ZyXEL U-1496

9600 bps:
  FURY 9600 TI v2
  NOKIA PMD 9600

NOTE:  The U.S. scripts listed above are also installed in all other
countries.

9600-bps or higher-speed modem scripts included with the Apple Remote Access
Client for Macintosh software can also be used with the Apple Remote Access
MultiPort Server.

If you're familiar with connection control languages (CCLs), you can also
write the appropriate script for your modem by using the “Apple Remote Access
Scripting Guide” and the Modem WorkShop software, which are included with the
Apple Remote Access MultiPort Server.
```

Using an MNP 10 modem

MNP 10 is an error-correction protocol that allows for more reliable data connections made through cellular modems.

Cellular phones with modems that have MNP 10 capabilities generally cannot receive a callback from a server due to variations in how phones answer incoming calls. Use a different security verification method than callback for cellular clients.

Using a Remote Access MultiPort Server with an Apple Internet Router

The Remote Access MultiPort Server may coexist on the same Macintosh with the Apple Internet Router version 3.0.1 or later. If Apple Internet Router 3.0 is installed, you must upgrade to Apple Internet Router 3.0.1 before installing the MultiPort Server. You may obtain this software through your authorized Apple reseller or representative, AppleLink, or the Apple Customer Assistance Center.

Using the Remote Access MultiPort Server with AppleShare

If AppleShare 4.0 is installed on the same Macintosh as the Apple Remote Access MultiPort Server is to be installed on, you must upgrade to 4.0.1 before installing the MultiPort Server. The Apple Remote Access MultiPort Server and AppleShare 4.0.1 can be active concurrently. You may obtain this software through your authorized Apple reseller or representative, AppleLink, or the Apple Customer Assistance Center.

Using the Remote Access MultiPort Server with Macintosh File Sharing

You cannot use the Remote Access MultiPort Server software concurrently with System 7 Macintosh file sharing. When you start the Remote Access Manager program, you will be asked to convert the Users & Groups Data File. After it is converted, only Remote Access Manager and AppleShare 3.0 (or later) can use the Users & Groups Data File.

Using the MultiPort Server on Macintosh computers with 7-inch NuBus Cards

Macintosh computers that use 7-inch NuBus™ cards only (such as the Macintosh Centris 610 and Macintosh Centris 660AV) may not be supported at this time by the Apple Remote Access MultiPort Server. Consult your authorized Apple reseller or representative for more information.

Using the Remote Access MultiPort Server with the built-in serial ports

The built-in serial ports in your Macintosh are not available for use with the Remote Access MultiPort Server.

Automatically starting the Remote Access MultiPort Server

If you want the MultiPort Server to start automatically after you restart your computer, or if you want the server to restart after a power failure, place the Remote Access Manager application (or an alias) in the Startup Items folder, located in the System Folder. The MultiPort Server will only start automatically if it was running the last time you quit the Remote Access Manager application.

Printing the Remote Access MultiPort Server Log

For best results when printing the Remote Access Manager server log, choose Page Setup from the File menu and then select the following options:

1. In the Orientation section of the dialog box, select the landscape page orientation (the option on the right).

2. In the Reduce or Enlarge box, type 70.

Using the Remote Access MultiPort Server with a security zone

If a security zone is advertised by a network router, make sure the security zone is available when Remote Access Manager ports are configured and turned on. Otherwise, when an Apple Remote Access user dials in, the user will be disconnected and the port turned off. See the “Apple Remote Access Security Zone Read Me” file (on the “Apple Remote Access MultiPort Server Toolkit” disk) for more information.

Zone lists and server performance

Overall performance of the MultiPort Server may be diminished if a large number of zones are included as part of a user’s zone access privileges. If you wish to allow or disallow a user’s access to a large number of zones, it would be better to choose either “All Zones except listed” or “Only Zones listed,” respectively. (See the section “Creating a New User” in Chapter 3 of the “Apple Remote Access MultiPort Administrator's Guide” for details on how to set these options.) Always try to minimize the number of zones in a user’s zone list for best performance.

Reinstalling the Remote Access MultiPort Server software

If you reinstall the MultiPort Server software and want to keep your server preferences and port configuration, move the MultiPort Server Preferences and Remote Access Preferences files out of your Preferences folder (in the System Folder) before reinstalling the MultiPort Server. After you reinstall the software, replace the newly installed MultiPort Server Preferences and Remote Access Preferences files with your original files.

NOTE: Only replace the MultiPort Server Preferences file with the original file if you know that your original file is not damaged. Your MultiPort Server will not start with a damaged MultiPort Server Preferences file.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14320

ARA Personal Server: Read Me File (12/93)

Revised: 12/17/93
Security: Everyone

ARA Personal Server: Read Me File (12/93)

==========

Article Created: 17 December 1993

TOPIC -----

This article contains the Read Me file for the Apple Remote Access Personal Server.

DISCUSSION -----

APPLE REMOTE ACCESS PERSONAL SERVER FOR MACINTOSH READ ME

This document provides late=breaking news about the Apple Remote Access Personal Server not covered in the “Apple Remote Access Personal Server User’s Guide.” You may need to refer to that guide to understand the use of several terms in this document.

Modems supported by the Apple Remote Access Personal Server

Modem scripts for many popular modems are provided on the Remote Access Personal Server installation disks, including:

United States

V.32bis modems (14,400 bps):
- Apple Express Modem
- Global Village PowerPort Gold
- Global Village TelePort Gold
- Hayes Optima 144
- Microcom QX4232bis
- Prometheus ProModem 144e
- PSI Powermodem IV
- Supra SupraFax v.32bis
- Telebit WorldBlazer

V.32 modems (9600 bps):

```
    Global Village PowerPort Silver
    Global Village TelePort Silver
    Prometheus Promodem 96
    PSI Powermodem III
    Supra SupraFax Modem Plus
    Telebit QBlazer
    Telebit T1600
    US Robotics Sportster

  V.22bis modems (2400 bps):
    Apple 2400
    Global Village PowerPort Bronze
    Global Village TelePort Bronze
    Hayes Optima 2400
    Microcom AX 2400C
    Prometheus Promodem 24
    PSI PowerModem II

  Cellular support:
    Applied Engineering DataLink PB and Applied Engineering Axcell Cellular
    Interface
    Microcom Cellular Data Link 300

  ISDN support:
    Hayes ISDN adapter

  Czechoslovakia
  --------------
  CZ Sample Script • Apple 2400

  Germany
  -------
  57,600 bps:
    Andante EAZ0 v2 (V.24 ISDN Adapter)
    Andante EAZ1 v2
    Andante EAZ2 v2
    Andante EAZ3 v2
    Andante EAZ4 v2
    Andante EAZ5 v2
    Andante EAZ6 v2
    Andante EAZ7 v2
    Andante EAZ8 v2
    Andante EAZ9 v2

  25,000 bps:
    Motorola 326x (Fast) v2

  19,200 bps:
    MDG 19K2=31 v2
    MDG 14MX=22 v2

  14,400 bps:
    euroScout v2
```

```
  Express Modem 14400 v2
  Global Village Test v2
  PriCom 14.4  v2
  TELEJET 14400 v2

9600 bps:
  CN=3532 SA Plus v2
  CN=3532 SA v2
  FURY 9600 TI v2
  MicroLink 9624 v2

2400 bps:
  Apple PowerBook/Portable v2
  CN=3522 SA Plus v2
  CTK EuroCoupler Akustikk. v2
  CTK EuroCoupler Modem v2
  Dialog 2400 MNP v2
  FURY 2400 TI v2
  GVC SuperModem 2400 MNP v2
  GVC SuperModem 2400 v2
  MAKK=CHAMPION Akustikk. v2
  MAKK=CHAMPION Modem v2
  MDG 2400=11 v2
  MDG 2400=21 v2
  MicroLink 2410 v.2
  Personal Line 2400 MNP v2
  TELEJET 2400 v2
  Worldport 2400 MNP v2

Switzerland
-----------
19,200 bps:
  ZyXEL U=1496

9600 bps:
  FURY 9600 TI v2
  NOKIA PMD 9600

NOTE:  The U.S. scripts listed above are also installed in all other
countries.

Modem scripts included with the Apple Remote Access MultiPort Server can also
be used with the Apple Remote Access Personal Server.


Using AppleTalk Remote Access v1.0 Modem Scripts with the ARA Personal Server
------------------------------------------------------------------------------
You can use AppleTalk Remote Access version 1.0 modem scripts with Apple
Remote Access Personal Server, but you will not be able to use certain new
features, such as Ignore Dial Tone, Manual Dialing, and MNP 10.  You cannot
use Apple Remote Access Personal Server modem scripts with AppleTalk Remote
Access version 1.0.
```

Calling an AppleTalk Remote Access version 1.0 Server

The AppleTalk Remote Access 1.0 Compatibility option allows you to call a version 1.0 server and to receive callbacks from a 1.0 server (see Chapter 3 of the “Apple Remote Access Personal Server for Macintosh User's Guide” for details on setting this option). However, it does NOT allow an Apple Remote Access Personal Server to receive calls from an AppleTalk Remote Access 1.0 client. The Apple Remote Access Personal Server can only receive calls from version 2.0 Apple Remote Access Clients.

Using an MNP 10 modem

MNP 10 is an error-correction protocol that allows for more reliable data connections made through cellular modems.

To establish an MNP 10 connection, your modem and the modem you're calling must support MNP 10; clicking the “Use MNP 10 error correction in modem” checkbox in the Remote Access Setup window is not by itself sufficient to establish an MNP 10 connection.

Using aliases with Apple Remote Access

When you create an alias over an Apple Remote Access connection, select the alias icon and choose Get Info from the File menu, then click the Locked checkbox. If you don't lock the alias, the alias can be converted to call the wrong Apple Remote Access server or to try to access the service across your local network.

Using the Manual Dialing feature

When you use Manual Dialing, establishing a Remote Access connection varies according to the type of modem you are using. To ensure that you can make a connection while using Manual Dialing, you may need to experiment with pressing the Connect button slightly before or after you hear the remote modem answer the phone.

Using the Redialing feature

Remote Access Client will attempt redialing only when the phone number that has been dialed is busy. If the connection attempt has failed for any other reason, Remote Access will stop the redialing attempts so that you can correct any problems.

When using the Redialing option, you should set the “Time between retries” number to five seconds or greater. Depending on the modem, anything less than five seconds may not give your modem sufficient time to reset, resulting in your Macintosh serial port being busy and unavailable for redialing.

When using the Redial alternate number option, the main number will be dialed once before the redialing sequence is initiated. The redialing sequence will then alternate between the main and alternate numbers.

Using DialAssist

In certain countries city/area codes don't exist. If you are calling within such a country and you encounter problems, try entering a space in the "Connect To City/Area Code" field in your connection document to get DialAssist to work properly.

Serial Port Arbitration

When a Remote Access connection is established (or being established when answering or making a call), Remote Access prevents other application programs from using the serial port you selected in the Remote Access Setup control panel. In this case, most programs will inform you that the port is in use.

If your Macintosh is set up to answer calls (the “Answer calls” checkbox in the Remote Access Setup control panel is selected), then other programs are allowed to use the serial port. When they are finished with the port, Remote Access reenables your Macintosh to answer calls.

Remote Access Personal Server provides this port arbitration through a system extension called the Serial Port Arbitrator located in the Extensions folder. Some programs that use the serial port may not be compatible with this extension. If you suspect this, remove the Serial Port Arbitrator file from the Extensions folder, restart your Macintosh, and try the program again.

NOTE: The Serial Port Arbitrator will not work on a Macintosh if Remote Access Personal Server has not been installed.

Macintosh computers with Virtual Memory

If you are using a Macintosh IIfx, Macintosh Quadra 900, or Macintosh Quadra 950 and have Virtual Memory turned on, you must open the Serial Switch control panel (included on the Install 2 disk) and set the serial port setting to Compatible.

Modem cable requirements

Most modems require a cable that supports the data terminal ready (DTR) signal. In addition, certain modems require a cable that supports CTS/RTS hardware flow control. To support DTR, the cable must connect pin 20 on the DB=25 connector to pin 1 on the Mini DIN=8. To support CTS/RTS, the cable must connect pin 5 on the DB=25 connector to pin 2 on the Mini DIN=8 and pin 4 on the DB=25 connector to pin 1 on the Mini DIN=8. See your modem vendor or Apple=authorized dealer about obtaining the necessary cable.

..TIL14321-ARA_Personal_Server-Read_Me_File_12-93_(TA30913).pdf

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14321

Tech Info Library

ARA 2.0 Client: Read Me File (12/93)

Revised: 12/17/93
Security: Everyone

ARA 2.0 Client: Read Me File (12/93)

==========

Article Created: 16 December 1993

TOPIC -----

This article contains the Read Me file for the Apple Remote Access 2.0 Client.

DISCUSSION -----

APPLE REMOTE ACCESS CLIENT FOR MACINTOSH READ ME

This document provides late=breaking news about the Apple Remote Access Client not covered in the “Apple Remote Access Client User’s Guide.” You may need to refer to that guide to understand the use of several terms in this document.

Modems supported by the Apple Remote Access Client

Modem scripts for many popular modems are provided on the Remote Access Client installation disks, including:

United States

V.32bis modems (14,400 bps):
- Apple Express Modem
- Global Village PowerPort Gold
- Global Village TelePort Gold
- Hayes Optima 144
- Microcom QX4232bis
- Prometheus ProModem 144e
- PSI Powermodem IV
- Supra SupraFax v.32bis
- Telebit WorldBlazer

V.32 modems (9600 bps):
- Global Village PowerPort Silver
- Global Village TelePort Silver

```
    Prometheus Promodem 96
    PSI Powermodem III
    Supra SupraFax Modem Plus
    Telebit QBlazer
    Telebit T1600
    US Robotics Sportster

  V.22bis modems (2400 bps):
    Apple 2400
    Global Village PowerPort Bronze
    Global Village TelePort Bronze
    Hayes Optima 2400
    Microcom AX 2400C
    Prometheus Promodem 24
    PSI PowerModem II

  Cellular support:
    Applied Engineering DataLink PB and Applied Engineering Axcell Cellular
    Interface
    Microcom Cellular Data Link 300

  ISDN support:
    Hayes ISDN adapter

  Czechoslovakia
  --------------
    CZ Sample Script • Apple 2400

  Germany
  -------
  57,600 bps:
    Andante EAZ0 v2 (V.24 ISDN Adapter)
    Andante EAZ1 v2
    Andante EAZ2 v2
    Andante EAZ3 v2
    Andante EAZ4 v2
    Andante EAZ5 v2
    Andante EAZ6 v2
    Andante EAZ7 v2
    Andante EAZ8 v2
    Andante EAZ9 v2

  25,000 bps:
    Motorola 326x (Fast) v2

  19,200 bps:
    MDG 19K2=31 v2
    MDG 14MX=22 v2

  14,400 bps:
    euroScout v2
    Express Modem 14400 v2
    Global Village Test v2
```

```
  PriCom 14.4  v2
  TELEJET 14400 v2

9600 bps:
  CN=3532 SA Plus v2
  CN=3532 SA v2
  FURY 9600 TI v2
  MicroLink 9624 v2

2400 bps:
  Apple PowerBook/Portable v2
  CN=3522 SA Plus v2
  CTK EuroCoupler Akustikk. v2
  CTK EuroCoupler Modem v2
  Dialog 2400 MNP v2
  FURY 2400 TI v2
  GVC SuperModem 2400 MNP v2
  GVC SuperModem 2400 v2
  MAKK=CHAMPION Akustikk. v2
  MAKK=CHAMPION Modem v2
  MDG 2400=11 v2
  MDG 2400=21 v2
  MicroLink 2410 v.2
  Personal Line 2400 MNP v2
  TELEJET 2400 v2
  Worldport 2400 MNP v2

Switzerland
-----------
19,200 bps:
  ZyXEL U=1496

9600 bps:
  FURY 9600 TI v2
  NOKIA PMD 9600

NOTE:  The U.S. scripts listed above are also installed in all other
countries.

Modem scripts included with the Apple Remote Access MultiPort Server can also
be used with the Apple Remote Access Client for Macintosh.


Using AppleTalk Remote Access v1.0 modem scripts w/Apple Remote Access Client
------------------------------------------------------------------------------
You can use AppleTalk Remote Access version 1.0 modem scripts with Apple
Remote Access Client, but you will not be able to use certain new features,
such as Ignore Dial Tone, Manual Dialing, and MNP 10.  You cannot use Apple
Remote Access Client modem scripts with AppleTalk Remote Access version 1.0.


Using an MNP 10 modem
---------------------
```

MNP 10 is an error-correction protocol that allows for more reliable data connections made through cellular modems.

To establish an MNP 10 connection, your modem and the modem you're calling must support MNP 10; clicking the “Use MNP 10 error correction in modem” checkbox in the Remote Access Setup window is not by itself sufficient to establish an MNP 10 connection.

Using aliases with Apple Remote Access

When you create an alias over an Apple Remote Access connection, select the alias icon and choose Get Info from the File menu, then click the Locked checkbox. If you don't lock the alias, the alias can be converted to call the wrong Apple Remote Access server or to try to access the service across your local network.

Using the Manual Dialing feature

When you use Manual Dialing, establishing a Remote Access connection varies according to the type of modem you are using. To ensure that you can make a connection while using Manual Dialing, you may need to experiment with pressing the Connect button slightly before or after you hear the remote modem answer the phone.

Using the Redialing feature

Remote Access Client will attempt redialing only when the phone number that has been dialed is busy. If the connection attempt has failed for any other reason, Remote Access will stop the redialing attempts so that you can correct any problems.

When using the Redialing option, you should set the “Time between retries” number to five seconds or greater. Depending on the modem, anything less than five seconds may not give your modem sufficient time to reset, resulting in your Macintosh serial port being busy and unavailable for redialing.

When using the Redial alternate number option, the main number will be dialed once before the redialing sequence is initiated. The redialing sequence will then alternate between the main and alternate numbers.

Using DialAssist

In certain countries city/area codes don't exist. If you are calling within such a country and you encounter problems, try entering a space in the "Connect To City/Area Code" field in your connection document to get DialAssist to work properly.

Serial Port Arbitration

When a Remote Access connection is established (or being established when making a call), Remote Access prevents other application programs from using the serial port you selected in the Remote Access Setup control panel. In this case, most programs will inform you that the port is in use.

Remote Access Client provides this port arbitration through a system extension called the Serial Port Arbitrator located in the Extensions folder. Some programs that use the serial port may not be compatible with this extension. If you suspect this, remove the Serial Port Arbitrator file from the Extensions folder, restart your Macintosh, and try the program again.

NOTE: The Serial Port Arbitrator will not work on a Macintosh if Remote Access Client has not been installed.

Macintosh computers with Virtual Memory

If you are using a Macintosh IIfx, Macintosh Quadra 900, or Macintosh Quadra 950 and have Virtual Memory turned on, you must open the Serial Switch control panel (included on the Install 2 disk) and set the serial port setting to Compatible.

Modem cable requirements

Most modems require a cable that supports the data terminal ready (DTR) signal. In addition, certain modems require a cable that supports CTS/RTS hardware flow control. To support DTR, the cable must connect pin 20 on the DB=25 connector to pin 1 on the Mini DIN=8. To support CTS/RTS, the cable must connect pin 5 on the DB=25 connector to pin 2 on the Mini DIN=8 and pin 4 on the DB=25 connector to pin 1 on the Mini DIN=8. See your modem vendor or Apple=authorized dealer about obtaining the necessary cable.

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Tech Info Library Article Number:14322

Tech Info Library

ABS Tech Note: AWS15 Reconfig of bnet For ATalk Support (1/94)

Revised: 1/11/94
Security: Everyone

ABS Tech Note: AWS15 Reconfig of bnet For ATalk Support (1/94)

==========

Article Created: 23 December 1993

TOPIC ----------

This technical note describes the proper reconfiguration of bnet for AppleTalk support on an Apple Workgroup Server (AWS) 95.

DISCUSSION ----------

Network protocols, like TCP/IP and AppleTalk, must be configured into the A/UX kernel before they can be used. To add networking capability through the Ethernet port, you must add a low-level driver to the kernel along with TCP/IP and AppleTalk Support This can be done by typing the following command in a CommandShell window,

```
newconfig bnet appletalk
```

This will create a new kernel that will include the necessary modules for Ethernet (ao, as or ae6), TCP/IP and AppleTalk support. It is important to note that the appletalk kernel module has certain dependencies on the bnet module and therefore both modules must be included in the kernel if support for AppleTalk is desired.

The user may decide to reconfigure the kernel that does not include the AppleTalk, TCP/IP and NFS modules. This can be done by typing the following command in a CommandShell window,

```
newconfig nonet
```

If the user decides later on to add support for AppleTalk, newconfig appletalk is not sufficient to configure the A/UX kernel. As mentioned before, the appletalk kernel module has certain dependencies on the bnet module, this makes it necessary to configure the kernel to include bnet. If the you attempt to build a kernel with appletalk support without the bnet module being included, the newconfig command will report an error. For example:

```
auxtest.root 9 # newconfig appletalk
newconfig: Making backup copies of /etc/inittab /etc/passwd /etc/group.
newconfig: Preparing to build a new kernel.
newconfig: Building a new kernel (this may take several minutes).
newconfig: *** PROBLEMS BUILDING A NEW KERNEL. ***
newconfig: You might try running newconfig with the -v flag.
/tmp/ncErr11168:Autoconfig error: Kernel link failed
Driver startup files in /etc/startup.d may not match kernel!
Run newunix(1m) to restore previous configuration
newconfig: Restoring saved /etc/inittab /etc/passwd /etc/group.
```

Running the newconfig command with the -v option, reveals that the kernel could not be linked because of undefined symbols in the elap module. These symbols are part of the bnet module.

```
ld warning: file /tmp/kernAAAa01368 has no relocation information
undefined first referenced
symbol in file
probing /etc/boot.d/elap
ld fatal: Symbol referencing errors. No output written to
/tmp/kernBAAa01368 Autoconfig error:
Kernel link failed
```

The correct way to include AppleTalk support back in the kernel after removing all network support is to include both the appletalk and bnet modules. This can be done by typing the following command in a CommandShell window:

```
newconfig bnet appletalk
```

On the other hand, creating a kernel which just includes the bnet module does not provide support for AppleTalk.

If you go to the Chooser and try to set AppleTalk to active, it will present you with the following dialog,

```
Please make sure that you are connected to an AppleTalk network
```

Followed by:

```
AppleTalk cannot be opened
```

If you go into the Network Control Panel and try to select EtherTalk, the following dialog will be displayed,

```
Please be sure you are connected to an AppleTalk network
```

If you click the OK button, the dialog will appear again. At this point, the only option available to exit the Macintosh Environment is to use Ctrl-Command-E.

To correct this situation, a new kernel that includes both the bnet and

appletalk modules should be created. This can be done by typing the following command in a CommandShell window,

```
newconfig bnet appletalk
```

NOTE: To make use of the new kernel, you must reboot the system each time following the newconfig command. For more information on the newconfig details, refer to the on-line man page for newconfig.

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Tech Info Library Article Number:14323

Tech Info Library

ABS Tech Note: AWS16 File Access Control on the AWS 95 (1/94)

Revised: 1/11/94
Security: Everyone

ABS Tech Note: AWS16 File Access Control on the AWS 95 (1/94)

==========

Article Created: 23 December 1993

TOPIC

The purpose of this tech note is to differentiate Macintosh (AppleShare) file privileges and A/UX file permissions. This document will discuss the concepts involved with each form of file access control and also discuss how the two concepts were integrated with each other on the Apple Workgroup Server (AWS) 95.

DISCUSSION

AppleShare (Macintosh) File Access Privileges

The Macintosh was originally designed as a single-user machine, where all the files on the machine were only accessible by one user. As a result there is no support for file access control built into the file system. With the advent of AppleShare it was necessary to come up with a scheme to control access to files which were shared on a network. On a Macintosh which runs as an AppleShare file server there exists a special file which stores all the necessary information to determines the accessibility of files to network users (See the AppleShare Pro Server 1.0 Administrator's Guide for a detailed description of AppleShare file privileges).

A/UX File Permissions

UNIX was originally designed as a multi-user operating system, thus a file access control mechanism was designed into the file system from the start. On each UNIX system there is a list of users which can log on to the system, each user has a unique name and user ID. In order to provide more control and flexibility when setting up file accessibility UNIX also maintains a list of groups, each group has a unique name and group ID. A group is defined by a list of 0 or more users. Each user must be a member of at least one group, known as the user's primary group, but may also be a member of any of the other group.

For each file in a UNIX file system, in addition to the data content of the UNIX file there is also information stored which determines file access. Each UNIX file has associated with it the following data: An owner (usually the user which created the file); a group (usually the primary group of the user which created the file); and a set of 9 permission bits.

The 9 permission bits associated with a file can be broken down in 3 parts, leaving 3 bits for each part. Each set of 3 bits defines the level of access for the file depending on which user is accessing the file. The first 3 bits (reading from left to right) determines the level of accessibility for the owner of the file. The second 3 bits apply to users who are a member of the group which is assigned to the file. The third 3 bits apply to any user who does not fall in either of the first two categories. These 3 user types are termed "User, Group and Other", respectively.

Now for the interpretation of the 3 bits. The first bit (read from left to right) determines whether the user has read access on the file. The second bit determines if the user has write access on the file. The third bit determines if the user has execute permission on the file.

Read and write access on a file is pretty much self-explanatory, if a user has read permission on a file then they may read the contents of the file, if a user has write permission on a file then they may modify the contents of a file. Execute permission determines if a user can execute a file, in the case where the file is an executable program. In the case where the file in question is a directory the execute bit determines if a user may make the directory their current working directory ("cd" into it).

Integration of both File Access System on the AWS 95

On an Apple Workgroup Server 95, somehow both file access systems apply to some of the files and how this is done can sometimes be confusing. There exists 2 separate list of users and each file has it's UNIX permissions as well as it's AppleShare permissions. In order to explain how this integration is achieved the concept of the "Super User" or "root" must be understood. On every UNIX machine there exists a special user, "root", to which file access control does not apply. In effect the "root" user has read, write and execute permission on every file in the file system.

On the AWS 95 the AppleShare program (the program which provides file sharing service to network users) runs as a "root" process. That is, all file accesses made by the AppleShare process are made from the "root:" user, which means that the AppleShare process has unrestricted access to all UNIX files. This provides AppleShare users with the illusion that an AppleShare volume on an AWS 95 is the same as a volume on a regular Macintosh.

This integration can often confuse administrators and users since one would expect a file to be owned by the AppleShare user, but if we go look at it from the UNIX side it is owned by the "root" user.

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Tech Info Library Article Number:14324

ABS Tech Note: AWS17 .fs_cache Item Limits (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AWS17 .fs_cache Item Limits (6/94)

==========

Article Created: 23 June 1994

TOPIC ----------

This article describes the item limit recommendation on the Apple Workgroup Server (AWS) 95.

DISCUSSION ----------

Apple is recommending for releases prior to A/UX 3.1 a 120,000 item limit for items that can be shared on a AWS95. The limit is due to incorrect handling in the b-tree code that maintains the .fs_cache file. The .fs_cache file is used to create b-tree entries for all items being shared under AppleShare Pro. The problem occurs when the .fs_cache file becomes greater than 32 megabytes in size. The maximum number of items can be calculated with the following formula:

32,000,000 / 200 bytes for each item = 160,000 Items

The number of 120,000 that is being recommended as opposed to 160,000 is conservative and is meant to avoid any problems from occurring until a version of the AWS95 software is released that eliminates this problem. The 120,000 number will also allow for some growth up to the maximum of 160,000.

Support Information Services

Copyright 1993-94, Apple Computer, Inc.

Tech Info Library Article Number:14325

Tech Info Library

Portable StyleWriter: Minimum Top and Bottom Margins (12/93)

Revised: 12/20/93
Security: Everyone

Portable StyleWriter: Minimum Top and Bottom Margins (12/93)

==========

Article Created: 20 December 1993

TOPIC ----------

My Portable StyleWriter won't print the last couple lines of text on several programs I'm using (Quark and Datebook). I have to move the text up about 3/4 of and inch before it would print the entire document.

DISCUSSION ----------

Portable StyleWriter Minimum top & bottom margins

Smallest Bottom margin	Smallest Top margin
.60 inches.	.25 inches

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Tech Info Library Article Number:14330

Tech Info Library

Installing ORACLE7 Server (Version 7.0.12.2.0) For A/UX (10/93)

Revised: 12/20/93
Security: Everyone

Installing ORACLE7 Server (Version 7.0.12.2.0) For A/UX (10/93)

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Article Created: 28 October 1993

TOPIC ----------

This technical information was provided by Oracle. This document was not written by Apple or tested for accuracy, but it's included because we feel you might find it useful.

DISCUSSION ----------

Installing ORACLE7 Server for A/UX (Version 7.0.12.2.0) Desktop
Victor Grigorieff
October 13, 1993 Apple A/UX 3.0.1

Updated 10/28/93 by Victor Grigorieff

This bulletin describes the steps required to install ORACLE7 Server for A/UX. This document assumes that A/UX has been properly configured. Bulletin #103947.028 describes in detail how to install A/UX 3.0.1 properly.

This bulletin only applies to the 7.0.12.2.0 Server release, as this process will most likely change with the upcoming 7.0.15 release.

Related Bulletins:

#103947.028 - Setting up an AWS 95 Server for Oracle7 for A/UX
If any part of the pre-installation checklist is not clear, or does not work, refer to this bulletin for assistance.

#104011.574 - Tips for administrating and supporting ORACLE7 for A/UX
This bulletin describes the techniques and tricks used to setup and debug the UNIX and Oracle installations.

Pre-Installation Checklist

C Compiler — You must install the C compiler for the install of Oracle to complete. If you type the command 'which cc' at a UNIX prompt, you should see '/bin/cc'. If you do not see this, you must reinstall A/UX to install the C compiler.

Disk Space — You must have 60 megabytes of space available to install the ORACLE7 Server for A/UX with the sample database. You can use the command 'df -B' to determine the amount of available space on the currently mounted filesystems. I recommend installing the Oracledatabase files on a separate filesystem from '/', which contains the operating system.

TCP/IP — If you intend to use SQL*Net TCP/IP, check the configuration of the networking software. Type the command 'hostname' to determine the name of your host, and then try to telnet to that host. See Bulletin #104011.574 for more details on this.

AppleTalk — If you intend to use AppleTalk check to see that the server is connected properly to your network. Usually, the Workgroup Server 95 is connected to an Ethernet network. If you are on an Ethernet network, check to see that the Network Control Panel has EtherTalk selected. Then, check the Chooser to se if you can see other AppleTalk devices on the network such as AppleShare file servers or LaserWriter printers.

Also, type the command:

```
ls -l /usr/lib/libat.a
```

If you do not see something like the following line, then you need to reinstall A/UX, including the Network Server capability:

```
-rw-r--r--  1 bin  bin   35774 Mar 23  1993  /usr/lib/libat.a
```

Installation

Before installing Oracle7 Server for A/UX, log into the AWS 95 as the root user. You must be root if you want to be able to install any SQL*Net product.

To install ORACLE7 Server for A/UX, you run the "AUX Installer" program from the folder called "Aux Installer" which is on the CD. The Installer will ask you several questions along the way.

Destination — You need to pick a folder to install the Oracle database and utilities. This will later be known as the ORACLE_HOME, which you will need to know.

*** Important: You may not install the Oracle database in any
*** directory whose path has a space in its name. This
*** means that you may not install in the '/ Shared Data'
*** directory.

Oracle owner — This is the user who will own the Oracle installation. You may pick an existing user, or let the Installer create a new user for you. The default is to let the Installer create a new user named 'oracle', which is fine.

DBA group — This is the name of the group that will have the ability to start and stop the database, and perform DBA-privileged operations. The Installer will create a new group for you if the group does not already exist. The default is to let the Installer create a new group called 'dba'.

Software — The ORACLE7 Server for A/UX is made up of several components.

A/UX RDBMS and Utilities
A/UX Required Support Files Version 7.0
A/UX SQL*Net Version 1.0

I recommend installing all of the options with this 7.0.12.2.0 release. If you know you will never need either SQL*Net AppleTalk or TCP/IP, you may choose to leave one of them out, but you would not be saving a large amount of disk space.

Procedural Option — The Installer WILL NOT ask you if you are licensed to use the Procedural Option. If you are in fact licensed for this option, you may enable it by running the script called CATPROC.SQL after installing and creating the database. This process is described in the Oracle7 Server Administrator's Guide.

Distributed Option — You will be asked if you are licensed to use the Distributed Option. If you are licensed, you may click yes.

If you click yes, several features will be enabled. these include the ability to maintain snapshots and snapshot logs (remote views of databases).

Note: The Distributed functionality will not work unless the Procedural Option is enabled.

Seed Database — You will be asked if you would like to create the seed database in the folder where you are installing oracle.

There are good reasons to choose Yes or No, which are below:

Yes — If you click yes, the Installer will start sqldba (the Oracle database administration program), and run the script createdb.sql, which was installed in the dbs directory of the oracle home. The sample database will be named SAMP.

This is a quick way of having a working database that you can use for learning and testing. The creation of this database requires one click of the mouse.

You will be warned that creating the database will destroy any other datbases in this location. If this is the first time you have installed an Oracle database in that directory, do not worry about this warning.

If you already have a database named SAMP in that directory, choosing Yes will overwrite your old database by creating a new one.

No — You may choose not to create the seed database, because you want to name the database something other than SAMP, or want to use different parameters and sizes for your database.

You could manually create the database, following the instructions in chapter 2 of the "ORACLE7 Server Administrator's Guide". This is somewhat difficult if you have never done it before.

Alternatively, you could make a copy of the createdb.sql script, and edit that copy. If I have an edited copy of createdb.sql called custom_createdb.sql, I could run that in sqldba to build my database.

Once you have answered all of the questions, the Installer will install the options you have selected, and create a seed database if you requested that.

Post Installation Tasks

Once the installation is complete, you will need to go through a few more steps to properly configure the Oracle database.

SQL*Net — There are several files which need to be created/edited to configure SQL*Net Version 1.

/etc/oratab — You need to create a file called oratab in the /etc directory. This file lists the instances (SID's) available on the A/UX machine. This file is required by both the TCP/IP and AppleTalk protocols of SQL*Net. This file has one line per database on the machine. Lines beginning with '#' are comments which are ignored. Each line is made up of the format:

```
                SID:ORACLE_HOME:STARTUP

                Where:  SID is the name of the database
                        ORACLE_HOME is where you installed the database
                        STARTUP is either Y or N, which indicates
                                whether the dbstart and dbshut
                                utilities should start or stop that
                                database.

                The default /etc/oratab should have the line:

                SAMP:/users/oracle:N

TCP/IP      If you intend to use SQL*Net TCP/IP version 1, you must edit
            several files, and startup the TCP/IP listener.

      /etc/services   You need to define a port number for SQL*Net
                      TCP/IP Version 1.   By default, this is 1525.  If
                      you use a different number for the orasrv port
                      number, you must configure the client machines to
                      use that same number.  In most cases, you will be
                      fine if you add the following line:

                      orasrv  1525/tcp  oracle  # SQL*Net Version 1

      /etc/hosts      This file lists all the IP addresses and host
                      names for all machines that the A/UX server can
                      connect to using TCP/IP. If your own host is not
                      already listed in the file, add an entry with the
                      format

                      <IP address>  <hostname> <aliasname>

                      An example would be:

                      139.185.81.95 squid.us.oracle.com squid

                      You may optionally list several other aliasnames
                      for each host, allowing you to call a host by
                      several different names.

      tcpctl start    This command starts the TCP/IP listener by running
                      the orasrv program.

                      This will start the orasrv process, which will
                      listen for client connections on the port defined
                      in the /etc/services file.

                      Client machines would then be able to connect
                      using the database connect string:

                        t:hostname:SAMP
```

hostname is the name of the server on the TCP/IP network. SAMP is the name of the database.

AppleTalk

If you wish to use SQL*Net AppleTalk version 1, you must start the atksrv process. As the root user, type:

```
atksrv MyServer
```

This will start up an AppleTalk server named "MyServer". Client machines will connect using the database connect string:

```
at:MyServer:SAMP [,Appletalk_Zone]
```

You would only need to specify the AppleTalk Zone if the client machine is in a different zone than the server.

Starting the atksrv process in this fashion will tie up that window until you stop the listener by hitting control-C.

You may run the atksrv process in the background by adding the ampersand (&) character after the command. You could then kill that process with the command "kill %", provided the atksrv process was the only background process of that window. Please see Bulletin 104011.57 for more information on running the atksrv process in the background.

Oracle user

If the A/UX Installer created the oracle user, there will be no .login file in the oracle user's home directory. If this is the case, log in as the oracle user, and issue the command:

```
cp /usr/lib/skel/std.login ~/.login
```

You will need to edit the .login file which is in the oracle user's home directory (by default /users/oracle). Add the following lines to the end of the file:

```
setenv ORACLE_HOME /users/oracle
setenv ORACLE_SID  SAMP
setenv PATH      "/users/oracle/bin:/bin:/usr/bin:/usr/ucb:
                  /mac/bin:/etc:/usr/etc:/usr/local/bin"
```

The examples above assume that Oracle was installed in /users/oracle and that the name of the SID is SAMP. If you have a different oracle home or a different name of the SID, you will need to use different values in the examples above.

*** Once you have edited the oracle user's .login file, you must
*** log out, and log in again as oracle before the changes will
*** take effect.

```
Post-Installation Checklist
---------------------------

Verify that database is running by using the ps command as shown here:

    ps -ef | grep dbwr
    root   10355 10242  2 07:39:46 pb       0:00 grep dbwr
    oracle  4196     1  0  Sep  2  ?        0:02 ora_dbwr_SAMP

    Look at the right-most column in this output.  If you see the process
    named "ora_dbwr_SAMP", then the SAMP database is running.

Verify that the TCP/IP listener process is running by using the command

     tcpctl status
     tcputl: Status summary follows
     Server is running:
       Started             : 21-SEP-93 10:01:29
       Last connection     : 30-SEP-93 14:39:49
       Total connections   : 300
       Total rejections    : 6
       Active subprocesses : 3
       ORACLE SIDs         : S7F,SAMP
       Default SID         : (null)
     Logging mode is ENABLED.
     DBA logins are DISABLED.
     OPS$ logins are ENABLED.
     OPS$ROOT logins are DISABLED.
     Orasrv is detached from the terminal.
     Break mode = IN BAND.
     Debug level = 1
     No timeout (on orasrv handshaking).
     Length of listen queue = 10
     Orasrv logfile = /u2/7012f/tcp/log/orasrv.log
     Orasrv mapfile = /etc/oratab

In the above example you see the string "Server is running", which is the
sign that TCP/IP is up and running.

Verify that the AppleTalk listener is running by using the command:

   ps -ef | grep atksrv
   root 22675 22662  0 14:57:02 q2       0:00 atksrv Squid
   root 22676 22662  1 14:57:28 q2       0:00 grep atksrv

Look at the right-most column in this output.  If you see the process
called "atksrv Servername", then the AppleTalk listener is running.

Verify that you can connect to the database using sqldba.

   sqldba
```

```
SQL*DBA: Release 7.0.12.2.0 - Production on Thu Sep 30 15:00:11 1993

Copyright (c) Oracle Corporation 1979, 1993.  All rights reserved.

ORACLE7 Server Release 7.0.12.2.0 - Production
With the procedural and distributed options
PL/SQL Release 2.0.14.0.1 - Production

SQLDBA> connect scott/tiger
Connected.
```

In this output, I connected as scott/tiger, and was successful. At this point you know that the database is running, and is accepting connections.

If you are still having problems with debugging/verifying the installation, refer to bulletin 104011.574 - Tips for administrating and supporting ORACLE7 for A/UX.

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Tech Info Library Article Number:14331

Tech Info Library

Ethernet NB Twisted-Pair Card: Supported on A/UX (8/95)

Revised: 8/23/95
Security: Everyone

Ethernet NB Twisted-Pair Card: Supported on A/UX (8/95)

==========

Article Created: 20 December 1993
Article Reviewed/Updated: 23 August 1995

TOPIC ----------

I have a Macintosh IIfx with A/UX 3.0, and I just bought the Ethernet NB Twisted-Pair Card. I ran the installer for the MacPartition and the card works fine under Mac OS. A/UX however, does not recognize it. I've done newconfig bnet and newconfig appletalk, taken them both down and reconfigured them, explicitly specified "ae0" (and, just in case "as0") drivers, but to no avail.

Is this card supported by A/UX?

DISCUSSION ----------

You should upgrade to A/UX version 3.1 or later for Ethernet NB Twisted-Pair Card support. The following information is from the Read Me for the Apple Workgroup Server (AWS) 95 Software Upgrade:

Install Driver for the Apple Ethernet NB Twisted-Pair Card

If you are using this new interface card, install the driver on the volume named MacPartition. Installing the file on MacPartition assures that the server will use EtherTalk rather than switching to LocalTalk each time you restart the server.

CORRECTIONS TO MANUAL PAGES
==========

A few commands are incorrect as they appear on screen in the manual pages. The corrections are as follows.

"newconfig" manual page

If you're adding support to your system for an Ethernet card, these are the

modules you need to specify in the "newconfig" command:

ao - Built-in interface for Apple Ethernet.
as - Apple Ethernet NB Card (a half-length card).
ae6 - Apple EtherTalk NB Card (a full-length card).
ac - Apple Ethernet NB Twisted-Pair Card.

An error appears in the last paragraph of the Descriptions section: "bnet_dr" should be "bnet".

"NETADDRS" manual page

The value of interface_id is as follows:
ao0 - for built-in interface for Apple Ethernet (which is found in the AWS 95)
ae0 through ae5 - for Apple EtherTalk NB Cards
as0 through as5 - for Apple Ethernet NB Cards
ac0 through ac5 - for Apple Ethernet NB Twisted Pair Cards

Article Change History:
23 Aug 1995 - Updated info to A/UX 3.1 and changed back to MacPartition.
06 May 1994 - Updated to reword "Mac Partition" to Macintosh partition.

Support Information Services

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Tech Info Library Article Number:14332

Tech Info Library

Administrating and Supporting ORACLE7 For A/UX - Part 1 (10/93)

Revised: 12/21/93
Security: Everyone

Administrating and Supporting ORACLE7 For A/UX - Part 1 (10/93)

==========

Article Created: 28 October 1993

TOPIC ----------

This technical information was provided by Oracle. This document was not written by Apple or tested for accuracy, but it's included because we feel you might find it useful.

This is part 1 of 2, of an Oracle technical note on Administrating and Supporting ORACLE7 for A/UX. To find part 2 or 2, search for an article titled, "Administrating and Supporting ORACLE7 For A/UX - Part 2 (10/93)."

DISCUSSION ----------

Tips For Administrating and Supporting ORACLE7 For A/UX Desktop
Victor Grigorieff
September 29, 1993 Apple A/UX 3.0.1

Revised: 10/28/93 by Victor Grigorieff

This bulletin explains many of the tools and procedures used in setting up, administrating, and supporting ORACLE7 on A/UX 3.0.1. It is helpful to gather the pieces of information mentioned in this bulletin before trying other methods of diagnosing problems.

This bulletin describes several UNIX commands, but does not provide complete definitions of them. Please refer to the documentation from Apple Computer Inc., or the manual pages on-line for complete definitions of the commands described below.

Manual pages is an option which can be chosen at the time you install the A/UX operating system. If they are installed, you can access the information with the command called man.

Type 'man man' for a description of the man command.

Note: For clarity, some commands are enclosed in single quotes (') with the arguments they accept.

The commands and configuration files of importance are listed below, and are grouped by the type of task to which they are related.

Macintosh Environment & A/UX Management

If you are logged into the console of A/UX 3.0.1 in the Macintosh Finder environment, you there are several things which you need to know.

Command-Control-E	If the Macintosh ever appears to freeze (You cannot type or move the mouse), DO NOT RESTART THE MACHINE. You can kill the Macintosh session by holding down Command-Control-E. The Command key is the key which looks like an Apple or a clover. Doing this will return you to the A/UX logon screen, but will not affect any other UNIX processes on the machine, like the Oracle database.
General Controls	Under the Apple menu, there is an option for Control Panels. In the Control Panels folder is a General Controls Control Panel, which will let you set the date and time on the A/UX machine.
TextEditor	If you need to edit a text file, and prefer the Macintosh interface, you can look in /: Applications for the program called TextEditor. It works like any other word processor on the Macintosh.
/etc/RELEASE_ID	This text file tells you the version of A/UX you are running. A/UX 3.0.1 is required for ORACLE7 Server for A/UX. Type the command 'cat /etc/RELEASE_ID' to list the file: at /etc/hosts ********** * A/UX 3.0.1 * * Friday, April 9, 1993 * **********

User Management
---

id displays user and group IDs and names
If you are logged in as the oracle user, you will get output like this:

% id

```
              uid=1000(oracle) gid=1000(dba)

              This means that you are the oracle user, and your active group
              is dba.  By default, the oracle user and dba group own the
              oracle database installation, meaning that this user can
              perform privileged operations. You must have dba privileges to
              connect internal, and to startup or shutdown a database.

passwd        passwd is the command to change the password for a user
              account.  If I am logged in as oracle, and type 'passwd
              oracle', I will be asked for the current password (if there is
              one), and will then be allowed to enter a new password.

              By default the oracle and root users have no password, so it is
              important to set passwords for those users.

su            su is the command to become another user.

              su - oracle

              This command prompts you for a password, and then logs you in
              as the oracle user, while reading in the oracle user's
              environment.  If you leave out the '-' between the su command
              and the user, you will not read in that user's environment
              properly.  If you are logged in as some other user, and wish
              to logon as the oracle user, use the above command.

              You usually become the oracle user when you want to start/stop
              the database, and perform routine maintenance.

Network Management
------------------

hostname -    displays the name of the UNIX host.  This is helpful in
              figuring out how to assemble a sql*net connect string for
              TCP/IP.

              % hostname
              squid

              In this case, my hostname is 'squid'.

ping          ping is a command which sends simple TCP/IP packets to a host
              to determine whether or not the host is functioning on the
              network.  If you are having trouble connecting to a host with
              telnet or SQL*Net TCP/IP (ORA-6108 errors), then you should
              check to see if ping can reach the host.

              ** Ping is used to check how the host is responding to TCP/IP
              ** packets, which are completely different than AppleTalk
              ** packets.  If a client Macintosh can access the server using
              ** File Sharing, then that means that the network is physically
              ** intact.  It DOES NOT tell you that TCP/IP is functioning
```

```
** properly.  You should use ping to verify the TCP/IP setup.

ping can be run by typing '/usr/etc/ping some_host' where
some_host is the name (or IP address) of a machine on the
network.  See the description of the /etc/hosts file below for
more info.

/usr/etc/ping squid
PING squid.us.oracle.com: 56 data bytes
64 bytes from 139.185.81.95: icmp_seq=0. time=0. ms
64 bytes from 139.185.81.95: icmp_seq=1. time=0. ms
----squid.us.oracle.com PING Statistics----
2 packets transmitted, 2 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 0/0/0

Since squid has been properly configured for TCP/IP and is
running, TCP/IP packets travel to it and back with no problem.
The ping command will keep sending packets until you hit
control-C,  at which point it gives you the PING Statistics.

If I attempt to ping a machine which is down,  the ping command
will keep sending packets until the host responds (which may
never happen) or until you hit Control-C.  If you do not see
any lines like '64 bytes from...' after 10 seconds, hit
control-C, and you will have output which looks like:

/usr/etc/ping bartman
PING bartman.us.oracle.com: 56 data bytes

----bartman.us.oracle.com PING Statistics----
12 packets transmitted, 0 packets received, 100% packet loss

In this case, bartman (a UNIX machine) has been turned off, and
hence does not respond to the ping command.  The 100% packet
loss means that the host you are attempting to ping is not
working, or is actually at a different address than the one you
are trying.

If I am trying to make a database connection to bartman using a
database connect string like 'T:bartman:SAMP', I would get the
ORA-6108 error, indicating that the TCP/IP connection attempt
failed.  I could then use the ping command to find out if the
machine named bartman is functioning on the network.  If
bartman does not respond to a ping, action should be taken to
revive bartman.  In this case, I would go and turn the machine
on.

If bartman does respond to a ping, but not a SQL*Net TCP/IP
connection attempt, then there could be several different
things going on.

 * The SQL*Net TCP/IP version 1 listener process (orasrv) may
   not be running.  Check to see if orasrv is active on the
```

machine, and if the /etc/services file has the correct entry for orasrv.

* Turn off the server and attempt to ping the server. This may sound like a silly thing to do, but if you ping a machine that is turned off and it actually responds, you know that there is another machine using the same IP address. If this happens, you need to talk to your network administrator to determine a new unique address for your server.

telnet

telnet is a way to log into another machine on the network using TCP/IP. It is a useful debugging tool as well as a convenience.

```
telnet squid
Trying...
Connected to squid.us.oracle.com.
Escape character is '^]'.

Apple Computer A/UX (squid)

login:
```

Once you see the login prompt, type the UNIX userid you wish to use and hit return. You will then be asked for a password. Once you have successfully entered the password, you will be working with the remote machine you have logged into, until you type exit.

ftp

ftp is a command you can use to transfer files from one machine to another. If you are transferring anything other than a text file, remember to type the command 'binary' at the 'ftp> prompt.

/etc/hosts

This file lists all the IP addresses and host names for all machines that the A/UX server can connect to using TCP/IP.

```
127.0.0.1     loop local me localhost
139.185.81.95 squid.us.oracle.com squid
```

In this file is the default 127.0.0.1 which is an internal loopback entry, and the definition for this host, which is squid. 127.0.0.1 is a special address. Any machine that attempts to connect to that address will connect to itself.

The hosts file is used when the machine needs to figure out the IP address of a host, when it knows the hostname.

If you try to telnet to a host which is not in the hosts file, you will see:

```
                    telnet does_not_exist
                    does_not_exist: unknown host

/etc/services       This file should contain an entry for the SQL*Net
                    TCP/IP version 1 server.  If you do not have the proper
                    line in this file, you will get the ORA-6107 error
                    while attempting to use SQL*Net TCP/IP version 1. The
                    line should look like:

                    orasrv          1525/tcp        oracle

/etc/NETADDRS       This file lists the TCP/IP network configuration for
                    the UNIX machine.

                    ao0     139.185.81.95 139.185.81.255 255.255.255.0

                    ao0 refers to the built-in Ethernet device of the
                    server.  139.185.81.95 is the IP address of the server.
                    139.185.81.255 is the broadcast address of the server.
                    255.255.255.0 is the subnet mask for the server.

                    This file is created when you run the newconfig
                    utility.  Checking this file can be helpful to debug
                    TCP/IP connectivity problems and address conflicts.

UNIX Command Management
-----------------------

man         man is a program which displays the help and documentation
            available for a command.

            man <some_command>

            will show you the description of the command, one page at a
            time.  As you are browsing the description, you hit the space
            bar to advance a page, and the return key to advance one line.

apropos     gives a listing of all commands which have a certain text
            string in their description.  This is useful if you remember
            what a command does, but not its name.

            For example, you know you need to reconfigure your UNIX kernel
            to set up certain network services. If you forget which command
            to use, type:

            apropos kernel

            It will give a listing of commands and descriptions, which have
            the word 'kernel' in them.   from that list, you determine that
            the command you were looking for was:

            newconfig(1M)            - generates an up-to-date kernel
```

After finding a command with apropos, check the man page on the command before executing it. It is a good idea to be aware of all of the options available before running a command.

more — more can be called on a file, to display the file a screen at a time. It can also have the output of a command piped through it to show output a screen at a time.

```
ps -ef | more
```

This will give you a long listing of processes, a page at a time.

| (pipe) — The '|' is the UNIX pipe operator. It sends the output of the first command through the second command.

```
some_command | some_other_command
```

some_command will not send its output to the screen, but instead, the output will be read and processed by some_other_command.

grep — grep is a text-searching utility that returns all lines that contain the search condition.

```
grep <some_condition> <some_file>
```

This searches <some_file> for <some_condition>, and returns all lines that match the search criterion.

```
% grep squid /etc/hosts
139.185.81.95 squid.us.oracle.com squid
```

This command lists all lines in the /etc/hosts file with 'squid' in them. When combined with the 'hostname' command above, this is a great way to find out what the A/UX machine's IP address is. In this example, 139.185.81.95 is my IP address, which identifies my machine on the TCP/IP network.

wc — wc counts characters, words, and lines in a file. It can be very helpful to pipe the output of another program through wc.

```
ps -ef | wc
134   1339   8817
```

'ps -ef' gives a long listing of all processes on the machine, and wc tells you that there are 134 lines in that output. This means that there are 134 processes currently running.

head — head <some_file> displays the first 10 lines of a file. This is useful if you just want to peek at the beginning of a file.

'ps -ef | head' lists the first 10 processes.

tail — tail is like head, except it returns the last 10 lines.

which — which will tell you exactly what function or executable will be executed, given a particular command.

'which cc' (This will tell me '/bin/cc' if the C compiler is installed, or tell me 'cc: Command not found' if the C compiler is not installed.)

Process & System Management

ps -ef — gives a long listing of all processes running on the UNIX machine. There are usually MANY processes running on a UNIX machine, so you usually want to pipe the output through 'more' or 'grep'.

```
ps -ef | more
```

This will show you all of the processes a screen at a time. Hit the space bar to see the next page.

```
ps -ef | grep oracle
```

This will give you a full listing of all processes owned by oracle, or with oracle in their name.

```
% ps -ef | grep oracle
   UID   PID  PPID  C    STIME TTY      TIME COMMAND
oracle  1520  1474  5 17:27:48 qa       0:00 ps -ef
oracle  1521  1474  2 17:27:48 qa       0:00 grep oracle
oracle 20307     1  0  Aug 20  p2       0:00 ora_pmon_SAMP
oracle 20308     1  0  Aug 20  p2       0:01 ora_dbwr_SAMP
oracle 20309     1  0  Aug 20  p2       0:05 ora_lgwr_SAMP
oracle 20310     1  0  Aug 20  p2       0:45 ora_smon_SAMP
oracle 20311     1  0  Aug 20  p2       0:00 ora_reco_SAMP
daemon  1473 21954  4 17:08:27 ?        0:26 oracleSAMP
                                                    T:I,1024,5
oracle  1531  1530  0 17:34:55 qa       0:00 oracleSAMP
                                                    AT:I,0,5
oracle  1474  1456  0 17:08:34 qa       0:01 -csh
```

Note: I pasted the titles of the columns into this document for clarity. The UID is the owner of the process. The COMMAND is the name of the process.

In this example, you see that there are 5 processes with the format ora_XXXX_SAMP. These are the processes that make up the ORACLE database named SAMP. The 'oracleSAMP T:I,1024,5' process is called a TCP/IP shadow process, and means that there is a remote user connected to the SAMP database using SQL*Net

TCP/IP. The 'oracleSAMP AT:I,0,5' process is an AppleTalk shadow process, representing a remote connection using SQL*Net AppleTalk.

From time to time, you may have to kill these shadow processes. 'ps -ef | grep oracle' will help you find them.

kill — kill can be used to terminate a process that is no longer needed on your machine.

```
kill <PID>
```

where PID is the process ID of the process you wish to terminate. The PID can be determined by looking at the second column of the ps -ef listing explained above.

For example, as part of the 'ps -ef' listing, I see:

```
daemon  1473 21954  4 17:08:27 ?        0:26 oracleSAMP
                                                T:I,1024,5
```

If I know that no one is connected to the SAMP database using TCP/IP, I can kill the orphaned shadow process with the command:

```
kill 1473
```

Then the process will be dead, and the database will clean up after the connection. If the process does not die, you can use 'kill -9 <PID>' instead, which will definitely kill the process.

& — The ampersand character, when added onto any other command, will run the program in the background, which means that you could run another command in the current window.

```
atksrv Squid
```

would normally just run the program, and you could not type any other commands (except control-c to stop the program).

```
atksrv Squid &
```

runs the same command in the background, meaning that you can run other programs.

jobs — lists the jobs which are currently in the background.

```
jobs
[1]  + Running                 atksrv MyServer
```

% — This command is used to bring a bring a background process to the foreground. In the above example, there was a background

process called 'atksrv MyServer'. Typing % at the prompt would bring the 'atksrv MyServer' process back to the foreground.

If there are multiple processes in the background, you can use '%2' to bring the second process in the list to the foreground.

pstat -m

pstat -m lists current system status, including the amount of physical memory which is currently free.

uptime

uptime tells you how long the UNIX machine has been running, and what the current load average is on the machine. It also tells you the current time, which lets you know if you need to reset the clock on your server.

```
uptime
7:28am  up 54 days, 13:59,  19 users,  load average: 2.29 2.32
2.20
```

The load average tells you how many processes are actively using the processor. At the time I ran this command, there were 130 processes on the machine, but only two of them were active. If I have 5 remote Macintosh clients actively start using one of the databases, the 5 shadow processes would become active, and the load would jump from about 2 to about 7.

ipcs -a

ipcs -m lists the status of all attached blocks of shared memory. An Oracle database uses a block of shared memory to store the SGA (Shared Global Area).

```
ipcs -m
IPC status from /dev/kmem as of Wed Sep 15 07:35:18 1993
T     ID     KEY        MODE       OWNER    GROUP
Shared Memory:
m   2100 0x744c4f57 --rw-------     root     root
m   1501 0x00028d92 --rw-r-----   oracle      dba
m    402 0x00020386 --rw-r-----   oracle      dba
m    203 0x00025a8e --rw-r-----   oracle      dba
m    404 0x0002c003 --rw-r-----   oracle      dba
m    605 0x0002f58f --rw-r-----   oracle      dba
```

The first entry is owned by root, with the root group. This segment is used by the UNIX kernel, and is OK.

Note: the order of the entries in this list does not matter.

The other 5 segments here are blocks which were obtained by Oracle databases on the machine. I know this because the owner is oracle and the group is dba. I can then determine which Oracle databases are running by looking for processes with the letters 'dbwr' in the name, as that is a process which is required by the rdbms.

```
ps -ef | grep dbwr
```

```
root   10355 10242  2 07:39:46 pb       0:00 grep dbwr
oracle  4196     1  0  Sep  2  ?        0:02 ora_dbwr_S6A
oracle  5856     1  0  Sep  8  ?        0:02 ora_dbwr_S6C
oracle  4211     1  0  Sep  2  ?        0:02 ora_dbwr_S6B
oracle  4232     1  0  Sep  2  q4       0:02 ora_dbwr_SAMP
```

Looking at the right column, I see 4 processes with the name ora_dbwr_???, where ??? is the name of the database (SID). The databases S6A,S6B,S6C, and SAMP are active on this machine.

I have 4 running databases, and 5 segments of shared memory attached by Oracle databases. This generally means that a database was terminated abnormally (by killing the processes or a severe crash). That last block of shared memory will not be freed until the system is rebooted.

In situations where you have blocks of shared memory that were not freed, you should reboot the system as soon as you can.

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Administrating and Supporting ORACLE7 For A/UX - Part 2 (10/93)

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Administrating and Supporting ORACLE7 For A/UX - Part 2 (10/93)

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Article Created: 28 October 1993

TOPIC ----------

This technical information was provided by Oracle. This document was not written by Apple or tested for accuracy, but it's included because we feel you might find it useful.

This is part 2 of 2, of an Oracle technical note on Administrating and Supporting ORACLE7 for A/UX. To find part 1 or 2, search for an article titled, "Administrating and Supporting ORACLE7 For A/UX - Part 1 (10/93)."

DISCUSSION ----------

Tips For Administrating and Supporting ORACLE7 For A/UX Desktop
Victor Grigorieff
September 29, 1993 Apple A/UX 3.0.1

Revised: 10/28/93 by Victor Grigorieff

File Management
---

ls ls gives a listing of the files in the current directory.

ls -lF gives a useful long listing, and places a '/' after the name of each directory, and a '*' after each executable program.

ls -a lists all files, including files that begin with the "."

cd cd changes the current directory.

'cd /' changes the active directory to the root of the

filesystem.

'cd ..' changes to the parent directory of the current directory.

pwd — pwd tells you what directory you are accessing.

mkdir — 'mkdir new_directory' makes a new directory called 'new_directory'

cp — cp is the command to copy a file to a new file.

'cp -r' is a recursive copy, which can copy directories and their contents.

mv — mv is the command to move or rename a file. mv is not capable of moving a file from one filesystem to another.

chmod — chmod <new permissions> <some_file> changes the permission bits on a file. chmod is often used to either restrict access to a file, or to enable the 'setuid bit' on an executable program.

A file has certain permission bits, which determine the rights to read, write, and execute the file. These permissions are given differently to the owner of the file, the group to which the file belongs, and everyone else.

ls -l will give a full listing of files, and the left-most column is a listing of permission bits.

```
-rwxr-xr-x   1 oracle   dba      4122655 Jun 19 14:19 sqldba*
```

There are a total of 10 characters in the left column.

The first character is '-' for a file, and 'd' if the item is a directory.

The next 9 characters are 3 groups of 3 characters each. Each group determines the rights to read, write, and execute.

rwx means that read, write, and execute rights are enabled
r-x means that read and execute are enabled, but writing is not.

If the letter is present in a particular position, the right is enabled. If there is a '-', the permission is disabled.

The first group of letters corresponds to the rights granted to the owner of the file. The userid listed in the third column of the ls -l output is the owner of the file.

** If the owner's permissions are 'rws', then the setuid bit
** is set, meaning that the program will run with all of the

```
                ** rights as the owner of the program, regardless of who
                ** invokes the program.

              The second group of letters corresponds to the rights of the
              group to which the file corresponds, which is the fourth
              parameter of the ls -l output.

              The third group of letters defines the permissions for
              everybody.

              -rwxr-xr-x means that everyone can read and execute the file,
                         but only the owner can write (modify) it.

              -rwsr-x--- means that the setuid bit is enabled, people in the
                         group which owns the file may read and execute the
                         file, but people outside of the group have no access
                         to the program.

              To set the permissions, you need to assemble a string of 3
              numbers to tell chmod how to set the permissions. Different
              privileges are enabled by adding up the numbers below:

              read -    4
              write -   2
              execute - 1

              read and execute privilege (4 + 1) are 5
              read, write, and execute (4 + 2 + 1) are 7
              to set the setuid bit, you prefix your string with the number
              4.

              chmod  755  (yields -rwxr-xr-x)
              chmod  400  (yields -r--------)
              chmod 4755  (yields -rwsr-xr-x)  (The setuid bit is enabled)

              The files 'orasrv' and 'oracle' (which are located in the
              /users/oracle/bin) should be -rwsr-xr-x.  You can set these
              permissions with the command:

              chmod 4755 orasrv oracle

chown         chown <new_owner> <some_file> changes the ownership of
              <some_file> to be owned by <new_owner>.  Only the current owner
              or the superuser (root) may issue this command.

              Only the owner and the superuser (root) may delete a file.
              the ownership of a file is usually most important with
              executable files that have the setuid bit set (see chmod
              above).

              *** Note:  when you change the ownership of a file, the
              ***        permission bits can be changed.  You may need to use
              ***        the chmod command to get the proper setting.
```

chgrp chgrp <new_group> <some_file> changes the group ownership of <some_file> to be owned by <new_group>. Only the current owner or the superuser (root) may issue this command.

find find can be used to locate files, and perform an action on each of them if desired.

```
find . -exec ls -l {}\;
```

This command looks a bit confusing, but it gives a long listing of the files in the current directory, as well as all of the subdirectories. Check the manual pages on find for more detailed information.

tar tar creates archives and extracts data from them.

```
tar -cf archive.tar something
  (creates a new archive called 'archive.tar' containing a copy
   of 'something'.  Something could be a file, or a filesystem)

** Note: NEVER try to back up a database that is RUNNING.
**       copies of running databases WILL NOT WORK.

tar -xf archive.tar
  (extracts the contents of archive.tar into the current
   directory)
```

compress 'compress some_file' will create a compressed version of the file called some_file.Z, and deletes some_file. You must uncompress the some_file.Z before using it again.

Filesystem Management

If you are not familiar with filesystems, mounting of filesystems, or disk setup in general on A/UX 3.0.1, please refer to the "Disk Setup" section of Bulletin #103947.028 -- "Setting up an AWS 95 Server for ORACLE7 for A/UX".

df -B df will give you a line of information for each of the mounted filesystems. Note the capital letter 'B', which specifies that the results should be given in kilobytes.

```
df -B
Filesystem        kbytes    used   avail %used  Mounted on
/dev/dsk/c0d0s0   140519  125637    7856   94%  /
/dev/dsk/c300d0s  637015  523524   81640   87%  /u1
/dev/dsk/c401d0s 1122889  805559  261185   76%  /u2
```

This command tells you which filesystems were successfully mounted, where they are mounted, how big they are, and how much space is available on each of them.

```
            ** Notice that the 'Filesystem' column is not giving you the
            ** first 16 letters in the name of the disk device file.  If
            ** you need the full name, check the /etc/fstab file, or use
            ** the df command without the -B flag.
```

/etc/fstab the fstab file has one line for each filesystem which should be mounted. It specifies the type of filesystem, where to mount it, and on what device it resides.

```
            # fstab for Squid 6/23/93
            #
            /dev/dsk/c300d0s0       /       ignore  rw      1 0
            /dev/dsk/c300d0s2       /u1     4.2     rw      1 0
            /dev/dsk/c401d0s2       /u2     4.2     rw      1 0
```

The lines that begin with # are ignored. It is a good idea to put notes in this file that identify which machine it belongs to, and when it was last modified. Whenever you modify this file, you should PRINT it and put it somewhere safe.

```
          *** IMPORTANT:  having a printout of the fstab file is very
          ***             helpful if your machine has a damaged root
          ***             partition, and you need to remember where all of
          ***             your filesystems reside.  You need to know the
          ***             location of your root filesystem.
          ***             /dev/dsk/c300d0s0 is the default, but it may be
          ***             different on your system.

          ***  I like to tape a printout of this file to the machine.
```

fsck fsck checks filesystem consistency and interactively repairs the filesystem. If a filesystem will not mount, you need to run fsck on it to verify and fix it. fsck works on a disk device file that corresponds to the filesystem in question. If the filesystem which normally mounts fine on u1 is not mounting, I need to run fsck. I can't just run 'fsck u1'. I need to run fsck on the disk device file that was listed in the /etc/fstab file that corresponds to the problematic filesystem.

```
            squid.root # fsck /dev/dsk/c300d0s2
            ** /dev/dsk/c300d0s2
            ** Last Mounted on /u1
            ** Phase 1 - Check Blocks and Sizes
            ** Phase 2 - Check Pathnames
            ** Phase 3 - Check Connectivity
            ** Phase 4 - Check Reference Counts
            ** Phase 5 - Check Cyl groups
            FILE SYSTEM STATE IS MARKED AS DIRTY
            FIX?
```

When you find out "FILE SYSTEM STATE IS MARKED AS DIRTY", you do NOT ALWAYS want to fix that.

** If the filesystem is currently mounted (it shows up when you use the df command), it will be DIRTY, which is OK. Filesystems are dirty when there is data in buffers that has not been written out to disk, which is fine if the filesystem is mounted and in use. If this is the case, choose N.

** If the filesystem is not mounted (it does not show up when you use the df command) then you should choose Y.

If an Oracle database (or some other program) is writing to a file on a filesystem at the time a server goes down (crashes), then the filesystem will not mount when the server comes back up. You need to run fsck to repair the dirty filesystem.

If the dirty filesystem is the root (/) filesystem, then A/UX will not boot. The A/UX Startup program will tell you that the root filesystem (/dev/dsk/c0d0s0) is dirty, and will present you with a window in which you can issue some UNIX commands. Try:

```
fsck /dev/dsk/c300d0s0
```

Once fsck completes the repairs on the filesystem, you should be able to type the command 'boot' to start A/UX.

mount -a

mount -a will attempt to mount every filesystem listed in the /etc/fstab file. If mount -a returns no information, that means that it had no problem. If it gives you errors, that means that either the /etc/fstab file is not set up properly, or the filesystem is damaged and should be checked with fsck.

mount -a is automatically called at startup time. You should only need to use this command after modifying the /etc/fstab file or after repairing a filesystem with fsck.

Unix Shells

.login

The .login file is in the home directory of each user. The .login file contains commands which are executed automatically when the user logs in to the UNIX machine.

It is often helpful to set the following in the .login file:

```
setenv ORACLE_HOME /users/oracle
setenv ORACLE_SID  SAMP
setenv PATH        "/users/oracle/bin:/bin:/usr/bin:/usr/ucb:
                   /mac/bin:/etc:/usr/etc:/usr/local/bin"
```

Adding these lines to the .login file will set these variables automatically when you next login, or use the source command.

PATH — PATH is the environment variable which lists the directories on the UNIX machine that will be searched when a command is typed. If I type 'do_something', and there is no program called 'do_something' in the current directory, the shell will search all the directories listed in the PATH for an executable program called 'do_something'. A default PATH may look like:

```
PATH=:/bin:/usr/bin:/usr/ucb:/mac/bin:/etc:/usr/etc:/usr/local
      /bin
```

If you try to use the oracle program called 'sqldba' you will see:

```
sqldba
sqldba: Command not found.
```

If you want to be able to use Oracle commands, you should add the bin directory of the oracle home to the PATH. This is '/users/oracle/bin' by default. Then the PATH would look like:

```
PATH=:/bin:/usr/bin:/usr/ucb:/mac/bin:/etc:/usr/etc:/usr/local
      /bin:/users/oracle/bin
```

In this case, the PATH references /users/oracle/bin, so the sqldba command can be used without problem.

csh — csh is the C shell, which is the default shell for each user except root. Use the setenv command to set environment variables. when running the C shell. This is also known as /bin/csh.

setenv — setenv sets environment variables under csh.

'setenv SOME_VARIABLE some_contents' sets the variable SOME_VARIABLE to be some_contents.

There are 3 environment variables which are important under A/UX. They are ORACLE_HOME, ORACLE_SID, and PATH.

```
ORACLE_HOME = /users/oracle ( This is the directory where the
                              oracle files and executables
                              reside )
ORACLE_SID  = SAMP          ( This is the name of the default
                              database, which is SAMP )
PATH = ../users/oracle/bin.. (discussed in PATH section above)
```

sh — sh is the Bourne shell, which is the default user for the root user. This is also known as /bin/sh.

To set an environment variable in the Bourne shell, you can do:

```
SOME_VARIABLE=some_contents; export SOME_VARIABLE
```

```
              It is important to add the '; export SOME_VARIABLE' to the
              line, as otherwise programs that you run will not be able to
              evaluate that environment variable.

              ORACLE_SID=SAMP; export SAMP

              This sets the ORACLE_SID to be SAMP, and allows other programs
              you run (like Oracle utilities) to read the variable.

env           env lists the names and contents of all variables in the
              current shell's environment.

source        source is used to read in a configuration file.  If you edit
              the .login file, and want the changes to take effect, you can
              log out and log in again, or read in the file.  To read in the
              .login:

              source .login

              This will run all of the commands in the .login file.

Oracle Database Management
--------------------------

tcpctl        tcpctl is a command to help you start, stop, and get the status
              of the SQL*Net TCP/IP version 1 listener.

         **   'tcpctl status' should give you the status of orasrv.

              tcpctl status
              tcputl: Status summary follows
              Server is running:
                Started             : 8-SEP-93 12:08:51
                Last connection     : 15-SEP-93 11:09:17
                Total connections   : 87
                Total rejections    : 3
                Active subprocesses : 9
                ORACLE SIDs         : S6A,S6B,S6C,S7F,SAMP
                Default SID         : (null)
              Logging mode is ENABLED.
              DBA logins are DISABLED.
              OPS$ logins are ENABLED.
              OPS$ROOT logins are DISABLED.
              Orasrv is detached from the terminal.
              Break mode = IN BAND.
              Debug level = 1
              No timeout (on orasrv handshaking).
              Length of listen queue = 10
              Orasrv logfile = /u2/7012f/tcp/log/orasrv.log
              Orasrv mapfile = /etc/oratab

              This tells you that the server is running, and has been running
              for a week.  It has serviced 87 connections since it was
```

started, and there are currently 9 connections made to the server. The active SIDs were read in from the /etc/oratab file.

If the server is not running, it will look like:

```
tcpctl status
tcputl: server is not running: Connection refused
```

** 'tcpctl start' should start the TCP/IP listener process (orasrv).

```
tcpctl start
tcpctl: log file is /u2/7012f/tcp/log/orasrv.log
tcpctl: SID mapping file is /etc/oratab
tcpctl: server will be run under oracle
tcpctl: logging mode is on

orasrv: Release 1.2.7.5.1 - Production on Wed Sep 15 12:01:06
1993

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reserved.

Starting server on port 1525.
tcpctl: server has been started
```

This means that server was successfully started on port 1525 (which was read in from the /orasrv entry of the etc/services file).

You may get the following error if you try to issue the 'tcpctl start' immediately after issuing a 'tcpctl stop':

```
Starting server on port 1525.
orasrv: server already running: Address already in use
```

If this happens, wait a few minutes and try again, while the UNIX operating system releases the port.

** 'tcpctl stop' should stop the TCP/IP listener process (orasrv).

'tcpctl stop' requires that you log into the A/UX machine as the user who started the server. You must actually log into the machine or telnet to the machine to have the proper privileges. If I log in as a user who is not a dba, and use the 'su - oracle' command to become the oracle user, it will not work:

```
tcpctl stop
tcputl: checking user permission...
tcputl: permission denied
```

If I then telnet to this machine as oracle, or log out and log in as oracle, it will work:

```
tcpctl stop
tcputl: checking user permission...
tcputl: server has been stopped
```

You can also stop the orasrv process by killing it.

```
ps -ef | grep orasrv   (this finds the orasrv process...)
oracle   692       1  0  Sep 21  ?        0:02 orasrv
vgrigori 16358 15344  2 18:17:44 p2       0:00 grep orasrv

kill 692  (This kills the orasrv process.)
```

orasrv — orasrv is the SQL*Net TCP/IP version 1 listener process which is controlled by the tcpctl program.

atksrv — atksrv is the SQL*Net AppleTalk version 1 listener process. It is invoked with the command atksrv.

```
atksrv Squid
atksrv: Release 1.0.1.2.1 - Production on Wed Sep 15 12:38:06
1993

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reserved.

Server name is Squid

Server Squid[10790] is accepting connections....
```

* If you get the error: Cannot register service "Squid" on network, that means that there is an AppleTalk listener using that name already in your zone of the AppleTalk network.

The [10790] tells you the PID of the atksrv process. You can stop the atksrv listener by hitting control-C, or by killing the process manually from another UNIX prompt.

You could also kill the atksrv process in the same way you could kill the orasrv process, which is described in the tcpctl section.

sqldba — sqldba is the utility used to administrate the Oracle database. It can create, startup, and shutdown databases. If the database is not running, you can only connect to it by using 'connect internal'. Once connected internally, you may startup and shutdown the database.

```
sqldba
```

```
SQL*DBA: Release 7.0.12.2.0 - Production on Wed Sep 15 12:44:56

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reserved.

ORACLE7 Server Release 7.0.12.2.0 - Production
With the procedural and distributed options
PL/SQL Release 2.0.14.0.1

SQLDBA> connect system/manager
ORA-01034: ORACLE not available
ORA-07318: smsget: open error when opening sgadef.dbf file.
Macintosh A/UX Error: 2: No such file or directory
```

The above error occurs when the database is not running. If you are logged in as a user in the dba group, you may connect internally and startup the database.

```
SQLDBA> connect internal
Connected.
SQLDBA> startup
ORACLE instance started.
Database mounted.
Database opened.
Total System Global Area       7319428 bytes
              Fixed Size         30492 bytes
           Variable Size       6453352 bytes
        Database Buffers        819200 bytes
            Redo Buffers         16384 bytes
```

After starting up the database, you may connect as a database user.

```
SQLDBA> connect scott/tiger
Connected.
```

You could then connect internally and shutdown the database.

```
SQLDBA> connect internal
Connected.
SQLDBA> shutdown
Database closed.
Database dismounted.
ORACLE instance shut down.
```

Loopback

You could then attempt a TCP/IP connection to the database (provided you have started the orasrv process). This is called a loopback, as the server machine is making a connection to itself, which is a useful test of the server's functionality.

```
SQLDBA> connect scott/tiger@t:squid:S7F
Connected.
```

* You may get errors trying to do the loopback.

ORA-6114 - problem with the SID you specified. Compare the SID you tried with the /etc/oratab file.

ORA-6401 - you did not install SQL*Net TCP/IP.

ORA-3113 - you probably did not install the C programming option of A/UX and oracle was not properly installed.

ORA-6107 - you need to add the orasrv entry to /etc/services.

ORA-6105 - you need to add the server's hostname to /etc/hosts

ORA-6108 - orasrv is not running, or you have the wrong IP address entered for your server in /etc/hosts. Refer to the description of ping above.

ORA-1034 - orasrv is running properly, but the rdbms is not. Use sqldba to start the database.

ORA-7318 - This error usually follows ORA-1034, but it means the same thing. The database is not running.

/etc/oratab - This file lists the instances (SID's) available on the A/UX machine. The has one line per database on the machine. Lines beginning with '#' are comments which are ignored. Each line is made up of the format:

SID:ORACLE_HOME:STARTUP

Where: SID is the name of the database
ORACLE_HOME is where you installed the database
STARTUP is either Y or N, which indicates whether the dbstart and dbshut utilities should start or stop that database.

The default /etc/oratab should have the line:

SAMP:/users/oracle:N

This means that I have one database on my machine, it is named SAMP, and the ORACLE_HOME for the SAMP database is /users/oracle. The ORA-6114 error occurs if you attempt to connect to a database that is not listed in the oratab file.

*** The capitalization of the SID is important
*** 'SAMP' is different from 'samp'.

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Tech Info Library

AppleShare 4.x.x Versions: Which Computers Supported (5/96)

Revised: 5/30/96
Security: Everyone

AppleShare 4.x.x Versions: Which Computers Supported (5/96)

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Article Created: 5 January 1994
Article Reviewed/Updated: 30 May 1996

TOPIC ----------

This article details the supported computers for AppleShare 4.x.x.

DISCUSSION ----------

The following chart details the supported computers for AppleShare versions 4.0, 4.0.1, 4.0.2, 4.1, 4.2, and 4.2.1:

Begin_Table

Supported Computer	4.0	4.0.1	4.0.2	4.1	4.2	4.2.1
Centris 610	X	X	X			
Centris 650		X	X			
Centris or Quadra 660AV						
LC 475		X	X			
LC 575		X	X			
LC 630		X	X			
Quadra 605		X	X			
Quadra 610 or AWS 60	X	X	X			
Quadra 630		X	X			
Quadra 650		X	X			
Quadra 700	X	X	X			
Quadra 800 or AWS 80	X	X	X			
Quadra 840AV						
Quadra 900		X	X			
Quadra 950	X	X	X			
Power Macintosh 6100/60			X	X	X	X
Power Macintosh 6100/60AV			X	X	X	X
Power Macintosh 7100/66			X	X	X	X
Power Macintosh 7100/66AV			X	X	X	X
Power Macintosh 8100/80			X	X	X	X

Power Macintosh 8100/80AV	X	X	X	X
Power Macintosh 6100/66		X	X	X
Power Macintosh 7100/80		X	X	X
Power Macintosh 7100/80AV		X	X	X
Power Macintosh 8100/100		X	X	X
Power Macintosh 8100/100AV		X	X	X
Power Macintosh 8100/110		X	X	X
Power Macintosh 7200/75/90				X
Power Macintosh 7500/100				X
Power Macintosh 8500/120/132				X
Power Macintosh 9500/120/132				X
Workgroup Server 6150	X	X	X	X
Workgroup Server 8150	X	X	X	X
Workgroup Server 9150	X	X	X	X
Workgroup Server 6150/66		X	X	X
Workgroup Server 8150/110		X	X	X
Workgroup Server 9150/120		X	X	X
Workgroup Server 7250/120				X
Workgroup Server 8550/132				X

End_Table

Note: AppleShare 4.2.1 is compatible with Open Transport on PCI-based Power Macintosh 7200, 7500, 8500, and 9500 series computers. Apple has not certified AppleShare 4.2.1 and Open transport on NuBus based Power Macintosh computers and Workgroup servers.

Note: There is a special version of AppleShare 4.0.2 for Power Macintosh computers. AppleShare 4.0.2 for Power Macintosh is no longer sold separately.

Note: AppleShare 4.0.1 supports all 68040-based Macintosh computers except the Macintosh Centris/Quadra 660AV and Quadra 840AV due to incompatibility. AppleShare is not recommended or supported when using a Power Macintosh Upgrade Card. There is no performance benefit with the Upgrade Card.

Note: From a functionality standpoint, AppleShare 4.0.1 is identical to the product "AppleShare 4.0.2 for 68040-based Macintosh Computers." Therefore, there is no need to upgrade AppleShare 4.0.1 to AppleShare 4.0.2. The only differences between these versions are the version number itself and the fact that AppleShare 4.0.2 is available in a complete retail package, while AppleShare 4.0.1 is available as a tune-up only and must be installed over an existing copy of AppleShare 4.0.

Note: The Workgroup Server 95 uses only AppleShare Pro (v 1.0 or 1.1). None of the other versions of AppleShare (shown in this article) is supported on the Workgroup Server 95. AppleShare Pro only works with the specific version of System Software (A/UX) it ships with.

Note: The AppleShare 4.0 column is left here for information purposes, users are recommended to upgrade to at least AppleShare 4.0.1.

Article Change History:

30 May 1996 - Updated for AppleShare 4.0.2.
24 May 1996 - Updated for AppleShare 4.2.1
21 Mar 1996 - Added Workgroup Server 95 comment.

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Tech Info Library Article Number:14337

Tech Info Library

Color Plus14 Display: Mac II Video is Compatible (12/93)

Revised: 12/23/93
Security: Everyone

Color Plus14" Display: Mac II Video is Compatible (12/93)

==========

Article Created: 23 December 1993

TOPIC -----

Will the Mac II Video Card (8Bit) drive the Apple Color Plus Display?

DISCUSSION -----

Yes. The Color Plus has the same sweep rate as the previous HighRes RGB monitor, for which the Mac II video card was originally designed.

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Tech Info Library Article Number:14338

Tech Info Library

Troubleshooting Macintosh System 7 INIT Conflicts (2/95)

Revised: 2/16/95
Security: Everyone

Troubleshooting Macintosh System 7 INIT Conflicts (2/95)

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Article Created: 22 December 1993
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

An Extension conflict results when an extension or control panel is incompatible with other software on your Macintosh. This document will help you determine whether an extension is causing erratic or unexpected behavior. An example of erratic behavior is a "frozen" screen that prevents continued use of the computer. This document also tells you how to resolve the conflict.

DISCUSSION ----------

These instructions call for you to test for the problem at regular intervals. To test for a problem, repeat the actions you took just before you saw the problem on your computer.

An easily reproducible problem facilitates testing (for example, if your screen freezes whenever you insert a floppy disk). However, you can also use this procedure to troubleshoot intermittent problems -- it will simply take longer to test for them.

What's an INIT?

System files that contain INIT resources are collectively referred to as INITs. The purpose of an INIT resource is to load into random access memory (RAM) at startup time and modify the standard behavior or add new features to the Macintosh operating system.

System extensions, control panels (cdevs) and Chooser extensions (rdevs) may contain an INIT resource. Control panels differ from system and Chooser extensions in that a control panel has a user interface where you can modify the parameters. System and Chooser extensions have no user interface to modify parameters.

In general, the term extension is used interchangeably with INIT, and refers to

any of those files that contain an INIT resource. For more information about system files and what they do, read the Tech Info Library article "Macintosh System Folder: Files Described."

TROUBLESHOOTING PROCEDURE

Follow these instructions in the order presented.

Turn Off Some Control Panel Settings

Turn off some of the control panel settings to check application compatibility with certain System 7 features.

Step 1
Open the Memory control panel, click on Use Defaults, and restart your computer. This will turn off virtual memory and 32-bit addressing, and reset the disk cache to its default settings.

Step 2
Turn off file sharing in the Sharing Setup control panel.

Step 3
Test for the problem with these features turned off.

Some applications may be incompatible with these System 7 features. So if this resolves the problem, contact the application vendor.

Disable Extensions

Note:
In cases where it isn't feasible to disable ALL extensions (for example, if you're having problems launching an application that requires the QuickTime extension) skip to the Isolating Extensions section.

Verify that the problem is related to extensions, following these steps:

Step 1
Make sure the Caps Lock key is off, and restart your Macintosh.

Step 2
After you see the smiling Macintosh, hold down the Shift key.

Step 3
If you are using System 7.5, hold down the Spacebar until the Extension Manager appears on screen. Select "System 7.5 Only: from the Sets menu. This will load only those extensions installed during your original System 7.5 installation.

Step 4
Release the Shift key when the "Welcome to Macintosh, Extensions Off" message appears.

Step 5
When the Macintosh is ready, try to recreate the erratic behavior.

If the problem no longer occurs, then you have an Extension conflict.
Continue with the next section.

Identify the Conflicting Extension

Step 1
Create a new folder on the desktop called "Removed Extensions."

Step 2
Move all items of Kind "system extension," "control panel," or "Chooser extension" from the System Folder, Extensions folder, and Control Panels folder to this new folder. When you open these folders, choose "by Kind" from the View menu to help identify the files you need to move.

Step 3
Close the System Folder, and restart the Macintosh. Test for the problem.

Note: If the problem still occurs, check your System Folder to make sure you've removed all the extensions and control panels.

Step 4
Move one item from the new folder on the desktop to the closed System Folder and restart the Macintosh.

Step 5
Attempt to recreate the original problem.

Repeat steps 4 and 5 for each item in the Removed Extensions folder until the problem recurs. The last item returned to the System Folder is likely to bo be the cause of the problem.

Install the Compatible Version

Contact the extension developer for compatibility information. If you have the compatible version, reinstall it from the original disk or from your backup.

If you still have problems with an extension which should be compatible, follow the instructions for isolating this extension from the others on your system.

Isolating Extensions

Follow the steps in this section when you need to test a single extension in isolation. For example, if you just installed the Macintosh PC Exchange control panel, and it doesn't work properly, the cause may be a conflict with another extension.

Make sure you have a startup floppy disk available (that is, a floppy disk containing a System Folder and enabler if required). You can use the Disk Tools disk.

Step 1
Open the hard disk icon and create a new folder called "Test Folder."

Step 2
From the root level of the System Folder, drag the System and Finder files to the Test Folder. Also move any files called System Enabler followed by a 3-digit number, from the root level of your System Folder to the Test Folder.

Step 3
Drag the extension or control panel you wish to test in isolation to the Test Folder as well.

Step 4
Restart the Macintosh.

Note:
If you experience problems starting up, restart with the startup floppy disk, and make sure you've moved the correct files to the Test Folder.

Step 5
Test for the problem.

Step 6
If the problem recurs, you may have an incompatible extension, or some damage to the System file. Check the compatibility and reinstall the extension and the system software if necessary.

Step 7
If the problem doesn't recur, there's some incompatibility between extensions. Drag the System, Finder, System Enabler (if any), and the extension you're testing back to the System Folder.

Note:
Don't drag any of the folders you may see in the Test Folder back to your System Folder. The system automatically creates these empty folders.

Follow the instructions in the "Identify Conflicting INIT" section, with this important exception -- remove all system extensions and control panels from the System Folder except the one you're testing. Begin with this extension in place, and add the others one at a time until the problem recurs.

If after following all the above procedures and the problem continues, it is recommended that a clean system software install be performed.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
16 Feb 1995 - Fixed some steps that were numbered incorrectly.
30 Aug 1994 - Reviewed for consistency with Fax document.
29 Jul 1994 - Revised wording to include System 7.5 Extension Manager

information.

Support Information Services

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Tech Info Library Article Number:14343

Tech Info Library

Troubleshooting Macintosh System 6 INIT Conflicts (8/94)

Revised: 6/5/96
Security: Everyone

Troubleshooting Macintosh System 6 INIT Conflicts (8/94)

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Article Created: 22 December 1993
Article Reviewed/Updated: 30 August 1994

TOPIC ----------

An "INIT conflict" results when a startup document or control panel is incompatible with other software on your Macintosh computer. This document will help you determine whether an INIT is causing erratic or unexpected behavior. An example of erratic behavior is a "frozen" screen that prevents continued use of the computer. This document also tells you how to resolve the conflict.

DISCUSSION ----------

These instructions call for you to test for the problem at regular intervals. To test for a problem, repeat the actions you took just before you saw the problem on your computer.

An easily reproducible problem is easy to test (for example, if your screen freezes whenever you insert a floppy disk). However, you can also use this procedure to troubleshoot intermittent problems – it will simply take longer to test for them.

WHAT'S AN INIT?

System files that contain INIT resources are collectively referred to as INITs (pronounced in-its). The purpose of an INIT resource is to load into random access memory (RAM) at startup time and modify the standard behavior or add new features to the Macintosh operating system.

Control panels (cdevs) and Chooser extensions (rdevs) may contain an INIT resource. Control panels differ from Chooser extensions in that a control panel has a user interface where you can modify the parameters. Chooser extensions have no user interface to modify parameters.

In general, the term extension is used interchangeably with INIT, and refers to any of those files that contain an INIT resource.

TROUBLESHOOTING PROCEDURE

Follow these instructions in the order presented.

Turn Off INITs

Note: In cases where it isn't feasible to turn off all INITs (for example, if you're having problems launching an application that requires a particular INIT), skip to the Isolating INITs section.

1) Create a new folder on your hard disk named "INITs."

2) Move all items of kind "Startup Document" or "Control Panel" from the System Folder to this new folder. When you open the System Folder, choose by Kind from the View menu to help identify the files you need to move.

3) Close the System Folder, restart the Macintosh, and attempt to recreate the problem. If an INIT conflict is causing the problem, you won't be able to reproduce the problem at this step.

   Note: If the problem still occurs, check your System Folder and make sure you've removed all the startup documents and control panels. If you've followed these instructions correctly, then your problem isn't related to INIT conflicts. You may want to try other troubleshooting methods, such as reinstalling your application or system software.

4) Move one item from the INITs folder to the closed System Folder and restart the Macintosh.

5) Attempt to recreate the original problem.

Repeat steps 4 and 5 with each item in the INITs folder until the original symptom recurs. The last item returned to the System Folder is probably the cause of the problem.

Install the Compatible Version

Contact the INIT developer for compatibility information. If you have the compatible version, reinstall it from the original floppy disks or from your backup.

If you still have problems with an INIT which should be compatible, follow the instructions for isolating this INIT from the others on your system.

Isolating INITs

Follow the steps in this section when you need to test a single INIT in isolation. For example, if you just installed a new control panel, and it doesn't work properly, the cause may be a conflict with another INIT.

Make sure you have a startup floppy disk available (that is, a floppy disk

containing a System Folder). You can use the System Tools, Utilities 1, or System Startup disk for this purpose.

1) Open the hard disk icon and create a new folder called "Test Folder."

2) From the root (top) level of the System Folder, drag the System and Finder files to the Test Folder.

3) Drag the startup document or control panel you wish to test in isolation to the Test Folder as well.

4) Restart the Macintosh.

   Note: If you experience problems starting up, restart with the startup floppy disk, and make sure you've moved the correct files to the Test Folder.

5) Test for the problem.

6) If the problem recurs, you may have an incompatible INIT, or some damage to the System file. Check the compatibility and reinstall the INIT and the system software if necessary.

7) If the problem doesn't recur, there's some incompatibility between INITs. Drag the System, Finder, and the INIT you're testing back to the System Folder.

Follow the instructions in the Identify Conflicting INITs section, with this important exception -- remove all startup documents and control panels from the System Folder except the one you're testing. Begin with this INIT in place, and add the others one at a time until the problem recurs.

Article Change History:
30 Aug 1994 - Reviewed for concistency with Fax document.
28 Jan 1994 - Reformatted.

Support Information Services

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Tech Info Library Article Number:14346

Tech Info Library

AppleScript Scripter's Toolkit: Technical Specifications(5/95)

Revised: 5/23/95
Security: Everyone

AppleScript Scripter's Toolkit: Technical Specifications(5/95)

==========

Article Created: 20 December 1993

TOPIC -----

This article gives the technical specifications for the AppleScript Scripter's Toolkit.

DISCUSSION -----

APPLESCRIPT SYSTEM EXTENSION VERSION 1.1

Memory Utilization

- At rest: 2K
- In use: 330K of code, 150K of data

System Extension File Size

- <400K

Storage Management

- Automatic garbage collection

Format of Compiled Scripts

- Universal AppleScript byte code

Optimization

- Run time optimized for speed
- Compiler optimized for storage efficiency

APPLESCRIPT LANGUAGE CHARACTERISTICS

Features

Object-oriented design with:
- Single-level inheritance
- Persistent data objects
- Control-flow commands
- Recursive subroutines
- Exception handling
- Conditionals
- Pattern-matching parameter lists
- Keyword and positional subroutine–calling conventions

Data Types

- Integer
- Real
- Date
- Time
- Text
- Lists
- Records
- And any application-specific data

Data Value Size

- 512MB maximum

Open Scripting Architecture (OSA) Compliance

- Fully compliant with the OSA, a cross-platform industry standard with widespread and growing application support (more than 80 Macintosh applications currently support the OSA)

Access to Third-party Application Data

- Uses Apple events

Transportability of Compiled Scripts

- Easily transportable (can even send compiled scripts as arguments to remote machines)

SCRIPT EDITOR VERSION 1.1 CAPACITIES

- Ability to edit, record, and compile scripts
- Display scripts in multiple languages
- Monitor Apple events and values returned
- Save scripts as compiled scripts or as stand-alone script applications
- Script with multiple scripting components (for example, QuicKeys)

SCRIPTABLE TEXT EDITOR VERSION 1.1 CAPACITIES

- Scriptable and recordable by any OSA-compliant scripting system

• Ability to have up to six text documents open simultaneously and edit text files up to 32K in length

INTERFACE PROCESSOR FROM SOFTWARE DESIGNS UNLIMITED, INC.

Capacities

• Ability to have up to 9 projects open simultaneously; any number of windows per project; any number of window items per window; any number of menus and menu items; and up to 32,767 characters per script for each project, window, and window item

Interface

• Graphical tools to draw all interface elements
• Ability to copy and paste all design elements and scripts
• Ability to import pictures and icons from any file
• Pixel and grid positioning and sizing
• Undo, Redo, and Revert functions
• Ability to set properties of all design elements
• Message window for commands
• Instant "play" of all interface elements
• Incremental application design and testing
• Pop-up references for messages and properties
• Ability to create custom design and editing tools

Design Elements

• Buttons: a variety of standard and custom button types
• Lists: plain and styled text, icons, pictures, multicolumn, draggable, multiselection
• Text: editable or not; wrapped or not; font, style, and color control; key filters; scrolling
• Pop-ups: text, icon, picture, color palettes
• Movies: QuickTime format
• Drawn graphics: lines and rectangles
• Menus: standard and application-specific

SYSTEM REQUIREMENTS

• Any Apple Macintosh computer with at least 4MB of RAM and a hard disk drive (the interface processor requires a 68020 or later microprocessor)
• Macintosh system software version 7.0 or later (interface processor requires version 7.0.1 or later)

ORDERING INFORMATION

AppleScript Scripter's Toolkit

Domestic Order No. M1730LL/A
International Order No. M1730Z/A

- AppleScript language, system software extension, and script editor
- Interface processor from Software Designs Unlimited, Inc.
- English, French, and Japanese Kanji AppleScript scripting dialects
- AppleScript Language Guide —- English Dialect
- Building Interfaces for AppleScript
- AppleScript Scripting Additions Guide —- English Dialect
- Getting Started with AppleScript
- AppleScript Guide to Scriptable Applications
- Redistribution license for AppleScript system software and interface processor run-time code

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Tech Info Library Article Number:14347

Tech Info Library

Apple Phone: Feedback When Using Hands Free Mode (12/93)

Revised: 12/22/93
Security: Everyone

Apple Phone: Feedback When Using Hands Free Mode (12/93)

==========

Article Created: 22 December 1993

TOPIC ----------

I'm using the Apple Phone 1.0 application with my Quadra 840AV and GeoPort Telecom Adapter in hands free mode. I'm getting feedback from the speakers in the AudioVision 14-inch Display. How can I eliminate the feedback?

DISCUSSION ----------

The feedback is a result of a design deficiency in the Apple Phone application. Apple Phone does not have Echo Cancellation Code to prevent feedback. There are several workarounds you can use to eliminate the feedback:

1) If you are using the AudioVision 14-inch Display, set the volume controls to their midpoints. This will eliminate much of the feedback.

2) Connect the PlainTalk microphone to the microphone jack on the Macintosh or to the Monitor, if applicable. Position the microphone away from and behind the speakers to reduce the feedback.

3) Connect a pair of headphones to the sound out jack. This will eliminate all feedback.

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Tech Info Library Article Number:14349

Tech Info Library

Apple Phone: Audio on Left Speaker Only (12/93)

Revised: 12/22/93
Security: Everyone

Apple Phone: Audio on Left Speaker Only (12/93)

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Article Created: 22 December 1993

TOPIC --------------------

When using Apple Phone software on my Quadra 660AV, audio is heard on the left external speaker only. How do I get audio to play on both speakers?

DISCUSSION --------------------

Apple Phone plays audio through the left channel. This is the equivalent to the internal speaker on the Quadra 660AV. There is no way to play Apple Phone audio on both left and right external speakers.

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Tech Info Library Article Number:14350

Tech Info Library

AWS 95: System Configurations With Jan. 1994 Release (1/94)

Revised: 1/4/94
Security: Everyone

AWS 95: System Configurations With Jan. 1994 Release (1/94)

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Article Created: 5 January 1994

TOPIC -----

This article describes the new system configurations of the Apple Workgroup Server (AWS) 95 with the January 1994 release.

DISCUSSION -----

Apple currently ships three AWS 95 configurations, and will only create two additional configurations with the January 1994 release. All three configurations will be equipped to install either the file/print environment or database tuned environment. Pacific configurations will be announced shortly.

Customers who purchase an AWS 95 in December 1993, January 1994, or February 1994 will receive a software upgrade free of charge. Customers will be required to prove that they purchased the AWS 95 in December, January, or February with an invoice.

USA Configuration:

Current Plan AWS 95	Jan. 1994 Release AWS 95
1) M6855LL/A • 16MB Memory, 128KB L2 Cache, 230MB Disk	1) Same as AWS 95, phase in new software/disk • 16MB Memory, 128KB L2 Cache, 250MB Disk
2) M6875LL/A • 32MB Memory, 512KB L2 Cache, 1GB Disk, DAT Tape, AppleShare Pro	2) M3074LL/A • 32MB Memory, 256KB L2 Cashe, 2GBDisk, DAT Tape, AppleShare Pro

3) M6895LL/A • 48MB Memory, 512KB L2 Cache, 230MB Disk, 1GB Disk, DAT Tape	3) M3075LL/A • 48MB Memory, 512KB L2 Cache, 250MB Disk, 2GB Disk, DAT Tape
M6940Z/A • PDS Card Upgrade #1: PDS Card and A/UX	Same as AWS 95, phase in new SW • PDS Card Upgrade #1: PDS Card and A/UX
M6945Z/A • PDS Card Upg #2: PDS Card, DAT Tape, A/UX	Same as AWS 95, phase in new SW • PDS Card Upg #2: PDS Card, DAT Tape, A/UX
M6825Z/A • AppleShare Pro 1.0 Software	M6825Z/B • AppleShare Pro 1.1 Software
	M2885Z/A • Software upgrade to AWS 95 installed base

Europe Configuration:

Current Plan AWS 95	Jan. 1994 Release AWS 95
1) M6865XX/A • 16MB Memory, 256KB L2 Cache, 500MB Disk, DAT Tape	1) M3074XX/A • 32MB Memory, 256KB L2 Cache, 2GB Disk, DAT Tape
2) M6895XX/A • 48MB Memory, 512KB L2 Cache, 230MB Disk, 1GB Disk, DAT Tape	2) M3075XX/A • 48MB Memory, 512KB L2 Cache, 250MB Disk, 2GB Disk, DAT Tape
M6940Z/A • PDS Card Upgrade #1: PDS Card and A/UX	Same as AWS 95, phase in new SW • PDS Card Upgrade #1: PDS Card and A/UX
M6945Z/A • PDS Card Upg #2: PDS Card, DAT Tape, A/UX	Same as AWS 95, phase in new SW • PDS Card Upg #2: PDS Card, DAT Tape, A/UX
M6825Z/A • AppleShare Pro 1.0 Software	M6825Z/B • AppleShare Pro 1.1 Software
	M2885Z/A • Software upgrade to AWS 95 installed base

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Tech Info Library Article Number:14353

Tech Info Library

AWS 95: Documentation with January 1994 Release (1/94)

Revised: 12/23/93
Security: Everyone

AWS 95: Documentation with January 1994 Release (1/94)

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Article Created: 5 January 1994

TOPIC --------------------

This article describes the Apple Workgroup Server (AWS) 95 documentation after the January 1994 product announcement.

DISCUSSION --------------------

The existing AWS 95 user documentation will be used with the newer release. A Read Me update will also be provided that will identify the differences. A new Performance Tuning Guide will be included with each system.

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Tech Info Library Article Number:14354

Tech Info Library

AWS 95: Hardware Product Enhancements - Jan 1994 Release (1/94)

Revised: 12/23/93
Security: Everyone

AWS 95: Hardware Product Enhancements - Jan 1994 Release (1/94)

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Article Created: 5 January 1994

TOPIC ----------

This article describes hardware enhancements to the Apple Workgroup Server (AWS) 95 with the January, 1994 product announcement.

DISCUSSION ----------

1) 2GB Hard Drive
   The new drive provides double the storage capacity of existing Apple hard drives on the AWS 95 (2GB vs. 1GB), and offers faster data rates. Most AWS 95 configurations will be packaged around the new 2GB hard drive. Below is a table showing speed comparisons:

	1GB Drive	2GB Drive
Seek time (ms)	11	9
Access Time (ms)	16	12
Internal Data Rate (MB/sec.)	3	5
External Data Rate (MB/sec.)	10	10

2) New Drive Bracket/SCSI Cable
   Apple has developed a new bracket/cable solution that allows the AWS 95 to hold up to 5 internal hard drives as compared to 2 drives before. Both systems support CD-ROM or DAT tape in addition to the hard drives stated above. Users will be able to take advantage of the new expanded internal storage capability.

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Tech Info Library Article Number:14355

AWS 95: Software Product Enhancements - Jan 1994 Release (1/94)

Revised: 12/23/93
Security: Everyone

AWS 95: Software Product Enhancements - Jan 1994 Release (1/94)

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Article Created: 5 January 1994

TOPIC ----------

This article describes software enhancements to the Apple Workgroup Server (AWS) 95 with the January, 1994 product announcement.

DISCUSSION ----------

1) Improved AppleShare Performance
   Apple has tuned A/UX software with AppleShare Pro to provide better system throughput. Preliminary benchmarks indicate file sharing operations are about 40% faster. Sequential reads improved an average of 12%, while sequential writes improved 70%. Enumerate performance, browsing through files and directories on the server, experienced the largest gain with a 123% increase in speed.

2) Pre-install TCP/IP and NFS
   Each AWS 95 will include TCP/IP and NFS pre-installed on the hard drive. UNIX customers asked that Apple make this software easier to setup, so we are loading it on the hard drive and allowing customers to select TCP/IP and NFS as an option.

3) Software Enhancements and Fixes
   Apple has tuned AWS 95 system software and made critical fixes. The key enhancements are listed below. These software improvements will be available to the installed based through a charge for software upgrade, check the Apple Price List for prices. Users who purchase an AWS 95 in December 1993, January 1994, or February 1994 will receive a software upgrade free of charge. Users will be required t prove that they purchased the AWS 95 in December, January, or February with an invoice.

Performance Improvements

- The file server now caches the packed data returned in enumerate calls, which improves browsing performance on the server.

- The file server no longer flushes the entire 68040 cache for local I/O.
- Rewrote the UNIX Ethernet driver and AppleTalk stacks to increase performance, primarily writes.
- Removed bottlenecks from the A/UX File Manager to speed up Finder copies.

Other Enhancements

- Support added for "dynamic" use of removable hard drives, such as Syquest drives.
- Added support for new Apple Twisted-Pair Ethernet card.
- Installed StyleWriter II print driver and new version of the Chooser.
- Installed new version of LaserWriter driver for LaserWriter NTR.
- Support for UNIX filesystems up to 4 GB (AppleShare still limited to 2 GB).

AppleShare Pro Fixes

- "Shortname" for CD-ROMs that have a ';' in the volume or path name will now be correct.
- The file server no longer returns fnfError when parsing a shortname path when the shortname not yet derived.
- Corrected a timing condition during startup which caused the stack to remain uninitialized and AppleShare to crash.
- Clients now derive the correct sub-folder count when they don't have full privileges on the parent folder.
- Improved error checking for GetIcon, AddIcon and GetAPPL calls.
- Fixed a hang in the parsing code when parsing shortnames and a btree call completed asynchronously.
- You should now be able to umount(1m) a UNIX filesystem after unsharing via Admin.
- Enumerates are now counted as file server activity; previously, this was not done and could cause a client to be logged out when opening up a folder containing many items.

A/UX Kernel Fixes

In the Protocol Stacks and Network Interfaces
- Infrequently, AppleShare Pro servers would not show up in the Chooser on some clients; this has been corrected.
- NFS clients with more than eight active supplementary groups could cause an AWS 95 to crash; the system no longer crashes, but will recognize only the first eight group IDs.
- ifconfig ae6 down no longer causes the system to crash.
- Previously, when using A/UX as a NFS client, you couldn't interrupt an NFS server, even if the remote filesystem was mounted with the intr option. This has been fixed.
- The AWS 95 no longer complains about duplicate IP addresses when IP is disabled.

In the UNIX Filesystem
- Fixed several problems where heavy UNIX filesystem use could cause system or process deadlock/panics.
- The buffer cache code could hold locks too long and cause interrupts to

be lost and therefore, the system tick count could drift. This has been fixed.

Other A/UX Kernel Fixes

- The MTIOCGET ioctl now returns EINVAL for non-tape devices.

A/UX Macintosh Environment Fixes

In the A/UX File Manager

- Previously, the .fs_cache file size was limited to 32MB, causing loss of Finder info with filesystems containing more than about 160,000 items. This problem was documented in the AWS Tech Note #17. It has been fixed.
- The toolbox now detects the death of catsearchd; previously, this condition could cause the entire Mac environment to hang.
- Fixed a problem in the File Manager which prevented changing the case of a filename which contained a slash ('/').
- Files with both CR and LF are now considered DOS TEXT files; previously these were interpreted as UNIX binaries.
- Previously, the Finder would frequently terminate after rebuilding the desktop. This has been fixed.
- Aliases to UNIX symbolic links now resolve to the target, not the sym-link.
- You can now subscribe to a publisher with '/', slash, in its filename.
- PB(H)Rename now correctly renames a locked file on an UFS volume.
- Previously, PBOpen did not always set the ioRefNum properly; this has been fixed.
- The A/UX Toolbox now supports the FlushCacheRange trap.
- HRename now works properly.

Related to Retrospect

- Loss of communication with a Retrospect Remote client no longer causes the Macintosh environment to freeze or hang.
- The Time low-memory global will no longer be corrupted (this fixes the Retrospect 2016 date error).
- Files with an empty resource fork are now restored correctly by Retrospect.

Related to Compatibility with Other Applications

- Think C now runs under A/UX.
- An application may now set the serial port baud rate directly via Control.
- Previously, Photoshop would crash with a disk error when creating files bigger than the available free space on the volume. Calls to SetEOF now properly check for free space.
- If the Finder restarts with files in the "Temporary Items" folder, it will now properly move them to "Recovered Items". Previously, this would not occur and creation of a new "Temporary Items" folder could fail, causing some programs, such as AppleSearch, to start up improperly.
- In the A/UX MacTCP glue, the UDP interfaces were fixed so that UDP Chat now works.

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Tech Info Library Article Number:14356

Apple Ethernet LC and LC Twisted-Pair Card Descriptions (1/94)

Revised: 12/23/93
Security: Everyone

Apple Ethernet LC and LC Twisted-Pair Card Descriptions (1/94)

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Article Created: 5 January 1994

TOPIC ----------

This article describes the Apple Ethernet LC Card and the Apple Ethernet LC Twisted-Pair Card.

DISCUSSION ----------

The Apple Ethernet LC Cards (Apple Ethernet LC Card and Apple Ethernet LC Twisted-Pair Card) provide all Macintosh LC models, as well as the Macintosh Color Classic and Macintosh Quadra 605 computers, with the ideal Ethernet connectivity solution for all of your networking needs.

Offering affordable high performance and flexibility, the Apple Ethernet LC Card includes a built-in Ethernet port. By plugging the appropriate Apple Ethernet cable system media adapter into this port, you can connect adapt to any standard Ethernet cabling environment: thin coax Ethernet networks, using the Apple Thin Coax Transceiver; and thick coax or other media (such as fiber-optic cable) Ethernet networks, using the Apple Ethernet AUI adapter.

The Apple Ethernet LC Twisted-Pair Card also provides cost-effective performance—as well as exceptional reliability—through its built-in, industry-standard 10Base-T network port. When used in conjunction with unshielded twisted-pair cable and an IEEE-compatible hub, it allows you to connect to IEEE 802.3 10Base-T networks.

These convenient, easy-to-install cards feature uncompromised network performance, and afford the flexibility of connection to any standard Ethernet media. They support a variety of networking protocols, including AppleTalk, TCP/IP, Mac IPX, and DECnet, and offer seamless interoperability in multivendor environments.

Features

Ease of use
- Easy, one button software installation makes set-up quick and painless
- Ships with multi-lingual software - ready for use with different language versions of system software

Compatibility
- Works with all Macintosh LC models as well as the Macintosh Color Classic and Macintosh Quadra 605 computers
- Complies with IEEE 802.3 standards
- Supports a variety of popular networking protocols, including AppleTalk, TCP/IP, Mac IPX, OSI and DECnet
- Easily integrates into multivendor environments
- Adapts to any standard Ethernet cable environment using the appropriate Ethernet cable system media adapter (Ethernet LC Card)

High performance
- Allows concurrent execution of multiple networking protocols to optimize network performance
- Ships with new, re-engineered, high performance network software
- Offers the highest available network buffer memory

Convenience
- Makes it easy to administer and expand your network. troubleshoot the network,
- Lets you take advantage of existing unshielded twisted-pair cabling (Ethernet LC Twisted-Pair Card)

Reliability
- Offers high network reliability because of the point-to-point nature of 10Base-T networks (Ethernet LC Twisted-Pair Card)

Ordering Information

Apple Ethernet LC Card
Order No. M0443
- Apple Ethernet LC Card
- Network Software Installer Disk
- User's guide
- Limited warranty

Apple Ethernet LC Twisted-Pair Card
Order No. M2460Z/A
- Apple Ethernet LC Twisted-Pair Card
- Network Software Installer Disk
- User's guide
- Limited warranty

Apple Ethernet Thin Coax Transceiver
Order No. M0329Z/B

Apple Ethernet Twisted-Pair Transceiver
Order No. M0437Z/B

Apple Ethernet AUI Adapter
Order No. M0432LL/A

Apple Ethernet 5-meter Thin Coax Cable
Order No. M0833LL/A

Apple Ethernet 13-meter Thin Coax Plenum Cable
Order No. M0436LL/A

For the latest version of AppleTalk software:
AppleTalk Connection for Macintosh
Order No. M8069Z/A

For more information about AppleTalk network design and management, see:
Planning and Managing AppleTalk Networks by Apple Computer, Inc., published by Addison-Wesley Publishing Company, Inc.

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Tech Info Library Article Number:14357

Tech Info Library

Apple Ethernet LC & LC Twisted-Pair Cards Specifications (1/94)

Revised: 12/23/93
Security: Everyone

Apple Ethernet LC & LC Twisted-Pair Cards Specifications (1/94)

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Article Created: 5 January 1994

TOPIC ----------

This article provides the specifications for the Apple Ethernet LC Card and the Apple Ethernet LC Twisted-Pair Card.

DISCUSSION ----------

Apple Ethernet LC Card

Connector
• Apple Ethernet

Transmit/receive data rate
• 10-megabit-per-second maximum data rate

Environmental requirements
• Operating temperature: 50° to 104° F (10° to 40° C)
• Humidity: 20% to 95% noncondensing

Power dissipation
• 4 W or less

Ethernet controller
• National Semiconductor DP83932 -SONIC

System requirements
• One available Macintosh LC–compatible processor-direct slot
• Appropriate Apple Ethernet cable system media adapter

Apple Ethernet LC Twisted-Pair Card

Connector
• Ethernet 10Base-T compliant RJ-45 port

Transmit/receive data rate
• 10-megabit-per-second maximum data rate

Environmental requirements
• Operating temperature: 50° to 104° F (10° to 40° C)
• Humidity: 20% to 95% noncondensing

Power dissipation
• Maximum 1.5, average 1 W

Ethernet controller
• National Semiconductor DP83934 -SONIC-T

System requirements
• One available Macintosh LC–compatible processor-direct slot
• Unshielded twisted-pair cable
• IEEE 802.3-compatible 10Base-T hub

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14358

Apple Personal LaserWriter 320: Description (10/96)

Revised: 10/22/96
Security: Everyone

Apple Personal LaserWriter 320: Description (10/96)

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Article Created: 20 December 1993
Article Reviewed/Updated: 22 October 1996

TOPIC ----------

This article describes the Apple Personal LaserWriter 320.

DISCUSSION ----------

The Apple Personal LaserWriter 320 is an affordable PostScript laser printer that offers a number of advanced print capabilities. It's ideal for individual home, education, and small-business users who require PostScript capability and who desire future RAM expansion options.

As easy to own as it is to buy, the Personal LaserWriter 320 connects simply, via the Macintosh computer's built-in LocalTalk port, and features an attractive, compact design. It also provides state-of-the-art energy efficiency. There is no on/off switch; instead, the printer "wakes up" when needed, operating the remainder of the time in an electricity-saving—and completely silent—standby mode.

Yet for all its simplicity of setup and operation, the Personal LaserWriter 320 offers a host of advanced capabilities. It features outstanding print quality, uniting Adobe PostScript Level 2 with Apple's own FinePrint resolution-enhancement technology. And the Personal LaserWriter 320 comes with 35 fonts in ROM, as well as built-in TrueType scaling for the highest-quality printing when using either PostScript Type 1 or TrueType fonts.

As your printing needs become more sophisticated, the Personal LaserWriter 320 is designed to grow to meet them. It has two expansion options: the 2MB RAM Upgrade, which expands both the printer's memory cache and its ability to print documents that contain large numbers of downloadable fonts; and the 6MB RAM PhotoGrade Upgrade, which adds to those capabilities the enhanced graphic image quality provided by Apple's PhotoGrade technology. Simply put, the Personal LaserWriter 320 offers the PostScript printing capabilities you need—now and in the future.

Features

Outstanding print quality

- Offers 300-dpi resolution
- Combines Adobe PostScript Level 2 support with FinePrint technology for resolution enhancement
- Comes with 35 built-in fonts and the TrueType scaler in ROM
- Includes built-in support for PhotoGrade graphic image enhancement (requires optional RAM upgrade)

Ease of ownership

- Connects simply via the Macintosh computer's built-in LocalTalk port
- Complies with the EPA's Energy Star guidelines for energy-efficient operation
- Prints extremely quietly, and makes no noise at all when not in use
- Features a compact, attractive design

Affordability and expandability

- Provides advanced functionality at an affordable price
- Offers two expansion options, allowing you to enhance its capabilities as your needs grow

Ordering Information

Apple Personal LaserWriter 320
Order No. M2178LL/A

- Apple Personal LaserWriter 320
- User's guide
- Limited warranty card

Apple 2MB RAM Upgrade*
Order No. M2182LL/A

Apple 6MB RAM PhotoGrade Upgrade*
Order No. M2183LL/A

Toner Cartridge
Order No. M2045G/A

100-sheet Universal Cassette
Order No. M2079G/A

*Requires dealer installation

Article Change History:

22 Oct 1996 - Updated printer cartridge part number.
27 Jul 1995 - Corrected misspellings; reviewed.
23 Aug 1994 - Review for accuracy.

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Tech Info Library Article Number:14359

Tech Info Library

Apple Personal LaserWriter 320: Technical Specifications (6/96)

Revised: 6/11/96
Security: Everyone

Apple Personal LaserWriter 320: Technical Specifications (6/96)

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Article Created: 17 December 1993
Article Reviewed/Updated: 6 June 1996

TOPIC -----

This article gives the technical specifications for the Apple Personal LaserWriter 320.

DISCUSSION -----

Print engine and controller

True laser engine
AMD 29205 RISC processor

Print quality

300-dpi resolution
FinePrint, Apple's resolution enhancement technology
PhotoGrade, Apple's graphic image enhancement technology

Memory

2MB of RAM standard
Expandable to 4MB or 8MB with optional upgrades

Interface

LocalTalk port

Print speed

Four-pages-per-minute maximum (actual speed varies depending on images printed and computer used)

System requirements

Any Apple Macintosh personal computer
System software version 7.0 or later
4MB of RAM or more recommended

Fonts

35 fonts from the following font families: Courier, Helvetica, Helvetica Narrow, ITC Avant Garde Gothic, ITC Bookman, ITC Zapf Chancery, ITC Zapf Dingbats, New Century Schoolbook, Palatino, Symbol, and Times

The four Apple fonts: Chicago, Geneva, Monaco, and New York

Paper capacities

Standard
- Manual feed tray
- 100-sheet Universal cassette

Printable Area

Maximum printable line: 8-in. (203 mm)
Minimum top margin: .11-in.
Mininum bottom margin:.21 -in.
Minimum left margin: .13-in.
Minimum right margin: .17 -in.

Note:

The Personal LaserWriter 320 requires 4 MB of RAM to print to the minimum margins on U.S. legal paper.

Paper Sizes

Width:	Minimum - 90mm	(3.54 in)	Maximum - 216mm (8.5 in)
Length:	Minimum - 188mm	(7.40 in)	Maximum - 356mm (14.0 in)

Print materials

16- to 28-lb. (60 to 105 g/m2) bond
Paper: U.S. letter, U.S. legal, A4, executive

Most letterhead and colored stock, labels, and envelopes

Medium-weight photocopier transparencies

Power requirements

U.S./Japan: 100 to 115 V, 50 to 60 Hz
Europe/Australia: 220 to 240 V, 50 Hz

Power consumption

```
-----------------
Operating mode: 120 W average
Standby mode: <10 W

Environmental requirements
--------------------------
Temperature: 50 to 90 deg. F (10 to 32 deg. C)
Humidity: 20% to 80% noncondensing
Toner cartridge transit environment: –4 to 104 deg. F (–20 to 40 deg. C)

Size and weight
---------------
Height: 6.3 in. (16.1 cm)
Width: 15.2 in. (38.5 cm)
Depth: 14.9 in. (37.9 cm)
Weight: 15.4 lb. (7 kg) not including cartridge


Ordering Information
====================
Apple Personal LaserWriter 320
Order No. M2178LL/A
Contents:
- Apple Personal LaserWriter 320
- User's guide
- Limited warranty card

Apple 2MB RAM Upgrade*
Order No. M2182LL/A

Apple 6MB RAM PhotoGrade Upgrade*
Order No. M2183LL/A

Toner Cartridge
Order No. M2045G/A

100-sheet Universal Cassette
Order No. M2079G/A

*Requires dealer installation

Article Change History:
06 Jun 1996 - Corrected toner cartridge part number.
19 Sep 1995 - Corrected minimum margins.
20 Mar 1995 - Added paper sizes

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Tech Info Library Article Number:14360
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Tech Info Library

Apple Media Authoring System: Hardware Specs (1/94)

Revised: 1/11/94
Security: Everyone

Apple Media Authoring System: Hardware Specs (1/94)

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Article Created: 22 December 1994

TOPIC ----------

This article gives the hardware specifications for third party products bundles with the Apple Media Authoring System.

DISCUSSION ----------

HARDWARE SPECIFICATIONS

AppleDesign Powered Speakers

- Full-range, tuned-port base-reflex system
- Active equalization for best frequency response at all listening levels
- Focused sonic dispersion for optimum personal listening
- Noise-reduction circuitry for audio clarity
- Built-in dual-input mixer and dual-channel amplifier

SuperMac DigitalFilm Card

- Video capture:
  Variable up to 640H
  Variable up to 480V
- Print to tape and display:
  NTSC—60 fields per second at 640 x 480 pixels
  PAL—50 fields per second at 786 x 576 pixels
- 24-bit graphics with Thunder QuickDraw acceleration on up to 832 x 624 pixel displays
- Audio capture: Stereo input and output at 8-bit resolution with audio sample up to 44.1kHz

SuperMac ThunderStorm Card

- Dual programmable DSPs optimized for image processing acceleration
- 60 MIPS performance

SYSTEM CONTENTS

AppleDesign Powered Speakers

- Powered speaker and satellite speaker
- Power-supply module (120-V input)
- Computer-to-speaker cable (with 3.5-mm miniplugs)
- CD-stereo cable with RCA jacks
- Speaker-to-speaker cable
- Complete documentation
- Limited warranty

SuperMac DigitalFilm Card

- Single NuBus slot card
- Breakout box for external video and audio connections
- Two sets of audio and video cables
- DigitalFilm software version 1.5
- Documentation
- Limited warranty

SuperMac ThunderStorm Card

- Single NuBus slot card
- Plug-in filter module
- Documentation
- Limited warranty

SOFTWARE:
All the third party software products listed below include:
- Software on CD-ROM disc
- Documentation
- Limited warranty statement

Adobe Premiere Deluxe CD-ROM Edition
Adobe Photoshop Deluxe CD-ROM Edition
Macromedia Action
Macromedia Sound Edit Pro
Media Clips

All the third party software products listed below include:
- Software on floppy disks
- Documentation
- Limited warranty statement

Apple Media Tool
CoSA After Effects
Macromedia Director
Macromedia MacroModel
Kodak Shoebox

NOTE:

Apple assumes no responsibility with regard to the performance or use of non-Apple products. All understandings, agreements, and warranties, if any, take place directly between the vendors and the prospective users. Product specifications are subject to change without notice.

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Tech Info Library Article Number:14361

Tech Info Library

Apple Media Authoring System: Description (1/94)

Revised: 5/7/96
Security: Everyone

Apple Media Authoring System: Description (1/94)

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Article Created: 22 December 1994

TOPIC ----------

This article describes the Apple Media Authoring System.

DISCUSSION ----------

Apple presents the state-of-the-art desktop multimedia development solution: The Apple Media Authoring System. This system contains the essential hardware and software tools required for media authoring, integration, and production. From three-dimensional modeling to animation, from special video effects to object-oriented authoring, this system includes the software and hardware you need to create titles, on-line presentations, video kiosks, and games.

This Apple-designed system is intended for use with your choice of high-performance Macintosh Quadra computers (800, 840AV, 950). These computers provide expandable, high-speed platforms for multimedia authors and developers. AppleDesign Powered Speakers, included in this solution, equip the Quadras with CD-quality near-field stereo output.

DigitalFilm and ThunderStorm from SuperMac add the tools you need to go from concept, through production to mastering the video and audio portions of your CD-ROM. DigitalFilm adds capture capabilities for full-motion video and audio. The ThunderStorm image processing card accelerates the application filters in Adobe Premiere and Photoshop as well as in CoSA After Effects. Together these tools accelerate the process and generation of you final media productions, including Cinepak movies.

The system includes a complete suite of software programs: Adobe Photoshop, the industry-standard software for image manipulation and photo retouching; Adobe Premiere, a digital movie-making and video production tool; Apple Media Tool, object-oriented authoring software

for rapid prototyping without programming and cross platform playback; CoSA After Effects for advanced digital compositing and effects; Macromedia Macromodel for 3D modeling, Macromedia Director integrates animation, sound, QuickTime movies, and interactivity; Macromedia Action! with ClipMedia, for producing multimedia presentations; Macromedia Sound Edit Pro for sound digitizing and editing; and Kodak Shoebox, an image database manager.

With the Apple Media Authoring System, you'll have just about everything you need to build the ultimate multimedia authoring studio.

FEATURES

AppleDesign Powered Speakers

- High-quality stereo separation and sound
- Excellent frequency response using transducer, tuned-port design and active equalization
- Built-in noise-reduction circuitry for clear sound

SuperMac DigitalFilm

- NuBus video card for full-motion, full-screen video and audio capture and editing
- Hardware-accelerated Apple Photo JPEG compatible image compression and decompression
- 24-bit accelerated graphics on up to 17-inch displays at 832 x 624 resolution

SuperMac ThunderStorm

- Nubus card accelerates multimedia filters for Adobe Premiere and Photoshop and CoSA After Effects
- Ideal for CD-ROM Cinepak video production

Apple Media Tool

- Multimedia production software allows media element assembly without programming

Adobe Premiere Deluxe CD-ROM Edition

- Digital video production and editing software allows nonlinear, off-line editing and production of QuickTime movies

Adobe Photoshop Deluxe CD-ROM Edition

- Photo manipulation, image editing, and production software

CoSA After Effects

- Video special-effects software puts production-house-quality tools

on the desktop

Macromedia Director

- Authoring software for multimedia production combines text, graphics, animation, sound and digital and analog video from different sources

Macromedia MacroModel

- Three-dimensional, spline-based modelling software allows fast creation of three-dimensional objects from two-dimensional reference objects

Macromedia Action!

- Multimedia presentation software

Macromedia Sound Edit Pro

- Software for digitizating and editing sound

Macromedia ClipMedia

- Provides video, animation, music and sound clips for your multimedia presentations

Kodak Shoebox

- Image database package for Kodak Photo CD users supports an index of multiple Photo CD discs

ORDERING INFORMATION

Apple Media Authoring System
Order No. M2699LL/A

Suggested computers:

- Macintosh Quadra 800 with 32MB of RAM, 1000MB hard disk drive, and external AppleCD 300 double-speed CD-ROM drive
- Macintosh Quadra 840AV with 32MB of RAM, 1000MB hard disk drive, and internal AppleCD 300i double-speed CD-ROM drive
- Macintosh Quadra 950 with 32MB of RAM, 1000MB hard disk drive, and external AppleCD 300 double-speed CD-ROM drive

Suggested displays:

- Apple AudioVision 14 Display
- Macintosh 16-inch Color Display
- SuperMac SuperMatch 17•T Display

- SuperMac SuperMatch SmartTouch Touch Screen
- E-Machines T16 II Display

Suggested keyboards:

- Apple Extended Keyboard II
- Apple Adjustable Keyboard

Other suggested products:

- Sony CDW-900E Write Once drive and CD-ROM Formatter Series Software from Sony Electronic Publishing
- Additional SuperMac ThunderStorm card and Cinepak Accelerator Software for Cinepak compression acceleration
- SuperMac DigitalFilm Player card
- SuperMac Cinepak Acceleration Kit
- 2GB FWB Hammer hard disk drive

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Tech Info Library Article Number:14362

Apple Professional Video Production System: Description (8/94)

Revised: 8/18/94
Security: Everyone

Apple Professional Video Production System: Description (8/94)

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Article Created: 20 December 1993
Article Reviewed/Updated: 18 August 1994

Topic ----------

This article describes the Apple Professional Video Production system, which brings professional video production and special effects capabilities to the desktop.

Discussion ----------

Apple presents the state-of-the-art desktop video and special effects solution: The Apple Professional Video Production System. The system delivers a high-quality digital video production studio anywhere you can put a computer. It gives CD-ROM based Macintosh Quadra class machines (800 and 950 (see note below about the 840AV)) full-screen, full-motion video capabilities without pixel doubling. And it contains everything you need to quickly and easily capture, display, edit and output professional-quality video to video tape, and also includes professional-quality stereo sound mixing and editing capabilities.

These Macintosh Quadra computers are the perfect choice for video professionals who demand speed, expandability, and high-quality video capabilities. AppleDesign Powered Speakers, included in this solution, equip the Quadras with CD-quality near-field stereo output.

These computers are complemented by VideoVision Studio, Radius' newest and most advanced JPEG video capture card. This NuBus card puts hardware compression and decompression of full-frame, full-motion digital video at your fingertips. It allows you to capture, display, edit, and output 640-by-480-pixel digital video at 30 frames and 60 fields per second.

Equipped with VideoVision Studio and a 2-gigabyte disk array, Macintosh Quadra computers have ample processing power to exercise the capabilities of the system's video-production software: Adobe Premiere and VideoFusion. These programs bring professional-quality post-production capabilities to the desktop and offer an affordable alternative to costly special-effects

hardware and outside production services.

To help create your sound tracks, the system includes digidesign's Audiomedia II 16-bit CD-quality sound card. This NuBus card puts a digital recording studio in your Macintosh. Its Sound Designer II stereo waveform-editing software makes it easy to edit and finesse sound for your videos.

The Apple Professional Video Production System. Just about everything a video producer needs. At a price just about every video producer can afford.

Features

• Radius VideoVision Studio
- Nubus video card allows video capture and editing
- Full motion, full-screen, flicker-free video at 640 x 480 resolution, at 30 frames, 60 fields per second
- Professional quality output to video tape

• Storage Dimensions Macinstor Speed Array
- External disk array provides 2 gigabytes of storage space
- Connects to high-speed macintosh processor direct slot

• digidesign Audiomedia II
- Nubus digital stereo sound card provides direct-to-disk recording, and playback
- 16-bit, 44.1 Khz And 48 Khz sample rates
- Digital and analog input and output

• AppleDesign Powered Speakers
- High-quality stereo separation and sound
- Excellent frequency response using transducer, tuned-port design and active equalization
- Built-in noise circuitry for clear sound

• Adobe Premiere Deluxe CD-ROM
- Digital video production and editing software includes non-linear, off-line editing capabilities and production of QuickTime movies
- Exports to video tape

• VideoFusion
- Special effects software combines video, graphics, and text in QuickTime movies
- Unlimited layering, field rendering and alpha channel support
- Extensive libraries of transitions, color transformations, DVE moves, 2D warps, and filters

Customer Profile

The Apple Professional Video Production System is designed for:
• Independent video producers
• Corporate marketing and PR departments responsible for producing

sales and other promotional video presentations
- Training departments
- Ad agencies
- Multimedia designers and producers
- Students and educators
- Quicktime producers

System Capabilities

The Apple Professional Video Production System includes all the hardware and software you need to:
- Capture, edit, playback and compress full-motion, full-screen digital video
- 640 X 480 NTSC at 30 frames and 60 fields/second
- 768 X 576 Pal at 50 fields/second
- Produce quick, low-cost videos for presenting new concepts
- Creating training and motivational video presentations
- Editing rough-cuts (offline editing) of high-end video for edit decision list production
- Integrating video into multimedia presentations
- Transferring multimedia presentations to video tape

Ordering Information

Apple Professional Video Production System
Order No. M2703LL/A

- Radius VideoVision Studio
- Storage Dimension 2 Gb Array
- 16-bit Sound Card
- VideoFusion (software)
- Adobe Premiere Deluxe CD-ROM Edition
- AppleDesign Powered Speakers
- AppleCD 300

Suggested Computers:

- Macintosh Quadra 800 with 32MB of RAM, 1000MB hard disk drive, and an external AppleCD 300 double-speed CD-ROM Drive.
- Macintosh Quadra 950 with 32MB of RAM, 1000MB hard disk drive, and an external AppleCD 300 double-speed CD-ROM drive.

NOTE: The Professional Video Production Solution is not compatible with the Macintosh 840AV or the Power Macintosh. The Video Production Solution bundle contains the Storage Dimensions MacinStor SpeedArray 2GB external hard drive which interfaces with the processor direct slot (PDS) on the Quadra 800 and 950. The 840AV and Power Macintosh computers do not support a disk array through PDS and are therefore incompatible with the Storage Dimensions drive.

Suggested Displays:

- Apple AudioVision 14" Display

- Apple Macintosh 16" Color Display
- Apple Macintosh 21" Color Display
- Radius Intellicolor Display/20

Suggested Keyboards:

- Apple Extended Keyboard II
- Apple Adjustable Keyboard

Article Change History:
18 Aug 1994 - Changed wording in NOTE section to show Power Macintosh as incompatible.
16 Aug 1994 - Added Power Macintosh as incompatible due to PDS disk array card.

Support Information Services

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Tech Info Library Article Number:14363

Tech Info Library

Professional Video Production System: Hardware Specs (1/94)

Revised: 1/10/94
Security: Everyone

Professional Video Production System: Hardware Specs (1/94)

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Article Created: 22 December 1993

TOPIC ----------

This article gives hardware specifications for third party products bundled with the Apple Professional Video Production System.

DISCUSSION ----------

HARDWARE SPECIFICATIONS

AppleDesign Powered Speakers

- Full-range, tuned-port base-reflex system
- Active equalization for best frequency response at all listening levels
- Focused sonic dispersion for optimum personal listening
- Noise-reduction circuitry for audio clarity
- Built-in dual-input mixer and dual-channel amplifier

Radius VideoVision Studio

- Compression: adaptive JPEG algorithm delivers variable compression ratios of 3:1 to 50:1.
- Capture and replay: NTSC—640 x 480 pixels at 60 fields per second, PAL—768 x 576 pixels at 50 fields per second
- Audio capture: 8-bit stereo or mono audio at 11 or 22 KHz
- Video inputs: 2 S-video and composite
- Audio inputs: 2 stereo and 1 mix
- Input formats: NTSC, PAL, and SECAM
- Output formats: NTSC and PAL

Storage Dimension 2GB array

- 4.5 to 7.5 MB/s transfer rates
- Consists of two 1GB drives in a single array

• 5.1-ms effective seek time

NOTE: The Professional Video Production Solution is not compatible with the Macintosh 840AV. The Video Production Solution bundle contains the Storage Dimensions MacinStor SpeedArray 2GB external hard drive which interfaces with the processor direct slot on the Quadra 800 and 950. The 840AV does not have a PDS slot and is therefore, incompatible with the Storage Dimensions drive.

digidesign Audiomedia II

• 16-bit, 44.1kHz and 48kHz sample rates
• Stereo analog input and output (RCA-type connectors)
• Stereo S/PDIF digital input and ouptut (RCA-type connectors)
• 10MB per minute sampling rate

SYSTEM CONTENTS

AppleDesign Powered Speakers

• Powered speaker and satellite speaker
• Power-supply module (120-V input)
• Computer-to-speaker cable with 3.5-mm miniplugs
• CD-stereo cable with RCA jacks
• Speaker-to-speaker cable
• Complete documentation
• Limited warranty

Radius VideoVision Studio

• Video interface card
• JPEG compression and decompression daughtercard
• External connector panel for external video and audio connections
• Comprehensive software controls
• Documentation
• Limited warranty

Storage Dimensions 2GB array

• 2-gigabyte disk array
• DataCannon coprocessing bus card
• Custom array software
• Documentation
• Limited warranty

digidesign AudioMedia II

• Sound card
• Waveform editing software on floppy disks
• Documentation
• Limited warranty

Adobe Premiere Deluxe CD-ROM Edition

- Software on CD-ROM disc
- Documentation
- Limited warranty

VideoFusion

- Software on floppy disks
- Documentation
- Limited warranty

NOTE:
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Tech Info Library Article Number:14364

Tech Info Library

HyperCard 2.2: Possible Post-Installation Problems (12/93)

Revised: 12/24/93
Security: Everyone

HyperCard 2.2: Possible Post-Installation Problems (12/93)

==========

Article Created: 24 December 1993

TOPIC ----------

Some users may encounter the following problems after installing HyperCard 2.2:

- They may not see the stack icons of existing stacks.
- Earlier versions of HyperCard may be launched when they double-click on a stack.
- When they double-click on a stack, they may see a message that the application program (HyperCard) could not be found. (This will happen only on systems that have never had HyperCard or the Player installed, or that have had the Desktop file rebuilt after HyperCard was deleted.)

DISCUSSION ----------

The Problem

In order to fit on an 800K floppy disk, HyperCard 2.2 is shipped as a compressed file. The HyperCard 2.2 installation procedure doesn't make the Finder aware that the application that's been installed is HyperCard and the Finder doesn't add it to the Desktop database. On systems that already had HyperCard, there is a HyperCard entry in the Desktop database, but it points to the older version. Thus when a stack is double-clicked, the older version of HyperCard is launched. Finally, systems that have never had HyperCard don't know what icons to attach to stacks.

The Fix

All you need to do to teach the Finder about the new version of HyperCard is to open the HyperCard 2.2 folder that is installed. (Few customers will have any of these problems because the first thing most of them will do after installation is look to see what is in the HyperCard 2.2 folder.) Then their stacks will find the correct HyperCard, and under System 6 their icons will show up.

Under System 7 there's another wrinkle. If System 7 sees a HyperCard stack, it will cache the appropriate icon until the Finder is restarted (restarting the computer will do this). If it sees a HyperCard stack before an entry is made in the Desktop database for HyperCard, it will use the standard document icon. Thus under System 7, if the Finder sees a stack before it knows about HyperCard, it will give all stacks the standard document icon until it is restarted. If you see this problem, open the HyperCard 2.2 folder (to show HyperCard to the finder) and then restart the computer. Note that this will only happen on systems that had no prior knowledge of HyperCard or Player or systems that had HyperCard deleted and then had their desktop files rebuilt. Unfortunately, the Finder will see the stacks in the HyperCard program folder before it gets to HyperCard, so these systems will get the icon problem and you'll have to restart your computer to fix it.

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Tech Info Library Article Number:14365

Tech Info Library

HyperCard 2.2 & Performa: If System Hangs After Install (2/94)

Revised: 2/17/94
Security: Everyone

HyperCard 2.2 & Performa: If System Hangs After Install (2/94)

==========

Article Created: 24 December 1993
Article Reviewed/Updated: 17 February 1994

TOPIC ----------

This article describes a problem with the HyperCard 2.2 Installer on Macintosh Performa systems. An incompatibility with the Performa system software sometimes causes a system to hang if you hit the Restart button at the end of the HyperCard 2.2 installation script, even though the installation was successful.

DISCUSSION ----------

To confirm that HyperCard was successfully installed, restart your computer and launch HyperCard.

Article Change History:
17 February 1994 - Reworded the discussion.

Copyright 1993, 1994, Apple Computer, Inc.

Tech Info Library Article Number:14366

Tech Info Library

HyperCard 2.2 Standalone Applications & Color (12/93)

Revised: 12/24/93
Security: Everyone

HyperCard 2.2 Standalone Applications & Color (12/93)

==========

Article Created: 24 December 1993

TOPIC --------------------

This article provides some cautions regarding the creation of standalone applications that use color.

DISCUSSION --------------------

When you first start to colorize a stack, resources are copied from the Color Tools stack into your stack. This process is not entirely completed until the stack is closed. If you save the stack as standalone application before quitting the stack, the resources won't make it into the standalone application -- and color won't work.

Be sure to allocate enough memory to the standalone app to allow it to display color. Generally, 2MB should suffice. If you're having trouble with color in standalone apps, be sure to close the stack at least once before saving it as a standalone application (most people will do this as part of the normal development process anyway), and then go to the Get Info dialog box and give the new application at least 2MB of memory.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14367

Tech Info Library

HyperCard 2.2: Color Tools Troubleshooting (2/94)

Revised: 2/17/94
Security: Everyone

HyperCard 2.2: Color Tools Troubleshooting (2/94)

==========

Article Created: 24 December 1993

TOPIC --------------------

People with monitors that can't display 16 or more colors can't use the Color Tools stack. On one-bit monitors, the Color Tools stack will show a card that lists its requirements, but it doesn't do this for monitors that are not in B&W mode -- so you may have problems running the stack without realizing why.

DISCUSSION --------------------

Here are the requirements for using the Color Tools stack:
- At least 2MB of RAM allocated to HyperCard
- 32-Bit QuickDraw (included as part of system software version 7.0 or later)
- A monitor capable of showing 16 or more colors or shades of gray

Also, when using Color Tools 1.0 with HyperCard 2.2, if you:
1) Choose Open Color Tools from the Color menu,
2) Before the palette is drawn, click on the desktop, and then
3) Later go back to HyperCard,
you get Color menus but no palette. The workaround is to close Color Tools and reopen it.

Article Change History:
17 February 1994 - Reworded the Discussion.

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Tech Info Library Article Number:14368

Tech Info Library

HyperCard 2.2: Can't Create Standalone App with 68000 (2/94)

Revised: 2/18/94
Security: Everyone

HyperCard 2.2: Can't Create Standalone App with 68000 (2/94)

==========

Article Created: 24 December 1993
Article Reviewed/Updated: 17 February 1994

TOPIC ----------

The standalone application builder is not supported on 68000-based Macintosh systems.

DISCUSSION ----------

This means you can't create a standalone application on Macintosh Plus, SE, Classic, Macintosh Portable, or PowerBook 100 computers.

Article Change History:
17 February 1994 - Added more Macintosh models to the Discussion.

Copyright 1993, 1994, Apple Computer, Inc.

Tech Info Library Article Number:14369

Tech Info Library

HyperCard 2.2: Close Script Ed Before Running OSA Script (12/93)

Revised: 12/24/93
Security: Everyone

HyperCard 2.2: Close Script Ed Before Running OSA Script (12/93)

==========

Article Created: 24 December 1993

TOPIC ----------

1) I put the following AppleScript script into a HyperCard button:

```
on mouseUp
  badNews()
end mouseUp
```

2) Click the button. HyperCard complains, 'Couldn't understand "badNews".' Click script in the complaint dialog. The script window opens. Leave the script window open.

3) Select the card window by clicking on it. Click the same button again as above.

4) HyperCard complains again. Click script again. The system eventually freezes or crashes.

DISCUSSION ----------

In a nutshell, HyperCard has problems if you run an AppleScript script with a script error and then hit the script button in the resulting error dialog while the corresponding script editor window is already open. If you run into this problem, close the script editor windows before running OSA scripts.

Copyright 1993, Apple Computer, Inc.

Tech Info Library Article Number:14370

Tech Info Library

ARA Serial Card and Serial NB Card Differences (1/94)

Revised: 1/4/94
Security: Everyone

ARA Serial Card and Serial NB Card Differences (1/94)

==========

Article Created: 3 January 1994

TOPIC -----

I have a question about the ARA 2.0 MultiPort Server. In the requirements it mentions the AppleTalk Remote Access Serial Card and RS-232 cable; is this different from the Apple Serial NB Card and the Hydra cable? If it is, will the ARA 2.0 support the Apple Serial NB Card?

DISCUSSION -----

The ARA Serial Card is the same as the Serial NB Card except for one minor difference. The resistor packs on the card have been removed so that ports 1A and 1B are configured as RS-232-C ports. If a customer is going to use an existing Serial NB card with the ARA Server they must remove the resistor packs in order to configure the card properly for operation.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14372

Language Kits: Text Control Panel (3/95)

Revised: 3/9/95
Security: Everyone

Language Kits: Text Control Panel (3/95)

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Article Created: 5 January 1994
Article Reviewed/Updated: 9 March 1995

TOPIC ----------

The Text control panel does not appear to save its selection. If I change the script setting in the control panel, close it, then open it again, the setting reverts back to Roman/US. Why does it do this?

DISCUSSION ----------

The Text Control Panel comes with the Japanese Language Kit, Chinese Language Kit, or System 7.5. This control panel is for use with WorldScript II and System extensions. It provides the user with the ability to view the scripts of the various languages (alphabets, writing systems) which are installed in the system.

When opened, the Text Control Panel defaults to show System script. The menu will always be set to the System script when the user opens the control panel because the System script is their primary script (the one they use most often).

NOTE:
Changing the "Script" menu in the Text control panel does not set a script to being the active script; it simply displays the text attributes for that particular script.

When the customer is running a language kit, for example, the operating system might still be Roman. If it is, Roman would be the script that is shown in the Text control panel. If the operating system is Kanji, then the Text control panel would show Kanji rather than Roman, even though a Language Kit might be installed in the system.

Article Change History:
09 Mar 1995 - Updated for technical accuracy.
01 Mar 1995 - Reviewed and updated for clarity.

..TIL14374-Language_Kits-Text_Control_Panel_3-95_(TA21600).pdf

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:14374

Apple Personal Diagnostics: Description and Specs (2/95)

Revised: 2/7/95
Security: Everyone

Apple Personal Diagnostics: Description and Specs (2/95)

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Article Created: 5 January 1994
Article Reviewed/Updated: 7 February 1995

TOPIC ----------

This article describes Apple Personal Diagnostics (APD) software, and gives technical specifications for the product.

DISCUSSION ----------

Apple Personal Diagnostics (version 1.1) offers a way to diagnose and monitor the performance of your Macintosh, Power Macintosh, or PowerBook system.

This software gives you information about your computer's hardware and software. It's also the only diagnostic product available that's based on the same testing programs Apple uses in manufacturing Macintosh computers. Regular use of the program can reduce system down time, minimize support calls, and help you isolate the sources of problems.

Personal Diagnostics combines hardware testing, system profiling, disk directory repair, and software checking in one package that now supports Power Macintosh and is fully compatible with System 7.5. You can run your system through an entire set of tests just by clicking on one button, and the results are presented in clearly understandable graphics and tables. The program performs comprehensive diagnostic tests on your system’s internal components, hard drives, floppy drives, and monitors. The hardware performance tests let you compare your system with benchmarks established by Apple for other Macintosh computers.

Personal Diagnostics also provides a variety of software information and checks. It lists all applications and system files (including extensions) installed on your computer, alerts you if duplicate System folders exist, and diagnoses and repairs minor disk directory problems.

You can even have Personal Diagnostics automatically test your Macintosh system when you are not using it. It alerts you to any irregularities that may exist

and suggest simple steps to correct them before they deteriorate into more serious problems.

Features

Thorough Diagnostics

- Tests logic board, memory, and other hardware components
- Checks for damaged System, Finder, and Enabler files
- Verifies and repairs disk directories
- Runs benchmark tests for comparison with Apple standards
- Looping option assists in detecting intermittent problems.

Comprehensive System Information

- Specifies the type and speed of processor and any coprocessors
- Indicates the amount of memory available, including RAM and virtual memory
- Displays SCSI bus assignments and the contents of NuBus slots
- Lists version numbers of system software files and applications
- Includes hardware tests for Macintosh logic board, RAM/VRAM, SCSI and IDE hard disk drives, floppy disk drives, CD-ROM drives and monitors.
- Offers a comprehensive background diagnostic function (Automated System Monitor) that checks your system during periods of inactivity. Alerts you to any irregularities that may exist, and suggests simple steps to correct them before they deteriorate into more serious problems.
- Identifies duplicate System Folders and other system irregularities and provides you with simple solutions.

Ease of Use

- Runs an entire suite of tests with the click of one button
- You can customize the test suite to your needs
- Checks your system automatically during periods of inactivity (Automated Diagnostics)
- Prints customized reports quickly

Technical Specifications

Diagnostic Tests

- Logic board
  - Clock/interrupt (VIA and RTC circuitry)
  - Floating-point unit (if present)
  - Memory management unit (if present)
  - RAM
  - Parameter RAM
  - ROM
  - ADB circuitry

  - Sound output (mono and stereo)
• Hard disk drives
• Floppy disk drives
• Monitors (displays test patterns)
• Software
• Detects and repairs corrupted disk directories
• Detects damaged system files (System, Finder, and Enabler)

System Information

• Macintosh model
• Processor type and speed
• Co-processor type (if any)
• Memory addressing mode
• Virtual memory status (if available)
• Memory size (installed memory plus virtual memory)
• Keyboard type
• NuBus cards type and slot number
• SCSI/IDE device name, type, and ID number
• Floppy disk drive type
• System and Finder version numbers
• Apple Menu items, Control Panels, System/Chooser extensions,
  and applications, including version numbers whenever possible
  (startup drive only)
• Identification of multiple System Folders (if applicable)

Benchmark Checks

• Performance data for CPU, math functions, video, and hard drives
• Comparisons of your system with Apple's benchmarks for several
  popular Macintosh models
• Performance history for your computer

Automated Diagnostics

• Logic board test
• Memory test
• Hard disk drive test
• Software check

Reports

Apple Personal Diagnostics reports can be customized to provide:

• Hardware information
• Software information
• Diagnostic test results
• Benchmark results
• Automated diagnostics history

System Requirements

• Apple Macintosh Plus or later, a Power Macintosh, or PowerBook

computer with at least 2MB of RAM
- Macintosh system software version 6.0.7 or later (automated diagnostics option requires version 7.0 or later)
- Hard disk drive
- Floppy disk drive

Ordering Information

Apple Personal Diagnostics
Order No. M2800LL/B

Contents:

- One 800K application disk, and two emergency disks (for starting up your computer and repairing damaged file directories).
- User's Guide.

Article Change History:
07 Feb 1995 - Made minor technical and format updates; added keyword.
07 Oct 1994 - Updated to include version 1.1.
30 Aug 1994 - Reviewed

Support Information Services

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Tech Info Library Article Number:14376

Tech Info Library

Engage Communications, Inc. (1/94)

Revised: 1/4/94
Security: Everyone

Engage Communications, Inc. (1/94)

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Article Created: 4 January 1994

Engage Communications, Inc.

9053 Soquel Dr. Suite 201
Aptos, CA 95003

408-688-1021

408-688-1421 FAX

Company Profile:
Manufacturer of LAN products.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14379

Tech Info Library

ISDN and Macintosh (9/94)

Revised: 9/27/94
Security: Everyone

ISDN and Macintosh (9/94)

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Article Created: 4 January 1994
Article Reviewed/Updated: 27 September 1994

TOPIC --------------------

What ever happened to Apple's ISDN card? Is there any information available for using ISDN with a Macintosh?

DISCUSSION --------------------

Apple's ISDN NuBus Card is a discontinued product. The Apple ISDN card is also NOT ISDN-1 compliant.

We know of three solutions for Macintosh which are:

1) MacSnet NuBus Card distributed by OST, Inc.

2) Planet-ISDN NuBus Card by Access Privilege Products and distributed by Q.Sys International, Inc., and OST, Inc.

3) Hayes ISDN System Adapter which works in conjuction with Apple Remote Access MultiPort Server.

Alternatives are to use National ISDN-1 compliant routers like Cisco Systems, Wellfleet, Engage Communications, and others.

To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
27 Sep 1994 - Added the Hayes ISDN solution.

Support Information Services

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..TIL14380-ISDN_and_Macintosh_9-94.pdf

Tech Info Library Article Number:14380

OST, Inc. (6/94)

Revised: 6/3/94
Security: Everyone

OST, Inc. (6/94)

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Article Created: 4 January 1994
Article Reviewed/Updated: 3 June 1994

OST, Inc.

14225-F Sullyfield Circle
Chantilly, VA 22021

703-817-0400

703-817-0402 FAX

Company Profile:
Distributor of computer products, for example two ISDN NuBus cards the Planet-ISDN NuBus Card, and the MacSnet Card.

Contacts:
Jean-Noel Berre
Jim Bell

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14381

Tech Info Library

Q.Sys International, Inc. (6/94)

Revised: 6/3/94
Security: Everyone

Q.Sys International, Inc. (6/94)

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Article Created: 4 January 1994
Article Reviewed/Updated: 3 June 1994

Q.Sys International, Inc.

4380 Malsbary
Cincinnati, OH 45242

Company Profile:
Distributor of computer products, for example the Planet-ISDN NuBus Card.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14382

Tech Info Library

AppleShare 4.0.1 Read Me File (1/94)

Revised: 1/5/94
Security: Everyone

AppleShare 4.0.1 Read Me File (1/94)

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Article Created: 5 January 1994

TOPIC ----------

This article contains the AppleShare 4.0.1 Read Me.

DISCUSSION ----------

APPLESHARE 4.0.1 READ ME
==========

This document provides important information about AppleShare 4.0. Some of this information is not included in the "AppleShare 4.0 Administrator's Guide." You may want to print this document and keep it with the "AppleShare 4.0 Administrator's Guide."

Choose Screen Savers Carefully

There are many screen savers on the market that can be used to prevent screen burn-in on AppleShare servers. Some screen savers are quite elaborate and perform many complex calculations to draw a single picture on the screen. Since they require significant amounts of CPU time, the more complex screen savers will impede the performance of your AppleShare server. Please choose the screen saver that interferes the least with your AppleShare server.

Some screen savers are not compatible with AppleShare 4.0 and can cause your AppleShare file server to crash or hang. Before purchasing or using a screen saver, check with the screen saver's manufacturer to determine if the screen saver will work properly with your AppleShare file server.

Optimize Memory Usage

AppleShare 4.0 uses caching techniques to improve the performance of the file server. Caching stores frequently used items, such as folders, icons, and parts of documents, in high-speed memory. Items in memory can be retrieved faster than items stored on disk.

In general, the more you increase the size of the cache, the better your AppleShare File Server will perform. However, increasing the size of the cache also increases the amount of server memory your AppleShare File Server requires. If you increase the size of the cache by too much, your other server applications (such as AppleShare Print Server) may not be able to run in the remaining memory.

To be sure that all your server applications have enough memory to operate correctly, start AppleShare File Service after you have opened all your other server applications. If there is not enough memory to start AppleShare File Service with the cache size you requested, AppleShare File Service will decrease the size of the cache until it fits in the available memory.

If, however, the primary purpose of your server system is to provide AppleShare File Service, then you may want to start AppleShare File Service first. This will allow AppleShare to allocate all the memory it needs. You can then use the remaining memory for your other server applications.

If you are using a backup utility that periodically backs up your file server data, be sure to leave enough memory available for the backup utility to function properly.

Using System 7 Disk Cache with AppleShare 4.0

In addition to the caching provided in AppleShare 4.0, System 7 also provides disk caching. Depending on how you use AppleShare 4.0, you may notice an improvement in performance by adjusting the server computer's disk cache size. Cache sizes in the range 32K to 128K are valid settings for use with AppleShare. Settings higher than 128K will provide little additional improvement in performance and will waste memory. In general, increasing the size of the cache for your AppleShare File Server will provide a more substantial performance improvement than increasing the size of the System 7 disk cache.

System 7 ships with disk cache turned on and set to 32K. You may wish to experiment with higher settings. (You adjust the cache size in the Memory control panel.) Depending on the type of server usage in your work environment, you may notice better server performance.

If you change the size of the disk cache, be sure to restart the server computer for the new size to take effect.

Using Virtual Memory with AppleShare 4.0

It is possible to run AppleShare 4.0 software with virtual memory turned on; however, doing so is not recommended. If you choose to run the software with virtual memory turned on, you will likely notice a decrease in server performance. See the manuals that came with your server computer for more information on using virtual memory.

Using Special Characters in Server Names

AppleShare 4.0 Admin will not allow the administrator to enter a server name that contains a "/" character. If you must have a "/" character in the name of your server, use the following workaround:

1. Shut down file service.
2. Quit AppleShare Admin.
3. Drag the Users & Groups Data File from the Preferences folder to the System Folder.
4. Using the Sharing Setup Control Panel, change the Macintosh name to the Server name you want.
5. Start AppleShare Admin.
6. Fill out the information in the Administrator Information and Serial Number dialog box.
7. When the Server Name dialog box appears, do not touch the Server Name field. Just enter the Admin Key and click OK.
8. Quit AppleShare Admin.
9. Drag the Users & Groups Data File from the System Folder to the Trash. It is no longer needed.

Retaining Access Privileges while Upgrading from Macintosh File Sharing

If you are upgrading from Macintosh file sharing while using new server hardware, your original access privileges will not be retained in some circumstances. Specifically, if you copy information from the startup volume using the Finder, your access privileges for that volume will not be retained. The "AppleShare 4.0 Administrator's Guide" instructs you how to manually re-establish those access privileges on the new server. For startup volumes that have only a few sharepoints and only a limited number of folders with specific access privileges, this is the best approach. However, if your startup volume has many folders with different access privileges, then you may want to use the following workaround.

Follow the instructions in the "AppleShare 4.0 Administrator's Guide" for upgrading from Macintosh file sharing. When the instructions ask you to copy the data from the startup volume, use the instructions below instead. Then finish the rest of the instructions in the "AppleShare 4.0 Administrator's Guide."

1. Connect an empty (unused) external disk to your old system.

2. Copy AppleShare Admin from your AppleShare 4.0 Installer disk to your startup volume. AppleShare Admin is in the AppleShare File Server folder. If the disk is a CD, the AppleShare File Server folder is inside the AppleShare folder.
3. Open AppleShare Admin. The "Users & Groups Data File was not found" dialog box appears.
4. Select "Use System 7 ...", and Click OK
5. Enter a serial number in the Administrator Information and Serial Number dialog box.
6. Enter a server name and admin key in the Server Information dialog box.
7. Wait for Admin to finish starting up.
8. Use the Copy <item> command to copy the contents of your startup volume to the external disk.
9. Quit AppleShare Admin, and drag it to the Trash.
10. Drag the newly created Users & Groups Data File from the Preferences folder to the Trash.
11. Drag the old Users & Groups Data File from the floppy (where you saved it earlier) to the Preferences folder.
12. Attach the external disk to your new server.

AppleShare Admin 4.0 runs only on 68040 based systems. If you are running Macintosh file sharing on other than a 68040 system, use either AppleShare Admin 3.0 or a third-party backup program to copy your startup volume. Contact your Apple Support Representative for assistance.

Install Fonts Before Using Online Documentation

If you purchased AppleShare 4.0 on a CD, online documentation for the "AppleShare 4.0 Administrator's Guide" and "Macintosh Basics" is included on the CD. Before you can use the documentation, you must first install the fonts required by DocViewer into your system. Those fonts are on your CD in the "Apple DocViewer Fonts" folder, which is in the "Apple DocViewer v1.0" folder. You can install the required fonts into your system by dragging their icons into the Fonts folder, which is in the System Folder. Some DocViewer fonts may already be in your Fonts folder. Drag only those fonts that are missing from your Fonts folder.

Use Caution when Removing the Workstation

The Installer will allow you to remove AppleShare 4.0 software as well as install it. Be aware that removing the Workstation software requires you to restart your Macintosh computer. Restarting your Macintosh computer will break your connection with your AppleShare File Server. Since there is no longer any Workstation software on your Macintosh computer, you will be unable to reconnect to your AppleShare File Server. You will need to reinstall the Workstation software from the "AppleShare Workstation" floppy disk before you can reconnect to your AppleShare File Server.

Install System 7.1 First

Always install System 7.1 first, then install AppleShare 4.0. If you install System 7.1 after you install AppleShare 4.0, the Apple Shared Library Manager will not function correctly. Since AppleShare 4.0 uses the Apple Shared Library Manager, it will also not function correctly.

If you need to reinstall System 7.1 for any reason, always reinstall AppleShare 4.0 afterwards.

Use Separate Aliases for Sharepoints

Aliases to shared folders can be created by the AppleShare server (using the Finder). Those aliases can be shared with workstations by placing them in a shared folder. If a shared alias is used by a workstation, the alias may be modified in such a way that it is no longer usable by the Finder on the AppleShare server. This can only happen with sharepoint aliases created on an AppleShare server.

To avoid this problem, use separate aliases for sharepoints. Create two aliases to the same sharepoint, using the Finder on the AppleShare server. Place one alias in a shared folder for use by workstations. Keep the other alias in a folder that is not shared with workstations.

Serial Numbers are Not Updated Immediately

Using AppleShare Admin, you can change serial numbers while file service is running. However, the old serial number will remain in effect until you restart file service.

If you change serial numbers to eliminate a duplicate serial number, you will continue to receive duplicate serial number notifications until you restart file service. Likewise, if you accidentally change the serial number to one that is already in use by another file server, you will not receive duplicate serial number notifications until you restart file service.

In addition, once you change to a new serial number, the old serial number will no longer be displayed by AppleShare Admin. To avoid confusion about which serial number is in use, restart file service immediately after changing the serial number.

Some Greeting Messages may not Appear on System 7 Workstations

Your Macintosh system software includes an AppleShare Workstation. You can use that software to log on to and use any AppleShare server, including an

AppleShare 4.0 server. However, the AppleShare Workstation software supplied with system software does not accept the full range of Server greeting messages that can be sent from an AppleShare 4.0 server.

To insure that the full range of greeting messages are displayed on all workstations, use the AppleShare Workstation software included with your AppleShare 4.0 software. See your "AppleShare 4.0 Administrator's Guide" for how to install the Workstation software.

Working with a Large Users & Groups Data File

AppleShare Admin is factory configured to work with a Users & Groups Data File that has a maximum of 1900 users. If you have a large user community, you may need to increase the capacity of AppleShare Admin. You can increase the capacity of AppleShare Admin by increasing the preferred memory size in the Admin's Info Window. (Use the Finder to first select the AppleShare Admin icon, then choose Get Info from the File menu.) AppleShare Admin needs a minimum of 400k of memory. Increase Admin's preferred memory size by 100k for each additional 1000 users in your user community. For example, AppleShare Admin needs 500k of memory to handle 2900 users. Likewise, it needs 600k of memory to handle 3900 users.

Using Retrospect with AppleShare 4.0

If you are backing up a large number of files, you may need to give Retrospect more application memory. See your Retrospect User's Guide for guidelines on when to increase the size of your Retrospect application. The Read Me document included with your Retrospect software also contains pertinent information about the use of Retrospect.

Using MicroSoft Mail Client Software on Your Server

If you are using MicroSoft Mail client software on your AppleShare server, use these directions for installing your MicroSoft Mail software:

1. On your server computer, turn AppleTalk off. (Open the Chooser, then select the AppleTalk Inactive radio button)
2. Follow the instructions included in your documentation for installing MicroSoft Mail in low memory conditions. Specifically, use the drag and drop instructions described in the Read Me document included with your MicroSoft Mail software.
3. Drag and drop all the MicroSoft Mail files in their proper location except the AppleTalk files. Those files should not be installed on your server system.
4. Reboot your server system.

Capitalize Apple II Sharepoints

If you are experiencing problems moving files between your AppleShare File Server and your Apple II workstation, try capitalizing the name of the sharepoint. For example, use a sharepoint named ARTCLASS rather than ArtClass.

Use QuickTime 1.6.1 on Workstations

If you are using NOW utilities on your workstation, and also have QuickTime 1.6 on your workstation, your workstation may hang when logging on to an AppleShare File Server. This may occur when logging on to a server through either the chooser, or through an alias. To correct this problem, install QuickTime 1.6.1 on your workstation. Alternatively, removing QuickTime 1.6 or the NOW utilities from your workstation will also fix the problem. You may also experience problems if you are using the HAM (HierArchial Menu) utility.

If you received AppleShare 4.0 on a CD, QuickTime 1.6.1 is inside the "Extras" folder, which is in the "AppleShare Tidbits" folder on the CD. If you received AppleShare 4.0 on floppy disk, QuickTime 1.6.1 is inside the "Extras" folder on the floppy disk labeled "AppleShare Tidbits".

Using the Apple IIe or the IIe Card for the Macintosh LC

If you are experiencing problems logging on to an AppleShare 4.0 File Server from either an Apple IIe or a Macintosh LC with a IIe card, contact your Apple support representative. Ask your representative to supply you with the upgraded software required to fix the problem.

Use the International Menu to Choose the Roman Keyboard

Using KanjiTalk 7.1, there are two ways to select the Roman keyboard. You can use either the international menu or the keyboard palette. When entering the product serial number into the File Server Serial Number Preferences dialog, use the international menu to select the Roman keyboard rather than the keyboard palette. The keyboard palette does not work correctly.

Specifically, before you open AppleShare Admin for the first time, use the international menu to select the Roman keyboard. Afterwards, open AppleShare Admin and enter the serial number into the File Server Serial Number Preferences dialog.

If you need to change your serial number, remember to select the Roman keyboard before selecting File Server Serial Number Preferences from the

Server menu.

Logging on to an AppleShare File Server from a PhoneNet PC Client

Using AppleShare Admin, you can force new AppleShare users to change their password the first time they log on to your server. If new users are experiencing problems logging on to an AppleShare File Server with PhoneNet PC, try letting the user keep the original password.

Modifying Users & Groups Information on a Server that also has Apple Remote Access

If you install AppleShare on a server that also has Apple Remote Access, the ability to work with Users and Groups from Apple Remote Access is disabled. Instead, use AppleShare Admin to work with Users and Groups.

Avoid Giving Users Access to the Root of a Volume

Using AppleShare Admin, you can give workstation users access to either the root of a volume, or to sharepoints within that volume. To insure the security of your file server, give workstation users access to sharepoints only.

Opening Applications over the Network

If you are experiencing problems opening applications over the network from your AppleShare File Server, and your workstation is a 68040 based Macintosh, try installing "Network Launch Fix" into the Extensions folder of your workstation.

If you received AppleShare 4.0 on CD, "Network Launch Fix" is inside the "Extras" folder, which is in the "AppleShare Tidbits" folder on the CD. If you received AppleShare 4.0 on floppy disk, "Network Launch Fix" is inside the "Extras" folder on the floppy disk labeled "AppleShare Tidbits". If you received AppleShare Tune-Up 4.0.1, "Network Launch Fix" is inside the "Extras" folder on the floppy disk labeled "AppleShare Tune-Up 4.0.1".

Using Quadra 605's or LC 475's as File Servers

If you are experiencing problems using a Quadra 605 or an LC 475 as a file server, try setting the server monitor to black & white. Open the Monitors control panel and select "Grays: Black & White."

..TIL14383-AppleShare_4-0-1_Read_Me_File_1-94_(TA30953).pdf

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Tech Info Library Article Number:14383

Tech Info Library

AppleShare 4.0.1 Tune-Up (5/96)

Revised: 5/24/96
Security: Everyone

AppleShare 4.0.1 Tune-Up (5/96)

==========

Article Created: 5 January 1994
Article Reviewed/Updated: 24 May 1996

TOPIC ----------

This article describes AppleShare 4.0.1 Tune-Up's enhancements, and how to obtain it.

DISCUSSION ----------

On January 4th, Apple announced AppleShare 4.0.1, a follow-on to the AppleShare 4.0 software that was released in July 1993. AppleShare 4.0.1 is a Tune-Up release only and the technology is free to all owners of AppleShare 4.0. The Tune-Up installer will upgrade any AppleShare 4.0 server to version 4.0.1. There is one worldwide version of the Tune-Up that upgrades English, French, Spanish, Italian, and Dutch versions of AppleShare 4.0 to version 4.0.1.

AppleShare 4.0.1 has the following features and enhancements that were not part of AppleShare 4.0:

- Supports all 68040 computers except the Centris/Quadra 660AV and Quadra 840AV.
- Utilizes Apple Shared Library Manager (ASLM) 1.1 and is therefore compatible with Apple Remote Access MultiPort Server and Apple Internet Router 3.0.1.
- Fixes all known compatibility problems with Farallon's PhoneNET PC.
- Fixes all know compatibility problems with PowerTalk and PowerShare Collaboration Servers.
- Updates the Apple Internet Router 3.0 to version 3.0.1 if it is resident on the AppleShare 4.0 server computer.

NOTE: Customers must also install the Network Software Installer ZM-1.4.1 or later.

AppleShare Tune-Up 4.0.1 is available free of charge in the USA in the following

ways:

• Call the Apple Order Center. The Tech Info Library article titled "Locating Vendor Information" can help you search for Apple Order Center's phone number.

NOTE: There is a shipping/handling fee for each order. All components needed to perform the upgrade are included in this kit. NO proof of purchase is required. The program will run from 1-4-94 to 5-31-94. Shipments will be made via first class mail within the 50 states and District of Columbia.

• These articles can help you locate software updates mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
24 May 1996 - Updated for technical accuracy.
12 Jul 1994 - Updated information on how to obtain Apple Software updates.

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Tech Info Library Article Number:14384

Tech Info Library

AIR 3.0.1 Basic Connectivity Package Read Me (1/94)

Revised: 1/5/94
Security: Everyone

AIR 3.0.1 Basic Connectivity Package Read Me (1/94)

==========

Article Created: 5 January 1994

TOPIC --------------------

This article contains the Apple Internet Router (AIR) 3.0.1 Basic Connectivity Package Read Me.

DISCUSSION --------------------

Apple Internet Router 3.0.1 Basic Connectivity Package Read Me

Version 3.0.1 Bug Fixes

- An incompatibility between the SNMP Router Agent and Shared Library Manager 1.1 has been fixed.

- An incompatibility between the DialUp access method and Apple Remote Access has been fixed.

Customized Installations

- The Customize installation screen differs from the one shown in Chapter 2 of the "Apple Internet Router Administrator's Guide." The following additional items appear when you click Customize during the installation process:

  "AppleTalk v58.0 for System 7" — Select this item if you do not already have AppleTalk version 58.0 or later installed on your Macintosh.

  "Half-Routing Resources" — Select this item if you do not already have AppleTalk Remote Access or Apple Remote Access installed on your Macintosh.

- If you are doing a customized installation of the router, be sure to install AppleTalk version 58.0 unless you already have a later version installed.

Using Memory Efficiently

- To ensure that the router has sufficient memory, you should start the router before starting other application programs (including file or print servers).

- When the router fails to start because it does not have enough memory, you may see an on-screen message that does not necessarily indicate that insufficient memory is the problem. For instance, you may see the message "The router was unable to start because an error occurred while installing an AppleTalk connection driver for a configured port."

  The Apple Internet Router requires a Macintosh computer with at least 4 megabytes of memory installed. To run other applications concurrently, you may need to install more memory in the router Macintosh.

- If you install System 7.1 and do not reinstall the router, you may get a message indicating that there is not enough memory for the router to start. You must reinstall the router software after installing System 7.1.

Upgrading from Version 2.0 of the AppleTalk Internet Router

- The message "Version 2.0 of the Router can not run. It is no longer installed." appears whenever you restart the router Macintosh if version 2.0 of the AppleTalk Internet Router was running on the Macintosh computer on which you installed the Apple Internet Router Basic Connectivity Package and you did not do the following prior to the installation:

  1. Open the Router desk accessory by choosing Router from the Apple menu.

  2. If necessary, open the Router Setup window by choosing Router Setup from the Router menu.

  3. Click the Current Status Off button to stop the Router.

  4. Click the Restart Status Off button to prevent the Router from starting when you start up the router Macintosh.

  5. Close the Router Setup window.

  6. Click Yes to save your changes to the Router Setup.

Though version 2.0 of the AppleTalk Internet Router cannot run, the newly installed Apple Internet Router will function properly.

To prevent this message from appearing whenever you restart the router Macintosh, start the router Macintosh using a startup disk on which version 2.0 of the AppleTalk Internet Router is installed, then follow the preceding steps. Once you've set the router's restart status to Off, the message no longer appears.

Installing the Router on Non-U.S. Systems

- If you do an Easy Install, the appropriate modem scripts for your country are installed. If the Installer is unable to determine which foreign system you are using, the U.S. modem scripts are installed by default.

- If you do a customized installation, the U.S. modem scripts are installed automatically. However, you can install the modem scripts that are appropriate for your country by using the international modem scripts on the "Router Installer 2" disk. To install international modem scripts, follow these instructions:

  1. Open the Dial Up folder on the "Router Installer 2" disk.

  2. Open the International Modem Scripts folder.

  3. Open the folder with your country's name and drag the files in it to the Extensions folder on the router Macintosh.

- We recommend that you do an Easy Install of the router software on a Macintosh on which a version of the system software other than an English-language version is installed. During the installation, a message may appear, requesting you to use the "Network Software Installer" disk to place the latest version of AppleTalk on the startup disk. If this message appears, quit the Installer, then use the Network Software Installer to install the latest version of AppleTalk. Once you have done so, you can use the Router Installer disks to install the router software by clicking Install when the Easy Install dialog box appears. Following this procedure ensures that the versions of the AppleTalk system files installed use the correct language.

- During a custom installation, a message appears, warning you that continuing the installation replaces local-language versions of some AppleTalk system files (such as the Network control panel, AppleTalk, and EtherTalk) with English-language versions. If you click Continue, the installation will replace only files that have the same names as the files being installed. Thus, there may be two different versions of some AppleTalk system files on the startup disk—a local-language version and an English version. If you click Cancel, a message appears, informing you that an error has occurred during installation and the software on the startup disk was not changed.

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Tech Info Library Article Number:14385

Tech Info Library

MegaDrive (1/94)

Revised: 1/5/94
Security: Everyone

MegaDrive (1/94)

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Article Created: 5 January 1994

MegaDrive
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489 South Robertson Blvd.
Beverly Hills, CA 90211

310-247-0006

310-247-8118 FAX

Company Profile:
Manufacturer of hard disk storage including RAID level 1.

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Tech Info Library Article Number:14386

..TIL14387-ABS_Tech_Note-ARA00_About_ARA_Technical_Notes_11-94_(TA30956).pdf

Tech Info Library

ABS Tech Note: ARA00 About ARA Technical Notes (11/94)

Revised: 11/14/94
Security: Everyone

ABS Tech Note: ARA00 About ARA Technical Notes (11/94)

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Article Created: 14 November 1994

TOPIC ----------

This document accompanies each release of Apple Business Systems Technical Notes.

DISCUSSION ----------

We want Technical Notes to be distributed as widely as possible, so they are sent to all Partners and Associates at no charge; they are also posted on AppleLink in the Developer Services Bulletin Board.

We place no restriction on copying Technical Notes, with the exception that you cannot resell them, so read, enjoy and share. We hope Apple Business Systems Technical Notes will provide you with lots of valuable information.

Technical notes are a 'living' complement to product documentation, be it Inside Macintosh or other documentation. This means that they are updated on a regular basis, so as to be accurate and up to date. New Notes are added as required.

This technical note is an index of all technical notes related to the AppleTalk Remote Access and related products. It also documents all changes to the technical notes since the previous release.

Index

Technical Note	Subject	Last Revision
ARA00	About ARA Tech Notes	Sep, 1994
ARA01	ARA ERS Corrections & Additions	May, 1994
ARA02	Error Correction	Sep, 1994
ARA03	ARA 2.0.1 known issues	Sep, 1994

Changes since last release:

New: ARA03

Revised: ARA02

Support Information Services

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Tech Info Library Article Number:14387

Tech Info Library

LaserWriter Pro 810: Auto Select Tray Size with Incoming Faxes?

Revised: 1/6/94
Security: Everyone

LaserWriter Pro 810: Auto Select Tray Size with Incoming Faxes?

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Article Created: 6 January 1994

TOPIC ----------

When receiving an A-4 fax from Europe, will the LaserWriter Pro 810 auto select the A-4 paper tray to print on the correct size paper?

DISCUSSION ----------

If the printer was set up to Auto Cascade as the paper source then it doesn't matter what the size of the incoming fax is. The paper will be pulled from the first tray with paper in it. If the first tray happens to have A4 paper then all is well. I would imagine that for most applications in Europe that is an acceptable solution.

To force the fax to a different paper size you must specify the paper source explicitly (using the control panel). This is fine as long as you know that all your incoming faxes are going to be that size.

As a side note: I set up a LaserWriter Select 360 with a letter cassette and the multipurpose tray loaded with legal paper. I used the LaserWriter Utility to set the paper type in the multipurpose tray to legal. In this configuration the 360 would use legal paper for a legal size fax.

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Tech Info Library Article Number:14388

Tech Info Library

ABS Tech Note: ARA01 Corrections & Additions For The ERS (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: ARA01 Corrections & Additions For The ERS (6/94)

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Article Created: 23 June 1994

TOPIC -----

The document "AppleTalk Remote Access, Application Programming Interface (API) External Reference Specifications" that is distributed with the developers kit has a number of errors and additions necessary to provide developers with a complete example specification. This technical note details the changes necessary to correct the document and its example code.

DISCUSSION -----

Minor typos and errors:

Page 7
---

1) Under LOAD the word 'to' is missing between "used" and "ensure".

2) The second sentence under LOAD. The structure referenced is

   TRemoteAccessParamHeader, the correct structure is
   TRemoteAccessParamBlock.

3) In the code example for LOAD the TRemoteAccessParamHeader should be
   changed to TRemoteAccessParamBlock.

4) Under UNLOAD the word 'to' is missing between "used" and "release".

5) The second sentence under UNLOAD. The struc referenced is

   TRemoteAccessParamHeader, the correct structure is
   TRemoteAccessParamBlock.

6) In the code example for UNLOAD the TRemoteAccessParamHeader should be
   changed to TRemoteAccessParamBlock.

7) The correct example code is:

```
#include "RemoteAccessInterface.h"
void UnloadRemoteAccess()
{
    TRemoteAccessParamBlock unloadPB;

   unloadPB.LOAD.csCode = RAM_EXTENDED_CALL;         // extended call
   unloadPB.LOAD.resultStrPtr = nil;                 // result string
   unloadPB.LOAD.extendedType = REMOTEACCESSNAME;    // to remote access
   unloadPB.LOAD.extendedCode = CmdRemoteAccess_Unload; // try to unload
   PBRemoteAccess(&unloadPB, false);                 // issue sync call
   if (unloadPB.LOAD.ioResult)
          ShowError(unloadPB.LOAD.ioResult);
     } // UnloadRemoteAccess
```

Page 8
------

1) There should be a space between guaranteed & Access in the fifth sentence. Additionally, Access should not be capped.

Page 9
------

1) In the DoConnect() example, TRemoteAccessConnectParam should be changed to TRemoteAccessParamBlock.

2) In the DoConnect() example the routine called CopyPStr is not defined. Instead you should use memcpy.

3) The structure pb should be changed to connectPB to make it consistent with the LOAD and UNLOAD commands. The corrected code would look like this:

```
#include "RemoteAccessInterface.h"
void DoConnect()
{
   TRemoteAccessParamBlock connectPB;
   Str255 PathName = "\pMyhardDisk:Remote Access:Connect Document";

   LoadRemoteAccess();           // Get the Remote Access Manager loaded
   connectPB.CONNECT.csCode = RAM_EXTENDED_CALL;    // extended call
   connectPB.CONNECT.resultStrPtr = nil;    // don't want result strings
   connectPB.CONNECT.extendedType = REMOTEACCESSNAME;// to remote access
   connectPB.CONNECT.extendedCode = CmdRemoteAccess_DoConnect;// connect
                                                              // command
   connectPB.CONNECT.portGlobalsPtr = nil;       // use the user port
   connectPB.CONNECT.fileInfo.vRefNum = 0;       // use the full pathnam
   connectPB.CONNECT.fileInfo.parID = 0;             //
   BlockMoveData (PathName, connectPB.CONNECT.fileInfo.name, PathName[0]
   + 1);
                                          // copy the string to the
                                          // fileInfo.Name
```

```
    // Ask for password if needed, use connection document, & show status
    pb.CONNECT.optionFlags = kNSCanInteract | kNSConnectDocument |
    kNSShowStatus;
    PBRemoteAccess(&pb, false);                      // issue sync call
    if (pb.CONNECT.ioResult)
         ShowError(pb.LOAD.ioResult);  // Do Error reporting and recovery
    UnloadRemoteAccess();
  } // DoConnect
```

Page 10
----

1) The code example for DoConnect() shown above should terminate with } // DoConnect so that it is consistent with the rest of the code examples.

2) In the DoDisconnect() example, TRemoteAccessDisconnectParam should be changed to TRemoteAccessParamBlock.

3) DoDisconnect() should be rewritten as follows:

```
  #include "RemoteAccessInterface.h"
  void DoDisconnect()
  {
     TRemoteAccessParamBlock disconnectPB;

     disconnectPB.DISCONNECT.csCode = RAM_EXTENDED_CALL;  // extended call
     disconnectPB.DISCONNECT.resultStrPtr = nil;      // don't want result
                                                      // strings
     disconnectPB.DISCONNECT.extendedType = REMOTEACCESSNAME; // to remote
                                                           // access
     disconnectPB.DISCONNECT.extendedCode = CmdRemoteAccess_Disconnect;
                                                    // disconnect command
     disconnectPB.DISCONNECT.portGlobalsPtr = nil;          // user port
     disconnectPB.DISCONNECT.abortOnlyThisPB = nil;   // don't get tied to
                                                      // any specific pb
     disconnectPB.DISCONNECT.optionFlags = 0 | kNSShowStatus; // show
                                             // status while disconnecting
     PBRemoteAccess(&disconnectPB, false);             // issue sync call
     if (disconnectPB.CONNECT.ioResult)
          ShowError(disconnectPB.LOAD.ioResult); // Do Error reporting and
                                                 // recovery
  } // DoDisconnect
```

Page 11
----

1) There is no code example for the IsRemote() function.

Page 12
----

1) GetStatus() should be rewritten as:

```
  #include "RemoteAccessInterface.h"
  void GetStatus()
  {
```

```
      TRemoteAccessParamBlock statusPB;
      Str255 UserName, connectedTo, lastMessage;
      long StatusBits;

      statusPB.STATUS.csCode = RAM_EXTENDED_CALL;          // extended call
      statusPB.STATUS.resultStrPtr = nil;               // put results here
      statusPB.STATUS.portGlobalsPtr = nil;             // do UserPort
      statusPB.STATUS.extendedType = REMOTEACCESSNAME;     // to Netshare
      statusPB.STATUS.extendedCode = CmdRemoteAccess_Status;  // status
                                                           // command
      statusPB.STATUS.userNamePtr = &UserName;
      statusPB.STATUS.connectedToNamePtr = &connectedTo;
      statusPB.STATUS.theLastStatusMsgPtr = &lastMessage;
      statusPB.STATUS.statusUserNamePtr = nil;
      statusPB.STATUS.statusMsgSeqNum = 0;
      PBRemoteAccess(&statusPB, false);
      if (statusPB.STATUS.ioResult)
           ShowError(statusPB.STATUS.ioResult);   // Do Error reporting and
                                                  // recovery
      else
      {
           // now decode the flag bits into words
           StatusBits = statusPB.STATUS.statusBits;
           if (StatusBits & CctlServerMode)
                printf("Answer Connection\n");
           if (StatusBits & CctlConnected)
                printf("Calling connection\n");
           if (StatusBits & CctlConnectionAborting)
                printf("Cancel in progress\n");
           if (StatusBits & CctlAnswerEnable)
                printf("Waiting for incoming call\n");
           if (StatusBits & CctlConnectInProg)
                printf("Connection in progress\n");
      }
  } // GetStatus
```

Note: The variable in the original code, lastSeqNum, causes a compiler warning because it is not needed in the code fragment pb has to be changed to statusPB to be consistent with previous code examples, lastly, the code fragment ends with the } // GetStatus to remain consistent with the other code fragments.

Page 14
----
1) MungePassword() should be rewritten as:

```
  #include "RemoteAccessInterface.h"
  void MungePassword(UserName, PassWord)
  unsigned char *UserName, *PassWord;
  {
     TRemoteAccessParamBlock mungePB;

     mungePB.MUNGEPW.csCode = RAM_EXTENDED_CALL;          // extended call
```

```
      mungePB.MUNGEPW.resultStrPtr = nil;                  // result string
      mungePB.MUNGEPW.extendedType = REMOTEACCESSNAME;  // to remote access
      mungePB.MUNGEPW.extendedCode = CmdRemoteAccess_PassWordMunger;
      mungePB.MUNGEPW.userNamePtr = (unsigned char *) &UserName;
      mungePB.MUNGEPW.passWordPtr = (unsigned char *) &PassWord;
      PBRemoteAccess(&mungePB, false);        // issue sync call
                                              // encrypt the eight bytes
                                              // pointed to by PassWord
      if (mungePB.MUNGEPW.ioResult)
           ShowError(mungePB.MUNGEPW.ioResult);

  } // MungePassword
```

Note: this code is rewritten to be more realistic as the user name and password would probably be passed in to a function like this as opposed to having them hard coded in the function itself. The TRemoteAccessParamBlock variable MungePB was changed to mungePB to be consistent with the other fragments, and the terminating line ends as } // MungePassword to be consistent with other examples.

2) In the GetCodeHooks section, the word are should be removed from the second sentence, or it should be rewritten.

Support Information Services

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Tech Info Library Article Number:14391

Tech Info Library

ABS Tech Note: ARA02 Error Correction & Modem Scripts (11/94)

Revised: 11/14/94
Security: Everyone

ABS Tech Note: ARA02 Error Correction & Modem Scripts (11/94)

==========

Article Created: 14 November 1994

TOPIC ----------

This document discusses error control and data compression when using Apple Remote Access (ARA). Specifically, it details ARA's use with modems that support error control using CCITT V.42 as well as data compression using CCITT V.42bis. Regardless of which error control and/or compression protocols your modem supports, please refer to the manufacturer's documentation for more information on their availability and use.

DISCUSSION ----------

Why use error control or data compression?

Numerous modem manufacturers are now supplying error control and/or data compression as a method of assuring accurate and efficient communication between a pair of modems, even under less than optimal line conditions. Typically, these options are enabled via Hayes-compatible "AT" commands prior to dialing a number or readying a modem to answer calls and are employed whenever the overlying application does not support error correction and/or data compression.

ARA's use of error control and data compression

ARA implements V.42 error correction (MNP 4) from its' Client application to its' Server application, as the Macintosh Serial Port is judged to be unreliable. ARA implements V.42bis data compression (LZW) from its' Client application to its' Server application. Thus it is not necessary to enable these features on the modem (except for cellular data modems, which are discussed below). Modem scripts, as distributed by Apple and by cooperating modem vendors, should specifically disable these features to ensure the best possible performance. ARA data compression is more effective than what is implemented in modems, simply due to greater computational power available.

If you plan to write or customize a modem script, it is recommended that you do not use the error correction or data compression capabilities of your modem

without testing it with varying line quality, file type, and file size to see if the desired performance improvement has been achieved.

And what if data compression and/or error correction are used with ARA?

Some customers, with exceptionally noisy phone lines, have reported that enabling the primary V.42 error correction standard (LAP-M) from modem to modem, has given them improved connection reliability. Note that ARA still does MNP 4 error correction end to end, due to the unreliability of the Macintosh Serial Port. If you have this need, please consult your modem manual carefully, and note the use of USERHOOK 2 in the Modem Scripting Guide. This call alerts ARA that the modems have successfully negotiated a V.42 link, and ARA should relax its' re-transmit timers. Failure to call USERHOOK 2 could result in unnecessary timeouts, re-transmissions, and the connection being dropped. There is no method for turning off ARA V.42.

Some customers have expressed a desire to implement V.42bis data compression (or perhaps MNP 5) from modem to modem. Generally this hurts throughput, but if you have this desire, please consult your modem manual carefully, and note the use of USERHOOK 3 in the Modem Scripting Guide. This call alerts ARA that the modems have successfully negotiated a data compression link, and ARA should turn off it's own data compression. Failure to call USERHOOK 3 could result in performance losses, as ARA will be trying to compress already compressed data.

What's with the 'mlts' resource and varString 4?

During the development of ARA 2.0, we included the infrastructure for requesting that modems bring up a error correction link. VarString 4 was selected as the variable that would be set to indicate what type of error correction link was requested. The 'mlts' resource was selected as the way that the modem script writer could inform the CCL engine, that the modem had the capability to perform error correction. VarString 4 is controlled by an algorithm in the CCL engine. In future versions of ARA, the CCL engine may choose which modem script to use, based on values in the 'mlts' resource. Currently for the Personal Client/Server products, varString 4 = 0, unless the MNP 10 box is checked, in which case varString 4 = 2. Currently for the MultiPort Server product, varString 4 = 0. Setting 'mlts' byte 1 = 1 does not mandate that varString 4 be passed to the script with a value of 1. We recommend that modem script writers include 'mlts' resources and correct modem commands for varString 4 = 1, for future compatibility.

Using cellular modems with ARA

If an ARA connection is desired using cellular modems, you should enable the MNP10 capability in the modems. This is performed differently depending on whether you are configuring for ARA individually (Personal Server or Client) or for use with the MultiPort Server.

- For the Personal Server or Client, open the 'Remote Access Setup' Control Panel document and check the box named 'Use MNP 10 error correction in modem'. This will tell ARA to establish a connection using MNP10 (provided that modems that support MNP10 are being used). You must use a modem script that has been properly configured to support

both MNP10 and non-MNP10 modems.

- For the MultiPort Server, a check box is not used. Instead, you should configure the script to accept calls from both MNP10 and non-MNP10 modems.

Creating modem scripts for use with MNP10

If you need to create or modify a modem script for use with MNP10, ensure that you perform the following:

- Create an 'mlts' resource using ResEdit with byte 1 = 0x01

- Check if varString 4 is equal to '2'. If so, jump to the label that programs the modem to perform MNP-10.

- Issue a 'USERHOOK 4' for a successful MNP10 connection so that anything that polls the modem will know that MNP-10 is enabled. ARA data correction can not be disabled.

Here are some excerpts from an example CCL detailing the use of MNP10 with ARA. Note that this is not a complete CCL; only the relevant parts are shown for clarity.

```
!  'mlts' resource info for this modem:
!    byte 1 == 01 -> modem HAS builtin reliability protocols
!    byte 2 == 00 -> reserved by Apple
!    byte 3 == 43 -> max hex chars in varstr 7 (72 dec)
!    byte 4 == 43 -> max hex chars in varstr 8
!    byte 5 == 43 -> max hex chars in varstr 9
...
! If modem mnp10 link requested (var 4 == 2) then jump label 4
ifstr 4 4 "2"
...
@LABEL 4
! Use this label for mnp 10 type stuff...
!
matchclr
matchstr 1 7 "OK\13\10"
! \N2 = MNP reliable mode
! )M1 = force adjust cellular power level
! *H1 = link negotiation occurs at 1200
! @M18 = use -18dBm xmit level
! -K1 = turn on LAPM to MNP10 upshift (extended services)
! :E0 = turn off equalization
write "AT\\N2)M1*H1@M18-K1:E0\13"
matchread 300
...
@LABEL 32
matchclr
matchstr 29  81 "CONNECT 2400/REL - CELLULAR\13\10"
matchstr 30  82 "CONNECT 4800/REL - CELLULAR\13\10"
...
```

```
  note "MNP10 reliable link established." 3
  userhook 4
  note "Communicating at 2400 bps." 2
  CommunicatingAt 2400
  jump 87
  !
  @LABEL 82
  note "MNP10 reliable link established." 3
  userhook 4
  note "Communicating at 4800 bps." 2
  CommunicatingAt 4800
  jump 87
```

See "Apple Remote Access Modem Scripting Guide" for more information on modem scripts.

Also See:

- Apple Remote Access Personal Server for Macintosh User's Guide
- Apple Remote Access Client for Macintosh User's Guide
- Apple Remote Access MultiPort Server for Macintosh Administrator's Guide

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14392

Tech Info Library

WorldScript II 7.1.2: Difficulty Printing Color/Grayscale(1/94)

Revised: 1/6/94
Security: Everyone

WorldScript II 7.1.2: Difficulty Printing Color/Grayscale(1/94)

==========

Article Created: 6 January 1994

TOPIC --------------------

My computer crashes when I select color or grayscale in the print dialog and have 2-byte fonts in the document.

DISCUSSION --------------------

This is a known issue with the 7.1.2 version of the WorldScript II extension. These situations can result in a crash when you select color or grayscale in the print dialog to print a document with 2-byte fonts:

- You change the printer selection, and try to print again before restarting.
- You use a non-Apple printer driver (it's unknown if the Adobe 8.x driver is more likely to provoke this).
- You don't have much memory available (either a low-memory CPU or a lot of applications are running).

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14393

Tech Info Library

Campus Software Set for Macintosh: Opening Documentation (1/94)

Revised: 1/6/94
Security: Everyone

Campus Software Set for Macintosh: Opening Documentation (1/94)

==========

Article Created: 6 January 1994

TOPIC --------------------

I purchased the Campus Software Set for Macintosh, and I can't open the electronic documentation for Macintosh PC Exchange or Retrieve It! programs.

DISCUSSION --------------------

The documentation for these applications is provided electronically only in Apple DocViewer version 1.0 format. If you can't open the documentation, be sure that DocViewer is installed. The installer for this package will place the DocViewer application in a folder called "Retrieve It! folder" at the top level of the hard disk. If you can't find Apple DocViewer v1.0 on the drive, run the installer for the Campus Software Set for Macintosh again, select Custom, and reinstall only the software for Retrieve It! as this will also reinstall Apple DocViewer v1.0.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14395

Tech Info Library

Hebrew 3270 Emulation (1/94)

Revised: 1/6/94
Security: Everyone

Hebrew 3270 Emulation (1/94)

==========

Article Created: 6 January 1994

TOPIC ----------

This article briefly describes a Hebrew 3270 terminal emulation.

DISCUSSION ----------

Heb3270 allows a Macintosh computer with a TCP/IP network connection to emulate an IBM 3270 terminal with Hebrew language capability. Heb3270 provides:

- Bilingual Hebrew/Latin computer interaction
- Graphic support for 3179 compatible graphics
- File transfer acting as a FTP server
- VT220/320 terminal text emulation

For information contact Bioinformatics Unit, Biological Services. To locate a vendor's address and phone number, use the vendor name as a search string.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14396

Tech Info Library

CD Setup v 5.0: READ ME File (1/95)

Revised: 1/12/95
Security: Everyone

CD Setup v 5.0: READ ME File (1/95)

==========

Article Created: 6 January 1994
Article Reviewed/Updated: 12 January 1995

TOPIC ----------

This is the READ ME document that comes with CD Setup v5.0. This READ ME file is also on products that ship with CD Setup v5.0, including the AppleCD 300 Plus and AppleCD 300i Plus drives.

DISCUSSION ----------

This Read Me document provides late-breaking and important news about the AppleCD 300 Plus drive and the software for it.

VIEWING LARGE PHOTO CD IMAGES
Some programs, such as TeachText, may have difficulty opening large (high-resolution) image files on a Photo CD. To view these images, you can change the application program that opens the Photo CD images and use a program designed to handle larger files. See the manual that came with the CD-ROM drive for more information. You can also change the amount of memory a program uses. See the manuals that came with your computer for more information on managing memory.

DISPLAYING COLOR ICONS FOR IMAGES ON PHOTO CDs
When your computer is low on memory, it may have problems displaying color icons for the images on a Photo CD. Although some icons may appear as black-and-white document icons, the Photo CD images themselves are not affected. To display color icons, quit all open programs, restart your computer, and reopen the Photos folder on your Photo CD. See the manuals that came with your computer for more information on managing memory.

SETTING SOUND OPTIONS FOR SOME MACINTOSH COMPUTERS
Some Macintosh computers (such as the Macintosh Quadra 660AV and 840AV) have special sound recording options. If you don't hear any sound when you play an audio CD or an audio track on a CD-ROM disc, you may have the sound options set incorrectly. To change the options, open the Sound control panel, choose Sound

In from the pop-up menu at the top of the panel, and then select the Built-In icon for the audio source. Click the Options button, select Internal CD, make sure the Play through box is checked, and click OK. See the manuals that came with your computer for more information.

ADJUSTING THE VOLUME FOR SOME MACINTOSH COMPUTERS

Some Macintosh computers allow you to increase or decrease the volume of sound through the Sound control panel, as well as through the volume control in your audio CD software. The manuals that came with your computer describe the Sound control panel if your computer has one. The manual that came with your CD-ROM drive describes the audio CD software.

DISPLAYING THE TOTAL PLAYING TIME FOR CUSTOMIZED PLAY LISTS IN APPLECD AUDIO PLAYER

If the total playing time of your customized Play List for an audio CD is longer than 99 minutes and 59 seconds, the Time display in the AppleCD Audio Player shows 99.99. (The Time display can't display times of more than 2 digits and 2 decimal points.)

WORKING WITH PHOTO CDs IN SYSTEM 6

If you have System 6 and want to view Photo CDs, turn MultiFinder on before you insert a Photo CD into your CD-ROM drive. If you are in the Finder, your computer may not have enough memory to start up the Photo CD. (See manuals that came with your computer for instructions on how to turn MultiFinder on.) Once you turn MultiFinder on, place the Photo CD in the tray of the CD-ROM drive and push the tray in (or press the Open/Close button) to close the tray of the CD-ROM drive. In a few moments, the Photo CD disc icon appears; you can now view images on the Photo CD.

USING THE SLIDE SHOW VIEWER IN SYSTEM 6

If you view photographic images in a sequence using the Slide Show Viewer and you want to look at images from more than one Photo CD, do not start up the Slide Show Viewer from the Photo CD. Copy the Slide Show Viewer onto your hard disk, and use that copy to view photos. If you start up the Slide Show Viewer from the Photo CD, you will experience problems when you insert the next Photo CD.

EJECTING CD-ROM DISCS IN AT EASE

If you are using At Ease (an alternative to the usual Macintosh desktop) and you want to eject a CD-ROM disc, make sure you eject the disc before you shut down your computer. The Open/Close button of your CD-ROM drive does not work when the computer is shut down. To eject a disc while using At Ease: Choose the Eject command from the Special Menu. Remove the disc and close the tray by pushing it in or pressing the Open/Close button.

WARNING: If you shut down your computer before you eject a disc while you are using At Ease, the tray of the CD-ROM drive opens and then closes immediately. If you attempt to remove the disc as the tray opens or closes, you may damage the disc or the tray of the CD-ROM drive. (To remove a disc from the CD-ROM drive after you have shut down your computer: Start up your computer, then choose the Eject command from the Special Menu. Remove the disc and close the tray by pushing it in or pressing the Open/Close button. Then you can shut down your computer again.)

Note: At Ease 2.0.3 corrects this problem. Additional information is in the Tech Info Library article titled "At Ease 2.0.3: Corrects AppleCD 300 Plus Ejection Problem"

FULL INSTRUCTIONS
See the manual that came with your CD-ROM drive for full instructions on using the CD-ROM drive.

Article Change History:
12 Jan 1995 - Included information on AppleCD 300 READ ME being the same.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:14397

Tech Info Library

Bioinformatics Unit, Biological Services (1/94)

Revised: 1/6/94
Security: Everyone

Bioinformatics Unit, Biological Services (1/94)

==========

Article Created: 6 January 1994

Bioinformatics Unit, Biological Services

Bioinformatics Unit,
Biological Services,
Weizmann Institute of Science,
Rehovot, Israel

Company Profile:
Hebrew IBM 3270 terminal emulation.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14398

Tech Info Library

GeoPort Telecom Adapter: Can Send Without Fax Cover Sheet(1/94)

Revised: 1/6/94
Security: Everyone

GeoPort Telecom Adapter: Can Send Without Fax Cover Sheet(1/94)

==========

Article Created: 6 January 1994

TOPIC ----------

I have a Macintosh Quadra 840AV and a GeoPort Telecom Adapter. I'd like to send only the fax cover sheet using the Express Modem Software that came with the Adapter. Since I can only fax from within an application that prints, I can't send just the fax cover sheet. How can I send a fax with just the cover?

DISCUSSION ----------

You can't just send the fax cover sheet that's installed with the Fax Cover application. However, you can send just your fax without the cover sheet. You do this by choosing "none" from the Fax Sender Cover Page pop-up menu. This will mean that no cover page is attached to the fax. Therefore, the first page of your document will now be your "cover page."

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14399

Tech Info Library

Newton Print Pack: User Guide And Troubleshooting (4/97)

Revised: 4/21/97
Security: Everyone

Newton Print Pack: User Guide And Troubleshooting (4/97)

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Article Created: 6 January 1994
Article Reviewed/Updated: 21 April 1997

TOPIC -----

This article describes how to use the Newton Print Pack and troubleshoot common problems.

DISCUSSION -----

Description

The Newton Print Pack is a cable containing a serial to parallel data converter and ROM-based printer drivers. These printer drivers are downloaded to the Newton MessagePad by powering on the MessagePad after the Print Pack is connected between the printer and MessagePad.

Using the Print Pack
---
1) Power off both the MessagePad and the printer.

2) Connect the Print Pack between the MessagePad and the printer.

3) Power on the MessagePad and wait ten (10) seconds. During this time, the LED on the Print Pack should flash twice; the first flash is short and the second flash is longer. At the end of this period, the printer drivers should be downloaded to the MessagePad.

4) Power on the printer and print the desired item(s).

5) In the printing slip, "choose other printer" will display the following new choices:

epson lx, epson fx, hp deskjet, hp laserjet, canon bubblejet.

The Tech Info Library articles titled, "Newton Print Pack: Compatible Printers

(A-L)" and "Newton Print Pack: Compatible Printers (M-Z)" list the compatible printers and the driver you should select.

Problem: the drivers did not appear

Verify that the red light on the parallel plug turns on as you power on your Newton.

If you continue to have printing problems, reset the Newton and try these steps again.

If your MessagePad unexpectedly powers off while printing or immediately after it is powered on, be sure to install fresh batteries or connect your MessagePad to AC power. The Print Pack draws a large amount of power while printing or at start up (when your MessagePad is downloading the printer drivers), and this may discharge the MessagePad's batteries.

Problem: the drivers disappear after a while

Newton OS 1.x systems will unload the drivers when the MessagePad goes to sleep or loses power. You will need to reconnect the cable and cycle power before being able to print.

Newton OS 2.x systems store the drivers as normal packages.

Article Change History:
21 Apr 1997 - Revised article for technical accuracy.

Copyright 1994-1997, Apple Computer, Inc.

Tech Info Library Article Number:14400

Tech Info Library

At Ease 2.0 for Workgroups: Copy to Floppy Disk Command (8/95)

Revised: 8/9/95
Security: Everyone

At Ease 2.0 for Workgroups: Copy to Floppy Disk Command (8/95)

==========

Article Created: 6 January 1994
Article Reviewed/Updated: 9 August 1995

TOPIC ----------

The Copy To/From Floppy disk command doesn't show up in the File menu of At Ease 2.0 for Workgroups.

DISCUSSION ----------

In the Options section (not the Options menu) of At Ease Setup, you must set the "Location of User documents:" radio button to the "folder on At Ease disk." If this isn't set, the user doesn't have the access privileges to make any changes to the hard drive. Without permissions to write to the hard drive, At Ease won't allow the user to copy from the hard drive. If you want to deny access, the user can work around this by opening the desired document and choosing Save As from the File menu to save to the user's floppy disk.

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:14401

Tech Info Library

Macintosh AV Series: HyperCard 2.1 Audio Palette Crashes (1/94)

Revised: 1/7/94
Security: Everyone

Macintosh AV Series: HyperCard 2.1 Audio Palette Crashes (1/94)

==========

Article Created: 7 January 1994

TOPIC ----------

I'm using HyperCard 2.1, the HyperCard Audio Palette (in the Audio Help Stack) on my Macintosh AV Series computer. When recording a sound, clicking on the Stop button crashes my computer. Is there a revised version of the stack that works with Macintosh AV Series computers?

DISCUSSION ----------

The Audio Help stack, bundled with HyperCard 2.2 and HyperCard 2.2 Runtime (the latter bundled with selected Macintosh systems) is fully compatible with Macintosh AV Series computers.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14403

Tech Info Library

Macintosh AV Series: Apple Remote Access & GeoPort (1/94)

Revised: 1/7/94
Security: Everyone

Macintosh AV Series: Apple Remote Access & GeoPort (1/94)

==========

Article Created: 7 January 1994

TOPIC -----

I'm trying to use Apple Remote Access with GeoPort Adpater on my Macintosh AV computer. According to page 118 in the Express Fax Modem User's Guide, I need a CCL description file apparently other than the file used to connect to AppleLink. Where can I find this file?

DISCUSSION -----

The manual refers to the name of the file which is used by the PowerBook Express modem. With a GeoPort Adapter, you need the file called "Geoport™ Telecom" installed in the Extensions folder inside the System Folder. The Express Modem for GeoPort software Installer properly install this file.

All the other files required for Apple Remote Access should be installed by the Apple Remote Access Installer. However, you need to remove the file called "Serial Port Arbitrator" from the Extensions folder inside the System Folder. The Serial Port Arbitrator file is not required in this instance. Failure to remove the Serial Port Arbitrator file may result an Error -23.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14404

Tech Info Library

Macintosh AV: Large Screen Video Capture Unsupported (11/95)

Revised: 11/13/95
Security: Everyone

Macintosh AV: Large Screen Video Capture Unsupported (11/95)

==========

Article Created: 7 January 1994
Article Reviewed/Updated: 24 May 1995

TOPIC ----------

I have a Macintosh AV Series computer connected to a Macintosh 21-inch Color Display. I'm unable to display or capture color video from a VCR or camera. I can only get black and white. Is there any way to do so?

DISCUSSION ----------

The Macintosh AV Series computers, including the Power Macintosh AV models, cannot display or capture 8-bit color video on displays using a resolution greater than 832x624 (17-inch, 19-inch, 20-inch, and 21-inch).

The reason is both VRAM and other on-board video circuitry are not fast enough to transfer the 8-bit color video data to the screen on larger monitors and the CPUs are only fast enough to dump the luminance data, so only 8-bit monochrome (grayscale) video can be displayed or recorded.

Article Change History:
13 Nov 1995 - Clarified type of video and Macintosh models.
24 May 1995 - Clarified black and white, not color capture.
18 Jul 1994 - Added other monitor sizes and reference to Power Macintosh.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:14405

Tech Info Library

LaserWriter Select 360: Size Limit of Phone Directory For Fax?

Revised: 1/10/94
Security: Everyone

LaserWriter Select 360: Size Limit of Phone Directory For Fax?

==========

Article Created: 10 January 1994

TOPIC --------------------

Is there a limit to the size of the Fax Phone Book for the fax option?
A customer has 1500 names and wants to make sure there won't be a problem adding that many names before she sets it up.

DISCUSSION --------------------

Engineering indicates that they are aware of performance problems when OVER 100 addresses are added to the Fax Phone Book. The recommendation is to limit the number of addresses in the phone book to 100 or less. If more addresses are added to the phone book the system may crash or hang.

The only workaround I can think of is to rename an existing phone book which will automatically create a new one with the name "Fax Phone Book" the next time the Fax option is used. A user could switch from phone book to phone book by renaming the active phone book to something else and renaming the phone book that is to be used to "Fax Phone Book." Not the greatest solution but that's the only solution I can think of given the current software.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14408

ABS Tech Note: AS05 AppleSearch Compatibility (1/94)

Revised: 1/10/94
Security: Everyone

ABS Tech Note: AS05 AppleSearch Compatibility (1/94)

==========

Article Created: 23 December 1993

TOPIC ----------

This technical note describes AppleSearch and compatibility with System 7 Pro and Macintosh computers.

DISCUSSION ----------

In the Compatibility Checker application shipped with System 7 Pro, AppleSearch's compatibility state is listed as not known, because at the time the Compatibility Checker's data was frozen, AppleSearch had not yet been released.

AppleSearch 1.0 has been tested against System 7.1 Pro as well as all current Macintosh computers (including the AV machines) and there are no known compatibility problems. A future version of the Compatibility Checker will be corrected to show this fact.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14409

ABS Tech Note: AS06 AppleSearch and XTND (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AS06 AppleSearch and XTND (6/94)

==========

Article Created: 23 June 1994

TOPIC -----

This technical note describes AppleSearch and XTND technology.

DISCUSSION -----

When AppleSearch is indexing data, if the file is a text file, it will import it directly. For files that are formatted, however, it uses the XTND technology to import the data. This has the advantage of allowing AppleSearch to be extended easily to support new data types, but also creates some potential reliability issues that need to be considered.

Supported file formats

AppleSearch 1.0 ships with an XTND that supports the following file formats. The formats are all supported by the MacLinkPlus XTND that ships with AppleSearch: MacWrite v4.5, v5.0 and vII; Word Perfect v1.0, v2.0, v2.1 (Mac); MS Word v3, v4, v5, v5.1 (Mac); MS Works WP v2.0 & v3.0; FrameMaker MIF v2.0, v3.0; PageMaker 4.0; Ragtime 3.1; AppleWorks; WriteNow v2, v3; Nisus v3; PICT (only text extraction); EXCEL (tab text - no formula); MS Word for Windows - 1.0, 2.0; and WordPerfect for Windows - 5.1.

To support additional formats, DataViz has an XTND that supplements AppleSearch 1.0 and supports the following formats: Macintosh Word Processing; FrameMaker MIF - 2.0, 3.0; Nisus - 3.0; MacWrite - 4.5, 5.0; MacWrite II; MS Word Mac - 3.0, 4.0, 5.0, 5.1; MS Works WP Mac - 2.0, 3.0; PICT (text extraction); Ragtime - 3.1; Rich Text RTF; WordPerfect Mac - 1.0, 2.0, 2.1; WriteNow - 2.0, 3.0; AppleWorks WP - 2.0, 3.0, GS.

It also supports importing the following DOS formats: AmiPro - 1.0, 2.0; DCA-RFT; MS Word DOS - 5.5; MS Word for Windows - 1.0, 2.0; MS Works WP DOS; MS Works WP Windows; Multimate; Multimate 4; OfficeWriter - 5.0, 6.0; Professional Write; WordPerfect DOS - 4.2, 5.0, 5.1; WordPerfect for Windows - 5.1; WordStar 3.4, 5.5, - 7.0; XYWrite III. The following spreadsheet formats are available as

tabbed text as well: AppleWorks SS; Excel - 2.2, 3.0, 4.0; Lotus - WKS, WK1; MS Works SS Mac - 2.0, 3.0; MS Works SS DOS; MS Works SS Windows; SYLK. To get the XTND that supports these additional formats, please contact DataViz for pricing and availability.

XTND warnings

If you're planning on installing your own XTNDs into AppleSearch, there are a couple of potential problems you need to be aware of.

First, we've found that some publicly available XTNDs have bugs or memory management problems that might not show up under casual use, but under the heavy use AppleSearch makes of XTND can cause server failures. An XTND used by a word processor to import a file that leaves a memory pointer allocated doesn't usually cause a problem, but that same XTND being used to import 1,500 files can significantly fragment memory and cause the server to fail. If you install your own XTNDs and start having server reliability problems, you should remove them and test them individually for problems.

Also, the XTND protocol allows one XTND to define itself as the XTND that attempts to translate any unknown formats. The XTND shipped with AppleSearch is one of these, so if you install your own default XTND, AppleSearch will give priority to its own and your XTND will never get called.

Please note that not all XTNDs will work under AppleSearch. AppleSearch requires that the XTNDs do text extraction, not format conversion. We have found, for instance, that the ClarisWorks XTND will not function under AppleSearch.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14410

Tech Info Library

Newton: -20006 Error During System Update (1/94)

Revised: 1/10/94
Security: Everyone

Newton: -20006 Error During System Update (1/94)

==========

Article Created: 10 January 1994

TOPIC -----

When I update my Newton MessagePad's system software by modem, I continually get a -20006 error. How do I recover from this?

DISCUSSION -----

If you get a -20006 error when updating your MessagePad's system, call 1-800-SOS-APPL and talk to a representative in the Newton Support group. The -20006 error means that the update server needs to be reset.

After calling, wait three to four hours before trying to update again. This will ensure the server has been reset.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14411

Tech Info Library

AppleShare 4.0 Print Server: Not Printing Error Pages (1/94)

Revised: 1/11/94
Security: Everyone

AppleShare 4.0 Print Server: Not Printing Error Pages (1/94)

==========

Article Created: 10 January 1994

TOPIC -----

I have set AppleShare 4.0 Print Server, banner page to off. However, when a print job is deleted from the print-queue, a page kicks out indicating that the print job has been deleted.

Is this "feature" changeable? I have an expensive output device, and I'm disturbed by the waste of supplies and time having such information printed.

DISCUSSION -----

There is no supported method for preventing the AppleShare Print Server 4.0.x software from printing error pages. However, we have a ResEdit patch that will prevent AppleShare Print Server 3.0.x, AppleShare Print Server 4.0.x, and AppleShare Print Server Pro from printing error pages. Here are the directions:

1) Use ResEdit to open the AppleShare Print Server application.

2) Open the "EXOP" resource with an ID of 128; it should be the only one.

3) Change the first four zeros (0000) to ones (1111).

4) Quit ResEdit saving the changes made to the AppleShare Print Server application.

Now the AppleShare Print Server application should no longer print error pages.

Note: This is NOT a supported solution.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14412

Tech Info Library

Apple Personal Diagnostics and MacTest Pro Compared (8/94)

Revised: 8/30/94
Security: Everyone

Apple Personal Diagnostics and MacTest Pro Compared (8/94)

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Article Created: 11 January 1994
Article Reviewed/Updated: 30 August 1994

TOPIC ----------

This article compares Apple Personal Diagnostics and MacTest Pro.

DISCUSSION ----------

Apple Personal Diagnostics (APD) is an end-user diagnostic and troubleshooting tool with a very simple interface. The diagnostic tests function across the entire current Macintosh (Macintosh Plus through Macintosh Quadra, including the Performa) and PowerBook line of computers. The APD application, which also includes benchmarking and system profiling features, is contained on a single non-bootable 800K disk. Technical Support for APD will be handled just like other Apple software (by calling 1-800-SOS-APPL).

MacTest Pro is repair-oriented diagnostic software that can test logic boards, video cards, monitors, floppy drives, hard drives, and CD ROM drives. It can also detect software corruption problems, and the existence of multiple System Folders on a volume. MacTest Pro is intended for use by Apple service technicians.

Although APD is a valuable tool for the end-user, we continue to recommend MacTest Pro over any other diagnostic and repair verification tool for service technicians. Here are some of the important reasons why:

- MacTest Pro is a subscription product with regular releases that are timed to coincide with major Apple CPU releases. APD is not a subscription product.

- MacTest Pro contains a comprehensive set of diagnostic tests that are CPU-specific in nature. The APD diagnostic tests are not CPU-specific.

- MacTest Pro performs diagnostic tests on modems, CD-ROM drives, and NuBus cards. APD does not perform these tests.

- MacTest Pro enables service technicians to provide the most up-to-date support for their customers. Updates also include coverage of newly released CPUs and improvements to the MacTest Pro application.

- MacTest Pro test modules are customizable, enabling the technician to respond to unique diagnostic and verification situations. APD does not have individual test modules and therefore cannot be reconfigured.

- MacTest Pro contains valuable on-line window help, error code, and system error information. APD does not contain on-line window help. Some error code and system information is contained in the APD User Manual.

Apple Service strongly recommends the use of MacTest Pro as the primary diagnostic and repair verification tool for all Apple Authorized Service Providers.

Article Change History:
30 Aug 1994 - Updated article and changed title to more accurately reflect contents.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14415

AppleScript Scripter's Toolkit: Error on Box (1/94)

Revised: 1/11/94
Security: Everyone

AppleScript Scripter's Toolkit: Error on Box (1/94)

==========

Article Created: 11 January 1994

TOPIC -----

The AppleScript Scripter's Toolkit box has an error printed on it.

DISCUSSION -----

Under the "Contents" heading it lists a Data Access Language scripting addition. This item isn't included in the AppleScript retail product (M1730LL/A). However, it is included with the AppleScript Developer's Kit (R0175Z/B) from APDA.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14417

ABS Tech Note: AWS19 Adding a UFS Drive (1/94)

Revised: 1/11/94
Security: Everyone

ABS Tech Note: AWS19 Adding a UFS Drive (1/94)

==========

Article Created: 23 December 1993

TOPIC ----------

Some customers using the AWS 95 have experienced difficulty adding additional UFS drives to a server. This problem occurs when they set up their drives on a Macintosh other than the server they will be used on. The "Apple HD SC Setup" program that is supplied with the AWS 95 system software protects administrators from the details of creating UNIX mount points, which are necessary to make the drive available. If the drive is formatted on another machine, these mount points are not created on the server, so the disk will not be accessible, which confuses some users. This Technical Note will endeavor to provide step-by-step instructions for adding a UFS drive to the Apple Workgroup Server (AWS) 95.

DISCUSSION ----------

The following steps need to be taken to install a disk onto a server. It assumes you are using Apple HD SC Setup or some third party formatting tool that supports UNIX partitioning. The drive that will be used in this example is a Micronet CPK-200, set to SCSI ID #5.

Use the formatting tool to create a "Free UNIX slice 3" on the disk, which creates the partition we will be using. Attach the disk to the server, and then execute this command from CommandShell:

```
newfs /dev/rdsk/c5d0s3 Generic
```

The parameter "Generic" (which is case sensitive) in the command line specifies that there is no specific drive entry in the /etc/disktab file. Entries are provided for some disks. If your disk is not one of them, you can either specify "Generic" for the drive type or provide the drive information from the manufactures documentation. This information allows newfs to tune the disk performance somewhat, but isn't critical, so if you don't have it handy, the Generic entry is usually close enough.

The AWS 95 supports 4 logical SCSI busses number 1-4 so that when you connect the drive to the PDS card's external connector, the command that you will need to enter changes to the following:

```
newfs /dev/rdsk/c405d0s3 Generic
```

Since you have not used "Apple HD SC Setup" program you will also need to create an entry in the /etc/fstab file so that this drive can be automatically mounted when the system is restarted. For this example we will assume that the drive will be mounted on a directory within the "/Shared Data" folder. Open the /etc/fstab file by traversing in the Mac environment and double-clicking on the file. The file should look something like the following:

```
/dev/dsk/c300d0s0   /    ignore  rw  1 0
```

Now append a new line to the file specify an existing directory in the / Shared Data folder.

```
/dev/dsk/c205d0s3   /\ Shared\ Data/NewVolume    4.2  RW  1 2
```

In this instance the NewFolder that is used for the mount point is NewFolder. The back slashes are necessary as the string / Shared Data has a space in it. You can create the directory for NewVolume from the CommandShell or from the Mac environment. Now you can close and save the /etc/fstab file.

To make this volume accessible to users you can enter the following command from the CommandShell:

```
mount -a
```

If there is a problem you will see some error text after this command is executed. To verify that the drive is now accessible you can type mount and receive output similar to the following:

```
/dev/dsk/c300d0s0   on /  type 4.2 (rw,noquota)
/dev/dsk/c205d0s3   on / Shared Data/NewVolume    type 4.2 (rw)
```

When adding new drives to the AWS 95 it is also important to add them to the PDS card as this will give you maximum performance. The DMA and Cache provided by the card will help increase I/O as compared to the motherboard internal and external busses.

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Tech Info Library Article Number:14418

ABS Tech Note: AWS20 Multi-Homing & IP Forwarding (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AWS20 Multi-Homing & IP Forwarding (6/94)

==========

Article Created: 23 June 1994

TOPIC

This tech note explains the differences between Multi-homing and IP (Internet Protocol) forwarding/routing, and how these capabilities can be achieved under A/UX.

DISCUSSION

Multi-Homing

A/UX supports multi-homing. It's possible that you may have multiple IP (Internet Protocol) interfaces (for example Ethernet Adapters) running under A/UX. As a result, your A/UX system may appear on and have access to different TCP/IP networks which may not be connected. To set up your A/UX system for multi-homing, follow the steps 1 through 3 oulined in the configuartion section below.

IP Forwarding / Routing

A/UX also supports IP routing or forwarding. This means that an A/UX system with more than one IP interface is configured to run as an Internet forwarder /router, and knows how to route IP traffic between two separate networks. IP forwarding/routing helps in extending the topology of your Ethernet network. To configure your system to be an Internet forwarder / Router, follow all the steps outlined in the configuration section below.

Configuration

To set up your A/UX system for multi-homing and/or Internet forwarding/Routing functionality, install a second IP interface, per the instructions provided by the card manufacturer and connect the network cable that came with the card to the second network and follow the steps steps outlined below. In both situations, a Macintosh computer running A/UX can be connected to two separate networks by using two IP interfaces.

1) Log in as root , after A/UX boots up.

2) Make a new kernel by typing the following command:

```
newconfig bnet appletalk
```

This will create a new kernel that will include the necessary modules for Ethernet (ao, as or ae6) , TCP/IP and AppleTalk support. Please note that newconfig will prompt you for the Internet address and netmask for the additional Ethernet card. It will also display the interface name such as ae0 etc.

3) When newconfig is done, restart A/UX.

4) After restarting A/UX, log in as a root and enable IP forwarding by typing the following adb (kernel debugger) command. (IP forwarding defaults to OFF on A/UX 3.0 and later versions.) The following lines show the commands you enter italic type and the output of adb in boldface.

```
#adb -w -k  /unix   /dev/kmem
 a.out file = /unix (COFF format)
 core file = /dev/kmem
ready
ipforwarding?D
ipforwarding:      0
ipforwarding?W  1
ipforwarding:   0x0        =    0x1
$w
$q
```

Then reboot A/UX so that the change will take effect. You might also want to make the same change to the /etc/install.d/boot.d/bnet_dr file (adb -w bnet_dr) in case you build a new kernel via newconfig on the forwarder /router system at some later date.

5) Enable routed daemon on each computer on the networks. To start in.routed manually, enter the following command:

```
/etc/in.routed
```

Alternatively, you can change the action field for the /etc/in.routed entry in the /etc/inittab file to wait, which can cause in.routed to start automatically.

6) Modify/check the /etc/hosts file on all computers to include host name and IP address of all the systems on the network and /etc/networks file on all computers to contain the host name and the network number.

7) Modify /check the /etc/NETADDRS file to configure IP and broadcast addresses and netmasks for each card.

The user will be prompted for the information as in the above steps 6 and 7, while running newconfig. See Chapter 6 Creating and Managing a TCP/IP Network of the Server Administration With A/UX 3.0.1 manual, for the detailed description on Routing and Forwarding.

Note: MacTCP under A/UX supports only one control panel CDEV, attributing to ONLY one IP interface, and does not let you access /select multiple IP interfaces. In other words, you cannot change/switch IP interface from the A/UX finder and changing the interface selection in the MacTCP CDEV has no effect.

Support Information Services

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Tech Info Library Article Number:14419

ABS Tech Note: AWS21 A/UX & Micropolis Drives (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AWS21 A/UX & Micropolis Drives (6/94)

==========

Article Created: 23 June 1994

TOPIC ----------

This article describes a problem with A/UX 3.0.1 and A/UX 3.0.2, and Micropolis drives.

DISCUSSION ----------

There is a known problem with A/UX 3.0.1 and A/UX 3.0.2, and Micropolis drives. The actual problem is in the firmware of the Micropolis drives. The problem is compounded by a problem in A/UX which has been fixed in A/UX 3.1. Note: Apple Computer has not shipped a product that uses Micropolis hard disks. Only customers that have purchased third-party hard disks with Micropolis mechanisms need to be concerned with this issue.

When using A/UX 3.0.2, the A/UX System Console window (Command-zero from the CommandShell) displays a list of the connected SCSI devices. This list shows the name, model, and firmware revision of the SCSI devices. This information will make it easier to determine what SCSI drives are in use. A/UX 3.0.1 customers should install the AWS 95 Tune-Up 1.0. Once this is done, they will be running A/UX 3.0.2.

When a request is made for a large amount of data (128 Kbytes), Micropolis drives are returning 1 sector too few (127.5 Kbytes) but reporting the transfer as okay. At this point, A/UX should generate an error. However, A/UX has "special case" code that determines the last 512 bytes did not actually get transferred. A/UX re-issues the request with the correct residual count (512 bytes). Unfortunately, A/UX uses the wrong memory address and writes the 512 Kbytes to the same place the original data was written. The end result is the first and last 512 bytes of the 128 Kbyte transfer are invalid.

The solutions:

1) Micropolis is now aware that their SCSI disk firmware is behaving incorrectly and will soon have a fix available for their customers. Once

the SCSI disk firmware is fixed, customers should no longer see the problem.

2) In A/UX 3.1, Apple has fixed the "special case" code so the residual 512 bytes are written to the correct location. This will allow the AWS 95 to use Micropolis drives even if their firmware has not been updated.

The work around:

There is a work around for this problem for customers that have yet to get the fix from Micropolis. The work around is to patch A/UX using "adb" so the largest request of data is 64 Kbytes instead of 128 Kbytes. This prevents the condition described above from ever occurring. The performance of the AWS 95 should not be noticeably affected by this patch. The work around changes the file /etc/config.d/newunix. Make a copy of this file before proceeding. You should also be logged in as the "root" user. Since you will be rebooting the machine at the end of this procedure you should make sure that the timing is convenient for active users of the system.

Create a shell script (file) called "micropolis" with the following lines of text:

```
adb -w /etc/config.d/newunix << EOF
maxba?W 8
maxwb?W 8
EOF
newconfig
```

After the file is created, it needs to be made executable. To do this, type the following in the CommandShell and hit return:

```
chmod +x micropolis
```

Now type micropolis in the CommandShell and hit return.

The output to the CommandShell should look something like this:

```
a.out file = /etc/config.d/newunix (COFF format)
cannot open core
ready
maxba:          0x10            =       0x8
maxwb:          0x10            =       0x8
newconfig: Making backup copies of /etc/inittab /etc/passwd /etc/group.
newconfig: Preparing to build a new kernel.
newconfig: Building a new kernel (this may take several minutes).
newconfig: Restoring kernel parameters.
newconfig: Checking for any installation information.
 1 ao Ethernet card(s) installed
ao0: IP address 138.45.4.72
     netmask 255.255.255.0
     broadcast address 138.45.4.255
newconfig: To avoid kernel/device inconsistencies, reboot immediately.
   The new configuration will take full effect when the system is
```

rebooted.

After you have done this, restart the Macintosh.

The following is a current list of Micropolis drives with their current firmware revisions that are known to work properly with A/UX 3.x. Please note that this list is subject to change:

Model(s)	Firmware	Checksum	Filename
1926, 1936	hw0a_11	97b8	hw0a-11.mac
21xx series	4930010a	b540	4930010a.mac
22xx series	4930010a	b540	4930010a.mac
22xx-AV series	No know problems		
1548, 1624, 1908, 1924	Not yet available		

In all cases, we recommend customers update their Micropolis firmware. For more information, please contact:

Micropolis Corp.
21211 Nordhoff St.
Chatsworth, CA 91311
800-395-3748; 818-709-3300
FAX: 818-709-3396
Tech support: 818-709-3325

Support Information Services

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Tech Info Library Article Number:14420

Tech Info Library

ARA 2.0 MultiPort Server and Client On Same Computer (1/94)

Revised: 1/13/94
Security: Everyone

ARA 2.0 MultiPort Server and Client On Same Computer (1/94)

==========

Article Created: 12 January 1994

TOPIC ----------

Can the Apple Remote Access (ARA) 2.0 MultiPort Server and 2.0 Client run on the same Computer?

DISCUSSION ----------

No, they can not be run on the same computer. This is due to differences in the link managers used by the two products.

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Tech Info Library Article Number:14422

Tech Info Library

System 7 Pro: Turn-around Time For Digisign Processing (7/94)

Revised: 7/27/94
Security: Everyone

System 7 Pro: Turn-around Time For Digisign Processing (7/94)

==========

Article Created: 13 January 1994

TOPIC --

A customer with System 7 Pro (7.1.1) sent the Digisign information approximately 3 weeks ago (to RSA Data Security, Inc.) to the correct address and has not received a reply yet.

DISCUSSION --

I have contacted RSA and received the following information:

- The "usual" turn-around for signature processing is two weeks from the time the request is received at RSA.
- It is ok to give customers the phone number, after they have been told of the "expected" turn-around time.
- The phone number is (415) 595-8782 and they should ask for "Certificate Services".

Article Change History:
27 Jul 1994 - Revised title to more accurately reflect contents.

Support Information Services

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Tech Info Library Article Number:14423

ARA 1.0 and Express Modem FAX (1/94)

Revised: 1/17/94
Security: Everyone

ARA 1.0 and Express Modem FAX (1/94)

==========

Article Created: 12 January 1994

TOPIC -----

I'm using the Express Modem software with his Quadra 840AV and GeoPort Adapter. I have installed AppleTalk Remote Access (ARA) 1.0 and the GeoPort Adapter software. I would like to be able to set AppleTalk Remote Access and FAX Terminal to auto-answer. Unfortunately, my Quadra 840AV with GeoPort Adapter will not accept a FAX from his FAX machine in this configuration. According to Appendix A on page 81 of the Express FAX/Modem User's Guide, this should work. The manual states:

"If both programs are set to auto-answer, the modem answers after the number of rings designated in the Data User Program. If the call is a FAX call, it is passed to the FAX server. If the call is intended for the data server, it is not passed to the data server (data user programs take precedence over data server programs) because the data port cannot distinguish between the two data programs."

I tested my configuration and found that I could get this to work if I went from Express Modem to Express Modem. However, as soon as I went from a Lanier FAX Model 3800 to Express Modem, the system would not accept a FAX. It would answer and then hang up.

What is happening here and is there a fix?

DISCUSSION -----

The problem quite simply is that some FAX machines do not send the mandatory FAX "calling tone" and therefore are not recognized as "FAX" when the FAX Arbitrator is active and deciding whether an incoming call is FAX or Data.

There is nothing that can be done by the receiving software to determine that it is a FAX when this calling tone is missing from the sending FAX machine. When only FAX Terminal is active and waiting to answer there is

no problem, as it assumes that all calls are for it.

Both the Konica FAX 280 Intelligent Facsimile and the Lanier FAX models 2235 and 3800 do not send this calling tone. The Panasonic Panafax PX-350 does send the calling tone and therefore it works with both FAX Terminal and ARA waiting to answer calls on the GeoPort.

For a customer who questions whether their sending FAX should be able to work with both FAX Terminal and ARA waiting to receive calls, the calling tone is a one-second beep, followed by a one-second pause, followed by the 'phone ring'. The beep can actually occur before -- or after -- the phone ring, that is the sequence can be ring-pause-beep instead. Regardless, this three-second sequence must start as soon as the dialing modem goes off-hook.

The following is specified in the CCITT specification:

"Calling Tone: To indicate a calling non-speech terminal. This signal is mandatory for automatic calling and optional for manual units."

This is not an Express Modem problem, but rather a limitation of the calling FAX machine.

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Tech Info Library Article Number:14426

Tech Info Library

PostScript Level 2 and CCITT Group 4 decompression for bit maps

Revised: 1/13/94
Security: Everyone

PostScript Level 2 and CCITT Group 4 decompression for bit maps

==========

Article Created: 13 January 1994

TOPIC ----------

I understand that PostScript Level 2 includes CCITT Group 4 decompression for bit maps. Is this true? Do any of the Apple printers support any CCITT decompressions?

DISCUSSION ----------

PostScript Level 2 does offer CCITT (now ITU-T) Group 3 and Group 4 encoding and decoding filters. PostScript language support for the ITU-T Group 3 and Group 4 standards is limited to encoding and decoding of image data. It does not include initial connection and handshaking protocols that would be required to communicate with a fax machine. The purpose of these filters is to enable efficient interchange of bi-level sampled images between an application program and a PostScript interpreter. For more information, please see pages 134 to 136 in the "PostScript Language Reference Manual, Second Edition" (ISBN 0-201-18127-4) from Addison-Wesley.

The LaserWriter Pro 810 and LaserWriter Select 360 have fax options that use the PostScript Level 2 ITU-T Group 3 encoding and decoding filters.

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Tech Info Library Article Number:14427

Tech Info Library

VT420 Emulation On Macintosh (1/94)

Revised: 1/19/94
Security: Everyone

VT420 Emulation On Macintosh (1/94)

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Article Created: 12 January 1994

TOPIC ----------

When can we expect VT420 support for the Macintosh? Will the Comm Toolbox (CTB) support this any time soon, or will this support come from third-party vendors?

DISCUSSION ----------

Here are some of the third-party products available now. For more information, please search the Redgate database on AppleLink using the string "VT420". To locate a vendor's address and phone number, use the vendor name as a search string on the Tech Info Library.

Vicom Pro by Vicom Technology

Vicom Pro provides a powerful communication development environment in which to create Macintosh front ends to corporate host systems. By using Vicom's unique interface editor in conjunction with Vicom's SuperScript language, applications can be created for use with Vicom RunTime and Vicom MultiTerm. Features include a project manager with run-time debugger, support for Publish and Subscribe, AppleEvents, AppleScript and XCMDs. Vicom Pro includes terminal emulations for SNA•ps 5250 and SNA•ps 3270, TN5250, TN3270, VT340 & VT241 (ReGIS), VT420, VT320, VT220, VT100/52, VIP7800 WP VIP7824, WYSE 60, WYSE 50, SCO ANSI, ANSI, TV1950, TV1925, DG410, DG211, MCG3101, Adds Viewpoint 50, TTY, Videotex Minitel/Teletel and Videotex Prestel. Connections can be made using Vicom drivers, TCP/IP, LAT, Apple's Communication Toolbox (CTB) connection tools and Serial. FTP Client and FTP Server are included.

asc420 by Sysnet Corporation
---

asc420 is a terminal emulation tool. It allows users to communicate with any computer that works with a DEC VT420 terminal and can be used by any communications application, such as 5PM, that works with the Communications

Toolbox. Full-featured key mapping lets users choose a character set for the keyboard and use DEC keys even if they do not appear on the Macintosh keyboard. Visual indicators are available to replace the indicators that usually appear on the DEC keyboard. These indicators show when the terminal is online, using local echo, pausing while users read text that is being written to the screen and waiting for the host.

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Tech Info Library Article Number:14428

Tech Info Library

SNA•ps Print and Postscript (1/94)

Revised: 1/19/94
Security: Everyone

SNA•ps Print and Postscript (1/94)

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Article Created: 12 January 1994

TOPIC -----

Is there anyway to print a PostScript document from a mainframe to a LaserWriter through the SNA•ps printer client? If so, what special configurations are needed on the mainframe, SNA•ps gateway, and SNA•ps printer client for this to work?

DISCUSSION -----

SNA•ps Print emulates an IBM 3287 or 3812 printer which supports LU3 (3270 data streams) or LU1 (SCS data streams) only. AS/400 printing is done only with LU1. The emulation is expecting to decode data (text only) within one of the mentioned data stream formats.

Therefore, SNA•ps Print is not a solution for printing Host based Postscript documents.

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Tech Info Library Article Number:14429

Tech Info Library

RSA Data Security, Inc. (1/94)

Revised: 1/13/94
Security: Everyone

RSA Data Security, Inc. (1/94)

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Article Created: 13 January 1994

RSA Security, Inc.
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100 Marine Parkway
Redwood City, Ca 94065

415-595-8782

415-595-1873 Fax

Company Profile:
RSA is the world's leading cryptographic research and development firm. They dedicate themselves to the development of privacy and authentication techniques.

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Tech Info Library Article Number:14432

Tech Info Library

PowerBook: Problems with Express Modem & Prodigy (3/95)

Revised: 3/31/95
Security: Everyone

PowerBook: Problems with Express Modem & Prodigy (3/95)

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Article Created: 12 January 1994
Article Reviewed/Updated: 31 March 1995

TOPIC ----------

This article is to clear up two common problems PowerBook owners with Express Modems may report when using Prodigy.

DISCUSSION ----------

Prodigy Error CT#24 - Can't communicate with the modem.

This problem usually indicates that the customer is using an older version of the Express Modem software. The solution is to use Express Modem 1.1.2 software or later. (2.0 is the current version)

Prodigy Error CT#8 - Noisy phone line.

The problem lies in the 'connect' message that Prodigy is expecting once a connection has been established. It has nothing to do with a noisy phone line.

Due to the ATW2 default setting within the Express Modem, it reports a full connection message:

CARRIER 2400
PROTOCOL :NONE
COMPRESSION: NONE
CONNECT 2400

Prodigy expects just "CONNECT 2400" and will disconnect immediately.

To solve the problem, the modem setup string within the CONFIG.SM file needs to be modified. ":ATW0X1" needs to be appended to the modem_str line. For example:

modem_str:3615,0,,2400,+++,CR,CRLF,1,4,6,N,30,50,3,6,32,N,N,,?,

```
S0,,S2,,,,S6,S7,,S9,S10,,S12,,,,,,,,,V1,Q0,,,,X1,,D,T,P,X1,H,,,,,,,,,,,,,,,
OK,0,CONNECT,1,RING,2,NO CARRIER,3,ERROR,4,CONNECT 1200,5,
NO DIALTONE,6,BUSY,7,NO ANSWER,8,CONNECT 2400,10,,,,,,,,,:ATW0X1
```

The W0 command disables Progress codes 40 through 80 and the X1 command restricts the Express Modem in using only result codes 0 through 4 and 8. Refer to the Express Modem User's guide, pages 120-121 for complete details.

Article Change History:
31 Mar 1995 - Reviewed for technical accuracy.
09 Jun 1994 - Made correction to modem string.

Support Information Services

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Tech Info Library Article Number:14433

Tech Info Library

Super ATM 3.5: Corrupts Desktop Rebuilding (11/94)

Revised: 11/17/94
Security: Everyone

Super ATM 3.5: Corrupts Desktop Rebuilding (11/94)

==========

Article Created: 12 January 1994
Article Reviewed/Updated: 17 November 1994

TOPIC ----------

After the Macintosh desktop file has been rebuilt, some Icons are generic, and some documents, which would open before, will now not open when I double click on them. If I click on a document and then "Get Info" on that document, the Get Info box tells me that the document is Type: 'Document'.

DISCUSSION ----------

According to Adobe, this is a problem with Super ATM 3.5 and has been fixed in later versions of Super ATM.

Super ATM 3.5 was installed before the last desktop rebuild. Adobe is aware of the problem, and recommends the following:

a. Reboot the Macintosh with Super ATM off (Extensions off works well for this)
b. Rebuild the Desktop file
c. Restart the Macintosh

This can be done all in one step (if the user is quick) by rebooting, and immediately holding down the shift key, until the 'Welcome to Macintosh, Extensions Off' message is seen. Let up on the shift key, and hold down on the Command-Option keys until the message to Rebuild the Desktop dialog is displayed.

Customers can call Adobe at 800-833-6687 for update information.

Article Change History:
17 Nov 1994 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:14434

Tech Info Library

Performa 560: Specifications (1/94)

Revised: 1/13/94
Security: Everyone

Performa 560: Specifications (1/94)

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Article Created: 13 January 1994

TOPIC --------------------

This article gives technical specifications for the Macintosh Performa 560 computer.

DISCUSSION --------------------

Microprocessor

- MC68030, 33 MHz clock speed; 32-bit data bus
- Built-in memory-management unit
- Socket for optional MC68882 floating-point unit (FPU)

Memory

- 5MB RAM standard (4MB on logic board, 1MB in SIMM)
- Expandable (by authorized Apple dealer) to as much as 36MB by adding 1MB, 2MB, 4MB, 8MB, 16MB, or 32MB SIMM to a single 72-pin slot. Requirement: 72-pin fast-paged, 80ns or faster.
- 1MB ROM

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 160MB hard disk
- Internal AppleCD 300i double-speed CD-ROM drive

Video Display

- Integrated Macintosh Color Display with 14-inch Trinitron CRT
- Resolution: 640 x 480 pixels, 69 dpi
- 768K VRAM supports 32,768 colors (16-bit color)

Software

• System Software version 7.1P5
• Financial and productivity software installed on hard drive

Interfaces

• Internal expansion slot for one Macintosh LC processor-direct expansion card. Compatible with Apple IIe Card.
• SCSI interface for connecting up to five external peripheral devices
• Two serial (RS-232/RS-422) ports
• One stereo sound-output port for external audio amplifier or headphones
• Two Apple Desktop Bus (ADB) ports for keyboard, mouse, and other devices
• Front headphone jack
• Built-in electret microphone above display
• One sound-input port for four sources: internal or external microphone, internal CD-ROM, or external audio

Sound Generator

• Stereo 8-bit digital-analog conversion using 22-kHz sample rate - capable of driving stereo headphones or other stereo equipment through the sound jack and headphone jack
• Built-in stereo speakers

Keyboard and Mouse

• ADB Mouse II
• Apple Keyboard II

Clock/Calendar

• Custom integrated circuit with long-life lithium battery

Disability Access

• CloseView, Easy Access, and visible-beep software are built in.
• Third-party options provide alternative input and output devices

Power Requirements

• Line voltage: 90 to 264 V AC, RMS single phase, automatically configured
• Frequency: 47 to 63 Hz
• Power: 40 W maximum, not including display
  60 W maximum, including display
• Energy-saving feature reduces power consumption by 50%
• One AC outlet powers computer, display, drives, and speakers

ADB Power Requirements

• Maximum current draw for all ADB devices: 500 mA (three ADB devices maximum is recommended)

• Mouse draws 10 mA
• Keyboard draws 25 to 80 mA, depending model used

Size and Weight

Main unit:
• Height: 17.9 in. (45.5 cm)
• Width: 13.5 in. (34.4 cm)
• Depth: 16.5 in. (42.0 cm)
• Weight: 40.5 lbs (18.4 kg)

Mouse:
• Height: 1.3 in. (3.3 cm)
• Width: 2.4 in. (6.2 cm)
• Depth: 4.2 in. (10.7 cm)
• Weight: 4.0 oz. (0.10 kg)

Keyboard:
• Weight: 2.2 lb. (1 kg)
• Height: 1.8 inches (44 mm)
• Width: 16.5 inches (418 mm)
• Depth: 5.6 inches (142 mm)

Operating Environment

• Operating temperature: 50 to 104° F (10 to 40° C)
• Storage temperature: –40 to 116.6° F (–40 to 47° C)
• Relative humidity: 20% to 85% noncondensing
• Maximum altitude: 15,000 ft. (4,722 m)

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Tech Info Library Article Number:14435

Tech Info Library

Apple Hardware: FCC Compliance (1/94)

Revised: 1/14/94
Security: Everyone

Apple Hardware: FCC Compliance (1/94)

==========

Article Created: 14 January 1994

TOPIC ----------

Does the Centris 650 and the Quadra 650 have a FCC rating "A".

DISCUSSION ----------

No, the Centris 650 and Quadra 650 as well as nearly all Apple Computers meet the more stringent FCC Class B certification. Class B devices emit so little EMI that they can be used in homes whereas Class A devices are generally noisier and, therefore, can be used only in a work environment, where there is less likelihood of products interfering with radio and television reception.

Devices certified by the FCC contain a label that specifies the type of certification. Per FCC regulations, Class A and Class B devices must contain a label that reads:

> This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

To determine whether an Apple product (except for LaserWriters) is Class B compliant, in addition to the label having the above passage, on the same label, molded into the housing, or on a separate label will appear a FCC ID number. Therefore, if you see a FCC ID number on a product, that product is class B compliant; if there is no additional FCC ID number, it is Class A.

An example of the FCC ID number is the FCC ID for the Macintosh LC II: FCCID BCGM1700.

Note that Apple requests LaserWriter logic boards be certified, and not the

engines; therefore, the Class B FCC ID number will appear on the logic board, and not the housing.

One other location to verify a products' FCC certification is the documentation that accompanies the product. We have more flexibility in how that message may read, and Apple typically states whether the product is Class A or B compliant.

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Tech Info Library Article Number:14437

Tech Info Library

TITLE

Macintosh: Startup Problems Q & A

Article ID: 14438
Created: 1/14/94
Modified: 1/11/00

TOPIC

This Q & A article addresses frequently asked questions (FAQ) on Macintosh startup problems.

DISCUSSION

Note: Before troubleshooting the following problems, remove any unnecessary external peripherals such as joysticks, disk drives, and the like.

Question: When trying to start my computer, I hear a noise like breaking glass.

Answer: The breaking glass sound indicates a hardware issue, typically memory related. You may follow steps 5 and 6 in the following Answer section to troubleshoot this issue.

Question: Whenever I start my computer I hear the normal startup chord and then it plays a series of musical notes? I have heard a series of both four and eight beeps.

Answer: This indicates a problem during startup. Try the following:

1. Shut the computer down.

2. Insert your Disk Tools disk or system software CD in the appropriate drive and restart the computer.

3. Recall if it is four or eight beeps you heard.

4. If your heard four beeps and they do not play when booting off the Disk Tools disk or CD, then the problem is usually software related. Eject the CD or disk and restart your computer pressing the Shift key. If the computer starts up normally, there is likely to be an extension conflict causing the problem. Read TIL article 30929: "**Mac OS 8.x: Extensions Troubleshooting/Extensions Manager Features**". If the beeps persist, it is likely that your system software is corrupted and you should perform a clean installation to resolve the issue.

5. If eight error beeps are played, this indicates a possible problem with the memory. If you have additional memory installed, remove it. If the problem goes away, the memory expansion is likely to be bad and should be replaced.

6. If, after all the above troubleshooting, the problems persist, your computer should be taken to an Apple-authorized service provider who can perform additional diagnostic tests to determine the exact cause of the problem.

Question: What do I do if the Desktop is rebuilt every time I start the computer?

Answer: Double-click on the hard drive icon to enable you to view its contents. If there is a folder called Desktop or Desktop Folder, change its name by clicking on the folder name and typing in a new name, or deleting the folder(s). This folder is normally created while transferring files using File Sharing.

Question: Why do I get a flashing question mark (?) every time I start my computer?

Answer: The flashing question mark can indicate either a software or hardware problem. Try the following steps to narrow down the likely cause. If your computer does not have a floppy drive, follow the same steps substituting your Mac OS system software CD for the Disk Tools floppy disk.

1. When you get the flashing question mark during startup, put the Disk Tools disk in the floppy drive and restart the computer, allowing the Macintosh to startup (boot) from the floppy drive. If the computer starts up normally and you can open the hard drive, then the problem is with your system software. A reinstallation of system software (clean installation) should solve the problem.

2. If the hard drive is not visible on the desktop launch Apple HDSC Setup, or Drive Setup program (which is located on the Disk Tools Disk) and scan the hard drive. Please note, Apple HDSC Setup will not function properly if the Apple hard disk has been formatted by a non-Apple drive utility.

If HDSC Setup can locate the drive, try to update and test the drive. If the drive doesn't mount (and you have a backup of the drive) then reformat the drive by clicking on the Initialize button. Please note, that if you use the initialize button, everything on the drive will be erased and cannot be recovered. Initializing the drive should enable the drive to mount to the desktop. Next, you will need to reinstall system software.

If HDSC Setup can't locate the drive, and you haven't formatted the drive with non-Apple software, this may indicate possible hardware failure.

Question: What do I do if my icons all look generic (documents are blank with a folded down corner and applications are diamonds with a hand), or when I double-click a document it says the application that created it cannot be found?

Answer: This is normally a sign of a corrupted Desktop file. The Desktop database contains information about all files on your hard disk, including the icon associated with the file. Over time, it can become corrupted and fail to associate the proper icon with the file. Rebuilding the desktop usually fixes the problem.

To rebuild the desktop, restart your computer and hold down the Command (open Apple) and Option key. Hold them down until you get the message "Are you sure you want to rebuild the desktop file?" Let go, and click OK. If this fails, perform a clean installation of system software and rebuild the desktop again.

Question: When I start my computer, it starts up to the desktop, but the cursor keeps flashing between the arrow and the watch. What should I do?

Answer: This is normally caused by having too many windows open or too many items in an open window. Try the following:

1. Shut down and turn off the computer.

2. Restart the computer. Immediately after hearing the startup chime, press the Option key and continue to hold it until the screen shows the desktop and all the menus are available. This closes all open windows.

Question: When my computer is booting up, I notice the mouse pointer is frozen while the Welcome to Macintosh screen is displayed. The computer goes no further. What can I do?

Answer: This is normally caused by an extension conflict during startup. Try the following:

1. Power the computer off.

2. Restart the computer and hold down the shift key until you see the message Welcome to Macintosh, Extensions off.

3. If the computer starts normally with extensions off, the problem is likely tied to an extension. If you recently installed a new extension, try removing it and restart. TIL article 30929: "**Mac OS 8.x: Extensions Troubleshooting/Extensions Manager Features**" can help you to troubleshoot an extension issue using the Extensions Manager control panel.

4. If the problem persists after troubleshooting your extensions, you may need to reinstall system software. A clean installation would be recommended so that you get a fresh copy of the system software.

Question: Whenever I start my computer, it tells me that I need a newer version of system 7.1. I have system 7.1 on my computer. What is the problem?

Answer: This message is displayed on Macintosh computers that require a system enabler. If the system enabler has been moved out of the system folder this message will appear. Try the following:

1. Shut down the computer.

2. Put the Disk Tools Disk, or the system software CD that came with your computer and restart. You must use the Disk Tools or

CD because it contains the proper enabler.

3. When the computer starts up, use Find File to search your hard disk for the system enabler. If it is found, move it into the system folder. If the enabler is missing, drag a copy of the enabler from the system folder on the Disk Tools Disk or system software CD.

4. Restart the computer. If it still fails, then system software corruption is likely. A clean installation of system software should resolve the problem.

In addition to the previous suggestions, you may install Mac OS version 8.0 or higher. The system enabler technology was removed beginning with this version of the Mac OS.

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

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Document Information
Product Area: Apple Software
Category: Software Information & Resources
Sub Category: General Topics

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Tech Info Library

Macintosh: Startup Problems Q & A (5/95)

Revised: 10/14/96
Security: Everyone

Macintosh: Startup Problems Q & A (5/95)

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Article Created: 6 January 1994
Article Reviewed/Updated: 9 May 1995

TOPIC ----------

This Q & A article addresses frequently asked questions on Macintosh startup problems.

DISCUSSION ----------

NOTE:

In resolving the following problems make sure there is nothing more than the power cord and floppy drive (if needed) plugged into the computer. Please disconnect all other devices.

Question: What do I do if the Desktop is rebuilt every time I start the machine?

Answer: Double-click on the Hard Drive Icon. If there is a folder called Desktop or Desktop Folder, change its name by clicking on the folder name and typing in a new name. This is normally created while transferring files using File Sharing.

Question: Why do I get a flashing "?" every time I start my machine?

Answer: The flashing question mark usually indicates either a software or hardware problem. Try the following steps below.

1) When you get the flashing question mark during startup, put the Disk Tools disk in the floppy drive and restart the Macintosh, allowing the Macintosh to startup (boot) from the floppy drive. If the computer starts up normally and you can open the hard drive, then the problem is with your system software. A reinstallation of System software (clean installation) should solve the problem.

2) If the hard drive is not visible on the desktop launch the Apple HDSC Setup program (which is located on the Disk Tools Disk) and scan the hard drive. Please note, Apple HDSC Setup will only function properly with an Apple drive which has not been reformatted by a non-Apple formatter.

If HDSC Setup can locate the drive, try to update and test the drive. If the drive doesn't mount (and you have a backup of the drive) then reformat the drive by clicking on the Initialize button. Please note, that if you use the initialize button everything on the drive will be erased and cannot be recovered. Initializing the drive should enable the drive to mount to the desktop. Next, you will need to install system software.

If HDSC Setup can't locate the drive, and you haven't formatted the drive with non-Apple software, this may indicate possible hardware failure.

Question: What do I do if my icons all look generic (documents are blank with a folded down corner and applications are diamonds with a hand) or when I double-click on a document it says the application which created it cannot be found (but I know the application is there)?

Answer: This is normally a sign of problems with the Desktop file. Restart your computer and hold down the Command (open Apple) and Option key. Hold them down until you get the message "Are you sure you want to rebuild the desktop file?" Let go, and click on "OK". If this fails, then do a clean System 7 Reinstallation (as given in the Fax Info System) and then rebuild the desktop. Most likely an extension is causing the failure in the Desktop file.

Question: What do I do if whenever I start my computer I hear the normal startup chime and then it plays a series of musical notes?

Answer: Unless a friend has put an alias of Beethoven Ninth in your startup items folder, this indicates a problem during startup. Try the following:

1) Shut the computer off for 5 seconds.
2) Put your Disk Tools disk in the drive and restart the computer again.
3) Listen for the chimes and count if it is four or eight tones.
4) If the chimes go away booting off the Disk Tools disk then the problem is usually software related. Performing a clean System Software installation should solve the problem.
5) If four tone error chimes persist this normally indicates a possible problem with the hard drive. Try using Disk First Aid 7.2. If that doesn't work try using a third party recovery disk to recover the drive.
6) If eight tone error chimes persist, this indicates a possible problem with the memory. If you have a memory expansion installed, remove it. If the problem goes away, the memory expansion may be bad and may need replacing.

Question: When I start my computer, it starts up to the desktop, but the cursor keeps flashing between the arrow and the watch. What should I do?

Answer: This is normally caused by having too many windows open or too many items in an open window. Try the following:

1) Power off the computer.
2) Restart the computer. Immediately after hearing the startup chime, hold down the "option" key and continue to hold it down until the screen shows the desktop and all the menus are available. This closes all open windows.

Question: My computer stops working and just sits there "frozen" during the "Welcome to Macintosh" screen. What can I do?

Answer: This is normally caused by an extension or init conflict during startup. Try the following:

1) Power the computer off for at least five seconds.
2) Restart the computer and hold down the shift key until you see the message "Welcome to Macintosh, Extensions off".
3) If the unit starts normally with extensions off, try removing the last extension you added and restart. Or, do a clean system 7 installation (as described in the Fax Info system).
4) If the computer hangs, power it off again and startup off of Disk Tools Disk. If it works, continue with a clean system 7 installation as described in the Fax Info system.

Question: Whenever I start my computer, it tells me that I need a newer version of system 7.1. I have system 7.1 on my computer. What is the problem?

Answer: This message is displayed on Macintosh computers which require a System enabler. (Not a Powerbook 100,140,145,145b or 170). If the system enabler has been moved out of the system folder this message will appear. Try the following:

1) Power the computer for five seconds.
2) Put the Disk Tools Disk in the Floppy drive and restart. You must use the Disk Tools because it contains the proper enabler on it.
3) When the computer starts up look on your hard drive for the system enabler. Move it into the system folder along with any other items which may have been removed. If the enabler is missing, drag a copy of the enabler from the system folder on the Disk Tools Disk .
4) Restart the computer. If it still fails, then something else is wrong. A clean system software reinstallation is needed.

Question: Sometimes when I start my computer, I get the normal startup chime and then the chime repeats and everything starts normally. If this supposed to happen?

Answer: This is normally a result of a non-Apple utility designed to change a setting while running off battery. If you have a PowerBook Utility program installed, check your manual or call the vendor for support. The restarting feature will normally continue even when booting off the Disk Tools Disk.

Question: I have intermittent problems with my computer. How can I determine if the problems are hardware or software?

Answer: In general, software problems will go away if you start up with extensions off (by holding down the "Shift" key during startup, or by booting off the Disk Tools Disk.) If either of these solves the problem, follow with a clean System 7 installation

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
20 February 1995 - Reformatted, added fax document information.

Support Information Services

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Tech Info Library Article Number:14438

Tech Info Library

AV Serial Extension: Fixes 660AV Serial Printing Problems (1/94)

Revised: 1/17/94
Security: Everyone

AV Serial Extension: Fixes 660AV Serial Printing Problems (1/94)

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Article Created: 17 January 1994

TOPIC----------

I'm using a 660AV with a LaserWriter Select 310 and a Geoport. The printer does not work. It works with any non-AV Macintosh, but when connected to any AV Macintosh it does not work.

DISCUSSION ----------

The extension to fix the 660AV serial printing problems (AV Serial Extension) has been released for everyone. It is the official tested solution and can be given to people for 660AV/serial connection problems, especially LaserWriter Select 310 printing problems.

I have tested with this extension, and a document which consistently failed when printed to a LaserWriter Select 310 from the 660AV, now prints completely with no problem. I tested with:

- Virtual Memory and Voice Recognition both OFF
- Voice Recognition ON
- Virtual Memory and Voice Recognition both ON In all three cases the 660AV printed with no problem from the Printer Port.

The extension "AV Serial Extension (1.0)" is available on AppleLink via the path:

Support
Apple Products
Apple SW Updates
Macintosh
Supplemental System Software

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Tech Info Library Article Number:14439

Tech Info Library

AppleShare 3.0: Sharing CDs with AppleShare (1/94)

Revised: 1/17/94
Security: Everyone

AppleShare 3.0: Sharing CDs with AppleShare (1/94)

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Article Created: 17 January 1994

TOPIC -----

I have a server running AppleShare 3.0 with a CD ROM Drive attached. I want to share various CD discs, how do I do this?

DISCUSSION -----

A new CD can be shared by simply inserting it into the CD ROM drive. The new disc will automatically be mounted on the desktop and made sharable to AppleShare if it was previously a shared CD (on that server). If the CD had never been shared previously, the CD will mount on the desktop, but you will have to share it via AppleShare Admin. After that, simply dragging the CD to the trash to unmount it, and then inserting it again, will cause it to automatically mount and become sharable with the same privileges as it had previously.

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Tech Info Library Article Number:14440

Tech Info Library

Japanese Language Kit: Furigana Support (2/95)

Revised: 2/22/95
Security: Everyone

Japanese Language Kit: Furigana Support (2/95)

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Article Created: 19 January 1994
Article Reviewed/Updated: 22 February 1995

TOPIC -----

Does the Japanese Language Kit support Furigana (small Kana written next to an unusual Kanji as a guide to its pronunciation), or is that something that would have to be "faked" by adding a very small line above the normal one?

DISCUSSION -----

Furigana is supported by a number of localized products. We know that TurboWriter, EGWord, and Nisus supports Rubi/Furigana, and we believe that MacWrite II-J, WordPerfect-J, PageMaker-J, Quark Express-J, etc., may support this feature too.

We feel that "faking" Furigana by adding an extra line above your line of text is a poor solution because the Furigana needs to be anchored to its associated text.

For additional details on third party Japanese Language Kit products, contact a Japanese Language Kit dealer in your area, or contact a third party software vendor, such as, SystemSoft.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
22 Feb 1995 - Added reference to "Locating Vendor Information" article.

Support Information Services

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Tech Info Library Article Number:14441

Tech Info Library

Japanese Language Kit: User Defined Characters (3/95)

Revised: 3/3/95
Security: Everyone

Japanese Language Kit: User Defined Characters (3/95)

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Article Created: 19 January 1994
Article Reviewed/Updated: 3 March 1995

TOPIC ----------

Does the Japanese Language Kit have any support for adding characters to the list of recognized characters?

For instance, if someone were to spell their name with an unusual Kanji character that the program does not already have, can the Japanese Language Kit add that Kanji itself or would an outside font editor be necessary?

DISCUSSION ----------

Depending on the nature of the kanji being used, Chapter 5 of the Japanese Language Kit Input Guide ("Using Dictionaries") may provide a solution. Otherwise see below:

When we introduced Kanji TrueType, we had to drop User Gaiji (user defined characters), because of the complexity of adding them to the outline fonts.

To our knowledge, the only program that produces User Gaiji is a 3rd party package from Enfour that patches the fonts: though we don't have a lot of details on this product.

For additional details on third party Japanese Language Kit products, contact a Japanese Language Kit reseller in your area, or call SystemSoft.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number, such as Enfour or SystemSoft.

Article Change History:
03 Mar 1995 - Added reference to information in the manual.

..TIL14442-Japanese_Language_Kit-User_Defined_Characters_3-95_(TA31000).pdf

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Tech Info Library Article Number:14442

Tech Info Library

Performa 550: Troubleshooting Blank Gray Display (1/94)

Revised: 1/17/94
Security: Everyone

Performa 550: Troubleshooting Blank Gray Display (1/94)

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Article Created: 17 January 1994

TOPIC ----------

My Performa 550 is displaying a blank gray screen.

DISCUSSION ----------

If your Performa 550 is displaying a blank gray screen, you need to eject the CD (or CD-ROM) that's in the drive. Here's how:

1) Insert a paper clip or similar slender straight tool into the small hole located just below, and to the right of, the CD door. Press slowly and firmly until the CD ejects.

2) If this doesn't work, raise the door marked "caddy loaded" straight up. Here's how: With the computer's power on, "walk" the door up with your fingers. Press in and up on the two corners of the CD caddy and it will pop out.

3) Once the CD has ejected, hold down hold down three keys simultaneously:
   the Control key at the bottom left of the keyboard,
   the Command key (located next to the space bar), and
   the Power key located at the top of the keyboard.

   Hold all three for about one second and let go. Your Performa will restart.

4) If you see a message that your Performa was not shut down properly, press the Return key on your keyboard. If you do not see this message, select Restart from the Special menu.

Support Information Services

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Tech Info Library Article Number:14446

Tech Info Library

Apple Basic Color Monitor & LCD Displays: Cabling Tips (1/94)

Revised: 1/17/94
Security: Everyone

Apple Basic Color Monitor & LCD Displays: Cabling Tips (1/94)

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Article Created: 17 January 1994

TOPIC ----------

I have a Macintosh LC III and an Apple Basic Color Monitor, which are hooked up to an LCD projection panel. The LCD is displaying a great picture, but the picture on the Apple Basic Color Monitor is awful. (The Basic Color Monitor works fine when connected to the computer by itself.)

DISCUSSION ----------

All Macintosh computers with built-in video (except for the Macintosh IIci and IIsi) automatically sense what kind of monitor is attached, and adjust the video signal accordingly. In the case of the Apple Basic Color Monitor, the computer will sense a VGA monitor and send out a VGA signal.

Although most LCD panels work with both RGB and VGA video signals, the different signals require different cables.

If you connects an LCD panel using the cable labeled for Macintosh, the computer will sense an RGB monitor and send out an RGB signal. This signal works fine with the LCD panel, but is not compatible with the Apple Basic Color Monitor.

Use the cable labeled for use with VGA monitors when connecting an LCD panel to a computer with the Apple Basic Color Monitor. Disconnect the VGA adapter from the Apple Basic Color Monitor and use it to connect the LCD panel cable directly to the computer.

Support Information Services

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Tech Info Library Article Number:14447

Tech Info Library

TITLE

PowerBook and iBook: Resetting Power Manager

Article ID: 14449
Created: 1/18/94
Modified: 1/4/00

TOPIC

What is the Power Manager and is there a proper way to reset it for each type of PowerBook computer?

DISCUSSION

The Power Manager is an integrated circuit that is usually on the logic board of the PowerBook and iBook. As the name implies, it is responsible for power management of the PowerBook. It controls backlighting, hard disk spin down, sleep and wake, some charging aspects, trackpad control, and I/O as far as looking at the serial port and modem so it doesn't sleep when connected.

Over time, the settings in the Power Manager may become corrupted, which can result in operational anomalies with the PowerBook. Examples would be not powering on, not waking from sleep, not charging the battery, or not seeing the AC Adapter, among others.

Resetting the Power Manager is accomplished in a variety of ways depending upon the specific PowerBook model in use. These methods are described below.

WARNING: Resetting the Power Manager on any PowerBook computer will permanently remove a RAM disk, if present, and all of its contents.

PowerBook 100

1. Remove the AC adapter and the battery.
2. Flip the battery contact switch on the rear of the unit to the down position.
3. Let the unit sit without power hooked up for 3-5 minutes.
4. Simultaneously press and hold the rest and interrupt buttons on the side of the unit for 15 seconds.
5. Reinstall the battery, reconnect the AC adapter if necessary and flip the battery contact switch on the rear of the unit to the up position.

PowerBook 140, 145, 145 B and 170

1. Remove the AC Adapter and the battery.
2. Let the unit sit without power connected for 3-5 minutes.
3. Using two paper clips, simultaneously press and hold the reset and interrupt buttons for 5-10 seconds.
4. Reinstall the battery and, if necessary, reconnect the AC adapter.

Note: Both recessed buttons (commonly known as the reset and interrupt buttons) are located next to the power button on the back panel of the PowerBook.

PowerBook 150

1. Remove the power adapter and battery from unit.
2. Push the reset button in the back of the unit with a paper clip and hold for 5-10 seconds.
3. Plug the AC adapter into the AC (wall) outlet.
4. Reconnect the power adapter and push the reset button in back again, but just briefly. You should hear a small pop from the speaker; do not be concerned.
5. Push main power button in back (large exposed button). The unit should power up.
6. Apple suggests charging the battery for at least 8 hours before running on battery power.

If the PowerBook powers on, the battery may be reinserted. If it fails to start, the PowerBook may require service.

PowerBook 160, 165, or 180

1. Remove the AC adapter and the battery.
2. Let the unit sit without power connected for 3-5 minutes.
3. Reinstall the battery and, if necessary, reconnect the AC adapter.

Note: Steps 1 and 2 will usually reset the Power Manager, however if the computer still exhibits the same problem, redo steps 1 and 2 and then follow the step listed below before reinstalling the battery.

1. Using two paper clips, simultaneously press and hold down the reset and interrupt buttons for 5-10 seconds. They are located next to the power button on the back panel of the PowerBook.

PowerBook 500 series

1. Remove the AC adapter and the battery.
2. Let the unit sit without power hooked up for 3-5 minutes.
3. Simultaneously press and hold Command-Option-Control-Power On for 5-10 seconds.
4. Reinstall the battery and, if necessary, reconnect the AC adapter.

PowerBook 200 and 2300 Series

1. Press and hold the power button on the rear of the 200 or 2300 series computer for 30-45 seconds.*

2. **(see Caution)** If resetting the Power Manager chip does not solve the problem, reset the code for the Power Manager chip by removing all power sources and letting the unit sit for 10 minutes. (Disconnect the AC adapter, remove the battery and the internal backup battery.) This forces the PowerBook Duo to reload the Power Manager code from the system software.

****Caution**** Apple-authorized service technicians may remove the internal back up battery to reset the Power Manager. If you are not an Apple-authorized service technician, please note that removing the internal backup battery is not a simple procedure and is not recommended. If anything is damaged in your attempt to remove the battery, it will not be covered under warranty.

PowerBook 190, 1400, 2400, 3400, 5300 Series, and PowerBook G3 (M3553):

The PowerBook 190, 1400, 3400, 5300 Series, and PowerBook G3 (M3553) have two different ways to reset the Power Manager. The only difference is the location of the reset button. See the table below for the location of the reset button on each PowerBook series.

PowerBook	Reset Button Location (on rear of computer)
190 Series	Below the video-out port
1400 Series	Between the ADB and Serial ports
2400 Series	Above the floppy drive connector
3400 Series & PowerBook G3 (M3553)	Left of the Serial port
5300 Series	Below the video-out port

Resetting the Power Manager

1. If the computer is on, turn it off.
2. Restart the computer by holding down the reset button for 10-20 seconds. (See chart above for location of the reset button for your PowerBook series.)
3. If the computer does not restart, repeat step 2 three or four times.

Resetting the Power Manager and PRAM

Resetting, or zapping, the parameter RAM (PRAM) when the computer is shut down also resets Power Manager. The following process resets both the Power Manager and the parameter RAM.

1. If the computer is on, turn it off.
2. Make sure the Caps Lock key is not down.
3. Restart the computer. Immediately after hearing the startup sound, simultaneously press and hold Command-Option-P-R. (If you do not hold down the key combination within 5-10 seconds after the computer restarts, you will need to repeat steps 1-3.)
4. Hold down the keys until you hear the startup sound again. Then release the keys.
5. If the computer shuts itself off, press the reset button on the back of the computer to turn it back on. (See chart above for location of the reset button for your PowerBook series.)
6. When the computer has finished starting up, restore any custom settings for the desktop pattern, memory, network, AppleTalk, trackpad, power conservation, and so forth.

PowerBook G3 Series (M4753)

1. If the computer is on, turn it off.
2. Simultaneously press Shift-Fn (function)-Ctrl (control)-power.

3. Wait 5 seconds.
4. Press the power button to restart the PowerBook.

PowerBook G3 Series (Bronze Keyboard) (M5343)

1. If the computer is on, turn it off.
2. Press the reset button on the rear of the computer. The reset button is located between the external video and modem (RJ-11) ports.
3. Wait 5 seconds
4. Press the power button to restart the PowerBook.

Note: When you reset the Power Manager, wait at least 5 seconds before using the power button to start up the computer. If you do not wait at least 5 seconds, the reset procdure may become corrupted. (If you suspect that the reset procedure was corrupted, press the reset button again and wait 5 seconds before pressing the power button.)

iBook

1. If the computer is on, turn it off.
2. Press the reset button located above the power button at the base of the display. You will need a small, blunt instrument such as a paper clip to press the button.
3. Wait 5 seconds
4. Press the power button to restart the iBook.

Note: The power manager reset on the iBook also resets the Date and Time. After the reset, the system clock will be set to 12:00 A.M., 01/01/1904.

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

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Document Information
Product Area: Computers
Category: PowerBook
Sub Category: General Topics

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Tech Info Library

DayStar Digital: nPOWER - PowerPC Coprocessor Card (3/94)

Revised: 3/11/94
Security: Everyone

DayStar Digital: nPOWER - PowerPC Coprocessor Card (3/94)

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Article Created: 18 January 1994
Article Reviewed/Updated: 11 March 1994

TOPIC ----------

This article describes the nPower PowerPC Coprocessor Card for selected Macintosh Models from DayStar Digital. The nPower card differs from other PowerPC upgrades in that multiple PowerPC chips can be added to a single card, accelerating important functions in image processing software.

DISCUSSION ----------

DayStar Digital has licensed core system-level ROM code from Apple. DayStar's nPower PowerPC Coprocessor Card will connect to the Processor Direct Slot (PDS) on the following Macintosh models:

- Macintosh Centris 650.
- Macintosh Quadra 650, 700, 800, 900, 950.

The rest of this article details the card's specifications. The card is expected to ship upon the official introduction of Apple first PowerPC based Macintosh models.

nPOWER PowerPC Coprocessor Card

Processor

- 66 MHz or 80 MHz clock speed option
- 64-bit data bus
- 32-bit address bus
- Mother board interface:
  - Processor Direct Slot (PDS) with proprietary multiplexed pipeline data path processor.
- Processor performance:
  - SPECint92 >60 (integer)
  - SPECfp92 >80 (floating point) at 66 MHz

Processor Cache

- Built in 32 Kbyte unified instruction and data cache
- Optional write-back mode

Memory

- 2 banks with two 72-pin SIMM slots each for a total of four.
- SIMM sizes: 1M x 32, 2M x 32, 4M x 32, 8M x 32.
- RAM speed: 60 ns (nanoseconds) or faster.
- RAM Type: non-parity or parity (parity is not used)

Memory Configurations

- Capacity range: 0 MB to 128 MB
- on board configurations: 0 MB, 8 MB, 16 MB, 27 MB, 32 MB, 40 MB, 48 MB, 64 MB, 72 MB, 80 MB, 96 MB, 128 MB, 0 MB

Memory Data Transfer Rates

- With interleaving: 92 MB per second reads, 118 MB per second writes.
- Without interleaving: 76 MB per second reads, 92 MB per second writes.
- Data transfer modes: 64-bit cache line transfers
- Data transfer rates: 20 MB per second and higher, depending on host platform.
- Power consumption: 3.0 amps at 5V (with 8 MB of RAM)

Software

- nPOWER Control Panel (CDEV)
- Adobe PhotoShop 25 nPOWERed extension

Environmental Conditions

- 50 to 104 degrees F (10 to 40 degrees C)
- Humidity: 10 to 80 percent (non-condensing)
- Altitude: Sea level to 10,000 feet.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
11 March 1994 - Reviewed and reclassified article.

Support Information Services

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Tech Info Library Article Number:14450

DayStar Digital: PowerPro 601 - PowerPC Upgrade Card (3/94)

Revised: 3/11/94
Security: Everyone

DayStar Digital: PowerPro 601 - PowerPC Upgrade Card (3/94)

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Article Created: 18 January 1994
Article Reviewed/Updated: 11 March 1994

TOPIC

This article describes the PowerPro 601, the PowerPC Upgrade Card for selected Macintosh Models from DayStar Digital.

DISCUSSION

DayStar Digital has licensed core system-level ROM code from Apple. DayStar's PowerPro 601 - PowerPC Processor Upgrade Card will connect to the Processor Direct Slot (PDS) on the following Macintosh models:

- Macintosh Centris 650.
- Macintosh Quadra 650, 700, 800, 900, 950.

The rest of this article details the card's specifications. The card is expected to ship upon the official introduction of Apple first PowerPC based Macintosh models.

PowerPro 601: PowerPC Processor Upgrade Card

Processor

- 66 MHz or 80 MHz clock speed option
- 64-bit data bus
- 32-bit address bus
- Mother board interface:
  - Processor Direct Slot (PDS) with asynchronous communications interface.
- Processor performance:
  - SPECint92 >60 (integer)
  - SPECfp92 >80 (floating point) at 66 MHz

Processor Cache

- Built in 32 Kbyte unified instruction and data cache
- Optional 512 KB second L2 cache

ROM

- Apple PowerPC licensed ROMs

Memory

- 2 banks with two 72-pin SIMM slots each for a total of four.
- 1M x 32, 2M x 32, 4M x 32, 8M x 32.
- RAM speed: 60 ns (nanoseconds) or faster.
- RAM Type: non-parity or parity (parity is not used)

Memory Configurations

- Capacity range: 0 MB to 128 MB
- on board configurations: 0 MB, 8 MB, 16 MB, 27 MB, 32 MB, 40 MB, 48 MB, 64 MB, 72 MB, 80 MB, 96 MB, 128 MB, 0 MB

Memory Data Transfer Rates

- With interleaving: 92 MB per second reads, 118 MB per second writes.
- Without interleaving: 76 MB per second reads, 92 MB per second writes.
- Data transfer modes: 64-bit cache line transfers
- Data transfer rates: 20 MB per second and higher, depending on host platform.
- Power consumption: 3.0 amps at 5V (with 8 MB of RAM)

Software

- PowerPro Control Panel (CDEV)
- Native Photoshop filters
- Photoshop scripting
- Color Management

Environmental Conditions

- 50 to 104 degrees F (10 to 40 degrees C)
- Humidity: 10 to 80 percent (non-condensing)
- Altitude: Sea level to 10,000 feet.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Article Change History:
11 March 1994 - Verified information & reclassified article.

Support Information Services

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Tech Info Library Article Number:14451

Duo Dock: Multiple Hard Drives May Not Spin Up (5/95)

Revised: 5/31/95
Security: Everyone

Duo Dock: Multiple Hard Drives May Not Spin Up (5/95)

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Article Created: 19 January 1994
Article Reviewed/Updated: 31 May 1995

TOPIC ----------

When inserted into a Duo Dock or Duo Dock II+, my PowerBook 200 series computer does not start up from its internal hard drive. The Dock contains its own hard disk, math coprocessor, and VRAM.

DISCUSSION ----------

This issue seems to occur only when specific conditions are present. It can affect all members of the PowerBook 200 family, as well as other Macintosh computers with two hard drives connected either internally or externally.

The conditions that can cause the problem include:

• The PowerBook 200 series (Duo) computer and Duo Dock hard drives have been formatted with different versions of HD SC Setup.

• Enough VRAM is installed to allow the option of thousands of colors when the PowerBook 200 series computer is inside the Dock (unless thousands of colors are selected, the problem does not occur).

• 32-bit addressing is on

It can also occur with an external hard drive connected to the Dock, or if a third party drive is installed inside the Duo Dock or Duo Dock II+. In this case, reformatting both the PowerBook 200 series computer and the Dock drives with the appropriate formatter is required. Because Apple HD SC Setup does not recognize third party drives, you need to use a third party formatter.

To correct the problem, remove one of these conditions:

• Use HD SC Setup 7.2.2 or later to update the drivers on both hard drives. This is available from authorized dealers or online services.

• Reformat the PowerBook 200 series computer's internal hard disk with Apple HD SC Setup 7.1, or reformat both the Duo's internal hard disk and the Dock's hard disk with the same version of Apple HD SC Setup.

• Turn 32-bit addressing off.

• When starting up from the Dock, set the colors to 256 instead of thousands.

This article was published in the "Information Alley":
Volume II, Issue 3, Page 14

Article Change History:
31 May 1995 - Added Info Alley information; updated to reflect Duo Dock II+.
23 May 1995 - Changed title to specify product.
06 Apr 1995 - Noted internal 3rd party drive in Dock could cause issue.

Support Information Services

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Tech Info Library Article Number:14453

HyperCard 2.2: Common Support Questions (1/94)

Revised: 1/19/94
Security: Everyone

HyperCard 2.2: Common Support Questions (1/94)

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Article Created: 19 January 1994

TOPIC --

This article, provided by Heizer Software, answers some common support questions that have come to Heizer since the introduction of HyperCard 2.2.

DISCUSSION --

Color

Q. Are the new Color Tools the same XCMDs as ColorizeHC?
A. No, they're entirely new XCMDs.

Q. How can I display color icons with HyperCard 2.2?
A. You can't. Color Tools supports the display of color picture resources (and files), but not icons. If you're comfortable with ResEdit, you can open the icon resource, select it, copy it to the clipboard, then create a new PICT resource and paste it in. You can then use Color Tools to display the new PICT resource.

Q. Why is color so slow?
A. Color is often slower, compared to monochrome, but here are several ways you can improve performance:
- In the OpenCard handler, set both lockmessages and lockrecent to true.
- Consider designing a single color background image, rather than colorizing several individual objects.
- Increase HyperCard's memory partition.

Visual Effects

Q. Why don't my visual effects work?
A. You've probably turned on Color Tools, which has its own visual effects. Either use Color Tools' visual effects, or turn Color Tools off.

Standalone Applications

Q. When I save as standalone, the color I added doesn't show up.
A. Increase the memory partition for your standalone (via the Get Info... command in the Finder) by at least 75K.

Memory

Q. Does HyperCard 2.2 require more memory than 2.1?
A. Yes, about 50K more -- primarily to support the new AppleScript features. If you haven't installed AppleScript, you probably don't need any more RAM than you did with HyperCard 2.1.

Compatibility

Q. Can HyperCard 2.1 open a HyperCard 2.2 stack?
A. Yes, both versions can read each other's stacks. However, new features of HyperCard 2.2 -- such as pop-up menus and AppleScript scripts, as well as some of the new language syntax -- will be unknown to HyperCard 2.1 and could cause script error messages.

Q. Will my XCMDs work under HyperCard 2.2, or do I need updates from the authors?
A. At Heizer Software, we have yet to find any XCMDs that worked under 2.1 but fail under 2.2. The XCMD interface is unchanged (other than bug fixes). Existing XCMDs should work just fine with the new version of HyperCard.

Other

Q. Why does the pop-up menu in the Save A Copy dialog list some menu items twice?

A. Because you've placed the StackToApp component in both your System folder and in HyperCard's folder. It should be in only one of those two places.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14454

Sysnet Corporation (9/95)

Revised: 9/18/95
Security: Everyone

Sysnet Corporation (9/95)

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Article Created: 19 January 1994
Article Reviewed/Updated: 18 September 1995

Sysnet Corporation

5301 Wisconsin Ave. NW, Ste. 640
Washington, DC 20015

202-686-5515

202-686-6992 FAX

Company Profile:
Makers of asc420 a DEC VT420 terminal emulator.

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:14455

Tech Info Library

Vicom Technology (1/94)

Revised: 1/19/94
Security: Everyone

Vicom Technology (1/94)

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Article Created: 19 January 1994

Vicom Technology

107-319 West Pender Street
Vancouver, BC V6B 1T4
Canada

800-842-6693

604-684-9517

604-684-9516 FAX

Company Profile:
Makers of Vicom Pro, a business professional desktop communications and terminal emulation software.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14456

Tech Info Library

Newton Connection Kit for Windows: Missing AM/PM (1/94)

Revised: 1/19/94
Security: Everyone

Newton Connection Kit for Windows: Missing AM/PM (1/94)

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Article Created: 11 January 1994

TOPIC -----

When I open my Newton Connection Kit for Windows and edit my connection files, calendar items do not show up with the proper AM or PM designations.

Also, if I add an item to the calendar and type either AM or PM next to the time, the designation disappears when I close the item.

Why does this happen?

DISCUSSION -----

This situation is caused by the setup of the Connection Kit's time display formats. To display the time in standard 12 hour format with AM/PM designations, follow these steps:

1) Open the Windows Control Panel, then open the International Control Panel.
2) Select Change from the Time Format section of the control panel. This will display the Time Format dialog box.
3) Click 12 hour in the dialog box.
4) Enter AM next to the sample time 00:00-11:59 and enter PM next to the sample time 12:00-23:59 by clicking the up and down arrows next to the sample times.
5) Close the dialog box and control panels.

The connection files will now display the time with AM/PM designations.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14457

Tech Info Library

Newton Messaging Card: In Box Limitation (1/94)

Revised: 1/19/94
Security: Everyone

Newton Messaging Card: In Box Limitation (1/94)

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Article Created: 11 January 1994

TOPIC -----

When a Newton Messaging Card that has received more than ten pages (or messages) is inserted into a Newton MessagePad, only the last 10 pages are shown in the MessagePad's In Box.

Why aren't the remaining pages displayed? Would adding more memory help?

DISCUSSION -----

Only the last 10 unread pages are shown in the In Box to conserve system memory for other tasks (such as handwriting recognition) and to reduce the memory overhead of maintaining the In Box.

Adding extra memory to the MessagePad will not help because the extra memory would be allocated to the user and not the Newton operating system.

To view the pages that are not shown in the In Box, open the Pager application in the Extras drawer.

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Tech Info Library Article Number:14459

Tech Info Library

Newton Messaging Card: How to Turn Off Alarm (1/94)

Revised: 1/19/94
Security: Everyone

Newton Messaging Card: How to Turn Off Alarm (1/94)

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Article Created: 11 January 1994

TOPIC -----

Does the Newton Messaging Card have a silent alarm so I can be notified when I receive pages (or messages) without an audible alarm?

Can I turn off the Newton Messaging Card (to avoid the audible alarm) and still receive pages?

DISCUSSION -----

Some paging devices can receive pages (or messages) after they are turned off. These devices vibrate to notify the user when they receive a page and do not produce an audible alarm.

The Newton Messaging Card cannot receive pages when it is turned off, and does not support vibrating notification. Its audible alarm can not be disabled while the unit is on.

The Messaging Card must be on to receive a page, but it does not need to be inserted into the Newton. To review pages that may have been sent to you while the Messaging Card was turned off, call the toll-free number in your Apple Wireless Messaging Service quick reference guide.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14461

Tech Info Library

Video Monitor: Video Playthrough Displays White Screen (1/94)

Revised: 1/19/94
Security: Everyone

Video Monitor: Video Playthrough Displays White Screen (1/94)

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Article Created: 19 January 1994

TOPIC ----------

The video playthrough displays a white screen using Video Monitor on my AV Series Macintosh. When the screen first appears the video window flashes from black to white. Why is this happening?

DISCUSSION ----------

Generally, the white screen means that the video signal is stronger than the machine can accept. It is similar to the effect when one records music on a tape deck and the volume is maximized. In that case, the sound goes to a blur of noise. In the case of your AV Series Macintosh, the result is a white screen. The opposite is when there is no signal at all and the display is completely black.

If the VCR or Television has an option for changing the video level,(it may be labeled 'Attenuation On/Off') try setting it to a lower level.

As an alternative, try adjusting some of the Video Settings such as Saturation, Brightness, and so on. By tweaking those adjustments, he may be able to achieve a satisfactory solution.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14462

Tech Info Library

AV Series: Software for Adjusting Video Brightness (1/94)

Revised: 1/19/94
Security: Everyone

AV Series: Software for Adjusting Video Brightness (1/94)

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Article Created: 19 January 1994

TOPIC -----

Is there is any software to adjust the video brightness for my
AV Series Macintosh?

DISCUSSION -----

Specific applications, such as VideoMonitor, Fusion Recorder, PhotoShop, or PageMaker, have software controls to adjust brightness. Currently, there isn't a general control panel or application to do this. However, most monitors and displays have contrast and brightness controls - either physical knobs or specific control panels.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

Support Information Services

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Tech Info Library Article Number:14465

Tech Info Library

AV, 68040 Macintoshes: Remote Application Launch Crash (1/94)

Revised: 1/19/94
Security: Everyone

AV, 68040 Macintoshes: Remote Application Launch Crash (1/94)

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Article Created: 19 January 1994

TOPIC ----------

Is there an incompatibility when launching applications or files on an AV Series Macintosh from a remote volume? My Macintosh crashes or hangs when doing so.

DISCUSSION ----------

The problem has been reported by users of AV Series Macintosh models as well as on other 68040 based Macintosh models which have had NSI (Network Software Installer) 1.4 or 1.4.1 updates installed.

The Network Launch Fix (1.0) is a system extension that allows you to successfully launch application programs over a network.

You should install the Network Launch Fix if you have a Macintosh computer with a 68O40 microprocessor. The 68040 microprocessor is included in Macintosh Quadra, Centris, and Performa 470 series computers.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14466

Tech Info Library

Apple 16 Color Monitor & Centris 610: White Lines Fix (1/94)

Revised: 1/20/94
Security: Everyone

Apple 16" Color Monitor & Centris 610: White Lines Fix (1/94)

==========

Article Created: 20 January 1994

TOPIC --

I recently came across a customer who had a problem with his Centris 610/16" Apple Color Monitor which caused "white lines" to appear across the screen during scrolling (such as a word processor). The problem is repeatable, occurs only in 8-bit mode, and appears just after you start to scroll the document. It's so bad that you are unable to do any scrolling without corrupting the video display.

What is the fix for this problem?

DISCUSSION --

The problem to which you allude was corrected in System Update 2.0.1. Once it is installed, the 16" Apple RGB Display/Centris 610 will not exhibit the "white lines" when scrolling.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14469

Tech Info Library

LaserWriter Pro 810 and Netware ATPS Print Services (1/94)

Revised: 1/20/94
Security: Everyone

LaserWriter Pro 810 and Netware ATPS Print Services (1/94)

==========

Article Created: 19 January 1994

TOPIC ----------

This article describes an problem when using the Apple LaserWriter Pro 810 with Novell's Netware ATPS Print Services.

DISCUSSION ----------

Novell's Netware ATPS Print Services is unable to make valid connections to the LaserWriter Pro 810 via the EtherTalk protocol. Presently you'll need to bind with IPX (or LocalTalk), not EtherTalk. Note this problem does not affect the Novell PSERVER Print Services.

Basically, the LaserWriter Pro 810's EtherTalk PAP arbitration is implemented differently than the LaserWriter Pro 630s and other printers. Though this implementation is not incorrect, merely different, it does cause problems with Novell's ATPS software as this software retries PAP connections with a new connection ID with every new print job instead of using the same connection ID, causing the LaserWriter Pro 810 to never get out of the arbitration stage. The ATPS console will show the printer as BUSY & IDLE at the same time.

It has been suggested that Netware ATPS administrators bind with Ethernet II (read Ethernet ii) instead of EtherTalk. We recommend you not bind the Ethernet II protocol as this protocol can only support AppleTalk Phase 1 packets. If you do bind Ethernet II intending to run AppleTalk Phase I, you'll need to place the server in -t (Transition mode) to translate the AppleTalk Phase II packets to AppleTalk Phase I and back, and place the LaserWriter Pro 810 on an AppleTalk Phase I cable segment.

Binding IPX (or using LocalTalk) is the preferred way to print to LaserWriter Pro 810s via the Netware ATPS queue.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14470

Tech Info Library

Newton Messaging Card: Deleting Messages (1/94)

Revised: 1/20/94
Security: Everyone

Newton Messaging Card: Deleting Messages (1/94)

==========

Article Created: 11 January 1994

TOPIC --------------------

I have received a number of pages (or messages) on my Newton MessagePad with the Newton Messaging Card.

How do I delete more than one page at a time from my MessagePad?

DISCUSSION --------------------

One method to delete multiple pages (or messages) at a time is to find all pages before or after a specific date, then delete all of the pages you found. To do this, follow these steps:

1) Open the Pager application by tapping the Extras drawer, then tapping the Pager icon.

2) Tap Find to display the Find slip.

3) Tap Look for, then tap either "dates before" or "dates after". Since each page is time and date stamped, this will display a list of pages that were received either before or after the date you entered in the Find slip.

4) Tap the overview dot between the arrows at the bottom of the screen to display the selected list of pages.

5) Tap the Envelope icon at the bottom of the list, then tap Delete. All of the pages in the list will be deleted.

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Tech Info Library Article Number:14471

Tech Info Library

Newton Connection Kit for Windows: -10066 Error (1/94)

Revised: 1/20/94
Security: Everyone

Newton Connection Kit for Windows: -10066 Error (1/94)

==========

Article Created: 11 January 1994

TOPIC -----

After starting a synchronization, both the Newton MessagePad and the Newton Connection Kit for Windows display error -10066.

How do I recover from this?

DISCUSSION -----

If this occurs during a synchronization with the Connection Kit for Windows, install either the 1.04 update (if you have 1.0 ROMs) or the 1.11 update (if you have 1.1 ROMs). These updates can be found on the Windows Connection Kit Disk. Their filenames are SYSUPD104.PKG (for 1.0 ROMs) and SYSUPD111.PKG (for 1.1 ROMS).

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Tech Info Library Article Number:14472

Newton Connection Kit for Windows: Missing Notes (1/94)

Revised: 1/20/94
Security: Everyone

Newton Connection Kit for Windows: Missing Notes (1/94)

==========

Article Created: 11 January 1994

TOPIC -----

After I synchronize my Newton MessagePad with the Newton Connection Kit for Windows, all of my notes are missing from my connection file, including the window headers which say "Created, Text, Folder, and Number of Shapes."

Sometimes, when I open synchronization files that are missing notes , the application quits with a General Protection Fault.

What causes this?

DISCUSSION -----

Version 1.0 of Newton Connection Kit for Windows has a problem with synchronizing notes. To cure this problem, upgrade to version 1.0a or later. Your notes will now display properly.

To upgrade your Newton Connection Kit for Windows, call Newton Fullfillment at 1-800-242-3374.

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Tech Info Library Article Number:14473

Newton Print Pack: Compatible Printers (A-L) (3/95)

Revised: 3/30/95
Security: Everyone

Newton Print Pack: Compatible Printers (A-L) (3/95)

==========

Article Created: 1 August 1994
Article Reviewed/Updated: 30 March 1995

TOPIC -----

Listed below are printers that will print to a Newton MessagePad when used with the Newton Print Pack.

DISCUSSION -----

AEG Olympia

Manufacturer	Model	Driver
AEG Olympia	Laserstar 6e	LJ II
AEG Olympia	NP 30	FX
AEG Olympia	NP 60	FX
AEG Olympia	NP 80 SE	FX
AEG Olympia	NP 80-24	LQ
AEG Olympia	NP 80-24E	LQ
AEG Olympia	NP 136 SE	FX
AEG Olympia	NP 136-24	LQ
AEG Olympia	NPC 136-24	LQ

Alps

Manufacturer	Model	Driver
Alps	Allegro 24	LQ
Alps	Allegro 500	LQ
Alps	Allegro 500XT	LQ
Alps	ALQ 218	FX
Alps	ALQ 224	LQ
Alps	ALQ 224E	LQ
Alps	ALQ 224GX	LQ

Alps	ALQ 318	FX
Alps	ALQ 324	LQ
Alps	ALQ 324E	LQ
Alps	ALQ 324GX	LQ
Alps	ALQ 3001	FX
Alps	ASP 1000	FX
Alps	ASP 1600	FX
Alps	DMX 800	FX
Alps	LPX 2020	LJ II
Alps	LSX 1600	LJ II
Alps	P2000+	FX
Alps	P2100	FX
Alps	P2400 C	LQ
Alps	P2418	FX
Alps	P2424 C	LQ

Brother

Manufacturer	Model	Driver
Brother	HJ-100i	BJ
Brother	HL-4	LJ II
Brother	HL-4V	LJ II
Brother	HL-4Ve	LJ II
Brother	HL-8e	LJ II
Brother	HL-8V	LJ II
Brother	HL-10V	LJ II
Brother	M-1109	FX
Brother	M-1209	FX
Brother	M-1309	FX
Brother	M-1324	LQ
Brother	M-1709	FX
Brother	M-1724L	LQ
Brother	M-1809	FX
Brother	M-1824L	LQ
Brother	M-1909	FX
Brother	M-1924L	LQ
Brother	M-2518	FX
Brother	M-2524L	LQ
Brother	M-4018	FX
Brother	M-4309	FX
Brother	Twinriter 5	FX
Brother	Twinriter 6	FX
Brother	XL-500	FX
Brother	XL-1500	LQ

C. Itoh/C-Tech

Manufacturer	Model	Driver
C. Itoh/C-Tech	9500	FX

C. Itoh/C-Tech	9515	FX
C. Itoh/C-Tech	9715	LQ
C. Itoh/C-Tech	C-240	FX
C. Itoh/C-Tech	C-245	FX
C. Itoh/C-Tech	C-310	FX
C. Itoh/C-Tech	C-315	FX
C. Itoh/C-Tech	C-510	LQ
C. Itoh/C-Tech	C-515	LQ
C. Itoh/C-Tech	C-610	LQ
C. Itoh/C-Tech	C-610 +	LQ
C. Itoh/C-Tech	C-610C +	LQ
C. Itoh/C-Tech	C-645	FX
C. Itoh/C-Tech	C-715 A	LQ
C. Itoh/C-Tech	CI-4	LJ II
C. Itoh/C-Tech	CI-8	LJ II
C. Itoh/C-Tech	CI-8E	LJ II
C. Itoh/C-Tech	ProWriter C-240	FX
C. Itoh/C-Tech	ProWriter C-245	FX
C. Itoh/C-Tech	ProWriter C-310 CXP	FX
C. Itoh/C-Tech	ProWriter C-610II	LQ
C. Itoh/C-Tech	ProWriter C-615II	LQ

Canon

Manufacturer	Model	Driver
Canon	BJ-5	BJ
Canon	BJ-10e	BJ
Canon	BJ-10ex	BJ
Canon	BJ-20	BJ
Canon	BJ-130e	BJ
Canon	BJ-200	BJ
Canon	BJ-230	BJ
Canon	BJ-300	BJ
Canon	BJ-330	BJ
Canon	BJC-800	LQ
Canon	BJC-820	LQ
Canon	LBP-4 sx	LJ II
Canon	LBP-8 sx	LJ II

Citizen

Manufacturer	Model	Driver
Citizen	120D	FX
Citizen	120D+	FX
Citizen	180D	FX
Citizen	200GX	FX
Citizen	200GX Fifteen	FX
Citizen	224	LQ
Citizen	5200	FX

Citizen	5800	FX
Citizen	GSX-130	LQ
Citizen	GSX-140	LQ
Citizen	GSX-140 Plus	LQ
Citizen	GSX-145	LQ
Citizen	GSX-240	LQ
Citizen	HSP-500	FX
Citizen	HSP-550	FX
Citizen	MSP-40	FX
Citizen	MSP-55	FX
Citizen	Overture 110	FX
Citizen	PN-48	LQ
Citizen	ProDot 9	FX
Citizen	ProDot 9X	FX
Citizen	ProDot 24	LQ
Citizen	ProJet	DJ
Citizen	ProLaser	LJ II
Citizen	ProScript	LJ II
Citizen	Swift 9	FX
Citizen	Swift 9X	FX
Citizen	Swift 24E	LQ
Citizen	Swift 24X	LQ

Compaq

Manufacturer	Model	Driver
Compaq	PageMarq 15	LJ II
Compaq	PageMarq 20	LJ II

Epson

Manufacturer	Model	Driver
Epson	ActionLaser	LJ II
Epson	ActionLaser 1000	LJ II
Epson	ActionLaser 1500	LJ II
Epson	ActionLaser II	LJ II
Epson	ActionLaser Plus	LJ II
Epson	ActionPrinter A-2000	FX
Epson	ActionPrinter A-2500	FX
Epson	ActionPrinter A-3000	LQ
Epson	ActionPrinter A-3250	LQ
Epson	ActionPrinter A-4000	LQ
Epson	ActionPrinter A-4500	LQ
Epson	ActionPrinter A-5000	LQ
Epson	ActionPrinter A-5500	LQ
Epson	ActionPrinter T-1000	LQ
Epson	Apex 80	FX
Epson	DFX-5000	FX
Epson	DFX-8000	FX

Epson	EPL-4000	LJ II
Epson	EPL-5000	LJ II
Epson	EPL-5200	LJ II
Epson	EPL-6000	LJ II
Epson	EPL-7000	LJ II
Epson	EPL-8000	LJ II
Epson	EX-800	FX
Epson	EX-1000	FX
Epson	FX-80	FX
Epson	FX-80 +	FX
Epson	FX-85	FX
Epson	FX-86e	FX
Epson	FX-100	FX
Epson	FX-100 +	FX
Epson	FX-185	FX
Epson	FX-286	FX
Epson	FX-286e	FX
Epson	FX-850	FX
Epson	FX-870	FX
Epson	FX-1050	FX
Epson	FX-1170	FX
Epson	HS-80	FX
Epson	JX-80	FX
Epson	L-750	LQ
Epson	L-1000	LQ
Epson	LQ-200	LQ
Epson	LQ-500	LQ
Epson	LQ-510	LQ
Epson	LQ-570	LQ
Epson	LQ-800	LQ
Epson	LQ-850	LQ
Epson	LQ-860	LQ
Epson	LQ-870	LQ
Epson	LQ-950	LQ
Epson	LQ-1000	LQ
Epson	LQ-1010	LQ
Epson	LQ-1050	LQ
Epson	LQ-1060	LQ
Epson	LQ-1070	LQ
Epson	LQ-1170	LQ
Epson	LQ-1500	LQ
Epson	LQ-2500	LQ
Epson	LQ-2550	LQ
Epson	LX-80	FX
Epson	LX-86	FX
Epson	LX-90	FX
Epson	LX-800	FX
Epson	LX-810	FX
Epson	SQ-850	LQ
Epson	SQ-2000	LQ
Epson	SQ-2500	LQ
Epson	SQ-2550	LQ
Epson	Stylus-800	LQ

Epson	T-750	FX
Epson	T-1000	FX

Fujitsu

Manufacturer	Model	Driver
Fujitsu	Breeze 100	DJ
Fujitsu	Breeze 200	DJ
Fujitsu	DL 1100	LQ
Fujitsu	DL 1100C	LQ
Fujitsu	DL 1150	LQ
Fujitsu	DL 1200	LQ
Fujitsu	DL 1200C	LQ
Fujitsu	DL 1250	LQ
Fujitsu	DL 2400	FX
Fujitsu	DL 2400C	FX
Fujitsu	DL 2600	FX
Fujitsu	DL 2600C	FX
Fujitsu	DL 3300	FX
Fujitsu	DL 3450	FX
Fujitsu	DL 3400	FX
Fujitsu	DL 3400C	FX
Fujitsu	DL 3600	LQ
Fujitsu	DL 3600C	LQ
Fujitsu	DL 4400	LQ
Fujitsu	DL 4400C	LQ
Fujitsu	DL 4600	LQ
Fujitsu	DL 4600C	LQ
Fujitsu	DL 5600	FX
Fujitsu	DL 5600C	FX
Fujitsu	DL 5800	LQ
Fujitsu	DL 5800C	LQ
Fujitsu	DX 2300	FX
Fujitsu	DX 2400	FX
Fujitsu	Print Partner 10	LJ II
Fujitsu	VM 2200	LJ II

Hewlett Packard

Manufacturer	Model	Driver
Hewlett Packard	DeskJet	DJ
Hewlett Packard	DeskJet Plus	DJ
Hewlett Packard	DeskJet 500	DJ
Hewlett Packard	DeskJet 500C	DJ
Hewlett Packard	DeskJet 550C	DJ
Hewlett Packard	DeskJet Portable	DJ
Hewlett Packard	LaserJet 4	LJ II
Hewlett Packard	LaserJet II	LJ II
Hewlett Packard	LaserJet IID	LJ II

Hewlett Packard	LaserJet IIP	LJ II
Hewlett Packard	LaserJet IIP Plus	LJ II
Hewlett Packard	LaserJet III	LJ II
Hewlett Packard	LaserJet IIID	LJ II
Hewlett Packard	LaserJet IIIP	LJ II
Hewlett Packard	LaserJet IIISi	LJ II
Hewlett Packard	PaintJet XL300	LJ II
Hewlett Packard	RuggedWriter	LQ
Hewlett Packard	RuggedWriter 480	LQ

IBM/Lexmark

Manufacturer	Model	Driver
IBM/Lexmark	2380 PPS II	FX
IBM/Lexmark	2381 PPS II	FX
IBM/Lexmark	2390	LQ
IBM/Lexmark	2390 PPS II	FX
IBM/Lexmark	2391 PPS II	FX
IBM/Lexmark	4019 LaserPrinter	LJ II
IBM/Lexmark	4019 LaserPrinter E	LJ II
IBM/Lexmark	4029-10 LaserPrinter SE	LJ II
IBM/Lexmark	4029-20 LaserPrinter 6	LJ II
IBM/Lexmark	4029-22 LaserPrinter 6P	LJ II
IBM/Lexmark	4029-30 LaserPrinter 10	LJ II
IBM/Lexmark	4029-40 LaserPrinter 10L	LJ II
IBM/Lexmark	4029-42 LaserPrinter 10P	LJ II
IBM/Lexmark	4070	BJ
IBM/Lexmark	4070 Execjet	LQ
IBM/Lexmark	4079	LQ
IBM/Lexmark	4226-302	FX
IBM/Lexmark	PS/1 printer	BJ

Kodak

Manufacturer	Model	Driver
Kodak	Diconix 180si	FX
Kodak	Diconix 300	FX
Kodak	Diconix 300W	FX
Kodak	Diconix 701	DJ

Kyocera

Manufacturer	Model	Driver
Kyocera	F-800	LJ II
Kyocera	F-800A	LJ II
Kyocera	F-820	LJ II
Kyocera	F-850	LJ II

Kyocera	F-1500A	LJ II
Kyocera	F-1800A	LJ II
Kyocera	F-2000A	LJ II
Kyocera	F-2010	LJ II
Kyocera	F-3000A	LJ II
Kyocera	F-3010	LJ II
Kyocera	F-3500A	LJ II
Kyocera	F-5000A	LJ II
Kyocera	F-5500A	LJ II
Kyocera	FS-1500A	LJ II

Support Information Services

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Tech Info Library Article Number:14474

Tech Info Library

MODE32: System Software Compatibility (8/95)

Revised: 8/15/95
Security: Everyone

MODE32: System Software Compatibility (8/95)

==========

Article Created: 14 February 1994
Article Reviewed/Updated: 15 August 1995

TOPIC ----------

With which versions of Macintosh System Software is MODE32 compatible?

DISCUSSION ----------

MODE32 is a system extension produced by Connectix that provides 32-bit addressing for System 7 through System 7.5 on the Macintosh SE/30, II (requires PMMU), IIx, and IIcx. This feature is otherwise unavailable on these Macintosh models, yet is needed to run System 7.5. MODE32 is only designed for use on these four Macintosh computers.

MODE32 may operate with System 7 Pro, but has not been tested and is not supported.

Either MODE32 or Apple's 32-bit Enabler can be used with System 7.1, but do NOT use both at the same time.

MODE32 only works with System 7.0 and later. If you want to use 32-bit addressing mode with System 6.0 you need to use the Connectix product, OPTIMA.

For more information on MODE32, see "MODE32 Version 7.5: Release Notes and Instructions" and "System 7.5: MODE32 Now Compatible."

Article Change History:
15 Aug 1995 - Add information on System 6.0 and 32-bit addressing.
15 Feb 1995 - Revised keyword for System 7.5.
12 Sep 1994 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:14475

Tech Info Library

Macintosh AV Systems: Video Capture Rate (1/94)

Revised: 1/20/94
Security: Everyone

Macintosh AV Systems: Video Capture Rate (1/94)

==========

Article Created: 19 January 1994

TOPIC ----------

What is the video capture rate, in frames per second, when copying from a VCR to a Macintosh Quadra 660AV or 840AV?

DISCUSSION ----------

The video-in capabilities of the Quadra 660AV and 840AV support full-motion, full-screen viewing of any video material in the NTSC, PAL, or SECAM format.

The video subsystem is completely independent of the CPU or DSP. One of the features provided by this subsystem is the ability to record a quarter screen image at 10 to 20 frames per second directly to a hard disk in real-time without data compression.

Video-in provides for on-screen viewing of video materials, 24-bit frame capture, and QuickTime movie recording without additional hardware.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14476

Tech Info Library

AV Series, AudioVision: Level Sensitivity Settings (1/94)

Revised: 1/20/94
Security: Everyone

AV Series, AudioVision: Level Sensitivity Settings (1/94)

==========

Article Created: 19 January 1994

TOPIC ----------

What are the line level sensitivity settings found in Sound Options dialog box in the AV Series Sound control panel. I'm using the AudioVision 14 Display with my AV Series Macintosh. The AV Series manual does not explain these settings and I'd like to know more.

DISCUSSION ----------

The following information was extracted from the Apple AudioVision 14 Display Developer Notes; Pages 32-34.

AudioVision Sound Options Dialog Box

- The controls in this dialog box are intended for power users.

- When you select an option in this dialog box, it is effective immediately.

AudioVision Sound Options functions. The remainder of this article explains the Sound Options dialog box controls.

External Sound Input buttons

These controls allows you to set the levels of the external sound input, specifically line level and microphone level.

The AudioVision 14 Display accepts 2.0 V and 4.0 V peak-to-peak sound input signals. When you power up the display initially, the Line Level button with low sensitivity will be selected. This means that the display is set to accept the 4.0 V peak-to-peak input.

If your sound input device provides a 2.0 V peak-to-peak signal, the sound output from the display will seem relatively quiet. To compensate for

this, and boost the level of the sound output, you should select Microphone Level high sensitivity. Once you have done this, the Manager saves the setting, which becomes the default unless you change it.

You should generally select Line Level low sensitivity for audio cassettes, audio CDs, and some Apple microphones. You should select Microphone Level (high or low sensitivity) for most other microphones.

External sound input plays through speakers and headphones
(Internal microphone disables external sound input)

During normal operation, you should select "External sound input plays through speakers and headphones." When this option is selected, the "Internal microphone disables external sound input" option is also available.

You should select "Internal microphone disables external sound input" only when your sound input device is a CD player plugged into the audio input connector on the side panel of the display.

Note that Internal microphone disables external sound input may only be selected when External sound input plays through speakers and headphones is selected.

The CD player typically provides a 16-bit sound input, which is transferred through the display to the CPU, and then back from the CPU to be output from the display's speakers or headphone jack. Since the CPU supports only 8-bit sound I/O, the sound output provided in this way is distorted and inferior to the original input.

If you select "Internal microphone disables external sound input," the sound input will be routed directly from the input port to the display's speakers and headphone outputs, without going through the CPU. This enables the display to function as a powered speaker system, and ensures that there is no loss in sound output quality.

If you are recording from the CD (or other sound device) input, the sound input must be routed through the CPU, and you should select "External sound input plays through speakers and headphones."

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14477

Tech Info Library

Cent,Quad 610,660AV: Powering down AudioVision Dsply (1/94)

Revised: 1/20/94
Security: Everyone

Cent,Quad 610,660AV: Powering down AudioVision Dsply (1/94)

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Article Created: 19 January 1994

TOPIC -----

On page 5 of the AudioVision 14 Display User Guide, it states that "by powering down the computer, the monitor will also power down."

Is this incorrect?

DISCUSSION -----

Yes. This is a mistake in the AudioVision 14 Display manual. Both the Centris 610 & Centris/Quadra 660AV have a pass through power supply. This means that as long as the Centris is plugged in and the monitor is plugged into the Centris, there will be power to the monitor. The only way to power the monitor down would be to manually power down the monitor with the on/off button on the back of the monitor.

Support Information Services

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Tech Info Library Article Number:14478

Tech Info Library

AV Series: RS383 Video Support? (1/94)

Revised: 1/20/94
Security: Everyone

AV Series: RS383 Video Support? (1/94)

==========

Article Created: 19 January 1994

TOPIC -----

I want to set up a Quadra 660AV running VideoMonitor to use in place of regular aircraft monitors, which are very expensive.

I know the AV Series Macintoshes support NTSC, PAL, SECAM. Can they run RS383 video instead? RS383 is a composite video, 640x480. They want to use C++ to create buttons that simulate those buttons around the aircraft monitor. Can DSP (Digital Signal Processor) handle it?

DISCUSSION -----

We are not familiar with the RS-383 video format. However, there is an chance the format will work if its horizontal and vertical frequencies correspond to those employed by one of our Macintosh computers. If this is the case, a cable must be made with the appropriate sense line configuration.

Support Information Services

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Tech Info Library Article Number:14479

Tech Info Library

GeoPort, Express Modem: The : and W Commands (1/94)

Revised: 1/20/94
Security: Everyone

GeoPort, Express Modem: The ":" and "W" Commands (1/94)

==========

Article Created: 20 January 1994

TOPIC ----------

I am trying to send a FAX using my telephone credit card according to page 32 of the Express Fax/Modem User's Guide (GeoPort Telecom Adapter version), and I'm having trouble getting the modem to recognize the ":" modem command using a GeoPort Telecom Adapter on my Macintosh AV computer.

DISCUSSION ----------

According the Express Fax/Modem User's Guide the ":" command is the same as the "W" modifier, except that the ":" can detect most calling card tones. The "W" modifier is used to make the modem detect a dial tone before sending the next digit, for example, calling card number. In some instances, the modem will not be able to recognize the ":" command using the Express Modem software version 1.1.2 that comes with the GeoPort Telecom Adapter. The solution is to use commas to delay the modem to wait until the long distance carrier dial tone is sent. The comma will delay the modem 2 seconds for each comma.

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Tech Info Library Article Number:14480

Tech Info Library

ARA 2.0 Client: Network Installer Instructions (1/94)

Revised: 1/20/94
Security: Everyone

ARA 2.0 Client: Network Installer Instructions (1/94)

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Article Created: 20 January 1994

TOPIC --------------------

These are instructions for creating a net install version of Apple Remote Access, using the Apple Remote Access Client set of three floppy disks. This net install version can be stored on an AppleShare File Server or File Sharing volume, and then installed over an AppleTalk network onto a AppleShare Workstation Client Macintosh.

DISCUSSION --------------------

The AppleShare System Administrator should choose the volume where this net install version will be located. Create a folder called (for example) ARA 2.0 Client Net Install, and drag copy each of the three disks into it. This is done by inserting a disk, selecting the icon on the desktop that represents that disk, and dragging it to the ARA 2.0 Client Net Install folder. Continue until all three disks have been copied.

Double click on the folder called ARA PS Install 1, to open it. Select and drag the file named Installer (the actual Installer application) from the ARA PS Install 1 folder, to the ARA 2.0 Client Net Install folder. Repeat this process for the file named Remote Access PS Install (the Installer script). You are now done.

Now, any AppleShare Workstation Client who has access privileges to the ARA 2.0 Client Net Install folder, can navigate to there, double-click the Installer application or the Installer script, and install Apple Remote Access onto their system, across the AppleTalk network.

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Tech Info Library Article Number:14481

Tech Info Library

AV Series: Using Macintosh Easy Open Software (1/94)

Revised: 1/20/94
Security: Everyone

AV Series: Using Macintosh Easy Open Software (1/94)

==========

Article Created: 20 January 1994

TOPIC ----------

I'm having trouble with my Centris or Quadra AV and Easy Open that came with my Apple Media Tool and MacLink?

DISCUSSION ----------

You need the following items installed on your AV Series Macintosh:

- Macintosh Easy Open Reference version 1.0.3
- Document Converter version 1.0.3
- Macintosh Easy Open Setup version 1.0.3
- Macintosh Easy Open version 1.0.3
- System Enabler 088 version 1.1

Support Information Services

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Tech Info Library Article Number:14482

Tech Info Library

GeoPort Telecom Adapter: Surge Protection (1/94)

Revised: 1/20/94
Security: Everyone

GeoPort Telecom Adapter: Surge Protection (1/94)

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Article Created: 20 January 1994

TOPIC ----------

Is there any built in surge suppression or surge protection in the GeoPort Telecom Adapter?

DISCUSSION ----------

This is a follow-on to your original inquiry. After some research, we were able to determine that the GeoPort Telecom Adapter is surge protected. There is a clamp at 300V, and the unit is fused.

Support Information Services

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Tech Info Library Article Number:14484

Tech Info Library

Multimedia Kit: Last Dinosaur Egg CD Bug (1/94)

Revised: 1/24/94
Security: Everyone

Multimedia Kit: Last Dinosaur Egg CD Bug (1/94)

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Article Created: 24 January 1994

TOPIC -----

When using the CD, "Victor, Vector, and Yondo: The Last Dinosaur Egg," the game tells me (via a message on the screen) there is a virus. I ran Norton Utilities and Disinfectant and found problems. Can you explain what is going on?

DISCUSSION -----

Apple contacted Sanctuary Woods Multimedia, the makers of the CD, and spoke with their technical support group. That virus message is actually part of the game and it's unlikely that the game caused the problems.

Sanctuary Woods Multimedia is aware of problems with that particular CD. The QuickTime version on the CD is corrupt and users will have problems if they install it. Also, the CD will crash with Type 1 and Type 28 errors if AppleTalk is active. There is a fix in a newer version which customers can order by calling: 1-800-665-2544.

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Tech Info Library Article Number:14487

Tech Info Library

Macintosh: Can It Be Used as a USENET News Server? (3/95)

Revised: 3/31/95
Security: Everyone

Macintosh: Can It Be Used as a USENET News Server? (3/95)

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Article Created: 26 January 1994
Article Reviewed/Updated: 31 March 1995

TOPIC ----------

Can I setup a Macintosh, using either the Macintosh Operating System (Mac OS) or A/UX, as a USENET news server?

If not, where can I get USENET news server software for other computers?

DISCUSSION ----------

You can setup a Macintosh as a USENET news server under A/UX, since it can use UNIX-based USENET new server software. We aren't aware of any Mac OS-based USENET news server software.

There is a large amount of news software available on the anonymous-ftp Internet hosts. Some of the USENET news software had been developed by the USENET community, such as B news, C news, NN, INN, nntp, rn, trn, ... etc. C News, NN, and INN are the programs most people are running for news servers.

INN (InterNetNews) seems to be the most current news server software being developed. Here is the description from INN's README file:

InterNetNews is a complete Usenet system. The cornerstone of the package is innd, an NNTP server that multiplexes all I/O. Think of it as an nntpd merged with the B News news, or as a C News relay news that reads multiple NNTP streams. Newsreading is handled by a separate server, nnrpd, that is spawned for each client. Both innd and nnrpd have some slight variances from the NNTP protocol.

Two news readers for UNIX systems are rn (read news), trn (threaded version of rn). Some Macintosh OS news reader packages (to access the news on the UNIX side of the news server) are Netnews, NewsWatcher, and Nuntius.

I believe the above mentioned software is available through some of anonymous-ftp hosts in the Internet. One source is the host sunic.sunet.se (192.36.125.2).

Article Change History:
31 Mar 1995 - Made minor changes.

Support Information Services

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Tech Info Library Article Number:14488

Tech Info Library

LW Pro 810: EPS File and Faxing in High Resolution (1/94)

Revised: 1/26/94
Security: Everyone

LW Pro 810: EPS File and Faxing in High Resolution (1/94)

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Article Created: 26 January 1994

TOPIC ----------

Problem

Graphics are created in Adobe Illustrator. They are imported into PowerPoint as an EPS file. The file is successfully printed on a PostScript printer. The same file cannot be faxed with acceptable quality. The text and graphics from PowerPoint are faxed at maximum resolution, but it appears the EPS imported file is printed in low resolution "preview mode.”

Questions
----
1. Will the LW Pro 810 with fax capability completely rasterize the file at maximum resolution, including the EPS import, and fax it to a standard fax machine?

2. Is there a fax phone book file capability?

3. Can Windows users get access to all the printers features and its fax capabilities? Also, can they use some type of Ethernet to talk to the printer?

DISCUSSION ----------

1. Although you do not state what type of fax you're using I'm assuming that it is something like the Express Modem Fax software. This software uses QuickDraw for imaging the fax, therefore it is only using the preview of the EPS file. If you save the EPS file without a preview then the fax would have no graphic at all.

   The LW Pro 810 fax option will use the EPS data and send the fax in high resolution.

2. Yes, there is a phone book utility that comes with the LaserWriter 8.1.1f driver.

3. Windows users can use the all of the printer's features that make sense, for example it's unlikely that a Windows user would use LAT. Ethernet can be used but the Windows machine would have to have either TCP/IP or AppleTalk drivers installed.

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Tech Info Library Article Number:14489

Tech Info Library

System 7.1: Clean Installation from 1.44MB Disks (5/96)

Revised: 10/14/96
Security: Everyone

System 7.1: Clean Installation from 1.44MB Disks (5/96)

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Article Created: 25 January 1994
Article Reviewed/Updated: 27 May 1996

TOPIC ----------

This article presents the steps necessary to perform a clean installation of system software version 7.1. Follow these instructions in the order presented.

DISCUSSION ----------

Purpose of a Clean Installation

A normal system software installation modifies and updates the existing System Folder. A clean installation disables the existing System Folder, leaving most files in place, and forcing the Installer to create a new System Folder.

A clean system installation brings the system software back to the standard configuration. This is necessary when system software has been damaged or modified, preventing a normal installation. It is also useful in troubleshooting.

Follow these instructions in the order presented.

Restart with Disk Tools

Shut down your Macintosh computer, insert the Disk Tools diskette in the floppy drive, and turn on the computer. At the desktop, the Disk Tools floppy disk's icon should be in the upper-right corner of your screen with your hard disk's icon below it.

If the computer ejects the Disk Tools disk, make sure you have an Apple SuperDrive (formerly FDHD) that will read high-density disks. If your computer does not have a SuperDrive, you need system software version 7.1 on 800K disks. To get them, call the Apple Order Center.

The Tech Info Library article titled "Locating Vendor Information" can help you

search for the Apple Order Center's phone number.

Run Disk First Aid

Disk First Aid can detect and repair problems with a hard disk.

Step 1
Open the Disk Tools disk, and double-click on the Disk First Aid icon. In the window that appears, be sure the main hard drive is selected. If it is not, click the Drive button to select the main hard drive.

Step 2
Click once on Open and then once on Start. Disk First Aid will check your hard disk for any potential problems. If it finds problems, you should let the software repair them.

Step 3
Repeat this procedure for each hard disk attached to the system.

Step 4
When you are finished verifying the hard disks, choose Quit from the File menu to return to the desktop.

If Disk First Aid cannot repair a hard disk, you should back up the hard disk and reinitialize it using the appropriate formatting utility for that drive. For Apple drives, use Apple HD SC Setup.

Update Hard Disk Drivers

If you do not have an Apple hard drive, or you use third-party software to format your hard disk, do not use the Apple HD SC Setup utility. However, you should contact your hard drive vendor to verify that your formatting software is compatible with system software version 7.1.

If you have an Apple hard drive, you should update the drivers with the version of Apple HD SC Setup that is on the Disk Tools disk, following these steps:

Step 1
Double-click the HD SC Setup icon on the Disk Tools disk to open it.

Step 2
Click on the Update button.

Step 3
When you are finished, click Quit to return to the desktop.

Sometimes HD SC Setup cannot update the hard disk driver (indicated by a "dimmed" Update button). Here are some possible causes and solutions:

• If a third-party utility formatted your hard disk, you should obtain the latest version of the utility to update your hard drive.

• If a version of Apple HD SC Setup more recent than the version on the Disk

Tools disk formatted your hard drive, do not update the hard disk drivers.

• If an earlier System 6 version of Apple HD SC Setup formatted the drive, it may not have left enough room for the updated driver. You do not have to update the hard disk drivers. However, if you intend to use file sharing or have a Macintosh that can use virtual memory, then you need to back up the disk and reinitialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

• If the driver is corrupt, the Macintosh does not recognize the drive (that is, the drive does not show on the desktop when you start from a floppy disk). You may wish to reinitialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

• If the driver has been modified with compression or security software you will not be able to update the driver. Contact the vendor for additional help.

Check Available Hard Disk Space

Be sure you have at least 5 MB available on the hard disk where you plan to install the system software. Open the hard disk's window. Open the Views control panel and select "Show disk info in header." The amount of available disk space appears in the upper-right corner of any open window.

If there is less than 5 MB available, you will need to delete some unnecessary files by moving them to the Trash. Choose Empty Trash from the Special menu, and you will have more disk space available. Or you can copy files onto floppy disks or other media before moving them to the Trash.

Disable the System Folder

You disable the System Folder by moving the System and renaming the System Folder.

Step 1
Open your hard disk's icon and locate the System Folder.

Step 2
Open the System Folder and locate the System file.

Step 3
Move the System file into the Preferences folder.

Step 4
Close the System Folder's window and rename the System Folder
"Storage."

Step 5
Close all windows that are open on your desktop.

Restart Your Computer

Choose Restart from the Special menu. The system automatically ejects the Disk

Tools disk, and after a few seconds you should see a picture of a disk with a flashing question mark.

If your Macintosh starts up from the hard drive, you have an extra System Folder on the hard disk. You need to delete it or disable it as described in the previous section, then restart.

When you get the disk with the flashing question mark on your screen, you can continue. If you still do not see this on your screen, and you are installing the system software on the internal hard disk, turn off your Macintosh and all attached peripherals. Then disconnect the SCSI cable from the back of the Macintosh. Start your Macintosh again.

Install System 7.1

Install system software version 7.1 following these steps:

Step 1

When you see the disk with a flashing question mark, insert the Install 1 or Install Me First disk into the Macintosh. The computer will start up with the system files on the Install disk.

If you have a Macintosh computer that requires a System Enabler, you should use the Install Me First disk that came with your computer. The standard 7.1 Install disk does not contain the Enabler, and will not start up a Macintosh that requires one.

Step 2

Once the "Welcome to the Apple Installer" message appears, click on OK.

Step 3

Click on Install.

Step 4

Insert the other disks when the Installer asks you to.

Verify Problem Resolution

After performing a clean installation, verify that you resolved the problem before adding anything to the new System Folder. Adding items to the System Folder before resolving your problem defeats the purpose of this procedure.

Install Non-Standard Items

You can now reinstall the non-standard items from the old System Folder (now named "Storage") such as fonts, screen savers, device drivers, and so on. If possible, you should reinstall these items from their original disks.

If the original disks are not available, you may move the non-standard items from the Storage folder to the new System Folder. Be careful not to replace anything that is already in the new System Folder. Only move items that are not already in the new System Folder.

Step 1
Open each corresponding folder within the System Folder and the Storage folder and then compare the contents.

Step 2
Move anything that is not already in the new System Folder and its subfolders from the Storage folder and its subfolders.

Step 3
Restart your Macintosh.

Troubleshooting Extension Conflicts

If you have installed any system extensions or control panels, you will probably see their icons line up across the bottom of the screen when you restart. They load into memory at startup time and modify the standard behavior of the operating system.

Verify INIT Conflict

If the Macintosh fails to restart or behaves erratically, you probably have an incompatible or conflicting INIT (also known as a system extension or control panel). To verify this problem, follow these steps:

Step 1
Be sure the Caps Lock key is off.

Step 2
Restart, and after you see the picture of a computer with a smile, hold down the Shift key.

Step 3
Release the Shift key when the "Welcome to Macintosh, Extensions Off" message appears.

Step 4
When the Macintosh is ready, try to recreate the erratic behavior.

If the problem no longer occurs, then you have a conflicting extension or control panel. Continue with the steps in the next section.

Remove and Replace INITs in System Folder

Step 1
Create a new folder on the desktop.

Step 2
Open the System Folder, Extensions folder, and Control Panels folder, and choose by Kind from the View menu. Move all items of Kind "system extension" or "control panel" to this new folder.

Step 3
Close the System Folder, and restart the Macintosh.

Step 4
Attempt to recreate the problem.

Step 5
Move one item from the new folder on the desktop to the closed System Folder and restart the Macintosh.

Step 6
Attempt to recreate the original problem.

Repeat steps 5 and 6 for each item in the new folder on the desktop until the problem recurs. The last item returned to the System Folder is probably the cause of the problem.

Final Steps

Verify that your applications are performing normally. If not, refer to the application manual or contact the vendor.

When the Macintosh behaves as expected, move the Storage folder to the Trash, and choose Empty Trash from the Special menu.

System Update

After performing a clean installation of System 7.1, you may want to consider installing System Update 3.0 to ensure that you have the most current version of the system software.

System Update 3.0 is available from the Apple Software Updates area of many online services. More specific information about how to find the updates on these services is available in Fax document #20729. If you do not have access to any online services, please call 1-800-SOS-APPL for more information.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
27 May 1996 - Updated for technical accuracy.
19 May 1995 - Corrected step numbering format.
17 May 1995 - Added information about installing System Update 3.0.

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Tech Info Library Article Number:14490

Chinese Language Kit: Third Party Product Solution (1/94)

Revised: 1/26/94
Security: Everyone

Chinese Language Kit: Third Party Product Solution (1/94)

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Article Created: 25 January 1994

TOPIC --------------------

For customers using the Chinese Language Kit, the product described below may be of assistance.

Note: this product does not compete with the Chinese Language Kit.

DISCUSSION --------------------

I recently demonstrated a product that meets the following needs for people using the Chinese Language Kit:

• Conversion of simplified characters to traditional, and vice versa, "on the fly." In other words, users can create text on the screen using simplified characters, then convert it to traditional and back again.

• Complete phrase input, as opposed to character by character.

The product is called Sindex, and it is available as a bundle with a word processor called Wintext. Wintext is one of the applications that is listed as being "Worldscript 2-byte savvy." It can be purchased from Pacific Rim Connections (415/697-0911) and is fully supported by the Chinese Language Kit.

For detailed information on Pacific Rim Connections, type their name as the search string.

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Tech Info Library Article Number:14491

Tech Info Library

Pacific Rim Connections

Revised: 1/26/94
Security: Everyone

Pacific Rim Connections

==========

Article Created: 25 January 1994

Pacific Rim Connections

1838 El Camino Real Suite 109
Burlingame, CA 94010

415-697-0911

415-697-9439 Fax

Company Profile:
Develops multilingual software (in Chinese, Japanese and Korean) such as Sindex and WinText which (an application that is WorldScript 2-byte savvy.)

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14492

Tech Info Library

Power Macintosh 7100/66: Specifications (Discontinued)

Revised: 8/30/95
Security: Everyone

Power Macintosh 7100/66: Specifications (Discontinued)

==========

Article Created: 27 January 1994
Article Reviewed/Updated: 29 August 1995

TOPIC ----------

This article gives the technical specifications for the Power Macintosh 7100/66 computer.

DISCUSSION ----------

Microprocessor

- 66-MHz PowerPC 601 RISC Processor

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB of RAM standard, expandable to 136 MB
- 4 SIMM slots (2 pairs)
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size. For example, you should install two 8 MB SIMMs in first two adjoining slots, and can install two 4 MB SIMMs in the remaining two for a total of 32 MB.
- Possible RAM configurations numerous: 8 MB, 16 MB, 24 MB, 32 MB, 40 MB, 48 MB, 72 MB, 80 MB, and 136 MB.
- 80 ns SIMMs or faster
- L2 Cache Slot for Optional Macintosh Cache Card

RAM note: All 8MB RAM configurations come with 8MB of RAM soldered onto the logic board

Form Factor

- Modular desktop enclosure (similiar to Quadra 650 enclosure)

Disk Drives

- One Built-in Apple SuperDrive 1.4 MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, MS-DOS, and OS/2 disks.
- Support for two internal SCSI devices, one of which may be used for a one-half height, 5.25-inch removable media drive, such as an internal CD-ROM drive.
- One internal hard disk
- Optional internal Apple CD-ROM drive (see above)
- Optional external SCSI hard disk drive (many capacities available)

Video Display

- DRAM based video: 16 bit on 14-inch monitors, 8 bit on 16-inch monitors 640k of non-expandable DRAM-based video
- VRAM based video: 1MB: 16 bit on 16-inch monitors, 8 bit on 21-inch monitors. 2MB: 24 bit on 16-inch monitors, 16 bit on 21-inch monitors (The table below details support for colors or grays for specific monitors.)

Begin_Table

Monitor:	Resolution:	1 MB VRAM:	2 MB VRAM:
12-inch Color	512 by 384	millions	millions
12-inch Monochrome	640 by 480	256	256
13-inch or 14-inch Color or VGA	640 by 480	thousands	millions
15-inch Portrait Monochrome	640 by 870	256	256
16-inch Color	832 by 624	thousands	millions
19-inch Color	1024 by 768	256	thousands
21-inch Color	1152 by 870	256	thousands
SuperVGA	800 by 600	thousands	millions
NTSC	640 by 480	thousands	millions
NTSC flicker-free	640 by 480	256	256
NTSC	512 by 384	thousands	millions
NTSC flicker-free	512 by 384	256	256
PAL	768 by 576	thousands	millions
PAL flicker-free	768 by 576	256	256
PAL	640 by 480	thousands	millions
PAL flicker-free	640 by 480	256	256

*NOTE - NTSC and PAL display modes supported only on AV configurations.

End_Table

Interfaces

- Three internal Nubus 90 slots, support block transfers to and from main memory, 2x block transfers card to card.
- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices.
- One AAUI-15 Ethernet connector.

- Two serial (RS-232/RS-422) ports. (Printer & Modem/GeoPort)
- SCSI interface for connecting up to a total of seven SCSI devices.
- Sound output port for stereo compact disc audio and stereo computer-generated sound.
- Sound input port for stereo sound input (supports 16-bit stereo audio)
- One AV Display Connector supports the Apple AudioVision 14 Display.
- The available Video Adapter Cable (Part #M2681LL/A) allows you to connect a monitor with a standard DB-15 connector to your Power Macintosh built-in video.
- One internal 601 PDS (processor direct slot)
- One internal L2 (Level 2) cache slot

Audio System

- 16-bit stereo in and out
- Sample rates of 48, 44.1, 24, 22.05 kilohertz (kHz)
- Input line level: 1 volt peak-to-peak
- Output line level: 1 volt peak-to-peak
- Input SNR (signal-to-noise ratio): 82 decibels (dB) with no audible discrete tones
- Output SNR: 85 dB with no audible discrete tones
- Bandwidth: 20 Hz-20 kHz (+/- 2 dB) at 44.100 kHz sample rate
- THD+N (Total harmonic distortion plus noise): Less than 0.05 percent; measured 20 Hz-20kHz with a 1-Vrms sine wave input.

Networking

- Built-in Ethernet
- Serial port for AppleTalk
- Integrated GeoPort telecommunications architecture for data, fax, and voice connectivity.

Keyboard

- Several Apple Desktop Bus keyboards with numeric keypads available.

Mouse

- Apple Desktop Bus Mouse II; mechanical tracking, optical shaft, or contact encoding.

Clock/Calendar

- CMOS custom chip with long-life lithium battery.

Apple PlainTalk Microphone (optional)

- The microphone is unidirectional and optimized for use with speech recognition.

Disability Access

- Easy Access, and visible beep included with system software. These built-in

features and third-party options provide alternative input and output tools for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured
- Frequency: 50 to 60 hertz, single phase
- Power Supply Output Rating (Power available for internal devices)
  - Continuous output 112W

- A/C Line Input (Power drawn by the Power Macintosh 7100/66)
  - Maximum continuous 167W
  - Peak input 230W

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 milliamps (a maximum of three Apple Desktop Bus devices is recommended)
- Mouse draws 10 milliamps.
- Keyboard draws 25 to 80 milliamps, depending on the keyboard model used.

Size and Weight

Main unit:

Height: 6 inches (15.3 cm)
Width: 13 inches (32.8 cm)
Depth: 16.5 inches (42 cm)
Weight: 25 lb. (11.32 kg)

*Weight varies based on internal devices installed

Mouse:

- Height 1.3 inches (33 mm)
- Width 2.4 inches (61.7 mm)
- Depth 4.2 inches (107.3 mm)
- Weight 4 ounces (0.10 kg)

Operating Environment

- Operating temperature: 50 degrees to 104 degrees F (10 degrees to 40 degrees C)
- Storage temperature: -40 degrees to 116.6 degrees F (-40 degrees to 47 degrees C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 ft. (3,048m)

System Software Requirements

Requires System 7.1.2 for Power Macintosh or later and System Enabler.

..TIL14493-Power_Macintosh_7100-66-Specifications_Discontinued.pdf

Article Change History:
29 Aug 1995 - Added more information about DRAM.
21 Oct 1994 - Corrected dimensions and weight.
23 Aug 1994 - Additional power supply ratings documented.

Support Information Services

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Tech Info Library Article Number:14493

Tech Info Library

Power Macintosh: Do Any Models Have a DSP chip? (1/94)

Revised: 5/24/95
Security: Everyone

Power Macintosh: Do Any Models Have a DSP chip? (1/94)

==========

Article Created: 26 January 1994

TOPIC -----

I'm considering a Power Macintosh model, but I need to know if any model includes a DSP (Digital Signal Processor) chip?

DISCUSSION -----

None of the models introduced in March, 1994 include a DSP chip. However, some third party vendors might offer a DSP chip on a NuBus or PDS (Processor Direct Slot) card.

Please note however, that all Power Macintosh models can use the Apple Real Time Architecture (ARTA) introduced with the Centris/Quadra 660AV and Quadra 840AV. Thus, image processing, telephony and other applications which use ARTA to improve performance will continue to have that advantage.

Support Information Services

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Tech Info Library Article Number:14495

Tech Info Library

HyperCard: Phone Dialing with Abaton Interfax Modem (7/92)

Revised: 3/25/94
Security: Everyone

HyperCard: Phone Dialing with Abaton Interfax Modem (7/92)

==========

Article Created: 12 July 1991
Article Reviewed/Updated: 25 Mar 1994

TOPIC --------------------

The Phone stack in HyperCard 1.2.5 (and presumably in 2.0 and 2.1 as well) does not automatically dial numbers if you have an Abaton Interfax modem.

DISCUSSION --------------------

To get HyperCard to automatically dial, turn the Interfax control off in the Abaton Interfax control panel.

This article is adapted from the Claris Tech Info database.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14496

Tech Info Library

HyperCard: Working with Alias Manager (3/94)

Revised: 3/25/94
Security: Everyone

HyperCard: Working with Alias Manager (3/94)

==========

Article Created: 30 March 1992
Article Reviewed/Updated: 25 March 1994

TOPIC -----

I want to read from a file in a folder using an alias folder located on the startup volume. The folder pointed to by the alias is located on another mounted volume in the same AppleTalk zone (volume is visible on the Desktop).

Here is the script segment:

```
put "myMachine:aliasFolder:theFileName" into thePath
open file thePath
read from file thePath until end
close file thePath
```

This returns the error that there is no open file by that name. If I substitute the other volumes name instead of "myMachine" it works just fine.

Why can't HyperCard resolve this alias?

DISCUSSION -----

Unfortunately, the Alias Manager doesn't resolve this alias. You've created this pathname by concatenating the path of an alias file and the leaf name of the target:

```
myMachine:aliasFolder:theFileName
|<--- alias file --->|
```

The pathname you want to resolve must refer to a real file on your desktop -- either an alias file or the real thing, like so:

```
myMachine:myAliases:aliasToFile
```

```
   |<------- alias file -------->|
```

In other words, you need to use an alias for the file you want, not for the folder that it lives in.

This article is adapted from the Claris Tech Info database.
Support Information Services

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Tech Info Library Article Number:14497

HyperCard: Ask Command Documentation Correction (8/92)

Revised: 5/9/94
Security: Everyone

HyperCard: Ask Command Documentation Correction (8/92)

==========

Article Created: 29 May 1992
Article Reviewed/Updated: 26 August 1992

TOPIC --------------------

On page 164 of the HyperCard Script Language Guide there is an error in describing the "ask" command.

DISCUSSION --------------------

The syntax given for the "ask file" variation includes the optional word "default" for indicating a default file name. The command is as follows:

ask file [promptText] [with [default] fileName]

* Note - promptText and FileName are italicized

The word default is in plain text, indicating that it can be used as an element in the expression, and is in brackets [], indicating that it is optional.

Given this information, you should be able to type the following handler and get a file name of "Copy":

ask file "Save this file as...." with default "Copy"

Instead the file name comes up as "default Copy". This is an error in the documentation, not with HyperCard. The word "default" describes fileName. A corrected version of the expression would read:

ask field [promptText] [with defaultFileName]

* Again - promptText and defaultFileName are italicized.

This article is adapted from the Claris Tech Info database.

..TIL14498-HyperCard-Ask_Command_Documentation_Correction_8-92_(TA31047).pdf

Support Information Services

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Tech Info Library Article Number:14498

Tech Info Library

HyperCard: Card Size Constraints (7/92)

Revised: 3/25/94
Security: Everyone

HyperCard: Card Size Constraints (7/92)

==========

Article Created: 4 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --

This article describes HyperCard's card size constraints, and tells how to change a stack's card size.

DISCUSSION --

- All the cards in a given stack must be the same size, even if there are several different backgrounds in the stack.
- Smallest card size: 64 x 64 pixels
- Largest card size: 1280 x 1280 pixels.

To change the card size:
1) Choose Stack Info from the Object menu. In the Stack Info dialog box, click Resize.

2) You have two objects for changing the card size:
   - Choose a size from the pop-up menu that appears to the right of Card size.
   - Drag the little black square in the lower-right corner of the card graphic in the dialog box until you see the card measurements you want.

Note: The card size is restricted by memory. If you are unable to reach the largest size of 1280 x 1280, it is probably due to a lack of memory. That is, you might not have enough memory allocated to HyperCard, or you might not have enough RAM installed in the computer.

This article is adapted from the Claris Tech Info database.
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Tech Info Library Article Number:14499

Tech Info Library

HyperCard: Problem with CD-Audio XCMDs from Voyager (12/95)

Revised: 12/22/95
Security: Everyone

HyperCard: Problem with CD-Audio XCMDs from Voyager (12/95)

==========

Article Created: 7 February 1991
Article Reviewed/Updated: 22 December 1995

TOPIC ----------

Some users, when they try to run their HyperCard 1.x stacks under HyperCard 2.0.v2, they find their previously working CD-Audio commands no longer work.

DISCUSSION ----------

Apple and Voyager both sold CD-Audio XCMDs. They were both the same product as Voyager licensed them from Apple. However, Voyager included ResCopy (the old version) to install the externals. This caused a problem when the CD-Audio externals are installed with the old version of ResCopy, the stack will not work properly under HyperCard 2.x.

To fix the problem, re-install the XCMD using either ResEdit or Resource Mover (found in the Power Tools stack).

All the development tools available from Apple are included with version 2.3 of HyperCard. CD-Audio XCMDS are not part of the HyperCard 2.3 tools and are no longer available from Apple. The Voyager company still offers the CD-Audio XCMDs.

Portions of this article were adapted from the Claris Tech Info database.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
22 Dec 1995 - Added information on XCMD availability.

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Tech Info Library Article Number:14500

Tech Info Library

HyperCard: Changing the Cursor While in a Field or Button (8/93)

Revised: 3/25/94
Security: Everyone

HyperCard: Changing the Cursor While in a Field or Button (8/93)

==========

Article Created: 23 June 1993
Article Reviewed/Updated: 2 August 1993

TOPIC --------------------

Here is a short handler that changes the standard "Browse" cursor into another cursor while the mouse is within a button or field.

DISCUSSION --------------------

```
on mouseWithin
    set cursor to "busy" -- or other cursor
       repeat while the mouseLoc is within the rect of the target
          if the mouseClick then
               [action on mouseClick]
          exit mouseWithin
       end if
    end repeat
end mouseWithin
```

If this handler is used in a field, make sure the field is locked. If it isn't, and you click the mouse while over the field, any characters typed will be stored in a memory buffer, and the typed text will appear in the field as soon as the cursor is moved away from the field.

Putting this handler at the card level will cause it to change the cursor when it enters any button or locked field on the card. To make the handler respond specifically to buttons or fields only, insert the following line of text between ON MOUSEWITHIN and SET CURSOR TO BUSY:

```
        if "button" is not in the target then exit mouseWithin
```

Use "field" instead of button if you only want fields responded to with the different cursor.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14501

HyperCard 2.0: Changes to the Convert Function (7/92)

Revised: 3/25/94
Security: Everyone

HyperCard 2.0: Changes to the Convert Function (7/92)

==========

Article Created: 10 April 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

HyperCard 2.0v2 handles the Convert function differently than HyperCard 1.2.x.

DISCUSSION --------------------

In early versions of HyperCard, the convert function would ignore parts of a date that were inconsistent. For example: April 24, 1991 is a Wednesday. Try the following line of HyperTalk code:

```
convert "Saturday, April 24, 1991" to seconds
```

The result is 2755296000, the number of seconds from January 1, 1904 to April 24, 1991. HyperCard 1.2.x ignored the (incorrect) Saturday portion.

If you try the same line of code in HyperCard 2.0, the result is "Invalid Date." HyperCard 2.0 does not allow the day name to be inconsistent with the date.

If you have a script that tries to take advantage of this feature of HyperCard 1.2.x, you will have to re-work it before it will function properly in version 2.0 or later. If you know the dayname of the long date will be incorrect, here's a suggested substitution:

instead of:

```
convert theDate to seconds
```

use:

```
put item 2 to 3 of theDate into theDate -- Drops the Day Name
convert theDate to seconds
```

If you are trying to use the Calendar stack from the old HyperCard, open

```
the background script and insert the line of code marked with "--
Inserted for HC 2.0 Compatibility."

function startOfMonth aDate     -- the seconds of Monday before the 1st
  put 60*60*24 into OneDay      --seconds in a day
  put aDate into it
  convert it to long date
  put 1 into word 2 of item 2 of it     --first of month
  put item 2 to 3 of it into it -- Inserted for HC 2.0 Compatibility
  convert it to seconds
  convert it to long date
  repeat while item 1 of it <> "Sunday"
    convert it to seconds
    subtract OneDay from it    --look for previous Sunday
    convert it to long date
  end repeat
  convert it to seconds
  return it
end startOfMonth
```

This article is adapted from the Claris Tech Info database.
Support Information Services

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Tech Info Library Article Number:14502

Tech Info Library

HyperCard: Disabling Arrow Keys while Keeping Text Arrows (8/93)

Revised: 3/25/94
Security: Everyone

HyperCard: Disabling Arrow Keys while Keeping Text Arrows (8/93)

==========

Article Created: 17 May 1993
Article Reviewed/Updated: 2 August 1993

TOPIC --------------------

To disable navigation through a stack with arrow keys, while still allowing arrow keys to be used in a field, put the following handler in the stack or background script.

DISCUSSION --------------------

```
on arrowKey
    if the selectedField is not empty then pass arrowkey
end arrowkey
```

This will make sure that the cursor is within a field before passing the arrowKey.

This article is adapted from the Claris Tech Info database.
Support Information Services

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Tech Info Library Article Number:14503

Tech Info Library

HyperTalk: Drawing Multiple Horizontal or Vertical Lines (7/92)

Revised: 3/25/94
Security: Everyone

HyperTalk: Drawing Multiple Horizontal or Vertical Lines (7/92)

==========

Article Created: 19 November 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

The first handler below is a quick way to get multiple horizontal lines drawn on your cards. The second handler does the same thing with vertical lines.

DISCUSSION --------------------

```
on mouseup
  put 0 into vert
  choose line tool
  repeat with n=1 to 68
    drag from 0,vert to 512,vert
    put vert+5 into vert
  end repeat
  choose browse tool
end mouseup
```

```
on mouseup
  put 0 into horiz
  choose line tool
  repeat with n=1 to 102
    drag from horiz, 5 to horiz, 160
    put horiz+5 into horiz
  end repeat
  choose browse tool
end mouseup
```

This article is adapted from the Claris Tech Info database.
Support Information Services

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Tech Info Library Article Number:14504

Tech Info Library

HyperCard: Script to Export Address Stack to FileMaker (6/93)

Revised: 3/25/94
Security: Everyone

HyperCard: Script to Export Address Stack to FileMaker (6/93)

==========

Article Created: 5 February 1991
Article Reviewed/Updated: 1 June 1993

TOPIC ----------

The following handler creates a tab-delimited text file from the HyperCard 1.x Address stack, with the elements of data parsed reasonably thoroughly. This enables you to bring your data into FileMaker.

DISCUSSION ----------

The created text file has to come into a database with the following fields, and in the following order:

- Name
- Company
- Street Address
- City, State
- Zip Code
- Phone 1
- Phone 2
- Phone 3
- Phone 4
- Check field

Tabs will separate the records, so it will be a standard merge file. More fields than these can exist, and if you want to separate Last and First Names, and State, that can be done in FileMaker later, or the script could possibly be modified.

The check field will mirror the original HyperCard form of the database, and so will contain much redundant information. However, since there will always be data that we can't parse (titles, divisions, odd or foreign addresses, etc.), we need this field so you can double-check your data, and perform additional manipulations.

```
on mouseUp
```

```
  ask "Please name the new text file." with "HC.txt"
  if it is empty or the result is "Cancel" then exit mouseUp
  put it into fileName
  set cursor to watch
  set lockMessages to true
  set lockRecent to true
  if number of bg fields = 0 then
    answer "There are no background fields from which to export data!"
    exit to HyperCard
  end if
  set lockRecent to true
  open file fileName

  lock screen
  repeat the number of cards
    set cursor to busy
    --
    -- Now figure the how many lines we have, and where the lines go.
    -- Our rules:
    --  If there are 3 lines, then they are Name, street address, citystatezip.
    --  If there are more than 3 lines, then
    --    the last line is citystatezip,
    --    the next to last line is street
    --    the third to last line is company
    --    and whatever else is filler.
    --  In all cases, the first line is Name.

    put number of lines in bg field 1 into numFieldLines
    repeat with i = 1 to numFieldLines
      if line i of bg field 1 is empty
      then exit repeat
      else put i into lastLine
    end repeat

-- Now we initialize our variables.
-- If we don't do this, then they may carry over their values to the next
record.

    put empty into theName
    put empty into theCompany
    put empty into theStreet
    put empty into theCityAndState
    put empty into theZip

    if lastline > 2 -- If there are 3 or more lines of data
    then
      get line lastline of bg field 1
      put last word of it into theZip
      delete last word of it
      put it into theCityAndState
    end if

    if lastline > 4 OR lastLine = 2
```

```
      then put line 1 of bg field 1 & "   *See Notes" into theName
      else put line 1 of bg field 1 into theName -- Name
      if (lastLine - 2) > 1 -- if there's a third to last line, it's company
      then put line (lastLine - 2) of bg field 1 into theCompany -- company
      if (lastLine - 1) > 1 -- if there's a second to last line, it's street
      then put line (lastLine - 1) of bg field 1 into theStreet -- street

      -- Here's our parsed information about the card.
      put theName & comma & theCompany & comma & theStreet & comma & ¬
      theCityAndState & comma & theZip & comma into theText

      put line 1 of bg field 2 & comma after theText -- phone numbers
      put line 2 of bg field 2 & comma after theText
      if line 3 of bg field 2 is not empty
      then put line 3 of bg field 2 & comma after theText
      else put comma after theText
      if line 4 of bg field 2 is not empty
      then put line 4 of bg field 2 & comma after theText
      else put comma after theText
      put bg field 3 after theText -- move the date to the notes field

      write theText & return to file fileName
      go next card
    end repeat
    close file fileName
    set lockRecent to false
    unlock screen
end mouseUp
```

This article is adapted from the Claris Tech Info database.
Support Information Services

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Tech Info Library Article Number:14506

Tech Info Library

HyperCard to 2.1: Extra Characters In Text Pick-up (8/93)

Revised: 3/25/94
Security: Everyone

HyperCard to 2.1: Extra Characters In "Text Pick-up" (8/93)

==========

Article Created: 12 April 1993
Article Reviewed/Updated: 2 August 1993

TOPIC ----------

In HyperCard versions 1.2.5, 2.0, 2.0v2, 2.1, and later, a feature called "Text Pick-up" allows you to copy field text into the message box by dragging across the text while holding down the Command Key.

The result of this action sometimes produces an extra random character like a, e, m, g, 1, 5, 7, etc. at the end of the string in the Message Box.

DISCUSSION ----------

Although the problem is intermittent, dragging across the text quickly seems to produce this extra character more frequently than dragging slowly.

If you are having this problem, try dragging more slowly or dragging from right to left.

This article is adapted from the Claris Tech Info database.
Support Information Services

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Tech Info Library Article Number:14507

Tech Info Library

HyperCard: Audio Palette vs. GateKeeper (7/92)

Revised: 3/25/94
Security: Everyone

HyperCard: Audio Palette vs. GateKeeper (7/92)

==========

Article Created: 4 January 1991
Article Reviewed/Updated: 25 March 1994

TOPIC ----------

Why does GateKeeper software sound an alert when I try to add a sound to a HyperCard stack?

DISCUSSION ----------

In HyperCard, as in other programs, sounds are saved as resources. After you record a sound the Audio Palette allows you to save the sound to a stack, but the sound gets saved as a separate resource. This causes GateKeeper to sound the "Red Alert" message because a resource is being generated.

By design, GateKeeper flags resource changes and creations. It then checks these resources against its own built-in look up table and "flags" whatever virus "match" it finds accordingly.

Note: There is apparently a conflict between GateKeeper Aid version 1.0.1 and the Audio Palette in 2.1. If the INIT is installed and you try to save a sound through the audio palette, the system will crash. Removal of GateKeeper Aid or upgrading it to version 1.1 solves the problem.

This article is adapted from the Claris Tech Info database.
Support Information Services

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Tech Info Library Article Number:14508

Tech Info Library

HyperCard: Converting SuperCard Projects to HyperCard (3/93)

Revised: 3/25/94
Security: Everyone

HyperCard: Converting SuperCard Projects to HyperCard (3/93)

==========

Article Created: 27 January 1993
Article Reviewed/Updated: 29 March 1993

TOPIC ----------

Heizer Software has a utility program, called Homeward, for converting SuperCard projects to HyperCard stacks.

DISCUSSION ----------

Homeward performs about 70% of the conversion work. Projects with multiple windows are no problem. Each window is translated into a new stack, including the scripts and objects associated with each window. Graphics, including color, are converted, as well as first-pass translation of SuperTalk scripts. Color and irregular-shaped objects are handled with XCMDs.

Some work will be required to refine the newly created HyperCard stacks. To aid in this process, Homeward generates a detailed "Exception List," pin-pointing items that may require further attention. Many vendors offer solutions for recreating SuperCard feature which are not directly supported by Homeward, such as list objects and animations.

Contact Heizer Software for more information. To locate a vendor's address and phone numbers, use the vendor's name as a search string.

This article is adapted from the Claris Tech Info database.
Support Information Services

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Tech Info Library Article Number:14509

Tech Info Library

HyperCard: How It Loads and Calls Externals (8/93)

Revised: 3/25/94
Security: Everyone

HyperCard: How It Loads and Calls Externals (8/93)

==========

Article Created: 10 August 1993

TOPIC ----------

This article is about how HyperCard loads and calls externals.

DISCUSSION ----------

HyperCard 1.x

HyperCard 1.x loaded externals with a GetNamedResource call, then tried to make a copy of the external using NewHandle/BlockMove. If that failed, it used DetachResource to get the external away from the Resource Manager. It then moved the external high (MoveHHi), locked it on the heap (HLock), and jumped to it. The reason for making a copy or using DetachResource was to make sure the external stayed around even if the resource file it came from got closed.

HyperCard 2.x

HyperCard 2.x uses Get1Resource to read the external from a resource file, but it doesn't make a copy or detach the external -- it just moves it high, locks it, and jumps into it.

This method has a potential side-effect. With HyperCard 2.x, if an external somehow closes the resource file it came from while it is running, the block the resource is in will be marked purgeable (by the Resource Manager), and may be purged. Externals are usually pasted into a stack, so if an external does something to close the stack it came from, it could end up purging itself. An external could get purged simply by executing a callback that caused HyperCard to go to another stack.

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Tech Info Library Article Number:14510

Tech Info Library

HyperCard, Apple Events, and Frontier (8/92)

Revised: 3/25/94
Security: Everyone

HyperCard, Apple Events, and Frontier (8/92)

==========

Article Created: 4 June 1992
Article Reviewed/Updated: 25 March 1994

TOPIC --------------------

When using the "send" command to execute Frontier scripts while the scripts are running, status messages are sent to the Frontier status bar using the msg command in Frontier. Is it possible to have the messages sent to the Frontier status bar sent to a HyperCard field (or "status window") instead?

DISCUSSION --------------------

HyperCard is not multi-threaded. In particular, it can't automatically handle Apple Events while it's waiting for a reply to an Apple Event that it sent itself. While the "send" command awaits a reply from Frontier, all HyperCard can do is to handle update events from the Event Manager, suspend and resume events from the Process Manager, and command-periods from the user.

However, you can use an XCMD to do what you want in one of two ways:

- Send the Apple event to Frontier in queueReply mode and handle the reply that comes back from Frontier as a separate Apple event in an Apple event script (class 'aevt', id 'ansr'). This would mean that HyperCard can respond to events coming from Frontier in the meantime, including events to display the Frontier status messages in HyperCard fields. It would also mean that HyperCard will be able to respond to user events while it awaits the reply from Frontier, so you'll have to do some careful HyperTalk scripting to figure out how to reconcile what the user is doing with what you want to do when the reply from Frontier comes back. The SendAppleEvent XCMD, available online, will send an event in queueReply mode.

- Write an XCMD that sends the Apple event to Frontier and calls GetSpecificHighLevelEvent in the idle proc for AESend, in order to extract 'do script' events for HyperCard to handle while it awaits the reply from Frontier. Writing this XCMD would require pretty good

knowledge of the High Level Event Manager, the Apple event Manager, and the 2.0 XCMD callbacks, particularly RunXHandler.

This article is adapted from the Claris Tech Info database.
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Tech Info Library Article Number:14511

Tech Info Library

HyperCard: Differences Between HyperCard and the Player (11/92)

Revised: 3/25/94
Security: Everyone

HyperCard: Differences Between HyperCard and the Player (11/92)

==========

Article Created: 17 October 1992
Article Reviewed/Updated: 25 November 1992

TOPIC ----------

What is the difference between the Standard HyperCard package, and the HyperCard Player?

DISCUSSION ----------

The HyperCard Player is designed to allow the user to view or edit the contents of the stack. Therefore, items that would allow the user to modify the HyperCard environment in any way have been removed or changed. The items removed or changed are listed below:

- The New Stack... menu item
- Many of the printing menu items
- The Icon Editor
- The Objects menu
- The Message box
- Error Strings
- The maximum user level
- The script editor
- The variable and message watchers
- Home stack

DISCUSSION ----------

New Stack Menu Item

Because of the ability to embed a stack into the HyperCard Player, the creation of a new stack (through the use of the menu item or through the command "create") behaves differently than HyperCard 2.1:

- The New Stack menu item is disabled in the HyperCard Player.
- Re-enabling this menu item will restore its HyperCard 2.1 functionality.
- All of the scriptable HyperCard 2.1 features of this menu item remain fully accessible from scripts.

Note: For additional information on this topic, please see the "Stack Embedding" note in the "Some Unique Features" section of the Player Tools stack.

Print Stack, Print Field, and Print Report

- These menu items are disabled in the HyperCard Player.
- These menu items can be re-enabled and given new menu messages (re-enabling these items WILL NOT restore the original HyperCard 2.1 functionality).
- All of the scriptable printing features of HyperCard 2.1 remain accessible from scripts.
- The Print Stack, Print Field, and Print Report dialogs and the code to support the dialogs have been removed from the Player.

Icon Editor

- The HyperCard Player does not include an Icon Editor.
- The Icon menu item is disabled.
- This menu item can be re-enabled and given a new menu message (re-enabling this item WILL NOT restore the original HyperCard 2.1 functionality).

Objects Menu

Since the HyperCard Player does not provide the user with the tools or facilities to create or modify objects, this menu has been removed.

- As in HyperCard 2.1, user level 3, there is not an Objects menu.
- All of the menu items in this menu CAN be accessed and changed from script.
- The dialogs used by the "info" menu items cannot be accessed, but the attributes contained in those dialogs can be set via script.

Message Box

The functionality of the Message box has been changed to prevent the HyperCard Player user from scripting via the Message box.

- The Message box has been simplified so that only the Find command can be executed.
- All HyperCard 2.1 forms of Find can still be used (e.g., Find whole, Find string, etc.).
- Any other evaluation or command entered and sent through the Message box will cause the HyperCard Player to beep.

Error Messages

Because the HyperCard Player is designed to allow the user to view stacks as easily as possible, the standard method of error notification has been changed. Instead of full error messages (the type that are received in HyperCard 2.1) being sent to the user, a simplified message is sent when using the Player. The error information consists of a reference to an error string list and includes the appropriate string number within that list.

For a complete discussion about this feature, please see the "Error Message Info" section of the Player Tools stack for additional information.

User Level

Since the HyperCard Player does not include facilities for authoring stacks, the functionality relating to userLevel has changed.

- From a user's standpoint, it will appear that the user level is set and restricted to user level 3 (with a few menu items disabled).
- From a functional standpoint, scripts have nearly all of the features of HyperCard user level 4 (minus a few menu items).
- The maximum user level that can now be set is user level 4 ("set userLevel to 5" will actually set the user level to 4).
- Once a script terminates, if the tool chosen in script is either the button or field tool, the Player changes the tool back to the Browse tool.

Script Editor

Because the HyperCard Player does not provide any facilities for authoring or scripting, the script editor and all of its related functionality has been removed.

- The Player does not include a script editor.
- All script editor support has been removed (including XCMD callbacks). The ability to add a script editor is not supported.
- All script editor callbacks return an error. The result field will contain an integer result code of 2, because the callback is not implemented.

Note: The "get script" and "set script" commands have all of their HyperCard 2.1 functionality. However, the script indentation code has been removed along with the "editor" code. When you "get" a script, it appears left-justified, WITHOUT indentation.

Variable Watcher and Message Watcher

Because the HyperCard Player does not provide any facilities for authoring, scripting or debugging, the variable watcher, message watcher and all of their related functionality has been removed.

- The Player does not include either watcher.
- All watcher support, including the XCMD callbacks, has been removed. The ability to add a watcher is not supported.
- All watcher callbacks return an error. The result field will contain an integer result code of 2, because the callback is not implemented.

Home Stack

The Home stack that is provided with the HyperCard Player has been simplified to reflect some of the changes made in the Player.

- The size of the Player Home stack is now 25K.
- All "Authoring" utility handlers have been removed (searchscript, c, b, s).
- This Home does not use the FontExists XCMD.

- This Home does not add or maintain any Home menus.
- This Home does not put any stacks "in use".
- The Preferences card has only three user level settings.

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Tech Info Library Article Number:14512

Tech Info Library

HyperCard 2.x: If Visual Effects Fail (11/92)

Revised: 3/25/94
Security: Everyone

HyperCard 2.x: If Visual Effects Fail (11/92)

==========

Article Created: 21 September 1992
Article Reviewed/Updated: 25 March 1994

TOPIC ----------

This article lists several conditions under which visual effects fail to work in HyperCard 2.x.

DISCUSSION ----------

- Lock screen in effect. This the most common cause. If scripts are very complicated and nested, it is not unusual to have at least one too many 'lock screen' calls. If the screen is locked, visual effect commands do nothing.

- Monitor bit depth is greater than 8 (more than 256 colors).

- Going between two stacks with different card sizes (or any two stacks with HyperCard before 2.1).

- A card window that straddles two different displays.

This article is adapted from the Claris Tech Info database.
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Tech Info Library Article Number:14513

Tech Info Library

HyperCard: ClickText and International Systems (8/92)

Revised: 3/25/94
Security: Everyone

HyperCard: ClickText and International Systems (8/92)

==========

Article Created: 10 June 1992
Article Reviewed/Updated: 25 March 1994

TOPIC --------------------

The clickText function knows only those writing systems that are defined in the currently installed script resources. On a KanjiTalk system, for example, the clickText function knows Japanese; that is, it follows the Japanese script system's definition of a word.

DISCUSSION --------------------

Use the word "script" in this context means a collection of resources that defines a writing system. These scripts are managed by the Macintosh Script Manager, which is documented in Inside Macintosh Volume V and VI. It is possible to modify existing scripts for use with various languages.

HyperCard is actually pretty good about not making assumptions about writing systems; the handling of text was extensively revised for 2.0 to have additional compatibility with international system software.

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Tech Info Library Article Number:14514

HyperCard 2.x: International Date Formats (8/92)

Revised: 3/25/94
Security: Everyone

HyperCard 2.x: International Date Formats (8/92)

==========

Article Created: 10 June 1992
Article Reviewed/Updated: 26 August 1992

TOPIC --------------------

Does HyperCard 2.1 UK version have the same date format as the U.S. version?

DISCUSSION --------------------

HyperCard 2.x calls the Script Manager to parse and to format dates properly. Therefore, as long as you make no assumptions about date formats in your scripts, it shouldn't matter whether UK or Thai or Arabic date formats are different.

Here's an example of making bad assumptions about dates: if you want to know the number of the day of the week of a certain date, you could write a script that assumes that the date is in the form

```
Day_Of_Week, Month Day_of_Month, Year
```

This script could extract word 1 of this date and translate it into numerical form by using a large If Then Else statement in HyperTalk. If word 1 is "Sunday" then put 1 into dayOfWeek, etc. Works great under restrictive conditions, but not worldwide. Actually, it won't work if the user enters a date in any other format.

The savvy way to do this is to use the HyperTalk "convert" command to parse the date.

```
put field "date" into myLocalVar
convert myLocalVar to dateItems -- will now contain dateItems list
get item 7 of myLocalVar -- number of day of week
```

If you're concerned about displaying dates in the proper format, you can store them in a numeric form in a hidden field -- dateItems format or

seconds format will do nicely -- and put them into a visible field and convert them to human-readable form within a script, perhaps on openCard.

```
on openCard
  lock screen
  put field "Date in Seconds" into field "Display Date"
  convert field "Display Date" to long date
  unlock screen
  pass openCard
end openCard
```

If the user enters a date in a field, you can convert it to numerical form and store it in a hidden field, perhaps on closeField.

```
on closeField
  put field "User Date" into field "Date in DateItems"
  convert field "Date in DateItems" to dateItems
  if the result is not empty then -- invalid date
    answer "Invalid date." with "OK"
    select text of field "User Date" -- user should try again
  end if
end closeField
```

By translating dates back and forth between human-readable forms and numerical forms for storage, you can guarantee that dates will be displayed properly and sensibly throughout the world.

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Tech Info Library Article Number:14515

Tech Info Library

HyperCard: International Sorting (8/92)

Revised: 3/25/94
Security: Everyone

HyperCard: International Sorting (8/92)

==========

Article Created: 10 June 1992
Article Reviewed/Updated: 26 August 1992

TOPIC --------------------

To specify a sort order in HyperCard, or to treat characters with diacritics differently from those without (in sorting) try:

```
sort [ascending | descending] international by <expr>
```

DISCUSSION --------------------

An example:

```
sort descending international by field "Hoopla"
```

For programmers only: The sort command follows an order established by the 'itl2" system resource. To customize the sorting order , replace the 'itl2' resource in your system. See Macintosh Technical Note #178, "Modifying the Standard String Comparison".

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Tech Info Library Article Number:14516

HyperCard: Dealing with Memory Problems (11/92)

Revised: 3/25/94
Security: Everyone

HyperCard: Dealing with Memory Problems (11/92)

==========

Article Created: 16 November 1990
Article Reviewed/Updated: 30 November 1992

TOPIC ----------

Frequently, when I attempt to paint on a card, I get the message "not enough memory to use paint tools." Other times, when I use a script that opens another application, nothing happens. What should I do?

DISCUSSION ----------

There are several things you can do to free up some memory in order to access the paint tools. Depending on your system configuration, any or all of these tips might help:

1) Turn off memory-hungry INITs and CDEVs. SoundMaster can take up a huge amount of memory if you are using large sound files. ColorDesk is another CDEV that can take up a large amount of RAM. After turning off or moving INITs and CDEVs out of the System folder, restart your computer; you should find that you have more memory now in which to work.

2) If you're using System software version 6, run HyperCard under Finder instead of MultiFinder.

3) Turn off the RAM cache via the Control Panel; HyperCard doesn't use it anyway. At the least, lessen the amount of the RAM cache.

4) Allocate more memory to HyperCard via the Finder: click on the HyperCard application (while it's not running), choose Get Info from the File menu, and increase the amount of the application memory size. The absolute minimum is 1000K; if you're having memory problems, try increasing the amount by 256K increments until you are able to use the paint tools. If your stack has a script that opens a large color PICT file, you may need to increase it up to 2000K. This will allow things within HyperCard to run more smoothly. Remember, if you're running

HyperCard with increased memory and you try to open another application under MultiFinder, you may not have enough to open the second program. If you open the second one from the desktop, you'll get a "Not enough memory" message. If you try and open a second one via a script, nothing will happen.

5) Remember to put "" (or empty) into large variables when you're done with them. This is more important for systems with 1MB of RAM. Also bear in mind that you needn't use many variables when one will do: rather than using variables called name, sex, and age, you can put all four into one variable like this:

```
put "Bob Jones" into line 1 of singleVariable
put "Male" into line 2 of singleVariable
put "04/13/63" into line 3 of singleVariable
```

You can then reference an item in the variable by referring to "line 2 of singleVariable".

6) Install more RAM in your system (if you do this, you can probably skip all of the above steps.)

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Tech Info Library Article Number:14518

Tech Info Library

HyperCard 2.x: Controlling Font, Style of Pasted Text (8/92)

Revised: 4/7/94
Security: Everyone

HyperCard 2.x: Controlling Font, Style of Pasted Text (8/92)

==========

Article Created: 29 May 1992
Article Reviewed/Updated: 26 August 1992

TOPIC --------------------

In HyperCard 2.x, text pasted into a field will paste in the Font, Size and Style of the field from which it was copied. To get pasted text to take on the attributes of the target field, hold the Shift key down while pasting.

DISCUSSION --------------------

To see this effect working from a script, create two card fields, then choose a different font and style for each. Then create a button with the following script. Enter text into card field 1, then click the button, with and without the optionKey down. (optionKey down demonstrates the shiftKey effect)

```
on mouseUp
  if the optionKey is down then
      select text of cd field 1
      doMenu "Copy Text"
      select before word 1 of cd field 2
      type "v" with commandKey,shiftKey
  else
      select text of cd field 1
      doMenu "Copy Text"
      select before word 1 of cd field 2
      type "v" with commandKey
  end if
end mouseUp
```

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Tech Info Library Article Number:14520

Tech Info Library

HyperCard: Phone Dialer Doesn't Dial Modem (7/92)

Revised: 4/6/94
Security: Everyone

HyperCard: Phone Dialer Doesn't Dial Modem (7/92)

==========

Article Created: 17 January 1992
Article Reviewed/Updated: 6 April 1994

TOPIC ----------

The Dialer generates tones, but the modem either:
- Doesn't dial.
- Hangs up too quickly.
- Doesn't hang up at all (line is faint, or conversation comes through modem speaker).

DISCUSSION ----------

Doesn't Dial

The most common cause is that the modem is waiting for a DTR (Data Terminal Ready) signal from the computer host, which is interrupted when HyperCard closes the serial connection. Modem manufacturers typically do not construct their own chip sets, but use one of about five that are made by OEMs. So various modems will share this problem, by sharing a chip set. We have observed that Zoom SupraModems, Abaton InterFax modems, and Prometheus fax modems all wait for DTR.

The solution to the DTR problem is normally to tell the modem not to bother looking at DTR. The Phone Dialer provided with HyperCard 2.1 has a ready-made option to do that. Simply open the Phone Dialer, click on the modem options button, and select the SupraModem setting. What we call the SupraModem setting will work with most of the modem types described above.

What this does is send a Hayes modem command to the modem with an instruction to ignore DTR. The command is "&D" (without quotes), and is incorporated as part of an ATD dial sequence, in the following form normally: AT&DS0=0DT. For Phone Dialers provided with versions of HyperCard BEFORE 2.1, the dial scripts themselves must modified to add the "&D" command.

Hangs Up Too Fast, or Not Fast Enough

The most common cause is that HyperCard is holding the serial connection open for an improper amount of time -- either too long or too short. This has been a longstanding problem with HyperCard, because it needed to be able to hold the serial connection open long enough to dial lengthy international numbers from the Portable, making it hang on after a regular local call has been dialed.

Finally, HyperCard 2.1 was introduced, and while it is set by default to hold the serial connection for 3 seconds, this amount of time can be modified through the use of the new dialingTime property. So a script can be written using the dialingTime to find a length congenial to the user's particular needs.

We have found that the TelePort modems require some modification of the dialingTime normally.

Different versions of HyperCard attempted different strategies with this -- some tried to send ATH commands (a Hayes modem command to hang up), or set certain registers in the modem to differing values, or change the amount of time they held the serial connection open. HyperCard 2.0v2 held the serial connection for 10 seconds; 2.0v1 held it for 3 seconds; versions of HyperCard before 2.0 held it open for differing amounts of time. None of these schemes was very successful.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14521

HyperCard 2.0: Phone Dialer Patches (7/92)

Revised: 4/6/94
Security: Everyone

HyperCard 2.0: Phone Dialer Patches (7/92)

==========

Article Created: 15 April 1991
Article Reviewed/Updated: 6 April 1994

TOPIC ----------

HyperCard 2.0 includes the local area code when dialing a number from the Address book. The correction for this lies in modifying the dial handler of the stack script of the Phone Dialer stack.

DISCUSSION ----------

The suggested fix is that the user first enter the local area code in the field labeled "Access Number" on the dial options card in the phone dialer. Then make the following change to the dial handler in the stack script of the Phone Dialer. This change parses out the area code, if it is local.

```
on dial theNumber
          .
          .
          .
  if international <> empty then
    -- XFCN that displays a modal dialog
    get
PrefixDialog(dialogData(),longDistance,international,outsideLine,theNumber)
    if it = "Cancel" then exit dial
    put it into theNumber -- the user modified number
  else
    if char 1 to 3 of theNumber = areaCode
    then delete char 1 to 3 of theNumber
    else put longDistance before theNumber
    -- add the outside line character(s)
         .
         .
         .
end dial
```

The About section of the dial options on the Phone Dialer with 2.0 misleadingly states that there is a place on the card for the local area number. There actually is such a place, but it is misleading because the field is apparently labeled "Access Number", even though it is really named "Local Area Code".

However, putting the local area code in that field still won't solve the problem of HyperCard including the area code when dialing from the Address book. Some change like the one above must be made.

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Tech Info Library Article Number:14522

Tech Info Library

HyperCard: Flaw in Power Tools Stack (3/93)

Revised: 4/6/94
Security: Everyone

HyperCard: Flaw in Power Tools Stack (3/93)

==========

Article Created: 22 March 1993
Article Reviewed/Updated: 6 April 1994

TOPIC --------------------

Some versions of the Power Tools stack have a small flaw. This article provides the workaround.

DISCUSSION --------------------

The problem: the Show Palette button of the Window Manager card of the Power Tools stack appears to be corrupt.

The symptom: the button does not highlight and does not show the Window Manager palette.

The workaround: Copies of the button work fine.

1) Duplicate the button.

2) Delete the original.

3) Replace the original button with the duplicate copy.

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Tech Info Library Article Number:14524

Tech Info Library

HyperCard 2.x: Tips for Printing Disk Labels (11/92)

Revised: 4/6/94
Security: Everyone

HyperCard 2.x: Tips for Printing Disk Labels (11/92)

==========

Article Created: 3 April 1991
Article Reviewed/Updated: 30 November 1992

TOPIC ----------

The commonly used labels (Avery 4241) are exactly 3" high. To print them out without skipping a label or having the labels "creep", do the following.

DISCUSSION ----------

1) In the Page Setup dialog, select International Fanfold paper. This is 12-inch high paper. Also, make sure "No Breaks Between Pages" is checked.

2) In the Print Stack dialog, set the Top Margin to 0.0 inch, the Bottom Margin to as small as possible (hold down the Option key and try several times. The least you may able to attain is 0.062 inch). Set the Left Margin to as small as possible (0.093 inch) and the right margin to anything. Make sure that "space between cards" is 0.0 inch.

3) In your print script, use the "Print card from x,y to x,y" command, and adjust the top and bottom pixels until you get the correct spacing between adjacent labels. You may have to shorten the print area by 1 pixel less than what the calculated value is for 3 inches: your adjustment may vary. To make sure that only one label is printed "across", make the right-hand 'x' dimension large -- use the full width of the card, and make sure that there is only white space on each card. This works nicely, but it is far from obvious how to do it when you start working.

This article is adapted from the Claris Tech Info database.

Support Information Services

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..TIL14525-HyperCard_2-x-Tips_for_Printing_Disk_Labels_11-92_(TA31074).pdf

Tech Info Library Article Number:14525

Tech Info Library

HyperCard: Opening QuickTime Compressed PICTs (7/92)

Revised: 4/6/94
Security: Everyone

HyperCard: Opening QuickTime Compressed PICTs (7/92)

==========

Article Created: 17 April 1992
Article Reviewed/Updated: 6 April 1994

TOPIC --

The HyperCard Picture XCMD can open up compressed PICTs created with QuickTime. This is done by making a toolbox call (DrawPicture). QuickTime intercepts the call and does any decompression necessary.

DISCUSSION --

Here are some factors that seem to affect the speed of the Picture XCMD:

- The amount of RAM allocated to HyperCard -- more memory may help.

- The size of the picture file.

- The type of compression used -- JPEG compression may be a lot slower than Video compression. Note also that JPEG gives you a smaller file but may take longer to decompress.

- The parameters you pass to the Picture XCMD -- Files may display quicker if no parameter for bit-depth (fifth param) is passed. Pass a fifth parameter only if memory conservation is important. If you try to display a file at a lower bit depth, it takes time to convert. If you pass 0 for the bit-depth parameter, then the XCMD does not set up an offscreen buffer. Hence, the window will seem to appear immediately, but the picture may take some time to get drawn into the window (it is drawn as it is decompressed). This method will give you slower updates.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14527

Tech Info Library

HyperCard: Sending Strings Using Apple Events (8/92)

Revised: 4/7/94
Security: Everyone

HyperCard: Sending Strings Using Apple Events (8/92)

==========

Article Created: 28 April 1992
Article Reviewed/Updated: 28 August 1992

TOPIC --------------------

I want to update an index over a network using identical HyperCard stacks. I use this handler:

```
on incoming data
  if data is not empty then put data into cd fld "index" of cd "topics"
end incoming
```

I send the contents of a large card to incoming by the following:

```
 send quote& cd fld "index" of cd "topics"&quote to remoteHC
```

where remote HC is the network address of the destination stack.

The script works fine in simple cases of "data". However, when sending the cd fld "index", I get an error that "Incoming could not understand QT", where QT is the first word of the second line of cd fld "index". The quotes on either end of the cd fld contents is not sufficient to distinguish the fld as a single entity; that is, everywhere I have a carriage return, the incoming handler thinks it's a separate argument and gets confused.

Sending each line of the cd fld "index" separately to avoid confusing the incoming handler works. Is there any way to send the contents of a field that has carriage returns as a single argument to a handler?

DISCUSSION --------------------

The problem is really not related to Apple events. As an example, take the same script and field and try sending them to another stack without using Apple events (send "blah blah blah" to stack "blah"). You will find that returns can not be part of a string parameter when sent to another stack. Therefore the problem is caused by this constraint and not by an Apple

event constraint.

Here are two recommendations for avoiding the problem.

First, create an "on AppleEvent" handler at the stack level of the receiving stack. With this created you simply send the whole field to your receiving stack.

```
  on mouseUp
    send cd fld "data" to program otherApp
  end mouseUp
```

When the "AppleEvent" handler is activated in your receiving stack, you simply extract the contents of the sent field from the "data" parameter and put it into your location field.

```
on AppleEvent
  request AppleEvent data
  put it into cd fld "myField"
end AppleEvent
```

The only problem with this solution is that all Apple events will be trapped by this handler. If you are only planning on sending one Apple event or you are willing to parse out all potential Apple events in this handler, this solution is OK. If not you might want to try the next solution.

Using the same "incoming" handler you presently have, change the nature of the "data" parameter to represent the id (or number or name) of the field in the sending stack which holds the data. Then, in the "incoming" handler request the contents of this field from the sending stack. For example:

```
on incoming data
  request data from program sendingProgram
end incoming
```

The script you would use in the sending stack would look something like this:

```
on mouseUp
  answer program ""
  put it into otherApp
  send (incoming & quote & "cd fld id 1" & quote) to program otherApp¬
  without reply
end mouseUp
```

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14530

Tech Info Library

HyperCard: Network Communication (8/93)

Revised: 4/6/94
Security: Everyone

HyperCard: Network Communication (8/93)

==========

Article Created: 13 June 1993
Article Reviewed/Updated: 6 April 1994

TOPIC --

How I can link one HyperCard stack on one Macintosh with another HyperCard stack on another Macintosh?

DISCUSSION --

There are several approaches to communicating between stacks on different Macintoshes or creating a multi-user stack which uses a client/server model.

- APDA (Apple Developer's Association) sells an AppleTalk Toolkit which includes XCMDs, XFCNs, and source code to enable stacks to interact via AppleTalk.

- epsiTalk 2.0 is a set of XCMDs which provide multi-user features. It enables you to make a stack multi-user and also includes an E-Mail system, real-time conferencing, and a mechanism to transfer files between Macintoshes.

- HyperCard can send and receive do script Apple Events. By sending an Apple Event to another Macintosh running HyperCard, it's possible to use Apple Events to pass data and commands between Macintosh computers. Refer to the Apple Event Primer Stack for more information.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14534

Tech Info Library

HyperCard: Converting 2.x Stacks Back to 1.2.5 (11/92)

Revised: 4/6/94
Security: Everyone

HyperCard: Converting 2.x Stacks Back to 1.2.5 (11/92)

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Article Created: 6 May 1991
Article Reviewed/Updated: 6 Apr 1994

TOPIC ----------

It is not possible to convert a HyperCard 2.x stack to 1.x format using HyperCard alone. It is always a good idea to convert a copy of a 1.2.5 stack rather than the original. However, a utility named UnConvert from Heizer Software can perform this task.

DISCUSSION ----------

UnConvert converts stacks from 2.x format back to 1.2.5. Of course, if a script uses any of the new 2.x features, those features will not be supported. If [the card size of] a 2.x stack is larger than [that of] a 1.2.5 stack, objects that would be off the card are moved onto the card, and any graphics will be clipped.

To locate a vendor's address and phone numbers, use the vendor's name as a search string.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14536

Tech Info Library

HyperCard: Waiting for a QuickTime Movie to Finish (3/93)

Revised: 4/6/94
Security: Everyone

HyperCard: Waiting for a QuickTime Movie to Finish (3/93)

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Article Created: 29 January 1993
Article Reviewed/Updated: 6 April 1994

TOPIC --------------------

The ability to play QuickTime movies in HyperCard is made possible using HyperCard's XCMD interface. XCMDs are basically little programs that can be executed using the HyperTalk language. Because they are separate programs, however, they can execute concurrently with other HyperCard scripts. A good example of this is the Movie XCMD provided in the QuickTime Tools stack. All commands in a handler following a Play command will execute while the movie is playing.

But what if I want to wait for the movie to finish before executing the rest of my handler?

DISCUSSION --------------------

The Movie XCMD allows you to set a callBackMsg property which will be automatically sent when the movie completes. You can use this command to execute another handler when the movie completes.

Button script example:

```
on mouseUp
  global TheMovieName
  put "Claris Logo Movie" into TheMovieName
  put the number of me into myButton
  Movie TheMovieName,"Windoid","Card","Visible","Floating"
  set the callBackMsg of window theMovieName to ¬
  "send movieFinished to cd btn" && myButton
  send "Play" to window TheMovieName
end mouseUp

on movieFinished
  global TheMovieName
```

```
  answer "The movie is done!"
  close window TheMovieName
end movieFinished
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14537

Tech Info Library

System 7: Making an Emergency Startup Disk (7/96)

Revised: 12/20/96
Security: Everyone

System 7: Making an Emergency Startup Disk (7/96)

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Article Created: 27 January 1994
Article Reviewed/Updated: 01 Jul 1996

TOPIC ----------

This article tells you what to do if Norton Utilities or another vendor's emergency startup disk fails or isn't compatible with Macintosh models that require a System Enabler. Follow these instructions to create a startup disk (emergency boot disk) to use with any Macintosh model running versions of System 7.

DISCUSSION ----------

Usually there isn't enough room on a 1.44MB floppy disk for System, Finder, AND an application. Here are instructions on how to make them fit on a floppy disk:

1) Run the system software Installer for the type of Macintosh you have. It doesn't matter if your Macintosh came with system software on floppy disk (Install Me First disk) or on a CD-ROM. If you install from a floppy disk, expect some disk swapping (the program ejects a disk and asks you to insert another disk).

2) Install a "Minimum" System (for your specific Macintosh) on a 1.44 MB floppy disk. You can find this in the Custom installation options. This gives you the smallest possible System file, which should be under 750K for system software version 7.1.

3) Move the System file and System Enabler (if your Macintosh needs one) out of the System Folder to the root level of the disk (the same level as the System Folder). Drag the rest of the System Folder to the Trash, AND choose Empty Trash from the Special menu.

4) Copy your application to the disk and change the application's name to Finder. You should have three items on the disk:

   • System

- System Enabler (if needed)
- Finder (which is really your application now)

It is important that these items are at the root level of the disk and not within a System Folder, other folder, or on the desktop.

5) Restart your Macintosh with the startup disk you just created. Your Macintosh should start up in the application you placed on the floppy disk.

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Article Change History:
01 Jul 1996 - Added Fax Doc Word
12 Oct 1994 - Added keyword; made additional updates.
04 Aug 1994 - Removed QRG from the title. Verified contents match fax doc.

Support Information Services

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Tech Info Library Article Number:14540

Tech Info Library

Power Macintosh 6100/60: Description (Discontinued)

Revised: 8/29/95
Security: Everyone

Power Macintosh 6100/60: Description (Discontinued)

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Article Created: 27 January 1994
Article Reviewed/Updated: 29 August 1995

TOPIC ----------

The Power Macintosh 6100/60 is a high performance Macintosh model incorporating the new PowerPC 601 RISC processor.

DISCUSSION ----------

Overview

The Power Macintosh 6100/60 and Power Macintosh 6100/60AV are the most affordable members of the new high-performance line of Macintosh computers that use the revolutionary PowerPC chip technology. With this technology, they deliver the performance that business and education users demand while maintaining the legendary Macintosh ease of use and the ability to run virtually all existing Macintosh applications.

In addition, Power Macintosh computers run applications written to take advantage of Power Macintosh capabilities at two to six times the speed of previous Macintosh computers based on the 040 chip. Both computers also support MS-DOS and Windows applications when using SoftWindows software.

Based on the 60-megahertz PowerPC 601 microprocessor co-developed by Apple, IBM, and Motorola, the Power Macintosh 6100/60 and 6100/60AV both have built-in, floating-point math coprocessors and come with 8 megabytes of RAM, expandable to up to 72 megabytes. They also provide on-board high-speed Ethernet support.

Both computers support most Apple and third-party displays, including monochrome, color, VGA, and SVGA. The 6100/60AV supports 32,000 colors on all Apple displays and also supports NTSC and PAL monitors.

Both computers can easily be expanded. The Power Macintosh 6100/60 has eight built-in ports and one expansion slot. The Power Macintosh 6100/60AV has eleven built-in ports and supports a second simultaneous display.

Support for GeoPort telecommunications (integrating your phone and your computer), speech-recognition, and text-to-speech capabilities is built into both computers (PlainTalk software and microphone required). The 6100/60AV adds S-video and composite video input as well as output for use with televisions, video cameras, and video recorders.

The Power Macintosh 6100/60 and Power Macintosh 6100/60AV provide an affordable gateway to Power Macintosh technology—and the future of personal computing.

Power and Speed

- 60-MHz PowerPC 601 RISC Processor

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB of RAM standard, expandable to 72 MB
- 2 SIMM slots
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size AND speed. For example, you should install two 8 MB SIMMs in first two adjoining slots.
- Possible RAM configurations are 8 MB, 16 MB, 24 MB, 40 MB, and 72 MB.
- 80 ns SIMMs or faster
- L2 Cache Slot for Optional Macintosh Cache Card

RAM note: All 8MB RAM configurations come with 8MB of RAM soldered onto the logic board

Display

- New AV Display Connector supports the Apple AudioVision 14 Display. The bundled Video Adapter Cable (Part #M2681LL/A) allows you to connect a monitor with a standard DB-15 connector to your Power Macintosh built-in video.
- DRAM based video: 16 bit on 14-inch monitors, 8 bit on 16-inch monitors. 640k of DRAM based video is not expandable.
- VRAM based video: No VRAM video support or expansion.

Audio System

- Custom sound circuitry, including stereo generator capable of driving stereo miniplug headphones or audio equipment. Also includes stereo sampling hardware for recording samples.

Expansion

- Eight built-in ports to support a wide range of peripherals
- One 601 PDS (Processor Direct Slot)
- One NuBus 90 Slot for additional expansion cards Accomodates one 7-inch NuBus card when the optional Power Macintosh 6100 NuBus Adapter Card (Part #M2337LL/A) is installed.

• Optional internal CD-ROM drive (such as AppleCD 300i Plus)

System software

• System 7 for Power Macintosh with multitasking, file sharing, QuickTime, Balloon Help, TrueType, and more

Networking

• Built-in AppleTalk networking
• File sharing without a dedicated server
• On-board Ethernet networking

Compatibility

• Reads Macintosh, MS-DOS, and OS/2 floppy disk formats

What's in the box:

Each unit includes a power cord, keyboard cable, mouse, microphone, and system software.

System software includes System 7.1.2 for Power Macintosh, System Enabler, Color Macintosh Basics, AppleScript 1.1, QuickTime 1.6.2, and HyperCard Runtime 2.2.

System software shipped on a bootable CD-ROM, the "Install Me First CD" which can double as a rescue disk.#

Documentation included with the Power Macintosh 6100/60:
• Power Macintosh Getting Started
• Technical Information
• Macintosh Reference
• AppleCD 300i Plus User's Guide#

- CD-ROM and AppleCD 300i Plus User's Guide bundled with configurations which include an internal CD-ROM drive.

Configurations and Ordering Information:

• Power Macintosh 6100/60
  - Power Macintosh 6100/60 computer with 8MB of RAM, built-in 1.4MB Apple SuperDrive, internal 160MB hard disk drive and Power Macintosh Display Adapter: Order No. M2196LL/A
  - With 8MB of RAM, 250MB hard disk, and internal CD-ROM drive: Order No. M1878LL/A
  - With 16MB of RAM, 250MB hard disk, and SoftWindows software: Order No. M3078LL/A
• Power Macintosh 6100/60av
  - Power Macintosh 6100/60av computer with 8MB of RAM, 2MB of VRAM, built-in 1.4MB Apple SuperDrive, internal 250MB hard disk, internal CD-ROM drive, and two S-video to composite video adapters: Order No. M2738LL/A

- Power Macintosh GeoPort Telecom Adapter
  Order No. M3127LL/A

- PlainTalk for Power Macintosh: Includes PlainTalk software and the PlainTalk microphone (required for speech recognition and text-to-speech capabilities). Order No. M2844LL/A

- Power Macintosh 6100 NuBus Adapter Card (Part #M2337LL/A)
  This card gives you the ability to plug in a 7-inch NuBus expansion card. There are dozens of such NuBus cards available to enhance your computer's capability in areas like video, networking and performance. You can find these cards at your local Apple Authorized Dealer.

Note: This card will not work with the Power Macintosh 6100/60AV, since the slot it plugs into is already loaded with the video I/O card.

- Power Macintosh Cache Card (Part #M2385LL/A)
  This card enhances performance by providing a large block of very fast memory for the processor to access directly. Use it to get optimum system performance.

- Macintosh Memory Expansion Kits
  Adding DRAM allows you to run more applications simultaneously. It also increases overall system performance. All models of the Power Macintosh 6100 have two DRAM SIMM slots (Single In-line Memory Module). These must both be filled with the same size SIMMs; i.e. two 4MB SIMMs, two 8MB SIMMs, two 16MB SIMMs or two 32MB SIMMs (16MB and 32MB SIMMs available from third-party vendors).
  - 4MB (1-4MB SIMM)
    Order No. M1507LL/A
  - 8MB (1-8MB SIMM)
    Order No. M1508LL/A

- Video Adapter Cable (Part #M2681LL/A)
  This cable allows you to connect a monitor with a standard DB-15 connector to your Power Macintosh built-in video. This cable is offered as an option for the Power Macintosh 6100/60AV only; it comes standard with every Power Macintosh 6100/60.

Article Change History:
29 Aug 1995 - Added information about DRAM video.
13 Jun 1995 - Reviewed for technical accuracy.
06 Jun 1994 - Updated information on Apple software included

Support Information Services

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Tech Info Library Article Number:14541

Tech Info Library

Power Macintosh 7100/66: Description (Discontinued)

Revised: 2/17/97
Security: Everyone

Power Macintosh 7100/66: Description (Discontinued)

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Article Created: 27 January 1994
Article Reviewed/Updated: 13 June 1995

TOPIC ----------

The Power Macintosh 7100/66 is a performance Macintosh model incorporating the new PowerPC 601 RISC processor.

DISCUSSION ----------

Overview

The Power Macintosh 7100/66 and Power Macintosh 7100/66AV are the expandable, mainstream members of the new high-performance line of Macintosh computers based on PowerPC chip technology. They’re built with the speed, expandability, and networking capabilities that business people require for word processing, desktop publishing, and working with complex spreadsheets and databases.

Although they use fast new technology, these computers run virtually all existing Macintosh applications. In addition, Power Macintosh computers run applications written for Power Macintosh at two to six times the speed of previous Macintosh computers. And the 7100/66 and 7100/66AV can run 10 to 25 percent faster than the Power Macintosh 6100/60 computer. Both computers can also run MS-DOS and Windows applications using SoftWindows software.

Based on the 66-megahertz PowerPC 601 microprocessor codeveloped by Apple,IBM, and Motorola, the Power Macintosh 7100/66 and 7100/66AV both have built-in, floating-point math coprocessors. They also provide built-in, high-speed Ethernet networking.

Both computers support all Apple and most third-party displays, including monochrome, color, VGA, and SVGA. Support for up to 32,000 colors on Apple color displays (up to 16- or 17-inch) is included with the 7100/66. The 7100/66AV (and the 7100/66 with the addition of 1 megabyte of VRAM) supports display of more than 16 million colors.

Both computers feature easy expandability via three NuBus slots, and you can run two simultaneous displays with each.

GeoPort telecommunications capabilities can integrate both computers with your phone, and both feature speech-recognition and text-to-speech capabilities (PlainTalk microphone and software required to utilize these features). The 7100/66AV adds S-video and composite video input as well as output for use with televisions, video cameras, and video recorders.

For high-performance and expandability in a platform that's built for the future, the Power Macintosh 7100/66 and Power Macintosh 7100/66AV are designed to meet your needs.

Power and Speed

- 66-MHz PowerPC 601 RISC Processor
- Integrated floating-point unit and 32K cache

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB of RAM standard, expandable to 136 MB
- 4 SIMM slots
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size AND speed. For example, you should install two 8 MB SIMMs in first two adjoining slots.
- Possible RAM configurations are 8 MB, 24 MB, 40 MB, 72 MB, and 136 MB.
- 80 ns SIMMs or faster
- L2 Cache Slot for Optional Macintosh Cache Card

RAM note: All 8MM RAM configurations come with 8MB of RAM soldered onto the logic board

Display

- New AV Display Connector supports the Apple AudioVision 14 Display. A Video Adapter Cable (Part #M2681LL/A) allows you to connect a monitor with a standard DB-15 connector to your Power Macintosh built-in video.
- 1 MB of VRAM standard, upgradeable to 2 MB

Audio System

- Custom sound circuitry, including stereo generator capable of driving stereo miniplug headphones or audio equipment. Also includes stereo sampling hardware for recording samples.

Expansion

- Eight built-in ports to support a wide range of peripherals
- One 601 PDS (Processor Direct Slot)
- Three NuBus 90 Slots for additional expansion cards

• Optional internal CD-ROM drive (such as AppleCD 300i Plus)

System software

• System 7 for Power Macintosh with multitasking, file sharing, QuickTime, Balloon Help, TrueType, and more

Networking

• Built-in AppleTalk networking
• File sharing without a dedicated server
• On-board Ethernet networking

Compatibility

• Reads Macintosh, MS-DOS, and OS/2 floppy disk formats

What's in the box:

Each unit includes a power cord, keyboard cable, mouse, microphone, and system software.

System software includes System 7.1.2 for Power Macintosh, Color Macintosh Basics, AppleScript 1.1, QuickTime 1.6.2, and HyperCard Runtime 2.2.

System software shipped on a bootable CD-ROM, the "Install Me First CD" which can double as a rescue disk.#

Documentation included with the Power Macintosh 7100/66:
• Power Macintosh Getting Started
• Technical Information
• Macintosh Reference
• AppleCD 300i Plus User's Guide#

- CD-ROM and AppleCD 300i Plus User's Guide bundled with configurations which include an internal CD-ROM drive.

Configurations and Ordering Information:

• Power Macintosh 7100/66:
  - Power Macintosh 7100/66 computer with 8MB of RAM, 1MB of VRAM, built-in 1.4MB Apple SuperDrive, and internal 250MB hard disk:
    Order No. M2464LL/A
  - With 8MB of RAM, 250MB hard disk, and internal CD-ROM drive:
    Order No. M2465LL/A
  - With 16MB of RAM, 250MB hard disk, and SoftWindows software:
    Order No. M3077LL/A

• Power Macintosh 7100/66AV:
  - Power Macintosh 7100/66AV computer with 8MB of RAM, 2MB of VRAM, built-in 1.4MB Apple SuperDrive, internal 500MB hard disk drive, internal CD-ROM drive, and two S-video to composite video adapters:
    Order No. M2467LL/A

- Macintosh VRAM Expansion Kit (2-256K SIMMs) Order No. M5953LL/A
  Note: This upgrade does not apply to the Power Macintsoh 7100/66 AV which is already configured with its full complement of 2MB VRAM.

- Power Macintosh GeoPort Telecom Adapter
  Order No. M3127LL/A

- PlainTalk for Power Macintosh: Includes PlainTalk software and the PlainTalk microphone (required to utilize text-to-speech and speech recognition features). Order No. M2844LL/A

- Power Macintosh Cache Card (Part #M2385LL/A)
  This card enhances performance by providing a large block of very fast memory for the processor to access directly. Use it to get optimum system performance.

- DRAM upgrades: All models of the Power Macintosh 8100 have eight DRAM SIMM slots (Single In-line Memory Module). SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs (16MB and 32MB SIMMs available from third-party vendors).
  - 4MB (1-4MB SIMM) Order No. M1507LL/A
  - 8MB (1-8MB SIMM) Order No. M1508LL/A

- Video Adapter Cable (Part #M2681LL/A)
  This cable allows you to connect a monitor with a standard DB-15 connector to your Power Macintosh built-in video. You can use it if you want to connect an additional display (other than the Apple AudioVision 14) to your computer.

Article Change History:
13 Jun 1995 - Reviewed for technical accuracy.
17 May 1994 - Updated to clarify PlainTalk requirements and remove unavailable configurations and products.
11 Mar 1994 - Reclassified for public access.

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Tech Info Library Article Number:14542

Tech Info Library

Power Macintosh 6100/60: Specifications (Discontinued)

Revised: 8/29/95
Security: Everyone

Power Macintosh 6100/60: Specifications (Discontinued)

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Article Created: 27 January 1994
Article Reviewed/Updated: 29 August 1995

TOPIC -----

This article gives the technical specifications for the Power Macintosh 6100/60 computer.

DISCUSSION -----

Microprocessor

- 60-MHz PowerPC 601 RISC Processor

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB of RAM standard, expandable to 72 MB
- 2 SIMM slots (1 pair)
- 80 ns (nanosecond) SIMMs or faster
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size. For example, you should install two 8 MB SIMMs in first two adjoining slots.
- Possible RAM configurations are 8, 16, 24, 40 and 72 MB.
- L2 Cache Slot for Optional 256K Macintosh Cache Card

RAM note: All 8MM RAM configurations come with 8MB of RAM soldered onto the logic board

Form Factor

- Modular desktop enclosure (similar to Quadra 610, 660av enclosure)

Disk Drives

- One Built-in Apple SuperDrive 1.4 MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.
- Support for one internal one-third, 5.25-inch height SCSI devices, one of which may be used for removable media, such as an internal CD-ROM drive.
- One internal one-third height hard disk (250MB, 350MB options available)
- Optional internal Apple CD-ROM drive (see above)
- Optional external SCSI hard disk drive (many capacities available)

Video Display

- 640k of DRAM based video: 16 bit on 14-inch monitors, 8 bit on 16-inch monitors. DRAM based video is not expandable. (The table below details support for specific monitors.)
- VRAM based video: No VRAM video support or expansion.

Begin_Table

Monitor:	Resolution:	Colors or Grays:
12-inch Color	512 by 384	thousands
12-inch Monochrome	640 by 480	256
13-inch or 14-inch Color or VGA	640 by 480	thousands
15-inch Portrait Monochrome	640 by 870	256
16-inch Color	832 by 624	256

Note: Built-in video (HDI-45 with 640K DRAM support) doesn't support any monitor with a resolution greater than 832 by 624. To use a larger monitor (19-inch, 20-inch, or 21-inch), a third-party video card or the AV card must be used.

End_Table

Interfaces

- One internal Nubus 90 PDS. Supports block transfers to and from main memory, 2x block transfers card to card. There is a NUBUS adapter for the Power Macintosh 6100. A NuBus card requires an adapter card & bracket. There is only one slot, so it supports one PDS card OR one NuBus card.
- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices.
- One AAUI-15 Ethernet connector.
- Two serial (RS-232/RS-422) ports.
  (1 Printer/LocalTalk, 1 Modem, both support GeoPort)
- SCSI interface for connecting up to a total of seven SCSI devices.
- Sound output port for stereo compact disc audio and stereo computer-generated sound.
- Sound input port for stereo sound input (supports 16-bit stereo audio)
- One AV Display Connector supports the Apple AudioVision 14 Display. The bundled Video Adapter Cable (Part #M2681LL/A) allows you to connect a monitor with a standard DB-15 connector to your Power Macintosh built-in video.
- One internal 601 PDS (processor direct slot)

- One internal L2 (Level 2) cache slot

Audio System

- 16-bit stereo in and out
- Sample rates of 48, 44.1, 24, 22.05 kilohertz (kHz)
- Input line level: 1 volt peak-to-peak
- Output line level: 1 volt peak-to-peak
- Input SNR (signal-to-noise ratio): 82 decibels (dB) with no audible discrete tones
- Output SNR: 85 dB with no audible discrete tones
- Bandwidth: 20 Hz-20 kHz (+/- 2 dB) at 44.100 kHz sample rate
- THD+N (Total harmonic distortion plus noise): Less than 0.05 percent; measured 20 Hz-20kHz with a 1-Vrms sine wave input.

Networking

- Built-in Ethernet
- Serial port for AppleTalk
- Integrated GeoPort telecommunications architecture for data, fax, and voice connectivity.

Keyboard

- Several Apple Desktop Bus keyboards with numeric key pads available.

Mouse

- Apple Desktop Bus Mouse II; mechanical tracking, optical shaft, or contact encoding.

Clock/Calendar

- CMOS custom chip with long-life lithium battery.

Apple PlainTalk Microphone (optional)

- The microphone is unidirectional and optimized for use with speech recognition.

Disability Access

- Easy Access, and visible beep included with system software. These built-in features and third-party options provide alternative input and output tools for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured
- Frequency: 50 to 60 hertz, single phase
- Power Supply Output Rating (Power available for internal devices)
  - Continuous output 86W

• A/C Line Input (Power drawn by the Power Macintosh 6100/60)
  - Maximum continuous 132W
  - Peak input 201W

ADB Power Requirements

• Maximum current draw for all ADB devices: 500 milliamps (a maximum of three Apple Desktop Bus devices is recommended)
• Mouse draws 10 milliamps.
• Keyboard draws 25 to 80 milliamps, depending on the keyboard model used.

Size and Weight

Main unit

• Height: 3.4 inches (8.5 cm)
• Width: 16.3 inches (41.5 cm)
• Depth: 15.6 inches (39.7 cm)
• Weight*: 14.0 pounds (6.4 kg)

*Weight varies based on internal devices installed

Mouse

• Height 1.3 inches (33 mm)
• Width 2.4 inches (61.7 mm)
• Depth 4.2 inches (107.3 mm)
• Weight 4 ounces (0.10 kg)

Operating Environment

• Operating temperature: 50 degrees to 104 degrees F (10 degrees to 40 degrees C)
• Storage temperature: -40 degrees to 116.6 degrees F (-40 degrees to 47 degrees C)
• Relative humidity: 5% to 95% noncondensing
• Maximum altitude: 10,000 ft. (3,048m)

System Software Requirements

Requires System 7.1.2 for Power Macintosh or later and the accompanying System Enabler.

Article Change History:
29 Aug 1995 - Formatted for better online viewing.
29 Sep 1994 - Documented hard drive sizes, availability of AV Card upgrade.
23 Aug 1994 - Additional power supply ratings documented.

Support Information Services

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Tech Info Library Article Number:14543

Tech Info Library

Power Macintosh 8100/80: Description (Discontinued)

Revised: 6/13/95
Security: Everyone

Power Macintosh 8100/80: Description (Discontinued)

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Article Created: 27 January 1994
Article Reviewed/Updated: 13 June 1995

TOPIC ----------

The Power Macintosh 8100/80 is the highest performance Macintosh incorporating the new PowerPC 601 RISC processor.

DISCUSSION ----------

Overview

The Power Macintosh 8100/80 and Power Macintosh 8100/80AV deliver the highest performance and speed ever in Macintosh computers. These racehorse computers are designed to meet the speed, expansion, and networking needs of the most demanding Macintosh power users, from professional publishers to computer-aided design professionals.

Although based on new technology, these computers support virtually all existing Macintosh applications. In addition, Power Macintosh computers run applications written for Power Macintosh at two to six times the speed of previous Macintosh computers. And the 8100/80 and 8100/80AV can run 50 to 100 percent faster than the Power Macintosh 6100/60 computer. Both computers can also run MS-DOS and Windows applications when using SoftWindows software.

Based on the 80-megahertz PowerPC 601 microprocessor co-developed by Apple, IBM, and Motorola, the Power Macintosh 8100/80 and 8100/80AV both have built-in, floating-point math coprocessors. They also provide built-in, high-speed Ethernet networking.

Both computers support all Apple and most third-party displays, including monochrome, color, VGA, and SVGA. Support for 16.7 million colors on Apple color displays (up to 16- or 17-inch) is included with the 8100/80 and the 8100/80AV. The 8100/80, with the addition of 2 megabytes of VRAM (to total 4 megabytes) supports display of more than 16 million colors.

Both computers feature easy expandability via three NuBus slots, and you can run two simultaneous displays with each.

GeoPort telecommunications capabilities can integrate both computers with your phone, and both feature speech-recognition and text-to-speech capabilities (PlainTalk microphone and software required). The 8100/80AV adds S-video and composite video input as well as output for use with televisions, video cameras, and video recorders.

The Power Macintosh 8100/80 and Power Macintosh 8100/80AV provide the most power and speed ever available in a Macintosh computer. And they come with the flexibility and expandability necessary to build a firm foundation for your future computing needs.

Power and Speed

- 80-MHz PowerPC 601 RISC Processor
- Integrated floating-point unit and 32k cache

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB of RAM standard, expandable to 264 MB
- 8 SIMM slots
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size AND speed. For example, you should install two 8 MB SIMMs in first two adjoining slots.
- Possible RAM configurations are 8 MB, 40 MB, 72 MB, 136 MB and 264 MB.
- 80 ns SIMMs or faster
- L2 Cache Slot with preinstalled Macintosh Cache Card

RAM note: All 8MB RAM configurations come with 8MB of RAM soldered onto the logic board

Display

- New AV Display Connector supports the Apple AudioVision 14 Display. A Video Adapter Cable (Part #M2681LL/A) is available as an option to allow connecting an additional monitor with a standard DB-15 connector to your Power Macintosh built-in video.
- Works with all Apple monitors as well as third-party displays including VGA and SVGA. AV configurations also support NTSC and PAL.
- 2 MB of VRAM standard, upgradeable to 4 MB on the PDS card with standard DB-15 monitor connector

Expansion

- Eight built-in ports to support a wide range of peripherals
- One 601 PDS (Processor Direct Slot)
- Three NuBus 90 Slots for additional expansion cards
- Optional internal CD-ROM drive (such as AppleCD 300i Plus)

System software

• System 7 for Power Macintosh with multitasking, file sharing, QuickTime, Balloon Help, TrueType, and more

Networking

• Built-in AppleTalk networking
• File sharing without a dedicated server
• On-board Ethernet networking

Compatibility

• Reads Macintosh, MS-DOS, and OS/2 floppy disk formats

What's in the box:

Each unit includes a power cord, keyboard cable, mouse, microphone, and system software.

System software includes System 7.1.2 for Power Macintosh, Color Macintosh Basics, AppleScript 1.1, QuickTime 1.6.2, and HyperCard Runtime 2.2.

System software shipped on a bootable CD-ROM, the "Install Me First CD" which can double as a rescue disk.#

Documentation included with the Power Macintosh 8100/80:
• Power Macintosh Getting Started
• Technical Information
• Macintosh Reference
• AppleCD 300i Plus User's Guide#

- CD-ROM and AppleCD 300i Plus User's Guide bundled with configurations which include an internal CD-ROM drive.

Configurations and Ordering Information:

• Power Macintosh 8100/80:
  - Power Macintosh 8100/80 computer with 8MB of RAM, 2MB of VRAM, built-in 1.4MB Apple SuperDrive, and internal 250MB hard disk drive: Order No. M1884LL/A
  - With 8MB of RAM, 250MB hard disk, and internal CD-ROM drive: Order No. M1880LL/A
  - With 16MB of RAM, 500MB hard disk, and SoftWindows software: Order No. M3079LL/A
  - With 16MB of RAM, 1GB hard disk, and internal CD-ROM drive: Order No. M2297LL/A

• Power Macintosh 8100/80AV*
  - Power Macintosh 8100/80AV computer with 16MB of RAM, 2MB of VRAM, built-in 1.4MB Apple SuperDrive, internal 500MB hard disk drive, internal CD-ROM drive, and two S-video to composite video adapters: Order No. M2293LL/A

- Power Macintosh GeoPort Telecom Adapter
  Order No. M3127LL/A

- PlainTalk for Power Macintosh: Includes PlainTalk software and the PlainTalk microphone (required to utilize text-to-speech and speech recognition features). Order No. M2844LL/A

- DRAM upgrades: All models of the Power Macintosh 8100 have eight DRAM SIMM slots (Single In-line Memory Module). SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs (16MB and 32MB SIMMs available through third-party vendors).
  - 4MB (1-4MB SIMM)
    Order No. M1507LL/A
  - 8MB (1-8MB SIMM)
    Order No. M1508LL/A

- Power Macintosh 8100 VRAM upgrade kit (Part M1311LL/A)
  Adding VRAM increases the number of colors which can be displayed on large monitors. For example, adding VRAM to the Power Macintosh 8100/80 increases the number of colors which can be viewed on a 21-inch monitor from 32,000 to over 16.7 million. The kit upgrades the standard 2MB VRAM to 4MB VRAM.

  Note: This upgrade does not apply to the Power Macintsoh 8100/80 AV which is not expandable over the standard configuration of 2MB VRAM.

- Video Adapter Cable (Part M2681LL/A)
  This cable allows you to connect a monitor with a standard DB-15 connector to your Power Macintosh built-in video. You can use it if you want to connect an additional display (other than the Apple AudioVision 14) to your computer.

Article Change History:
13 Jun 1995 - Reviewed for technical accuracy.
17 May 1994 - Updated to remove unavailable configurations and products.
Clarified ProDos support and PlainTalk requirements.
11 Mar 1994 - Revised "What's in the box" section and reclassified for public access.

Support Information Services

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Tech Info Library Article Number:14544

Tech Info Library

Power Macintosh 8100/80: Specifications (Discontinued)

Revised: 11/20/95
Security: Everyone

Power Macintosh 8100/80: Specifications (Discontinued)

==========

Article Created: 27 January 1994
Article Reviewed/Updated: 20 November 1995

TOPIC ----------

This article gives the technical specifications for the Power Macintosh 8100/80 computer.

DISCUSSION ----------

Microprocessor

- 80-MHz PowerPC 601 RISC Processor

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB of RAM standard, expandable to 264 MB
- 8 SIMM slots (4 pairs)
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size. For example, you should install two 8 MB SIMMs in first two adjoining slots, and two 4 MB SIMMs in the remaining two slots for a 32 MB machine.
- Possible RAM configurations are 8 MB, 16 MB, 24 MB, 32 MB, 40 MB, 48 MB, 56 MB, 64 MB, 72 MB, 80 MB, 96 MB, 104 MB, 120 MB, 136 MB, 168 MB, 200 MB, 216 MB and 264 MB.
- 80 ns SIMMs or faster
- L2 Cache Slot with Macintosh 256k Cache Card included

RAM note: All 8MB RAM configurations come with 8MB of RAM soldered onto the logic board

Form Factor

- Desktop Mini Tower (similiar to Quadra 800, Quadra 840 case)

Disk Drives

- One Built-in Apple SuperDrive 1.4 MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, MS-DOS, and OS/2 disks.
- Support for three internal SCSI devices, one of which may be used for a one-half height, 5.25-inch removable media drive, such as an internal CD-ROM drive.
- One internal hard disk (xxx MB options available)
- Optional internal Apple CD-ROM drive (see above)
- Optional external SCSI hard disk drive (many capacities available)

Video Display

- DRAM based video: 16 bit on 14-inch monitors, 8 bit on 16-inch monitors
- VRAM based video: 2MB: 24 bit on 16-inch monitors, 16 bit on 21-inch monitors. 4MB: 24 bit on 21-inch monitors

Monitor:	Resolution:	2 MB VRAM:	4 MB VRAM:
12-inch Color	512 by 384	millions	millions
12-inch Monochrome	640 by 480	256	256
13-inch or 14-inch Color or VGA	640 by 480	millions	millions
13-inch Color	640 by 400	millions	millions
15-inch Portrait Monochrome	640 by 870	256	256
16-inch Color	832 by 624	thousands	millions
19-inch Color	1024 by 768	thousands	millions
21-inch Color	1152 by 870	thousands	millions
SuperVGA	800 by 600	thousands	millions
NTSC	640 by 480	thousands	millions
NTSC flicker-free	640 by 480	256	256
NTSC	512 by 384	thousands	millions
NTSC flicker-free	512 by 384	256	256
PAL	768 by 576	thousands	millions
PAL flicker-free	768 by 576	256	256
PAL	640 by 480	thousands	millions
PAL flicker-free	640 by 480	256	256

*NOTE- NTSC and PAL video modes supported on AV configurations only.

Interfaces

- Three internal Nubus 90 slots, support block transfers to and from main memory, 2x block transfers card to card.
- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices.
- One AAUI-15 Ethernet connector.
- Two serial (RS-232/RS-422) ports. (Printer & Modem/GeoPort)
- SCSI interface for connecting up to a total of seven SCSI devices.
- Sound-out port for stereo playback from CDs or Macintosh audio applications
- Stereo sound-input port (supports 16-bit stereo audio)
- One AV Display Connector supports the Apple AudioVision 14 Display.

- The available Video Adapter Cable (Part #M2681LL/A) allows you to connect a monitor with a standard DB-15 connector to your Power Macintosh built-in video.
- One internal 601 PDS (processor direct slot)
- One internal L2 (Level 2) cache slot

Audio System

- 16-bit stereo in and out
- Sample rates of 48, 44.1, 24, 22.05 kilohertz (kHz)
- Input line level: 1 volt peak-to-peak
- Output line level: 1 volt peak-to-peak
- Input SNR (signal-to-noise ratio): 82 decibels (dB) with no audible discrete tones
- Output SNR: 85 dB with no audible discrete tones
- Bandwidth: 20 Hz-20 kHz (+/- 2 dB) at 44.100 kHz sample rate
- THD+N (Total harmonic distortion plus noise): Less than 0.05 percent; measured 20 Hz-20kHz with a 1-Vrms sine wave input.

Networking

- Built-in Ethernet
- Serial port for AppleTalk
- Integrated GeoPort telecommunications architecture for data, fax, and voice connectivity.

Keyboard

- Several Apple Desktop Bus keyboards with numeric keypads available.

Mouse

- Apple Desktop Bus Mouse II; mechanical tracking, optical shaft, or contact encoding.

Clock/Calendar

- Custom integrated circuit with long-life lithium battery.

Apple PlainTalk Microphone

- The microphone is unidirectional and optimized for use with speech recognition. (Microphone bundled with all AV units sold in the USA, available as a separate item outside the USA.)

Disability Access

- Easy Access, and visible beep included with system software. These built-in features and third-party options provide alternative input and output tools for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured
- Frequency: 50 to 60 hertz, single phase
- Power Supply Output Rating (Power available for internal devices)
  - Continuous output 200W

- A/C Line Input (Power drawn by the Power Macintosh 8100/80)
  - Maximum continuous 298W
  - Peak input 453W

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 milliamps (a maximum of three Apple Desktop Bus devices is recommended)
- Mouse draws 10 milliamps.
- Keyboard draws 25 to 80 milliamps, depending on the keyboard model used.

Size and Weight

Main unit

- Height 14.25 inches (46.2 cm)
- Width 8.9 inches (22.5 cm)
- Depth 16 inches (40.5 cm)
- Weight 24 lb. (16.7 kg) varies with disk drive options installed

Mouse

- Height 1.3 inches (33 mm)
- Width 2.4 inches (61.7 mm)
- Depth 4.2 inches (107.3 mm)
- Weight 4 ounces (0.10 kg)

Operating Environment

- Operating temperature: 50 degrees to 104 degrees F (10 degrees to 40 degrees C)
- Storage temperature: -40 degrees to 116.6 degrees F (-40 degrees to 47 degrees C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 ft. (3,048m)

System Software Requirements

Requires System 7.1.2 for Power Macintosh or later and the accompanying System Enabler.

Article Change History:
20 Nov 1995 - Corrected Cache Card information
21 Oct 1994 - Corrected dimension specs.
23 Aug 1994 - Additional power supply ratings documented.

Support Information Services

..TIL14545-Power_Macintosh_8100-80-Specifications_Discontinued.pdf

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Tech Info Library Article Number:14545

Tech Info Library

Newton Connection Kit for Windows: VCD.386 Errors (1/94)

Revised: 1/27/94
Security: Everyone

Newton Connection Kit for Windows: VCD.386 Errors (1/94)

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Article Created: 27 January 1994

TOPIC -----

I recently installed the Newton Connection Kit for Windows on my Windows-compatible computer. When Windows launches on my computer, I get the following error message:

"Can not find the device file that may be needed to run Windows in 386 Enhanced mode. You need to run setup program again to install VCD.386. Press any key to continue"

Also, the Newton Connection Kit doesn't work with my Newton and my computer's fax modem doesn't work. How can I make my system work properly?

DISCUSSION -----

This problem occurs with version 1.0 of the Newton Connection Kit for Windows. Version 1.0a of the Newton Connection Kit for Windows will solve this problem and is available from the Newton System Update line at 1-800-242-3374. You can also use a workaround with Version 1.0 to cure this problem.

Problem

When you install Newton Connection Kit for Windows v 1.0, the installer looks for a statement in the SYSTEM.INI file referencing the file VCD.386. In standard Windows installations, this statement is in the 386ENH section of the SYSTEM.INI file and is written as:

device=*vcd

This statement tells Windows to look for a file called VCD.386 in the Windows system directory.

If this statement is missing from the SYSTEM.INI file, the Newton Connection Kit installer will add the following statement to the file:

device=vcd.386

Certain communications software and particular machines (usually laptops with PCMCIA slots) modify the SYSTEM.INI file and place a modified version of the file VCD.386 in the Windows system directory. Often, this modified version is NOT named VCD.386. This will cause the problems mentioned above.

Solution

You can use Version 1.0a of the Newton Connection Kit for Windows. It does not make the changes mentioned above and assumes that a VCD.386 file or equivalent is being loaded.

You can also use a workaround with Version 1.0. It restores the old SYSTEM.INI file and adds a line referencing the file TSIVID.386.

To do this, follow these steps:

1) Quit Windows.

2) Copy the file SYSTEM.INI from the directory where the Newton Connection for Windows was installed to your Windows directory. The default path is C:\NEWTON. The installer placed the old SYSTEM.INI file in this directory.

3) Launch Windows

4) Go to the Program Manager, select RUN from the FILE menu, and enter SYSEDIT.EXE. Click on OK.

5) Select SYSTEM.INI from the WINDOW menu.

6) Scroll down through the file until you see a line that says [386Enh].

7) Continue scrolling down through the file until you see a line that says [Standard].

8) Insert a new line above the line that says [Standard] and enter the following text on the new line in all caps:

   DEVICE=path\TSIVID.386

   where "path" is the DOS directory pointing to the installed Newton files.

   For example, if the files where installed in the directory C:\NEWTON, this statement would be:

   DEVICE=C:\NEWTON\TSIVID.386

9) Relaunch Windows.

Your Newton Connection Kit and fax/communications software should now work.

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Tech Info Library Article Number:14546

Tech Info Library

Power Macintosh 6100, 7100, 8100: Comparisons (8/96)

Revised: 8/1/96
Security: Everyone

Power Macintosh 6100, 7100, 8100: Comparisons (8/96)

==========

Article Created: 9 March 1994
Article Reviewed/Updated: 1 August 1996

TOPIC ----------

How do the Power Macintosh 6100, 7100, and 8100 series computers compare with each other?

DISCUSSION ----------

The major differences between the Power Macintosh models are:

Begin_Table

Feature:	Power Macintosh 6100	Power Macintosh 7100	Power Macintosh 8100
Processor	PPC 601 @60 MHz PPC 601 @66 MHz	PPC 601 @66 MHz PPC 601 @80 MHz	PPC 601 @80 MHz PPC 601 @100 MHz
DRAM Expansion	8 MB to 72 MB	8 MB to 136 MB	8 MB to 264 MB
DRAM Slots	2 slots	4 slots	8 slots
DRAM Speed	80 ns	80 ns	80 ns
DRAM SIMM Sizes#	4,8,16 & 32 MB	4,8,16 & 32 MB	4,8,16 & 32 MB
DRAM SIMM Type	72-pin	72-pin	72-pin
Possible DRAM Configurations	8,16,24,40,72 MB	8,24,40,72,136 MB	8,40,72,136,264 MB
Ethernet	Standard	Standard	Standard
FPU	Standard	Standard	Standard
ROM Size	4 MB	4 MB	4 MB
Standard VRAM	N/A (uses DRAM)	1 MB	2 MB
VRAM Expansion	N/A (uses DRAM)	1 MB to 2 MB	2 MB to 4 MB
VRAM Slots	no slot	1 slot	1 slot
VRAM Speed	N/A (uses DRAM)	80 ns	80 ns
NuBus 90 Slots%	1!	3	3
601 PDS%	Yes	Yes	Yes
L2 Cache Slot	Yes	Yes	Yes

Power Macintosh AV Models

Feature:	Power Macintosh 6100 AV	Power Macintosh 7100 AV	Power Macintosh 8100 AV
Processor	PPC 601 @60 MHz PPC 601 @66 MHz	PPC 601 @66 MHz PPC 601 @80 MHz	PPC 601 @80 MHz PPC 601 @100 MHz
DRAM Expansion	8 MB to 72 MB	8 MB to 136 MB	8 MB to 264 MB
DRAM Slots	2 slots	4 slots	8 slots
DRAM Speed	80 ns	80 ns	80 ns
DRAM SIMM Sizes#	4,8,16 & 32 MB	4,8,16 & 32 MB	4,8,16 & 32 MB
DRAM SIMM Type	72-pin	72-pin	72-pin
Possible DRAM Configurations	8,16,24,40,72 MB	8,24,40,72,136 MB	8,40,72,136,264 MB
Ethernet	Standard	Standard	Standard
FPU	Standard	Standard	Standard
ROM Size	4 MB	4 MB	4 MB
Standard VRAM	2 MB	2 MB	2 MB
VRAM Expansion	2 MB(no expansion)	2 MB(no expansion)	2 MB(no expansion)
VRAM Slots	no slot	no slot	no slot
VRAM Speed	80 ns	80 ns	80 ns
S-Video Input&	1	1	1
S-Video Output&	1	1	1
Monitor Ports	2	2	2
NuBus 90 Slots@	1!	3	3
601 PDS@	This slot is used by the Apple AV Technologies Card		
L2 Cache Slot	1	1	1

End_Table

The Power Macintosh 8100/110 is identical to the Power Macintosh 8100/80 excepting that it comes with 16MB of RAM, 2 MB of VRAM (expanable to 4 MB), and is equipped with a 110 MHz version of the PowerPC 601 microprocessor. There is no AV model.

Notes:

Composite SIMMs are not supported, SIMMs must be installed in pairs of the same size in adjoining SIMM slots.

! Requires a Power Macintosh 6100 NuBus Adapter Card (Part #M2337LL/A) This card gives you the ability to plug in a 7-inch NuBus expansion card.

% The Power Macintosh 6100 has a single expansion slot which can be used as a 601 PDS or as a NuBus slot with the optional Power Macintosh 6100 NuBus Adapter Card installed.

& The S-Video Input and Output ports can be used as composite video ports when used with the bundled composite input and output adapter cables.

@ With the Power Macintosh 6100, the PDS/NuBus 90 Slot is used by the Apple AV Technologies Card, which provides an additional monitor port and two s-video ports.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
01 Aug 1996 - Changed title to accurately reflect contents.
21 Nov 1995 - Reviewed for technical accuracy.
11 Aug 1995 - Reformatted to make more readible on the World Wide Web.

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Tech Info Library Article Number:14547

Tech Info Library

Power Macintosh Series: Standard versus AV Models (1/95)

Revised: 1/19/95
Security: Everyone

Power Macintosh Series: Standard versus AV Models (1/95)

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Article Created: 27 January 1994
Article Reviewed/Updated: 09 January 1995

TOPIC ----------

I need a short summary of the key differences between standard Power Macintosh models and Power Macintosh AV models.

DISCUSSION ----------

The primary difference is an additional expansion card, the Apple AV Technologies Card, which plugs into the 601 PDS (Processor Direct Slot) The Apple AV Technologies Card adds the following functionality to a standard Power Macintosh model, making it a Power Macintosh AV model:

Interfaces

- One video output port (S-Video) for output to video devices or a television (composite input and output adapter cables provided.)
- One video input port (composite and S-Video) for video devices.

Video RAM (VRAM)

- 2 MB of VRAM is included with Power Macintosh AV models and cannot be upgraded.

For further information on individual Power Macintosh AV model specifications, use the product name as a search string.

Article Change History:
09 Jan 1995 - Reviewed for technical accuracy.
28 Mar 1994 - Revised the VRAM portion to avoid confusion.
11 Mar 1994 - Revised and reclassified article for public access.

Support Information Services

..TIL14548-Power_Macintosh_Series-Standard_versus_AV_Models_1-95_(TA31084).pdf

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Tech Info Library Article Number:14548

Tech Info Library

HyperCard 2.1: 16K Limits on Read Command (11/92)

Revised: 4/6/94
Security: Everyone

HyperCard 2.1: 16K Limits on Read Command (11/92)

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Article Created: 27 September 1991
Article Reviewed/Updated: 6 April 1994

TOPIC ----------

The documentation for HyperCard 2.1 (both paper and stack) state that the 16K (16384 characters) limit has been dropped for the 'read' command. This turns out to be only partly true. (Note: This limit is mentioned in the Script Language Guide for HyperCard 2.0.)

DISCUSSION ----------

The form

```
read from file <fileName> for <N>
```

will read > 16K if N is greater than 16384 and the file is more than 16K in size. (It will read the minimum of the file size and N chars, provided there is memory to do so.)

The form

```
read from file <fileName> until { end | eof }
```

will read until the end of the file -- which can be > 16K characters (provided there is memory).

The form

```
read from file <fileName> until <char>
```

will still only read a maximum of 16K characters from a file.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14549

Tech Info Library

HyperCard 2.1: Color Options (6/93)

Revised: 5/9/94
Security: Everyone

HyperCard 2.1: Color Options (6/93)

==========

Article Created: 17 June 1992
Article Reviewed/Updated:11 June 1993

TOPIC ----------

HyperCard versions prior to and including 2.1 do not support color directly in card or background graphics. However, there are several options available to allow the use of color in HyperCard stacks. Note: Except for the first of these, they are not supported by Apple.

This article does not apply to HyperCard versions after 2.1.

DISCUSSION ----------

- Picture XCMD displays color or gray-scale pictures in several types of standard Macintosh windows. This XCMD comes free with HyperCard, and is documented in the Power Tools stack, which is included with both the HyperCard upgrade and the Development Kit.

- Colorizing HyperCard, from BungDabba Productions, is a set of XCMDs to color HyperCard. These XCMDs require at least 2MB RAM dedicated to HyperCard (4MB or more is preferable). This public domain unsupported product is available from most on-line systems.

- QuickColor is another product from BungDabba and is a "graphical" front-end for the ColorizeHC XCMD. It allows you to color your HyperCard stacks with pictures, colors, or both, with no programming or scripting.

- HyperTint: A demo of this commercial package for adding color to HyperCard is available on most on-line systems.

- Pictoid Package 1.0.2 is a package of XCMDs to display monochrome, color, and QuickTime movies in "pictoids". A "pictoid" is an any-shape windoid (it can contain holes and non-contiguous areas) which displays a picture. Pictoids can have scripts and behave like buttons.

..TIL14550-HyperCard_2-1-Color_Options_6-93_(TA31087).pdf

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14550

Tech Info Library

HyperCard 2.1: Fix for Address Stack Import Problem (8/92)

Revised: 4/7/94
Security: Everyone

HyperCard 2.1: Fix for Address Stack Import Problem (8/92)

==========

Article Created: 26 May 1992
Article Reviewed/Updated: 26 August 1992

TOPIC ----------

If the ZIP Code in an old HyperCard 1.x.x Address stack contains arithmetic characters (+ - /) or letters (such as in Canadian postal codes), you may encounter an "Expected Number" error when attempting to import the data into the 2.1 Addresses stack. The script for this stack was changed from the 2.0 version to solve a similar problem but, this particular problem still exists.

DISCUSSION ----------

To correct the problem in the 2.1 version of the Addresses stack, follow the procedure outlined below. This procedure does not work in the 2.0 version of this stack.

1) Open the Addresses stack with the UserLevel set to 5.

2) Choose Bkgnd Info from the Objects menu.

3) The name of the background should be Body. Click on the Script button.

4) Choose Find from the Script menu and type the word "lastWord". Click Find.

5) You should be brought to the section of code listed below. The second line here contains an error.

```
if lastWord ≠ empty then
  if offset(lastWord, "/-+") = 0 then
    if value(lastWord) is a number then
      put lastWord into theZip
      delete last word of lastLine
    end if
```

```
        end if
      end if
```

6) "Comment out" the second line by inserting two hyphens (--) in front of it and add a new line directly underneath this line, as follows:

```
      if lastWord ≠ empty then
        --if offset(lastWord, "/-+") = 0 then
        if offset("-", lastWord) = 0 and offset("/", lastWord) = 0 and¬
        offset("+", lastWord) = 0 then
          if value(lastWord) is a number then
            put lastWord into theZip
            delete last word of lastLine
          end if
        end if
      end if
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14552

Tech Info Library

HyperCard 2.1: String Too Long Error (10/92)

Revised: 4/7/94
Security: Everyone

HyperCard 2.1: String Too Long Error (10/92)

==========

Article Created: 28 June 1991
Article Reviewed/Updated: 30 October 1992

TOPIC ----------

The "String Too Long" message may appear in the Apple Event Primer Stack that shipped with HyperCard 2.1. This article tells how to resolve the problem.

DISCUSSION ----------

1) Be sure you're running HyperCard 2.1 at UserLevel 5 and System 7.0 or greater.

2) Open stack Apple Event Primer.

3) When the "String too long" error appears, click the Script button.

4) The insertion point will be in front of the word "answer" of the errMessage handler (shown below).

```
  on errMessage theOffender
    if theOffender is not empty then answer¬
    "This stack uses features available only in HyperCard" && ¬
    "2.1 or greater running with System Software version 7 or" && ¬
    "greater. To take advantage of these features, you will need to" &&¬
    "upgrade your" && theOffender & ". For now, you will only be" &&¬
    "able read about these features." --Δ
    exit to HyperCard
  end if
end errMessage
```

5) Shorten the handler by deleting the characters

```
   & ". For now, you will only be" && "able read about these features." --Δ
```

from the sixth and seventh lines of the handler.

6) Close the script editor and save your changes.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14553

Tech Info Library

HyperCard 2.1: Send Message Error (10/92)

Revised: 4/7/94
Security: Everyone

HyperCard 2.1: "Send Message" Error (10/92)

==========

Article Created: 15 July 1991
Article Reviewed/Updated: 30 October 1992

TOPIC ----------

The "Send Message..." error message may appear in the Apple Event Primer Stack that ships with HyperCard 2.1.

DISCUSSION ----------

To resolve the problem:

1) Be sure you're at userLevel 5, is running HyperCard 2.1, and System 7.0 or later.

2) Open stack Apple Event Primer.

3) Go to card "Conversing" by clicking the "Chat" button on the first card.

4) Edit the script of card button "Send Message..." by clicking the "Send Message..." card button while holding the Option and Command keys down.

5) Locate line 20 (empty lines count, too) of the mouseUp handler (bold down below but not in the stack).

6) Replace "Apple event Primer" in line 20 with "Gossip", so that the line now reads "send "Gossip" && quote & theNews &¬".

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14554

Tech Info Library

HyperCard 2.0v2: Problem with Appointments Stack (7/92)

Revised: 4/7/94
Security: Everyone

HyperCard 2.0v2: Problem with Appointments Stack (7/92)

==========

Article Created: 6 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --

In HyperCard 2.0v2, if you are in the appointments stack and are on January 31, clicking the button "Month" brings you to March 3rd, when most people would expect it to go to February 28th.

DISCUSSION --

The Appointments stack makes the assumption that the number of days in a month will always be 30 or 31. Therefore, if the month of January has 31 days, and the month of February has 28 days, and the current day is January 31, then the length of the next month is less than the number of the current day (28<31). Because of this, HyperCard 2.0 seems to overshoot the last day of the next month by the difference of the two numbers (31-28=3). Therefore, when you click the month button, instead of going from the last day of January to the last day of February, you end up at March 3.

This was corrected in HyperCard version 2.1.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14555

HyperCard 2.0: Problem with Appointments Stack (7/92)

Revised: 4/7/94
Security: Everyone

HyperCard 2.0: Problem with Appointments Stack (7/92)

==========

Article Created: 24 April 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

This article describes a problem with the Appointments stack that was shipped with HyperCard 2.0. It is fixed in HyperCard 2.1.

DISCUSSION ----------

If you try to return to a day that has been previously deleted, and allow the stack to try to create the cards to get to that day, then the stack will go into a loop, and create new cards for as long as you have hard disk space. Moreover, since the cantAbort property is set by the script to true, Command-period does not interrupt it.

Note that some customers received version 2.1 of the application but have the 2.0 version of the stack. Check the stack script to find the version of the stack.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14556

Tech Info Library

Bliss Interactive Technologies

Revised: 11/29/94
Security: Everyone

Bliss Interactive Technologies

==========

Article Created: 27 January 1994

Bliss Interactive Technologies

6034 West Courtyard Drive, Suite 305
Austin TX 78730

512-338-2458

Company Profile:
Software, including HyperCard products.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14558

Tech Info Library

HyperCard: Books on HyperCard and XCMDs (8/93)

Revised: 4/7/94
Security: Everyone

HyperCard: Books on HyperCard and XCMDs (8/93)

==========

Article Created: 7 February 1991
Article Reviewed/Updated: 2 August 1993

TOPIC ----------

This article list some books on HyperCard XCMD development.

DISCUSSION ----------

The following books were published before the release of HyperCard version 2.0v2 :

- XCMDs For HyperCard by Gary Bond. Published by MIS Press.
- HyperCard Developers Guide by Danny Goodman. Published by Bantam Books.

Since XCMD development can also include the use of the Mac Toolbox, you may also want to consult:

- Inside Macintosh Volume I-V. Published by Addison-Wesley
- Macintosh Revealed Volume 1-4 by Stephen Chernicoff. Published by Hayden Books.

- The Complete HyperCard 2.0 Handbook, by Danny Goodman. Published by Bantam Computer Books. 1990.

- HyperTalk 2.2 The Book 2nd Edition, by Dan Winkler, Scot Kamins and Jeanne Devoto. Published by Random House, 1994.

- The Complete Book of HyperTalk 2, by Dan Shafer. Published by Addison Wesley. It highlights only the features of version 2.0, with some reference to earlier versions where necessary.

- “Windoid”, newsletter from AHUG, published by AHUG (Apple HyperCard Users Group).

- “HyperPub”, a new quarterly journal of hypermedia written by Michael Swaine, published by The Prose Lab, 31 Patrick Road, Santa Cruz, CA 95060; (408) 459-8564.

- “Inside HyperCard”, a new monthly journal for HyperCard developers published by The Cobb Group, P.O. Box 36160, Louisville, KY 40232-9719

- The Complete HyperTalk 2.0, by Dan Winkler and Scott Kamins. Published by Bantam Computer Books. 1990.

- Cooking With HyperTalk 2.0, by Dan Winkler and Scott Knaster. Published by Bantam Computer Books. 1990.

- HyperTalk 2.0 New Features, by Ted Jones. Published by BMUG Press, 1442A Walnut Street, #62, Berkeley, CA 97409-1496. 1991.

HyperCard Stack Design Guidelines, by Apple Computer, Inc. Published by Addison-Wesley. 1989.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14559

Tech Info Library

HyperCard 2.1: Cowhide Effect & Power Tools Stack (8/94)

Revised: 8/23/94
Security: Everyone

HyperCard 2.1: Cowhide Effect & Power Tools Stack (8/94)

==========

Article Created: 26 September 1991
Article Reviewed/Updated: 23 August 1994

TOPIC ----------

If version 2.1 of the Power Tools stack is in use, then the Cowhide effect in the Background Art stack does not work.

DISCUSSION ----------

The problem appears to be in the "Lighten" paint effect -- when you call it by script or choose it from the Paint menu (the power key seems to be unaffected...) -- in combination with the "doMenu" handler in the Power Tools stack.

This problem also effects several of the demo scripts in the HyperTalk Reference Stack (those that call doMenu "Revert"). Most of these demos involve painting tools/ paint properties and failure to revert leaves paint on the card.

The following will fail with the Power Tools stack in use: Create a card that's filled with black paint -- and execute the following from a handler

```
choose select tool
doMenu "Select All"        -- or make any non-empty selection
doMenu "Lighten"           -- this works!
doMenu "Lighten"           -- nothing happens
```

Any other affected commands will fail if added to the end of this script. The selection seems to be getting lost after the first command.

Workarounds for other scripters (none is very effective):
• Make sure Power Tools is not in use.
• Re-select an area before calling subsequent commands in the Paint menu.

This article is adapted from the Claris Tech Info database.

23 Aug 1994 - Review for accuracy.

Support Information Services

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Tech Info Library Article Number:14561

Tech Info Library

HyperCard 2.0, 2.1: Create Report with Breaks (11/92)

Revised: 4/12/94
Security: Everyone

HyperCard 2.0, 2.1: Create Report with Breaks (11/92)

==========

Article Created: 19 November 1991
Article Reviewed/Updated: 10 April 1994

TOPIC

HyperCard 2.0 and 2.1 can't print dynamically sized records that do not break across columns or pages when printing reports. HyperCard 1.2.x can.

DISCUSSION

A Workaround

There is a workaround involving a series of scripts (below) that will solve this problem. To use the script, you need to

1) From the File menu, choose "Print Report...".

2) From the Edit menu, choose "New Report".

3) Set the top and bottom margins of the report to one-half inch.

4) Set the space between records to 0 inches.

5) From the Edit menu, choose "Report Items...".

6) From the Items menu, choose "New Item"..

7) Resize this item to the full height of the record by clicking and dragging in its corner.

8) From the Items menu, choose "Item Info...".

9) In the Item box, type "specialReport()"

10) Click OK as many times as you need to to exit and save your changes.

11) Enter the handlers (below) into the stack or background script.

How It Works

These scripts work by making the assumption that the default 12-point line height has been specified for the items in the report -- if this is not true, the script will need to be adjusted accordingly. A doMenu handler is required as well, so if you already have one, you can simply add the lines from the one below that are different from the one you already have to your current doMenu handler.

Finally, the report itself must have half-inch top and bottom margins, and no space between the labels, and must have fields corresponding to those in the Address stack shipped with HyperCard 2.1. Where differences occur, the script will have to be modified.

The Handlers

```
on doMenu item
  global lineCount -- For our special report
  if item = "Print Report..." then put empty into lineCount
  pass doMenu
end doMenu

function writeBLine number
  if number is empty then put 1 into number
  repeat number
    put return & " " after theLine --  option-space here
  end repeat
  return theLine
end writeBLine

function specialReport
  -- Assumptions:
  --   a 12 point line height.
  --   a half-inch top and bottom margin.
  --   an 11-inch high page.
  -- Other handlers needed:
  --   on domenu (to reinitialize lineCount each time it's called)
  --   function writeBLine (to write a line with only an option-space in it
  --     because HyperCard's report generator removes trailing returns.
  --
  global lineCount
  put 12 into lineHeight
  --
  if lineCount > 63 or lineCount is empty then put 0 into lineCount
  --
  if bg fld "Company" is empty
  then
    put bg fld "Name" & return & bg fld "Street" & ¬
    return & bg fld "City" &", "& bg fld "State" && bg fld "Zip" ¬
    & writeBLine(1) into adjustedAddress
```

```
    else
      put bg fld "Name" & return & bg fld "Company" & ¬
      return & bg fld "Street" & return & bg fld "City" & ¬
      ", " & bg fld "State" && bg fld "Zip" & writeBLine(1) into adjustedAddress
    end if
    --
    put (number of lines of adjustedAddress) into labelHeight
    put round((36 / lineHeight) + linecount) into usedLines
    put round(792 / lineHeight) into availableLines
    put availableLines - usedLines into freeLines
    --
    if freeLines < (labelHeight)
    then
      repeat ((labelHeight - freeLines) - 1)
        put writeBLine(1) before adjustedAddress
      end repeat
    end if
    --
    if (number of this cd) = (number of cds of this bg)
    then put empty into lineCount
    else add labelheight to lineCount
    --
    return adjustedAddress
  end specialReport
```

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14562

Tech Info Library

HyperCard: Fax STF & Dial Command Problems (4/93)

Revised: 4/11/94
Security: Everyone

HyperCard: Fax STF & Dial Command Problems (4/93)

==========

Article Created: 3 March 1993
Article Reviewed/Updated: 10 April 1994

TOPIC ----------

I am using Fax STF 2.x software, which holds the serial port open until another application tries to open it, at which point it releases the port. When it see that the port is available again it will take control again. This works fine with several different terminal programs, but when I use the "dial" command and try to fax something at a later point the fax software complains that the port is in use by another application. Does HyperCard close the serial port after it uses it? Is there a way to get it to release the port?

DISCUSSION ----------

Using the dial command causes the Fax STF 2.x software to think that the serial port is in use. The Macintosh must be restarted before the Fax STF software will be able to fax. The problem is caused by a problem in the FaxSTF 2.x software and is fixed in FaxSTF version 3.0, which was released in December 1993.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14565

Tech Info Library

HyperCard: Fixing New Card Problem in Graph Maker Stack (7/92)

Revised: 4/11/94
Security: Everyone

HyperCard: Fixing New Card Problem in Graph Maker Stack (7/92)

==========

Article Created: 27 February 1992
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

If I make a new card in the Graph Maker stack, it becomes non-functional, with a string of "Can't understand" messages and so forth. What could be the cause?

DISCUSSION ----------

The reason is that the background is trapping the openCard message, and a handler is sending a message to the CARD script, which is not there for new cards.

The easy workaround is simply to disable the New Card command for this stack, since there should be no reason to make new cards in this stack.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14566

Tech Info Library

HyperCard 2.0v2 Graph Maker: Fix for Business Chart Error (7/92)

Revised: 4/11/94
Security: Everyone

HyperCard 2.0v2 Graph Maker: Fix for Business Chart Error (7/92)

==========

Article Created: 16 March 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --

In HyperCard 2.0v2, the Fever charting section of the Graph Maker stack contains an oversight. A chart that contains values greater than 1, and contains no value greater than 2, goes careening wildly off the chart.

DISCUSSION --

The fix is simple: in the background script there is a function called getMaxValue. Change it to add 1 to the value returned as the highest value being charted.

```
function getMaxValue dataList
  -- returns the number with the highest value
  sort dataList descending numeric
  return line 1 of dataList + 1
end getMaxValue
```

This has been fixed in HyperCard 2.1

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14567

Tech Info Library

HyperCard Pre 2.0v2: Problem with HP DeskWriter (7/92)

Revised: 5/6/94
Security: Everyone

HyperCard Pre 2.0v2: Problem with HP DeskWriter (7/92)

==========

Article Created: 12 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

This article describes a problem printing from early versions of HyperCard to a DeskWriter printer.

DISCUSSION --------------------

When printing to the Hewlett-Packard DeskWriter, you only get the first page of a short print job and page one and some other arbitrary pages of a long print job. The rest of the pages are blank.

This has been fixed in HyperCard 2.0v2 and later.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14568

Tech Info Library

HyperCard: Importing Addresses Using Import Text... (7/92)

Revised: 5/6/94
Security: Everyone

HyperCard: Importing Addresses Using "Import Text..." (7/92)

==========

Article Created: 11 February 1992
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

The Address Stack's Import script, designed to allow easy import of one address stack into another, fails when the last word of the address stack is text containing a mathematical operator (+,-,/,*).

DISCUSSION ----------

The import option ("Import Text..." under the "Utilities" menu of the Address Stack) was initially designed to handle addresses in the following format:

```
Name
Company
Street
City, State Zip
```

In order to handle international addresses ending in country names, or any other non-standard address ending in text, a line of script was inserted to evaluate whether the last word in the field was text or a number:

```
If Value(lastword) is a number then
```

This function works if the last word of the address field is all text, all number, or a valid mathematical expression, such as a ZIP-plus-four (96453-2345 for example). However, when a non-standard entry such as "USA+CANADA" is the last word in the field, the HyperCard VALUE function fails because it tries to evaluate the expression mathematically.

To fix the problem, run the import script. If HyperCard is set to userlevel 5, a dialog box with the choice of DEBUG, SCRIPT or CANCEL will appear if the script fails. Choose SCRIPT.

To fix the script for operation under HyperCard 2.1 replace the following

line:

```
          if offset(lastWord, "/-+") = 0 then
```

with the line:

```
 if offset("/",lastWord) = 0 and offset("+",lastWord) = 0 and
 offset("*",lastWord) = 0 then
```

This fix should allow the import script to proceed to completion, though it will not place ZIP codes containing the +4 numbers into the ZIP code field.

The following line is intended to evaluate whether the last word of the address field is or is not a number :

```
            if value(lastword) is not a number then
```

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14571

Tech Info Library

HyperCard:Importing Addresses 2.0 to Addresses 2.1 (7/92)

Revised: 5/6/94
Security: Everyone

HyperCard:Importing Addresses 2.0 to Addresses 2.1 (7/92)

==========

Article Created: 26 September 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

The HyperCard 2.1 Address stack can't import data from the 2.0 Address stack.

DISCUSSION --------------------

The reason is that the returns in the 2.0 Notes field are never parsed out and replaced with the "..." (ellipses, made with Option-semicolon keys) that the import script is looking for.

So in the ImportTextFromNewStack handler, in the background of the 2.1 Addresses stack, one line should be added:

```
  put bg fld "Notes" into theNotes -- notes field
  put SubstituteChar(return,"…", theNotes) into theNotes -- this is the new line
  write theName & tab & theCompany & tab & theStreet & tab &...
```

This will solve the problem.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14572

Tech Info Library

HyperCard: Vendors of MIDI Products (7/92)

Revised: 5/6/94
Security: Everyone

HyperCard: Vendors of MIDI Products (7/92)

==========

Article Created: 12 November 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

As MIDI integration with the Macintosh becomes more and more common, the ability to use MIDI with HyperCard becomes more important. He is a list of vendors of HyperCard MIDI products.

DISCUSSION --------------------

Earlevel Engineering

Opcode Systems Inc.

Passport Designs

digidesign

To locate a vendor's address and phone numbers, use the vendor's name as a search string.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14574

Tech Info Library

HyperCard 1.2.5: Error Converting Month Calendar (11/92)

Revised: 5/6/94
Security: Everyone

HyperCard 1.2.5: Error Converting Month Calendar (11/92)

==========

Article Created: 24 September 1992
Article Reviewed/Updated: 25 November 1992

TOPIC ----------

Converting the Month Calendar from the HyperCard 1.2.5 Idea Stack to HyperCard 2.x results in a script error when the Extend button is clicked.

DISCUSSION ----------

The error, "Invalid Date" (or the error "Destination does not contain a number") occurs because the old script creates a long date in which the day name does not match the day number. Such as:

```
Sunday, September  12, 1992
(The correct day name for this date is Saturday)
```

While HyperCard 1.x could correctly convert such a mismatched long date to another date format (it ignores the day name), HyperCard 2.x will see the date as invalid, and exit the script with an error.

To correct the problem:

1) Go to the background script of the calendar stack, and find the function startOfMonth.

2) Find the first line reading "Convert it to long date", and change the words "long date" to "dateItems". (Note: dateitems is one word.)

3) Change the next line

```
  put 1 into word 2 of item 2 of it
```

to

```
  put 1 into item 3 of it
```

Note: The dateItems format shows the date "Saturday, September 12, 1992" as "1992,9,12,0,0,0,7"

(The parameters are "year,month,day,hours,minutes,seconds,day of week")

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14575

Tech Info Library

HyperCard 2.x and More Disk Space INIT (8/92)

Revised: 5/6/94
Security: Everyone

HyperCard 2.x and "More Disk Space" INIT (8/92)

==========

Article Created: 26 May 1992
Article Reviewed/Updated: 26 August 1992

TOPIC ----------

There appears to be a problem with HyperCard 2.x and Altsys Corp's "More Disk Space" INIT. This INIT performs resource compression using Apple's built-in resource compressor.

If HyperCard has at any time been compressed by this utility, it will not allow you to display large cards, regardless of the amount of memory allocated to the application. The cards will always appear smaller with the scroll window displayed.

DISCUSSION ----------

The fix is to re-install HyperCard from the original disks. Decompressing the application does not correct the problem.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14576

HyperCard 2.0: MultiFinder and Hidden Windows (7/92)

Revised: 5/6/94
Security: Everyone

HyperCard 2.0: MultiFinder and Hidden Windows (7/92)

==========

Article Created: 21 February 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

HyperCard 1.2.x was set up to automatically hide the current stack when you switched out of HyperCard to another application (or the Finder) using MultiFinder. HyperCard 2.0 no longer does this. This can be distressing, especially to those with small screens and full-size stacks. The difficulty can be worse if there are multiple stacks open at once (multiple windows). Also, although some windows ARE automatically hidden by HyperCard 2.0, the Variable Watcher and Message Watcher are not (there may be others…)

The following bit of HyperTalk remedies this situation.

DISCUSSION --------------------

When placed in the Home Stack Script (it needs to always be in the inheritance path) somewhere in an "on idle" handler, it will automatically detect the fact that HyperCard is not the current application and hide all the visible windows. When you return to HyperCard, all the windows will reappear.

Be sure to add the container (variable) named resumeStackList to the global list at the beginning of the "on idle" handler.

```
on idle
  global resumeStackList

            .
            .
            .

  if the suspended then
    if resumeStackList is empty then
      put the windows into rSL
      repeat with z=1 to the number of lines in rSL
```

```
        if the visible of window (line z of rSL) then
          put line z of rSL & return after resumeStackList
          hide window (line z of rSL)
        end if
      end repeat
    end if
  else
    if resumeStackList is not empty then
      repeat with z=1 to the number of lines in resumeStackList
        show window (line z of resumeStackList)
      end repeat
      put empty into resumeStackList
    end if
  end if
  pass idle
end idle
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14578

Tech Info Library

HyperCard 2.0, MultiFinder, and Open With (7/92)

Revised: 5/9/94
Security: Everyone

HyperCard 2.0, MultiFinder, and Open With (7/92)

==========

Article Created: 6 March 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

If you try to open a document with an application from within HyperCard 2.0 or 2.0v2 and you are using MultiFinder, it will only work correctly if the application you are trying to use to open the document has not yet been opened (that is, it doesn't appear in the Application menu).

DISCUSSION --------------------

If the application has already been opened, your Macintosh will switch to that application, but it will not open the specified file. For example:

open "Hard Disk:Text:test file" with "MacWrite II 1.1v1"

This will work correctly only if MacWrite is not currently open.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14579

Tech Info Library

HyperCard 2.0v2: Never heard of... Error (7/92)

Revised: 5/6/94
Security: Everyone

HyperCard 2.0v2: "Never heard of..." Error (7/92)

==========

Article Created: 27 March 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Whenever I open HyperCard 2.0v2, I get the message "Never heard of bkgnd field 'Paths.'" I can re-install HyperCard to get rid of this message, but it eventually crops up again with some use.

DISCUSSION ----------

HyperCard 2.0v2 stores the pathnames of your frequently used stacks, documents, and applications in a series of cards in the Home stack. When HyperCard starts up, it looks at these cards first, referencing them by name. Essentially, it says, "Give me the information from the Path field on the Applications card." HyperCard also lets you set up a series of "Custom" Home cards with any name you specify.

Because of this, if you were to use the "Rename this card" command in the Home menu to call another card "Applications," HyperCard would mistakenly look for the Paths field on your "Applications" card. It won't find it there, and that is why you get the error message. Thus, you will get this error if any of the custom cards in your Home stack is named "Documents," "Applications," or "Stacks."

The easiest way to work around this is to click on your custom cards and rename them to something like "My Stacks," "My Applications" or "My Documents."

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14580

Tech Info Library

HyperCard: Opening MacDraw 1.9.x Files (10/92)

Revised: 5/6/94
Security: Everyone

HyperCard: Opening MacDraw 1.9.x Files (10/92)

==========

Article Created: 15 May 1992
Article Reviewed/Updated: 30 October 1992

TOPIC ----------

Using HyperCard to open MacDraw 1.9.x documents in MacDraw Pro 1.0v1 does not work. (This is fixed in MacDraw Pro 1.5.)

DISCUSSION ----------

This command should launch MacDraw Pro and open a MacDraw 1.9.x file named MDdoc:

  Open MDdoc with MacDraw Pro

Instead, it opens a blank, untitled document.

This command works correctly for all other openable file types. For example:

  Open MW2doc with MacDrawPro

opens a file named MW2doc into MacDraw Pro, even if this file is an EPSF, TIFF, PICT, MacWrite II or any other openable file.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14582

Tech Info Library

HyperCard 2.0v2: PostScript Files from HyperCard (7/92)

Revised: 5/6/94
Security: Everyone

HyperCard 2.0v2: PostScript Files from HyperCard (7/92)

==========

Article Created: 4 March 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Bliss Interactive Technologies has been able to successfully create PostScript files from HyperCard 2.0v2 under System 6.0.7 in MultiFinder and System 7.0. The procedures are outlined below.

DISCUSSION ----------

HyperCard 2.0v2 and System 6.0.7 with and without MultiFinder
---

1) Choose a PostScript LaserWriter from the Chooser.

2) Select Page Setup... from the File menu and click OK.

3) To generate a PostScript file without the LaserPrep header, choose Print Field..., Print Stack..., or Print Report... from the File menu.

4) If you choose Print Field..., immediately after you click OK in the next dialog, type and hold down Command-F until the Creating PostScript message appears. To create a file with the LaserPrep header type Command-K instead of -F.

5) When choosing Print Stack... or Print Report..., another dialog will appear with a Print... button. Immediately after clicking Print..., type Command-F to create a PostScript file without the LaserPrep header. Type Command-K instead of -F to capture the LaserPrep header.

6) For Print Card..., immediately after selecting this menu item, type Command-F to create a PostScript file without the LaserPrep header. Type Command-K instead of -F to capture the LaserPrep header.

NOTE: The files generated are saved as text files and titled PostScript0, PostScript1 to 9 -- similar to how screen dumps are named.

HyperCard 2.0v2 and System 7.0

---

1) Choose a PostScript LaserWriter from the Chooser.

2) Turn Background printing OFF.

3) Select Page Setup... from the File menu and click OK.

4) Choose Print Field..., Print Stack..., or Print Report... from the File menu. After clicking OK in the Field dialog, or Print... in the Stack and Report dialog, the typical Print dialog will appear. At the bottom of this dialog, you'll see two radio buttons for the destination. Toggle on PostScript and the Print button is renamed Save. Click on Save and the save dial appears, allowing you to name the file and its location. The PostScript file created contains the LaserPrep header.

5) If you want to capture a single card, you cannot create a PostScript file using the Print Card menu item. Instead, mark the card and choose Print Stack... In the next dialog click on Marked cards and proceed as above.

NOTE: The files generated are saved as text files.

This article is adapted from the Claris Tech Info database.

Support Information Services

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Tech Info Library Article Number:14584

Tech Info Library

HyperCard 2.0v2: Print Stack Does Not Print Tall Adjusted (7/92)

Revised: 5/6/94
Security: Everyone

HyperCard 2.0v2: Print Stack Does Not Print Tall Adjusted (7/92)

==========

Article Created: 22 October 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

HyperCard 2.0v2 had a problem printing cards and stacks because the Tall Adjusted checkbox was disabled causing card images to print too narrow.

In version 2.1, the Tall Adjusted checkbox has been enabled, but it only affects Print Card, not Print Stack.

DISCUSSION ----------

Solutions:
- Print stacks in landscape mode.
- Create a button with a script to repeat for the number of cards, doMenu "print card", and go next card.

This article is adapted from the Claris Tech Info database.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14586

Tech Info Library

HyperCard: Problem with Readymade Buttons Stack (7/92)

Revised: 6/22/94
Security: Everyone

HyperCard: Problem with Readymade Buttons Stack (7/92)

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Article Created: 6 February 1991
Article Reviewed/Updated: 22 Jun 1994

TOPIC --

In the Readymade Buttons stack is a card called "Create Card Pictures". A field on the button explains that the buttons will disappear momentarily while the card is being copied. However, if you are at userlevel 1 or 2 and click the button, an error message says that it doesn't recognize Copy Card. After clicking "OK" the buttons are gone.

DISCUSSION --

As an immediate fix, type in show card button 1 or 2 (depending which one disappeared). As a permanent fix, the script needs to be changed. The following is a proposal.

```
on mouseUp
  if the userlevel >= 3 then
    hide me
    doMenu "Copy Card"
    show me
  else
    exit mouseup
  end if
  answer "Go to the card where you wish to paste the miniature card"¬
  && "image and press Command-Shift-V." with "OK"
end mouseUp
```

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14587

Tech Info Library

HyperCard 2.x: If Reference Stack Can't Understand (4/95)

Revised: 4/21/95
Security: Everyone

HyperCard 2.x: If Reference Stack Can't Understand (4/95)

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Article Created: 14 July 1992
Article Reviewed/Updated: 21 April 1995

TOPIC ----------

When you try to use the Reference Stack in HyperCard 2.x, nearly every mouse click may result in error messages containing "Can't understand..." . The problem is that the HyperCard Help Stack, which contains many handlers in its stack script required by the Reference stack, has not been placed "in use".

DISCUSSION ----------

The cause of the problem is a subtle scripting oversight in the HyperCard Reference stack's Openstack handler. When the Reference stack first opens it looks to see if the HyperCard Help Stack is already "in use". It does this by looking for the existence of the string "HyperCard Help" in the stacksInUse.

Unfortunately, if the Audio Help stack is placed "in use" first, and it happens to reside in a folder labeled "HyperCard Help", its full path name, including the folder name "HyperCard Help", shows up in the stacksInUse. The Reference stack sees "HyperCard Help" in the stacksInUse, and assumes that the HyperCard Help stack is already "in use".

To avoid the problem:
- Change the name of the HyperCard Help folder (for example, "HC Help")
  or
- Move the Audio Help Stack out of the HyperCard Help folder

This article is adapted from the Claris Tech Info database.

Article Change History:
21 Apr 1995 - Modified Title Abbreviation Field.

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Tech Info Library Article Number:14588

Tech Info Library

HyperCard 2.1: Don't Specify Root File Name as :: (8/92)

Revised: 5/6/94
Security: Everyone

HyperCard 2.1: Don't Specify Root File Name as :: (8/92)

==========

Article Created: 22 June 1992
Article Reviewed/Updated: 26 August 1992

TOPIC ----------

In HyperCard 2.0, I use double colons (::) to specify the root directory without knowing the name of the hard disk (so the script is not hardcoded with the name of my disk). But now, when I run HyperCard 2.1, every time I open a file inside a subdirectory using a command such as:

```
open file ":: tmp dir:tst.txt"
```

It closes the file immediately after opening it. So when I try to write to it with the command:

```
write "test" to file ":: tmp dir:tst.txt"
```

HyperCard complains that the file is not open. The same script runs fine on a Macintosh Plus with HyperCard 2.0.

DISCUSSION ----------

A bug in HyperCard 2.1 keeps the subdirectory specification "::" from working as it did in HyperCard 2.0. This will be fixed in a future release of HyperCard.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14589

HyperCard 2.0: Sliding Objects in HyperCard Reports (7/92)

Revised: 5/6/94
Security: Everyone

HyperCard 2.0: Sliding Objects in HyperCard Reports (7/92)

==========

Article Created: 7 March 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

While HyperCard 2.0 doesn't have any native ability to slide report items up or left if one is blank while printing reports, it is possible to get that accomplished.

DISCUSSION ----------

The trick is to use a single report item, instead of one for each field. Then, by double-clicking on the report item, you can set the contents of the item to a call to a function. The function can be in your stack or background scripts, and can process the information on the card.

For example:

Assume the following fields: Name, Company, Address1, Address2, City, State, and Zip. Now assume that Company and Address2 will sometimes be empty, and that they should slide.

For the contents of your one report item in your label template, simply enter the name of a function: makeLabel()

Now, in your stack script write something like the following handler:

```
function makeLabel
  put bg field "Name" into theLabel
  if bg field "Company" is not empty
  then put return & bg field "Company" after theLabel
  put return & bg field "Address1" after theLabel
  if bg field "Address2" is not empty
  then put return & bg field "Address2" after theLabel
  put return & bg field "City" & ", "& bg field "State" & " " & bg field "Zip"
after theLabel
```

```
  return theLabel
end makeLabel
```

For each card that's printed in the report, the single report item will be evaluated according to the function above, and will print the formatted label.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14591

Tech Info Library

HyperCard 1.x: Converting Stack Ideas to 2.x (7/92)

Revised: 5/9/94
Security: Everyone

HyperCard 1.x: Converting Stack Ideas to 2.x (7/92)

==========

Article Created: 30 March 1992
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

Version 1.x of HyperCard included a stack named "Stack Ideas" that contained several templates to be used in creating new stacks. Two of these templates, "Monthly Cal" and "Weekly Cal 3", had problems after being converted to 2.x.

DISCUSSION ----------

- With the "Weekly Cal 3" stack the date fields were not large enough to hold the full date. Therefore, the 14th of March would show as 1. This is caused by changes in the HyperCard text engine, where non-proportionally spaced fonts need a bit more room to be displayed. Enlarging the individual fields solves the problem.

- The problems with "Monthly Cal" are a bit more complex. Problems occurred as a result of some scripting errors encountered when using the "Extend" button.

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Tech Info Library Article Number:14592

Tech Info Library

HyperCard: Starting QuickTime Tools Stack (7/92)

Revised: 5/9/94
Security: Everyone

HyperCard: Starting QuickTime Tools Stack (7/92)

==========

Article Created: 30 March 1992
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

The HyperCard Development Kit and HyperCard Upgrade each have an additional button installed on the Home Stack to access the QuickTime Tools Stack. However, you may find that clicking this button doesn't take you to the QuickTime Tools stack.

DISCUSSION --------------------

This happens when the compressed QuickTime Tools Stack that ships with HyperCard has not been decompressed. If you do not decompress the stack before trying to access it, the Home Stack doesn't recognize the file as a HyperCard stack.

To correct this problem, simply double click on the compressed file to decompress it. Then return to the Home Stack where the QuickTime Tools button should now be working.

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Tech Info Library Article Number:14593

Tech Info Library

HyperCard 2.0 and Stop Sign Icon (7/92)

Revised: 5/9/94
Security: Everyone

HyperCard 2.0 and "Stop Sign" Icon (7/92)

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Article Created: 25 September 1990
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

When assigning an icon to a button in HyperCard 2.0, a window will appear showing all icons available for use in your current stack. Near the lower left hand corner of this scrollable window is an icon called "Stop" which looks identical to the "Stop" icon on the Find File dialog box. Normally, in HyperCard, assigning a icon to a button is just a matter of double-clicking on it. However, when you click on the "Stop" icon, nothing happens.

DISCUSSION ----------

This is because Apple decided to use some of the same icons found in the System and Finder files, and include them in HyperCard. This helps developers make screen prototype mock-ups quickly. Rather than "re-invent the wheel," Apple simply moved copies of these System/Finder icons into HyperCard via a resource mover. Hence, the System/Finder ID numbers for these icons also got transferred as well into HyperCard.

Icon numbers 0-128 are reserved by the Macintosh operating system for System Use only. Therefore, when HyperCard goes to read the "Stop" icon, and it sees an ID # of 0 (zero), it doesn't know what to do with it. Thus the icon, although selected, never appears.

The workaround is to (from within the icon window) assign an icon number to the stop icon which is greater than 128. This will enable HyperCard to "see" the icon, and display it properly when you assign it to a button. Be sure that this new number is different than all other icons in this stack, otherwise another icon will be overwritten.

This article is adapted from the Claris Tech Info database.

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..TIL14594-HyperCard_2-0_and_Stop_Sign_Icon_7-92_(TA31121).pdf

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Tech Info Library Article Number:14594

Tech Info Library

HyperCard 2.x and StyleWriter: Print Card Problem & Fix (10/92)

Revised: 5/9/94
Security: Everyone

HyperCard 2.x and StyleWriter: Print Card Problem & Fix (10/92)

==========

Article Created: 15 November 1991
Article Reviewed/Updated: 19 October 1992

TOPIC ----------

Vertical lines do not align perfectly when printing to a StyleWriter from HyperCard 2.x using the "Print Card" option. This problems does not happen with horizontal lines or when using the "Print Stack" option.

DISCUSSION ----------

Yes, StyleWriter output has vertical-line registration problems when using the "Print Card" option in HyperCard 2.x. The registration problem is caused by the HyperCard printing code, not by the StyleWriter.

The registration problem can be avoided by using the "Mark Card" option:

1) Go to the card you want to print.

2) Display the "message box".

3) Type "Mark Card" into the message box and press either the Return or Enter key. Note that more than one card can be marked at a time.

4) Select "Print Stack" from the "File" menu.

5) Select the "Marked Cards" option.

6) Click the "Print" button.

7) Type "unMark Card" in the message box and press either the Return or Enter key. This unmarks the card so it doesn't printed the next time this procedure is used.

This article is adapted from the Claris Tech Info database.

..TIL14595-HyperCard_2-x_and_StyleWriter-Print_Card_Problem_and_Fix_10-92_(TA31122).pdf

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Tech Info Library Article Number:14595

Tech Info Library

HyperCard 2.1: Phone Dialer and Teleport Modem (7/92)

Revised: 5/9/94
Security: Everyone

HyperCard 2.1: Phone Dialer and Teleport Modem (7/92)

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Article Created: 18 September 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

HyperCard 2.1 and the Teleport modem from Global Village do not always work together properly.

DISCUSSION ----------

When dialing the phone with HyperCard through the Teleport, the Teleport will not hang up, which draws voltage from the phone, resulting in a more distant, less clear connection. But when the mouse moves, or a key is hit (a signal sent down the ADB), then the Teleport hangs up.

The workaround is to use the dialingTime property that is new to HyperCard 2.1, and set that property to around 10 seconds. There are several ways to do that:

- If you are using the Phone Dialer stack that comes with HyperCard 2.1 to do your dialing, then simply go to the Dial Delay card, select where it says "5 seconds", and move the selector on the slider bar that will then appear.

- If you are dialing directly from your stack, then a simple script like the following will work:

```
set the dialingtime to 600
-- (these are ticks, and there are 60 ticks per second, so 600/60=10)
dial dialNumber with modem
```

The reason for this problem is a little complicated. The Teleport is a special kind of modem, that uses the ADB (keyboard and mouse connections) both to draw power and to communicate with the serial port. When communications messages are sent to the serial port, the Teleport driver intercepts them, sends them over the ADB to the Teleport, where the

Teleport software can process them. HyperCard closes down the serial connection so fast (normally 3 seconds after the Dial command has been given), that the Teleport software never gets a chance to do all it needs to, such as hanging up.

But the dialingTime property sets a specified amount of time that HyperCard 2.1 will hold the serial connection open, allowing the Teleport software a chance to complete its routines.

HyperCard 2.0v2 users will not have the same problem, since this version of HyperCard was hard-coded to hold the serial connection for a long period of time - around 10 seconds. This works for the Teleport, but introduces other problems.

HyperCard 2.0v1 will probably have the same problem as HyperCard 2.1, with the unfortunate difference that HyperCard 2.0v1 has no dialingTime property, and, therefore, may not have any way to work around the problem.

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Tech Info Library Article Number:14596

Tech Info Library

HyperCard 2.0: Unitialized Variables (7/92)

Revised: 5/9/94
Security: Everyone

HyperCard 2.0: Unitialized Variables (7/92)

==========

Article Created: 30 July 1991
Article Reviewed/Updated: 23 July 1992

TOPIC --------------------

There is some inconsistency in how HyperCard 2.0 treats unitialized variables and the constant "empty".

DISCUSSION --------------------

For example, typing

```
the number of items of myVariable
```

into the message box returns "1" when myVariable has not been initialized.

However, initializing myVariable with

```
put empty into myVariable
```

and then typing

```
the number of items of myVariable
```

returns "0".

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Tech Info Library Article Number:14597

Tech Info Library

HyperCard 2.0v2: Problem With WindChooser 1.12 INIT (7/92)

Revised: 5/9/94
Security: Everyone

HyperCard 2.0v2: Problem With WindChooser 1.12 INIT (7/92)

==========

Article Created: 15 January 1991
Article Reviewed/Updated: 23 July 1992

TOPIC ----------

An INIT called WindChooser 1.12 (created 7/27/89) causes problems with HyperCard 2.0v2.

DISCUSSION ----------

Actually there are a series of WDEF-style INITs which cause a false (and invisible) window to get layered in front of HyperCard's window. Others of this type are Erics' WDEF, and Dave's WDEF (a color modification of Erics' WDEF).

The symptoms are a failure to redraw the screen after displaying dialogs, and an inability to operate with the mouse anywhere in a HyperCard window, including clicking.

Note: The WDEF referred to above is NOT related to the common virus of that name. The letters refer to a very common Macintosh resource for Window DEFinition.

This article is adapted from the Claris Tech Info database.

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Tech Info Library Article Number:14599

Tech Info Library

MacTCP: When It Initializes (2/95)

Revised: 2/10/95
Security: Everyone

MacTCP: When It Initializes (2/95)

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Article Created: 28 January 1994
Article Reviewed/Updated: 10 February 1995

TOPIC ----------

My office has a network of several Macintosh computers which run TCP/IP.

I am unable to consistently use Ping to find out the IP address of a particular Macintosh. If I start up one Macintosh without loading any software, then "ping" it from a second Macintosh, I will not get a response from the first Macintosh.

If I start up a Macintosh and run a TCP/IP application, like Gopher or NewsWatcher, then "ping" it from a second Macintosh, I will get a response from the first Macintosh and can obtain the IP address.

Why does this happen?

DISCUSSION ----------

Traditionally, Apple's MacTCP driver was not initialized at startup. Instead, it loaded into memory and waited for the first MacTCP application to be launched before initializing. If you "ping" a Macintosh before it loads the MacTCP driver, you would not get a response.

MacTCP was designed so a user could change its parameters before launching a MacTCP application and not be required to reboot the Macintosh to use the new parameters.

With System 7.5, MacTCP does not initialize at startup as described above. Confusion might arise if the TCP/IP Connection for Macintosh product is installed which include SNMP agents. With SNMP present, the MacTCP driver is initialized at startup, and you can "ping" this Macintosh without other MacTCP applications being started.

Article Change History:
10 Feb 1995 - Added SNMP information and corrected System 7.5 information.

20 Dec 1994 - Noted that TCP is active at system start under System 7.5.

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Tech Info Library Article Number:14601

Tech Info Library

System 7: Can I Save to the Move&Rename Folder? (2/94)

Revised: 2/4/94
Security: Everyone

System 7: Can I Save to the "Move&Rename" Folder? (2/94)

==========

Article Created: 4 February 1994

TOPIC ----------

When using Personal File Sharing or AppleShare under System 7, I occasionally save files in the "Move&Rename" folder. Often, I cannot find these files when I go back to look for them.

1) What is the purpose of the "Move&Rename" folder?

2) When are the contents of this folder deleted?

3) When should I use the "Move&Rename" folder?

DISCUSSION ----------

1) The "Move&Rename" folder (which is marked invisible) is created by Personal File Sharing and AppleShare as a temporary holding point for files during the execution of AppleShare File Protocol (AFP) "Move and Rename" calls. The "Move and Rename" call, as the name suggests, is used to move a file between folders and give it a different name in the destination folder. HFS only supports separate Move (with the same name) and Rename (in the same folder) calls.

   Since the file can't be renamed and then moved (there might be a name conflict with the new name in the source folder) and can't be moved and then renamed (there might be a conflict with the old name in the destination folder), the only way to correctly execute the call on an HFS volume is to do the following:

   1) Move the file to the "<box><box><box>Move&Rename" folder.
   2) Rename the file there to the new name.
   3) Move the file to the destination directory.

   By the way, the <box><box><box> are the ASCII characters 0x01, 0x02, and 0x03, which generally don't have legitimate character representations in

most fonts. We wanted to make sure this folder wouldn't be confused with user folders, so we gave it a name that would be hard to type.

2) The "Move&Rename" folder should always be empty, except in mid-operation, and is emptied at system startup (it also is deleted at system shutdown).

3) The "Move&Rename" folder should NOT be used by anyone or anything but AppleShare and Personal File Sharing. Also, Macintosh applications are not supposed to show invisible folders in SFGetfile or SFPutFile.

Note: There is no way to prevent software from being able to see the "Move&Rename" folder or put files in it. AppleShare and Personal File Sharing absolutely require the "Move&Rename" folder.

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Tech Info Library Article Number:14602

Tech Info Library

PowerPC Business Issues: Competitive Analysis (3/95)

Revised: 3/17/95
Security: Everyone

PowerPC Business Issues: Competitive Analysis (3/95)

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Article Created: 27 January 1994
Article Reviewed/Updated: 17 March 1995

TOPIC ----------

This article takes a look at a number of practical business reasons why PowerPC will be the better choice of a microprocessor than Pentium. The business issues boil down to the fact that as an older architecture, Pentium is more expensive to build, will continue to be more difficult to improve, and suffers from the same shortcomings as any sole-source part. PowerPC is less expensive to produce, easier to advance, and has the advantage of being designed and manufactured by multiple sources.

DISCUSSION ----------

To best understand where the two microprocessor families stand in today's market it is necessary to take a look at the primary design criteria of both. PowerPC is a new architecture which was designed specifically to meet the computing needs of this decade and beyond. Those needs are very high performance at low cost. Intel acknowledges that Pentium was designed with backward compatibility with the installed base of DOS applications as its number one design criteria.

PowerPC's roots lie in the powerful IBM POWER (Performance Optimization With Enhanced RISC) architecture introduced in 1990. The POWER architecture is a very high performance RISC architecture designed initially for use in high end workstations and servers. PowerPC is a cost reduced adaptation of this architecture by the joint design teams of Apple, IBM and Motorola. PowerPC starting with its first its generation has always been intended for use in high performance computers, be they desktop, server, or portable.

While PowerPC's roots are in high performance computing, the x86 architecture's roots lie in the simple 4004 calculator chip which Intel built in the early 1970s. The 4004 led to the 8008 and then 8080 the immediate predecessor to the 8086. The x86 architecture was essentially defined by its namesake 8086, the grandfather of all succeeding x86 generations including Pentium. Intel had not intended to make the 8086 the basis for a long succession of chips so it

probably didn't put as much effort into designing these early-generation parts as it would have had it intended the x86 to be the foundation for many generations to come. In fact, according to John Wharton, author of many articles about Intel's x86 processors and a former Intel employee, the first generation of the 8086 was designed by three engineers in a hotel room over the course of a couple of weeks. Intel was putting its serious microprocessor design efforts into its ill fated APX432 processor.

Because the IBM Power architecture was designed with very high clock speeds and modern implementation techniques like superscalar execution and deep pipelining in mind, it was optimized for the ability to run at highspeeds and to take advantage of these implementation techniques through the use of such RISC architectural features as fixed size instructions, large register sets, and minimal number of memory addressing modes. Because the x86 was defined long before today's advanced implementation techniques were available to microprocessors (and at a time when 5 MHz was considered fast) it was designed as a complex CISC architecture which must be squeezed into these modern implementations.

Intel's effort to bring an older architecture closer to modern performance standards has resulted in a processor with a large and expensive die size, thermal output levels which has brought a new meaning to the term "a hot PC," and ultimately delivered considerably less than industry-leading performance.

Lets look at each of these factors from a business perspective:

Die size

CISC architecture microprocessors, like Pentium, typically have a higher transistor count than comparable RISC processors. And larger number of transistors will generally translate to a larger die size and higher thermal output. There has already been a considerable amount written in the press about the larger die size of Pentium relative to PowerPC but most computer buyers probably remain unaware of why the relative die size or transistor count is important to them. These characteristics directly affect the cost to produce a microprocessor. And if a manufacturer must pay more to produce a part it is likely that ultimately they will have to charge more for the part. Additionally, over the long term it will be increasingly difficult for the more expensive processor architecture to maintain its place in the market. (A more complete comparison of the transistor count and die size of Pentium and PowerPC are covered later in this paper.)

The higher thermal output of Pentium compared to PowerPC will lead to higher system costs because of the need for complex heat sinks or larger and bigger cooling fans. But the additional cost of these fans and heat sinks is not very great. The big financial impact will be on those individuals and organizations that had intended to upgrade their current 486 based systems to a Pentium based system but are unable to do so because of the significantly increased cooling requirements of Pentium processors were not considered by the manufacturers of their supposedly "Pentium upgradeable" 486 based system. (See the Appendix "Pentium Upgrade Hoax" for more details).

Development issues

Developing succeeding generations of an older architecture is likely to cost considerably more and take far longer than developing new generations of more modern microprocessors. The reasons for this again lie in the fact that much effort (both time and money) must be devoted to sections of the processor that exist primarily to maintain complete compatibility with previous generations of the processor, generations for example that were designed when the fastest anticipated clock speed was 12 MHz rather than the 120 or 200 MHz expected by the mid 1990s.

In the past, when Intel didn't face as much competition in the microprocessor business, long expensive design cycles for successive generations of processors wasn't a significant issue. But now as the microprocessor market advances rapidly, long and expensive design cycles could put the Pentium and its successors at a significant competitive disadvantage since it should take Intel longer and cost it considerably more money to design future generations of its x86 processors than it will for the PowerPC alliance members to develop succeeding processor generations. In fact, while the next generations of the PowerPC processor will ship in 1994, experts are not expecting to see the next generation of processor from Intel until 1995. Motorola and IBM have already shown samples of the next versions of PowerPC, the 603.

Problems due to sole sourcing

When a key component, like Pentium, is available from only one supplier the supplier may make decisions not in the best interest of its customers. Traditionally, electronics manufactures have been unable to sell their parts if they were the only source for those parts. The reason for this is that having a single company as the only supplier of such a key component as a microprocessor leads to a number of conditions which are less than favorable for that part's customers and the end users who are the consumers of the products.

One of the key business reasons for the ultimate success of PowerPC will be the fact that it is being manufactured and sold by multiple suppliers. In fact one of the most important reasons for the formation of the PowerPC alliance was to ensure that PowerPC would be available from more than one supplier, and that the suppliers would have to compete with each other on pricing and other single supplier issues. This section looks at some of the numerous reasons why a sole source for a microprocessor, like Pentium, is a less than ideal situation for computer manufacturers and more importantly the customers of the computer manufacturers, the party that must ultimately pay for a single sourced part.

Pricing

It doesn't take a professor of economics to figure out that if only one company is supplying a critical component that company will charge an exceptionally high price for that part. Intel has made no secret of the fact that it has fought to maintain its sole source position in x86 parts because as a sole source supplier it can charge much more for its chips than it could if there were alternate suppliers. So long as a microprocessor is available from only a single supplier (especially a supplier that spends many millions of dollars in court fighting to remain a sole source for the part) that part will be priced much higher than one that has to be priced according to market forces.

For example, fear of cutting into its very profitable 486 business is cited as one of the reasons for the high price of Pentium. Although Pentium is very expensive to manufacture, at a selling price of over $800 it should still be profitable for Intel. But, apparently because Pentium yields are low, producing more Pentium parts would require Intel to give up too much of its very profitable 486 capacity so it is slow to bring Pentium to market in the numbers its customers require.

Those who are depending on Intel for the latest generation of microprocessor lose out. They must either pay the very high chip price, or make do with older generation parts. If an alternate Pentium supplier existed Intel could not keep Pentium prices high in order to protect its 486 profits. Both experience and common sense dictate that when multiple suppliers offer similar parts, as is the case with PowerPC, lower prices are inevitable.

Availability

Shortages of the latest generation parts can easily occur in the case of a sole supplier since any glitch in that single manufacturer's process could cause a halt in production or lead to production of parts with an unacceptable bug in the part. All production of the part would have to be slowed or stopped till the sole manufacturer solved all of the problems. Intel's problems supplying bug free versions of both the 386 and 486 in the volumes and time period originally announced have been well documented.

Although it easy to see why having a single supplier for the latest generation of a processor could lead to a short supply, a sole source situation often leads to availability problems with older and less expensive parts as well. Even parts that have already gone through the learning curve problems of new chips can be subject to these shortages When a chip maker can charge much more for its latest chip than it can for older chips but it has limited production capacity for all chips, it will devote its production to building the most profitable chips. And because semiconductor manufacturing capacity is so costly and takes so long to build, a sole source manufacturer often becomes capacity limited causing it to put its customers on allocation.

Many observers believed that the acute shortage of 386 parts in 1989 and the shortage of 486SX parts in 1992 and early 1993 was due to Intel's devoting most of its fabs to building the more profitable 486DX parts. Customers that had become dependent on Intel for their processors were forced to pay more for the available higher priced parts or simply wait until the less expensive parts became available.

Multiple sources for the same chip doesn't absolutely guarantee better availability of all generations of parts regardless of their price range, but industry experience has generally shown that it does.

Design advances

A sole source supplier whose customers have become dependent on it for a key component has less incentive to rapidly advance its products or create different versions of the products. Designing advances to a processor or creating new

versions is an expensive process. It requires a large investment in time and money, and without competitive market forces a company has little incentive to make such investments until absolutely necessary.

Intel provided an excellent example of this behavior with its 486 microprocessor. Prior to the entry of AMD and Cyrix into the x86 market with 386 compatible parts (parts which Intel continues to contest in court and parts which may ultimately be determined to be illegal) Intel felt little pressure to offer different varieties of its processors. Once it felt competition from these companies though it started to design different versions of the 486. Some of these versions provided significant benefits to computer buying customers, yet it seems likely that many of these versions would never have been produced by Intel had its 486 monopoly not been breached by AMD and Cyrix.

Not only does direct competition between manufacturers spur advances but the combined resources of multiple companies makes advances possible that could be too costly or too risky for a single company to undertake. IBM, Apple and Motorola, have a combined R&D budget of over $8 billion while Intel's total R&D spending is about one tenth as much at about $800 million. The combined financial, engineering, design and manufacturing resources of the PowerPC alliance companies far exceeds Intel's resources.

Process limitations

A single manufacture is limited to using only those production processes for which it has experience or is able to obtain licenses. If a particular processor architecture can only be produced by a certain process or if a certain process is necessary for the production of certain speeds of a processor a sole source producer (and its dependent customers) would be at a significant disadvantage. The first generation of PowerPC, the PowerPC 601, is available from both Motorola and IBM even though it is being produced using IBM's advanced .6 micron technology.

Because Intel does not yet have sufficient .6 micron production capacity and it has not licensed any second sources, the Pentium processor is currently being produced with Intel's less-advanced .8 micron technology. But Intel, and its customers, would be better off if Pentium was currently being produced with the more advanced .6 micron technology. By the time Intel is able to produce significant volumes of Pentium with .6 micron technology IBM and Motorola should already be producing the next generation of PowerPC in .5 micron technology.

The combined technology and production resources of two of the best semiconductor manufacturers in the world should insure that PowerPC customers will always have the best process technology available.

For further competitive analysis on PowerPC versus Pentium, please refer to the following Tech Info Library articles:
1) PowerPC Technical Issues: Competitive Analysis
2) RISC and CISC, Why the Difference: Competitive Analysis

Our thanks to Stephen Dougherty of Apple Competitive Analysis for his permission to add this article to the Tech Info Library.

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17 Mar 1995 - Corrected PowerPC wording.
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Support Information Services

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PowerPC Technical Issues: Competitive Analysis (3/95)

Revised: 3/17/95
Security: Everyone

PowerPC Technical Issues: Competitive Analysis (3/95)

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Article Created: 27 January 1994
Article Reviewed/Updated: 11 March 1994

TOPIC ----------

The article "PowerPC Business Issues: Competitive Analysis" covered some of the business reasons why Pentium and its follow-on processors will be at an increasingly great disadvantage relative to PowerPC. This article looks at some of the many technical reasons why an aging CISC architecture such as the x86 architecture of Pentium is at a significant technical disadvantage to a modern RISC architecture like PowerPC.

DISCUSSION ----------

But without looking at a single technical advantage the reader can note that the largest computer manufacturers in the world, in all categories of computing, supercomputers, mainframes, minis, workstations and now personal computers have all made a commitment to RISC architecture, despite the fact that they have all risen to their current positions by selling CISC based computers. It should be obvious that if these companies, with their vast technical expertise and huge stake in CISC technology have concluded that CISC is a dead end and that RISC computing is the future, there must be some very sound technical reasons. Surely the leaders of all the various categories of computing, companies like of Cray, IBM, DEC, HP, Apple, Sun, and others would not invest their futures in RISC technology if CISC technologies couldn't be pushed to keep up. But all of these companies and many more have come to the inevitable conclusion that, in the final analysis, the most important criteria for a viable computing architecture is performance and price/performance. And when it comes to performance and price/performance the CISC architectures of the 70s, no matter what techniques are used to push them into the 90s, simply will not be able to keep up with a modern RISC architectures such as PowerPC.

Not only have the top computer companies chosen RISC but the world's largest semiconductor companies, companies that have also have risen to dominance in a CISC world, have seen the advantages of RISC and with a single exception have all made major commitments to RISC. The one major exception is of course Intel,

the maker of Pentium, and the company with the most to lose as the CISC era comes to a close.

Because it is now widely accepted within the computer design community and beyond that RISC microprocessor architectures are superior to CISC architectures Intel has started calling its CISC architecture, "RISC-like." But this is simply a marketing department's attempt to gloss over a major architectural weakness. A CISC architecture can not be a RISC architecture anymore than Byzantine Architecture can become Modern Architecture.

The difference between an architecture and an implementation A microprocessor architecture, like a building's architecture, embodies the underlying design philosophy and potential capabilities of that microprocessor. The architecture includes such design decisions as the number of and size of the instruction registers, the manner in which instructions are moved to and from memory, whether or not floating point numbers are a standard data type, etc. A microprocessor implementation on the other hand is similar to the materials that are used to build a building. The microprocessor's architecture is the ultimate determinant of what the microprocessor is capable of and how it will do it. Once an architecture has been defined there is no going back. Byzantine architecture is Byzantine architecture regardless of whether it is implemented in stone or concrete.

Intel proponents try to convince the market that the 486 and Pentium are, "RISCy" or "RISC-like" by pointing to certain features in the current implementations that are also used in RISC processor implementations. Intel's hope is to confuse the unwary by pointing to implementation techniques such as pipelining and superscalar execution, while ignoring the actual architecture. But it is the architecture that defines whether a processor is CISC or RISC and the architecture is fixed very early in the life of a processor family. The initial foundation of the Intel x86 architecture was set in place by the 8080 in 1972. And the blueprint of the x86 architecture was drawn up for the 8086 in 1978. The architecture has expanded since then but in order to maintain complete backward compatibility with all previous x86 software the basic x86 architecture must remain unchanged. The best that Intel can hope for is to implement some of the techniques in their newer processors that are used in more modern RISC processors. The number of techniques that they are able to borrow and the extent to which the x86 architecture can benefit from these techniques is limited by the design decisions made way back in the early 1970s.

Don't be misled. A microprocessor's architecture can not be changed by its marketing department; just because Pentium uses some of the same implementation techniques used by RISC architecture processors, it is not RISC. Only those processors that have been initially designed as a RISC architecture are RISC. And it is only those processors which can fully derive the price, performance, and other benefits of a modern RISC architecture.

Why should a user care whether a microprocessor is RISC or CISC?

The only reason why a user should care about whether or not a processor is RISC or CISC is if they want to be able to choose the architecture with the best performance, best price/performance and the ability to rapidly advance to even higher levels of performance and price/performance over time. Comparing PowerPC

to Pentium is a good example of how a modern RISC architecture compares to an older CISC architecture on these criteria. PowerPC delivers a higher level of performance than Pentium and is able to do so with fewer transistors, in a smaller die, at a lower price. These are not unrelated features. Fewer transistors means smaller die size and less heat. A smaller die size allows for a less expensive chip.

Pentium vs. PowerPC Comparison Chart

Feature	Pentium	PowerPC 601
Architecture	32-bit CISC	64-bit RISC(7)
Age of architecture	15-20 years(1)	3 years
Maximum instructions per cycle	2	3
On-chip cache size	16 KBytes	32 KBytes
Core logic transistor count(2)	~2.2million	~1.3million
Die size	262.4mm2	118.8mm2
Estimated manufacturing cost(3)	$483	$76
Heat dissipation @66 MHz	13 watts	7 watts
General Purpose Registers	8 32-bit	32 32-bit
Floating Point Registers	8 80-bit	32 64-bit
Primary operating system	16-bit (4)	32-bit(5)
Follow on processors	NA(6)	603, 604, 620

Notes for Table:
1) Depending on whether the 8080 or the 8086 is used as starting point.
2) Total transistor count less transistors devoted to on-chip cache
3) Based on Micro Design Research estimates published 8/2/93
4) DOS and Windows 3.1
5) System 7
6) Intel has not announced additional x86 processors.
7) PowerPC 601 is a 32-bit implementation of the 64-bit PowerPC architecture

CISC architecture requires more transistors

RISC processors can generally achieve higher performance with fewer transistors. Pentium, the latest generation of x86 processor, uses over 3.1 million transistors to achieve integer performance similar to that of PowerPC 601 using only 2.8 million transistors. But nearly a half of the 601's transistors are used by the 32 KB on-chip cache while Pentium uses only a quarter of its transistors for the cache. Comparing the core logic of the two processors shows that Pentium uses nearly a million more transistors (2.2 million) devoted to actual core logic than the PowerPC 601 (1.3 million) to achieve roughly the same level of integer performance and substantially lower floating point performance.

Pentium requires far more transistors devoted to core logic in order to implement its CISC architecture. The considerably higher core logic transistor count increases the cost of Pentium, imposes barriers to easily achieving higher clock speeds, and contributes to increased heat.

All future versions of the x86 architecture will be similarly afflicted with

large transistor counts in order to maintain their architectural heritage. Intel will undoubtedly be able decrease the size and improve the heat dissipation of Pentium somewhat, but future versions of the x86 will likely continue to be at size, cost, heat and probably clock speed disadvantages to PowerPC chips.

The cost of manufacturing Pentium vs. PowerPC

No semiconductor company publishes its actual cost of manufacturing various chips. But by looking at the various factors that affect the cost of making a chip, a fairly good estimate of the cost of producing a microprocessor can be made. MicroDesign Resources recently took a look at these factors for both PowerPC and Pentium. Examining a number of variables, including die size, wafer size, estimated yield, packaging and test costs they estimated that it currently costs Intel approximately $480 to produce a single Pentium chip while the cost of manufacturing a PowerPC 601 chip was estimated at $75. This is a tremendous differential, and there is little to suggest that Intel can close this cost gap. Because as an Intel VP recently stated in the Wall Street Journal both Pentium and PowerPC are subject to the same cost dynamics the cost of manufacturing both processors can be expected to decline at approximately the same rate. And equally important it can be expected that future generations of both processors will have a large cost delta as well.

Future Performance

The fact that PowerPC is only in the first generation of its life cycle while Pentium is already over 15 years and many generations into its life cycle has some important implications for expected performance difference over time. InfoCorp looked at the various factors likely to influence the performance of Pentium and PowerPC over the next few years. This information together with previously published information available from both Intel and Motorola was used to create the following chart. This chart shows the absolute performance levels of both Pentium and announced versions of PowerPC. Both Pentium and PowerPC start out with approximately equal integer performance in their current generations and both improve considerably over time. But as is obvious from the chart InfoCorp expects future generations of PowerPC will outperform Pentium by many times. Had InfoCorp chosen to chart the floating point performance of the two the performance advantage of PowerPC would be even more dramatic.

Intel's emulation performance FUD (Fear, Uncertainty, Doubt)

Those in the Intel camp like to make statements like, "PowerPC can only run DOS applications in emulation mode which is unacceptably slow." They often go on to state that "emulation is many times slower than running native."

What the Pentium camp conveniently forgets is that because PowerPC is many times faster than a typical 486 the PowerPC can still deliver high performance even when running DOS emulation. Considering that the only reason many users would even want to run older DOS applications is to run things like a terminal emulator or a text editor that they have become used to performance should not be a significant issue.

Intel is also trying to confuse customers about the performance of Macintosh

applications running on PowerPC. Because Apple has control over both its hardware system design as well as its operating system it is in a position to ensure that current Macintosh applications will run with good performance on PowerPC based Macs. By rewriting performance critical parts of System 7 Apple has relieved software developers from the need to rewrite their existing software to run well on PowerPC based Macs. And customers will be able to run their current software on the new PowerPC based Macintosh computers without having to purchase new applications or an emulator.

Upgrades

Many users are excited by the possibilities of next generation processors like PowerPC and Pentium, but until computers based on these chips are more widely available they can't buy one. The obvious answer for these customers is some sort of an upgrade to their existing systems. Both Intel and Apple plan on offering upgrades to next generation processors to their customers.

Pentium Upgrade Hoax

Intel's inability to produce Pentium processors in large volume has caused it to pursue another strategy in order to take advantage of the hype it has created for Pentium. Intel has convinced most of the companies which manufacture 486 based PCs to include a socket on their motherboards to accommodate some sort of Pentium upgrade processor. This processor which was originally code named P24T is now called Pentium OverDrive. The PC trade press though has reported a number of reasons why an end user who purchases a 486 based computer in anticipation of upgrading his machine to a "Pentium" based processor may be in for a disappointment.

Most of the reasons are related to the high thermal output of Pentium and the reduced performance a user can expect when putting a 66 MHz "64-bit" processor into a 33 MHz board designed for a 32-bit processor.

The problems which Intel faces with the Pentium OverDrive are not just speculation on the part of industry analysts. Intel admits that there is an upgrade problem. One of the ways it has attempted to address this problem is by redefining the socket specifications for the Pentium OverDrive processor. The current version of the socket being used is already on its third iteration, (it's called Pentium OverDrive 3) and the Pentium OverDrive part has not even been announced yet, much less shipped. And Intel itself has acknowledged that there are some supposedly Pentium upgradeable systems being shipped by various PC manufactures which will not be Pentium upgradeable as advertised.

PowerPC Upgrades

Apple has announced that low cost PowerPC upgrades will be available for most of the current Macintosh computers, and third party manufacturers are developing PowerPC upgrade boards for other Macintosh models. There are some critical differences though between the PowerPC upgrades for Macintosh computers and the Pentium OverDrive upgrades being advertised by Intel. Because the PowerPC 601 chip has a thermal output not significantly higher than current high end 68040 processors heat dissipation should not be as critical an issue. From a compatibility standpoint, compared to the hundreds of different 486 based

systems that Pentium OverDrive must be compatible with, there are relatively few models of Macintosh which need to be tested for compatibility. And because unlike the Pentium OverDrive, which is not yet shipping, the PowerPC chip is already shipping it can be tested in actual Macintosh computers. The lower cost of the PowerPC processor compared to announced Pentium pricing will allow Apple to make PowerPC upgrades available to current Macintosh owners at a very reasonable price.

Conclusion

PowerPC is an advanced, modern microprocessor architecture designed and manufactured by the world's leading semiconductor and personal computer companies. And as such, PowerPC has a number of key technical and business advantages over the older CISC based architecture, Pentium, being offered by a single supplier, Intel. And while Intel would like the market to believe that Pentium's ability to run all existing DOS applications will be the only important feature when choosing a microprocessor architecture IBM, Apple, Motorola, and an increasing number of industry observers believe that PowerPC's superiority in the areas of price, performance, time to market, multiple sourcing, and salability to higher performance levels, will be even more important especially in light of PowerPC's ability to run the vast majority of the installed base of existing software, and to run that software at a performance level higher than many customers are able to run them on their current Intel based hardware. Businesses can not afford to handicap themselves with an aging architecture when newer higher performance more cost effective solutions will be adopted by their competitors.

While those customers not currently held captive to the Intel's aging x86 architecture will be the first to reap the benefits of a migration to PowerPC, those with substantial investments in commercial and custom applications currently running on an x86 processor will also be attracted by the price, performance, availability and future of the PowerPC architecture. Those who believe that customers will not migrate to a clearly superior technology are probably the same group who thought that technically superior CDs could never replace the vast installed base of vinyl LPs.

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RISC and CISC, Why the Difference: Competitive Analysis (3/94)

Revised: 3/11/94
Security: Everyone

RISC and CISC, Why the Difference: Competitive Analysis (3/94)

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Article Created: 28 January 1994
Article Reviewed/Updated: 11 March 1994

TOPIC

This article describes some of the differences between RISC and CISC computer architectures and the implications for the PowerPC and Pentium processors.

DISCUSSION

RISC computer architectures take advantage of features such as simple memory addressing and fixed length instructions to achieve higher performance levels than CISC processors which use variable length instructions and multiple memory addressing modes. To understand why the designers of RISC processors decided to use less complex (reduced) instructions than CISC processor designers it's necessary to understand something about the systems for which these processors were designed. The following is but one example of the type of design trade-off decisions made in developing a processor architecture.

CISC computer architectures were originally developed in the 1960s and 1970s, an era when a computer's available memory was both very limited and quite expensive, and many of the processor design decisions made at the time were based on minimizing the program memory requirements. One way to reduce program memory requirements was to simplify software as much as possible by building more complexity into the processor itself. Although increasing the complexity of the processor had a negative impact on processor performance, it was a reasonable trade off at the time. After all, it didn't matter how fast your processor could run if you didn't have enough memory left to load your data and run your programs. But as the price and availability of memory improved there was a need to reexamine the performance versus complexity trade offs. An architecture that made sense in the 1970s when a computer might have only 16 or 32 kiloytes of memory might not be an optimum architecture in the 1990s when 4 or 8 megabytes of memory would be standard.

The goal of a RISC architecture is to allow instructions to be executed as fast as possible. One of the ways of accomplishing this was to simplify the number and type of instructions. The smaller and simpler instructions of a RISC processor could run faster than the longer and more complex instructions of a CISC processor. Of course, this would require moving some complexity into the computer's software programs which, in turn, would require more system memory and better compiler technology. By the mid-1980s with compiler technology quite advanced and memory more readily available, although still expensive, RISC processors made sense for high performance workstations where the cost of memory was not an important issue. And now in the 1990s with very advanced compilers widely available and 8 megabytes or more of memory becoming common, high performance of RISC computing makes sense even for personal computers.

The market conditions that made CISC technology the right choice for personal computers in the 1970s, limited system memory and modest performance requirements, have been replaced by new conditions in the 1990s, inexpensive memory and heavy performance demands. And these requirements of the 1990s are the very conditions which RISC processors were designed for.

Floating point

Intel's engineers and marketing people seem to be at odds over the importance of fast floating point performance. Intel engineers devoted a considerable amount of resources to improving the poor floating point performance of the earlier x86 processors. This effort is reflected in the relatively large amount of space devoted to floating point execution on the Pentium processor. Yet the baggage of the x86 architecture was so great that the Intel engineers were only partially successful in improving floating point performance. Pentium is faster than the 486 in floating point but significantly slower than PowerPC and most current generation processors. As a result Intel marketing people now go out of their way to de-emphasize the importance of floating point.

The truth is floating point performance is not critical for some of today's typical desktop computing tasks such as word processing or database programs, so Pentium's lack of good floating point performance is not too critical for these applications (or at least for the versions of these applications that have been written thus far.) But for the large number of professionals that depend on their computers for financial calculations, high-end graphics or digital imaging, the lack of sufficient floating point performance could make them less competitive. And in the future, fast floating point performance will enable new and far better versions of many existing applications as well as enable new classes of applications that require fast floating point. To the extent that users will want to run these newer applications fast floating point will become essential.

Applications are getting cheaper

The DOS/Windows installed base has far more invested in its data than it

does in its applications. Because the price of applications continues to drop, and because data is the easiest thing to move between platforms, customers will have less and less reason to stay with the declining architecture.

Number of fans

It used to be that the latest x86 based PC would brag about its high clock speed or MIPS rating. Now many of the current press releases and ads for upcoming Pentium systems talk about the number of fans a system includes. It is quite likely that in the near future PC trade magazines will start counting the number of fans a system includes as part of the system's overall rating. The need to have multiple cooling fans is not a particularly desirable trait for a microprocessor. Fans, which are mechanical devices, have a much higher failure rate than any of the electronic components used in computers. So a computer that depends on fans for cooling the CPU will have a reliability rating (MTBF) similar to the relatively low MTBF of its fans. Multiple cooling fans also generate considerable noise. While this noise may not be an issue for file servers in closets it can be quite irritating in a desktop computer.

Intel's reaction

Intel's reaction to the introduction of PowerPC has been unusually vigorous. This is no doubt due to the fact that possibly for the first time it faces a significant threat to its high-end microprocessor business. Intel apparently feels so threatened by PowerPC that it has started running ads in Macintosh oriented publications extolling the virtues of Pentium and the x86 architecture. But MacUser in commenting on the veracity of Intel claims noted that a close look "revealed more obfuscation than clarification".

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1) PowerPC Technical Issues: Competitive Analysis

Our thanks to Stephen Dougherty of Apple Competitive Analysis for his permission to add this article to the Tech Info Library.

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Support Information Services

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Tech Info Library

LaserWriter Pro 810: If It Won't Select Correct Tray (1/94)

Revised: 1/31/94
Security: Everyone

LaserWriter Pro 810: If It Won't Select Correct Tray (1/94)

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Article Created: 31 January 1994

TOPIC ----------

I'm having a problem getting my LaserWriter Pro 810 to select a specific paper tray.

DISCUSSION ----------

The cure is to restore factory default settings. Here's how:

1) Turn the printer on and wait until it comes ready.

2) Locate the control panel and press the On-line button to force the printer "Off-line".

3) Press the Menu button.

4) Press the down arrow until "Misc." appears in the display, then press Enter.

5) Press Enter again to select "Restore Factory Setup".

6) Press Enter when the "Factory Setup" question appears.

When you've done all this, the printer will display "Confirmed" and run a self-test. The printer will return to the ready state once the self-test is complete.

Support Information Services

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Tech Info Library Article Number:14608

Tech Info Library

Macintosh LC 575: Specifications (Discontinued)

Revised: 8/19/96
Security: Everyone

Macintosh LC 575: Specifications (Discontinued)

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Article Created: 2 February 1994
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

This article provides technical specifications for the Macintosh LC 575 computer. Note that, in the U.S., this model is sold only through educational channels.

DISCUSSION ----------

Microprocessor

- MC68LC040, 33 MHz clock speed; 32-bit data bus
- Built-in memory-management unit

Memory

- 4MB RAM on logic board
- Expandable (by authorized Apple dealer) to as much as 36MB by adding 1MB, 2MB, 4MB, 8MB, 16MB, or 32MB SIMM to a single 72-pin slot. Requirement: 72-pin fast-paged, 80ns or faster.
- 1MB ROM

Storage

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 160MB or 320MB hard disk
- Internal AppleCD 300i Plus CD-ROM drive with new tray-loading design
  - Does not require a CD caddy
  - Average access time: 295 ms
  - Capacity: 650MB
  - Supported formats: Multisession Photo CD, High Sierra (ISO 9660), Macintosh HFS, Audio CD, CD + G/CD + MIDI, CD-ROM XA, CD-I
- Start-up (bootable) CD-ROM with system software

Video Display

- Integrated Macintosh Color Display with 14-inch Trinitron CRT
- Resolution: 640 x 480 pixels, 69 dpi, .26 mm dot pitch
- Two VRAM expansion slots:
  Standard 512K VRAM supports 256 colors (8-bit color)
  Optional 1MB VRAM supports 32,768 colors (16-bit color)

Interfaces

- Internal expansion slot for one Macintosh LC processor-direct expansion card. Compatible with Apple IIe Card.
- SCSI interface for connecting up to five external devices
- Communication slot can be easily configured -- by the user -- to accept any of three Ethernet cards (10BASE-T, Thin Coax, Apple AUI), or a high-speed 14.4 KB fax/modem (based on PowerBook Express Modem).
- Two serial (RS-232/RS-422) ports
- One stereo sound-output port for external audio amplifier or headphones
- One Apple Desktop Bus (ADB) ports for keyboard, mouse, and other devices
- Front headphone jack
- Built-in microphone above display
- One sound-input port for four sources: internal or external microphone*, internal CD-ROM, or external audio.

* Note: Requires the PlainTalk microphone.

Pull-out Logic Board

Allows easy upgrades to DRAM, VRAM, PDS, and communication slot.

Sound Generator

- Stereo 8-bit digital-analog conversion using 22-kHz sample rate, capable of driving stereo headphones or other stereo equipment through the sound jack and headphone jack
- Two built-in stereo speakers
- CD output is 16-bit digital

Keyboard and Mouse

- ADB Mouse II
- Keyboard purchased separately only in the K-12 configuration; several ADB keyboards with numeric keypads available

Clock/Calendar

- Custom integrated circuit with long-life alkaline battery.

Disability Access

- CloseView, Easy Access, and visible-beep software are built in.
- Third-party options provide alternative input and output devices

Power Requirements

- Line voltage: 90 to 264 V AC, RMS single phase, automatically configured
- Frequency: 47 to 63 Hz
- Power: 40 W maximum, not including display
  60 W maximum, including display
- Energy-saving feature reduces power consumption by 50%
- One AC outlet powers computer, display, drives, and speakers

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 mA (three ADB devices maximum is recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA, depending model used

System Software

Requires System 7.1 or later and the System Enabler 065.

Size and Weight

Main unit:

- Height: 17.9 in. (45.5 cm)
- Width: 13.5 in. (34.4 cm)
- Depth: 16.5 in. (42.0 cm)
- Weight: 40.5 lbs (18.4 kg)

Mouse:

- Height: 1.3 in. (3.3 cm)
- Width: 2.4 in. (6.2 cm)
- Depth: 4.2 in. (10.7 cm)
- Weight: 4.0 oz. (0.10 kg)

Operating Environment

- Operating temperature: 50 to 104° F (10 to 40° C)
- Storage temperature: –40 to 116.6° F (–40 to 47° C)
- Relative humidity: 20% to 85% noncondensing
- Maximum altitude: 15,000 ft. (4,722 m)

Article Change History -
19 Aug 1996 - Corrected misspelling.
16 May 1995 - Added microphone information.
29 Jun 1994 - Added information regarding VRAM slots.

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Tech Info Library

LC 520 and Performa 550: Upgrade to LC 575 (Discontinued)

Revised: 12/1/94
Security: Everyone

LC 520 and Performa 550: Upgrade to LC 575 (Discontinued)

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Article Created: 2 February 1994
Article Reviewed/Updated: 01 December 1994

TOPIC ----------

Can a Macintosh LC 520 or a Performa 550 be upgraded to a Macintosh LC 575?

DISCUSSION ----------

Yes. The logic-board upgrade is part number M2479LL/A.

Article Change History:
01 Dec 1994 - Noted that upgrade is discontinued.

Support Information Services

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Tech Info Library Article Number:14610

Tech Info Library

Macintosh LC 575: Why an Alkaline Battery (2/94)

Revised: 1/31/94
Security: Everyone

Macintosh LC 575: Why an Alkaline Battery (2/94)

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Article Created: 2 February 1994

TOPIC --

The back-up battery in the Macintosh LC 575, the battery that maintains the computer's clock/calendar even when the system is unplugged, is an alkaline battery. Previous Macintosh models have contained a lithium battery for this purpose. Why the change?

DISCUSSION --

The Macintosh LC 575 is the first Apple desktop system to ship with this kind of battery. These batteries are the same as in many DOS/Windows PCs. They are readily available, easy to install, last about the same amount of time as lithium batteries, and should cost less.

Support Information Services

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Tech Info Library Article Number:14611

Tech Info Library

Apple License Mgr: How Much Network Traffic Generated? (2/94)

Revised: 2/4/94
Security: Everyone

Apple License Mgr: How Much Network Traffic Generated? (2/94)

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Article Created: 4 February 1994

TOPIC -----

I need some information on Apple License Manager, which controls the software serial number tracking feature of AppleShare 4.x. I understand that Apple Licence Manager searches across the network to check serial numbers.
My questions are:

- How much network traffic does Apple License Manager generate?
- How often do the searches occur?
- Does Apple License Manager search LAN or WAN wide?
- How big are the packets?
- When a serial number violation is found, is server performance affected in any way?

DISCUSSION -----

We designed Apple License Manager (ALM) to keep the generated traffic as low as possible, especially when two LANs are connected by a router over a slow link such as X.25. This is one of the reasons we did not use Name Binding Protocol (NBP) directly. The Apple License Manager implements a new protocol Apple Serial Number Registration Protocol (ASNRP) and in its first implementation uses Datagram Delivery Protocol (DDP) and Routing Table Maintenance Protocol (RTMP).

RTMP is used to acquire network information, which is basically the network number range tables. It refreshes this information every hour by sending an RTMP request to A-router. RTMP is described in Inside AppleTalk. The number of RTMP packets is not significant (Our engineering net is composed of about 700 network number ranges; this gives 1 request and 5 responses every hour).

ASNRP also implements a general purpose multiplexed sharing socket protocol - known as broadcast protocol. It utilizes a static socket reserved by Apple for this purpose.

When a application has registered a Network Serial Number, ALM will be able to respond to any request matching this serial number, but it does not generate any requests until an application calls for a search. Then, every "X" seconds, ALM will pick a network number and send a request on this net. "X" can vary from 30 seconds to 2 minutes, depending of the size in network numbers of the internet. So, the search can take a long time to complete, but it generates little traffic. Once the search is completed, the application is free to call for another search.

AppleShare 4.0, for example, is continuously searching the entire internet sorted by hops during the first search at startup and then randomly. If a duplicate is found, then it requests the Apple License Manager to search using the cache of duplicates every 5 minutes to verify that the duplicate has not gone away. This search does not generate more traffic; it only changes the order the network numbers are searched.

The size of a request is just less than 100 bytes, and a response would be 40 bytes more.

Here is what AppleShare 4.0 does when it finds a duplicate serial number:

Time	Action
1) First Detection	Duplicate detection dialog displayed on each server
2) Four hours later	Set the greeting message to the duplicate detection dialog
3) 76 hours since first detection	Start sending out the duplicate detection dialog every hour
4) 112 hours since first detection	Start sending out the duplicate detection dialog every 30 min
5) 148 hours since first detection	Start sending out the duplicate detection dialog every 15 min

If at any time during the duplicate detection process, no more duplicate servers are detected, the duplicate detection dialog will go away.

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Tech Info Library Article Number:14612

Tech Info Library

PLW 300: HyperCard Prints at Quarter Size (2/94)

Revised: 2/23/94
Security: Everyone

PLW 300: HyperCard Prints at Quarter Size (2/94)

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Article Created: 21 February 1994

TOPIC ----------

When I print a card or stack from HyperCard version 2.1 or 2.2 to a Personal LaserWriter 300, the image is printed quarter-size (25% of normal). This problem didn't occur when I printed the same image from HyperCard to an ImageWriter and LaserWriter IINT.

What causes this?

DISCUSSION ----------

This is a known bug in HyperCard (including version 2.2). It also occurs when printing from HyperCard to the Personal LaserWriter LS and LaserWriter Select 300 since all of these printers use the same printer driver.

Since each image is reduced to quarter-size, the workaround is to set the Page Setup "Reduce or Enlarge" value to 400% for full size images, 200% for half size images, and 100% for quarter size images.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14614

Tech Info Library

LaserWriter Select 360 Fax: Importing Phone Book Entries (2/94)

Revised: 2/7/94
Security: Everyone

LaserWriter Select 360 Fax: Importing Phone Book Entries (2/94)

==========

Article Created: 1 February 1994

TOPIC ----------

I just installed the software for the LaserWriter Select 360 with Fax card. I want to import my existing fax phone list which is already an ASCII text file containing three fields -- the format noted in the user's manual.

When I select the phone book file for import, I get an error message stating that the file is of the wrong file type. What am I doing wrong?

DISCUSSION ----------

The import feature is very particular about the data format for the import file. Unfortunately, the user's manual forgets an important field and carriage returns after all phone entries. Any changes from the designated format (that is, missing field, tab, or carriage return) will always yield an error when trying to import the data. The format should be as follows:

NAME (tab) COMPANY (tab) FAX NUMBER (tab) POSTSCRIPT (Y/N)? (tab) (return)

Note:

- You can leave fields blank as long as you insert a tab as a placeholder.

- The POSTSCRIPT field should contain a "Y" if the receiving device is a PostScript FAX-capable device.

In order to view a sample file that you can import, we suggest exporting your existing phone book entries using the export button. Open the file that was created using Microsoft Word or MacWrite Pro.

From within the word processor select "show invisibles" to view the tabs and carriage returns.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14615

Tech Info Library

LW Pro 810: Enet Ptr Name Maximum 16 Chars (2/94)

Revised: 7/20/95
Security: Everyone

LW Pro 810: Enet Ptr Name Maximum 16 Chars (2/94)

==========

Article Created: 1 February 1994

TOPIC ----------

When I configured a LaserWriter Pro 810 on an Ethernet network, the Chooser name is truncated to 16 characters long. The full printer name, however, is displayed on the status page and in the Chooser when using LocalTalk.

Can the LaserWriter Pro 810's Ethernet printer name ever be longer than 16 characters?

DISCUSSION ----------

No, the LaserWriter Pro 810 Ethernet printer name is limited to 16 characters.

Previous LaserWriter printers have had plenty of EEROM space to store printer names. The LaserWriter Pro 810 supports up to 64 'virtual' printers with their own name and configuration variables that must be stored in non-volatile memory. In order to provide sufficient EEROM space, the LaserWriter Pro 810's non-LocalTalk printer names were truncated to 16 characters.

Page 43 of the LaserWriter Pro 810 User's Guide contains a small note explaining that the Ethernet printer name is limited to 16 characters.

Support Information Services

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Tech Info Library Article Number:14616

Tech Info Library

Macintosh with PC Emulation in Banyon VINES Environment (2/94)

Revised: 2/7/94
Security: Everyone

Macintosh with PC Emulation in Banyon VINES Environment (2/94)

==========

Article Created: 7 February 1994

TOPIC -----

This article tells you how to enable a Macintosh running PC emulation software (SoftWindows with SoftNode) to access a BANYAN server, and use its services. The configuration described here works for Banyon VINES SoftNode or Banyon VINES.

DISCUSSION -----

1) The Banyan Macintosh client runs on top of NDIS and uses Ethernet II frames with a magic number of 0xBAD. So to run it with SoftNode, you must first set up the NET.CFG file to reflect this. The following is a sample Banyan NET.CFG file for SoftNode Ethernet:

```
Link Driver ETHERSPC
    Frame ETHERNET_802.3
    Frame ETHERNET_802.2
    Frame ETHERNET_II
    Frame ETHERNET_SNAP
    Protocol BANYAN BAD ETHERNET_II

Protocol ODINSUP
    Bind ETHERSPC
```

2) Run the following to set up SoftNode for Banyan:

```
LSL
ETHERSPC
ODINSUP
```

3) Configure VINES. Include the line:

```
device=c:\banyan\protman.dos /i:c:\banyan
```

in the CONFIG.SYS file. If you've installed the software somewhere instead of c:\banyan, substitute your directory here. The configuration file for PROTMAN.DOS is called PROTOCOL.INI. It should be in the c:\banyan directory and should contain the following:

```
[protocol manager]
  drivername = PROTMAN$

[VINES_XIF]
  DRIVERNAME = NDISBAN.DOS$
  BINDINGS = ETHERSPC
```

4) Run PCCONFIG, the Banyan configuration program. Choose the first option, "Network Card Settings," choose "NDIS Ethernet." Then in the configuration screen, configure IRQ 10, driver name ETHERSPC. Press F10 to save the changes. Then choose the second option, "Login Environment Settings," and configure NDIS Ethernet. Press F10 to save the changes.

5) Restart for the CONFIG.SYS changes to become effective and run the ODI side and ODINSUP as described. Then type the following to get VINES going (from the Banyan directory, or wherever you have put it).

   ban /nc (Ignore the "network driver not enabled" message. It means it's working!) ndisban netbind arswait redir4 z: login

If you can run everything, but can't access files on the Z: drive, you probably left out the Protocol line in the NET.CFG file.

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Tech Info Library Article Number:14617

Tech Info Library

Continual Mounting Of A Remote Disk (8/94)

Revised: 8/23/94
Security: Everyone

Continual Mounting Of A Remote Disk (8/94)

==========

Article Created: 3 February 1994
Article Reviewed/Updated: 23 August 1994

TOPIC -----

Whenever I start my Macintosh, it asks me to log onto another drive on the network, and I can hit cancel 50 times before it goes away.

I don't think this is related to an AppleShare File Server or File Share, under System 7, set to open at system startup, because I've checked those. What could be causing this?

DISCUSSION -----

If throwing the AppleShare Prep file in the Trash doesn't solve the problem, you should check to see if Suitcase is installed. It has a feature which allows a user to connect to another users hard disk which has Suitcase installed. You can either move Suitcase out of your System Folder, or remove the reference to the remote disk in Suitcase.

Article Change History:
23 Aug 1994 - Review for accuracy.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14620

Tech Info Library

System 6 Clean Installation (8/94)

Revised: 6/5/96
Security: Everyone

System 6 Clean Installation (8/94)

==========

Article Created: 3 February 1994
Article Reviewed/Updated: 29 August 1994

TOPIC ----------

This document tells you how to do a clean System 6 installation. A normal system software installation modifies and updates the existing System Folder. A clean installation disables the existing System Folder, leaving most files in place, and forcing the Installer to create a new System Folder.

A clean system installation brings the system software back to the standard configuration. This is necessary when system software has been damaged or modified, preventing a normal installation. It's also useful in troubleshooting, and helps to determine whether a problem is hardware- or software-related.

DISCUSSION ----------

Required Disks

System 6 software comes as a set of 800K (double-density) disks or a set of 1.44MB (high-density) disks:

- The set of four 800K disks includes System Tools, Utilities 1, Utilities 2, and Printing Tools.

- The set of two 1.44MB disks includes System StartUp and System Additions.

The instructions in this document give the name of the 800K disk first, followed by the name of the 1.44MB disk in parentheses. Follow these instructions in the order presented.

Restart with Utilities 1 or System StartUp

Shut down your Macintosh computer, insert Utilities 1 (or System Startup) in the

floppy drive, and turn on the computer. At the desktop, the floppy disk's icon should be in the upper-right corner of your screen with the hard disk's icon below it.

If the computer ejects the disk and won't start up from it, check the density of the disk. A high-density (1.44MB) disk requires an Apple SuperDrive (formerly FDHD) to read it. Macintosh computers, except the Macintosh Plus, SE, II and earlier, have SuperDrives.

If your computer doesn't have a SuperDrive, you need the set of 800K System 6 installation disks. To get them, contact your local Apple dealer or User Group for a copy (they may charge a fee).

Run Disk First Aid

Disk First Aid is a utility found on the Utilities 1 (or System StartUp) disk. It can detect and repair problems with the hard disk.

1) Double-click the Utilities 1 (System StartUp) icon to open it.

2) Double-click on Disk First Aid, and make sure the startup hard drive is selected. If it isn't, click the Drive button to select the startup hard drive.

3) Click once on Open and then once on Start. Disk First Aid checks your hard disk for any potential problems. If it finds problems, you should let the software repair them.

4) Repeat this procedure for each hard disk attached to the system.

5) When you're finished verifying the hard disks, choose Quit from the File menu to return to the desktop.

If Disk First Aid can't repair a hard drive, you should back up the hard drive and reinitialize it using the appropriate formatting utility for that drive. For Apple drives, use Apple HD SC Setup.

Check Available Hard Disk Space

Be sure you have at least 3072K of disk space available on the hard disk where you're installing the system software. Double-click on the hard disk icon, and choose by Icon from the View menu. The upper-right corner of the window displays the amount of available disk space.

If there's less than 3072K available, you'll need to delete some unnecessary files. Copy files to floppy disks or other media if needed. Then drag the files from your hard disk to the Trash, and choose Empty Trash from the Special menu.

Disable the System Folder

You disable the System Folder by moving the Finder and renaming the System Folder.

1) Open your hard disk's icon and locate the System Folder.

2) Open the System Folder.

3) Create a new folder and name it "Old Finder."

4) Locate the Finder (within the System Folder) and move it into this new folder.

5) Close the System Folder's window and rename the System Folder, "Storage."

6) Close any open windows on your desktop.

Restart Your Computer

Choose Restart from the Special menu. The system automatically ejects the floppy disk, and after a few seconds you should see a picture of a disk with a flashing question mark. This indicates that no System Folder is active on the hard disk.

If your Macintosh starts up from the hard disk, you have an extra System Folder on the hard disk. You need to delete it (or disable it as described in the previous section), then restart.

If your computer starts up from a second hard disk connected to your computer, you'll see that disk's icon in the upper-right corner of your screen with the startup hard disk's icon below it. If this happens, you can continue installation without waiting for a blinking question mark.

Install System 6

Install System 6 following these steps:

1) Insert System Tools (or System StartUp) into the floppy drive.

2) Double-click the Installer application icon.

3) Once the "Welcome to the Apple Installer" message appears, click OK.

4) The Installer will indicate the name of the disk where it's installing the system software. Click Switch Disk if necessary until you see the name of the correct disk. Then click Install.

5) Insert the other disks when the Installer asks you to.

6) When installation is complete, quit the Installer program, and restart the Macintosh.

The system will eject the floppy disk and the Macintosh will start up from the hard disk.

Verify Problem Resolution

After performing a clean installation, verify that you resolved the problem before adding anything to the new System Folder. Adding items to the System Folder before resolving your problem defeats the purpose of this procedure.

Install Non-Standard Items

You can now reinstall the non-standard items from the old System Folder (now named "Storage") such as fonts, screen savers, device drivers, and so on. If possible, you should reinstall these items from their original disks.

If the original disks aren't available, you may move the non-standard items from the Storage folder to the new System Folder. Be careful not to replace anything that's already in the new System Folder. Only move items that aren't already in the new System Folder.

1) Open the System Folder and the Storage folder and choose by Name from the View menu. Then compare the contents of the folders as they are open side-by-side.

2) Move anything that isn't already in the new System Folder from the Storage folder to the new System Folder.

3) Restart your Macintosh.

Install Fonts and Desk Accessories

Fonts and desk accessories become part of the System file. You need to reinstall them after a clean installation. Use the original disks to install them. If the original disks aren't available, follow these steps:

1) If the Font/DA Mover isn't on your hard disk, copy it from the Font/DA folder located on the Utilities 2 (or System Additions) disk to your hard disk.

2) Open the Font/DA folder on the hard disk, and double-click the Font/DA Mover to launch it. You see two windows. The radio button at the top indicates whether you're viewing fonts or desk accessories. The default is to view fonts. The left window displays fonts installed in your system, and beneath it you see "System on <hard disk name>."

3) Click the Open button beneath the window on the right.

4) When a dialog box appears, navigate to the Storage folder, and open it.

5) Double-click the System file to open it. You'll see the fonts in your old system in the window on the right.

6) Select the fonts you wish to add to the new system, and click on the <<Copy<< button.

7) When finished installing fonts, use the radio button at the top to display desk accessories.

8) Select the desk accessories you wish to add to the new system, and click on the <<Copy<< button.

9) When finished, quit the Font/DA Mover and restart your computer.

Troubleshooting INIT Conflicts

If you installed any startup documents or control panels, you'll probably see their icons line up across the bottom of the screen when you restart. They load into memory at startup time and modify the standard behavior of the operating system.

If the Macintosh fails to restart or behaves erratically, you probably have an incompatible, or conflicting INIT or control panel. To verify this problem, follow these steps:

1) Shut down the computer.

2) Insert the System Tools (or System StartUp) disk.

3) Restart the computer.

4) Create a new folder on the hard disk and name it "INITs."

5) Open the System Folder on the hard disk, and move to the INITs folder any third-party (that is, non-Apple) INITs you added since completing the clean installation. Choose by Kind from the View menu to help identify files of Kind — "startup document," "control panel" and "Chooser document" — that you need to move.

6) Restart the computer from the hard disk.

7) When the Macintosh is ready, try to recreate the erratic behavior.

If the problem no longer occurs, then you have a conflicting INIT. Continue with these steps:

8) Move one item from the INITs folder to the closed System Folder and restart the Macintosh.

9) Attempt to recreate the original problem.

Repeat steps 8 and 9 for each item in the new folder on the desktop until the problem recurs. The last item returned to the System Folder is probably the cause of the problem. Restart with the System Tools (System StartUp) disk and remove the problem item from the System Folder. Check with the vendor for compatibility information.

Final Steps

Verify that your applications are performing normally. If not, refer to the application manual or contact the vendor.

When the Macintosh behaves as expected, check the Storage folder for items you may not have reinstalled. You may find items including the following:

- INITs, control panels, device drivers (such as scanner drivers), which you should reinstall from the original floppy disks, if possible.

- Application Preference files, which store any changes you made to the application's default settings (for example, if you change the default font in your word processing program). You can drag these settings to the new System Folder, but be aware that Preference files do sometimes become damaged and can cause erratic behavior. If this happens, quit the application, remove the Preference file from the System Folder, and launch the application again. The application recreates the Preference file the next time you launch it, and returns your settings to their defaults.

- Folders installed by applications (such as Claris, Microsoft, and Aldus). You can move these to the new System Folder.

After you move all needed items from the Storage folder, drag the Storage folder to the Trash, and choose Empty Trash from the Special menu.

Article Change History:
29 Aug 1994 - Updated for FAX/TIL/QRG maintenance.

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Tech Info Library Article Number:14621

Apple LaserWriters: Changing the Symbol Set for DOS Print(2/94)

Revised: 2/11/94
Security: Everyone

Apple LaserWriters: Changing the Symbol Set for DOS Print(2/94)

==========

Article Created: 9 February 1994

TOPIC ----------

I would like to print the special German letters (like ä, ü, ö, ß) in DOS, using the software Printer Control Panel that comes with the Windows-marketed Apple LaserWriter printers (LaserWriter Pro 600 and 630, Personal LaserWriter NTR, LaserWriter Select 310 and 360).

DISCUSSION ----------

The Printer Control Panel software that ships with Apple Windows-marketed LaserWriters is simply emulation switching software, so it has no real role in producing the German letters. You can print the letters in different ways depending on which mode you choose for the printer (PostScript or PCL). For this article we'll assume that you're using PCL.

Given this assumption, you can change the symbol set used in PCL mode to one that contains umlaut characters. The ROMAN-8 symbol set, for example, contains the characters you're looking for. We've provided the PCL escape code sequence at the end of this article to perform this.

Of course, you first need to generate the umlaut characters on the screen. The character codes for "ä, ü, ö, ß" in the ROMAN-8 symbol set are 204, 207, 206, and 222 respectively. To generate these on the screen requires some combination of modifier keys (Shift, Option, and so on) to get the characters.

Here's the HP PCL escape code to change the symbol set to ROMAN-8. You should place this at the beginning of your text document:

<esc>(8U

The Printer Control Panel software determines that this is HP PCL and

automatically switches the Apple printer into PCL mode.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14623

Tech Info Library

LaserWriter Pro 630: PostScript Commands to Change Baud Rate

Revised: 2/11/94
Security: Everyone

LaserWriter Pro 630: PostScript Commands to Change Baud Rate

==========

Article Created: 9 February 1994

TOPIC ----------

How can we change the baud rate for the RS-232 serial port on the LaserWriter Pro 630? We have an SGI Indigo-2 workstation serially connected to the LaserWriter, and we need the appropriate PostScript commands to change the baud rate.

DISCUSSION ----------

Here are the PostScript commands to change the baud rate on the serial 9-pin port.

NOTE: The LaserWriter Pro has four user-configurable communications settings; these are thumbwheel switch positions 6 through 9. Page 126 in the LaserWriter Pro User's Guide outlines all of the default settings for these positions.

To change the baud rate to 9600 for switch position 6 on the serial 9-pin port:

```
%%Begin (%SerialB_NV%) <</Baud 9600>> setdevparams %%End
```

The possible baud rate values are: 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600, 19200, 57600.

The integer after "SerialB_NV" correlates to the thumbwheel switch setting. For example:

```
%SerialB_NV%    - changes settings to thumbwheel switch setting 6
%SerialB_NV2%   - changes settings to thumbwheel switch setting 7
%SerialB_NV3%   - changes settings to thumbwheel switch setting 8
%SerialB_NV4%   - changes settings to thumbwheel switch setting 9
```

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Tech Info Library Article Number:14625

Tech Info Library

Novell Netware: Rebuilding Desktop File (4/97)

Revised: 4/2/97
Security: Everyone

Novell Netware: Rebuilding Desktop File (4/97)

==========

Article Created: 9 February 1994
Article Reviewed/Updated: 02 April 1997

TOPIC -----

Macintosh systems use a Desktop database that contains information associating the documents and applications with icons, and provides bitmap representations of the icons. AppleShare servers, and third-party servers that use AFP (Apple Filing Protocol), implement their own version of a Desktop database, enabling Macintosh users to retain their familiar Macintosh graphical user interface when accessing those server's volumes.

You can rebuild remotely a Novell Netware Desktop file on an AFP volume. This article presents steps for rebuilding the network's Desktop file(s) for Netware versions 3 and 4.

DISCUSSION -----

Netware 3.x

Netware 3.x has 3 hidden files in the Desktop AFP subdirectory that collectively contain the database. Follow these steps to rebuild (clear) the Desktop files:

Step 1
Load AFP. It checks to see if the Desktop files exist, and if not, creates them.

Step 2
Load AFP CDT. CDT stands for Clear Desktop. This clears out the databases. It doesn't eliminate them, but merely clears them out.

Step 3
Rebuild the remote Netware volume. Use a Macintosh client running a version of System 6 system software, or a System 7.x workstation booted with a System 6.x System floppy disk. Hold down the Option key and the Command key (open Apple key) when connecting to that volume.

Step 4
Follow the steps to number 2 above.

Step 5
Mount the Novell volume you wish to rebuild, then launch the Rebuilder utility.

Step 6
A dialog box will appear on your desktop. Highlight the volume you wish to rebuild and click on the Rebuild button. If you wish to rebuild multiple volumes, hold down the <Shift> key, and highlight each volume you want to rebuild then click on the Rebuild button.

Step 7
A status bar will appear on the desktop showing the rebuilding progress. Also a dialog box will appear stating the desktop that has been successfully rebuilt when completed.

Step 8
For the Finder to recognize each new Desktop, you may need to restart or unmount and remount each rebuilt volume.

Netware 4.x

Netware 4.x uses a database Btrieve structure, which the server maintains dynamically. The system automatically checks the database for corruption. If it finds evidence of corruption, the server rebuilds the Desktop database. You can also force a rebuild of the database in a Netware 4.x environment within AFP CON:

Step 1
Load AFP CON.

Step 2
Choose Maintenance and Status option.

Step 3
Choose Volume information.

Step 4
Select your volume from the list.

Step 5
Choose Start Desktop Database Rebuild, Enable AFP, Choose Modified, Cancel Desktop.

Repeat these steps for each server you wish to rebuild.

Article Change History:
02 Apr 1997 - Removed outdated reference to on line service.
16 Oct 1995 - Changed information on getting Dayna Rebuilder utility.
10 Feb 1995 - Added information on where to find Dayna Rebuilder.

..TIL14626-Novell_Netware-Rebuilding_Desktop_File_4-97_(TA31146).pdf

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Tech Info Library Article Number:14626

Tech Info Library

A/UX: Does Version 3.0.1 Include Motif? (2/94)

Revised: 2/7/94
Security: Everyone

A/UX: Does Version 3.0.1 Include Motif? (2/94)

==========

Article Created: 7 February 1994

TOPIC -----

Was a version of Motif shipped with A/UX 3.0.1? If not, where can I get a copy of Motif for A/UX?

DISCUSSION -----

Motif has never shipped with A/UX.

Integrated Computer Solutions (ICS), however, developed a version of OSF/Motif (1.1.4, X11R4 based) for A/UX.

According to ICS, however, they have stopped producing this and no longer support for it.

To locate a vendor's name and phone number, use the vendor's name as a search string.

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Tech Info Library Article Number:14628

Tech Info Library

LaserWriter Pro 810: Printing from Hypercard (2/94)

Revised: 2/7/94
Security: Everyone

LaserWriter Pro 810: Printing from Hypercard (2/94)

==========

Article Created: 7 February 1994

TOPIC ----------

When I press Command-P to print a HyperCard stack or card to a LaserWriter Pro 810 (with a fax modem installed), the printer starts a fax transmission instead of printing the document.

How can I print a HyperCard document to a LaserWriter Pro 810?

DISCUSSION ----------

This is a known problem which is documented in the ReadMe file on the LaserWriter Pro 810 Fax software disk.

To print HyperCard documents to a LaserWriter Pro 810 with a fax modem installed, press Shift-Command-P so that a Print Dialog Box is displayed before printing.

Note: If you attempt to print an document by selecting Print from the File menu, printing problems may occur.

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Tech Info Library Article Number:14629

Tech Info Library

LaserWriter Pro 810: What Are VMS/UNIX Network Utilities? (2/94)

Revised: 2/8/94
Security: Everyone

LaserWriter Pro 810: What Are VMS/UNIX Network Utilities? (2/94)

==========

Article Created: 7 February 1994

TOPIC ----------

What are the LaserWriter Pro 810 VMS Network Utility Installer (Apple part number M2695LL/A) and LaserWriter Pro 810 UNIX Network Utility Installer (Apple part number M2696LL/A)?

DISCUSSION ----------

They are print driver and utility installer kits for the LaserWriter Pro 810. Both of these utilities are also included with the LaserWriter Pro 810 on 3.5-inch floppy diskettes (the UNIX utility is on a tar formatted-diskette and the VMS floppy is on a MS-DOS-formatted diskette).

Apple created these utility kits, because some VMS and UNIX systems require tape-based instead of floppy-based software.

The VMS Network Utility is shipped on a TK50 tape, while the UNIX Network Utility is shipped on a QIC24 tape.

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Tech Info Library Article Number:14630

Tech Info Library

AppleSearch: Changing Index Location On An AWS 95 (2/94)

Revised: 6/17/94
Security: Everyone

AppleSearch: Changing Index Location On An AWS 95 (2/94)

==========

Article Created: 4 February 1994

TOPIC -----

The AppleSearch Server requires a "volume" be selected as a point for indexing on an Apple Workgroup Server (AWS) 95. Under the A/UX operating system, the root file system is the only choice that is presented. The reason for this is that the UNIX operating system "mounts" other file systems as a node on the current file system. For example, an external drive could be mounted as /shared data/software and could contain shared data. The root file system could have only a couple of megabytes free, and a lot on /shared data/software, but since AppleSearch looks for Macintosh style volumes, that being "/" it uses the root file system for indexing. Most UNIX systems have a small root file system and a large data (/shared data) and /usr partitions. This way, the UNIX system can be reinstalled with minimal hassle. Under AppleSearch, this presents a problem, is there a workaround?

DISCUSSION -----

AppleSearch 1.0 forces the "AppleSearch Indexes" folder to be at the root of HFS partition. This is fine for HFS disks, but for the UFS disks there are times when you want to move them (if, for instance, /users is a separate disk and you want the indexes there). Here is a workaround you can use:

1) Start AppleSearch and create the information source indexes in "/".
2) Quit AppleSearch.
3) Move the index to wherever you want them to exist.
4) Restart AppleSearch. It will ask you where the indexes are, navigate to them, and then AppleSearch remembers the new location.
5) Index as usual.

Also, you may want to have fair amount of available space on the "/" directory. AppleSearch uses this directory to store temporary files when reindexing, which can be large at times.

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Tech Info Library Article Number:14631

Tech Info Library

LW Pro 810: Printing Ledger Size at High Resolution (2/94)

Revised: 2/15/94
Security: Everyone

LW Pro 810: Printing Ledger Size at High Resolution (2/94)

==========

Article Created: 15 February 1994

TOPIC ----------

When I try to print ledger-size documents (11 by 17 inches) to my LaserWriter Pro 810, the only output is an 8.5 by 11 inch page with a double line printed across the top. I setup the printer with the Auto Setup option in the Chooser and I'm using LaserWriter driver version 8.1.1.

How can I print ledger-size documents?

DISCUSSION ----------

The LaserWriter Pro 810's standard 8MB of memory can only print ledger-sized pages at a maximum resolution of 400 dots-per-inch (dpi). If the printer is set for 800dpi and you try to print ledger-sized documents, the resulting problem you outlined will occur. To print ledger-sized pages at higher resolution, the printer memory needs to be upgraded to 12MB for 600 dpi and 16MB for 800 dpi.

Here's how to print ledger-sized documents at 400 dpi:

1) Select 400 dpi printer resolution for a particular print job.

   On a Macintosh computer, follow these steps:

   1) Select Print from the File menu to display the Print Dialog box.
   2) Click on Options in the Print Dialog box to display the Print Options Dialog box.
   3) Select 400 dpi from the Choose Resolutions option.

You can permanently change the LaserWriter Pro 810's default printer resolution by selecting the appropriate resolution in the printer's control panel under the POSTSCRIPT RESOLUTION option.

2) Set the paper size for ledger-size paper, then select the specific paper

tray with ledger-sized paper in your printing utilities.

On a Macintosh computer, follow these steps:

1) Select Page Setup from the File menu to display the Page Setup Dialog box.
2) Select Ledger from the Paper option. Click OK to close this dialog box.
3) Select Print from the File menu to display the Print Dialog Box.
4) Select the specific paper tray (Upper, Middle, Lower) that contains ledger-size paper from the Paper Source option.

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Tech Info Library Article Number:14633

Tech Info Library

PowerBook Duo Battery Patch: For Battery Recharge Problem (3/95)

Revised: 3/3/95
Security: Everyone

PowerBook Duo Battery Patch: For Battery Recharge Problem (3/95)

==========

Article Created: 9 February 1994
Article Reviewed/Updated: 03 March 1995

TOPIC ----------

The Read Me file for PowerBook Duo Battery Patch states:

The Duo Battery Patch (extension) has been developed to resolve a problem discovered with PowerBook Duo 210/230/250s using version 1.0 of the PowerBook Duo Enabler.

Apple recommends that all Duo users upgrade to version 1.0 of the PowerBook Duo Enabler. Users of 210's, 230's, or 250's should also install the Duo Battery Patch. Users of 270c's do not need to install this patch.

This patch is being rolled into future versions of Duo enablers. When the next version of the PowerBook Duo Enabler is released, users can feel free to remove this patch from their system.

DISCUSSION ----------

The Read Me should have more clearly stated that the problem only involves:

- Some (not all) PowerBook Duo 210, 230, and 250 computers
- With Express Modems installed
- Using version 1.0 of the PowerBook Duo Enabler.

The problem -- PowerBook Duo battery won't recharge and/or the battery DA shows blank or empty.

Customers running System 7.5 or using the Type III battery will not need this patch. System 7.5 has the patch built in and the Type III batteries do not need it.

Article Change History:
03 Mar 1995 - Noted that System 7.5 users don't need the patch.

Support Information Services

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Tech Info Library Article Number:14637

Tech Info Library

PowerBook: Insomnia Software (2/94)

Revised: 2/11/94
Security: Everyone

PowerBook: Insomnia Software (2/94)

==========

Article Created: 9 February 1994

TOPIC ----------

What is the new PowerBook software from Apple called "Insomnia"?.

DISCUSSION ----------

Insomnia is an extension that keeps the PowerBook from going to sleep during the installation process when starting from the Install Me First disk.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14638

Tech Info Library

LaserWriter Pro 810: How Memory is Allocated (2/94)

Revised: 2/15/94
Security: Everyone

LaserWriter Pro 810: How Memory is Allocated (2/94)

==========

Article Created: 10 February 1994

TOPIC ----------

I have a LaserWriter Pro 810 with 16MB (megabytes) of memory. When I select my printer in the Chooser and click on Printer Info to see how much memory is available, only 1.2MB is free. Note that the LaserWriter Pro 810 has just been turned on and no fonts are downloaded.

How is the rest of the LaserWriter Pro 810 memory allocated?

DISCUSSION ----------

When the LaserWriter Pro 810 powers on, it checks to see how much memory is available and automatically allocates the largest page buffer possible at the highest resolution. Thus, for a 16MB configuration, approximately 14.1MB is used to create a page buffer for a ledger-sized page at 800dpi.

The remaining 1.9MB of memory is used for such things as the PostScript interpreter itself, PostScript dictionaries, display list, font caching, and program memory.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14639

Tech Info Library

LaserWriter Pro 630: How Memory is Allocated (2/94)

Revised: 2/15/94
Security: Everyone

LaserWriter Pro 630: How Memory is Allocated (2/94)

==========

Article Created: 15 February 1994

TOPIC ----------

I have a LaserWriter Pro 630 printer with 8MB (megabytes) of memory. When I select my printer in the Chooser and click on Printer Info to see how much memory is available, only 2.3MB is free. Note that the LaserWriter Pro 810 has just been turned on and no fonts are downloaded.

What happened to the remaining 5.7MB of memory? How is the rest of my LaserWriter Pro 630's memory allocated?

DISCUSSION ----------

The remaining 5.7MB of memory is used for a variety of things, although most of it is allocated to a frame buffer where the actual page is imaged.

Since legal-size (8.5 by 14 inches) is the largest available page size, the memory required for a legal-sized page can be calculated by multiplying the total imageable area (8.5 by 14) by the highest vertical and horizontal resolution in dots-per-inch (600 by 600). This calculation comes out to roughly 5MB.

The 2.3MB of "free" memory is used for such things as the PostScript interpreter itself, PostScript dictionaries, display list, font caching, and program memory.

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Tech Info Library Article Number:14640

Tech Info Library

LaserWriter Pro 810: Printing from UNIX Default Socket (2/94)

Revised: 2/15/94
Security: Everyone

LaserWriter Pro 810: Printing from UNIX Default Socket (2/94)

==========

Article Created: 15 February 1994

TOPIC ----------

I have been using TCP port 3101 (Factory printer with no settings) to print from UNIX platforms (Macintosh and Sun) to a LaserWriter Pro 810. A few days ago, TCP port 3101 would suddenly no longer print documents sent to it, though the printer acts like the documents are printed.

Are there any internal settings in the LaserWriter Pro 810 that are not reset to factory defaults by selecting "Restore Factory Setup" from the printer's LCD front panel? If so, how can they be reset and could they cause this problem?

DISCUSSION ----------

Yes, there are settings not affected by the "Restore Factory Setup" option in the LaserWriter Pro 810's control panel. This option only affects settings used by the PostScript interpreter. Settings for the LaserWriter Pro 810's print server (otherwise known as Virtual Printer Technology) are kept on the print server card itself which is inside the printer. It has its own separate Non-Volatile RAM (NVRAM). These settings can be reset in two different ways:

1) By entering the command "INIT DEFAULT DELAY 0" through the printer's Remote Console Facility (RCF).

2) By putting a jumper on "WIRE 2" on the print server card, starting up the printer until "Ready To Print" appears, and then removing the jumper.

WARNING: Either one of these reset mechanisms will remove all virtual printers, and any settings related to virtual printers.

Here are some suggestions which may cure your problems in printing from the UNIX default socket:

1) Reset the LaserWriter Pro 810's print server as mentioned above.

2) Through your printer's RCF, type in "show service characteristics" and look to see that CONNECTIONS and QUEUE are "enabled" in TCP port 3101. If they aren't, enabling them should cure your problem.

3) Print to a different TCP port, such as 3104 for ASCII printing or 3102 for PostScript printing.

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Tech Info Library Article Number:14641

Tech Info Library

LW Pro 810: Non-AppleTalk Packets in Data Stream (11/94)

Revised: 11/9/94
Security: Everyone

LW Pro 810: Non-AppleTalk Packets in Data Stream (11/94)

==========

Article Created: 15 February 1994
Article Reviewed/Updated: 9 November 1994

TOPIC ----------

When I used a network diagnostic tool on my network, I noticed that a variety of non-AppleTalk packets are being sent from my LaserWriter Pro 810. How do I turn each one off or on?

DISCUSSION ----------

If you plan on using the RCF (Remote Console Facility) extensively you should order the manual "Apple LaserWriter Pro 810 TCP/IP - LAT Protocol and Command Reference" (Apple Part Number M2187LL/A).

RCF can be accessed a couple of different ways. The easiest is by Telnet, once the printer's IP address has been set. The other way is by using the RJ-12 maintenance port. This option requires a unique RJ-12 to mini DIN-8 cable. For further information on the maintenance port and cabling, refer to Section 2.3.2 and Appendix A of Part 1 in the LaserWriter Pro 810 Network Installation and Configuration Manual. Once the connections have been made, the default passwords for RCF are as follows:

RCF: password = ACCESS
RCF Super User mode: password = SYSTEM

Enable or Disable a Protocol Stack

Below is listed the RCF commands you can use to enable or disable the entire protocol stack. Use these commands to specify server options:

SET SERVER option(s)
DEFINE
CHANGE

Option: AUTHORIZED [PROTOCOL] APPLETALK [ENABLED | DISABLED]

```
                                LAT       [ENABLED | DISABLED]
                                NETWARE   [ENABLED | DISABLED]
                                TCPIP     [ENABLED | DISABLED]
                                ALL
                                NONE
```

Below is an example showing the disabling of TCP/IP:

```
  change server authorized tcpip disabled
```

Specifying a protocol with no flag, enables that protocol and disables the rest. ALL enables all protocols. NONE disables them.

SET — Modifies the current database and takes effect immediately. Parameters are reset to permanent (DEFINEd or CHANGEd) values at the next login or initialization

DEFINE — Modifies the permanent database and takes effect next login or initialization.

CHANGE — Modifies both databases immediately.

Enable or Disable Announcement Broadcasts

Announcement broadcasts may also populate the network such as DECnet MOP (Maintenance Operation Protocol) or bootp in TCP/IP. Use this command to specify server options.

```
   SET    SERVER option(s)
   DEFINE
   CHANGE
```

```
Option: ANNOUNCEMENTS [PROTOCOL] LAT   [ENABLED | DISABLED]
                                 TCPIP [ENABLED | DISABLED]
                                 RCF   [ENABLED | DISABLED]
```

Note: RCF enables or disables DECnet Mop.

Below is an example showing how to disable the DECnet MOP broadcasts:

```
  change server announcements rcf disabled
```

SET — Modifies the current database and takes effect immediately. Parameters are reset to permanent (DEFINEd or CHANGEd) values at the next login or initialization

DEFINE — Modifies the permanent database and takes effect next login or initialization.

CHANGE — Modifies both databases immediately.

Enable or Disable Netware Broadcasts

Netware broadcasts are different, use this command to specify the preferred Ethernet mode that IPX uses.

```
 SET     SERVER NETWARE IPX [DEFAULT | 802.3 | [ETHERNET_II [ether_type]]]
 DEFINE                     [REDISCOVER [minutes]]
 CHANGE                     [FAST [PRINTSERVER] ENABLE | DISABLE]
```

Below is an example showing how to disable Netware broadcasts:

```
  change server netware ipx rediscover 0
```

DEFAULT	IPX will try both 802.3 and Ethernet II. The first one found will be selected.
802.3	IPX will only look for 802.3 Ethernet frames.
ETHERNET_II	IPX will only look for Ethernet II frames.
ether_type	If Ethernet II is selected the user can specify the Ethernet type in ASCII hex. For example, the Netware default is 0x8137. The Ethernet type is not changed if this is not specified.
REDISCOVER	Triggers the rediscovery process. This process queries the network for newly configured Novell Print Servers and starts all remote printers found.
minutes	If specified with the REDISCOVER keyword this sets the automatic interval at which REDISCOVERY takes place. The range is from 0-14 minutes, 2 is the default and 0 disables periodic rediscovery.
FAST	Some versions of Netware pserver when run on original PC class machines (4.77mhz) require this option to be disabled.

Article Change History:
09 Nov 1994 - Updated article to include more RCF commands and clarity.
25 Oct 1994 - Updated article to include more RCF commands.

Support Information Services

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Tech Info Library Article Number:14642

Tech Info Library

Newton MessagePad: Hard Resets Occur After Low Power (3/94)

Revised: 3/18/94
Security: Everyone

Newton MessagePad: Hard Resets Occur After Low Power (3/94)

==========

Article Created: 18 March 1994

TOPIC ----------

When I turn on my Newton MessagePad, I get the message "Do you want to erase data?". What is causing this to happen?

DISCUSSION ----------

The message is an indication that a hard reset has occurred. A hard reset erases only the information you have stored. It does not remove Newton's programs or operating system software (including system updates).

The normal procedure for doing a hard reset is to slide down the on/off switch, hold it down as you press the Reset button in the battery compartment, and then release the on/off switch.

There are also two unusual situations that can trigger a hard reset. If the Newton MessagePad is low on power, then a power fault flag is set. Once this flag is set, if the power switch is held for an extended duration, a hard reset is triggered. If the Newton MessagePad quits and resets itself, and the power switch is held down, a hard reset is also triggered.

No changes will be made to the software or hardware to eliminate this from occurring.

Support Information Services

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Tech Info Library Article Number:14643

Tech Info Library

ARA 2.0: Incompatible with Macintosh Plus (5/96)

Revised: 5/24/96
Security: Everyone

ARA 2.0: Incompatible with Macintosh Plus (5/96)

==========

Article Created: 11 February 1994
Article Reviewed/Updated: 24 May 1996

TOPIC ----------

I'm using a Macintosh Plus, Hayes V-series 9600, AppleTalk Remote Access (ARA) 2.0 and supplied script. ARA won't dial. AppleTalk Remote Access 1.0 worked on this Macintosh Plus.

DISCUSSION ----------

ARA 2.0 is incompatible with Macintosh Plus computers. Version 2.0.1 is compatible, and can be ordered through the Apple Order Center. There is a small charge for shipping and handling. The Tech Info Library article titled "Locating Vendor Information" can help you search for Apple Order Center's phone number.

Article Change History:
24 May 1996 - Updated for technical accuracy.
25 May 1994 - Added 2.0.1 availability information.
11 Apr 1994 - Added the note about ARA 2.0.1 beta software.

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Tech Info Library Article Number:14645

Tech Info Library

VideoSync: Doesn't Run with Some Configurations (5/95)

Revised: 5/25/95
Security: Everyone

VideoSync: Doesn't Run with Some Configurations (5/95)

==========

Article Created: 11 February 1994
Article Reviewed/Updated: 25 May 1995

TOPIC ----------

I am using VideoSync, and followed all the directions. They explain that I needed to put VideoSync and the Monitors control panel at the root level of the System Folder, and put an alias of the Monitors control panel in the Control Panels folder. Then restarted my Macintosh computer.

Configuration:

System 7.1
VideoSync 1.0

Quadra 700
Apple 21-inch
Apple 8.24 GC video card

When I open the Monitors control panel and click on Options, the screen goes into a severe roll and I have to restart.

DISCUSSION ----------

This configuration won't work with VideoSync.

VideoSync will only run:

- In 8-bit color (256 colors)
- Only on a 13-inch monitor (640x480)
- Only on the 8•24 NuBus card

VideoSync WON'T RUN with:

- The 24AC Display card
- The 8•24 GC card

- Third-party cards
- Internal Video

You need to use a smaller monitor and a different card to make VideoSync work on the Quadra 700. If you had access to a Quadra 840AV, you could use VideoSync II which ONLY works on the Internal Video.

Both VideoSync and VideoSync II are available through online services Apple provides software updates on.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
25 May 1995 - Added where to get VideoSync & VideoSync II software

Support Information Services

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Tech Info Library Article Number:14646

Tech Info Library

Software Installation Over a Network (2/95)

Revised: 2/10/95
Security: Everyone

Software Installation Over a Network (2/95)

==========

Article Created: 11 February 1994
Article Reviewed/Updated: 10 February 1995

TOPIC ----------

This article tells you how to set up software on a file server for installation over a network. This process works with many software packages that use the Apple Installer, such as At Ease and System 7, but does not work for system software versions earlier than 7.0.

DISCUSSION ----------

NETWORK INSTALLATION SERVER SETUP
==========

Most software installation scripts, especially those that use the Apple Installer, specify the name and contents of each disk used in the installation. You can substitute folders for disks, as long as their names and contents are exactly the same as the disks.

To set up a network installation, you need to have write privileges on the file server. If you cannot create files on the file server, ask your file server administrator to grant write privileges, then follow these steps:

Step 1:
Create a folder on a server volume, and give it an appropriate name, such as "System 7 Net Install".

Step 2:
Insert the first installation disk and drag its icon to this new Net Install folder. All files on the disk will copy into the new folder. Repeat this process for the remaining installation disks, except the Disk Tools disk.

Step 3:
Double-click the Net Install folder to open it.

Step 4:
Find the folder with the name of the first installation disk and open it.

Step 5:
Drag the Installer icon and the Installer Script icon to the root (top) level of the Net Install folder.

NOTE: If you are setting up a network installation for System 7 Pro, the instructions differ slightly from previous versions of system software. Make these changes:

- The Installer and Installer Script remain inside the Install Me First folder.

- Create an alias to the Installer and the Installer Script, and drag the aliases to the top level of the Net Install folder.

Step 6:
Be sure the server users have privileges to "See Folders" and "See Files" for the Net install Folder and all enclosed folders. Ask your file server administrator for help, if necessary.

Step 7:
Test the server by logging on from your own computer and running the installation.

NETWORK INSTALLATION

Preinstallation Checklist

Have a Recent Backup

It is always advisable to have a recent backup of your hard disk data. There are several software utilities available that perform this operation, or you can select the items you want to back up, and then copy them to another disk. If you cannot back up your entire hard disk, at least make a backup copy of your System Folder.

Run a Compatibility Checker

If you are installing system software, you may have a Compatibility Checker with the package. If so, run it before installing the new software. It checks all your applications and extensions for compatibility, and lets you print out the report. Remove any incompatible or questionable extensions from your System Folder. Contact the vendors of the incompatible applications for update information.

Turn Off Security and Virus-Protection Software

Turn off all security software and virus-protection software, and restart. Refer

to the manuals that came with the software for instructions.

Check for Directory Problems

Before upgrading system software, it is advisable to check the disk for directory problems. Start the workstation with the Disk Tools disk, and Run Disk First Aid on all connected hard disks. Repair any damaged hard disks you have connected to your Macintosh.

Update Hard Disk Drivers

You may want to update hard disk drivers, especially if you are upgrading from System 6 to System 7. If you have an Apple hard drive, you should update the drivers with the version of Apple HD SC Setup that is on the Disk Tools disk. Start the Macintosh with the Disk Tools disk, open Apple HD SC Setup, and click on the Update button.

If HD SC Setup cannot update the hard disk driver (indicated by a "dimmed" Update button), consider these possibilities:

- If a third-party utility formatted your hard disk, you should obtain the latest version of the utility to update your hard disk.

- If a version of Apple HD SC Setup more recent than the version on the Disk Tools disk formatted your hard disk, do not update the hard disk drivers.

- If a System 6 version of Apple HD SC Setup formatted the drive, it may not have left enough room for the updated driver. You don't have to update the hard disk drivers. However, if you intend to use file sharing or have a Macintosh that can use virtual memory, then you need to back up the disk and re-initialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

- If the driver is corrupt, the Macintosh does not recognize the disk (that is, the disk does not show on the desktop when you start from a floppy disk). You may want to re-initialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

- If the driver has been modified with compression or security software you will not be able to update the driver. Contact the vendor for additional help.

Begin Installation

Step 1:
Connect to the shared disk that contains the Net Install folder.

Step 2:
Double-click the Net Install folder to open it. A window appears.

Step 3:
Double-click the Installer icon (or alias, if you're using System 7 Pro).

Follow the instructions under Easy Install or Customize Install.

Easy Install

Step 1:
Click the Switch Disk button to select the disk where you want to install system software.

Step 2:
Click the Install button. When installation finishes, a message appears saying installation was successful.

Step 3:
Click the Quit Button.

Step 4:
Choose Restart from the Special menu.

Customize Install

If you want to select the components of the software installed (for example, if you do not want to install file sharing software, or don't want all printer drivers installed), you can customize the installation.

Step 1:
In the Installer, click the Customize button. A screen appears.

Step 2:
Click the Switch Disk button if necessary to select the disk where you want to install system software.

Step 3:
Select the items you want to install. Shift-click to select multiple items. Your selections appear beneath the scrolling window.

Step 4:
When you've made your selections, click the Install button.

Step 5:
When installation finishes, a message appears saying installation was successful. Click the Quit button.

Local Volume "Network Installation"
==========

This procedure also works on a local volume, such as an external hard disk or a RAM disk. This is useful for a Macintosh with only an 800K floppy drive, when you have high-density installation disks. Follow these steps:

Step 1:
Attach an external hard disk to a Macintosh with an Apple SuperDrive (formerly called FDHD).

Step 2:
Set up the Net Install folders on the external drive.

Step 3:
Connect it to the Macintosh with the 800K floppy drive.

Step 4: Run the Installer.

Clean System Software Installation

A normal system software installation modifies and updates the existing System Folder. A clean installation disables the existing System Folder, leaving most files in place, and forcing the Installer to create a new System Folder.

A clean system installation brings the system software back to the standard configuration. This is necessary when system software has been damaged or modified, preventing a normal installation. It's also useful in troubleshooting.

Follow these steps to do a clean system software installation over the network:

Step 1:
Follow the previous instructions in this document about the Compatibility Checker and Disk First Aid, updating the hard disk drivers if needed, and disabling security and virus protection software.

Step 2:
Log on to the file server where the Net Install folder is.

Step 3:
Open the System Folder on your hard disk.

Step 4:
Drag the System (at the root level of the System Folder) into the Preferences Folder.

Step 5:
Close the System Folder, and rename it "Storage".

Step 6:
Proceed with the installation instructions in the Begin Installation section.

After performing a clean installation, verify that problems are resolved before adding anything to the new System Folder. Adding items to the System Folder before resolving the problem defeats the purpose of a clean installation.

When the Macintosh behaves as expected, check the Storage folder for other system files, fonts, and sounds that you may want to install in your new System Folder. Drag files to the Trash that duplicate those in your new System Folder. Other files you might find in the Storage Folder include:

- INITs, control panels, and device drivers (such as scanner drivers), which you should reinstall from the original floppy disks, if possible.

- Check the system suitcase for non-standard fonts, sounds, and keyboard layouts.

- Preference files from applications that store information about the application's settings, (such as the default font and margins). These files can sometimes become damaged -- unless you have spent a lot of time customizing the application, it is best not to reinstall these. The application recreates the Preference file with default settings when you launch it.

- Some applications install folders (such as Claris, Microsoft, Aldus, or a folder for electronic mail). You can drag these folders to the new System Folder.

After you move all needed items from the Storage folder, drag the Storage folder to the Trash, and choose Empty Trash from the Special menu.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
10 Feb 1995 - Added keyword; made several technical updates; reformatted.
08 Feb 1995 - Added information on compressed drivers.
27 Oct 1994 - Review for consistency and update format.

Support Information Services

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Tech Info Library Article Number:14648

Sys 7.1 CD: Clean Install Quadra/Centris 610, 650, 800 (7/96)

Revised: 7/8/96
Security: Everyone

Sys 7.1 CD: Clean Install Quadra/Centris 610, 650, 800 (7/96)

==========

Article Created: 14 February 1994
Article Reviewed/Updated: 2 July 1996

TOPIC

A normal system software installation modifies and updates the existing System Folder. A clean installation disables the existing System Folder, leaving most files in place, and forcing the Installer to create a new System Folder.

A clean system installation brings the system software back to the standard configuration. This is necessary when system software has been damaged or modified, preventing a normal installation. It's also useful in troubleshooting.

DISCUSSION

Follow these instructions in the order presented.

Restart with Install Me First CD

1) Shut down your Macintosh computer.

2) Restart the computer while holding down the Command-Option-Shift-Delete keys.

3) When you see the blinking question mark, continue holding down the four keys, and insert the CD into the drive.

   The computer should start from the CD, and then you should see the At Ease menu. If you don't see this menu, repeat these steps.

Run Disk First Aid

Disk First Aid software can detect and repair problems on a hard disk.

1) Click on the Disk First Aid button.

2) In the window that appears, be sure the startup hard disk is selected. If it isn't, click the Drive button to select the startup hard drive.

3) Click on Open and then on Start. Disk First Aid checks your hard disk for any potential problems. If it finds problems, you should let the software repair them.

4) Repeat this procedure for each hard disk attached to the system.

5) When you're finished verifying the hard disks, choose Quit from the File menu to return to the desktop.

If Disk First Aid can't repair a hard disk, you should back up the hard disk and reinitialize it using the appropriate formatting utility for that disk. For Apple drives, use Apple HD SC Setup.

Update Hard Disk Drivers

If you don't have an Apple hard disk or use third-party software to format your disk, don't use the Apple HD SC Setup Utility. However, you should contact your hard drive vendor to verify that your formatting software is compatible with system software version 7.1.

If you have an Apple hard drive, you should update the drivers with the version of Apple HD SC Setup that's on the Disk Tools disk, following these steps:

1) Double-click the HD SC Setup icon to launch it.

2) Click on the Update button.

3) When you're finished, click Quit to return to the Finder.

If HD SC Setup can't update the hard disk driver (indicated by a "dimmed" Update button), consider these possibilities:

- If a third-party utility formatted your hard disk, you should obtain the latest version of the utility to update your hard disk.

- If a version of Apple HD SC Setup more recent than the version on the Disk Tools disk formatted your hard disk, don't update the hard disk drivers.

- If a System 6 version of Apple HD SC Setup formatted the drive, it may not have left enough room for the updated driver. You don't have to update the hard disk drivers. However, if you intend to use file sharing or have a Macintosh that can use virtual memory, then you need to back up the disk and reinitialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

- If the driver is corrupt, the Macintosh doesn't recognize the drive (that is, the drive doesn't show on the desktop). You may wish to reinitialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

- If the driver has been modified with compression or security software you will not be able to update the driver. Contact the vendor for additional help.

Check Available Hard Disk Space

Be sure you have at least 5MB available on the hard disk where you plan to install the system software. To check hard disk space, follow these steps:

1) Choose Control Panels from the Apple menu.

2) Double-click the Views control panel to open it.

3) In the Views control panel, check "Show disk info in header."

4) Open your hard disk's window.

The amount of available disk space appears in the upper-right corner of any open window.

If there's less than 5MB available, you'll need to delete some unnecessary files by moving them to the Trash. Choose Empty Trash from the Special menu, and you'll have more disk space available. Or you can copy files onto floppy disks or other media before moving them to the Trash.

Disable the System Folder

You disable the System Folder by moving the System and renaming the System Folder.

1) Open your hard disk's icon and locate the System Folder.

2) Open the System Folder and locate the System file.

3) Move the System file into the Preferences folder.

4) Close the System Folder's window and rename the System Folder "Storage."

5) Close all windows that are open on your desktop.

Install System 7.1

Install system software version 7.1 following these steps:

1) Double-click on the Install System Software icon located on the

Install Me First CD.

2) When the "Welcome to the Apple Installer" message appears, click on OK.

3) Be sure the correct disk is selected for the installation procedure (click on "Switch Disk" if necessary).

4) Click on Install.

The Installer determines the required software and reads it from the CD.

Verify Problem Resolution

After performing a clean installation, verify that you resolved the problem before adding anything to the new System Folder. Adding items to the System Folder before resolving your problem defeats the purpose of this procedure.

Install Non-Standard Items

You can now reinstall the non-standard items from the old System Folder (now named "Storage") such as fonts, screen savers, device drivers, and so on. If possible, you should reinstall these items from their original disks.

If the original disks aren't available, you may move the non-standard items from the Storage folder to the new System Folder. Be aware that reinstalling items from the old Storage folder into the new System Folder may reintroduce damaged or corrupted files. Be careful not to replace anything that's already in the new System Folder. Only move items that aren't already in the new System Folder.

1) Open each corresponding folder within the System Folder and the Storage folder and then compare the contents.

2) Move anything that isn't already in the new System Folder and its subfolders from the Storage folder and its subfolders to the new System Folder.

3) Restart your Macintosh.

Troubleshooting Extension Conflicts

If you've installed any system extensions or control panels, you'll probably see their icons line up across the bottom of the screen when you restart. They load into memory at startup time and modify the standard behavior of the operating system.

Verify INIT Conflict

If the Macintosh fails to restart or behaves erratically, you probably

have an incompatible, or conflicting, INIT (also known as a system extension or control panel). To verify this problem, follow these steps:

1) Be sure the Caps Lock key is off.

2) Restart, and after you see the picture of a smiling Macintosh, hold down the Shift key.

3) Release the Shift key when the "Welcome to Macintosh, Extensions Off" message appears.

4) When the Macintosh is ready, try to recreate the erratic behavior.

If the problem no longer occurs, then you have a conflicting extension or control panel. Continue with the next section.

Remove and Replace INITs in System Folder
---
1) Create a new folder on the desktop and name it "INITs."

2) Open the System Folder, Extensions folder, and Control Panels folder, and choose by Kind from the View menu. Find all items of Kind "system extension" or "control panel" under the Kind heading in the windows of the open folders, and move them to the INITs folder.

3) Close the System Folder, and restart the Macintosh.

4) Attempt to recreate the problem.

5) Move one item from the INITs folder to the closed System Folder and restart the Macintosh.

6) Attempt to recreate the original problem.

Repeat steps 5 and 6 for each item in the INITs folder on the desktop until the problem recurs. The last item returned to the System Folder is probably the cause of the problem. Remove it from the System Folder (restart, holding down the Shift key again, if necessary), and contact the developer of the INIT for more information.

Final Steps

Verify that your applications are performing normally. If not, refer to the application manual or contact the vendor.

When the Macintosh behaves as expected, drag the Storage folder to the Trash, and choose Empty Trash from the Special menu.

Article Change History:
02 Jul 1994 - Removcd Fax Information

01 Nov 1994 - Modified process for disabling old system folder.
04 Aug 1994 - Verified against contents of the fax document.

Support Information Services

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Tech Info Library Article Number:14650

Tech Info Library

MODE32: How to Access More Than 8 Megabytes (2/94)

Revised: 2/14/94
Security: Everyone

MODE32: How to Access More Than 8 Megabytes (2/94)

==========

Article Created: 14 February 1993

TOPIC ----------

I have a Macintosh which has 24-bit ROMs and I wanted to access more than 8 megabytes of memory with System 7, so I installed MODE32. When I open About This Macintosh in the Apple Menu, my system size is larger than 8 megabytes, yet I cannot access more than 8 megabytes of memory.

How can I access more than 8 megabytes?

DISCUSSION ----------

Your Macintosh is still set to 24-bit memory addressing and cannot access more than 8 megabytes. You must set your Macintosh to 32-bit addressing. To do so, follow these steps:

1) Select Control Panels from the Apple Menu, then select the Memory Control Panel.

2) Click on 32-bit addressing in the Memory Control Panel.

3) Restart your Macintosh.

Your Macintosh will now be able to access more than 8 megabytes of memory.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14651

Tech Info Library

MODE32: System Crashes and Recovery (2/94)

Revised: 2/14/94
Security: Everyone

MODE32: System Crashes and Recovery (2/94)

==========

Article Created: 14 February 1994

TOPIC ----------

I am using MODE32 and have had my system "crash" or "freeze." How do I recover from this?

DISCUSSION ----------

Here are some troubleshooting steps to follow if you have system "crashes" or "freezes" when using MODE32:

- If your Macintosh "freezes" before the Welcome to Macintosh dialog box is displayed, additional hardware, such as NuBus cards, system accelerators or memory may not be 32-bit clean. In this case, contact the manufacturer of your third-party hardware.

- If your Macintosh "freezes" when the Welcome to Macintosh dialog box is displayed, your hard disk formatting software may not be 32-bit clean. You should update your hard disk driver.

- If your Macintosh "freezes" while it is loading INIT files, remove all INITs except MODE32, then reboot your system. If your system reboots normally, add the INIT files one by one to your System Folder and reboot after you add each one. If your Macintosh "freezes" again, the INIT that you just added is likely to be incompatible. Contact the INITs vendor to get an updated version.

  Note that INITs that are NOT 32-bit clean are likely to be incompatible.

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Tech Info Library Article Number:14652

Tech Info Library

Newton MessagePad: How to get System Update 1.05 (2/94)

Revised: 2/28/94
Security: Everyone

Newton MessagePad: How to get System Update 1.05 (2/94)

==========

Article Created: 24 January 1994

TOPIC -----

This article describes Newton System Update 1.05.

DISCUSSION -----

Newton System Update 1.05 is designed for any Newton MessagePad who has system software version 1.04 or lower. It optimizes system performance for third-party applications, and improves your Newton's memory and power management. System Update 1.05 gives you the same functionality provided by Newton System 1.11.

To receive System Update 1.05 in the United States, contact the Newton Fulfillment Center at 1-800-242-3374. Outside the United States, contact your local Apple Authorized Service Provider.

Apple is currently distributing system updates for your Newton MessagePad by the following methods:

- If you have the Newton Connection Kit for Macintosh or Windows, you can:

  1) Call the Newton Fulfillment Center at 1-800-242-3374 and order a floppy disk containing the system update. You can then use your Newton Connection Kit to download the system update from your personal computer to your Newton.

  2) For customers with a personal computer, modem, and a Newton Connection Kit for Macintosh or Windows, the update is also available on the following online services:

     Compuserve (type go newton to get to the Newton Forum) America Online (keyword PDA to get to the Newton Discussion Area) AppleLink (in Newton Folder, inside World of Newton)

It is also available to internet users via FTP at the address FTP.APPLE.COM.

- If you do not have the Newton Connection Kit, you can call the Newton Fulfillment Center at 1-800-242-3374 and order the system update on a PCMCIA card. You can then transfer the system update from the PCMCIA card to your Newton.

Since System Update 1.05 uses an additional 32K of system memory, you must back up your Newton's information on a PCMCIA card or with the Newton Connection Kit before installing System Update 1.05. If you do not have a Newton Connection Kit or a memory card, contact the Newton Fufillment Center to borrow a memory card.

Article Change History
28 February 1994 - Added reference to on-line sources of System Update1.05

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14653

Tech Info Library

Network Software Installer 1.4.x and Enabler 201 Flaw (2/94)

Revised: 2/18/94
Security: Everyone

Network Software Installer 1.4.x and Enabler 201 Flaw (2/94)

==========

Article Created: 14 February 1994

TOPIC -----

This article describes a message flaw with the Network Software Installer (NSI) 1.4.x.

DISCUSSION -----

The NSI 1.3.2 installer had a problem where it didn't remove Enabler 201 from systems that did not require it. This was fixed in later releases of NSI.

However, the NSI 1.4.x installer does install this Enabler on all systems initially because it is unable to handle Enabler files in an elegant manner. So to properly install network resources on Macintosh Duo systems, it is necessary to install Enabler 201 on all systems and then later delete the enabler during the install process on non-Macintosh Duo systems. The Installer does not have a feature that would allow the script writer to hide the message "building file, system enabler 201". As of this writing, the message is there to stay. Engineering is aware of the issue and, when possible, will address it.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14656

Tech Info Library

Apple Color StyleWriter Pro: Description (7/95)

Revised: 7/27/95
Security: Everyone

Apple Color StyleWriter Pro: Description (7/95)

==========

Article Created: 16 February 1994
Article Reviewed/Updated: 27 July 1995

TOPIC ----------

This article describes the Apple Color StyleWriter Pro printer.

DISCUSSION ----------

The Apple Color StyleWriter Pro printer offers high-quality color documents at an affordable price on a wide range of media sizes and types.

The Apple Color StyleWriter Pro printer is integrated with ColorSync color–matching software. At 360 dots-per-inch (dpi) print resolution, the Apple Color StyleWriter Pro printer offers 44 percent higher resolution than traditional 300-dpi printers.

Setup, use, and maintenance are simple. There is a separate cartridge for black ink, as well as for cyan, magenta, and yellow. So you can print with high–quality black ink and replace cartridges individually.

The Apple Color StyleWriter Pro printer features the ColorShare driver that gives you the ability to share printers across a network. It comes with 64 TrueType fonts and supports Adobe Type 1 fonts when used in conjunction with Adobe Type Manager (ATM).

Product Features

Outstanding Print Quality

- Offers 360 dpi resolution for crisp text and vibrant color
- 65 screen lines per inch
- Takes advantage of ColorSync color-matching technology to ensure high-quality printed output

High Performance

- Prints quickly — even when printing in color
- Offers a variety of print modes to enhance productivity
- Features fast ColorSync performance

Low Cost per Page

- Uses separate cyan, magenta, yellow and black ink cartridges, which lowers cartridge replacement and per-printed-page costs
- Prints on plain bond or copier paper

Convenience

- Features a compact, attractive design
- Includes everything needed to print: interface cable, ink cartridges, printhead, and sample media kit
- Offers the option of printing on a wide range of media, including plain paper, transparencies, premium coated paper, and back-print film
- Takes advantage of ColorShare software to enable printer sharing over a network
- Complies with the EPA's Energy Star guidelines for energy-efficient operation

Ordering Information

Apple Color StyleWriter Pro
Order No. B1029LL/A

- Apple Color StyleWriter Pro printer
- User's guide
- Apple System Peripheral-8 Cable
- Apple Color StyleWriter Pro Ink Cartridges
- Apple Color StyleWriter Pro Print Head
- Sample media kit
- Limited warranty

Ink Cartridges

- Cyan Order No. M1949G/A
- Magenta Order No. M1950G/A
- Yellow Order No. M1951G/A
- Black Order No. M1952G/A

Media

- Letter-size transparency (50 pack)
  Order No. M2658G/A
- A4-size transparency (50 pack)
  Order No. M1959G/A
- Letter-size premium coated paper (200 pack)

Order No. M2952G/A
- A4-size premium coated paper (200 pack)
  Order No. M2951G/A
- Letter-size back-print film (20 pack)
  Order No. M2953G/A
- A4-size back-print file (20 pack)
  Order No. M2954G/A

System Requirements

- Any Apple Macintosh personal computer that supports Color QuickDraw and has 4MB of RAM and a hard disk drive. Color QuickDraw first shipped with the Macintosh II, and is in every Macintosh II class computer, which includes the SE/30. This EXCLUDES the Plus, Classic and SE (they will not print in color).
- System software version 7.0 or later

Article Change History:
27 Jul 1995 - Corrected misspellings; reviewed.
25 Jul 1994 - Added System Requirements.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:14657

Tech Info Library

Apple Color StyleWriter Pro: Specifications (7/95)

Revised: 7/14/95
Security: Everyone

Apple Color StyleWriter Pro: Specifications (7/95)

==========

Article Created: 16 February 1994
Article Reviewed/Updated: 14 July 1995

TOPIC ----------

This article gives the technical specifications for the Apple Color StyleWriter Pro printer.

DISCUSSION ----------

Print Method

• Thermal ink jet

Print Quality

• 360 dpi in normal and best mode
• 180 dpi in draft mode

Interface

• High-speed serial (RS-422)

Speed

• Up to 2 pages per minute for monochrome
• Up to 0.5 page per minutes for color
• Actual speed depends on the documents printed and the Macintosh used

Fonts Supported

• 64 TrueType fonts: ITC Avant Garde, ITC Bookman, Chicago, Courier, Delphian, ITC Garamond Narrow, Geneva, Helvetica, Helvetica Black, Helvetica Compressed, Helvetica Narrow, ITC Lubalin Graph, Lucida Bright, ITC Machine, Monaco, Nadianne, New Century Schoolbook, New York, Old English Text, Onyx, Oxford, Palatino, Swing, Symbol, Times, ITC Zapf Chancery, ITC Zapf

Dingbats, and Zeal

Ink Cartridges

- Separate cartridges for cyan, magenta, yellow, and black
- 315 pages at 5% page coverage per color

Print Materials

- 16 to 24 lb. (60 to 90 g/m2) bond or copier paper
- Paper: U.S. letter, U.S. legal, A4, and envelopes (#10 business, monarch, and other sizes)
- Most letterhead and colored stock, labels, and envelopes
- For superior graphics and imaging results, Apple recommends Apple premium coated paper and Apple back-print media
- For fast dry time and vibrant colors, Apple recommends Apple color ink-jet transparencies

Paper Capacity

- Multipurpose tray that accommodates up to 100 sheets of paper or 15 envelopes

Printable Surface

- Maximum printable line: 8.0 in (20.3 cm)
- Minimum margins: 0.25 in. (.64 cm)

Size and Weight

- Height: 7.2 in. (18.3 cm)
- Width: 16.5 in. (41.9 cm)
- Depth: 10.1 in. (25.7 cm)
- Weight: 11 lb. (5.0 kg)

Power Consumption

- Operating mode: 28 W (maximum)

Operating Environment

- Temperature: 59° F to 86° F (15° C to 30° C)
- Humidity: 10% to 80% noncondensing

Power Requirements

- U.S./Japan: 120 V, 60 Hz, 1 amp
- Europe/Australia: 220 to 240 V, 50 Hz, 0.5 amp

System Requirements

- Any Apple Macintosh personal computer that supports Color QuickDraw and has 4MB of RAM and a hard disk drive. Color QuickDraw first shipped with the

Macintosh II, and is in every Macintosh II class computer, which includes the SE/30. This EXCLUDES the Plus, Classic, SE, Macintosh Portable, and the PowerBook 100 (they will not print in color).

- System software version 7.0 or later

Article Change History:
14 Jul 1995 - Added PowerBook 100 and Portable to list of unsupported computers
15 Jun 1994 - Added that only machines that support Color QuickDraw will print in color.

Support Information Services

Copyright 1994-1995, Apple Computer, Inc.

Tech Info Library Article Number:14658

Tech Info Library

QuickTake 100 for Macintosh: Description (2/94)

Revised: 5/13/94
Security: Everyone

QuickTake 100 for Macintosh: Description (2/94)

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Article Created: 17 February 1994

TOPIC -----

This article describes the Apple QuickTake 100 Digital Camera for Macintosh.

DISCUSSION -----

Overview

The Apple QuickTake 100 Digital Camera for Macintosh is a 24-bit color still digital video camera. You can take up to 32 standard-resolution or 8 high-resolution images at a time (which are stored in the QuickTake 100's internal memory), then you can download your images into a Macintosh computer. The Apple QuickTake 100 has automatic exposure and flash, along with simple controls for ease of use.

Once you've connected your QuickTake 100 to your Macintosh with the included serial cable, you can use the QuickTake software to download your images. You can also control and run the camera from your Macintosh, so images appear on screen as they are taken.

Your downloaded images can be rotated, cropped or scaled, then saved in PICT, TIFF or QuickTake file formats for placing in word processing, presentation or publishing applications.

Quality

• High-quality, 24-bit color images
• Two image sizes:
  - 320 by 240 pixels (standard resolution)
  - 640 by 480 pixels (high resolution)

Performance

- Up to 32 standard-resolution or 8 high-resolution images in internal memory
- Automatic exposure with computer-controlledshutter speeds from 1/30 to 1/175 of a second
- Apertures from f2.8 to f16
- Focus range from 4 feet to infinity
- Built-in automatic flash
- Images can be stored in the camera up to one year before being loaded into your Macintosh computer
- Battery life: 120 images (assuming about half taken with flash)

Compatibility

- GeoPort serial connection for high-speed data transfer
- QuickTake application to download and manipulate images
- File formats: PICT, TIFF, and QuickTake
- QuickTake Setup control panel to mount camer as a volume on your Macintosh desktop
- Supports QuickTime system extension for image compression
- ColorSync system extension for automatic color matching to screen and printer
- Standard photo tripod socket
- Standard AA batteries

Ordering Information

Apple QuickTake 100 Digital Camera for Macintosh
Order No. M1644

- QuickTake 100 digital camera for Macintosh
- QuickTake software (for downloading and editing images) for Macintosh
- Serial cable for connecting camera to your computer (cable connects to printer or modem port)
- Three rechargeable NiCad AA batteries
- Battery recharger
- Neck strap
- QuickTake 100 User’s Guide

Battery Booster Pack
Order No. M2655

- Lets you take thousands of pictures with your QuickTake 100 digital camera
- Eight AA lithium batteries included

Travel Case
Order No. M2848

- Leather camera grip and protective carrying case

Macintosh PowerBook AC Adapter
Order No. M4662

- Lets you power your QuickTake 100 digital camera using AC power

Connection Kit for Windows
Order No. M1647

- Allows you to connect your QuickTake digital camera to a Windows-based personal computer

Support Information Services

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Tech Info Library Article Number:14659

Tech Info Library

QuickTake 100 for Macintosh: Specifications (10/94)

Revised: 10/17/94
Security: Everyone

QuickTake 100 for Macintosh: Specifications (10/94)

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Article Created: 16 February 1994
Article Reviewed/Updated: 17 October 1994

TOPIC ----------

This article describes the specifications of the Apple QuickTake 100 Digital Camera for Macintosh.

DISCUSSION ----------

Image

• 24-bit color

Memory

• 1MB of FLASH EPROM stores up to 32 standard-resolution images, 8 high-resolution images or a combination of high and standard-resolution images
• Storage time: up to one year

Resolution

• 320 by 240 pixels (standard resolution)
• 640 by 480 pixels (high resolution)

Optics

• Fixed-focus lens
• Focus range: 4 feet to infinity
• Field of view: equivalent to a 50-mm lens on a 35-mm camera
• Optical viewfinder
• Aperture from f2.8 to f16

Speed

- Shutter speed: from 1/30 to 1/175 of a second
- Cycle time: average 4 seconds
- Self-timer: 10 seconds

Built-in Flash

- Three modes: Automatic, On, or Off
- Range 4 to 9 feet
- Flash cycle time: 7 seconds

Power

- Includes three rechargeable AA NiCad batteries
- Supports three 1.5 V AA, R6P, LR-6, or SUM-3 NiCad or lithium batteries
- Battery recharger
- Option AC adapter

Interface

- Serial port for connection to Macintosh printer or modem port

User Controls

- Shutter release, resolution, flash, self-timer, and Erase All Images

LCD Status Window

- Number of images that have been taken
- Number of images remaining
- Resolution, flash, and self-timer settings
- Erase All Images
- Battery level

Operating Environment

- Operating - 0° to 40° C (32° to 104° F)
- Storage (6 months) - -40° to 47° C (-40° to 117° F)
- Transit (72 hours) - -40° to 65° C (-40° to 149° F)
- Humidity - 20 to 95 percent, non–condensing
- Altitude - No limitation other than specified temperature and humidity limits

QuickTake 1.0 Application

- Display thumbnails of images
- Select, process, and view images
- Rotate images by ± 90°
- Crop, scale, and zoom in on images
- Cut, copy, and pates images into other applications
- Erase images in camera
- Save pictures in PICT, TIFF, or QuickTake file formats
- Transform images to 16 bit, 8 bit, and 1 bit
- Uses ColorSync for automatic color matching to screen and printer

(ColorSync included)
• Compress images with QuickTime software (QuickTime included)
• View images immediately with camera connected to Macintosh

QuickTake Setup

• Access from the control panel
• Lets you mount camera as a volume onto your desktop

System Requirements

• A Macintosh with a 68020 or higher central processing unit (any Macintosh except a Macintosh Plus, SE, Classic, Portable, or Powerbook 100)
• System software version 7.0.1 (with Tune-Up 1.1.1) or later
• 4 MB of RAM with 8 MB of virtual memory or 8 MB of RAM
• Apple SuperDrive
• Hard drive with at least 10 MB available

Article Change History:
17 Oct 1994 - Added Operating Environment specifications.
19 Apr 1994 - Added system requirements.

Support Information Services

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Tech Info Library Article Number:14660

Macintosh LC 550: Specifications (Discontinued)

Revised: 8/19/96
Security: Everyone

Macintosh LC 550: Specifications (Discontinued)

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Article Created: 16 February 1994
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

This article provides technical specifications for the Macintosh LC 550 computer. Note that, in the U.S., this model is sold only through educational channels.

DISCUSSION ----------

Microprocessor

- MC68030, 33 MHz clock speed; 32-bit data bus
- Optional 68882 math coprocessor

PowerPC

- Upgradable to PowerPC when upgrade becomes available

Memory

- 4MB RAM on logic board
- Expandable (by authorized Apple dealer) to as much as 36MB by adding 1MB, 2MB, 4MB, 8MB, 16MB, or 32MB SIMM to a single 72-pin slot. SIMM Specification: 72-pin fast-paged, 80ns or faster SIMM.
- 1MB ROM

Storage

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 160MB hard drive
- Optional Internal AppleCD 300i Plus CD-ROM drive with new tray-loading design.
. • Does not require a CD caddy
. • Average access time: 295 ms

. • Capacity: 650MB
. • Supported formats: Multisession Photo CD, High Sierra (ISO 9660),
. Macintosh HFS, Audio CD, CD + G/CD + MIDI,
. CD-ROM XA, CD-I

Video Display

• Integrated Macintosh Color Display with 14-inch Trinitron CRT
• Resolution: 640 by 480 pixels, 69 dpi, .26 mm dot pitch
• Standard 512K VRAM supports 256 colors (8-bit color)
  Optional 1MB VRAM supports 32,768 colors (16-bit color)

Interfaces

• Internal expansion slot for one Macintosh LC processor-direct
  expansion card. Compatible with Apple IIe Card.
• SCSI interface for connecting up to five external devices
• Internal SCSI interface for connecting optional internal CD-ROM drive
• Two serial (RS-232/RS-422) ports
• One stereo sound-output port for external audio amplifier or headphones
• One Apple Desktop Bus (ADB) ports for keyboard, mouse, and other
  devices
• Front headphone jack
• Built-in microphone above display
• One sound-input port for four sources: included internal microphone, or
external Plaintalk Microphone, internal CD-ROM, or other external audio source

Pull-out Logic Board

• Allows easy upgrades to DRAM, VRAM, and PDS.

Sound Generator

• Stereo 8-bit digital-analog conversion using 22-kHz sample rate,
  capable of driving stereo headphones or other stereo equipment through
  the sound jack and headphone jack
• Two built-in stereo speakers
• CD output is 16-bit digital

Keyboard and Mouse

• ADB Mouse II
• Keyboard purchased separately only in the K-12 configuration; several ADB
  keyboards with numeric keypads available

Clock/Calendar

• Custom integrated circuit with long-life alkaline battery.

Disability Access

• CloseView, Easy Access, and visible-beep software are built in.

- Third-party options provide alternative input and output devices

Power Requirements

- Line voltage: 90 to 264 V AC, RMS single phase, automatically configured
- Frequency: 47 to 63 Hz
- Power: 40 W maximum, not including display
. 60 W maximum, including display
- Energy-saving feature reduces power consumption by 50%
- Energy Star compliant
- One AC outlet powers computer, display, drives, and speakers

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 mA (three ADB devices maximum is recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA, depending model used

Operating Environment

- Operating temperature: 50 to 104° F (10 to 40° C)
- Storage temperature: –40 to 116.6° F (–40 to 47° C)
- Relative humidity: 20% to 85% noncondensing
- Maximum altitude: 15,000 ft. (4,722 m)

Article Change History:
19 Aug 1996 - Corrected spelling.
03 Aug 1995 - Added information on PlainTalk Microphone requirement.
27 Jul 1995 - Corrected misspellings; reviewed.

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Tech Info Library Article Number:14661

Tech Info Library

A/UX and Compatible Macintosh Computers (8/94)

Revised: 8/29/94
Security: Everyone

A/UX and Compatible Macintosh Computers (8/94)

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Article Created: 16 February 1994
Article Reviewed/Updated: 29 August 1994

TOPIC ----------

This article describes which Macintosh computers do and do not support A/UX.

DISCUSSION ----------

Here is the list of Macintosh computers supported by A/UX 3.0.1 or 3.0.2:

- Mac SE/30
- Mac II (with PMMU)
- Mac IIx
- Mac IIcx
- Mac IIci
- Mac IIfx
- Mac IIsi
- Mac Centris 610 (only with third party FPU)
- Mac Centris 650 (only with FPU)
- Mac Quadra 610*, 650
- Mac Quadra 700, 800, 900, 950
- Apple Workgroup Server (AWS) 95

* A/UX will not work with 68LC040-based Quadra 610 computers, because the 68LC040 microprocessor doesn't have an FPU. The low-end Quadra 610 (8/160) and the Quadra 610 (8/160) DOS Compatible have the 68LC040 microprocessor.

Macintosh computers NOT supported by A/UX include:

- Mac IIvx
- Mac Quadra 630
- Mac Quadra 660AV
- Mac Quadra 840AV
- All Macintosh LC series computers (no FPU present)

All Macintosh PowerBook and PowerBook Duo computers
All Power Macintosh computers

Additionally, if you are installing A/UX on a supported Macintosh that requires a system enabler in order to boot, you can accomplish the installation by copying the necessary system enabler to the System Folder of the A/UX installation diskette prior to beginning the install.

A/UX 3.1 is only supported on the AWS 95, but it still can be purchased by existing non-AWS 95 customers for upgrade to A/UX 3.1.

Also, A/UX 3.0.1, 3.0.2, or 3.1 Finder interface is still based on Macintosh System 7.0.1.

Article Change History:
29 Aug 1994 - Added info about Quadra 630.
20 Jun 1994 - Added clarification on 68LC040-based computers.
06 Jun 1994 - Added Macintosh computers not supported by A/UX.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14662

Tech Info Library

PowerCD and A/UX Incompatibility (6/94)

Revised: 6/6/94
Security: Everyone

PowerCD and A/UX Incompatibility (6/94)

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Article Created: 18 February 1994
Article Reviewed/Updated: 6 June 1994

TOPIC ----------

Is A/UX 3.0.1 compatible with the PowerCD? Will A/UX 3.1 be compatible?

DISCUSSION ----------

The Apple PowerCD is currently NOT compatible with A/UX 3.0. There are no known plans to make A/UX 3.1 compatible with the PowerCD.

If you try to run a PowerCD on an A/UX system, you may see the following symptoms:

- The PowerCD extension software will be crossed out on startup.
- Trying to mount a CD will always bring up this error message, "Not a Macintosh Disk: Do You Want To Initialize?"

Article Change History:
06 Jun 1994 - Included symptoms.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14663

Tech Info Library

LaserWriter Pro 810: How to Enter Super User Mode (7/96)

Revised: 7/18/96
Security: Everyone

LaserWriter Pro 810: How to Enter Super User Mode (7/96)

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Article Created: 18 February 1994
Article Reviewed/Updated: 18 July 1996

TOPIC ----------

I am using NCSA Telnet to access the LaserWriter Pro 810's Remote Console Facility (RCF), and am unable to enter super user mode. I can, however, enter super user mode through a terminal that I have directly connected to the printer's RJ-12 port.

How can I enter super user mode through Telnet?

DISCUSSION ----------

When using Telnet to enter super user mode on the LaserWriter Pro 810, you must change the carrige return configuration from CR-LF to CR-NUL. Here is how to make this change.

Step 1

Launch NCSA Telnet

Step 2

Choose Preferences from the Edit menu, and choose Sessions from the submenu.

Step 3

Click New to create a session, or highlight the session you normally use and Click Change.

Step 4

Select Berkley 4.3 CR mode.

This changes the carriage return mode to CR-NUL.

Step 5

Select OK to close the Sessions options dialog.

Step 6

Select OK to close the Sessions dialog.

Once you have changed the CR mode, you can enter the super user mode.

The password to enter the super user mode is: SYSTEM

Article Change History:
18 Jul 1996 - Rewrote entire discussion.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14664

Tech Info Library

Macintosh Plus: Limited Cursor Movement During Background Print

Revised: 2/21/94
Security: Everyone

Macintosh Plus: Limited Cursor Movement During Background Print

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Article Created: 21 February 1994

TOPIC ----------

Configuration:

- Macintosh Plus (4MB RAM)
- External hard disk
- StyleWriter II

During background printing, I can't move the cursor in certain directions:

- When connected to the printer port, I have only horizontal cursor movement.
- When connected to the modem port, I have only vertical cursor movement.

DISCUSSION ----------

We have verified this problem on a StyleWriter II with a Macintosh Plus. There was a Serial Driver patch created for other computers, and this patch doesn't work well on the Macintosh Plus.

You must do a "clean" system software version 7.1 installation, because the patch updated the System and can't be removed. Then drag the following items into the System Folder from the StyleWriter II version 1.2 disks (DON'T run the Installer as it will reinstall the patch):

- From Installer (Disk 1):
  - StyleWriter II
  - Chooser

- From Disk 2 Printer Software:
  - TrueType Fonts 2

    - And from within the "Printer Software 2" folder:
      - PrinterShare

- From Disk 3 Printer Software:
  - TrueType Fonts 3

- From Disk 4 Printer Software:
  - TrueType Fonts 4

Be aware that you may still see the "slow CPU and jerky mouse" syndrome. But you'll have a functional mouse while the printer is actually printing.

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Tech Info Library Article Number:14665

Tech Info Library

File Server 3.0, 4.0, & Pro: Which Workstation Version (2/94)

Revised: 2/21/94
Security: Everyone

File Server 3.0, 4.0, & Pro: Which Workstation Version (2/94)

==========

Article Created: 15 February 1994

TOPIC -----

I want to know what version of AppleShare Workstation software I can load on all my workstations to create messages from either 3.0.1, 4.0.x, or AppleShare Pro servers, and not get error messages. For example when I mount a server and get a dialogue indicating the next time I log in I'll have a new password. What is the latest workstation software that works with all the AppleShare File Servers versions I mentioned above?

DISCUSSION -----

The AppleShare Workstation software that comes with AppleShare 4.0 is version 3.5 and it is backward compatible, it will allow the workstation to get those messages you mentioned. We recommend using version 3.5.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14667

Tech Info Library

DAL Support & Sales Info From Independence Technologies (2/94)

Revised: 2/17/94
Security: Everyone

DAL Support & Sales Info From Independence Technologies (2/94)

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Article Created: 15 February 1994

TOPIC -----

This article describes how to get support and sales information from Independence Technologies, Inc. (ITI) for Data Access Language (DAL).

DISCUSSION -----

With the agreement between Apple Computer and ITI, ITI will market DAL and provide all support to DAL customers. Existing DAL licensing agreements, independent software vendors (ISVs) and resellers will continue with ITI.

• Technical Support

  - In the USA, call ITI at 510-438-2095.

  - In Europe and Pacific, contact Apple locally as of February 15, 1994.

• Sales Support

  - Marsha Doyen, Manager DAL Sales at 510-438-2000.

For complete Independence Technologies, Inc. information, use "Independence Technologies" as a search string.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14668

Tech Info Library

Independence Technologies, Inc.

Revised: 4/7/97
Security: Everyone

Independence Technologies, Inc.

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Article Created: 15 February 1994
Article Reviewed/Updated: 7 April 1997

Independence Technologies, Inc. (ITI)

42705 Lawrence Place
Fremont, CA 94536

510-438-2095 Technical Support

510-438-2000 ITI Main Number

510-438-2034 FAX

Company Profile:
ITI provides sales support and technical support for Data Access Language (DAL).

Copyright 1994-97, Apple Computer, Inc.

Tech Info Library Article Number:14669

Tech Info Library

Macintosh Quadra 610 DOS Compatible: Specifications (1/95)

Revised: 9/29/95
Security: Everyone

Macintosh Quadra 610 DOS Compatible: Specifications (1/95)

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Article Created: 17 February 1994
Article Reviewed/Updated: 13 January 1995

TOPIC ----------

This article provides technical specifications for the Macintosh Quadra 610 DOS Compatible computer.

DISCUSSION ----------

Microprocessors

- 68LC040, 25-MHz clock speed, 32-bit data bus
- Intel 486sx, 25-MHz clock speed, 32-bit data bus

Memory

- Comes with 4MB of RAM on the logic board
- Expandable to 68MB of RAM by adding a Single Inline Memory Module (SIMM) to the 72-pin slot on the Macintosh logic board (dealer installation required).
- Single Macintosh-compatible 72-pin SIMM slot for up to 32 MB of 80ns local RAM on DOS Compatibility Card (dealer installation required).
- DOS environment can access either shared memory on the Macintosh logic board (up to 64MB) or local memory on the DOS Compatibility Card (up to 32MB)

Storage

- Built-in Apple SuperDrive 1.4MB floppy disk drive, which uses high-density floppy disks and reads, writes, and formats Macintosh, Windows, MS-DOS, OS/2, and ProDOS disks
- Internal hard disk
- Optional internal CD-ROM drive

Displays

• Features built-in support for one or two displays
• Works with all Apple displays as well as third-party NTSC, PAL, VGA, and SuperVGA displays (Macintosh environment)
• Works with Apple 13-inch, 14-inch, and 16-inch displays as well as third-party VGA and SuperVGA displays (DOS environment)

Video RAM (VRAM)

• 512K standard, expandable to 1MB (Macintosh environment)
• 512K RAM for video (DOS environment)

Interfaces

• PC game port (DOS environment)
• SCSI interface for connecting up to six external peripheral devices
• AAUI-15 Ethernet connector
• Two serial (RS-232/RS-422) ports for Macintosh-compatible devices
• Video port for color and monochrome displays of various sizes and resolutions
• Two Apple Desktop Bus (ADB) ports for a keyboard, mouse, and other devices

Networking

• Serial port for AppleTalk
• Built-in Ethernet

Sound Generator

• Built-in speaker
• Stereo 8-bit sound capable of driving stereo headphones or other stereo equipment through the sound jack (Macintosh environment)

Sound Input

• 8-bit analog-to-digital monophonic recording
• Sample rates: 11 or 22 KHz

Keyboard and Mouse

• Several ADB keyboards with numeric keypads available
• Apple Desktop Bus Mouse II

Clock/Calendar

• Custom integrated circuit with long-life lithium battery

Disability Access

• CloseView, Easy Access, and visible-beep software are built in. These and third-party options provide alternative input and output devices.

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 210 W maximum, not including display power

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 mA (three ADB devices maximum recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA (depending on the keyboard used)

Size and Weight

- Height: 3.4 in. (8.6 cm)
- Width: 16.3 in. (41.4 cm)
- Depth: 15.6 in. (39.6 cm)
- Weight: 16.2 lbs (7.4 kg) Weight varies depending internal devices installed.

Operating Environment

- Operating temperature: 50° to 104° F (10° to 40° C)
- Storage temperature: –40° to 117° F (–40° to 47° C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 ft. (3,048 m)

Article Change History:
13 Jan 1995 - Documented SIMM specification for DOS card.
20 Dec 1994 - Corrected RAM amount and number of SIMM slots.
18 Mar 1994 - Added "Macintosh" to title.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:14670

Tech Info Library

Macintosh LC 575: Description (3/95)

Revised: 3/17/95
Security: Everyone

Macintosh LC 575: Description (3/95)

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Article Created: 17 February 1994
Article Reviewed/Updated: 17 March 1995

TOPIC ----------

This article describes the Apple Macintosh LC 575 computer. Note that, in the U.S., this model is sold only through educational channels.

DISCUSSION ----------

Overview

The Apple Macintosh LC 575 is Apple's most powerful all-in-one computer. Its integrated design combines logic board and monitor in a single package with stereo speakers and a microphone.

With its fast 33 megahertz 68040 microprocessor, the Macintosh LC 575 performs at four times the speed of the Macintosh LC III. It supports up to 36 megabytes of memory and has 160 and 320 megabyte internal hard drive options. Apple's new internal CD-ROM drive is included with most models. This new drive features tray-loading, so you'll no longer need a CD caddy.

The Macintosh LC 575 is expandable with a LC-compatible processor-direct slot and a communications slot for Ethernet networking or a high-speed fax/data modem.

Features

Power and Speed

- 33 megahertz 68LC040 microprocessor with 32-bit data bus
- 5 megabytes of RAM, expandable to 36 megabytes
- 512 kilobytes or 1 megabyte of VRAM for 8-bit color standard (optional 16-bit)

- Built-in double-speed, tray-loading CD-ROM drive (on most models)
- 160 and 320 megabyte hard disk drive options

Convenience

- Features all-in-one design for easy setup and use
- Includes front-panel contrast and volume controls and a headphone jack, as well as a keyboard power on/off switch
- Conserves energy by reducing power consumption by more than 50 percent

Broad Expansion Capabilities

- PowerPC upgradable when upgrade becomes available
- Comes with built-in ports to support a wide range of peripherals
- Features a Macintosh LC-compatible processor-direct slot
- Includes a communication slot for 14.4 KB fax/modem or Ethernet connection

Ordering Information

Macintosh LC 575 4/160
Order No. M2618LL/B
- Macintosh LC 575 computer with 4MB of RAM, 512K of VRAM, built-in 1.4MB Apple SuperDrive, and internal 160 MB hard disk drive
- System software version 7.1
- Limited warranty

Macintosh LC 575 5/160
Order No. M2461LL/B
- Same as Order No. M2618LL/B, but with 5MB of RAM, 1MB of VRAM, and an internal CD-ROM drive

Macintosh LC 575 8/160
Order No. M1797LL/B
- Same as Order No. M2461LL/B, but with 8MB of RAM

Article Change History:
17 Mar 1995 - Corrected wording of PowerPC.
01 Dec 1994 - Removed mention of Macintosh LC 575 Upgrade.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:14671

Tech Info Library

Macintosh LC 550: Description (3/95)

Revised: 3/17/95
Security: Everyone

Macintosh LC 550: Description (3/95)

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Article Created: 17 February 1994

TOPIC ----------

This article describes the Apple Macintosh LC 550 computer. Note that, in the U.S., this model is sold only through educational channels.

DISCUSSION ----------

Overview

The Apple Macintosh LC 550 is a low cost, yet powerful all-in-one computer. Its integrated design combines logic board and monitor in a single package with stereo speakers and a microphone.

With its 33 megahertz 68030 microprocessor, the Macintosh LC 550 performs 25 percent faster than the Macintosh LC III. It supports up to 36 megabytes of memory and has a 160 megabyte internal hard drive options. As an option, you can add Apple's new internal CD-ROM drive. This new drive features tray-loading, so you'll no longer need a CD caddy.

The Macintosh LC 550 is expandable with a LC-compatible processor-direct slot.

Features

Power and Speed

- 33 megahertz 68030 microprocessor with 32-bit data bus
- Optional 68882 math coprocessor
- 4 megabytes of RAM, expandable to 36 megabytes
- 512 kilobytes of VRAM for 8-bit color standard (optional 1MB of VRAM for 16-bit color)
- Optional internal double-speed, tray-loading CD-ROM drive
- 160 megabyte hard disk drive

Convenience

- Features all-in-one design for easy setup and use
- Includes front-panel contrast and volume controls and a headphone jack, as well as a keyboard power on/off switch
- Conserves energy by reducing power consumption by more than 50 percent

Broad Expansion Capabilities

- PowerPC upgradable when upgrade becomes available
- Comes with built-in ports to support a wide range of peripherals
- Features a Macintosh LC-compatible processor-direct slot

Article Change History:
17 Mar 1995 - Corrected wording of PowerPC.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:14672

Tech Info Library

Apple Workgroup Server 95: Description (10/94) (Discontinued)

Revised: 10/4/94
Security: Everyone

Apple Workgroup Server 95: Description (10/94) (Discontinued)

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Article Created: 17 February 1994
Article Reviewed/Updated: 04 October 1994

TOPIC ----------

This article describes the Apple Workgroup Server 95.

DISCUSSION ----------

The Apple Workgroup Server 95 provides the performance, reliability, scalability, and manageability you need to meet the requirements of medium-sized workgroups for file and print, workgroup database, information retrieval, or other server-based solutions.

It is easy to maintain, manage, reconfigure, and expand. Over the long run, the Apple Workgroup Server 95 offers the lowest cost of ownership in its class.

The most powerful Apple server, this system is based on the fast 33-megahertz Motorola 68040 microprocessor. With AppleShare Pro, and on-board Ethernet and AppleTalk networking capability, the Apple Workgroup Server 95 is ideal for up to 200 active users (that is, users simultaneously reading from and writing to the server). It can act as a communications server by running applications such as Apple's SNA•ps, MacX25, or MacX.400 gateway products.

The Apple Workgroup Server 95 is expandable. You can add up to 256MB of RAM, install up to four NuBus cards, and store up to five additional high-capacity internal storage devices, such as an internal DDS-DC 4mm tape drive for backups.

High Performance

- Leading AppleShare file-server performance
- Tunes for relational database performance
- Enhanced with SCSI DMA, asynchronous I/O, and a large external cache

Expansion

- 16MB RAM, expandable to 256MB
- Four SCSI channels (two SCSI DMA)
- Up to 20 SCSI devices
- Room for six internal SCSI drives
- Four usable NuBus expansion slots
- Up to 5,000 open files when running AppleShare Pro, compared to 346 open files with other AppleShare systems

Usability

- Preinstalled Operating system, file/print services, backup, and networking software
- Pretuned and configured for file services or relational database
- Easy server administration with Macintosh System 7 user interface
- Full-function, graphical backup utility

System Software

- Tunes version of A/UX, a standard UNIX operating system, with Macintosh System 7 features
- Preinstalled TCP/IP and NFS software

Networking

- Built-in support for AppleTalk, TCP/IP, Ethernet and LocalTalk networks

Order Information

Apple Workgroup Server 95 16/SD/230/128
Order No. M6855LL/A
- Apple Workgroup Server 95 computer with 16MB RAM, 230MB internal hard disk, built-in 1.4MB Apple SuperDrive, and 128K memory cache
- Mouse
- A/UX system software for file and print service environment, Apple documentation viewer, and Retrospect Remote backup software preloaded on hard drive
- A/UX system software installer CD-ROM (one-button installation of above software)
- Complete on-line and hard-copy documentation
- Limited warranty statement

Apple Workgroup Server 95 32/SD/1000/512/DDS-DC/AppleShare Pro
Order No. M6875LL/A
- Apple Workgroup Server 95 computer with 32MB RAM, built-in 1.4MB Apple SuperDrive, 1000MB (1GB) internal hard disk, 512K second-level 68040 memory cache, and an internal digital data storage-data compression (DDS-DC) 4mm tape backup drive
- AppleShare Pro file and print server software preloaded on hard drive, on-line documentation for AppleShare Pro, and installer software on

CD-ROM
- All other features included with the Apple Workgroup Server 95 16/SD/230/128

Apple Workgroup Server 95 48/SD/230/1000/512/DDS-DC
Order No. M6895LL/A
- Apple Workgroup Server 95 computer with 48MB RAM, built-in 1.4MB Apple SuperDrive, 230MB and 1000MB (1GB) internal hard disk, 512K second-level 68040 memory cache, and an internal digital data storage-data compression (DDS-DC) 4mm tape backup drive
- A/UX system software for database service environment, Apple documentation viewer, and Retrospect Remote backup software preloaded on hard drive
- A/UX system software installer CD-ROM (one-button installation of above software)
- SCSI cable and bracket needed to support five internal hard drives
- Complete on-line and hard-copy documentation
- Limited warranty statement

Apple Workgroup Server 95 32/SD/2000/256/DDS-DC/AppleShare Pro
Order No. M3074LL/A
- Apple Workgroup Server 95 computer with 32MB RAM, built-in 1.4MB Apple SuperDrive, 2000MB (2GB) internal hard disk, 256K second-level 68040 memory cache, and an internal digital data storage-data compression (DDS-DC) 4mm tape backup drive
- AppleShare Pro file and print server software preloaded on hard drive, on-line documentation for AppleShare Pro, and installer software on CD-ROM
- All other features included with the Apple Workgroup Server 95 16/SD/230/128

Apple Workgroup Server 95 48/SD/230/2000/512/DDS-DC
Order No. M3075LL/A
- Apple Workgroup Server 95 computer with 48MB RAM, built-in 1.4MB Apple SuperDrive, 230MB and 2000MB (2GB) internal hard disk, 512K second-level 68040 memory cache, and an internal digital data storage-data compression (DDS-DC) 4mm tape backup drive
- All other features included with the Apple Workgroup Server 95 48/SD/230/1000/512/DDS-DC

Discontinued Configurations

Apple Workgroup Server 95 16/SD/500/256/DDS-DC
Order No. M6865LL/A
- Apple Workgroup Server 95 computer with 16MB of RAM, 500MB internal hard disk, built-in 1.4MB Apple SuperDrive, 256K second-level 68040 memory cache, and an internal digital data storage-data compression (DDS-DC) 4mm tape backup drive
- All other features included with the Apple Workgroup Server 95 16/SD/230/128

Apple Workgroup Server 95 32/SD/230/500/256/DDS-DC
Order No. M6885LL/A
- Apple Workgroup Server 95 computer with 32MB RAM, built-in 1.4MB Apple

SuperDrive, 230MB and 500MB internal hard disk, 256K second-level 68040 memory cache, and an internal digital data storage-data compression (DDS-DC) 4mm tape backup drive
- System software for database service environment, Apple documentation viewer, and Retrospect Remote backup software preloaded on hard drive
- System software installer CD-ROM (one-button installation of above software)
- Complete on-line and hard-copy documentation
- Limited warranty statement

Ordering Information For Upgrade Kits And Accessory Kits

AppleShare Pro
Order No. M6825Z/A
- File and print software for Apple Workgroup Server 95

Apple Workgroup Server PDS Card Upgrade Kit*
Order No. M6940Z/A
- Processor-direct slot card for the Macintosh Quadra 900 or 950 (128K second-level memory cache on-board)
- A/UX system software installer CD-ROM (one-button installation of system software, Apple documentation viewer and Retrospect Remote backup software
- A/UX CD-ROM for file/print environment and A/UX CD-ROM for database environment
- Complete documentation
- Limited warranty statement
- CPU labels

Apple Workgroup Server PDS Card/DDS-DC Drive Upgrade Kit*
Order No. M6945Z/A
- Processor-direct slot card for the Macintosh Quadra 900 or 950 (128K second-level cache on-board)
- Internal digital data storage-data compression (DDS-DC) 4mm tape backup drive
- All other features included with the Apple Workgroup Server PDS Card Upgrade Kit for the Macintosh Quadra 900 or 950

  * These kits upgrade a Macintosh Quadra 900 or 950 to an Apple Workgroup Server 95. A CD-ROM drive is required to install system software.

Apple Workgroup Server 95 128KB/Tag Second-Level Memory Cache Upgrade Kit
Order No. M6810Z/A
- Adds an additional 128K and Tag second-level 68040 memory cache to the PDS card, for a total of 256K of second-level memory cache

Apple Workgroup Server 95 256KB Second-Level Memory Cache Upgrade Kit
Order No. M6815Z/A
- Adds an additional 256K of second-level 68040 memory cache to the PDS card for a total of 512K second-level memory (Requires installation of 128KB/Tag kit)

Apple Workgroup Server 95 16MB Parity DRAM Upgrade Kit
Order No. M6820Z/A
• Adds 16MB of parity DRAM to the Apple Workgroup Server 95

Blank DDS Tape 5 Pak
Order No. M2092Z/A
• Blank DDS tape for use with internal DDS-DC drive.(Tape uses the Media Recognition System (MRS) standard.)

Article Change History:
04 Oct 1994 - Removed statement that WS95 supports Apple Internet Router.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14673

Tech Info Library

Centris/Quadra 610: Logic Board Upgrade Options (8/94)

Revised: 8/5/94
Security: Everyone

Centris/Quadra 610: Logic Board Upgrade Options (8/94)

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Article Created: 17 February 1994
Article Reviewed/Updated: 05 August 1994

TOPIC ----------

The upgrade from the Centris 610 or Quadra 610 to the Quadra 660AV has been discontinued. This article describes the Power Macintosh 6100/60 upgrade.

DISCUSSION ----------

The Macintosh Quadra 660AV Logic Board Upgrade (Order No. M1534LL/A) has been discontinued. The only current upgrade for the Centris/Quadra 610 is to a Power Macintosh 6100/60, part number M2901LL/A.

This upgrade includes system software, 8MB DRAM, 2MB VRAM, PlainTalk Microphone, cables for S-video to composite, and a name plate.

Article Change History:
05 Aug 1994 - Documented that this upgrade is no longer available, added Power Macintosh upgrade.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14674

Tech Info Library

Quadra 800: Upgrade to Quadra 840AV (2/94)

Revised: 2/17/94
Security: Everyone

Quadra 800: Upgrade to Quadra 840AV (2/94)

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Article Created: 17 February 1994

TOPIC ----------

This article describes the upgrade from the Quadra 800 to the Quadra 840AV.

DISCUSSION ----------

The Macintosh Quadra 840AV Logic Board Upgrade (Order No. M1848LL/A) is a logic board upgrade a Quadra 800 to a Quadra 840AV. Along with the logic board, this upgrade includes 4MB of memory, System 7.1, an Apple PlainTalk Microphone and the Quadra 840AV back panel.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14675

HyperCard 2.2: Screen Doesn't Refresh Color When Scrolling

Revised: 2/18/94
Security: Everyone

HyperCard 2.2: Screen Doesn't Refresh Color When Scrolling

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Article Created: 18 February 1994

TOPIC --------------------

If a color object is in a scrollable window, and the window is then scrolled, the area scrolled onto the screen will be white. This is because the stack is not refreshing itself properly during the scroll. It is possible to program around this.

DISCUSSION --------------------

In the OpenStack handler (or any setup handler) check the visible of the scroll window to see if refresh routines are necessary:

```
on (some action)
  global needsRefresh
  if the visible of window "scroll" then put true into needsRefresh
end (some action)
```

Then any other handler could periodically call a refresh handler:

```
on idle -- or whatever
  refreshScreen
end idle

on refreshScreen
  global needsRefresh
  if needsRefresh then go this card
end refreshScreen
```

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14677

Tech Info Library

A/UX 3.0: Tracking ftp Access (2/94)

Revised: 2/22/94
Security: Everyone

A/UX 3.0: Tracking ftp Access (2/94)

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Article Created: 21 February 1994

TOPIC ----------

A/UX doesn't log ftp transactions the way most UNIX computers do. People tell me that on other computers, ftp transactions appear in /usr/adm/messages, but it seems that under A/UX, ftp transactions aren't logged at all. Can you tell me how to log ftp transactions under A/UX 3.0?

DISCUSSION ----------

The "-l" option of in.ftpd in A/UX had bugs. But there's a newer version of in.ftpd posted on the Internet, which logs all uses of ftp on your system and especially pays attention when someone logs in via anonymous ftp. It logged a great deal of information via syslogd daemon.

We suggest that you upgrade to this version of in.ftpd to log ftp transactions properly. The newer version of in.ftpd is available from the Internet host, jagubox.gsfc.nasa.gov (128.183.44.1), via anonymous ftp. Get the AAA.AUX.README file for more information.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14679

Tech Info Library

AppleShare 4.0.1: Can't Share Files with Remote NFS Volume

Revised: 2/22/94
Security: Everyone

AppleShare 4.0.1: Can't Share Files with Remote NFS Volume

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Article Created: 21 February 1994

TOPIC -----

We need to use a Macintosh Quadra 800 as an AppleShare 4.0.1 server. However, the Quadra 800 is currently an NFS client to an Apple Workgroup Server 95, using NFS Share version 1.3.5 from InterCon.

When AppleShare 4.0.1 starts up, it scans all volumes on the desktop and gives an "access privilege not correct" message on the remotely mounted NFS volume. We understand that AppleShare 4.0.1 expects to see only HFS volumes, but is there any workaround that would allow us to use file sharing with the remotely mounted NFS volume from AppleShare 4.0.1?

DISCUSSION -----

AppleShare only allows using local volumes for file sharing. It won't allow you to establish file sharing with a remote volume like NFS Share from InterCon. There's no public API to allow AppleShare to "publish" remote volumes mounted on the AppleShare server.

On a side note, it isn't that AppleShare 4.0.1 expects to see only HFS volumes. The volumes must be local to the server, they don't necessarily have to be HFS volumes.

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Tech Info Library Article Number:14681

Tech Info Library

Converting From Novell DataClub To AppleShare (2/94)

Revised: 2/21/94
Security: Everyone

Converting From Novell DataClub To AppleShare (2/94)

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Article Created: 18 February 1994

TOPIC -----

This document describes some methods for converting a Novell DataClub file sharing environment into an AppleShare server. It also presents some instructions for removing the DataClub software from the Macintosh, after the data, users, and security information have been successfully converted to the new file-sharing environment.

DISCUSSION -----

We suggest three methods for converting data stored on a DataClub file server volume into an AppleShare volume. Each method has its own benefits, but all have the same drawbacks; none of these methods preserves the security information established by the DataClub software. Therefore, we strongly recommend that you use the DataClub Admin utility to obtain a thorough summary of all information about users, groups, and the security of shared files and folders before destroying any DataClub volume(s). You must then explicitly recreate all the user names and security assignments for files and folders that you previously established using DataClub on the new AppleShare server. This is essential in order to minimize difficulties for end users during and after the conversion process.

- You can back up the DataClub volume, whether it is a dedicated server volume or a distributed or "virtual" volume, by using a number of tape drive utilities. Retrospect, from Dantz Software, is one example of a DataClub-compatible tape back-up system.

  When using a tape back-up system, be particularly aware of any restrictions on how you can restore the data to a different volume. Each tape back-up vendor's solution may incorporate differing rules concerning existing volume names, new volume names, or incremental restorations. So be sure to verify that you can successfully restore all the data to the new volume before destroying the old DataClub volume.

- You can copy the data on a DataClub volume directly to the new AppleShare volume. To do this, mount both the DataClub and the AppleShare volumes on the desktop of the client Macintosh. Then, simply drag-copy the data—and directory structure, if you want—from one volume to the other.

  This method may be slower than others, but it allows you to verify the data's integrity on the new volume at arbitrary times during the process. If a problem occurs, you can halt the process and troubleshoot the problem at that time.

- You can move the data on the DataClub volume to some other intermediate storage, such as a workstation user's local hard disk or some removable storage such as a writable magneto-optical drive. You can even copy all the DataClub data to 1.44 MB floppy disks. After moving the data to intermediate storage, you can easily copy the data to the new AppleShare volume.

  This method is probably the most labor-intensive of the three. However, if you do not have a tape back-up utility and want to install the AppleShare server software on the same machine as the current DataClub DSM (Dedicated Server Module) software, this method may offer the most desirable solution. In this case you can verify the data's integrity on the intermediate media at arbitrary times during the copying process. Then, during the software conversion from DataClub to AppleShare, you can retain the media in a safe place. Finally, after you install the new AppleShare file server, you can recopy the data to the new volume.

Removing DataClub from the Macintosh

It is important that you not remove the DataClub software or the hidden volume before successfully restoring the data on a new volume where you can verify the data's integrity.

We suggest two methods for removing the DataClub software from a Macintosh volume. Both of them require a resource editor program like ResEdit from Apple Computer or the Norton Utilities from Symantec.

- Use your favorite resource editor on each Macintosh where DataClub is installed. First, turn DataClub off in its Control Panel and restart the Macintosh. Then use the resource editor to find the hidden DataClub folder. (The folder name may include five nonprinting boxes.) After you find the folder, use the resource editor to make the folder visible so that you or the workstation user can move the folder to the Trash, as with any other folder on the local volume. The time required to empty the Trash depends on how much data the folder contains. This method may be the faster of the two, but it requires a person familiar with resource editors to perform the operation on every Macintosh where DataClub is installed.

- If DataClub is installed on every Macintosh, and each Macintosh has made its hard disk available for use by DataClub, you can remove the DataClub software from each Macintosh in a step-wise fashion. We recommend that you remove DataClub software from Macintosh workstations in order, based

on the amount of available disk space on each Macintosh:

1) Remove DataClub from the Macintosh with the least available disk space.

2) Proceed to the Macintosh with the second least available disk space, and continue in this order.

3) Remove DataClub from the Macintosh with the most available disk space.

Starting with the first Macintosh, open its DataClub Control Panel and uncheck the checked disks in "Use these disks" list. This will cause DataClub to move any shared data residing on the first Macintosh to other Macintosh clients on the DataClub network. After DataClub has moved the data, turn off DataClub by clicking the OFF radio button in the DataClub Control Panel. If at any point during the automatic data migration a problem arises, use a resource editor (as described in the first method, above) to remove DataClub from the volume. After restarting the Macintosh and verifying that DataClub does not load, move the DataClub Control Panel into the Trash. If any DataClub applications like the Admin utility reside on the Macintosh, throw them away also because they are not useful without the DataClub software.

Repeat the steps in this method on every Macintosh client until all the data (files and folders) reside on the last Macintosh on the network. On this workstation, turn DataClub off in the Control Panel, and restart the machine. Use a resource editor to find the hidden DataClub folder on the root of the volume and make it visible. After quitting the resource editor, simply move the entire DataClub folder into the Trash. The time required to empty the Trash depends on how many files are in the folder.

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Tech Info Library Article Number:14684

Tech Info Library

SNA•ps Print: CEI Printer for Multipart Forms (2/94)

Revised: 2/23/94
Security: Everyone

SNA•ps Print: CEI Printer for Multipart Forms (2/94)

==========

Article Created: 21 February 1994

TOPIC ----------

Is there any printer that SNA•ps Print can use to print multipart forms?

DISCUSSION ----------

CEI Systems has the CEI 420 printer, a 420 character-per-second dot-matrix impact printer suitable for multi-part forms. It prints forms including invoices, W-2 forms and other tax forms, and checks. It provides inexpensive, fast, high-quantity printing. A Macintosh-compatible driver is available, and seems to work quite well.

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Tech Info Library Article Number:14685

Tech Info Library

SoftArc Inc.

Revised: 4/7/97
Security: Everyone

SoftArc Inc.

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Article Created: 21 February 1994
Article Reviewed/Updated: 7 April 1997

SoftArc Inc.
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805 Middlefield Road, Suite 102
Scarborough, Ontario
Canada, M1V 2T9

Telephone: 905-415-7000

Fax: 905-415-7151

Internet: info@softarc.com

First Class BBS: 905-415-7070

Company Profile:
Makers of FirstClass bulletin board service host and client software for Macintosh, DOS and Windows computers.

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Tech Info Library Article Number:14686

Tech Info Library

LaserWriter Driver 8 Versions: Retain Preferences Differently

Revised: 2/23/94
Security: Everyone

LaserWriter Driver 8 Versions: Retain Preferences Differently

==========

Article Created: 22 February 1994

TOPIC ----------

Is there a way for the LaserWriter driver to retain the configuration information so it remembers that a LaserWriter Pro 630 has an envelope feeder?

I'm using two LaserWriter 8.1.1 drivers (differently named) on my PowerBook. I select one for my LaserWriter Pro 630 at home (which doesn't have an envelope feeder), and select another for my LaserWriter Pro 630 at work (which does have an envelope feeder). Neither driver can save these types of settings independently. What's wrong?

DISCUSSION ----------

The LaserWriter driver 8.1.1 driver uses a Preferences file to store Envelope Feeder option information. All LaserWriter 8.1.1 drivers (regardless of what you name them) look to this file for option information, so there's no way to save settings independently.

A possible workaround is to use both LaserWriter driver 8.0 and 8.1.1, as it seems LaserWriter driver 8.0 stores its information in the LaserWriter 8 Preferences file differently. Of course, you don't get the benefits of LaserWriter driver 8.1.1 on one printer.

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Tech Info Library Article Number:14688

Tech Info Library

LaserWriter Pro 810: Total Memory Available (2/94)

Revised: 2/23/94
Security: Everyone

LaserWriter Pro 810: Total Memory Available (2/94)

==========

Article Created: 22 February 1994

TOPIC ----------

I have noticed a big difference between the LaserWriter Pro 810 and several printers with the Total Memory available (information available in the "Printer info" dialog box of LaserWriter driver 8 versions). The LaserWriter Pro 810 seems to have less total Memory available. Here's a table of some Apple printers:

	Pro 810	Pro 810	Select 360	Pro 630	Pro 630	LW IIg
Résolution	400dpi	800dpi	600dpi	600dpi	300dpi	300dpi
RAM	8MB	8MB	7MB	8MB	8MB	4MB
Total Memory available	348,4K	356,5K	1 ,3MB	2,2MB	2,2MB	1,7MB

Can you explain the differences for the total memory available among the printers listed?

DISCUSSION ----------

The total memory available is the amount of memory left after the printer has set aside its required space to operate. The majority of this is the largest page buffer possible at the highest resolution, given the amount of memory installed in the printer.

For example, a LaserWriter Pro 630 with 8MB of RAM would allocate a page buffer for a 600dpi Legal-sized page (approximately 5MB). The LaserWriter Pro 810 with 8MB of memory would allocate a page buffer for an 800dpi Letter-sized page (approximately 6.8MB) since there isn't

enough memory to create a page buffer for an 800dpi Legal-sized page (approximately 8.8MB).

In addition to the page buffer, the printer needs to allocate space for the PostScript interpreter itself, PostScript dictionaries, display list, font caching, and program memory.

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Tech Info Library Article Number:14690

Tech Info Library

SNA•ps Gateway, SNA•ps 5250, and IBM 5494 Controller (2/94)

Revised: 2/23/94
Security: Everyone

SNA•ps Gateway, SNA•ps 5250, and IBM 5494 Controller (2/94)

==========

Article Created: 21 February 1994

TOPIC ----------

I need to install a SNA•ps Gateway and SNA•ps 5250 which will attach to a remote IBM 5494 mod.2 controller equipped with Token Ring. The IBM 5494 is connected to an AS/400 through an X.25 line. The SNA•ps Gateway Macintosh will connect through Token Ring to the IBM 5494.

Is it possible to do this? If it is, how should I configure the IBM 5494 controller, the devices on the AS/400, and the SNA•ps Gateway?

DISCUSSION ----------

This is possible to do with the SNA•ps Gateway and SNA•ps 5250.

This is a complex configuration mostly because the IBM 5494 is very different from all previous IBM mid-range controllers. The IBM 5494 is an APPC LEN device (similar to that of a SNA•ps Gateway). It attaches to the AS/400 using special code included with OS/400 V2R2M0, which requires the IBM 5494 to connect to the AS/400 as a Token Ring or SDLC based APPC controller. (X.25 connection for SDLC is just fine). The Twinax devices on the physical IBM 5494 have to be associated with some remote Workstation controller on the AS/400 which manages the LU 4-7 sessions used by the Twinax ports. The connection between the APPC connection and the Remote Workstation controller is done by an AUTOCONFIGURED APPC parallel session between the APPC 5494 connection and the Remote workstation controller. If the IBM 5494 configuration is setup to support downstream PU 2.1 and passthru to the AS/400, (such as a SNA•ps APPC gateway), then there is just an APPC controller passing through the IBM 5494 to an APPC controller on the AS/400. The IBM 5494 just provides the pipeline to the AS/400. This is quite similar to how a SNA•ps Gateway in 3270 environments is a PU 2.0 downstream from IBM 3174 Cluster Controller.

Through all of this you need to know AS/400 Network IDs, Remote LUs, and Local LUs for the SNA•ps APPC connection, and use known Mode descriptions.

That is all very basic information to a knowledgeable APPC system manager.

The most difficult to understand in the configuration of the SNA•ps Gateway in this setup were the XIDs to be used. The Gateway XID in the SNA•ps Gateway config can be anything, we used 050 00000. BUT the XID for the Partner (the IBM 5494 in this case) HAS to be 073 00000, which is the default value given the IBM 5494 if it is configured with downstream support for PU 2.1 on Token Ring. Also, the Link address in the SNA•ps config is the Token Ring address of the IBM 5494 controller which is placed in the IBM 5494 when customization is done. The IBM 5494 does not care about the Token Ring address of the SNA•ps Token Ring card (the address in the Apple Token Ring Control Panel).

We would suggest that you carefully read the IBM 5494 documentation, and get a copy of the current IBM RedBook on configuring 5494 to AS/400 - P/N GG24-3828-00. We found it to be very helpful.

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Tech Info Library Article Number:14691

Tech Info Library

MacCheck 1.0.5 Read Me (2/94)

Revised: 2/22/94
Security: Everyone

MacCheck 1.0.5 Read Me (2/94)

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Article Created: 22 February 1994

TOPIC --------------------

This article's discussion section contains the MacCheck 1.0.5 Read Me file.

DISCUSSION --------------------

MacCheck 1.0.5 Release Notes

This Read Me document contains information about the MacCheck program. The Microsoft Word and MacWrite II documents, "MacCheck User Guide.msWrd" and "MacCheck User Guide.mwII" are a superset of this document and provide easier to read (better formmated and highlighted) text, along with more technical details about the inner workings of MacCheck. These documents are found in the Software Utilities Update 1.0.1 disk release.

Changes between MacCheck 1.0.4 and 1.0.5

- MacCheck no longer crashes when running on 3rd party NuBus cards.
- MacCheck now displays the "true" System Enabler version ("7.1--1.0.1").
- MacCheck displays the processor speed more accurately--MacCheck would not tell when a faster clock crystal was added, nor was able to accurately display the speed when running on some accelerator cards.
- MacCheck no longer fails the logic board test when a DayStar accelerator card is being used (or any other card that patches the ROM image, but fails to put a real ROM checksum in).
- If you double-click on the "MacCheck dataFile", MacCheck no longer puts up the annoying "Can't open this kind of document" message.

This ReadMe document contains information about the MacCheck program. The Microsoft Word and MacWrite II documents, "MacCheck User Guide.msWrd" and "MacCheck User Guide.mwII" are a superset of this document and provide easier to read (better formatted and highlighted) text, along with more technical details about the inner workings of

MacCheck.

I. INTRODUCTION TO MACCHECK

MacCheck is an Apple support utility tool with which you can learn more about your Macintosh computer, as well as diagnose software problems that result from corrupted directories and files. By using MacCheck in conjunction with Disk First Aid, you can resolve common disk corruption problems.

MacCheck creates a profile of your Macintosh computer, including:

- The processor, memory, expansion cards, SCSI drives, keyboard, monitor, and so on
- The installed applications and system software on your startup drive

MacCheck also provides:

- A general logic board test
- A checker for the file system and System files
- A checker for duplicate System Folders

The MacCheck product consists of the application file "MacCheck," and the data file "MacCheck dataFile." For MacCheck to work correctly, both the application file and the data file must be located in the same folder. MacCheck is compatible with System 7.0 or later.

Under most circumstances, MacCheck can be run with extensions on. However, if you are having trouble running MacCheck, you should turn extensions off (by restarting your computer while holding down the Shift key). MacCheck does conflict with some non-Apple extensions:

- Thunder 7
  Don't run MacCheck while Thunder 7 is active. MacCheck and Thunder 7 have serious conflicts.
- Virus protection programs
  You'll need to "teach" some virus protection programs about MacCheck.
- Electronic mail programs
  Sometimes when electronic mail programs, such as Microsoft Mail or QuickMail, are active, they disrupt the file system checking by making your startup volume "busy".

II. MACCHECK OVERVIEW

Launching MacCheck

When you launch MacCheck, you'll see a splash screen detailing the initialization processes that MacCheck performs while it starts up. During most of this time, MacCheck gathers profile information and checks for multiple System Folders. On a new Macintosh LC III, MacCheck takes about 1 minute to launch; on a 400MB, 8,000-plus-file Macintosh Quadra 950, it takes about 4-5 minutes to launch.

Note: If you want to speed up the launch process by about 20 seconds, press the Space bar when the splash screen first appears. This tells MacCheck not to profile modems or check SCSI devices that are typically slow, such as DAT tape drives. MacCheck will display a "•QuickBoot•" message. If you wish to quit the launch process at any time, press command-period.

Accessing Profile Information

MacCheck stores the collected profile information in three log files, the "System Info," "Additional System Info," and "Application and Font Info" logs. To view the profile information placed into these logs, select the log you want from the Windows menu.

Starting Logic Board and File System Tests

To start the logic board and file system tests, click the Test button or select the Test option (command-G) in the Diagnostics menu. When these tests are completed, MacCheck stores the results in a results file. The default name of this file is "Test Results-1". You may rename this file by selecting the Save Results As option in the File menu.

Support Information Services

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Tech Info Library Article Number:14692

Tech Info Library

System 7 Pro 7.1.1 Read Me (2/94)

Revised: 2/22/94
Security: Everyone

System 7 Pro 7.1.1 Read Me (2/94)

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Article Created: 22 February 1994

TOPIC ----------

This article's discussion section contains the System 7 Pro 7.1.1 Read Me file.

DISCUSSION ----------

WELCOME TO SYSTEM 7 PRO, Version 7.1.1

This document provides late-breaking news about System 7 Pro. This information is not in the documentation that came with your software. For all other questions, refer to your Macintosh software documentation.

APPLESHARE SERVER SOFTWARE

To install an AppleShare file server or print server on a Macintosh using System 7 Pro, you need AppleShare server software version 3.0.3. An application that updates your existing AppleShare file server or print server software to version 3.0.3 is on the disk titled "Before You Install."

APPLE IIe CARD SOFTWARE FOR THE MACINTOSH LC II

To use the Apple IIe Card with System 7 Pro on a Macintosh LC II, you need version 2.2 of Apple IIe Card Software. You should upgrade to version 2.2 only if you are using your LC II with System 7 Pro. Apple IIe Card Software 2.2 may also be used with the original Macintosh LC, but it is not required.

You can obtain the upgrade package from an authorized Apple Reseller. In the United States, you can call the Apple Customer Assistance Center at 1-800-776-2333 to request Apple IIe Card Software version 2.2. The new software is also available on AppleLink (AppleLink path: Apple

Products: Apple II: Apple II Product Information: Apple IIe Card).

INSTALLING SYSTEM 7 PRO ON A MACINTOSH QUADRA 700 AND 950

To install System 7 Pro on a Macintosh Quadra, use the Installer program's Easy Install option, or choose "System software for any Macintosh" in the Installer's Customize window. If you use the Macintosh Quadra option in the Customize window, some parts of the Monitors control panel will not work correctly.

MacTCP USERS: CHECK VERSION BEFORE YOU INSTALL System 7 Pro

To use MacTCP with System 7 Pro, you need version 1.1.1 or later. If the version number is 1.1 or earlier, you need to remove the file from your System Folder before you install System 7 Pro.

IF THE SYSTEM 7 PRO INSTALLATION FAILS

The installation may fail if your existing System file contains fonts with names having more than 31 characters.

If this happens, follow these steps:

1) Open the System Folder and move the System file to the desktop.
2) Restart the Macintosh using the Install disk. When the Installer opens, proceed with the installation (refer to your manual for help).
3) Restart the Macintosh when the installation is completed.
4) If you wish to use the fonts that were installed in your old System file with System 7 Pro, open the System file on the desktop and drag the font icons to the System Folder icon. The fonts are moved to the Fonts folder and can now be used.

If you had installed additional software that modified the System file, you will need to reinstall it after you install System 7 Pro.

USING ADOBE TYPE MANAGER WITH SYSTEM 7 PRO

In System 7 Pro, a new folder named "Fonts" stores all screen and printer fonts. Fonts you drag to the System Folder are automatically installed in the Fonts folder. If you use Adobe Type Manager, but are not getting smooth type on-screen, you must move any PostScript printer fonts located in the Fonts folder to the Extensions folder. Please contact Adobe to obtain a new version of ATM that will allow you to use the Fonts folder (see details below).

A Gift to You From Adobe

Adobe Systems is pleased to offer Apple computer owners a free copy of award-winning Adobe Type Manager (ATM) software.

With ATM, you'll gain access to thousands of PostScript Type 1 fonts for use on screen. Plus, ATM software can be used with all

Macintosh-supported printers, including the ImageWriter, StyleWriter, LaserWriter, and PostScript typesetters.

As a special bonus, you'll also receive four free typefaces from the Adobe Garamond family. These Adobe Originals are a fresh treatment of some of the most popular typefaces in history.

Take advantage of this incredible offer today! Order the latest release of ATM—plus the Adobe Garamond typefaces—and pay just a $7.50 shipping and handling charge ($30 outside the USA and Canada). Together, these products normally retail for $346!

U.S. and Canadian residents, call

1-800-521-1976 ext. 4400, or fax 1-303-792-2231

Outside the U.S. and Canada, call

(303) 799-4000 ext. 4600.

Fax requests please include name, shipping address, daytime phone and credit card information. Please allow 6-8 weeks for delivery. Outside the U.S. and Canada, you may either take advantage of this $30 offer for the English-language version of ATM shipped via courier, or see below for other offers that may be available in your country.

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Tech Info Library Article Number:14693

Tech Info Library

AV Series, Apple Nubus Video Cards: Compatibility (2/94)

Revised: 2/22/94
Security: Everyone

AV Series, Apple Nubus Video Cards: Compatibility (2/94)

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Article Created: 22 February 1994

TOPIC ----------

Of all of the NuBus Video cards Apple has produced, which Apple NuBus cards listed below are not considered "compatible" with the Macintosh Quadra 840AV, Quadra 660AV and Centris 660AV?

DISCUSSION ----------

The following list details all video cards tested for compatibility with the Macintosh AV Series. Each card is individually evaluated further in the discussion.

Video Card:	Compatible with:
Macintosh II 1 Bit Video Card	840AV(unsupported)
Macintosh II 4 Bit Video Card	840AV(See Note B)
Macintosh II 8 Bit Video Card	840AV(See Note B)
Macintosh II Hi-Res Display Card (4-Bit)	840AV
Macintosh II Extended Hi-Res Display Card (8-Bit)	840AV
Macintosh II Two-Page Video Card	Incompatible
Macintosh II Portrait Display Card	Incompatible
Macintosh II Portrait Display Card (DB15 connector)	Incompatible
Macintosh Display Card 4•8	840AV(See Note E)
Macintosh Display Card 4•8, Rev. B	840AV(See Note E)
Macintosh Display Card 8•24	840AV(See Note E)
Macintosh Display Card 8•24, Rev. B	840AV(See Note E)
Macintosh Display Card 8•24GC, Rev A	Incompatible
Macintosh Display Card 8•24GC, Rev B	840AV(See Note F)
Macintosh Display Card 24AC	660AV, 840AV

• NOTES FOR SPECIFIC CARDS:

A) Macintosh II 1 Bit Video Card

The 840AV was never tested with this card. While we did not encounter any problems during testing, it is officially untested and the possibility of hidden bugs remains.

B) Macintosh II 4 Bit Video Card
   Macintosh II 8 Bit Video Card

The Mac II High Res 4-bit and 8-bit video cards are compatible but will not drive Apple's 16-inch and 21-inch color monitors. Also, because these cards were designed only to drive the 12-inch High Res monochrome and the 13-inch RGB monitors, they have no sense line capability. Therefore, if they are placed in any Macintosh computer with a NuBus slot that is also supporting built-in video or a later version NuBus card, the boot up screen will automatically default to the old Mac II High Res 4-bit or 8-bit video card.

C) Macintosh II Hi-Res Display Card (4-Bit)
   Macintosh II Extended Hi-Res Display Card (8-Bit)

These cards are compatible with the Quadra 840AV.

D) Macintosh II Two-Page Video Card
   Macintosh II Portrait Display Card,
   Macintosh II Portrait Display Card,(DB15 connector)

Apple does not recommend that these cards be used in the Macintosh AV series. While they will not harm the computer, there are some timing differences with certain cards.

E) Macintosh Display Card 4•8
   Macintosh Display Card 4•8, Rev. B
   Macintosh Display Card 8•24
   Macintosh Display Card 8•24, Rev. B

The Macintosh 4•8 and 8•24 cards are compatible with the Quadra 840AV. If you're planning to use the Apple 16-inch or 21-inch color monitor with either of these cards, Apple recommends the Rev. B ROM upgrade, available from an Apple authorized service provider.

F) Macintosh Display Card 8•24GC, Rev. A
   Macintosh Display Card 8•24GC, Rev. B

The Rev A card is incompatible. The Rev B card is compatible, but not in the accelerated mode.

G) Macintosh Display Card 24AC

The card is a 7-inch NuBus card and therefore compatible with the Centris 660AV, Quadra 660AV and Quadra 840AV computers. The card can suffer significant performance problems (speed) when used in its accelerated mode.

Support Information Services

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Tech Info Library Article Number:14695

Tech Info Library

Teknosys, Inc.

Revised: 4/7/97
Security: Everyone

Teknosys, Inc.

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Article Created: 22 February 1994
Article Reviewed/Updated: 7 April 1997

Teknosys, Inc.

3923 Coconut Palm Drive
Suite #111
Tampa, FL 33619 USA

Phone: 813-620-3494

Fax: 813-620-4039

CompuServe: 71333,710 or Go TEKNOSYS

Internet: http://www2.combase.com/~teknosys
e-mail: teknosys@combase.com

America Online: TEKNOSYS
Keyword: TEKNOSYS

Company Profile:

Teknosys develops and markets compatibility tool family Help! for checking the software installed on your Macintosh with its internal database, recommending actions based on its findings.

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Tech Info Library Article Number:14696

Tech Info Library

LaserWriter Select: Envelope Tray Specifications (2/94)

Revised: 2/23/94
Security: Everyone

LaserWriter Select: Envelope Tray Specifications (2/94)

==========

Article Created: 23 February 1994

TOPIC ----------

What envelope sizes can I use in the LaserWriter Select envelope cassette tray?

DISCUSSION ----------

The LaserWriter Select 360 uses the same trays as the LaserWriter Select 300/310. Part number M2031G/A is the 30-envelope cassette to use with all LaserWriter Select printers.

The envelope cassette is center justified and can support up to 30 #10 business envelopes. It supports the following envelope sizes:

Description	Width	Length
Com #10	104.8mm (4.12")	241.3mm (9.5")
Monarch	98.4mm (3.87")	190.5mm (7.5")
DL	110.0mm (4.33")	220.0mm (8.66")
C5	162.0mm (6.38")	229.0mm (9.02")
Post Card	100.0mm (3.94")	148.0mm (5.83")

Paper weights supported:

Minimum: 60 gr/sq m (16.0#)
Envelope max: 105 gr/sq m (28.0#)
Postcard max: 100 gr/sq m (50.7#)

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Tech Info Library Article Number:14697

Tech Info Library

No Hands Software

Revised: 4/7/97
Security: Everyone

No Hands Software

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Article Created: 23 February 1994
Aritcle Reviewed/Update: 7 April 1997

No Hands Software

1320 Shoreway Road, Suite 220
Belmont, CA 94002

Telephone: 415-802-5800

Fax: 415-593-6868.

Technical Support: 415-802-5820. Hours are from 8AM to 5PM Pacific Time.

America OnLine: NoHands

CompuServe: 74740,5142

Company Profile:
Software. Develops and markets utility software, specializing in document conversion and display with Common Ground for Macintosh and Windows computers.

Support Information Services

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Tech Info Library Article Number:14698

Tech Info Library

System 7 Pro: Assistant Toolbox is Compatible (2/94)

Revised: 2/23/94
Security: Everyone

System 7 Pro: Assistant Toolbox is Compatible (2/94)

==========

Article Created: 23 February 1994

TOPIC -----

The Compatibility Checker in System 7 Pro erroneously removes part of the PowerBook File Assistant out of the System Folder.

DISCUSSION -----

When running the System 7 Pro Compatibility Checker, the file Assistant Toolbox is flagged as not compatible with System 7 Pro and removed from the System folder. All parts of the PowerBook File Assistant, Control Panel, The File Assistant, and the Assistant Toolbox, are compatible with System 7 Pro.

Work Around

After running the Compatibility Checker, move the Assistant Toolbox back into the System folder.

Support Information Services

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Tech Info Library Article Number:14700

Tech Info Library

Newton: System Update 1.05 Changes and Features (2/94)

Revised: 2/23/94
Security: Everyone

Newton: System Update 1.05 Changes and Features (2/94)

==========

Article Created: 23 February 1994

Topic ----------

What features does Newton System Update 1.05 provide?

Discusion ----------

There are a number of updates including the following:

Dates

Addresses problems with recurring meetings
  Exception repeating meetings alarms
  -48009 error when deleting exceptions to recurring meetings
Alarms for appointments on a card after reset
Removes error that indicates "styles slot is too short" in to do list

Restore

Removal of false error when starting up
A card with packages problem
Allows restore from a card with too big a backup
Restores Letter styles properly

Beaming

Fixes "Auto receive"
Multiple beams problem

Power Faults

Alleviates system sensitivity to power fluctuations on wakeup
Unit can now always turn off

Memory Management

Elimination of memory fragmentation and leaks
Increase of system memory by 32K

Time Zones	Old	New
Singapore	+7:30	+8:00
Anchorage	-10:00	-9:00
Tientsin	+8:30	+8:00
Mt. Everest	+5:30	+5:45

Word List

List now scrolls
Words that start with a capital letter can now be removed

Warm Reset

When switching folders and restarting, scrolls to the end of the notepad

Backup

Backup can be completed regardless of how full the internal memory is

Modem

Addresses out of sync wait for answer setting
Modified modem level for Japan approval

Dialing Assistant

Outgoing code for Hong Kong corrected
Corrects incorrect prefixes for Hong Kong, Singapore, and other cities

Support Information Services

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Tech Info Library Article Number:14701

Tech Info Library

HyperCard 2.2: Stand-alone Apps Need 2MB for Color (2/94)

Revised: 2/23/94
Security: Everyone

HyperCard 2.2: Stand-alone Apps Need 2MB for Color (2/94)

==========

Article Created: 23 February 1994

TOPIC ----------

After compiling a HyperCard 2.2 stack into a stand-alone application, graphics are not displayed in color.

DISCUSSION ----------

The default memory allocation of the stand-alone application is not set high enough for the program to display graphics in color. To display color graphics, adjust the memory allocation of the stand-alone application to a minimum of 2048K.

Support Information Services

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Tech Info Library Article Number:14702

Tech Info Library

Power Macintosh Pinouts (3/96)

Revised: 3/5/96
Security: Everyone

Power Macintosh Pinouts (3/96)

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Article Created: 23 February 1994
Article Reviewed/Updated: 5 March 1996

TOPIC ----------

This article presents the pinouts for non-AV Power Macintosh models. These pinouts include: ADB, GeoPort, SCSI, a floppy disk drive, built-in Ethernet, high-quality 16-bit stereo sound, and various levels of monitor support up to 21 inches, depending on the model.

DISCUSSION ----------

Apple Desktop Bus (ADB)

One connector is located on the back panel of Power Macintosh computers. It is a 4-pin mini-DIN socket.

Pin	Description
1	Data; grounded by an open collector or pulled to +5 V through 470 Ω
2	Power on, fed by +5 V through 100 kΩ; connect to pin 4 to turn on the system
3	+5 V at 500 mA maximum drain; protected by a 1.25-A circuit breaker
4	Ground return

Ethernet

All models of Power Macintosh contain built-in Ethernet.

Pin	Signal Name	Signal Description
1	FN Pwr	Power (+12V @ 2.1W or +5V @ 1.9W)
2	DI-A	Data In circuit A
3	DI-B	Data In circuit B
4	VCC	Voltage Common

5	CI-A	Control In circuit A
6	CI-B	Control In circuit B
7	+5V	+5 volts (from host)
8	+5V	Secondary +5 volts (from host)
9	DO-A	Data Out circuit A
10	DO-B	Data Out circuit B
11	VCC	Secondary Voltage Common
12	NC	Reserved
13	NC	Reserved
14	FN Pwr	Secondary +12V @ 2.1W or +5V @ 1.9W
Shell	Protective Gnd	Protective Ground

Serial Ports

The back panel of all Power Macintosh models contain two I/O ports for serial telecommunication data. Both sockets accept 9-pin plugs allowing either port to be independently programmed for asynchronous or synchronous communication formats up to 9600 bps. This includes AppleTalk and the full range of Apple GeoPort protocols.

Pin	Name	Function
1	SCLK(out)	Reset pod or get pod attention
2	Sync(in)/SCLK(in)	Serial clock from pod (up to 920 Kbit/sec.)
3	TxD-	Transmit -
4	Gnd/shield	Ground
5	RxD-	Receive -
6	TxD+	Transmit +
7	Wakeup/TxHS	Wake up CPU or do DMA handshake
8	RxD+	Receive +
9	+5 V	Power to pod (350 mA maximum)

SCSI Connection

The SCSI interface in Power Macintosh computers exists in two forms: an internal 50-pin ribbon connector for internal devices and an external DB-25 connector for external devices.

Pin Number		Description	Pin Number		Description
Internal	External		Internal	External	
1	7	Ground	2	8	/DATA0*
3	9	Ground	4	21	/DATA1
5	14	Ground	6	22	/DATA2
7	16	Ground	8	10	/DATA3
9	18	Ground	10	23	/DATA4
11	24	Ground	12	11	/DATA5
13		Ground	14	12	/DATA6
15		Ground	16	13	/DATA7
17		Ground	18	20	/DATAP
19		Ground	20		No connection
21		Ground	22		No connection

23	Ground	24		No connection
25	No connection	26	25	TERMPWR
27	Ground	28		No connection
29	Ground	30		No connection
31	Ground	32	17	/ATN
33	Ground	34		No connection
35	Ground	36	6	/BUSY
37	Ground	38	5	/ACK
39	Ground	40	4	/RST
41	Ground	42	2	/MSG
43	Ground	44	19	/SEL
45	Ground	46	15	/C/D
47	Ground	48	1	/REQ
49	Ground	50	3	/I/O

* A slash (/) before a signal name indicates that it is in the low state when active.

Floppy Disk Drive Connection

All Power Macintosh models contain one internal Apple superDrive floppy disk drive, which supports GCR and MFM formats for 1.44 MB disks.

Pin	Signal	Description	Pin	Signal	Description
1	GND	Ground	11	+5 V	+5 V
2	PH0	Phase 0 state control	12	SEL	Head select
3	GND	Ground	13	+12 V	+12 V
4	PH1	Phase 1 state control	14	/ENBL*	Drive enable
5	GND	Ground	15	+12 V	+12 V
6	PH2	Phase 2 state control	16	RD	Read data
7	GND	Ground	17	+12 V	+12 V
8	PH3	Phase 3 register write strobe	18	WR	Write data
9	NC	No connection	19	+12 V	+12 V
10	/WRREQ	Write data request	20	NC	No connection

* A slash (/) before a signal name indicates that it is in the low state when active.

AudioVision Monitor Support

The Power Macintosh computers provide connection to AudioVision (and other monitors when used with an adapter cable) by means of an AudioVision HDI-45 monitor socket on their back panel.

Pin	Description	Pin	Description
1	Analog audio ground	24	Reserved
2	Audio input shield	25	Reserved
3	Left channel audio input	26	Red ground (shield)

4	Right channel audio input	27	Red video output (75 Ω)
5	Left channel audio output	28	I^2C data signal* (I-squared)
6	Right channel audio output	29	I^2C clock signal* (I-squared)
7	Reserved	30	Reserved
8	Monitor ID sense line 1**	31	Monitor ID
9	Monitor ID sense line 2**	32	Monitor ID
10	Green ground (shield)	33	Vertical sync signal
11	Green video output (75 Ω)	34	Composite sync signal
12	Video input power ground	35	ADB power +5 V
13	Power for camera +5 V	36	ADB ground
14	Reserved	37	ADB data
15	Reserved	38	Keyboard switch
16	Reserved	39	Reserved
17	Reserved	40	Reserved
18	Monitor ID sense line 3**	41	Monitor ID
19	S-video input shield	42	Horizontal sync signal
20	S-video input luminance (Y)	43	Video sync ground
21	S-video input chroma (C)	44	Blue ground (shield)
22	Reserved	45	Blue video output (75 Ω)

* Philips serial bus interface
** See Apple Technical Note 326

VRAM Expansion Cards

VRAM expansion cards are Apple cards that plug into the PDS slots of Power Macintosh 7100/66 and 8100/88 computers. They provide an additional DB-15 monitor output.

Pin	Description	Pin	Description
1	Red ground	9	Blue video signal
2	Red video signal	10	Monitor sense 2
3	Composite synchronization	11	Synchronization ground
4	Monitor sense 0	12	Vertical synchronization
5	Green video signal	13	Blue ground
6	Green ground	14	Horizontal synchronization ground
7	Monitor sense 1	15	Horizontal synchronization
8	No connection		

Sound I/O

All Power Macintosh computers contain external stereo mini phone jacks for sound I/O, connected through amplifiers to the AWAC chip.

Panel label	Description
Audio In	8 kΩ impedance, 2 V rms maximum, 22.5 dB gain available
Audio Line Out	37 Ω impedance, 0.9 V rms maximum, attenuated -22,5 dB (crosstalk degrades from -80 to -32 dB when the audio output is connectedto 32 Ω headphones)

S-Video

Power Macintosh AV Models include S-Video In/Out jacks.

NOTE:
Non-AV Power Macintosh models do not include these S-Video In/Out jacks.

Pin	Input Connector	Output Connector
1	AGND	AGND
2	AGND	AGND
3	Video Y (luminance)	Video Y (luminance)
4	Video C (chroma)	Viceo C (chroma)
5	I^2C clock (I-squared)*	Composite Video
6	+12V at 250 mA maximum	No connection
7	1^2C data*	No connection

* Phillips serial bus

Article Change History:
05 Mar 1996 - Made minor changes to Ethernet pinouts.
14 Jul 1995 - Added AV S-Video information.
14 Sep 1994 - Corrected pinout information for DB-15 video port.

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Tech Info Library Article Number:14703

CEI Systems

Revised: 2/23/94
Security: Everyone

CEI Systems

==========

Article Created: 21 February 1994

CEI Systems

P.O. Box 406
Osseo, MN 55369

800-333-5234

612-425-1167

612-425-5196 (fax)

Company Profile:
Specializing in printers.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14704

Tech Info Library

Power Macintosh AV Card Pinouts (7/94)

Revised: 7/6/94
Security: Everyone

Power Macintosh AV Card Pinouts (7/94)

==========

Article Created: 23 February 1994
Article Reviewed/Updated: 06 July 1994

TOPIC ----------

This article describes the pinouts for the Power Macintosh AV card.

DISCUSSION ----------

The AV card is an Apple expansion card that plugs into the PDS connector of any Power Macintosh computer. It contains an I/O system that handles video input and output signals, mixes video with 16-bit graphics, and supports a wide variety of Apple and third-party monitors. The AV I/O system also lets the user connect a television set as a monitor, using either NTSC or PAL format.

The AV card contains a DB-15 monitor connector output.

Here is a diagram of the pin configuration for the DB-15 monitor connector and the signals:

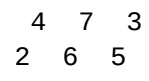
```
 8  7  6  5  4  3  2  1
  15 14 13 12 11 10 9
```

Pin	Description	Pin	Description
1	Red ground	9	Blue video signal
2	Red video signal	10	Monitor sense 2
3	Composite synchronization	11	Synchronization ground
4	Monitor sense 0	12	Vertical synchronization
5	Green video signal	13	Blue ground
6	Green ground	14	Horizontal synchronization
7	Monitor sense 1	15	Horizontal synchronization ground
8	No connection		

The AV card also contains two identical connectors for S-Video input and

output, with adapter cables for composite video devices that have RCA connectors, like television equipment.

Here is a diagram of the pin configuration for the S-Video port and the signals:



Pin	Input connector	Output connector
1	AGND	AGND
2	AGND	AGND
3	Video Y (luminance)	Video Y (luminance)
4	Video C (chroma)	Video C (chroma)
5	I^2C clock (I-squared)*	Composite video
6	+12 V at 250 mA maximum**	No connection
7	I^2C data*	No connection

* Philips serial bus
** Fused at 1.1 A

Article Change History:
06 Jul 1994 - Added diagram of pin configuration for S-Video and DB-15 ports.
24 Mar 1994 - Corrected wording.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14705

Tech Info Library

Why Do Computer-Generated Faxes Have a Header/Footer? (2/94)

Revised: 2/23/94
Security: Everyone

Why Do Computer-Generated Faxes Have a Header/Footer? (2/94)

==========

Article Created: 10 February 1994

TOPIC ----------

When I fax a document from the fax modem from my Macintosh to a fax machine, each page has a header or footer with my name, phone number, date and time or transmission and other information.

Why is this? Can I turn this off?

DISCUSSION ----------

Federal Communications Commission regulations require that all telephone facsimile machines (including fax modems) manufactured on or after December 20, 1992, print identifying information at the top or bottom of each transmitted page. The identifying information must include the name of the sender, the date and time the fax is sent and the telephone number of the sender.

You cannot turn off this identifying information.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14706

Tech Info Library

At Ease 2.0: GrayShare Printers Unshared on Logout (2/95)

Revised: 3/2/95
Security: Everyone

At Ease 2.0: GrayShare Printers Unshared on Logout (2/95)

==========

Article Created: 23 February 1994
Article Reviewed/Updated: 2 March 1995

TOPIC ----------

I have several Macintosh computers which are using At Ease on a LocalTalk network and are sharing a StyleWriter II. When the user of the Macintosh that is directly connected to the StyleWriter II logs out of At Ease, printer sharing quits and the printer is no longer shared across the network.

What causes this? Is there a workaround?

DISCUSSION ----------

This is a problem with At Ease 2.0. If you upgrade to At Ease v2.0.3 you do not have this problem. Under At Ease 2.0, when a user logged out all processes were terminated. This caused Printer Share to quit. When Printer Share quit, the StyleWriter II became unavailable to other computers and the "Share this printer" check box disappeared from the Choosers on the other computers.

We you install At Ease 2.0.3, Printer Share no longer quits when users log out of At Ease, so the printer is still available on the network. However, print jobs sent to the printer will be queued up to print. Printer Monitor does not launch and the acutal printing will not take place until the next user logs onto the workstation.

Article Change History:
02 Mar 1995 - Added information on At Ease 2.0.3.
29 Apr 1994 - Clarified explanation of At Ease design decision.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14707

Tech Info Library

Super ATM: Problems After Rebuilt Desktop (2/94)

Revised: 2/25/94
Security: Everyone

Super ATM: Problems After Rebuilt Desktop (2/94)

==========

Article Created: 23 February 1994

TOPIC ----------

After I rebuilt my desktop file, some files are displayed as generic icons.

Also, some documents which previously opened, now won't open when I double click them. In the Get Info window, these icons are named "Document".

What causes this?

DISCUSSION ----------

This is caused by having Super Adobe Type Manager (ATM) loaded when you rebuilt your desktop. Adobe is aware of the problem and recommends the following workaround:

1) Turn off Super ATM and restart your system. You can do this by:

   • Turning off Super ATM from the Control Panel

   OR

   • Rebooting your Macintosh with the Shift key held down to turn Extensions off.

2) Rebuild your Desktop file by restarting your Macintosh and holding the Option and Command keys down during the startup process.

3) Turn on Super ATM and restart your Macintosh.

According to Adobe, this problem fixed in version 3.6 of Super ATM.

..TIL14708-Super_ATM-Problems_After_Rebuilt_Desktop_2-94_(TA31207).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14708

Tech Info Library

HSU 2.0.1: Install After System 7 Pro Install (2/94)

Revised: 2/25/94
Security: Everyone

HSU 2.0.1: Install After System 7 Pro Install (2/94)

==========

Article Created: 23 February 1994

TOPIC ----------

Should I install Hardware System Update (HSU) 2.0.1 on top of System 7 Pro?

Why?

DISCUSSION ----------

Yes, you should install HSU 2.0.1 over System 7 Pro.

The Apple Installer Script, version 1.0, REMOVES HSU if it's installed, and doesn't replace it with a new copy. Installer Script 1.0.1 fixes this problem. There are approximately 18,000 System 7 Pro copies that have Installer Script 1.0. If you suspect that HSU was removed from a system, check the Extensions folder for Hardware System Update. If it isn't there, install HSU 2.0.1 again.

The HSU that Apple Installer Script 1.0.1 installs is exactly the same as the one the Hardware System Update disk installs, except the creation date is earlier.

If you install System 7 Pro with Custom Install on a system that already has HSU 2.0.1, you'll see a dialog box which says that the existing version is newer and asking whether you want to replace it. Since the HSU files are also found in System 7 Pro and are the same except for creation date, you can either replace or leave the existing file.

Support Information Services

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Tech Info Library Article Number:14709

Tech Info Library

System 7 Pro: Installs Older Version of Scrapbook (2/94)

Revised: 2/25/94
Security: Everyone

System 7 Pro: Installs Older Version of Scrapbook (2/94)

==========

Article Created: 23 February 1994

TOPIC ----------

Does System 7 Pro install the latest version of the Scrapbook?

DISCUSSION ----------

No, System 7 Pro installs version 7.1 of the Scrapbook desk accessory. It installs this version even though version 7.1.2 is found on the QuickTime 1.6.1 disk included with System 7 Pro.

System 7 Pro doesn't install the latest version of the Scrapbook because the current Installer script requires that you manually install the Scrapbook file to retain its contents.

Support Information Services

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Tech Info Library Article Number:14710

Tech Info Library

Bernoulli Compatible With DOS and Macintosh (11/94)

Revised: 11/2/94
Security: Everyone

Bernoulli Compatible With DOS and Macintosh (11/94)

==========

Article Created: 24 February 1994
Article Reviewed/Updated: 2 November 1994

TOPIC ----------

Can I connect a removable cartridge drive, such as a Bernoulli drive, to both a Macintosh and IBM?

DISCUSSION ----------

Iomega Corp., the distributor of Bernoulli, distributes drives and drivers that work with both Macintosh and MS-DOS compatible computers. Check with Iomega regarding the compatibility of the product you are interested in.

After physically and logically establishing the connections, you need a utility to recognize a DOS formatted Bernoulli disk on a Macintosh, such as PC Exchange 2.0, AccessPC 3.0 from Insignia Solutions, or DOS Mounter Plus from Dayna Communications. Digital Intrumentations Technology makes a Windows product called TransferPro for Windows which reads Macintosh formatted removable media. A program called MacDisk for the PC allows MS-DOS compatible computers to read 1.4 MB Macintosh disks. So, you may wish to keep the disks and files in a DOS format, then use Macintosh utilities to access the disk.

Most Macintosh applications and their Windows or DOS counterparts can directly open and save files in the opposite platform's format. Many applications also let you read documents created with another application, but there can be some limitations. To help file translations, AccessPC 3.0 ships with some file format translators, and MacLinkPlus, a file translating application, is capable of translating hundreds of different file types.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Article Change History:
02 Nov 1995 - Added TransferPro for Windows information.

10 Oct 1994 - Added PC Exchange 2.0 to article discussion.

Support Information Services

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Tech Info Library Article Number:14711

Tech Info Library

Power Macintosh: Install SIMMs In Same Size Pairs (2/95)

Revised: 2/15/95
Security: Everyone

Power Macintosh: Install SIMMs In Same Size Pairs (2/95)

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Article Created: 10 March 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

This article describes installing RAM SIMMs in same size pairs into a Power Macintosh.

DISCUSSION ----------

RAM for Power Macintosh computers is provided by dynamic random-access memory (DRAM) chips, of which the first 8 MB of RAM capacity is soldered to the main logic board. Users may expand RAM capacity by adding 72-pin Single Inline Memory Modules (SIMMs) of 80ns or better (for example 60ns) in pairs of 4 MB, 8 MB, 16 MB, or 32 MB in size.

For example, you may install two 8 MB SIMMs in the first two adjoining slots, additionally two 4 MB SIMMs may be added in the next two adjoining slots, and so on (no descending or ascending SIMM pair size order is necessary). SIMM pairs, of the same size and speed, must be installed in adjacent slots, but different size and speed SIMM pairs may be added to the next adjacent slots.

If you install a pair of SIMMs of different density, the Power Macintosh will assume they are both the larger size. For example if you have installed an 8 MB and a 4MB SIMM, your computer will think you have a total of 24 MB installed including the 8 MB on the logic board. In reality you would have 20 MB.

The result if an application were to try and use the additional memory that wasn't there, a system error or bomb would likely occur.

Article Change History:
15 Feb 1995 - Explained result if different density SIMM pairs are installed.

Support Information Services

..TIL14712-Power_Macintosh-Install_SIMMs_In_Same_Size_Pairs_2-95_(TA31212).pdf

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:14712

Tech Info Library

AV Systems: Apple Phone and Audio File Types (2/94)

Revised: 2/24/94
Security: Everyone

AV Systems: Apple Phone and Audio File Types (2/94)

==========

Article Created: 11 February 1994

TOPIC --

What are the file types of Apple Phone's messages and greeting? Also, how do I open Apple Phone files?

DISCUSSION --

Apple Phone message and greeting files are saved as AIFF files.

They are saved to the Preferences folder inside the System Folder and can be opened with many audio programs, such as MacroMedia's SoundEdit Pro and Director and Adobe Premiere.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14713

Tech Info Library

Newton MessagePad: Reducing Out Of Memory Problems (2/94)

Revised: 2/24/94
Security: Everyone

Newton MessagePad: Reducing Out Of Memory Problems (2/94)

==========

Article Created: 24 February 1994

TOPIC -----

When printing, running programs, or performing backups, I often get "out of memory" messages on my Newton MessagePad. How can I reduce this problem?

DISCUSSION -----

If you have ROM version 1.0 and System Update 1.04 or earlier, you should upgrade to the latest version of the System Update. This will help reduce "out of memory" problems because the Newton System is allocated 32K more memory.

Also, early system updates had problems displaying many bit-mapped images and often fragmented system memory. These problems do not affect MessagePads with ROM version 1.1 or later.

Here are some tips for better memory performance:

1) Remove programs that you no longer use, including programs that reside on a memory card. Each additional program, besides those located in the Newton's ROM, takes up an additional 2K of heap memory.

2) Close the Extras drawer after running any application. This will save another 3K of system memory.

3) Avoid using a large number of programs that are run continuously after installation. These programs consume large amounts of system memory and slow performance.

   You can identify these types of programs by the way they work. If you have a program that always adds a button on a particular screen or has a "floating" window that is always available, it may be a program that is always running.

4) Reset the MessagePad. This will rebuild the memory areas and remove deallocated memory which will free memory space and improve performance.

Support Information Services

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Tech Info Library Article Number:14714

..TIL14715-Newton-Digital_Books_and_Bookmarks_2-94_(TA31215).pdf

Newton: Digital Books and Bookmarks (2/94)

Revised: 2/24/94
Security: Everyone

Newton: Digital Books and Bookmarks (2/94)

==========

Article Created: 24 February 1994

TOPIC --------------------

How do I remove a bookmark from a Newton "digital book"?

DISCUSSION --------------------

Digital books are Newton applications which use a book metaphor for their user interface. Newton digital books allow the user to scroll pages, mark pages with bookmarks, access data directly by page number or subject, and perform text searches.

You can place up to six bookmarks in a digital book at a time. Each additional bookmark replaces the oldest remaining bookmark. To replace an individual bookmark in a Newton digital book, you must add bookmarks until the desired bookmark is replaced. You cannot remove an individual bookmark.

Resetting your Newton will remove ALL the bookmarks.

Support Information Services

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Tech Info Library Article Number:14715

Tech Info Library

Apple Media Tool: Macintosh Runtime System Requirements (3/95)

Revised: 3/1/95
Security: Everyone

Apple Media Tool: Macintosh Runtime System Requirements (3/95)

==========

Article Created: 24 February 1994
Article Reviewed/Updated: 1 March 1995

TOPIC ----------

What are the system requirements for Macintosh computers which are running Apple Media Tool runtime modules?

DISCUSSION ----------

Here are the system requirements:

- Macintosh computer with System 7.01
- Quicktime
- CD-ROM player (if the runtime module is distributed on CD-ROM)
- Sufficient memory to run your runtime with the "minimum allocation" memory

You can display the minimum allocation memory by selecting your runtime application in the Finder, then selecting Get Info from the File menu.

Article Change History:
01 Mar 1995 - Changed title to reflect new product name.

Support Information Services

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Tech Info Library Article Number:14716

Tech Info Library

Apple Media Tool: Windows Runtime System Requirements (3/95)

Revised: 5/24/95
Security: Everyone

Apple Media Tool: Windows Runtime System Requirements (3/95)

==========

Article Created: 24 February 1994
Article Reviewed/Updated: 1 March 1995

TOPIC ----------

What are the system requirements for Microsoft Windows-compatible computers which are running Apple Media Tool runtime modules?

DISCUSSION ----------

Here are the system requirements:

- Pentium- or 486-based Windows-compatible computer with Windows 3.1
- Quicktime for Windows
- Audio (or sound) card
- Windows-compatible video board capable of displaying at least 256 colors on a 640 by 480 pixel monitor
- CD-ROM player (if distributed on CD-ROM)
- Sufficient memory to display the desired runtime module

Article Change History:
01 Mar 1995 - Changed title to reflect new product name.

Support Information Services

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Tech Info Library Article Number:14717

Tech Info Library

Newton Connection Kit for Windows: Connection Timeouts (2/94)

Revised: 2/24/94
Security: Everyone

Newton Connection Kit for Windows: Connection Timeouts (2/94)

==========

Article Created: 22 February 1994

TOPIC -----

When I try to synchronize my Newton MessagePad with the Newton Connection Kit for Windows, my connection to the Newton will timeout or "drop".

How can I avoid this?

DISCUSSION -----

If you try to synchronize your Newton with the Newton Connection Kit and the connection "drops" or times out, try the following steps:

1) Be sure to avoid communication port conflicts. On Windows-compatible PCs, two communications ports generally share one interrupt line. COM1 and COM3 generally share IRQ4, while COM2 and COM4 share IRQ3.

   Since you can't have more than one active device at a time on the same interrupt line, your connection will "drop" if a serial device (such as a mouse) uses the same interrupt line as the Connection Kit.

   Note that the Windows Connection Kit will try to disable any communications ports on which it finds active devices.

   Communication port conflicts can also occur if you have a fax/modem card. Fax software is generally loaded at startup and activates its communication port. If the fax/modem card uses the same interrupt as the serial port to which your Newton is connected, you won't be able to use the Connection Kit. In this case, be sure that you disable the fax software and restart your computer. To turn off your fax software, check the AUTOEXEC.BAT file or the WIN.INI LOAD= statement, remove any code that calls your fax software and restart your computer.

2) Try to synchronize again, especially if you've never synchronized your Newton before. Due to the Windows Connection Kit's speed, your

connection can "drop" while your computer is processing data. This is especially true with computers which use a 80386SX microprocessor.

Trying to synchronize again will usually get around this problem. When you synchronize your Newton and your computer for the first time, synchronization files are created. Subsequently, synchronizing will go faster because there's less data to process and the chance of a timeout lessens.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14718

Tech Info Library

Newton MessagePad: AC Adapter Voltage Ratings (2/94)

Revised: 2/24/94
Security: Everyone

Newton MessagePad: AC Adapter Voltage Ratings (2/94)

==========

Article Created: 22 February 1994

TOPIC --------------------

Will I need a power transformer to operate my Newton MessagePad on AC power outside of the United States and Canada?

DISCUSSION --------------------

The Newton MessagePad AC adapter has the following specifications:

Voltage: 100 to 240 volts AC
Cycles: 50 to 60 Hertz

If the voltages at your destination conform to these specifications, then you need no extra transformer; the AC Adapter should handle these voltages properly. All you would need is an wall plug adapter for your destination country. This should be available in most electronic stores.

Support Information Services

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Tech Info Library Article Number:14719

Tech Info Library

Newton MessagePad: Won't Power Off Or Sleep (2/94)

Revised: 2/24/94
Security: Everyone

Newton MessagePad: Won't Power Off Or Sleep (2/94)

==========

Article Created: 22 February 1994

TOPIC -----

My Newton MessagePad will not power off or go to sleep. What can be done?

DISCUSSION -----

If the Newton will not go to sleep, be sure that the sleep settings in Preferences are not set to the "never" setting. To check this, follow these steps:

1) Tap the Extras Drawer, then tap Preferences.

2) Tap Sleep, then tap on the diamond for Sleep settings and choose a time other than never.

If your Newton will not power off, follow these steps:

1) Reset your Newton by pressing the reset button with the tip of your stylus.

   Crashed applications or operating system tasks may prevent your Newton from powering off and a reset will restart these applications and operating system tasks.

2) If you reset your Newton and it still won't power off, remove all added applications from your Newton. Some applications may not handle the shutdown sequence properly can cause your Newton to fail to power off.

3) If the suggestions above do not work, toggle the sleep settings. Follow the instructions above for accessing the sleep settings and choose different sleep times.

Support Information Services

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Tech Info Library Article Number:14720

Tech Info Library

Newton Connection Kit for Windows: Truncated Line Error (2/94)

Revised: 2/24/94
Security: Everyone

Newton Connection Kit for Windows: Truncated Line Error (2/94)

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Article Created: 22 February 1994

TOPIC -----

When I try to install the Newton Connection Kit for Windows, the error "MemReadlinefrom file - Truncated Line" occurs.

What causes this error? How do I recover from it?

DISCUSSION -----

This error occurs during installation while the Newton Connection Kit for Windows installer is reading or modifying one of the following system configuration files:

- CONFIG.SYS
- AUTOEXEC.BAT
- SYSTEM.INI
- WIN.INI

This particular error occurs if one or more lines in these files exceeds 128 characters. A future version of the Newton Connection Kit for Windows will address this installer problem.

The workaround is edit these files so each line is less than 128 characters.

You can edit these files with the Windows application SYSEDIT. To run SYSEDIT, go to the Program manager, choose Run from the File menu and execute SYSEDIT.EXE.

Support Information Services

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Tech Info Library Article Number:14721

Tech Info Library

NCK for Macintosh: Resources Not Found Error (2/94)

Revised: 2/24/94
Security: Everyone

NCK for Macintosh: Resources Not Found Error (2/94)

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Article Created: 22 February 1994

TOPIC ----------

When I synchronize my Newton MessagePad with the Newton Connection Kit for Macintosh, I get the error message "certain resources are not available" and the synchronization files do not open when I try to open them.

What causes this?

DISCUSSION ----------

This error message occurs when you use the Newton Connection Kit for Macintosh with a Macintosh that does not have Color QuickDraw in ROM or if system software wasn't installed properly.

The Newton Connection Kit for Macintosh requires a Macintosh running System Software 7.01 or greater, 4 megabytes of RAM, and Color QuickDraw in ROM. The Color QuickDraw ROM has certain system resources which are required by the Connection Kit. These particular resources are not added by the System Software if they are missing from the ROM.

The following Macintosh systems do not have Color QuickDraw in ROM:

- Macintosh Plus
- Macintosh SE
- Macintosh Portable
- Macintosh Classic
- Macintosh PowerBook 100
- Macintosh II without SuperDrive (FDHD) ROM support

The packaging for the Macintosh Connection Kit states that a Macintosh SE/30 or later computer is needed. This statement is incorrect because the Macintosh Portable, Classic, and PowerBook 100 were released after the SE/30. Note that adding third-party 68030/040 accelerator boards will not add the necessary system resources.

If you have a Macintosh with Color QuickDraw in ROM and the message "certain resources are not available" occurs, follow these steps:

1) Perform a "clean install" of System 7 and choose the "Easy Install" option.

2) Reinstall the Newton Connection Kit for Macintosh.

Support Information Services

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Tech Info Library Article Number:14722

Tech Info Library

Newton Connection Kit for Windows: 386SX Compatibility (2/94)

Revised: 2/24/94
Security: Everyone

Newton Connection Kit for Windows: 386SX Compatibility (2/94)

==========

Article Created: 24 February 1994

TOPIC --------------------

Does the Newton Connection Kit for Windows run on Windows-compatible computers with 80386SX microprocessors?

DISCUSSION --------------------

The Newton Connection Kit for Windows is only recommended for Windows-compatible computers with 386DX or later microprocessors. Some customers have been able to run the Newton Connection Kit for Windows on 386SX-equipped computers, but we do not recommend it.

Support Information Services

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Tech Info Library Article Number:14723

Tech Info Library

Where to Find Apple Software Updates (02/97)

Revised: 2/6/97
Security: Everyone

Where to Find Apple Software Updates (02/97)

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Article Created: 24 February 1994
Article Reviewed/Updated: 06 February 1997

TOPIC -----

This article details where Apple Software Updates are posted and available for downloading.

DISCUSSION -----

Apple Software Updates include all of the latest updates of Apple software, including most printer drivers, System Enablers, updates to utilities, and networking and communication software. Customers should read the posted Apple Software License Agreement before downloading any software.

Currently, AppleAssist posts Apple Software Updates to the following online services:

1) Internet: Apple World Wide Web and ftp sites: http://www.info.apple.com
2) ftp URL: ftp://ftp.info.apple.com
2) Gopher: gopher.info.apple.com
3) America Online (keyword: applecomputer)
4) CompuServe (GO APPLE, GO APLSUP, GO APLWW)

In addition, Apple maintains a list of all available mirrors of Apple SW Updates on the Internet. This list is available using the following URL: http://support.info.apple.com/ftp/mirrors.html

Specific paths and details for each service follow:

1) America Online

Use the keyword: applecomputer to take you directly to the Apple Computer, Inc. window. Click on the software button located in the lower left side of the Apple area window to go directly to the Apple software updates collection.

2) CompuServe

Apple software updates are posted to several forums on CompuServe.

- Apple Computer Area - main window (GO APPLE) lists all Apple forums. To go to the Apple software updates collections directly, refer to one of the following GO words:

- Apple Support Forum (GO APLSUP) contains all US Apple SW Updates and information libraries.

- Apple Worldwide Software (GO APLWW) -contains localized (or worldwide) Apple Software Updates.

3) Internet: Apple Web Sites

All Apple software updates are posted to ftp servers, but you can also get to the software updates collections from one of Apple's web sites:

- http://www.info.apple.com - Get Info: Apple Support Information - Apple's USA based web site. Click on the Apple SW Updates button in the upper left corner of the home page to go to the Apple software updates collection, where you can browse for, search for and download all US and Worldwide Apple SW Updates. Here are a few handy urls:

- http://support.info.apple.com/ftp/mirrors.html -- list of newly posted Apple software updates.

- http://swupdates.info.apple.com/Architext/AT-SWupdates_USquery.html -- Search page for US Apple software updates.

- http://swupdates.info.apple.com/Architext/AT-SWupdates_Worldquery.html -- Search page for Worldwide (localized) Apple software updates.

- http://swupdates.info.apple.com/cgi-bin/lister.pl?Apple.Support.Area/Apple.Software.Updates -- Browsing page for all Apple software updates.

- http://www.support.apple.com - Takes you to the same site mentioned above.

- http://www.apple.com - Apple Computer, Inc's main home page - click on the Customer Support button in the upper left corner of the home page to go the www.info.apple.com site mentioned above.

- http://club.apple.com - Apple Club, a fee-based "diamond-lane" server, providing priority access to Apple software updates for customers in the USA and Canada. You can sign up for $19.95 per year (US) right at the site.

4) Internet: Apple ftp Sites

You can use either an ftp client (such as Fetch or Anarchie) or a web browser to go our ftp sites directly:

- ftp.info.apple.com (multiple servers, handles 2400 concurrent users - located in Austin, TX USA) When using a web browser, use the following url: ftp://ftp.info.apple.com.

- ftp.apple.com (multiple servers, handles 1000 concurrent users - located in Cupertino, CA USA) When using a web browser, use the following url: ftp://ftp.apple.com.

- ftp.info.euro.apple.com (one server, handles 250 concurrent users - located in Zeist, The Netherlands) When using a web browser, use the following url: ftp://ftp.info.euro.apple.com.

- For the latest list of other ftp sites, check the following url --http://support.info.apple.com/ftp/mirrors.html

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
06 Feb 1997 - Removed references to support.apple.com.
20 Jan 1997 - Moved the Internet options to top of the list - online services.
07 Jan 1997 - Major overhaul of article, removing AppleLink, updating AOL and CIS references and updating all Internet site information.
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Tech Info Library Article Number:14724

Tech Info Library

TITLE

Where to Find Apple Support

Article ID: 14724
Created: 2/24/94
Modified: 9/9/99

TOPIC

This article details where various Apple support offerings are located on the Internet.

DISCUSSION

Apple Software Updates

Apple Software Updates is a collection of updaters, utilities, and full software installs to help keep your Apple Products running smoothly. Customers should read the posted Apple Software License Agreement before downloading any software.

- **http://asu.info.apple.com/** Search, browse, and download all English-North American and International Apple Software Updates. This web site also includes featured software updates that have recently been posted or have been identified by Apple's Response Engineers as important to our customers.
- **http://asu.info.apple.com/swupdates.nsf/Changes?OpenView&Count=50** a list of newly posted Apple software updates.

The URL listed above to the Apple Software Updates Database is the preferred method to find Apple Software Updates. However, direct access to our servers is available from the following URLs:

- **http://download.info.apple.com/** Apple's http servers located in Austin, Texas, USA.
- **ftp://ftp.info.apple.com/** Apple's ftp servers located in Austin, Texas, USA.
- **ftp://ftp.apple.com/** Apple's ftp servers located in Cupertino, CA, USA.
- **ftp://ftp.info.euro.apple.com/** Apple's ftp server located in Zeist, The Netherlands.

Tech Info Library (TIL)

The Tech Info Library (TIL) is Apple's knowledgebase with product information, technical specifications, and troubleshooting information. The TIL is updated daily and is available from the following URLs:

- **http://til.info.apple.com** Search current articles and read the latest technical information.
- **http://til.info.apple.com/tilarchive.nsf/Web+Search+Simple** Search articles covering products 8 years or older.

Apple Product-Specific Support

Apple provides support pages at **http://www.apple.com/support/** for current products that include links to:

- Product-specific software updates
- Relevant Tech Info Library articles
- Getting Started and Solving Problems informational sections
- Tech Exchange discussion boards

Fee-Based Support Options and Extended Warranty

Apple has a number of programs designed to help you get the most out of your Apple product:

- **Apple Support Line at http://support.info.apple.com/support/supportoptions/aplsupline.html** is designed for individuals and small businesses, providing convenient and affordable technical support after your 90 days of standard support expires.

- **Support Professional at http://support.info.apple.com/sp/supportpro.html** is Apple's premier technical support program specifically designed for enterprise, government, and educational computing support environments.
- **AppleCare Professional Mac OS X Server Series at http://support.info.apple.com/support/supportoptions/macosx.html** provides convenient, priority access to senior Apple technical support representatives.
- **AppleCare Professional Multimedia Series at http://support.info.apple.com/support/supportoptions/mmedia.html** provides convenient, toll-free, priority access to senior Apple technical support representatives for QuickTime, Final Cut Pro and current products based on QuickTime technologies.
- **AppleCare Extended Service at http://support.info.apple.com/support/supportoptions/applecare.html** is an extended service plan similar to the one-year limited warranty coverage that came with your Apple product when you purchased it.

Apple Spec Database

This database contains Apple product specifications collected from many sources and is available from the following URL:

- **http://www.info.apple.com/applespec/applespec.taf**

Apple Manuals

Search, browse, and download all Apple manuals and other instructional materials from the following URL:

- **http://www.info.apple.com/manuals/manuals.taf**

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

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Document Information
Product Area: Apple General Information
Category: Apple On Line Resources
Sub Category: Apple SW Updates

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Tech Info Library

MotionWorks

Revised: 7/18/96
Security: Everyone

MotionWorks

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Motion Works Group (7/96)
Article Created: 24 February 1994
Article Reviewed/Updated: 16 July 1996

Motion Works Group

1020 Mainland Street
Suite 130
Vancouver, BC, Canada V6B 2T4

604-685-9975

604-685-6105 FAX

Internet: www.mwg.com

Company Profile:
Created ADDmotion II a 24-bit color paint, animation and sound extension (XCMD) that is bundled with HyperCard 2.3.

Article Change History:
16 Jul 1996 - Updated name, address & phone number. Added Internet address

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Tech Info Library Article Number:14725

Tech Info Library

Performa: Checking Proper Installation of TelePort Modem (2/94)

Revised: 2/25/94
Security: Everyone

Performa: Checking Proper Installation of TelePort Modem (2/94)

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Article Created: 25 February 1994

TOPIC --------------------

Can I tell if the Global Village TelePort Bronze Modem is connected and the Global Village fax software is installed properly without sending a fax?

DISCUSSION --------------------

Yes. From the TelePort/Bronze Modem Control Panel, you can confirm proper installation of both the modem and the software.

1) Open the TelePort/Bronze control panel

2) Click the change port icon

3) Change the port by selecting the modem or printer icon that is not highlighted

If the incorrect port is selected, the volume slider bar dims. If the incorrect port is selected, switch it back by following steps 2 and 3. When the proper port is selected, you can move the volume slider bar. This indicates that the Global Village TelePort/Bronze software is installed properly, and the modem is properly connected to the Macintosh.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14727

Tech Info Library

Personal LaserWriter 320: Compatible With Apple IIGS (2/94)

Revised: 2/25/94
Security: Everyone

Personal LaserWriter 320: Compatible With Apple IIGS (2/94)

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Article Created: 25 February 1994

TOPIC ----------

Can a Personal LaserWriter 320 be used with an Apple IIGS and GSOS 6.0?

DISCUSSION ----------

You can use the Personal LaserWriter 320 on an Apple IIGS running GSOS 6.0. Here is how:

1) Open the Net Printer Control Panel

2) Select ImageWriter Emulation

You can use the ImageWriter Emulation to print to any Apple PostScript AppleTalk printer.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14728

Tech Info Library

Newton Print Pack: Garbled Text with Canon Bubblejet (4/97)

Revised: 4/1/97
Security: Everyone

Newton Print Pack: Garbled Text with Canon Bubblejet (4/97)

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Article Created: 25 February 1994
Article Reviewed/Updated: 1 April 1997

TOPIC -----

When I print to my Canon Bubblejet printer from my Newton using the Newton Print Pack, the printer outputs multiple pages of garbled text. How can I get my Newton to print to the Canon Bubblejet properly?

DISCUSSION -----

The Canon Bubblejet printer is capable of several types of emulation. The printer must be set to "130e" emulation mode to print properly. In some cases, having the printer set to the wrong emulation mode can cause garbled text and multiple pages to be output.

Article Change History:
27 Aug 1996 - Corrected spelling.

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Tech Info Library Article Number:14729

Macintosh LC III: Button on Logic Board Resets PRAM (2/94)

Revised: 2/25/94
Security: Everyone

Macintosh LC III: Button on Logic Board Resets PRAM (2/94)

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Article Created: 25 February 1994

TOPIC --------------------

What is the button on the Macintosh LC III logic board used for?

DISCUSSION --------------------

The button is used for testing purposes during manufacturing of the computer. When the button is pressed it resets the ADB bus, Parameter RAM, and the video settings.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14730

Power Macintosh and NuBus Q&A (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh and NuBus Q&A (3/94)

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Article Created: 8 March 1994

TOPIC -----

Below is a Q&A series around NuBus performance on Power Macintosh.

DISCUSSION -----

Q) Is NuBus slow on the Power Macintosh family?
A) No. NuBus performance on the Power Macintosh computers is faster than any NuBus-capable Macintosh we've ever shipped except for the Quadra 840AV. And compared to the Quadra 840AV, the NuBus performance of the Power Macintosh 8100 should be about the same for most situations. When combined with new native applications, the overall performance of Power Macintosh machines is far better than any previous Macintosh.

Q) Do existing NuBus cards run on the Power Macintosh?
A) Yes. That's why we chose to stay with the NuBus expansion bus. We have found that overall NuBus compatibility is excellent. High performance cards, in areas like video and graphics, may require new software drivers in order to achieve the level of performance of the fastest Quadra Computers today.

Q) Why do customers need to get new drivers?
A) Some existing drivers depend on software APIs custom to the 68040 family. The new drivers have be rewritten around the PowerPC 601 chip instead of the 68040.

Q) How will customers get the new software drivers?
A) These new drivers will be made available by the third-party card vendors.

Q) Under what conditions is NuBus faster on the Quadra 840AV than on the Power Macintosh 8100?
A) The Quadra 840AV has the potential for block transfer reads and writes from the CPU to a slave card, whereas the Power Macintosh 8100 can only

block transfer when the card is a NuBus master. This difference is due to a special custom 68040 instruction called MOVE16, which is not implemented in the PowerPC instruction set.

Q) Why isn't the MOVE16 instruction included in the PowerPC instruction set?
A) The PowerPC processor is a Reduced Instruction Set (RISC) processor, which means that it has very simple instructions that can be executed quickly. It does not have complex instructions like MOVE16. This is what gives the PowerPC processor its great speed.

Q) Does this mean that the Quadra 840AV could be a better solution than the Power Macintosh 8100 for some customers?
A) No. The Power Macintosh 8100 combined with native Power Macintosh applications will offer performance far superior to the Quadra 840AV. We believe that the performance of native Power Macintosh applications will be 2 to 4 times faster than the same applications running on an Quadra 840AV.

Q) So NuBus performance is not an advantage of the new machines?
A) The Power Macintosh family was designed to vastly improve CPU processing performance while maintaining compatibility with today's Macintosh applications, peripherals and expansion cards. The I/O subsystems on the Power Macintosh machines, including NuBus, SCSI, networking, and so on, offer very high compatibility with today's computers and performance similar to that of the fastest Quadra Computers. The NuBus performance of the Power Macintosh machines is clearly sufficient for applications in publishing, multimedia and digital video.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14731

Tech Info Library

Power Macintosh: New Monitor Port Uses HDI-45 Socket (7/95)

Revised: 7/11/95
Security: Everyone

Power Macintosh: New Monitor Port Uses HDI-45 Socket (7/95)

==========

Article Created: 24 February 1994
Article Reviewed/Updated: 10 July 1995

TOPIC ----------

This article describes:

• HDI-45 socket on all Power Macintosh computers

• Monitors supported through the HDI-45 socket

• DRAM supported video when using this port

• Adapter cable needed for monitors with a DB-15 plug.

DISCUSSION ----------

AllPower Macintosh 6100, 7100, 8100 computers have an HDI-45 monitor socket located on the back panel. The Power Macintosh 7100, 8100, and all designated AV models also provide a DB-15 monitor socket. In addition to the Apple AudioVision 14 monitor, the HDI-45 interface supports these other monitors when used with the HDI-45 Adaptor cable:

Monitor	Size (pixels)	Color depth (bits)
12-inch RGB	512 by 384	16
14-inch RGB	640 by 480	16
15-inch portrait	640 by 870	8
15-inch Multi-Scan	640 by 480	16
15-inch Multi-Scan	832 by 624	8
16-inch RGB	832 by 624	8
17-inch Multi-Scan	640 by 480	16
17-inch Multi-Scan	832 by 624	8
20-inch Multi-Scan	640 by 480	16
20-inch Multi-Scan	832 by 624	8
16-inch RGB	832 by 624	8

VGA	640 by 480	8

Note:
Built-in video (HDI-45 with 640K DRAM support) doesn't support any monitor with a resolution greater than 832 by 624. To use a larger monitor (19-inch, 20-inch, or 21-inch) at these higher resolutions, a third-party video card or the AV card must be used.

When using the HDI-45 connector, frame buffering for monitor support is provided through a 640K DRAM space. There is no dedicated VRAM when using this port.

A video adapter cable (Part #M2681LL/A) is needed to connect a monitor with a DB-15 connector to a HDI-45 built-in port. This cable comes standard with every Power Macintosh 6100, and is offered as an option for the Power Macintosh 6100AV. With the Power Macintosh 7100, 8100, or AV models, the adapter cable is offered as an option to connect an additional display (other than the Apple AudioVision 14) to your computer.

Article Change History:
10 Jul 1995 - Added information on Multiple Scan Displays.
09 Jan 1995 - Excluded speed from Power Macintosh model numbers.

Support Information Services

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Tech Info Library Article Number:14732

Tech Info Library

Power Macintosh: DRAM Based Video and HDI-45 Port (2/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh: DRAM Based Video and HDI-45 Port (2/94)

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Article Created: 24 February 1994

TOPIC -----

When using to the new HDI-45 monitor port to connect my monitor, is dynamic random-access memory (DRAM) used for video buffering?

DISCUSSION -----

Yes. Frame buffering for monitor support is provided through a 640K DRAM space. The HDI-45 provides support for 16 bits on 14 inch monitors, and 8 bits on 15 inch portrait, 16 inch monitors, and VGA.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14733

Tech Info Library

Power Macintosh: Upgrades Available (4/97)

Revised: 4/8/97
Security: Everyone

Power Macintosh: Upgrades Available (4/97)

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Article Created: 25 February 1994
Article Reviewed/Updated: 87 April 1997

TOPIC ----------

This article describes the Power Macintosh Upgrade Card, the Macintosh Processor Upgrade Card (discontinued), and the Power Macintosh Logic Board Upgrades.

DISCUSSION ----------

Macintosh owners who want the new high-speed capabilities of Power Macintosh computers, but don't want to sacrifice their previous investments have several upgrade options: the Power Macintosh Upgrade Card (which is no longer available from Apple Computer), the Macintosh Processor Upgrade Card (discontinued), and the Power Macintosh Logic board Upgrades.

You can install the Power Macintosh Upgrade Card (which is no longer available from Apple Computer) into the 68040 processor-direct slot of your Macintosh computer yourself by following simple, step-by-step instructions. The card adds the benefits of Power Macintosh technology to your Macintosh and provides speeds up to four times faster when using programs optimized for Power Macintosh technology. And you can still run all your existing Macintosh applications.

The Macintosh Processor Upgrade Card (discontinued) upgrades some 68040 systems with the PowerPC microprocessor. It is available for the Macintosh Quadra 605, Macintosh LC 475, Performa 47x, Macintosh LC 57x, Performa 57x, Macintosh LC 580, Performa 58x, Macintosh LC 630, Macintosh Quadra 630, and Performa 630 series of computers. Once installed, the upgrade occupies the LC-PDS slot of your Macintosh computer.

In addition, even greater performance, as well as speech and telephone capabilities, can be yours if you choose the appropriate Power Macintosh Logic Board Upgrade for your Macintosh. These logic board upgrades give your computer capabilities identical to those of the Power Macintosh model to which you've upgraded.

Installation of both the Macintosh Processor Upgrade Card and the Power Macintosh Logic Board Upgrade must be performed by an authorized Apple reseller. Your upgraded computer will retain your existing hard drive and, in most cases, your DRAM SIMMs, allowing you to take advantage of Power Macintosh capabilities and software written to take advantage of those capabilities.

The Power Macintosh Upgrade Card, the Macintosh Processor Upgrade Card, and the Power Macintosh Logic Board Upgrade give you the best of both worlds: Power Macintosh capabilities designed for the future, built on the foundation of the investment you already have in your Macintosh today.

Power Macintosh Upgrade Cards

(This product has been discontinued and is no longer available from Apple Computer.)

Begin_Table

Computer	040 speed	PowerPC 601 speed
Quadra 950	33 MHz	66 MHz
Quadra 900	25	50
Quadra 800	33	66
Quadra 700	25	50
Quadra 650	33	66
Quadra 610	25	50
Centris 650	25	50
Centris 610	20	40

End_Table

Features of Power Macintosh Upgrade Card

Power and speed
- Includes PowerPC 601 microprocessor with floating-point processor and 32K cache.
- Card runs at double the processor speed of your Macintosh computer
- Includes 1MB level-2 cache

Easy, do-it-yourself installation
- Simple, step-by-step instructions with illustrations allow you to install it yourself.
- Most installations require no tools

Compatibility
- On-board Power Macintosh ROM
- Runs programs written for Power Macintosh
- Runs Macintosh programs
- Runs MS-DOS and Windows programs (with third-party SoftWindows software)

Macintosh Processor Upgrades Available

Begin_Table

Computer	040 speed	PowerPC 601 speed
Quadra 605	25 MHz	50 MHz
Quadra 630	33	66
LC 475	25	50
LC 57X	33	66
LC 58X	33	66
LC 630	33	66
Performa 57X	33	66
Performa 58X	33	66
Performa 630	33	66

End_Table

Features of Macintosh Processor Upgrade (discontinued)

Power and speed
- Includes PowerPC 601 microprocessor with floating-point processor and 32K cache.
- PowerPC chip runs at double the processor speed of your Macintosh computer
- Includes 256K level-2 cache

Compatibility
- Macintosh System 7.5 (included)
- On-board Power Macintosh ROM
- Runs programs written for Power Macintosh
- Runs Macintosh programs
- Runs MS-DOS and Windows programs (with third-party SoftWindows software)

Logic Board Upgrades Available

The following table lists the Macintosh computers that can be upgraded to the Power Macintosh 8500 using the Power Macintosh 8500 Logic Board Upgrade (M3807LL/B) and a Power Macintosh Processor Upgrade Card (180 MHz M5458LL/A).

Begin_Table

Computer	Processor speed	PowerPC 604 speed
Quadra 800	33 MHz	180 MHz
Quadra 840AV	40	180
Workgroup Server 80	33	180
Workgroup Server 8150/80	80	180

Workgroup Server 8150/110	110	180
Power Macintosh 8100/80	80	180
Power Macintosh 8100/100	100	180
Power Macintosh 8100/110	110	180

End_Table

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
08 Apr 1997 - Updated with availability information.
24 Sep 1996 - Updated information.
08 Feb 1996 - Removed note

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Tech Info Library Article Number:14734

Power Macintosh: Upgrade Card, Logic Board Specification (10/94)

Revised: 10/11/94
Security: Everyone

Power Macintosh: Upgrade Card, Logic Board Specification (10/94)

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Article Created: 28 February 1994
Article Reviewed/Updated: 10 October 1994

TOPIC ----------

This article contains the specifications for the Power Macintosh Upgrade Card and Power Macintosh Logic Board Upgrades.

DISCUSSION ----------

Power Macintosh Upgrade Card technical specifications
==========

Microprocessor

- Includes PowerPC 601 RISC microprocessor
- Provides integrated floating-point processor and 32K cache
- Runs at twice the clock speed of upgraded Macintosh

Cache

- 1MB on-board level-2 cache

Installation

- User-installable in Motorola 68040 processor-direct slot of upgraded Macintosh

ROM

- Includes 4MB Power Macintosh ROM

Operating environment

- Operating temperature: 50 to 131 degrees F (10 to 55 degrees C)
- Relative humidity: 5% to 95% (non-condensing)

• Maximum altitude: 10,000 feet (3,048 meters)

Macintosh Upgrade Compatibility

Macintosh Model	6100/60 6100/60AV	7100/66 7100/66AV	8100/80 8100/80AV	Upgrade Card
Quadra 900, 950				X
Quadra 840AV			X	
Quadra 800			X	X
Quadra 700				X
Quadra or Centris 660AV	X			
Quadra or Centris 650		X		X
Quadra or Centris 610	X			X
IIvx, IIvi, or Performa 600		X		

Power Macintosh Upgrade Card Speed Comparison

Macintosh Model	68040 Speed (MHz)	Macintosh Upgrade Card Speed (MHz)
Quadra 950	33	66
Quadra 900	25	50
Quadra 800	33	66
Quadra 700	25	50
Quadra 650	33	66
Quadra 610	25	50
Centris 610	20	40

After upgrading to a Power Macintosh, your system continues to run almost all your existing Macintosh software. For best performance and greatest speed, look for the new software programs designed especially for Power Macintosh computers. You'll find Power Macintosh programs at any software store that carries products for Macintosh computers.

Ordering Information

Power Macintosh Upgrade Card*

Order No. M2843LL/A
• Power Macintosh Upgrade Card
• Necessary hardware for installation
• Complete installation instructions

Power Macintosh 6100/66 Logic Board Upgrade*

Order No. M2343LL/A
• With 8MB of RAM and Power Macintosh Display Adapter

Power Macintosh 6100/60AV Logic Board Upgrade*

Order No. M2901LL/A
• With 8MB of RAM and cable for S-video to composite video

Power Macintosh 7100/66 Logic Board Upgrade*

Order No. M2474LL/A
• With 8MB of RAM and 1MB of VRAM

Power Macintosh 7100/66AV Logic Board Upgrade*

Order No. M2840LL/A
• With 8MB of RAM, 2MB of VRAM, and S-video to composite video adapter

Power Macintosh 8100/80 Logic Board Upgrade*

Order No. M2344LL/A
• With 8MB of RAM and 2MB of VRAM

Power Macintosh 8100/80AV Logic Board Upgrade*

Order No. M2902LL/A
• With 8MB of RAM, 2MB of VRAM, and S-video to composite video adapter

* These upgrades include system software version 7; complete setup, learning, and reference documentation; as well as a limited warranty.

Internal CD-ROM Upgrades

• AppleCD 300i Plus internal CD-ROM drive: Order No. M3152LL/A
• Adapter kit for Power Macintosh 6100/60 or 6100/60AV: Order No. M2846LL/A
• Adapter kit for Power Macintosh 7100/66 or 7100/66AV: Order No. M3126LL/A
• Adapter kit for Power Macintosh 8100/80 or 8100/80AV: Order No. M2847LL/A

Article Change History:
10 October 1994 - Added additional information

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14735

Tech Info Library

840AV Video Input/Output Frame Per Second Capabilities (3/94)

Revised: 3/3/94
Security: Everyone

840AV Video Input/Output Frame Per Second Capabilities (3/94)

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Article Created: 3 March 1994

TOPIC----------

We have a customer who is interested in using a Quadra 840AV to capture QuickTime video. He needs to know how many frames per second (FPS) he can expect from it.

DISCUSSION----------

1) How many FPS can I expect to capture without buying additional RAM using QuickTime 1.6 and 2.0? The FPS rate of QuickTime depends on a number of factors. The size of the movie, what media it is playing back from, whether or not there is audio attached to it, and which compression algorithms are used. QuickTime 2.0 will have about twice the performance at 1.6 all other things being equal. The next part of the answer depends if you want to use third-party hardware to give better performance in QuickTime. New MPEG (Motion Pictures Expert Group) hardware exists which will give up to 30FPS data rate at 640 by 480.

2) How many FPS with up to 64MB of RAM and setting up a RAM disk using QuickTime 1.6 and 2.0? You don't necessarily need to use a RAM disk to save a movie to. Some digitizing software allows you to save to RAM as a standard option. Increased memory will not improve performance, rather it allows longer recording times. Again, QuickTime 2.0 will have about twice the performance at 1.6 all other things being equal.

4) Is there any way to get the 840AV to capture video at (or very close to) 30FPS? Yes, you can get 30FPS input speed with a 840AV if the size is 320 by 240 or less and you record to RAM, or if you record frame by frame. The more RAM you have the better, more RAM simply gives you longer recording times.

5) What is the fastest rate at which video can be output from the 840AV to be recorded to a VCR? The fastest rate that you can output from the AV is similar to the fastest that the movie will play. The output is

recorded in real-time.

Lastly it depends on the frame rate that you actually need. You can do backgrounds that playback at 1FPS and smaller foreground movies that are small and playback at 30FPS.

The underlying understanding is that you have to experiment with a number of variables in making QuickTime Movies. The hardest thing to do is create movies that play back from CD-ROM. To do this you need to use MovieShop or an equivalent product which will allow you to limit the playback speed to between 90K to 190K/sec depending whether you have a single speed or double speed drive.

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Tech Info Library Article Number:14736

Tech Info Library

ARA, Express Modem, and Net Install Problem (2/94)

Revised: 3/1/94
Security: Everyone

ARA, Express Modem, and Net Install Problem (2/94)

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Article Created: 28 February 1994

TOPIC ----------

I'm trying to do a net install using the Apple Installer over an AppleTalk Remote Access connection. The installer keeps cutting me off after I click the install button. I have a Macintosh Quadra 840AV, I'm using a GeoPort Telecom Adapter, and AppleTalk Remote Access 1.0. I tried a net install over AppleTalk Remote Access with my Macintosh IIci and external modem and everything worked fine.

Listed below is the sequence when net install failed:

1) Connect to AppleTalk Remote Access Server.
2) Quit AppleTalk Remote Access and stay connected.
3) Launch Net Installer for CD-ROM Setup v5.0.
4) Installer Loads fine. Click Install.
5) Installer asks to quit all other applications.
6) Clicked Continue
7) AppleTalk Remote Access connection is dropped
8) Message states that server is dropped and installation cannot continue

Is there a solution? It seems there is a limitation with the Express Modem Software or GeoPort Telecom Adapter, since my Macintosh IIci worked fine with AppleTalk Remote Access and Apple Installer.

DISCUSSION ----------

We have been told that in order to change the Express Modem software, so the Installer does not shut it down, will take a lot of work and there are no current plans to do this. We have submitted this as an enhancement request.

We came up with two similar workarounds that still require downloading the software, then doing the install, but at least they do not require any additional equipment:

- Depending on the amount of software that must be downloaded and the amount of RAM installed on your computer, you could create a RAM disk to copy the software into, disconnect and quit ARA, then run the installation. The RAM disk still appears if you then restart with the Shift key down to disable extensions. This will increase the amount of RAM available for the Installer to run in. We successfully downloaded Microsoft Mail and installed it using a RAM disk on a computer with 4MB of RAM.

- The RAM disk method isn't likely to work with a huge program like Word or Excel. We used disk partition software that comes with Norton Utilities. We created a couple of partitions on our hard drive and copied the software into them. The nice thing about these kind of partitions is they can be created and deleted on the fly. Although we didn't perform extensive testing, this method also appeared to work.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14737

Tech Info Library

LaserWriter Select 360: Creating Fax Groups (3/94)

Revised: 3/3/94
Security: Everyone

LaserWriter Select 360: Creating Fax Groups (3/94)

==========

Article Created: 2 March 1994

TOPIC ----------

Can I create several group lists with the Phone Book Utility?

DISCUSSION ----------

Yes, the LaserWriter driver 8f comes with a Phone Book utility that allows you to create a list of fax recipients. In addition to individual recipients it is quite easy to create a group of individuals that a fax will be sent to.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14740

Tech Info Library

LaserWriter Select 360: Cannot Force Fax Connection (3/94)

Revised: 3/3/94
Security: Everyone

LaserWriter Select 360: Cannot Force Fax Connection (3/94)

==========

Article Created: 3 March 1994

TOPIC ----------

When trying send a fax to someone with a voice/fax/data switch the LaserWriter Select 360 fax software does not send the fax. It appears to be waiting for a fax to answer the phone. Is there a way to force the fax modem to go ahead and send the document?

DISCUSSION ----------

There is no way to force fax modems to go ahead and send documents. This is because data handshaking, and optionally error correction, need to be established. The LaserWriter Select 360 fax modem operates as a standard Group 3 fax machine so it's communications are no different, just the type of data being sent.

Historically voice/fax/data switches have not been too robust in making the appropriate connections. So, we would suggest contacting the manufacturer of the switch for additional help in troubleshooting the switch. We have heard that some switches can be configurable so it might help to adjust those settings.

Support Information Services

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Tech Info Library Article Number:14742

Color StyleWriter Pro: Meaning of Error LEDs (4/97)

Revised: 4/2/97
Security: Everyone

Color StyleWriter Pro: Meaning of Error LEDs (4/97)

==========

Article Created: 01 March 1994
Article Reviewed/Updated: 02 April 1997

TOPIC ----------

When the printer has a problem what do the various LEDs mean?

DISCUSSION ----------

The Error and Power LEDs are not visable when the top cover is closed. When the top cover is open they can be seen, as well as the cartridge (black, cyan, magenta, yellow) LEDs.

LED Status

ERROR	Power	Black	Cyan	Magenta	Yellow	Cause
ON	ON	OFF	OFF	OFF	OFF	Paper empty/Jam
ON	ON	OFF	OFF	OFF	ON	Check printer for leaks
ON	ON	One or more LEDs Blinking				Cartridge out of ink
Blinking	ON	All cartridge LEDs Blinking				Printhead error

(Sometimes the printhead cover not fully latched. Push down on cover.)

Begin_Table

The following errors require the printer be serviced.

Blinking	ON	OFF	OFF	OFF	ON	Recovery error*
Blinking	ON	OFF	OFF	ON	OFF	Home Position Error
Blinking	ON	OFF	OFF	ON	ON	Linear Encoder Error
Blinking	ON	OFF	ON	OFF	OFF	Cleaning Sensor Error

Blinking	ON	OFF	ON	OFF	ON	Paper Feed Motor
Blinking	ON	OFF	ON	ON	OFF	Sheet Feeder Sensor
Blinking	ON	OFF	OFF	OFF	ON	Thermistor Error
Blinking	ON	ON	OFF	OFF	OFF	ROM Error
Blinking	ON	ON	OFF	OFF	ON	Memory Error (printer)
Blinking	ON	ON	OFF	ON	OFF	Ink Absorber Full
Blinking	ON	ON	OFF	ON	ON	EEPROM Error
Blinking	ON	ON	ON	OFF	OFF	Gate array Error

End_Table

NOTE: When you encounter a Recovery error, check and reinstall the purge unit first. This usually corrects this error.

If the error lights on the Color StyleWriter Pro indicating service is needed, you can first try resetting the printer to correct the problem. If resetting the printer doesn't correct the problem, it needs to be serviced.

Resetting the Color StyleWriter Pro
---

1) Disconnect the power cord from the Color StyleWriter Pro while it is still on.

2)Open printer and remove all four ink cartridges.

3)Open Print Head case and remove the print head.

4)Wait 1-2 minutes.

5)Replace print head and make sure that the lid for the print head snaps twice locking it down.

6)Replace all four ink cartridges, making sure that they snap into place.

7) Wait a few seconds, then reinsert the power cord into the printer.

Once the power cord is reconnected to the printer, it should print a calibration page. If it doesn't, use the Utilities option in the print dialog box to print a calibration page.

Article Change History:
04 Sep 1996 - Added note about purge unit.
10 Nov 1994 - Added information on resetting the printer.
02 Apr 1997 - Revised the reset procedure.

..TIL14744-Color_StyleWriter_Pro-Meaning_of_Error_LEDs_4-97_(TA31239).pdf

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Tech Info Library Article Number:14744

Tech Info Library

Color StyleWriter Pro: Improperly Installed Ink Cartridge (3/94)

Revised: 3/2/94
Security: Everyone

Color StyleWriter Pro: Improperly Installed Ink Cartridge (3/94)

==========

Article Created: 1 March 1994

TOPIC ----------

When changing ink cartridges, for the Color StyleWriter Pro, I switched two of the colors. How can fix this problem?

DISCUSSION ----------

1) Put all cartridges in their correct position
2) Turn the printer on
3) Choose PRINT DESKTOP from the 'File' pulldown menu
4) Open the UTILITIES box in the Print dialog
5) Select 'Clean print head before printing'
6) Select 'All Colors'

This cleans the print heads and corrects the problem.

Support Information Services

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Tech Info Library Article Number:14745

Tech Info Library

Color StyleWriter Pro: Ink Cartridge Capacity & Usage (3/94)

Revised: 3/1/94
Security: Everyone

Color StyleWriter Pro: Ink Cartridge Capacity & Usage (3/94)

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Article Created: 1 March 1994

TOPIC ----------

How much ink does each Color StyleWriter Pro ink cartridge hold, and how much ink is used in the various cleaning operations?

DISCUSSION ----------

Capacity

Ink in cartridge - 8 grams/ .28oz

Ink Used During Cleaning Operations

Single head cleaning of the black - 0.29 grams or 3.6%
Four-head cleaning - 0.14 grams per cartridge or 1.6%
Super cleaning - 0.44 grams per cartridge or 5.5%

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14746

Tech Info Library

Color StyleWriter Pro: Avoiding Marks On Transparencies (3/94)

Revised: 3/3/94
Security: Everyone

Color StyleWriter Pro: Avoiding Marks On Transparencies (3/94)

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Article Created: 3 March 1994

TOPIC ----------

When printing transparencies, I occasionally see a 0.5 in. x 2 in. rectangle mark on the edge that is fed in first. It is more apparent when a color or shaded background is used. How can I prevent this from occurring?

DISCUSSION ----------

The marks are caused by the sheet feed rollers. The marks are virtually invisible when the transparency is placed on an overhead projector. However, to avoid the marks altogether the following procedure is recommended:

1) Empty the sheet feeder

2) Move the paper load lever to the envelope position

3) Make sure printer is turned on

4) Insert the transparency into the sheet feeder, as normal

5) Load the transparency manually by adjusting the transparency so that the leading edge drops down into the printer about 1.25 in.

6) Start the print job. If printing a multi-page document, the printer attempts to automatically feed sheets for pages after the first page. To prevent this, print each page separately using the From: To: option in the Print dialog box.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14747

Tech Info Library

Color StyleWriter Pro: Initial Startup time (3/94)

Revised: 3/3/94
Security: Everyone

Color StyleWriter Pro: Initial Startup time (3/94)

==========

Article Created: 2 March 1994

TOPIC -----

The first time I turned on my Color StyleWriter Pro, it took about 6 minutes before it was ready to use. Is this normal?

DISCUSSION -----

Yes, this is normal the frist time the printer is turned on. The next time it should be ready in about two minutes or less. The initial startup cycle is called refreshing the printer. During this operation each color head is cleaned and wiped twice and the jets are cleaned of air bubbles that may developed in shipping. The process uses about 0.47 grams of ink per cartridge or 5.9%.

Support Information Services

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Tech Info Library Article Number:14748

Tech Info Library

Power Macintosh: L1 and L2 Cache Explained (4/97)

Revised: 4/24/97
Security: Everyone

Power Macintosh: L1 and L2 Cache Explained (4/97)

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Article Created: 28 February 1994
Article Reviewed/Updated: 24 April 1997

TOPIC -----

What are the differences between Level 1 and Level 2 cache on the Power Macintosh computers? Do all Power Macintosh computers use the same type of L2 cache?

DISCUSSION -----

Level 1 Cache
==========
Level 1 Cache consists of high speed memory built into the PowerPC processor. By using this cache, the processor can access frequently-requested data more quickly. The amount of Level 1 cache varies among the PowerPC chips, and you cannot upgrade it.

The PowerPC 601 microprocessor and the PowerPC 604 microprocessor both have 32K internal cache. However, the PowerPC 601 microprocessor has a single 32K cache for both instructions and data, whereas the PowerPC 604 has two 16K sections, one for instructions and one for data. The PowerPC 604e microprocessor has 64K cache, which consists of two 32K sections, one each for instructions and data.

Begin_Table

Computer	L1 Cache
Power Macintosh 4400 series	32K
Power Macintosh 5200/75 & Performa 5200 Series	16K
Power Macintosh 5260/100, 5300/100 & Performa 5300 Series	32K
Power Macintosh 5400 Series	32K
Power Macintosh 5500 Series	32K
Macintosh Performa 6200 Series	16K
Macintosh Performa 6290CD and 6300 Series	32K
Macintosh Performa 6360/160	32K

Power Macintosh & Performa 6400 Series	32K
Power Macintosh 6500 Series	32K
Power Macintosh & Performa 6100 Series	32K
Power Macintosh 7100 Series	32K
Power Macintosh 8100 Series	32K
Power Macintosh 7200 Series	32K
Power Macintosh 7300 Series	64K
Power Macintosh 7500/100	32K
Power Macintosh 7600/120 and /132	32K
Power Macintosh 7600/200	64K
Power Macintosh 8500/120	32K
Power Macintosh 8500/132	32K
Power Macintosh 8500/150	32K
Power Macintosh 8500/180	64K
Power Macintosh 8600/200	64K
Power Macintosh 9500/120	32K
Power Macintosh 9500/132	32K
Power Macintosh 9500/150	32K
Power Macintosh 9500/180MP	64K
Power Macintosh 9500/200	64K
Power Macintosh 9600/200	64K
Power Macintosh 9600/200MP	64K

End_Table

Level 2 Cache

Level 2 Cache is separate from the processor and it is typically upgradeable. The Level 2 cache works in conjunction with the microprocessor's internal cache to provide maximum performance. The total amount of supported Level 2 Cache also varies from computer.

Performance Benefits

* Native PowerPC Software

You see the greatest performance improvement in tightly written native PowerPC software where code is kept close to the microprocessor.

* Non-Native Software

You will likely see marginal or no performance improvements running software applications written for 68000-series microprocessors.

PowerPC Microprocessors

The reason for performance increases with the addition of L2 cache is the PowerPC microprocessor can keep its pipeline full, allowing for faster and more efficient processing. The microprocessor first checks its internal cache, then L2 cache, and finally main memory (DRAM) for instructions. Because cache memory

is faster than DRAM, it can be accessed more quickly, thus helping keep the pipeline full.

This also accounts for the lack of uniform performance improvements. Tight code will stay near the processor and run faster, while other code may not. In general, you can expect a 10-15% performance improvement with code that benefits from L2 cache.

Power Macintosh Models

The Nubus-based Power Macintosh computers (which include the 6100, 7100, and 8100 series) and the PCI-based Power Macintosh computers (which include the 7200, 7500, 8500, and 9500 series) do not use the same type of L2 cache.

* Power Macintosh 6100, 7100, and 8100

The 6100, 7100 and 8100 Power Macintosh models accept an external L2 cache on a Single Inline Memory Module (SIMM). The Power Macintosh 8100/80 shipped with 256K L2 cache already installed; users of Power Macintosh 6100/60, 6100/60AV, 7100/66, and 7100/66AV can install a L2 cache by installing the appropriate cache SIMM into the 160-pin connector on the main logic board.

The Power Macintosh 6100/66, 7100/80, 8100/100, and 8100/110 computers ship with 256K L2 cache memory installed.

* Power Macintosh 7200, 7300, 7500, 7600, 8500, 8600, 9500, and 9600

The Power Macintosh 7200, 7300, 7500, 7600, 8500, and 8600 series all support L2 cache 160-pin Dual Inline Memory Modules (DIMMs). The cache can be increased by adding L2 cache DIMMs to the expansion slot(s) on the logic board.

The Power Macintosh 7200/75, 7200/90, 7200/120 (8 MB configuration), and the 7500 series computers ship with no L2 cache DIMM installed.

The Power Macintosh 7200/120 (16 MB configurations), 7300 series, 7600 series, 8500 series, and the 8600 series include a 256K L2 cache DIMM installed. The Power Macintosh 7200 is theoretically expandable to 1 MB, while the 7300, 7500, 7600, 8500, and 8600 series computers are theoretically expandable to 4 MB, but those configurations have not been tested and are not supported by Apple.

The Power Macintosh 9500 and 9600 series computers ship with 512K L2 cache memory soldered to the logic board. The Power Macintosh 9500 and 9600 series computers do not have a DIMM socket for adding additional L2 cache memory, and therefore are not expandable beyond 512K.

Begin_Table

Power Macintosh Series	L2 Cache Included	Cache Type	Supported Cache SIMM/ DIMM Sizes	Maximum Total Cache

4400	256K (optional on some configurations)	160-pin DIMM	256K	256K
5200	256K	On logic board	N/A	256K
5260	OPTIONAL	160-pin SIMM	256K	256K
5300	256K	On logic board	N/A	256K
5400	OPTIONAL	160-pin DIMM	256K	256K
5500/225	256K	160-pin DIMM	256K	256K
6200	256K	On logic board	N/A	256K
6300	256K	On logic board	N/A	256K
6360	OPTIONAL	160-pin DIMM	256K	256K
6400/180	NONE	160-pin DIMM	256K	256K
6400/200	256K	160-pin DIMM	256K	256K
6500/225	256K	160-pin DIMM	256K	256K
6500/250	256K	160-pin DIMM	256K	256K
6100/60	OPTIONAL	160-pin SIMM	128K, 256K	256K
6100/66	256K	160-pin SIMM	128K, 256K	256K
7100/66	OPTIONAL	160-pin SIMM	128K, 256K	256K
7100/80	256K	160-pin SIMM	128K, 256K	256K
8100	256K	160-pin SIMM	128K, 256K	256K
7200/75	NONE	160-pin DIMM	256K*	256K*
7200/120	256K DIMM	160-pin DIMM	256K*	256K*
7300 Series	256K DIMM	160-pin DIMM	256K,512K,1 MB**	1 MB**
7500/100	NONE	160-pin DIMM	256K,512K,1 MB**	1 MB**
7600 Series	256K DIMM	160-pin DIMM	256K,512K,1 MB**	1 MB**
8500 Series	256K DIMM	160-pin DIMM	256K,512K,1 MB**	1 MB**
8600 Series	256K DIMM	160-pin DIMM	256K,512K,1 MB**	1 MB**
9500 Series	512K	On logic board	N/A	512K
9600 Series	512K	On logic board	N/A	512K

End_Table

Notes

Apple does not sell cache modules larger than 256K.

Apple does not support cache modules larger than 256K.

*These computers theoretically support 512K and 1 MB of L2 cache, but these configurations have not been tested and are not supported by Apple.

** These computers support a theoretical limit of 4 MB of L2 cache, but this has not been tested and is not supported by Apple.

The Power Macintosh 7200/120 configuration with 8 MB of memory does NOT include the L2 Cache DIMM.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

This article was published in the Information Alley on 7 August 1996.

Article Change History:
24 Apr 1997 - Added note regarding largest cache modules Apple supports.
24 Mar 1997 - Added note regarding largest cache modules Apple sells.
13 Feb 1997 - Added new Power Macintosh computers.

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Tech Info Library Article Number:14750

Tech Info Library

Language Kits and Printing Errors (6/95)

Revised: 6/26/95
Security: Everyone

Language Kits and Printing Errors (6/95)

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Article Created 2 March 1994
Article Reviewed/Updated: 26 June 1995

TOPIC ----------

I have problems printing from either the Japanese Language Kit (JLK) or the Chinese Language Kit (CLK) using the LaserWriter driver 8.1.1 to an Apple LaserWriter printer.

DISCUSSION ----------

Question: If I try to print in black and white with print options "Summarize PostScript errors on screen" and "Cover Page Before" enabled, I get a Type 4 error.

This error can be reproduced by printing from TeachText-J (TeachText Japanese) on any Macintosh with 7.1, JLK, and LaserWriter 8.1.1 installed.

NOTE:
This error does not occur when printing in "Color/Grayscale" or "Color/Calibrated Grayscale".

Answer: The Japanese Language Kit employs the "InputBackSupport" extension to support non-TrueType Japanese fonts. TeachText Japanese defaults to the non-TrueType font "Osaka" to display and print Japanese text.

The Japanese Language Kit Update contains a newer version of the "InputBackSupport" extension which provides System 7.5 compatibility and corrects problems associated with printing, including the "Type 4" problem described above. This update is available online or by calling Apple directly.

Question: We are using the Japanese Language Kit and whenever we print to any of our LaserWriters (such as, a LaserWriter IIg, LaserWriter Pro 630, or LaserWriter Pro 810), one of two things happen:

- Our machine freezes.
- Blank pages are printed.

This problem occurs from a variety of applications such as TeachText-J, and FileMaker Pro-J. We also loaded the InputBackSupport file from the Chinese Language Kit, and the problem still occurs.

Answer: This is a known issue with LaserWriter driver 8.0 and 8.1.1 which is resolved by installing LaserWriter 8.2. LaserWriter 8.2 is included in System 7.5 Update 1.0. The latest version of the LaserWriter driver, 8.3, is now available for downloading from on-line services.

These articles can help you locate the software update mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates.

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
26 Jun 1995 - Added information on LW 8.3.
03 Mar 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:14751

Tech Info Library

Power Macintosh and ApplePhone Are Not Compatible (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh and ApplePhone Are Not Compatible (3/94)

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Article Created: 1 March 1994

TOPIC -----

I just installed the GeoPort Telecom Adapter Express Modem software and ApplePhone application on my Power Macintosh. I now get a message that says it's not supported on this hardware. Why?

DISCUSSION -----

ApplePhone accesses the Macintosh 660AV and 840AV computers Digital Signal Processor (DSP) directly. The Power Macintosh AV computers do not have a DSP, resulting in ApplePhone software not running.

Support Information Services

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Tech Info Library Article Number:14752

Tech Info Library

Newton Connection Kit Timeout Troubleshooting

Revised: 3/2/94
Security: Everyone

Newton Connection Kit Timeout Troubleshooting

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Article Created: 2 March 94

TOPIC -----

When using the Newton Connection Kit for Macintosh or Windows, the connection fails during synchronization with a timeout error such as "Error -1", "Error -4", or "Connection Failed." Previous synchronizations were successful so I know the hardware configuration is correct. What can be done?

DISCUSSION -----

Occasionally certain applications and data added to the MessagePad cannot be backed up properly. The MessagePad or computer may take too long to process the information and will drop the connection. Pay attention to the progress window during synchronization. The windows will show which piece of data is being synchronized. When the sync fails, you should have an idea of what application or data may be causing the problem.

Try the following steps:

- Reset the MessagePad

- Remove applications from the MessagePad or RAM card and try to synchronize again. Contact the publishers of applications found to be causing the problem.

- Move the synchronization files to another folder or directory on the disk and resync. The resync will create new files from scratch.

Sometimes corrupt or uncompacted synchronization files can cause the problem. Copy and paste data from the old sync files to the new sync files then resynchronize to transfer data to the MessagePad.

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Tech Info Library Article Number:14755

Tech Info Library

Macintosh TV Remote doesn’t work after power on

Revised: 3/2/94
Security: Everyone

Macintosh TV Remote doesn’t work after power on

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Article Created: 2 March 94

TOPIC -----

The remote control for my Macintosh TV will power up the computer but does not provide any control of the unit after that. The replacement remote has the same symptoms.

DISCUSSION -----

To resolve this problem you need to reset the Parameter RAM (PRAM) by holding down the Command, Option, P, and R keys while starting up your computer. Your Macintosh TV will sound its normal startup chord twice. After the second chord you can release the keys you are holding down. Your remote control should now be functional in controlling your Macintosh TV.

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Tech Info Library Article Number:14756

Tech Info Library

Power Macintosh: VRAM SIMMs are Different (1/95)

Revised: 1/19/95
Security: Everyone

Power Macintosh: VRAM SIMMs are Different (1/95)

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Article Created: 1 March 1994
Article Reviewed/Updated: 19 January 1995

TOPIC ----------

This article describes the importance of installing VRAM SIMMs into the correct Power Macintosh. The VRAM SIMMs for the Power Macintosh 7100 are different from the VRAM SIMMs for the Power Macintosh 8100.

DISCUSSION ----------

Because the SIMMs for the Power Macintosh 7100 and 8100 VRAM Expansion Cards have the same pin assignments and external dimensions, they may inadvertently be switched between computers. If a switch happens, the additional VRAM may not be recognized, or strange video activity may occur. Be sure the proper VRAM SIMMs are installed.

The SIMMs can be differentiated by sight. SIMMs for the Power Macintosh 7100 have two chips per SIMM, while SIMMs for the Power Macintosh 8100 have four chips per SIMM.

Note that this information is applicable to Apple SIMMs only, third party SIMMs may be different in chip count. Be sure to check with your SIMM vendor or installing dealer as to the compatibility of the VRAM SIMMs prior to installation.

Article Change History:
19 Jan 1995 - Noted that identification method is for Apple SIMMs only.
11 Jan 1995 - Updated for all Power Macintosh 7100 and 8100 models.

Support Information Services

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Tech Info Library Article Number:14758

Tech Info Library

Newton MessagePad 110: Description (10/94)

Revised: 10/10/94
Security: Everyone

Newton MessagePad 110: Description (10/94)

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Article Created: 4 March 1994
Article Reviewed/Updated: 10 October 1994

TOPIC -----

This article describes the functions and capabilities of the Newton MessagePad 110.

DISCUSSION -----

MessagePad 110 Features
==========

New Industrial Design

The MessagePad 110 is a completely new industrial design – slightly longer and narrower than the original to accommodate a better grip. It includes a flip-top cover that folds out of the way when in use, and flips closed to protect the MessagePad’s screen when the Newton is off or charging.

Memory

The MessagePad 110 memory has been expanded to 1MB with about 480K available for user storage. Users should expect to be able to store about 600 recognized notes, 750 names, 1500 appointments, and 100 notes in digital ink.

Battery Life

The MessagePad 110’s design accommodates AA-type batteries, which increases the battery life to up to 50 hours of use when using alkaline batteries and up to 20 hours when using NICD batteries. The implementation of type AA batteries also brings the MessagePad 110 into a range of common electronic devices that use this battery size. With the optional MessagePad 110 Recharger, the Newton can

recharge a battery pack in about two hours.

Screen and Stylus

The MessagePad 110’s screen is 16 pixels shorter than the original MessagePad. Software titles that were written to adjust to variable screen sizes should not experience any trouble when used on the MessagePad 110. Titles that do not adjust to variable screen sizes may not work properly with the MessagePad 110. A new, round stylus is also included which may make writing more comfortable for some users.

Manual and Video

A revised manual and video is included for all MessagePad 110 customers.

Improved Recognition Capabilities

The Newton Intelligence Operating System included in the MessagePad 110 ROM supports two new features which enhance handwriting recognition. An improved letter-by-letter recognition feature allows users to write words that are not in Newton’s dictionary yet Newton will recognize them. Another new feature called deferred recognition allows users to take notes in digital ink and return to the note and recognize them later. Newton users now also have the option of adding the names, street names, and cities they enter into the Names application of Newton’s dictionary.

Compatibility

The MessagePad 110 can share data with any other device based on Newton Intelligence, including the original MessagePad. Applications written for the Newton OS which adjust for variable screen sizes are compatible with the 110. Those that do not adjust for variable screen sizes may not work properly.

Technical Comparison

ASPECT	MessagePad 110	MessagePad 100
Power Supply	4 Type AA batteries	4 Type AAA batteries
Estimated Average Battery Life:		
• Alkaline batteries	40-50 hours	10-28 hours
• NICD batteries	15-20 hours	4-12 hours
Enclosure	Flip-open cover	Carrying case
RAM/User Space	1024K / 4800K	640K / 150K

Screen Size (pixels)	240 x 320	240 x 336
Pen	Telescopic round	Flat
Size	8" x 4" x 1.25"	7.25" x 4.5" x 0.75"
Weight (with batteries)	1.28 lbs	0.9 lbs
Infrared Transfer Rate (at one meter)	Up to 38.4 Kbps	Up to 38.4 Kbps

Ordering Information
==========

Newton MessagePad 110
Order No. H0060LL/A
- Newton MessagePad 110 personal digital assistant
- Telescoping stylus
- Batteries
- Complete setup, learning and reference documentation
- Limited warranty statement

Article Change History:
10 October 1994 - Updated and included more complete battery information

Support Info Services

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Tech Info Library Article Number:14759

Tech Info Library

Newton MessagePad 110: Specifications (12/94)

Revised: 12/14/94
Security: Everyone

Newton MessagePad 110: Specifications (12/94)

==========

Article Created: 4 March 1994
Article Reviewed/Updated: 14 December 1994

TOPIC ----------

This article discusses the technical specifications of the Newton MessagePad 110.

DISCUSSION ----------

Newton Recognition Architecture

- Recognizes handwriting: printed, cursive, or mixed-word recognition
- Recognizes writing letter-by-letter or word-by-word
- Recognizes graphics and the inherent symmetry in objects
- Allows deferred recognition; can store notes in handwritten for later recognition

Newton Information Architecture

- Object-oriented data storage optimized for storing, finding, and linking small pieces of information
- Easy creation of custom forms applications via the flexible graphical view Toolbox
- Easy data sharing using standard tags
- Object-oriented database provides flexible view of data

Newton Communications Architecture

- Provides single interface for all communication services
- Integrated to support easy communications with minimum setup requirements
- Designed in modules to support new communications capabilities

Intelligent Assistance Architecture

- Assists users in completing repetitive tasks done in multiple categories,

including communications, scheduling, finding, and reminding functions
• Contains smart defaults to reduce complexity
• Functions across applications transparently
• Allows extensions by third-party developers

Newton Hardware Architecture

• ARM 610 processor at 20 MHz
• Apple custom system ASIC
• Low-power, reflective LCD display (336 x 240 pixels)
• Transparent tablet with round telescopic pen
• 4MB of ROM
• 1MB of RAM
• One PCMCIA Type 2 card slot
• LocalTalk-compatible serial port
• Low-power, half-duplex, infrared transceiver (up to 38.4 kilo bits per second (kbps) at 1 meter)
• Protective screen lid

Communications Capabilities

• Print to Apple LaserWriters and StyleWriters with serial cable and to popular parallel printers using Newton Print Pack
• Fax with optional fax modem (9600 baud fax send, automatic cover-page generation, post-formatting)
• Send notes, name cards and appointments at up to 38.4 kbps within 1-meter (3.28 feet) using high-speed “beaming” via infrared technology
• Handle telephony needs with assistance for intelligent auto dialing (DTMF or modem dialing)
• Receive and store wireless messages using optional Messaging Card
• Use NewtonMail* to exchange electronic mail with other Newton MessagePad users, as well as with Windows-based and Macintosh computer users with an optional modem
* This service may not be available in all countries

Size and Weight

• Height: 8 in. (202 mm)
• Width: 4 in. (106 mm)
• Depth: 1.25 in. (33 mm)
• Weight: 1.28 lb. (.59 kg)

Operating Environment

• Temperature: 32 degrees to 104 degrees Fahrenheit (+0 to +40 degrees Celsius)
• Storage temperature: -4 to 117 degrees Fahrenheit (-20 to +60 degrees Celsius)
• Relative Humidity: 20 percent to 90 percent noncondensing

Power Requirements

• Power adapter:

    -- Universal, 100 to 240 VAC, 50/60 Hz
    -- Four plug configurations: U.S., U.K., Europe, and Australia
- Battery type: alkaline or nickel-cadmium
    -- Alkaline output: 6.0V DC, 1.1 WH (nominal)
    -- Nickel-cadmium output: 6.0V DC, 800 mAh (nominal)
- Lithium cell: DL2032
- Operating range: 3 V (nominal)
- Power source: Four AA batteries (included), optional AC adapter, optional Rechargeable Nickel-cadmium Battery Pack

Connecting Kit System Requirements

- Works with personal computers running Microsoft Windows 3.0 or later, using the Newton Connection Kit for Windows
- Works with Macintosh personal computers running system software version 7.1 or later, using the Newton Connection Kit for Macintosh

Printer Support

- Built-in printer support for the Apple StyleWriter and StyleWriter II, Personal LaserWriter LS and Personal LaserWriter 300 printers, and Apple PostScript laser printers from the LaserWriter Plus and up
- Works with most popular PC printers, including the Hewlett-Packard LaserJet, Hewlett-Packard DeskJet, Canon BubbleJet, and Epson LQ and FX using the Newton Print Pack option

Fax Machine Support

- Supports Group 3 fax machines

Article Change History:
14 Dec 1994 - Corrected the metric weight
09 Mar 1994 - Corrected power source to say four AA batteries, not AAA.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14760

Newton MessagePad Family: Comparison to other Models (5/94)

Revised: 5/17/94
Security: Everyone

Newton MessagePad Family: Comparison to other Models (5/94)

==========

Article Created: 4 March 1994
Article Reviewed/Updated: 17 May 1994

TOPIC

The following discusses the differences between the original Newton MessagePad and the Newton MessagePad 110.

DISCUSSION

TECHNICAL COMPARISON

	MessagePad 110	MessagePad 100
Power Supply	4 Type AA batteries	4 Type AAA batteries
Average User Battery Life		
- Alkaline Batteries	40-50 hours*	10-28 hours*
- NICD Batteries	15-20 hours*	4-12 hours*
Enclosure	Flip-open cover	Carrying case
RAM/User Space	1024K/480K	640K/150K
Screen Size (pixels)	240 x 320	240 x 336
Pen	Telescopic round	Flat
Size	8"x4″x1.25"	7.25″x4.5″x0.75″
Weight (with batteries)	1.28 pounds	0.9 pounds
Infrared Transfer rate	up to 38.4 kbps**	up to 38.4 kbps**

* battery life is estimated
** at 1 meter

FEATURES OF MESSAGEPAD 110

New Industrial Design

The MessagePad 110 is a completely new industrial design that reflects Apple's commitment to user-centered designs. The new MessagePad is slightly longer and narrower than the original to accommodate a better grip. It also includes a flip-top cover that folds out of the way when in use, and flips closed to protect the MessagePad's screen when the Newton is off or charging.

Memory

The memory on the MessagePad 110 has been expanded to 1MB with about 480K available for user storage which is 3 times greater than the original MessagePad. Users should expect to be able to store about 600 recognized notes, 750 names, 1,500 appointments and 100 notes in digital ink.

Battery Life

The MessagePad 110's design accommodates AA type batteries which increase battery life to up to 50 hours of use when using alkaline batteries and up to 20 hours when using NICD batteries. The implementation of type AA batteries also bring the MessagePad 110 into a range of common electronic devices that use those size batteries. With the optional MessagePad 110 Recharger, the Newton can recharge a battery pack in about 2 hours.

Screen and Stylus

The MessagePad 110's screen is 16 pixels shorter than the original MessagePad. Software titles which were written to adjust to variable screen sizes should not experience any trouble when used on the MessagePad 110. Titles which do not adjust to variable screen sizes may not work properly with the MessagePad 110. A new, round stylus is also included which may make writing more comfortable for some users.

Manual and Video

A revised manual and video is included for all MessagePad 110 customers.

Improved Recognition Capabilities

The Newton Intelligence Operating System included in the MessagePad 110 ROM supports two new features which enhance handwriting recognition. An improved letter-by-letter recognition feature allows users to write words that are not in Newton's dictionary yet Newton will recognize them. Another new feature called deferred recognition allows users to take notes in digital ink and return to the note and recognize them later. Newton users now also have the option of adding the names, street names, and cities they enter the Names application to Newton's dictionary.

Compatibility

The MessagePad 110 can share data with any other device based on Newton Intelligence, including the original MessagePad. Applications written for the Newton OS which adjust for variable screen sizes are compatible with the 110. Those which do not adjust for variable screen sizes may not work properly.

Article Change History:
 17 May 1994 - Corrected battery life information and corrected size and weight.

Support Info Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14761

Tech Info Library

PostScript Fax Card: Limited Security For Incoming Faxes (3/94)

Revised: 3/7/94
Security: Everyone

PostScript Fax Card: Limited Security For Incoming Faxes (3/94)

==========

Article Created: 7 March 1994

TOPIC ----------

Are there any security options available for the optional PostScript Fax card when sending and receiving Faxes?

DISCUSSION ----------

The only security option we are aware of for the LaserWriter Pro 810 and LaserWriter Select 360 fax card is through setting a Fax Postscript password on your printer for incoming fax jobs. This works only with incoming faxes. Setting up a password is done with the LaserWriter Fax Utility that is automatically installed with the fax software.

Setting Passwords

The password can be set by choosing the Incoming Fax Settings menu item under the Configuration menu. Once this is set, people wishing to fax to your printer must type in the Fax PostScript password in one of two places:

1) The PostScript password field in the Options dialog when they are selecting a fax destination.

2) The PostScript password field when setting up entries in their fax phone book.

Deleting Passwords

To delete any passwords you have set for the printer, leave the Fax PostScript Password field blank in the Incoming Fax Settings menu and close the dialog. This clears out any stored password.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14763

Tech Info Library

LaserWriter Utility 7.6.1 and 7.7: Grayed out options (3/94)

Revised: 3/23/95
Security: Everyone

LaserWriter Utility 7.6.1 and 7.7: Grayed out options (3/94)

==========

Article Created: 7 March 1994
Article Reviewed/Updated: 23 March 1995

TOPIC----------

A customer is trying to use the Power Saving option in the Laserwriter Utility. When the customer goes into Laserwriter utility 7.7, several of the utility's features are grayed out, including Power Saving. The customer is using a LaserWriter Pro 810 and has a fax card in the printer. If the customer takes out the fax card, then some of the options in the LaserWriter Utility's menu come back.

As a test, I used Laserwriter Utility 7.7 with our printer (a LaserWriter 16/600 PS) and had the same options grayed out.

DISCUSSION ----------

There was a similar previous issue with LaserWriter Utility 7.6.1, but ONLY when using it with the LaserWriter Pro 810f printer. Unfortunately, LaserWriter Utility 7.7 was based on LaserWriter Utility 7.6.1 so the same type of problem occurs. Please note that you will not be able to select "Power Saving", however, since the 810 DOES NOT have this capability.

With regard to the same problem happening on a LaserWriter 16/600 PS, the LaserWriter Utility 7.7 probably does not know about this new printer. Thus, the same problem (as in LW Utility 7.6.1) occurs where the Utility does not have the LaserWriter 16/600 PS with or without fax in its product list, and has disabled menu items since it knows nothing about the printer.

The bottom line is that customers should use one of the following:

- The new Apple Printer Utility for the LaserWriter 16/600 PS

- LaserWriter Utility 7.6.2 if they have a LaserWriter Pro 810

- LaserWriter Utility 7.7 if they are running GX

These articles can help you locate the software update mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates.

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History: 23 Mar 1995 - Updated with new information; retitled.

Support Information Services

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Tech Info Library Article Number:14764

Tech Info Library

10-Base-T Pinout Configuration (3/94)

Revised: 3/3/94
Security: Everyone

10-Base-T Pinout Configuration (3/94)

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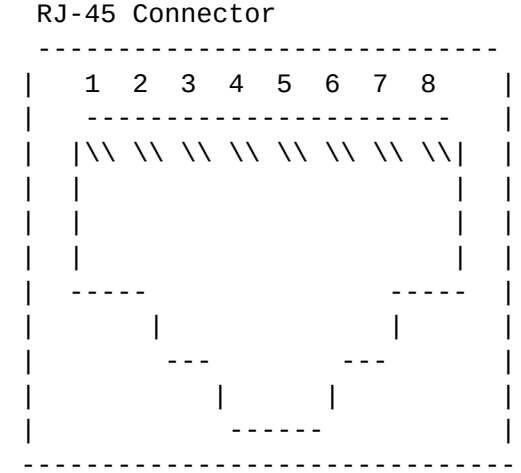
Article Created: 3 March 1994

TOPIC ----------

I need some specific information on the pinouts for our 10-Base-T Ethernet connector.

DISCUSSION ----------

The pin configurations for 10BASE-T are as follows:



Contact:	Signal:
1	TD+
2	TD-
3	RD+
4	Not Used by 10BASE-T
5	Not Used by 10BASE-T
6	RD-
7	Not Used by 10BASE-T
8	Not Used by 10BASE-T

..TIL14766-10-Base-T_Pinout_Configuration_3-94_(TA31256).pdf

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Tech Info Library Article Number:14766

Tech Info Library

LaserWriter Pro 630: No Tray Switching With Windows (3/94)

Revised: 3/21/94
Security: Everyone

LaserWriter Pro 630: No Tray Switching With Windows (3/94)

==========

Article Created: 21 March 1994

TOPIC -----

Is there a way to specify which tray to use for the first page, and a different tray for the remaining pages of the print job with a LaserWriter Pro 630 using Windows?

DISCUSSION -----

The ability to control tray selection for the "first" and "remaining" pages is a feature of PostScript level 2. The current Windows driver being distributed by Microsoft (PScript.drv v3.5x) is only a PostScript level 1 driver.

We believe Adobe sells a Windows version of their PS Printer driver which is a PostScript level 2 driver. You may want to verify with Adobe that their driver supports this specific feature you are looking for.

Support Information Services

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Tech Info Library Article Number:14767

Tech Info Library

Macintosh LC Family: Replacement Battery Alternatives (5/96)

Revised: 5/8/96
Security: Everyone

Macintosh LC Family: Replacement Battery Alternatives (5/96)

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Article Created: 3 March 94
Article Reviewed/Updated: 8 May 1996

TOPIC ----------

Are there specific brands and model numbers of batteries that can serve as replacements for the LC battery? The Apple part number, 742-0011, is sometimes in short supply.

DISCUSSION ----------

Several Macintosh computers* use the same 1/2AA 3.6-3.9V lithium battery that powers the clock chip after the computer is shut down. It has a life span of approximately 7 years and should be replaced when the clock begins to lose accuracy or when the contents of the parameter RAM are not maintained after powering down the system.

Consult your user manual or the Service Source CD for replacement instructions. This battery is NOT replaceable by the user.

There are altenative sources for the batteries. For example, this part may be available through Sun Remarketing at 800-821-3221.

In addition, computer stores may have the kind of batteries you'll need; below is a list of replacement batteries:

Hitachi Maxell	#ER3S
ELECTROCHEM	#3B26
ETERNACELL	#T04/41
TADIRAN	#TL-2150, TL-5101
VARTA	#VL1/2AA

*Note: This includes the following Macintosh computers: Macintosh LC, LC II, LC III, LC 475, LC 520, LC 550, Performa 400, 405, 410, 430, 450, 460, 466, 467, 475, 476, 550, 560, Color Classic, and Quadra 605.

Article Change History:
08 May 1996 - Updated with additional information
17 Oct 1994 - Changed article to Public access.

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Tech Info Library Article Number:14768

Tech Info Library

LW Select 360 & Pro 810: Documents Are Faxed Not Printed (10/94)

Revised: 10/12/94
Security: Everyone

LW Select 360 & Pro 810: Documents Are Faxed Not Printed (10/94)

==========

Article Created: 7 March 1994
Article Reviewed/Updated: 12 October 1994

TOPIC ----------

We have a LaserWriter Select 360, with the Fax option, and sometimes our documents are Faxed instead of printed. Can I correct this? Does this problem also apply to the LaserWriter Pro 810, with the Fax option? Are there any updates that fix this?

DISCUSSION ----------

This is actually a two-part problem and occurs on both the LaserWriter Select 360 as well as the LaserWriter Pro 810, when both have the Fax option cards. The first part of this problem is that there are some applications that bypass the Print dialog box, and so the destination of the print job (printer, file, or fax) is indeterminate.

Without the Print dialog, you are unable to select the appropriate destination (fax, printer, or file), so you cannot determine where the job is being sent. There are no rules as to which destination takes priority, but typically the job is sent to the previous destination stored in the driver.

NOTE: This varies with versions of the LaserWriter Driver.

We strongly recommend using the Apple Print dialog (rather than the application's Print dialog) whenever possible, otherwise the destination of the job is questionable. Check the application’s user’s guide for instructions on using Apple’s Print dialog. We are currently aware of a few applications that allow a bypass of the Print dialog, these include:

- AppleLink
- Microsoft Excel
- HyperCard
- PageMaker

The second part of the problem is that LaserWriter 8.0 and 8.1.1 have a "sticky" destination feature. Basically, the driver maintains the last selected destination and uses that destination for any future jobs, until a different destination is chosen. Engineering has acknowledged that this can cause potential problems, so they are modifying the next revision of the driver to be "non-sticky" and have it always default to "printer".

In addition to the two possible "causes" of this problem (i.e. no print dialog, and the driver's "sticky" destination), some applications don't make the required calls to certain Print Manager routines when they bypass the Print dialog.

We have determined that in these cases, the application does not make the Print Manager call to PrintDefault, which provides the default values for the printing record. PrintDefault MUST be called if the Page Setup or Print dialogs are not displayed.

Article Change History:
12 Oct 1994 - Added keyword and made minor technical updates.
24 Jun 1994 - Added information regarding applications not making required calls to certain Print Manager routines.
31 May 1994 - Added PageMaker to list of applications and added information on next revision of the software.
15 Apr 1994 - Changed title to include LW Pro 810.

Support Information Services

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Tech Info Library Article Number:14769

Tech Info Library

LaserWriter Select 310: Printing Problems from Workstation(3/94)

Revised: 3/7/94
Security: Everyone

LaserWriter Select 310: Printing Problems from Workstation(3/94)

==========

Article Created: 7 March 1994

TOPIC ----------

A customer has a LaserWriter Select 310 with 5MB RAM connected to a Sun workstation using the serial port.

Very small PostScript files print fine, but when a nominal size PostScript file is sent to the printer, it blinks then resets itself without printing anything. What is causing this to happen?

DISCUSSION ----------

There are a couple of things that the customer can try, as well as verify:

1) Make certain that the printer has not been previously communicating to a Macintosh within the current power cycle. If so, the LaserWriter Select 310 driver puts the printer into a special serial communications mode. To solve this, turn off the power to the printer, then turn it back on.

2) Set the communications on the Sun for:

   57.6 Kbaud (try 38.4 Kbaud if 57.6 fails), two stop bits, no parity, 8 data bits

3) Verify that the PostScript code, or the driver generating it, is producing good code. You might try sending the code to another printer.

Support Information Services

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Tech Info Library Article Number:14770

Tech Info Library

STF Technologies, Inc.

Revised: 3/3/94
Security: Everyone

STF Technologies, Inc.

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Article Created: 3 March 1994

STF Technologies, Inc.

P.O. Box 81
Concordia, MO 64020

816-463-2021

816-463-7958 (fax)

Company Profile:
Develops and markets fax software for the Macintosh.

Support Information Services

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Tech Info Library Article Number:14771

Tech Info Library

LaserWriter Fax: Group Fax Has PostScript Selected (3/95)

Revised: 3/23/95
Security: Everyone

LaserWriter Fax: Group Fax Has PostScript Selected (3/95)

==========

Article Created: 2 March 1994
Article Reviewed/Updated: 23 March 1995

TOPIC ----------

When we use the LaserWriter Fax software (8.xf) with a fax-capable printer to send a "group fax" (sending to more than one number) it sets off the PostScript fax "flag" (the PostScript Fax check box gets turned on), and has to redial the destinations. Also, when sending to a group with return reciepts, you only get confirmation of the first user of the group.

Do these situations cause any problems when sending a fax to a non-PostScript fax machine? When will this be resolved?

DISCUSSION ----------

There are PostScript flag and confirmation page problems when sending group faxes. Both issues have been reproduced in our lab, and have been reported to engineering.

Workaround

Fortunately, there is a simple workaround to both issues. After selecting the group to fax to, click on Options in the Fax Destination dialog box, and then uncheck the PostScript checkbox. This prevents the PostScript fax card from dialing out twice; instead it just sends a Group 3 fax the first time. In addition to this, confirmation pages print for each and every job.

NOTE:
The problem occurs only when every phone number in the fax group is just a standard Group 3 fax machine.

If the phone numbers in the group include mixed Group 3 and PostScript fax destinations, then a user is NOT allowed to send a group fax using "Broadcast using Printer", but must instead select "Broadcast using Computer". With "Broadcast using Computer" selected, confirmation pages print for each job,

however, two phone calls are still placed for standard Group 3 faxes. Finally, if all the phone numbers in the group are PostScript there are no problems; only one phone call is made and confirmation pages print for each job.

Helpful Suggestions

The following suggestions might make the problems less troublesome:

• In the Fax Phone Book, label the fax numbers with "PS" after their names so that it is easier to distinguish the type of fax machines.

• Use the LaserWriter Fax Utility to "Display the Activity Report". This option in the utility queries the LaserWriter for its recent fax activity and displays it for you.

Clearly, the best way to resolve the issue is to uncheck the PostScript box when sending a group fax to Group 3 fax machines. Regardless of whether you turn off the PostScript option or not, the fax is sent successfully.

Article Change History:
23 Mar 1995 - Updated and expanded with additional information.
10 Jun 1994 - Revised instructions on turning off PostScript
18 Mar 1994 - Added how to decrease the time it takes to send the fax.

Support Information Services

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Tech Info Library Article Number:14773

Tech Info Library

Power Macintosh: Which Models Support Memory Interleaving?(6/96)

Revised: 6/26/96
Security: Everyone

Power Macintosh: Which Models Support Memory Interleaving?(6/96)

==========

Article Created: 3 March 1994
Article Reviewed/Updated: 26 June 1996

TOPIC ----------

Do any of the Power Macintosh computers or Workgroup Servers use memory interleaving? I heard that the PowerPC 601 chip will not support interleaving.

DISCUSSION ----------

Memory interleaving is a function of the memory controller not the microprocessor. Therefore, some Power Macintosh models based on the same microprocessor will support memory interleaving while others based on the same microprocessor will not.

For example, the Power Macintosh 7500, which is based on the PowerPC 601 microprocessor, supports memory interleaving. The Power Macintosh 7200, which is also based on the PowerPC 601 processor, does not support memory interleaving. The difference is that the Power Macintosh 7500 uses the HammerHead ASIC memory controller which supports memory interleaving and the 7200 uses the Platinum IC which does not support memory interleaving. The Power Macintosh 6100, 7100, and 8100 computers use the High-speed Memory Controller (HMC) which also does not support memory interleaving.

Begin_Table

POWER MACINTOSH SERIES NUMBER	MICROPROCESSOR	MEMORY CONTROLLER	MEMORY INTERLEAVING
Power Macintosh 6100	601	HMC	NO
Power Macintosh 6150	601	HMC	NO
Power Macintosh 7100	601	HMC	NO
Power Macintosh 7200	601	Platinum IC	NO
Power Macintosh 7250	601	Platinum IC	NO
Power Macintosh 7500	601*	HammerHead ASIC	YES
Power Macintosh 7600	604*	HammerHead ASIC	YES

Power Macintosh 8100	601	HMC	NO
Power Macintosh 8150	601	HMC	NO
Power Macintosh 8500	604*	HammerHead ASIC	YES
Power Macintosh 8550	604*	HammerHead ASIC	YES
Power Macintosh 9150	601	HMC	NO
Power Macintosh 9500	604*	HammerHead ASIC	YES

* Removeable/upgradeable microprocessor card

End_Table

Article Change History:
26 Jun 1996 - Updated with information about more models.
10 May 1996 - Updated with information about more models.
11 Aug 1995 - Updated with information about more models.

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Tech Info Library Article Number:14775

Tech Info Library

Newton: Mac Connection Kit 2.0 Format Files (3/94)

Revised: 8/5/94
Security: Everyone

Newton: Mac Connection Kit 2.0 Format Files (3/94)

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Article Created: 03 March 1994

TOPIC -----

When should we use Newton Connection import/export format in Newton Connection for Macintosh version 2.0?

DISCUSSION -----

The Newton Connection format can be used to:

- Move information between two Newton Connection synchronize files
- Distribute information to other people who have Newton Connection
- Move data to another application that supports Newton Connection format

This file format contains all Newton information and you are guaranteed not to lose data with this format. In the future, other applications may also support the format removing the need for translators and templates.

Support Info Services

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Tech Info Library Article Number:14776

Newton: Mac Connection Kit 2.0 Template Caveats (12/94)

Revised: 12/14/94
Security: Everyone

Newton: Mac Connection Kit 2.0 Template Caveats (12/94)

==========

Article Created: 3 March 1994
Article Reviewed/Updated: 14 December 1994

TOPIC ----------

What are some of the issues when using the template import/export format feature of Newton Connection for Macintosh 2.0?

DISCUSSION ----------

Look for the following issues when using templates:

1) There are situations in which a file exported using a template and then re-imported into a Newton Connection Kit file may lose information. The templates import and export files with text only. This means that any graphics in your Newton data will not be exported if you use a template. If your data contains tabs, returns or multiple paragraphs (**), some of the data may be lost if you export with a template that uses Tab and Return as the field and record separators. To avoid this, click Options in the Edit Template dialog window and choose a character that does not appear in your data as the separator, or export in Newton Connection format. If you want to move all information from one Newton Connection Kit file to another, it is strongly recommended that you use the Newton Connection format to import and export the information. This format contains all information necessary to move the data between two or more Newton Connection files. It is also cross platform and will be supported by Newton Connection for Windows 2.0.

(**) Multiple paragraphs are concatenated with Carriage Returns.

2) Repeating meeting information may be lost when exporting repeating meetings using templates. The meeting still repeats but all special case information is lost. For example, if a repeating meeting repeats every Thursday for a month, and on the Newton you change week three's meeting from Thursday to Friday, the special case of having a Friday meeting for the third week will be lost.

Article Change History:
14 Dec 1994 - Verified information

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14777

Newton: Connection Kit 2.0 Import and Export Caveats (12/94)

Revised: 12/14/94
Security: Everyone

Newton: Connection Kit 2.0 Import and Export Caveats (12/94)

==========

Article Created: 3 March 1994
Article Reviewed/Updated: 14 December 1994

TOPIC ----------

What are some of the caveats when using the built in DataViz translators that are included with the Newton Connection for Macintosh version 2.0?

DISCUSSION ----------

Here are some tips to keep in mind when using the translators:

• If you are exporting from a Newton application that contains fields not present in the designated supported Macintosh application, information in the fields not supported by the Macintosh application will not be exported. For example, in Newton Connection, name file entries have a field for the e-mail address. Dynodex 3.0 does not have a field for the e-mail address. Therefore, if you export a name entry to a Dynodex file, the e-mail address will not be exported.

Also, if you are importing information from a Macintosh application that contains fields not present in the corresponding Newton application, data from the unsupported fields will not be imported.

• Newton graphics and ink can be exported as PICT graphics from Newton Connection using the built in DataViz translators. However, PICT graphics in Macintosh applications can not be imported as Newton graphics and ink. Only the Newton Connection Format supports import of graphics into Newton Connection. However, future third party Macintosh applications might support this format.

• Some translators will break repeating meetings and repeating day notes into individual meetings and day notes. For example, if you export one yearly repeating meeting from Newton Connection into ACT! 1.1, the Newton repeating meeting will be translated into 10 non-repeating meetings which occur once a year for 10 years.

Article Change History:
14 Dec 1994 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:14778

Tech Info Library

3.5 Disks: Unformatted and Formatted Capacity (2/95)

Revised: 2/8/95
Security: Everyone

3.5" Disks: Unformatted and Formatted Capacity (2/95)

==========

Article Created: 2 March 1994
Article Reviewed/Updated: 8 February 1995

TOPIC ----------

Some 3.5' floppy disks are marked as 1MB and 2MB. Why are the disks marked as such when the formatted capacity is 800K and 1.44MB respectively?

DISCUSSION ----------

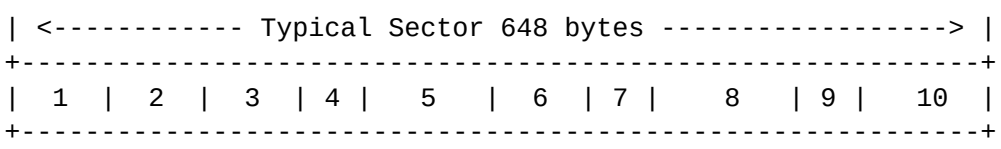
The 1MB and 2MB ratings are unformatted capacities. Regardless of what computer you initialize these disks with, you do not get a data capacity of the full 1MB or 2MB. This is due to the way information is stored on floppy disks. Depending on what operating system is used, more information than 800K or 1.44MB can be placed on a floppy disk. This is because they use additional sectors per disk.

Macintosh Disk Capacities
==========

	Double Density	High Density
	1 MB Unformatted	2 MB Unformatted
	800K Formatted	1.44MB Formatted
	---	---
Bytes/Sector	512	512
Sectors/Tracks	8-12 (variable)	18
Track Density tpi	135	135
Tracks/Side	80	80
Sectors/Disk	1600	2880
Bytes/Side	409,600	737,280
Bytes/Disk	819,200	1,474,560

Typical Disk Sector
==========

A typical disk sector consists of 648 bytes of information. Here is how this information is encoded on the disk:



1	Sector Gap	12 bytes
2	ID Mark	4 bytes
3	Track and Sector Address	4 bytes
4	CRC	2 bytes
5	ID Gap	22 bytes
6	Date Block Gap	12 bytes
7	Data Mark	4 bytes
8	Data Field	512 bytes
9	CRC	2 bytes
10	Data Block Gap	84 bytes

How Disk Space is Calculated

When formatted disk space is calculated, most of the sector information is not included. The only information used is the data field. Here is the formula used to determine the amount of information on a floppy disk.

Sides x Tracks x Sectors x Bytes/Sector = amount of information a disk can store

For a High Density disk this would be:

2 x 80 x 18 x 512 = 1,474,560 bytes

The Macintosh double density disk gets a bit more difficult because it uses 5 different speeds. When the speed changes, so does the sectors in per track. Here is a table with the track information and our formula:

Tracks	Sectors
00 - 15	12
16 - 31	11
32 - 47	10
48 - 63	09
64 - 79	08

Formula

Sides x Tracks x Sectors x Bytes/Sector = Information

Double Density Disk

2 x 16 x 12 x 512 = 196,608

```
2 x 16 x 11 x 512 = 180,224
2 x 16 x 10 x 512 = 163,840
2 x 16 x 09 x 512 = 147,456
2 x 16 x 08 x 512 = 131,072
.                   -------
.Total disk space = 819,200 bytes
```

Article Change History:
08 Feb 1995 - Added keyword; made several technical updates.

Support Information Services

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Tech Info Library Article Number:14779

Tech Info Library

Power Macintosh: High-Speed Memory Controller (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh: High-Speed Memory Controller (3/94)

==========

Article Created: 3 March 1994

TOPIC ----------

This article describes the high-speed memory controller on all Power Macintosh computers.

DISCUSSION ----------

The high-speed memory controller (HMC) is an ASIC chip that controls all memory operations in Power Macintosh computers. The HMC has the following features that support data transfers to and from the PowerPC 601 microprocessor:

- Support for all basic transfer protocols, including all single-cycle accesses
- Support for four-cycle 32-byte cache accesses
- Translation of misaligned read actions into double-word read actions
- Implementation of address-only transactions
- Bus arbitration (of the address bus only)

The HMC does not support the following features:

- Pipelining of memory bus transactions
- Cache snooping
- Recovery from transfer error acknowledge signals
- Little-endian transfer mode

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14780

Macintosh DOS Compatibility Card: Specifications (3/94)

Revised: 9/29/95
Security: Everyone

Macintosh DOS Compatibility Card: Specifications (3/94)

==========

Article Created: 3 March 1994
Article Reviewed/Updated: 28 September 1995

TOPIC ----------

This article gives the technical specifications for the Macintosh DOS Compatibility Card.

DISCUSSION ----------

The Macintosh DOS Compatibility Card is designed for the Macintosh Centris 610 and Macintosh Quadra 610 computer.

Description

• 7-inch DOS Compatibility Card compatible with 68040 processor-direct slot of Macintosh Centris 610 and Quadra 610

Power

• +5 volts

• 10 watts maximum

Expansion RAM

• One 72-pin DRAM SIMM; expandable to 32 MB

DMA

• One 32-bit DMA Channel

• DMA for shared, memory support provided through Macintosh system software

Video Modes

- VGA modes 0-7 and d13h

- SVGA modes for 640 x 480 and 800 x 600 (16-in only)

- EGA, CGA, MDA also supported

Sound

- PC sound played though Macintosh speaker or headphones

Serial Ports

- Macintosh Serial ports can emulate two 16450-compatible serial interfaces

Parallel Port

- Macintosh printer port can emulate PC-compatible parallel port

Keyboard

- Macintosh ADB keyboard and mouse emulate PC AT-compatible keyboard and PS/2-compatible mouse

Environmental Requirements

- Operating temperature
  50 to 104 degrees F (10 to 40 C)

- Humidity
  10% to 90% noncondensing

- Altitude
  10,000 feet maximum (3048 m)

System Requirements

- Macintosh Centris 610 or Quadra 610

Ordering Information

- M2153LL/A

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14781

LaserWriter Select 360 Parallel Port: Data Flow (3/94)

Revised: 3/7/94
Security: Everyone

LaserWriter Select 360 Parallel Port: Data Flow (3/94)

==========

Article Created: 7 March 1994

TOPIC

We have a LaserWriter Select 360 connected to our Ethernet network via a NetQue from Emulex (software version 4.1). When a job is sent to the printer using LaserWriter driver version 8.1.1, the green LED flashes, but no document is printed. The same configuration with the version 7.1.2 of the driver works fine. If we print serially with the 8.1.1 driver however, the configuration works.

Can you explain the difference between driver LaserWriter 7.1.2 and 8.x, and why it's not possible to print via the parallel port using the NetQue device with LaserWriter 8.x?

DISCUSSION

The LaserWriter Select 360 parallel port is unidirectional, however the LaserWriter driver 8.x expects to receive information back from the printer. The driver relies on bidirectional communications because it sends out various queries to obtain information about the characteristics of the target output device (such as features, fonts, etc.) before beginning a print job. The 7.x LaserWriter driver does not rely on bidirectional communications.

Included below is an excerpt from the APDA developer notes on the LaserWriter Select 360 regarding the parallel port:

"The Centronics parallel interface is essentially an input-only channel. This means it transfers information from the host to the printer. However, the PostScript interpreter always deals with both the input and output sides of an I/O channel. When operating in Centronics parallel input mode, the printer sets up the 8-pin serial port for the PostScript language print operator. The output from this port may be ignored for simple one-way communication. However, important information may be output via this port.

Printer errors are always reported, since the Paper Error signal on the Centronics interface cannot be relied upon to report all printer errors."

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14782

Tech Info Library

Macintosh Color Display, Quadra 605 and Energy Saver software

Revised: 5/12/94
Security: Everyone

Macintosh Color Display, Quadra 605 and Energy Saver software

==========

Article Created: 4 March 1994
Article Reviewed/Updated: 12 May 1994

TOPIC ----------

The Macintosh Color Display is listed as being Energy Star compliant but the Energy Saver software is telling me that the monitor is not compatible when installed on a Quadra 605. Is the software being revised to support this monitor? Should this configuration work with the Energy Saver software?

DISCUSSION ----------

The Quadra 605, Macintosh Color Display, and the Energy Saver Display software (version 1.0), are compatible.

For this configuration to function properly you must be using system software version 7.1 and have at least 2MB of system memory available. Also, ensure that you are not using the CPU Energy Saver software (version 1.0.1) which is not designed to control the display. You must also use the Custom Install button even though there is only one item to select in the Custom Install list.

Article Change History:
12 May 1994 - Included Custom Install information.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14784

Tech Info Library

How to determine A/UX version number (3/94)

Revised: 3/4/94
Security: Everyone

How to determine A/UX version number (3/94)

==========

Article Created: 4 March 1994

TOPIC -----

How do I determine which version of A/UX is running?

DISCUSSION -----

The following command returns the revision number for a/ux:

```
uname -r
```

For a more detailed snapshot including system name and processor type:

```
uname -a
```

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14785

Tech Info Library

Serial Switch CDEV: Use with AV Computers (3/94)

Revised: 3/5/94
Security: Everyone

Serial Switch CDEV: Use with AV Computers (3/94)

==========

Article Created: 4 March 1994

TOPIC -----

A customer is currently using the Serial Switch v1.1a1 CDEV on his Macintosh Quadra 900. His also is using a Macintosh Quadra 840AV. He would like to use the serial switch for his AV system but gets the message "Cannot be used with this Macintosh.”

Are there any plans for making a Serial Switch CDEV for the AV systems?

DISCUSSION -----

The Serial Switch is designed for products that contain intelligent I/O processors (IOPs). Only the Macintosh IIfx, Quadra 900, and 950 have IOPs on the ports for the floppy disk, ADB, and serial I/O. Since the Quadra 840AV doesn't have IOPs, this program will return the error message you report.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14786

Tech Info Library

Apple Adjustable Keyboard & Compatibility with A/UX 3.x (3/94)

Revised: 3/4/94
Security: Everyone

Apple Adjustable Keyboard & Compatibility with A/UX 3.x (3/94)

==========

Article Created: 4 March 1994

TOPIC -----

Is the Apple Adjustable Keyboard compatible with A/UX 3.x?

DISCUSSION -----

No, the Apple Adjustable Keyboard does not work completely with A/UX 3.0 or 3.0.1.

Because the CommToolbox tool(s) are built into the kernal with the keyboard IDs, some of the keys, such as arrow keys and '~', key do not respond with the same ANSI escape sequences as they do in CommandShell.

The problem has been reported and is known to A/UX engineering.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14788

Tech Info Library

Partitioning Large Hard Drives into Smaller Blocks (8/95)

Revised: 8/30/95
Security: Everyone

Partitioning Large Hard Drives into Smaller Blocks (8/95)

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Article Created: 4 March 1994
Article Reviewed/Updated: 30 Aug 1995

TOPIC ----------

The minimum file size on my 2 GB drive is 32K, and I would like to make it smaller, but I can't seem to do it with HDSC setup. Why is the file size so large, and what can I do to make it smaller?

DISCUSSION ----------

In both the Macintosh and DOS environments, the maximum number of blocks on a drive is 65,536 because both Operating Systems address the allocation blocks with a 16-bit address. Drives larger than 512 MB cannot use a block size of 8K or less because there just aren't enough addresses. Thus, if a 2 GB drive is one Macintosh partition, the smallest file size allowed will be 32k. (If you saved a TeachText file with one character, it would take up 32k of disk space.) This can waste a lot of space on large drives that have a lot of small files.

One solution to this problem would be to partition larger drives into smaller partitions or logical drives, each with a maximum of 65,536 blocks. Apple's Drive Setup can be used to partition qualified Apple hard drives and some removable devices as listed in the Drive Setup Guide file. Unsupported hard drives will show up in the device list by name, however, if you select an unsupported hard drive you will get the message, "Cannot modify a disk in an unsupported drive."

Also, Drive Setup is supported on all of the Power Macintosh computers. This includes the original Power Macintosh computers and the new PCI-based Power Macintosh computers. Drive Setup is also supported on 68LC040 processor-based systems that have IDE drives installed. Drive Setup is not supported with the Power Macintosh Upgrade Card.

There are third-party companies that offer solutions for creating multiple Macintosh partitions. A few that we know of are:

Begin_Table

Hard Disk Toolkit (HDT)	by FWB Software, Inc.
SilverLining	by LaCie Ltd.
Micronet Utility	by MicroNet Technology
MicroTech Utility	by MicroTech International

End_Table

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
30 Aug 1995 - Added Apple's Drive Setup information.
20 Jun 1994 - Typo fix.

Support Information Services

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Tech Info Library Article Number:14789

Tech Info Library

Direct Dialup Mail Overview and Issues (5/96)

Revised: 5/30/96
Security: Everyone

Direct Dialup Mail Overview and Issues (5/96)

==========

Article Created: 4 March 1994
Article Reviewed/Updated: 30 May 1996

TOPIC ----------

This article provides a basic description of the capabilities of Apple's Direct Dialup Mail (DDM) software.

DISCUSSION ----------

Please refer to the "PowerTalk User's Guide" (from System 7 Pro), Appendix B for details on setting up and configuring the software. See Using Direct Dialup Mail in this article for an example.

You can find Direct Dialup Mail 1.2 on Apple Computer's software update locations.

These articles can help you locate Direct Dialup Mail 1.2:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

DDM Functionality

What DDM Does

• Lets you send Apple mail to another DDM/PowerTalk user (peer-to-peer).

• Lets another DDM user send you Apple mail provided you have the software configured to accept incoming calls.

What DDM does NOT do

- Let you retrieve your remote mail from another PowerTalk equipped Macintosh.

- Let you get PowerShare mail from a PowerShare server

DDM Requirements and Issues

DDM requires a Macintosh running PowerTalk. It also requires that modems be attached to the Macintosh computers to which you want to connect. See the "PowerTalk User's Guide" (or Using Direct Dialup Mail later in this article) for instructions on installing DDM and adding it to your PowerTalk Key Chain. Be sure to obtain the proper CCL script for the modem you are using. CCL scripts are obtained from the specific modem vendor. DDM uses the same modem scripts and setup control panel as Apple Remote Access. Because DDM is more particular about modem scripts, it is very important to use the most updated scripts from the modem vendors.

Once you have installed DDM, the modem connected to the Macintosh is always in "answer call" mode. While in this mode the modem cannot be used with any other communications software except Apple Remote Access (ARA), if it is installed. DDM must be disabled using the "I'm at..." command to use the modem for anything other than ARA or DDM.

There is no Status Window indicating that DDM is dialing, so the only indication you have of what is going on are the modem tones.
When addressing an Apple mail message using the DDM option, DDM attempts to send the mail message immediately. If it cannot connect to another DDM user's modem, then it retries three times before giving up. You can also specify a preset time to send all your DDM mail. This mode keeps all the mail in your Out Tray until the specified time, and then attempts to send each message.

Information for AppleTalk Remote Access Users

AppleTalk Remote Access (ARA) 1.0 is not compatible with Direct Dialup mail. It is automatically removed from your hard disk when you install Direct Dialup mail. If you want to run PowerTalk Direct Dialup Mail concurrently with AppleTalk Remote Access Software, you must upgrade to ARA version 2.0 or later. ARA MultiPort Server is not compatible with Direct Dialup mail. Do not install both ARA Multiport Server and Direct Dialup mail on the same computer.

Upgrade Products

- M1964Z/C Apple Remote Access Client for Macintosh Upgrade Kit v2.0.1

- M2678Z/B Apple Remote Access Personal Server for Macintosh Upgrade Kit v2.0.1

These products require proof of purchase of version 1.0 or 2.0 and are available

at authorized Apple resellers and dealers. For the name of a nearby authorized Apple reseller or dealer in the U.S., call (800) 538-9696. For more information on the Apple Remote Access product family, contact the Apple Network Information Line at (408) 862-3385. To obtain information on availability of Apple Remote Access Software outside the U.S., please contact your local Apple representative.

Using Direct Dialup Mail

You use the Direct Dialup Mail Accessory Kit for sending and receiving mail over a modem to another computer.

Setting Up the Software

After you have installed Direct Dialup mail, you are ready to set it up. Follow these steps:

Step 1:
Open your PowerTalk Key Chain. If you have not already given your Key Chain Access Code, you are asked to enter it. The Key Chain dialog box appears, listing your current services.

Step 2:
Click the Add button to bring up a list of available services.

Step 3:
Select Direct Dialup Mail and click OK. The dialog box closes and Direct Dialup is added to your list of available services.

Step 4:
Double-click Direct Dialup. The Direct Dialup dialog box appears.

Step 5:
Fill in or change information as appropriate.

Step 6:
To set the software to control your modem, click Modem Setup.

Step 7:
In the dialog box that appears, use the pop-up menus to choose the kind of modem you have and make sure the port setting is correct. Click the appropriate radio button to turn the modem speaker on or off.

NOTE:
If the pop-up menu does not list your modem, try the Hayes setting with the same speed as yours. If that does not work, contact the manufacturer to get the necessary software.

Step 8:
Close the Remote Access Setup, Direct Dialup, and PowerTalk Key Chain windows. Your software is now installed and ready to run.

Adding Dialup Addresses

You can add a dialup telephone address to an information card for easy access. Follow these steps to add a Direct Dialup mail address:

Step 1:
Find the information card to which you want to add a Direct Dialup mail address.

Step 2:
Open the card and use the pop-up menu to move to the Electronic Addresses page.

Step 3:
When the Electronic Addresses page appears, click Add at the bottom of the card. A dialog box appears, asking for the kind of address to add.

Step 4:
Select "Direct Dialup mail" and click Add. An untitled Dialup Address line appears on the card, ready for you to fill out.

NOTE:
Make this address the preferred one by highlighting its radio button. The Mailer uses the preferred address when it sends documents.

Step 5:
Type a descriptive name for this address. Something like "Mary's Home Modem" is a good choice because it describes both the owner and the modem's location.

Step 6:
Double-click the icon to the left of the address line to add the necessary dialup information. Select the top radio button to have the system use the information you supplied in the Direct Dialup dialog box (described earlier in this article) to form this person's telephone number. Then enter the required numbers in each of the three fields. If your area code and the area code you enter on this person's card are the same, the system does not use the area code when it dials.) For example, the Country code field can hold the standard 1 prefix used before North American area codes.

Select the bottom radio button to have the system use the number you type into the lowest field without regard for the information you supplied in the Direct Dialup dialog box. You can change any of these settings at any time.

Step 7:
Click the Close box when you are finished to confirm your settings and put the dialog box away.

Step 8:
Click the information card's close box. Once the dialup address information is complete, you can send mail to that address just as you can to any other address in PowerTalk.

Using Dialup Addresses in the Mailer

==========

Adding addresses

To add a dialup address from your personal catalog, follow these steps:

Step 1:
Click the top button in the Catalogs access panel.

Step 2:
Locate and select the information card containing the dialup address.

NOTE:
To use an information card as the source of a dialup address, a Direct Dialup number must be selected as the preferred address on the Electronic Addresses section of the information card.

Step 3:
Click the To button.

Manually Entering Address

To enter a dialup address for a letter's recipient, follow these steps:

Step 1:
Open the Mailer's Catalogs access panel and click the bottom button.

Step 2:
Type the exact phone number for the dialup recipient's modem. You can use a hyphen to separate the parts of the number if you want.
You can also use the form <name>@<number>.

Step 3:
Choose Dialup from the catalog pop-up menu.

Step 4:
Click To (or press the Return or Enter keys) to address the letter. To put a copy of this dialup address in your preferred personal catalog, press the Option key and click the Save button.

Step 5:
Provide any other necessary information in the Mailer and send the document.

Troubleshooting
==========

You may experience an occasional problem using the dialup service. Here are a few common problems and some suggested solutions.

Error Message When Typing a Phone Number

When you type a phone number in an address window, the system adds a message at the bottom stating that your dialup service has not been set up.

Open the PowerTalk Setup control panel and check that the dialup service information is complete and that you have entered your local phone number.

The Dialup Service Does Not Work

You have set up your dialup service, but it does not seem to work. For instance, the modem will not dial an address, try these solutions:

- Be sure the modem is turned on and your phone line is connected.
- Verify that you have selected your model of modem in the Remote Access Setup control panel. If your modem's auto-answer light is on, your setup is probably OK.

Cannot Connect With Another Macintosh

When your modem dials the telephone but cannot connect with another Macintosh, try these solutions:

- Make sure the telephone number is correct.
- Make sure the Macintosh you are trying to connect with is turned on, the modem is connected, and the computer and modem are set up correctly.
- If you are using a charge card number in the Direct Dialup control panel, you may need to make Direct Dialup wait longer before dialing the charge card number. The default delay in the U.S. is 20 seconds. To increase the delay, add one or more commas at the beginning of the charge card number. Each comma increases the delay by two seconds.
- If you are using a charge card in the Direct Dialup setup window, make sure you select tone dialing in the Remote Access Setup window.
- If you see a triangle icon on the right side of your Out Tray or In Tray, it means there is a problem. Click the triangle icon for more information.

Connects Then Drops Connection

If your modem connects with another modem but then loses the connection, try these solutions:

- Make sure you selected the correct modem type when setting up the software.
- If your telephone line has a call-waiting feature turned on, try turning that feature off. Call waiting can interrupt modem connections.
- Your telephone line may have excessive noise. Contact your telephone company.
- If you are using another application program that uses the modem, quit that program before using Direct Dialup.

A Reply To a Letter Does Not Get Through

You reply to a letter that originally had multiple recipients, at least one of which had a dialup address, but your reply to that dialup address does not get through.

Check the area code of the dialup address. If the original sender of the letter

and the dialup recipient were in the same area code (for example, 408), but you are in a different area code (for example, 212), the dialup recipient's address would not have any area code listed. (There would have been no need for the original sender to include an area code.)

Unless you change the dialup address, the system would dial without an area code and try to send your reply to your area code (212) instead of the proper one (408).

Other Troubleshooting Tips

• To cancel a call in progress, open the Out Tray and drag the sending item to the trash.

• To suspend Direct Dialup from using the port and phone temporarily, choose "I'm at" from the Special menu, and uncheck the Direct Dialup checkbox.

• To use the MNP 10 protocol, both your modem and the one you call must support the protocol.

• If you are using a Macintosh IIfx, a Macintosh Quadra 900, or a Macintosh Quadra 950 and have virtual memory turned on, you must open the Serial Switch control panel and change the serial port setting to Compatible.

• If the error code -9014 appears while sending a Direct Dialup mail, choose "I'm at" from the Special menu, and make sure the Direct Dialup checkbox is checked.

• If you drag a type-in Direct Dialup address from the mailer's recipient field to the desktop and change its name on the desktop, the address will become invalid and may not be used thereafter.

• You may experience an occasional problem using the dialup service. Here are a few common problems and some suggested solutions.

• When you type a phone number in an address window, the system adds a message at the bottom stating that your dialup service has not been set up.

• Open the PowerTalk Setup control panel and check that the dialup service information is complete and that you have entered your local phone number.

This article was published in the "Information Alley":
Volume II, Issue 2, Page 15

Article Change History:
30 May 1996 - Corrected where to get DDM.
26 May 1996 - Updated for technical accuracy.
13 May 1996 - Added troubleshooting tips.

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Tech Info Library Article Number:14790

Tech Info Library

Apple Remote Access: Changes From 1.0, 2.0, & 2.0.1 (2/96)

Revised: 2/9/96
Security: Everyone

Apple Remote Access: Changes From 1.0, 2.0, & 2.0.1 (2/96)

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Article Created: 4 March 1994
Article Reviewed/Updated: 9 February 1996

TOPIC -----

This article lists the differences between ARA 1.0, 2.0, and 2.0.1.

DISCUSSION -----

Differences Between ARA 1.0 and 2.0
==========

ARA 1.0

ARA 1.0 had both client and server capability, and came with a license to copy to three computers. ARA 1.0 cannot connect to an ARA 2.0 server.

ARA 2.0 Personal Server

ARA 2.0 Personal Server comes with a license to copy to two computers, and can act as a server or a client. There is a compatibility mode allowing connection to ARA 1.0 servers.

ARA 2.0 Client

ARA 2.0 Client can only access ARA 1.0 or 2.0 servers, it does not provide server capability.

ARAP 2.0

The AppleTalk Remote Access Protocol (ARAP) provides efficient AppleTalk services on a per client basis over slow links. It defines the login and authentication sequences. The ARAP specification has been enhanced to include the ability to change passwords, allow password retries, authenticate a user using external third party security devices, and send out-of-band messages such as alerts and greetings.

In addition, ARAP Version 2.0 now lets administrators of the MultiPort Remote Access Server set the specific zones each user can see. The Apple Remote Access MultiPort Server provides a flexible, scalable, and secure way to offer network access to large numbers of remote or mobile users. Used in conjunction with one or more Apple Remote Access Serial Cards, it lets a Macintosh computer or a Workgroup Server support from 4 to 16 simultaneous dial-up connections.

NOTE: The protocol enhancements are what allow for the new functionality; therefore, ARAP 1.0 based products are not able to take advantage of these enhancements.

Remote Password Change

ARAP 2.0 provides a method for you to remotely change your password (without having to use AppleShare on the same Macintosh as was necessary with ARA 1.0). Other new features in the MultiPort Server product let the administrator set the number of retries allowed before user logon is disabled and to force users to change their passwords via the "New password required" field in the user setup window.

SNMP Management

Integrated network management via SNMP is now a part of the MultiPort servers.

Roving Access Security

Dial-back is not satisfactory for you if you want both security and mobility. Mobile security is now added to the feature list by allowing for the use of third party "security cards". With some "security cards" you must type in a personal code and a requester code into a credit card size calculator like device. The device then returns the SecureID. Other "security cards" are time based and constantly display current SecureID information. When trying to make a connection to a secure server, you see a dialog box requesting a SecureID. Without the SecureID and the standard username and password you are not able to get access to the server.

X.25 connectivity

The new MultiPort Server software supports extensions that let you connect to ARA through an X.25 network. This type of access is valuable in situations where the cost of X.25 asynchronous dial-up service is less than the cost of end-to-end service through the phone companies. These X.25 extensions are sold as separate products from ARA 2.0 MultiPort server.

DialAssist

DialAssist is a client software (both ARA Personal Server 2.0 and ARA 2.0 Client Only) feature that makes long distance, credit card, international, and private PBX calling extremely easy for you. The software is preconfigured with all of the most common dialing codes so that a you only have to select items from pop-up menus.

MNP10 error correction

If you have a modem that supports MNP10 error correction, it can be turned on via the Remote Access Setup window.

ARA 1.0 and 2.0 Compatibility

Modem Scripts

You can use AppleTalk Remote Access version 1.0 modem scripts with Apple Remote Access 2.0 Personal Server, but you cannot use certain new features, such as Ignore Dial Tone, Manual Dialing, and MNP 10. You cannot use Apple Remote Access Personal Server 2.0 modem scripts with AppleTalk Remote Access version 1.0.

Calling an AppleTalk Remote Access Version 1.0 Server

The AppleTalk Remote Access 1.0 Compatibility option lets you call a version 1.0 server from the ARA 2.0 client and to receive callbacks from a 1.0 server (see Chapter 3 of the "Apple Remote Access Personal Server for Macintosh User's Guide" for details on setting this option). However, it does not let Apple Remote Access Personal Server receive calls from an AppleTalk Remote Access 1.0 client. The Apple Remote Access 2.0 Personal Server can only receive calls from version 2.0 Apple Remote Access Clients.

Supported Scripts

Apple includes some modem scripts with all versions of the ARA server. These are not the only compatible modem scripts. These scripts were current when 2.0 was introduced, but there could be updates from the modem vendors. If you need a new script, contact your modem vendor. The following paragraph is in the Apple Remote Access MultiPort Server Read Me file:

"9600-bps or higher-speed modem scripts included with the Apple Remote Access Client for Macintosh software can also be used with the Apple Remote Access MultiPort Server."

Basically, 9600-bps or higher-speed modem scripts should be compatible with the Apple Remote Access MultiPort Server product. If an ARA 2.0 script is not available for a particular modem, the ARA 1.0 script should work.

If you cannot find the CCL script for you modem, contact the modem vendor directly, check with user groups, or develop your own CCLs with tools from APDA, Apple’s source for developer tools.

Differences Between ARA 2.0 and 2.0.1

The ARA 2.0.1 release addressed the following problems:

1) Fixed a bug that caused ARA 2.0 to crash when running on a Macintosh Plus.

2) Changed the ARA MP (MultiPort) Server to be compatible with the Power Macintosh computers.

3) Added the ability to determine on the fly whether the client is attempting to connect to an ARA 1.0 or 2.x server.

This release has no specific performance enhancements relative to ARA 2.0.

Article Change History:
09 Feb 1996 - Added Differences between ARA 2.0 and 2.0.1.
08 Feb 1995 - Updated and added information from another article.
13 Oct 1994 - Added keyword; made minor technical updates.

Support Information Services

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Tech Info Library Article Number:14791

Tech Info Library

ARA 2.0: DialAssist, Manual Dialing, & Redial (3/94)

Revised: 3/4/94
Security: Everyone

ARA 2.0: DialAssist, Manual Dialing, & Redial (3/94)

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Article Created: 4 March 1994

TOPIC ----------

Dialing, Redialing and DialAssist information for ARA

DISCUSSION ----------

Manual Dialing

When you use Manual Dialing, establishing a Remote Access connection varies according to the type of modem you are using. To ensure that you can make a connection while using Manual Dialing, you may need to experiment with pressing the Connect button slightly before or after you hear the remote modem answer the phone.

ReDial Feature

Remote Access Client will attempt redialing only when the phone number that has been dialed is busy. If the connection attempt has failed for any other reason, Remote Access will stop the redialing attempts so that you can correct any problems.

When using the Redial option, you should set the “Time between retries” number to five seconds or greater. Depending on the modem, anything less than five seconds may not give your modem sufficient time to reset, resulting in your Macintosh serial port being busy and unavailable for redialing.

When using the Re dial alternate number option, the main number will be dialed once before the redialing sequence is initiated. The redialing sequence will then alternate between the main and alternate numbers.

DialAssist

In certain countries city/area codes don't exist. If you are calling within such a country and you encounter problems, try entering a space in the "Connect

To City/Area Code" field in your connection document to get DialAssist to work properly.

Support Information Services

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Tech Info Library Article Number:14793

Tech Info Library

Adding AppleShare File Servers to the PowerTalk Keychain (3/94)

Revised: 3/4/94
Security: Everyone

Adding AppleShare File Servers to the PowerTalk Keychain (3/94)

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Article Created: 4 March 1994

TOPIC -----

I want to add keys for additional AppleShare servers to my PowerTalk Key Chain, and I don't know how to do it. Logging into them via the Chooser doesn't provide an opportunity to add them, so how is this accomplished?

DISCUSSION -----

AppleShare file server entries can be added to the Key Chain in two ways:

1) Access the server via an alias. You will then be provided with the dialog asking if you want to add that server to your Key Chain.

2) Access the server via AppleTalk Catalogs. When you search through the catalog for an AppleShare server, and select one, You will then be provided with the dialog asking if you want to add that server to your Key Chain.

PowerTalk uses the Alias Manager to trigger the additional dialog allowing you to add the server to your keychain. The Chooser does not use AppleEvents, nor the Alias Manager, and therefore has no way to trigger the dialog.

Note: Once added to your Key Chain the logon dialog box for a server will be skipped when accessing via an alias or AppleTalk Catalogs. Access via the Chooser still requires entry of user name and password.

Support Information Services

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Tech Info Library Article Number:14794

Tech Info Library

A/UX 3.0.1: cat Displaying Files Incorrectly (3/94)

Revised: 3/4/94
Security: Everyone

A/UX 3.0.1: cat Displaying Files Incorrectly (3/94)

==========

Article Created: 4 March 1994

TOPIC ----------

When I use "cat" in the A/UX CommandShell, it is not displaying the file correctly. The lines are bunched up with one line on top of the other.

DISCUSSION ----------

A/UX 3.0.1 has new variable called "TBTRANSLATEUXONLY" that is set in the shell scripts /mac/bin/mac32 and /mac/bin/mac24. Use the Text Editor to comment this out, and the cat function will return to A/UX 3.0 behavior.

The TBTRANSLATEUXONLY variable affects how carriage returns (CR) and line feeds (LF) are stored in the system. A/UX 3.0 converts carriage returns to line feeds, and then tries to translate the line feeds back to carriage returns when the file is reopened. A/UX 3.0.1 avoids possible complications that this may cause and allows you to set this variable. If this variable is assigned any value in your environment, carriage returns are translated to line feeds upon a file save of UNIX text files. (Files created in the CommandShell as well as by TextEditor are considered UNIX text files.)

Support Information Services

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Tech Info Library Article Number:14795

Tech Info Library

Problems Copying Reports Between HyperCard Stacks (3/94)

Revised: 3/4/94
Security: Everyone

Problems Copying Reports Between HyperCard Stacks (3/94)

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Article Created: 4 March 1994

TOPIC --------------------

I tried to copy an Avery Mailing Label report from the Address stack that comes with HyperCard 2.2 into my own 2.1 Address stack, and it's not copying correctly. The original label report had three columns and ten rows, and the pasted version has two columns and eight rows. What's wrong?

DISCUSSION --------------------

The problem is with Page Setup in your personal Address stack. In the page setup of your Address stack, choose Options, and make sure that "Precision Bitmap Alignment (4% Reduction) is NOT chosen. Try the copy again, and it should work fine.

Note: In the Reports dialog box in HyperCard version 2.1 there is no Save button, whereas there is a Save in version 2.2. A Save dialog does appear whenever a new report is created or an old report is changed, and the user chooses Print or Cancel (the only two options).

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14796

ARA MultiPort Server and Memory (3/94)

Revised: 3/16/94
Security: Everyone

ARA MultiPort Server and Memory (3/94)

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Article Created: 4 March 1994

TOPIC --------------------

ARA MultiPort Server version 2.0 has a problem with locking memory that will be fixed in the next release.

DISCUSSION --------------------

The Remote Access Manager application version 2.0 leaves a small locked block in the MultiFinder (Process Manager) heap after the user quits. It is verified that this island in the PM heap could reduce your "Largest Unused Block" size significantly. Engineering has agreed on a fix, which they will begin testing for the next release.

Support Information Services

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Tech Info Library Article Number:14797

MNP 10 and ARA 2.0: Description (3/94)

Revised: 3/4/94
Security: Everyone

MNP 10 and ARA 2.0: Description (3/94)

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Article Created: 4 March 1994

TOPIC ----------

Information regarding the use of MNP 10 error correction.

DISCUSSION ----------

MNP 10 is an error-correction protocol that allows for more reliable data connections using cellular modems.

To establish an MNP 10 connection, your modem and the modem you're calling must support MNP 10, and you must select the “Use MNP 10 error correction in modem” checkbox in the Remote Access Setup window.

If both modems do not support MNP 10 error correction, the selection in the Setup window will do nothing.

Support Information Services

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Tech Info Library Article Number:14798

Tech Info Library

Modem Cables Requirements for ARA 2.0 (3/94)

Revised: 3/4/94
Security: Everyone

Modem Cables Requirements for ARA 2.0 (3/94)

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Article Created: 4 March 1994

TOPIC ----------

This article describes modem cable requirements for ARA 2.0.

DISCUSSION ----------

Most modems require a cable that supports the data terminal ready (DTR) signal. In addition, certain modems require a cable that supports CTS/RTS hardware flow control.

To support DTR, the cable must connect pin 20 on the DB-25 connector to pin 1 on the Mini DIN-8.

To support CTS/RTS, the cable must connect pin 5 on the DB-25 connector to pin 2 on the Mini DIN-8 and pin 4 on the DB-25 connector to pin 1 on the Mini DIN-8.

See your modem vendor or Apple-authorized dealer about obtaining the necessary cable.

Support Information Services

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Tech Info Library Article Number:14799

Tech Info Library

Power Macintosh: AV Video Technologies Card (7/95)

Revised: 2/13/96
Security: Everyone

Power Macintosh: AV Video Technologies Card (7/95)

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Article Created: 3 March 1994
Article Reviewed/Updated: 14 July 1995

TOPIC ----------

This article describes the AV Technologies Video Card (Apple order number: M3447LL/A)* found on Power Macintosh.

DISCUSSION ----------

The AV video card is an Apple expansion card that plugs into the PDS (Processor Direct Slot) connector of any Power Macintosh computer. It contains a sophisticated I/O system that handles video input and output signals, mixes video with 16-bit graphics, and supports a wide variety of Apple and third-party monitors. The AV I/O system also lets you connect a television set as a monitor, using either NTSC (National Television Standards Committee - primarily used in North America and Japan) or PAL (Phase Alternating Line - primarily used outside of North America and Japan) format.

The AV card expands the Power Macintosh computer's video capabilities to include the video capture and output features of the Apple AV Technologies. These video features were introduced with the Macintosh Centris 660AV and Macintosh Quadra 840AV.

Power Macintosh models 6100 AV, 7100 AV, and 8100 AV are shipped with the AV card installed. On the Power Macintosh 6100 AV, the card uses an angle adapter card.

A 40-pin connector on the AV card implements the Macintosh Digital Audio/Video (DAV) interface. The DAV connector taps into the AV card's unscaled YUV video input signal; through the PDS interface, it also connects to the digital audio signal input for the sound chip. NuBus cards for the Power Macintosh 7100 AV and 8100 AV can be designed with a flat ribbon cable that plugs into the DAV connector on the AV card, so they can access these video and audio signals directly.

Power Macintosh AV models are shipped with two adapter cables so you can connect your AV card to a standard television set, video camera, videodisc player, and videocassette recorder. The input cable connects the signal pin of an RCA socket to pin 3 (the luminance signal) of the AV card's video output connector.

The video and graphics I/O system is built around two banks of 80ns VRAM with a total capacity of 2MB. The CIVC (Cyclone Integrated Video Interfaces Controller) chip manages this VRAM and provides timing and interrupt signals. Applications can use the VRAM in two ways:

- As a single frame buffer that uses all the VRAM capacity

- As two frame buffers, one for video and one for graphics

If you configure the VRAM as a single video frame buffer, it can all be used for graphics and the video input can be disabled. If you configure the VRAM as two frame buffers, it can store video as well as graphics.

* NOTE:
Part numbers mentioned in this article are accurate as of this writing. Before ordering, verify that they are still correct as they are subject to change.

Article Change History:
14 Jul 1995 - Added part number and part number disclaimer.
14 Dec 1994 - Added keyword, clarified acronyms, made minor technical changes.

Support Information Services

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Tech Info Library Article Number:14800

Tech Info Library

Power Macintosh: AV Video Card, Video Inputs (12/94)

Revised: 12/14/94
Security: Everyone

Power Macintosh: AV Video Card, Video Inputs (12/94)

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Article Created: 3 March 1994
Article Reviewed/Updated: 14 December 1994

TOPIC ----------

This article describes the Power Macintosh computer's AV Video Technologies Card's video inputs.

DISCUSSION ----------

Video input signals, which may be analog composite or S-video in NTSC (National Television Standards Committee – primarily used in North America and Japan), PAL (Phase Alternating Line – primarily used outside of North America and Japan), or SECAM (a French acronym for the television signal format used in France, Eastern Europe, the former Soviet Union, and many former French colonies) format, enter through one of the identical connectors for video input and output. An adapter cable included with Power Macintosh AV models receives composite video from external devices that have RCA connectors and feeds it into the luminance input of the TDA8708 video ADC (Analog/Digital Converter) chip. The ADC chip can also receive separate luminance and chroma signals from S-video sources. The ADC chip digitizes the video waveform and the SAA7194 chip decodes the result into YUV format. The YUV digital video format, also known as YCrCb, is a video signal format with separate luminance and chrominance components.

The SAA7194 chip scales down the video image and converts its format to either 8-bit grayscale, 15-bit RGB, or 16-bit YUV, storing the result in the VRAM buffer.

The data rate for full-screen NTSC video (640 by 480 pixels at 30 frames per second) is 18.43 MB per second through the AV card. The data rate for full-screen PAL video (768 by 576 pixels at 25 frames per second) is 22.12 MB per second. This means that it is practical to record a video image up to one-quarter screen in size on an output device such as an external hard disk drive in real time, without data compression.

Users of the Power Macintosh 6100 AV, 7100 AV, or 8100 AV can capture live color

video with a standard video camera, using the composite video input cable supplied with the computer.

Article Change History:
24 Aug 1994 - Made correction for technical accuracy.
14 Dec 1994 - Added keyword and technical detail; removed MHz references.

Support Information Services

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Tech Info Library Article Number:14801

Tech Info Library

Power Macintosh: AV Video Card, Video Output (1/96)

Revised: 1/4/96
Security: Everyone

Power Macintosh: AV Video Card, Video Output (1/96)

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Article Created: 3 March 1994
Article Reviewed/Updated: 4 January 1996

TOPIC ----------

This article describes the Power Macintosh computer's AV Video Technologies Card's video output.

DISCUSSION ----------

Video and graphic images stored in VRAM may have different color depths. The two images exit VRAM through its serial access memory port and pass to the Sebastian color palette chip. Sebastian provides independent color lookup tables for video and graphics images and mixes them into a single digital RGB data stream. The Sebastian then converts the result into analog RGB video, using internal DAC circuits.

Analog RGB data passes to the Mickey encoder chip. Mickey either sends RGB directly to the monitor connector or encodes it into NTSC (National Television Standards Committee – primarily used in North America and Japan) or PAL (Phase Alternating Line – primarily used outside of North America and Japan) video signals in composite or S-video format and sends it to other connectors located on the card.

The Power Macintosh uses the HDI-45 for on board video. It supports a dot clock up to 57 MHz. On AV Power Macintosh computers, the AV card supports a dot clock up to 100 MHz.

The AV card has two banks of 80-ns VRAM soldered in, with a total capacity of 2 MB.

The AV card contains two identical connectors for video input and output with adapter cables for composite video devices that have RCA connectors, such as television equipment.

The AV card can support mixed video and graphics in full 24-bit color on small

and medium-sized monitors and in 16-bit or 8-bit color on larger monitors. The color depths (in bits per pixel) available when the AV card drives Apple monitors are listed below:

Monitor type	Screen Size Hor.by Vert.	Color Depths Graphics	Graphics/video
12-inch RGB*	512 by 384	32	32/16
	560 by 384	32	16/16
13-inch RGB or	640 by 400	32	16/16
12-inch monochrome*	640 by 480	32	16/16
	704 by 512	32	16/16
Full-page monochrome*	640 by 870	8	8/8
Full-page RGB	640 by 870	16	8/16*
16-inch RGB*	832 by 624	32	16/16
19-inch RGB	1024 by 768	16	8/8
Two-page monochrome	1152 by 870	8	8/8
Two-page RGB	1152 by 870	16	8/8**
VGA*	640 by 480	32	16/16
Super VGA 56 Hz*	800 by 600	32	16/16
Super VGA 72 Hz*	800 by 600	32	16/16
Super VGA 60 Hz	1024 by 768	16	8/8**
Super VGA 70 Hz	1024 by 768	16	8/8**
NTSC	640 by 480	32	16/16
	512 by 384	32	16/16
Convolved NTSC	640 by 480	8	n.a.
	512 by 384	8	n.a.
PAL	768 by 576	32	16/16
	640 by 480	32	16/16
Convolved PAL	768 by 576	8	n.a.
	640 by 480	8	n.a.

* With a color depth of 16 bits in these configurations, the maximum video window size is limited. If the video window width is 512 pixels or less, the height may be as large as 512 pixels; if the video window width is

more than 512 pixels, the height is limited to 340 pixels.

** The 8 bits of video are grayscale.

The color depths above are shown as the number of bits in which the color or grayscale value of each pixel can be encoded.

Article Change History:
04 Jan 1996 - Made minor technical changes.
16 May 1994 - Added dot clock rates.
14 Dec 1994 - Add keyword, make several minor technical updates.

Support Information Services

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Tech Info Library Article Number:14802

Tech Info Library

Apple Media Tool and Windows (3/94)

Revised: 3/7/94
Security: Everyone

Apple Media Tool and Windows (3/94)

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Article Created: 7 March 1994

TOPIC ----------

Although the literature states that we support the creation of mixed mode and Windows only CDs with the Apple Media Tool, I have heard and read that there are known problems with being able to read such CDs in the Windows environment. Is there any additional information on this?

Also, for text that is a part of a project created on the Macintosh using the Apple Media Tool and then compiled to run on Windows, are those fonts compiled as part of the project, or does the project rely on the Windows system fonts?

DISCUSSION ----------

While some people have had problems creating mixed mode CD-ROMs, other companies have had good success. It depends on how much time they are willing to spend on development and testing. The most common reasons for problems is that the media files are in the wrong formats or don't conform to the eight character restriction of DOS. A good example of a mixed-mode disc is the "Forever Growing Garden" developed by a company called Arborescence located in San Francisco. The CD is distributed by Media Vision.

Regarding the fonts question:
As with most font handling for all applications, if you don't have the corresponding font on the PC, a default font will be used instead. You can use the PC version of StyleEdit (STYLEDIT.EXE) to look at your text on the PC and find a close match if you don't have the corresponding font. Another alternative would be to create a picture, and font substitution won't be an issue.

Support Information Services

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Tech Info Library Article Number:14803

Tech Info Library

CD-ROM Setup 4.0: Don't Need To Move Foreign File Access (3/94)

Revised: 3/8/94
Security: Everyone

CD-ROM Setup 4.0: Don't Need To Move Foreign File Access (3/94)

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Article Created: 4 March 1994

TOPIC ----------

Occasionally when CD titles are not recognized by an AppleCD player, users are advised to move the following files from the extensions folder to the root level of the system folder:

- Foreign File Access
- High Sierra File Access
- ISO 9660 File Access
- Audio CD Access
- Apple Photo Access

DISCUSSION ----------

For anyone not familiar with it, Foreign File Access is a system extension which allows AppleCD drives to read non-Macintosh CD formats. The other files let Foreign File Access know how to handle each of those CD formats.

Prior to System 7 these files were stored at the root level of the system folder. That is where Foreign File Access expected to be and to find its supporting access files. Using System 7, some or all of these files may have been located in the extensions folder. At the time, Foreign File Access wasn't aware of the extensions folder and didn't know to look for its files there. Moving these files back to the root level of the system folder caused Foreign File Access to function normally. The operation of Foreign File Access should not have affected the use of Macintosh CD-ROMs in any way.

CD-ROM Setup 4.0 or later has a version of Foreign File Access which is fully compatible with System 7 and will work from within the extensions folder.

Support Information Services

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Tech Info Library Article Number:14804

Tech Info Library

Macintosh IIsi Speed Issues When Using Built-In Video (3/94)

Revised: 3/7/94
Security: Everyone

Macintosh IIsi Speed Issues When Using Built-In Video (3/94)

==========

Article Created: 7 March 1994

TOPIC ----------

We have 2 Macintosh IIsi's which are similarly configured and one of them seems to be running faster than the other. Both machines have 5MB of RAM, an 80MB hard drive, are using the built-in video port, and have a clean copy of System 7.0.1 with the tune-up installed. The logic board on the slower machine has been replaced, but it remains slower.

DISCUSSION ----------

When using built-in video with the Macintosh IIsi, performance of the machine can vary depending upon the setup of the system software and what size monitor is connected. The Macintosh IIsi does not have dedicated VRAM, rather it uses the RAM on the logic board for video.

Below are three things that can help improve the speed of a Macintosh IIsi.

1) Increase the Disk Cache in the Memory Control Panel to 768k.

2) Set the Monitors Control Panel to 16 colors/Shades. This reduces the amount of main memory used for the video and therefore allows the computer to run faster

3) As a 12" RGB monitor shows less information than a larger monitor, the computer can be set at 256 colors and still use less memory for the video. If a smaller monitor is suitable, it can improve performance.

Support Information Services

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Tech Info Library Article Number:14805

Tech Info Library

Macintosh and LaserWriter SCSI Termination Outlined (5/96)

Revised: 5/30/96
Security: Everyone

Macintosh and LaserWriter SCSI Termination Outlined (5/96)

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Article Created: 7 March 1994
Article Revised/Updated: 30 May 1996

TOPIC ----------

Is there a table that outlines the specific termination requirements and capabilities of the Macintosh and Apple printer product lines?

DISCUSSION ----------

Below is a table that includes the SCSI termination specifics for all Macintosh models and LaserWriter printers (current as of this issue) and describes whether termination power (TPWR) is supplied for either the internal or external SCSI bus, depending on which is present (one or both).

Macintosh Models
==========

Here is a description of the information provided in each column of the following table:

Additional Termination

Indicates if additional termination is needed for a separate internal bus.

Internal Device

Indicates if an internal device or BUS TPWR is supplied.

External Bus

Indicates if an external BUS TPWR is supplied.

Term. Type

Indicates the type of terminator required for the external bus.

SCSI Mode

Indicates if the CPU can be used in SCSI disk mode. Currently only some PowerBook models support SCSI Disk Mode.

NOTE: The asterisks in the table correspond to footnotes that follow the table.

CPU Name	Additional Termination	Internal Device	External Bus	Term. Type	SCSI Mode
Macintosh Plus	No	No	No	Gray	No
Macintosh SE	No	Yes	Yes	Gray	No
Macintosh SE/30	No	Yes	Yes	Gray	No
Macintosh Classic	No	Yes	Yes	Gray	No
Macintosh Classic II	No	Yes	Yes	Gray	No
Macintosh Color Classic	No	Yes	Yes	Gray	No
Macintosh II	No	Yes	Yes	Gray	No
Macintosh IIx	No	Yes	Yes	Gray	No
Macintosh IIcx	No	Yes	Yes	Gray	No
Macintosh IIci	No	Yes	Yes	Gray	No
Macintosh IIfx	No	Yes	Yes	Black	No
Macintosh IIvx	Automatic*	Yes	Yes	Gray	No
Macintosh IIvi	Automatic*	Yes	Yes	Gray	No
Macintosh LC	No	Yes	Yes	Gray	No
Macintosh LC II	No	Yes	Yes	Gray	No
Macintosh LC III	No	Yes	Yes	Gray	No
Macintosh LC 520	Intrnl hd	Yes	Yes	Gray	No
Quadra 605	No	Yes	Yes	Gray	No
Quadra 610	On last device	Yes	Yes	Gray	No
Macintosh 630 Family	Intrnl hd	Yes	Yes	Gray	No
Quadra 650	Intrnl hd	Yes	Yes	Gray	No
Quadra 700	Intrnl hd	Yes	Yes	Gray	No
Quadra 800	On last device	Yes	Yes	Gray	No
Quadra 900	On cable	Yes	Yes	Gray	No
Quadra 950	On Cable	Yes	Yes	Gray	No
Performa 200	No	Yes	Yes	Gray	No
Performa 400	No	Yes	Yes	Gray	No
Performa 405	No	Yes	Yes	Gray	No
Performa 410	No	Yes	Yes	Gray	No
Performa 430	No	Yes	Yes	Gray	No
Performa 450	No	Yes	Yes	Gray	No
Performa 460	No	Yes	Yes	Gray	No
Performa 466	No	Yes	Yes	Gray	No
Performa 467	No	Yes	Yes	Gray	No
Performa 475	No	Yes	Yes	Gray	No

Performa 476	No	Yes	Yes	Gray	No
Performa 550	Intrnl hd	Yes	Yes	Gray	No
Performa 600	Automatic*	Yes	Yes	Gray	No
Macintosh Portable	No	No	No	Gray	No
PowerBook 100	No	Yes	No	Gray	Yes
PowerBook 140	No	Yes	No	Gray	No
PowerBook 145	No	Yes	No	Gray	No
PowerBook 145b	No	Yes	No	Gray	No
PowerBook 150	No	No	No	Gray	No
PowerBook 160	No	Yes	No	Gray	Yes
PowerBook 165c	No	Yes	No	Gray	Yes
PowerBook 170	No	Yes	No	Gray	No
PowerBook 180	No	Yes	No	Gray	Yes
PowerBook 180c	No	Yes	No	Gray	Yes
PowerBook Duo 210	No	Yes	No	Gray	Yes**
PowerBook Duo 230	No	Yes	No	Gray	Yes**
PowerBook Duo 250	No	Yes	No	Gray	Yes**
PowerBook Duo 270c	No	Yes	No	Gray	Yes**
PowerBook 520/520c	No	No	No	Gray	Yes
PowerBook 540/540c	No	No	No	Gray	Yes
Duo Dock	No	Yes	Yes	Gray	No
Power Macintosh 6100!	Last device	Yes	Yes	Gray	No
Power Macintosh 7100!	Intrnl hd	Yes	Yes	Gray	No
Power Macintosh 8100!	Last device	Yes	Yes	Gray	No

! Power Macintosh information is valid for all speeds of the particular Power Macintosh model.

Apple Workgroup Server					
AWS 60	Intrnl hd	Yes	Yes	Gray	No
AWS 80	Intrnl hd	Yes	Yes	Gray	No
AWS 95	On cable	Yes	Yes	Gray	No

NOTES:

* An active termination circuit automatically terminates the internal device when it is the last device on the bus. If a terminated device is attached to the external SCSI port, the internal termination is deactivated.

** These PowerBook Duos work in SCSI Disk Mode with a minidock.

Printer Information

Here is a description of the information provided in each column of the following table:

Direct Connect

Indicates if the printer includes a direct SCSI connection.

External Port

Indicates if the printer includes an external SCSI port (for additional font storage).

Term. Type

Indicates the type of terminator required for the external port.

TPWR

Indicates if termination power is supplied and, if so, if it is internal or external.

Reserved SCSI IDs

Indicates if the printer includes a reserved SCSI ID and, if so, what ID number is reserved.

NOTE: The asterisks in the table correspond to footnotes that follow the table.

Printer Name	Direct Connect	External Port	Term. Type	TPWR	Reserved SCSI IDs
LaserWriter	No	No	n/a	n/a	n/a
LaserWriter Plus	No	No	n/a	n/a	n/a
LaserWriter IISC	Yes	Yes	Grey	No	7
LaserWriter IINT	No	No	n/a	n/a	n/a
LaserWriter IINTX	No	Yes	Gray	No	7
LaserWriter IINTXJ	No	Yes	Gray	No	7
LaserWriter IIf	No	Yes	Black	No	6
LaserWriter IIg	No	Yes	Black	No	6
LaserWriter Pro 600	No	No	n/a	n/a	n/a
LaserWriter Pro 630	No	Yes	Black	Int-Yes Ext-No	6&7
LaserWriter Pro 810	No	Yes	Gray	Yes	7
LaserWriter Select 300	No	No	n/a	n/a	n/a
LaserWriter Select 310	No	No	n/a	n/a	n/a
LaserWriter Select 360	No	No	n/a	n/a	n/a
Personal LaserWriter SC	Yes	Yes	Grey	No	7
Personal LaserWriter LS	No	No	n/a	n/a	n/a
Personal LaserWriter NT	No	No	n/a	n/a	n/a
Personal LaserWriter NTR	No	No	n/a	n/a	n/a
Personal LaserWriter 300	No	No	n/a	n/a	n/a
Personal LaserWriter 320	No	No	n/a	n/a	n/a
Apple Color Printer	Yes	No	***	No	****
StyleWriter	No	No	n/a	n/a	n/a
StyleWriter II	No	No	n/a	n/a	n/a
Color StyleWriter Pro	No	No	n/a	n/a	n/a

NOTES:

*** The Macintosh model determines which terminator to use.

**** Indicates the SCSI ID is user-selectable.

Article Change History:
30 May 1995 - Corrected SCSI printer info.
23 Mar 1995 - Updated article; reformatted tables for readability.
22 Mar 1995 - Corrected wording of Duo Dock.

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Tech Info Library Article Number:14806

Tech Info Library

ARA Client: Problems w/Installation from Hard Drive (10/95)

Revised: 10/17/95
Security: Everyone

ARA Client: Problems w/Installation from Hard Drive (10/95)

==========

Article Created: 21 February 1994
Article Reviewed/Updated: 16 October 1995

TOPIC ----------

I cannot install Apple Remote Access. When I double-click the Apple Remote Access Installer that came pre-loaded on my Macintosh PowerBook hard drive, I get a dialog box which asks me to insert the disk "Installer." I don't have a disk called "Installer." How can I install this software?

DISCUSSION ----------

Apple Remote Access (ARA) Client (version 1.0 or 2.0) comes bundled with several Macintosh PowerBook computers. Sometimes you may have problems running the ARA 1.0 Installer from your hard disk as described in the manual.

The following discussion describes a work around that will let you successfully run the ARA 1.0 installer. You will need one 1.4 Megabyte (MB) floppy disk.

NOTE: Before you begin, make sure you double-click on the Installer application, and not the script.

If you have tried double-clicking on the installer application, and still have problems with the installation, follow these instructions:

NOTE: This procedure only works for ARA Client software version 1.0. The ARA Client software version 2.0 or later installer does not show these symptoms and should install properly.

1) Format a 1.4 MB floppy disk and name it "Installer".
2) Locate and open the Apple Remote Access folder on the Hard Disk.
3) You should see four items inside the folder: ARA Installer, Remote Access Read Me, Remote Access Script and a folder called Installer. Copy all items but the Installer folder to the floppy disk.
4) Open the remaining folder "Installer," and copy all 8 items from inside this folder to the floppy disk.

5) Open the floppy disk window and verify that you see 11 items.
6) Open the Chooser and make AppleTalk active.
7) Restart the computer from the Special Menu.
8) Hold the shift key down after the start up chime. Keep holding the Shift key until you see "Welcome to Macintosh. Extensions Off." Release the Shift key.
9) Insert the "Installer" floppy disk.
10) Open the floppy disk window and click twice on the ARA Installer.
11) Restart. ARA is now installed.

Article Change History:
16 Oct 1995 - Clarified ARA 2.0 information.
14 Dec 1994 - Noted that process is for version 1.0 only.
26 Jul 1994 - Changed title, included ARA 2.0, clarified instructions.

Support Information Services

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Tech Info Library Article Number:14807

Tech Info Library

Color Clasc, Perf 550/636CD & LC520: Flashing Menu Bar (8/94)

Revised: 8/31/94
Security: Everyone

Color Clasc, Perf 550/636CD & LC520: Flashing Menu Bar (8/94)

==========

Article Created: 18 February 1994
Article Reviewed/Updated: 31 August 1994

TOPIC -----

The Menu Bar constantly flashes on systems with built-in volume buttons such as the Color Classic, the LC 520, the Performa 550, and Performa 636 CD. Zapping the PRAM, booting from a floppy, and/or reinstalling the System Software made no difference.

DISCUSSION -----

The volume button on the front of the machine (labeled with a speaker icon) is stuck in the down position, and when the volume reaches zero, the menu bar flashes. To verify, open up the Sound control panel, and turn the volume to maximum. You will see the volume go all the way back to zero, with a beep at each increment, and the menu bar will start flashing again.

The solution is to press the sound button a few times to see if the button can be freed. If it cannot be changed, then the system will need to be repaired.

Article Change History:
31 Aug 1994 - Added Performa 636 CD to the list.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14808

Tech Info Library

Removing PMSAM from Key Chain - Lost Mail (12/94)

Revised: 12/8/94
Security: Everyone

Removing PMSAM from Key Chain - Lost Mail (12/94)

==========

Article Created: 21 February 1994
Article Reviewed/Updated: 8 December 1994

TOPIC ----------

Removing a PMSAM (gateway) from your key chain will appear to remove all mail in your PowerTalk mail box associated with that PMSAM (gateway).

DISCUSSION ----------

Starnine ships a QuickMail and Simple Mail Transfer Protocol (SMTP) Personal Message Access Module (PSAM) for Macintosh computers running PowerTalk. The PMSAMs serve as mail gateways retrieving mail from other systems for your PowerTalk mail box, and their preferences are stored in the PowerTalk Setup Preferences file.

There are two ways to recover the missing mail:

1) Look in System Folder: PowerTalk Data: IPM Bin folder path. The IPM Bin folder contains all local queues like in and/or out mail. All of the messages are still there with blank icons and 8-digit file names. You can simply drag the files over the AppleMail application and they will launch and display your messages, attachments included. You can also open the files within AppleMail, and do a Save As to restore the original type and creator so the files are double-click able AppleMail documents again. Although untested, this procedure should apply to messages created by other PowerTalk applications.

2) Change the file type and creator of the files with the 8-digit file names found in System Folder: PowerTalk Data: IPM Bin using a file utility such as FileType, Disk Top or ResEdit. Set as follows:

type: lttr
creator: lap2

Then move the files out of IPM Bin, and open them with AppleMail (or other appropriate mail application).

Article Change History:
08 Dec 1994 - Added information on the PMSAM preferences and IPM Bin folder.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14809

Tech Info Library

Deleting forgotten root password under A/UX (3/94)

Revised: 3/7/94
Security: Everyone

Deleting forgotten root password under A/UX (3/94)

==========

Article Created: 7 March 1994

TOPIC ----------

I have forgotten my root password under A/UX, how do I create a new one?

DISCUSSION ----------

There are several ways to delete the existing root password:

If Secure Startup is set:

1) Get a clean copy of A/UX startup from their distribution CD, and reinstall.

2) While booted under the Macintosh Operating System, launch ResEdit, and change the resource in the A/UX Startup application SASH ID=1 which is called “state.” Flip the "check passwords" field of this resource ID from 1 to 0 to disable password checking. You need not worry about the existence of the auxstartuprc file in /etc. To re enable switch the field back to 1.

   The existence of the auxstartuprc in /etc does NOT guarantee password checking. Even if the file is not there the bit in A/UX Startup application REALLY controls this behavior.

When Secure Startup is not set:

The actual commands that you will type are enclosed in <> characters for clarity.

1) Start the AWS 95 or launch A/UX Startup.
2) At the "Welcome to A/UX" dialog, click the Cancel button.
3) At the Startup# prompt, type <launch -S> . This will cause A/UX to come up in single user mode.
4) Type <cp /etc/passwd /etc/passwd.old>

5) Once A/UX comes up in single user mode, type <vi /etc/passwd> . This will start the vi text editor and open the passwd file. You will see the passwd file looks something like this:

```
root:CSFE80x0tKY92:0:0::/:/bin/sh
daemon:*:1:1::/:
bin:*:2:2::/bin:
sys:*:3:3::/bin:
adm:*:4:4::/usr/adm:
```

The character string CSFE80x0tKY92 in the first line is the encrypted root password. The encrypted password string will be different on every system. This is the part that must be deleted.

6) Use the arrow keys to move the cursor to the first character of the encrypted password string.
7) With the cursor sitting on top of the first character, in this example the letter C, press the <x> key to delete the characters of the password one at a time.

   BE VERY CAREFUL not to delete the colon (:) at the end of the password string or anything after.
   When you are done, the first line should look like this:

   ```
   root::0:0::/:/bin/sh
   ```

8) To save the changes you made type <:w!> and press return.
9) To exit the vi editor type <ZZ> . That's shift with two z's.
10) To restart the Macintosh type <reboot> at the command line prompt.
11) To log in, type <root> in the Name field and leave the Password field blank.

If you make any mistakes while editing the /etc/passwd file, type <:q!> to quit without saving changes. Then start over again.

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14810

Tech Info Library

Serial Port Arbitration and Apple Remote Access (2/96)

Revised: 2/8/96
Security: Everyone

Serial Port Arbitration and Apple Remote Access (2/96)

==========

Article Created: 7 March 1994
Article Reviewed/Updated: 8 February 1996

TOPIC -----

Article discusses Serial Port Arbitration and Apple Remote Access (ARA).

DISCUSSION -----

When an ARA connection is established (or being established when answering or making a call), ARA prevents other application programs from using the serial port you selected in the Remote Access Setup control panel. In this case, most programs will inform you that the port is in use.

If your Macintosh is set up to answer calls (the "Answer calls" checkbox in the Remote Access Setup control panel is selected), then other programs are allowed to use the serial port. When they are finished with the port, ARA re-enables your Macintosh to answer calls.

ARA Personal Server provides this port arbitration through a system extension called the Serial Port Arbitrator located in the Extensions folder. Some programs that use the serial port may not be compatible with this extension. If you suspect this, remove the Serial Port Arbitrator file from the Extensions folder, restart your Macintosh, and try the program again.

NOTE: The Serial Port Arbitrator is not needed with ARA Client software. If you remove the Serial Port Arbitrator and use ARA Personal Server, you must either select, or deselect Answer calls in the Remote Access Setup control panel. Also the Serial Port Arbitrator will not work on a Macintosh if ARA Personal Server has not been installed.

Article Change History:
08 Feb 1996 - Changed title and added information in Note section.

Support Information Services

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Tech Info Library Article Number:14811

Tech Info Library

AppleShare: Users & Groups Strange Entries (_SMU0000) (5/94)

Revised: 5/25/94
Security: Everyone

AppleShare: Users & Groups Strange Entries (_SMU0000) (5/94)

==========

Article Created: 7 March 1994

TOPIC -----

My Users and Groups file in AppleShare contains strange name entries such as: _SMU0000 through _SMU0099 and groups entries such as: _SMG0000 through _SMU0025. What has caused this?

DISCUSSION -----

Check to see if you have the Server Manager from TechWorks (Technology Works) installed on this machine. The Server Manager does create a duplicate users and group file called SMBasis. This file is created in order to allow the remote administration to change users and groups from another machine. Server Manager makes a private copy of the Users and Groups Data file (SMBasis) when making changes, and then swaps the temporary file with the original Users and Groups datafile when the change is complete.

This problem should be referred to TechWorks/Santorini.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14813

Tech Info Library

ARA on a Quadra 900, 950 or IIfx with Virtual Memory (4/94)

Revised: 3/7/94
Security: Everyone

ARA on a Quadra 900, 950 or IIfx with Virtual Memory (4/94)

==========

Article Created: 7 March 1994

TOPIC --------------------

ARA Personal Server and Virtual Memory

DISCUSSION --------------------

If you are using a Macintosh IIfx, Macintosh Quadra 900, or Macintosh Quadra 950 and have virtual memory turned on, you must open the Serial Switch control panel (included on the Install 2 disk) and set the serial port setting to Compatible.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14814

Tech Info Library

Math Coprocessor (FPU): Which Centris & Quadras Have One (3/94)

Revised: 3/7/94
Security: Everyone

Math Coprocessor (FPU): Which Centris & Quadras Have One (3/94)

==========

Article Created: 7 March 1994

TOPIC -----

Which Macintosh Centris & Quadra products have an Math Coprocessor (FPU)
and which do NOT.

DISCUSSION -----

Quadra 605 (NONE of the configurations have an FPU)

Macintosh Centris 610 (NONE of the below configurations have an FPU)

M1345LL/A Macintosh Centris 610 4 MB Hard Disk 80 CPU (no Ethernet)
M1392LL/A Macintosh Centris 610 4 MB Hard Disk 80 CPU
M1397LL/A Macintosh Centris 610 8 MB Hard Disk 230 CPU
M1398LL/A Macintosh Centris 610 8 MB (1 MB VRAM) Hard Disk 230 CPU w/CD-ROM

Macintosh Quadra 610 (first two configurations below HAVE an FPU)

M2098LL/A Macintosh Quadra 610 (512K VRAM) 8 MB Hard Disk 230
M2099LL/A Macintosh Quadra 610 8 MB Hard Disk 230 w/CD-ROM

M2319LL/A Macintosh Quadra 610 (512K VRAM) 8 MB Hard Disk 160 (NO FPU)

Macintosh Centris 650 (first four configurations have an FPU)

M1613LL/A Macintosh Centris 650 8 MB Hard Disk 80 CPU
M1337LL/A Macintosh Centris 650 8 MB Hard Disk 230 CPU
M1279LL/A Macintosh Centris 650 8 MB (1 MB VRAM) Hard Disk 230 CPU w/CD-ROM
M1209LL/A Macintosh Centris 650 8 MB Hard Disk 500 CPU

M1276LL/A Macintosh Centris 650 4 MB Hard Disk 80 CPU (NO Ethernet or FPU)

Macintosh Quadra 650 (ALL configurations have an FPU)
Macintosh Quadra 700 (ALL configurations have an FPU)

Macintosh Quadra 800 (ALL configurations have an FPU)
Macintosh Centris/Quadra 660AV (ALL configurations have an FPU)
Macintosh Quadra 840AV (ALL configurations have an FPU)
Macintosh Quadra 900 (ALL configurations have an FPU)
Macintosh Quadra 950 (ALL configurations have an FPU)

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14815

Tech Info Library

Visual Effects Don't Work, HyperCard 2.2 (6/95)

Revised: 6/19/95
Security: Everyone

Visual Effects Don't Work, HyperCard 2.2 (6/95)

==========

Article Created: 7 March 1994
Article Reviewed/Updated: 16 June 1995

TOPIC ----------

I created a new button in my HyperCard 2.2 stack, and added visual effects to it using "Effect" in the Button info dialog box, but the visual effects don't appear to be working. What's wrong?

DISCUSSION ----------

In HyperCard 2.2, when Color Tools resources have been added to a stack, and the Color Tools palette is opened, the following handlers are added to the stack script:

```
on openCard
  Send colorMe to this card
  pass openCard
end openCard

on closeCard
  lock screen
  pass closeCard
end closeCard

on colorMe
  AddColor colorCard,stamp,30
end colorMe

on openStack
  AddColor install
  pass openStack
end openStack

on closeStack
  AddColor remove
```

```
  pass closeStack
end closeStack
```

As you can see, the on closeCard handler locks the screen, so unless messages have been locked in your button script, the visual effects will not be seen. Note that simply opening the "Coloring Tools" palette is what places these handlers in the home stack script; it doesn't matter whether the stack has actually been colored or not Removing the Color Tools resources does not remove these handlers.

The best solution here is to remove the black & white effect scripts from the buttons, turn on Color Tools, and use the Color Transitions menu for visual effects. You can set a transition for the entire stack, override that choice with a transition for a specific background, and then override that choice with individual transitions for individual cards within your stack.

You can use the visual effects that Color Tools provides by doing the following:

1) Select "Coloring Tools" under the "Color" menu
2) Select either stack transitions, background transitions, or card transitions from the "Effects" menu (see the Color Tools stack for more information).

Error messages such as "Can't Understand ColorMe" and Can't Understand AddColor" when opening and closing cards can be remedied by deleting the handlers from stack scripts, or use the lockmessages command. If you do lock out the commands, and you have added color to the card following the card with the button script that you edited, the color will not be there when you go to that next card. If you paste it and then come back to the card, the color will there. This is an anomoly of combining Color Tools with these locked out messages.

Article Change History:
19 June 1995 - Reworded workaround to clarify effects
09 Jun 1995 - Reworded workaround for clarification purposes.

Support Information Services

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Tech Info Library Article Number:14816

Color StyleWriter Pro: ColorSync Matching Methods (3/94)

Revised: 3/7/94
Security: Everyone

Color StyleWriter Pro: ColorSync Matching Methods (3/94)

==========

Article Created: 3 March 1994

TOPIC --

This article explains each of the ColorSync Matching Methods on the Color StyleWriter Pro printer.

DISCUSSION --

Photographic - Photographic matching is best for images with many different colors and shades, especially when the image included a neutral color (such as a white border). This method allows for better continuous tone changes from one color to another.

Business Graphics - Business Graphics matching is best for charts, graphs, and other images with large areas of single colors.

Spot Color - Spot Color matching works best for images that have a large area of similar colors or shades of one color, and for images that do not include a neutral color (such as a white border). This method allows continuous tone consistency with any selected color. For example, a small background color behind a heading.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14818

Tech Info Library

AppleCD 300i Plus Drive: Specifications (Discontinued)

Revised: 8/19/96
Security: Everyone

AppleCD 300i Plus Drive: Specifications (Discontinued)

==========

Article Created: 7 March 1994
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

This article provides specifications for the AppleCD 300i Plus internal CD-ROM drive.

DISCUSSION ----------

Playback Medium

- 12 cm optical disc (any CD-ROM or audio compact disc is compatible) tray loading, no caddy required.

Capacity

- Mode 1: 656MB
- Mode 2: 748MB
- Recording surfaces: 1
- Data/block (available to user):
  - Mode 1: 2048 bytes
  - Mode 2: 2336 bytes
- Blocks per disc: more than 270,000

Audio Playback

- Playing time: more than 1 hour
- Frequency response: 20 to 20,000 Hz

Characteristics

- Rotational Speed:
  - Normal speed (1X): 230 to 530 rpm
  - Double speed (2X): 460 to 1060 rpm

- Average Access Time:
  - Normal speed (1X): 410 ms
  - Double speed (2X): 295 ms

- Data Streaming Rate, Normal Speed (1X)
  - Mode 1: 150KB/sec
  - Mode 2: 171KB/sec

- Data Streaming Rate, Double Speed (2X)
  - Mode 1: 300KB/sec
  - Mode 2: 342KB/sec

- Block Rate:
  - Normal speed (1X): 75 blocks/sec
  - Double speed (2X): 150 blocks/sec

- SCSI Bus Transfer Burst Rate (over one CD-ROM block):
  Asynchronous 2.5MB/sec
  Synchronous 2.1MB/sec

- Buffer Size: 256KB

Formats Supported

- Multisession Kodak Photo CD
  (QuickTime required)
- ISO 9660/High Sierra
- Macintosh HFS
- CD-ROM XA (requires additional ADPCM hardware to read compressed audio)
- CD+G
- CD+MIDI
- Standard Audio CDs
- CD Digital Audio Data Via SCSI Bus

Electrical Requirements

- Power Requirements:
  - +5V DC +/-5%, +12V DC +/-10%

- Power Consumption (typical):
  - 450 mA for +5V DC
  - 420 mA for +12V DC

Operating Environment

- Temperature:
  - 41° F to 122° F (5° C to 50° C)

- Relative Humidity: 5% to 90% noncondensing

Non-operating Environment

- Storage Temperature (6 months): -22° F to 122° F (-30° C to 50° C)

- Transportation Temperature (72 hours): -40° F to 149° F (-40° C to 65° C)

- Relative Humidity: 5% to 95% noncondensing

System Requirements

- Macintosh Quadra 610, 660AV, 650, 800, 840AV, 900, 950 with appropriate mounting hardware and cabling.

- AppleCD SC Setup software version 5.x or later.

Article Change History:
19 Aug 1996 - Corrected misspelling.

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Tech Info Library Article Number:14819

AppleCD 300e Plus and 300i Plus: General Description (5/96)

Revised: 5/17/96
Security: Everyone

AppleCD 300e Plus and 300i Plus: General Description (5/96)

==========

Article Created: 7 March 1994
Article Reviewed/Updated: 16 May 1996

TOPIC -----

This article provides a general description of the AppleCD 300e Plus (external) and AppleCD 300i Plus (internal) CD-ROM drive.

DISCUSSION -----

Now your Macintosh computer can bring you into the world of CD-ROM–based multimedia with the double-speed AppleCD 300e Plus CD-ROM player. It's easy to connect and as simple to use as an audio CD player.

It can play audio CDs, but unlike a simple audio CD player, it also gives you access to the thousands of soft-ware programs, databases, educational and reference materials, QuickTime movies, clip art collections, and games now available on CD-ROM discs.

The AppleCD 300e Plus spins at double speed—the speed for which most CD-ROM titles are designed—and allows smoother playback of your QuickTime movies, video clips, and animated sequences.

The AppleCD 300e Plus also makes it possible to view photographs on your Macintosh—and use them in your documents.

This player is compatible with multisession Kodak Photo CD discs. To make your own Photo CD, just take your original film, negatives, or slides to an authorized Kodak photo processor for conversion into high-quality images on a disc. Then insert your disc into the AppleCD 300e Plus to view the images on your Macintosh. New photos can also be added to your Photo CDs at a later date.

You can connect the AppleCD 300e Plus to just about any Macintosh computer all by yourself. It attaches through the SCSI port on the back. No tools are required.

And if you have a Macintosh computer with a half-height, 5.25-inch removable-drive bay, you can have your local authorized Apple service provider (or reseller) add an AppleCD 300i Plus internal player right inside it.

Either way, your Macintosh will be equipped to bring you into the exciting, educational, and entertaining new world of CD-based multimedia.

Features

Performance

- Double-speed (up to 342 kilobytes per second) streaming data-transfer rate
- Access time of 290 milliseconds
- 256K cache and SCSI-2 inputs and outputs allow burst data-transfer rate of up to 2.5 megabytes per second

Compatibility

- Designed to work with Macintosh computers running system software version 6.0.7 or later, and Power Macintosh computers
- Connects to all computers with SCSI interface, including IBM PC compatibles and UNIX workstations
- Supports all major CD-ROM formats
- Can be shared over a network
- Plays standard audio CDs
- Exports audio CD tracks via SCSI port
- Exceeds Multimedia PC Level II specifications

Ease of use

- Loads CD via powered tray
- Set up and use in minutes
- Headphone jack and volume control (external model only)

Reliability

- Automatic lens cleaning
- Tested average life over 125,000 hours

Article Change History:
16 May 1996 - corrected spelling of SCSI-2
13 Feb 1995 - replaced entire discussion area.

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Tech Info Library Article Number:14820

Tech Info Library

Power Macintosh: DRAM Based Video Is Not Expandable (8/95)

Revised: 8/29/95
Security: Everyone

Power Macintosh: DRAM Based Video Is Not Expandable (8/95)

==========

Article Created: 4 March 1994
Article Reviewed/Updated: 29 August 1995

TOPIC ----------

Can I expand the DRAM allocated to video when using the HDI-45 port on my Power Macintosh computer?

DISCUSSION ----------

No. When using the HDI-45 connector, the computer senses the connection and automatically sets aside 640K of DRAM space for monitor support. There is no way to adjust DRAM allocation for monitor support on the following Power Macintosh models: 6100/60, 6100/66, 7100/66, 7100/80, 8100/80, 8100/100, and 8100/110.

If the monitor is connected in another way (through the DB-15 connector on an AV Video Technologies Card, or an VRAM Expansion Card on a Power Macintosh 7100/66 or 8100/80) the 640K of DRAM video allocation will become available for system use.

Article Change History:
29 Aug 1995 - Specified Power Macintosh models.
21 Mar 1994 - Clarified name of VRAM expansion card.

Support Information Services

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Tech Info Library Article Number:14822

Tech Info Library

LW Pro 810: Reading UNIX Network Installer Utility (3/94)

Revised: 3/8/94
Security: Everyone

LW Pro 810: Reading UNIX Network Installer Utility (3/94)

==========

Article Created: 8 March 1994

TOPIC ----------

This article explains how to use the UNIX Network Utility Installer that comes with the LaserWriter Pro 810 when there is not a 3.5-inch floppy drive on the UNIX workstation.

DISCUSSION ----------

The UNIX Network Utility Installer is a tar formatted disk that is used when configuring the LaserWriter Pro 810 in a UNIX environment.

Customers who do not have a UNIX workstation with a 3.5-inch floppy drive can order the software as a QIC24 tape, or they can use a Macintosh Utility like the shareware program Suntar to read the tar formatted disk and copy the files to a Macintosh computer.

Once the files are copied to a Macintosh computer, then the files can be transferred to the UNIX host using XMODEM, Kermit, or ftp.

Ordering Information

M2696LL/A - LaserWriter Pro 810 UNIX Network Utility Installer (QIC24)

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14827

Tech Info Library

LaserWriter Select 360: Paper-Out Lit With Envelope Tray (3/94)

Revised: 3/16/94
Security: Everyone

LaserWriter Select 360: Paper-Out Lit With Envelope Tray (3/94)

==========

Article Created: 8 March 1994

TOPIC ----------

When the optional envelope tray is attached to the LaserWriter Select 360 and I try to print, the Paper-Out LED comes on. This doesn't occur using the manual envelope feed.

How can I fix this?

DISCUSSION ----------

There is no option in the Page Setup menu to select the envelope cassette. If Universal Cassette is selected you get the paper out indication. You must select Auto Select in the Page Setup menu. You must do this because the software looks at what type of paper is being selected in the Page Setup and checks each cassette until it finds that size paper.

In order to print an envelope with the optional envelope tray on the LaserWriter Select 360, follow these steps:

1) Open the application program

2) Choose Page Setup from the File menu

3) Select envelope size (Comm 10 for business envelopes)

4) Select Landscape

5) Select OK

6) Choose Print from the File menu

7) Select Auto Select

8) Select Print

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14828

Tech Info Library

PowerBook Batteries: Types and How To Recycle (2/96)

Revised: 2/20/96
Security: Everyone

PowerBook Batteries: Types and How To Recycle (2/96)

==========

Article Created: 8 March 1994
Article Reviewed/Updated: 19 Febuary 1996

TOPIC ----------

This article describes the various batteries used in Apple portable products and how to properly dispose of a failed battery.

DISCUSSION ----------

Apple utilizes lithium, lead-acid, nickel-hydride, and nickel-cadmium batteries in our portable products. These batteries should be returned to Apple for recycling or proper disposal.

Customers can take their failed batteries to an Apple authorized service provider who can utilize the Apple Direct Air Shipping and Handling Program to return the failed batteries. Customers may not return the batteries themselves. If they do, it will be returned to them.

Authorized service providers may send failed batteries to the following address:

Apple Computer, Inc.
NiCd Battery Recycling
3011 Laguna Blvd.
Bldg. A
Elk Grove, CA 95758

Lithium Batteries

Lithium batteries require disposal when “dead,” but you cannot throw them away. In addition to being potentially explosive, lithium is water reactive, requiring these batteries to be disposed of as hazardous waste. Therefore, after removing a “dead” battery from a board, clip off the lead wires (necessary for soldered batteries) and place the battery into the zip-lock wrapper that the replacement battery was taken from. Mark the

battery “dead” and return it to Apple, where it will be disposed of following EPA guidelines.

Lead-Acid Batteries

The Macintosh Portable and Macintosh PowerBook 100 main batteries are sealed lead-acid batteries. These batteries, which contain hazardous materials (lead and sulfuric acid), should not be thrown away with regular trash. Send the Macintosh Portable and PowerBook 100 batteries to Apple for recycling. Return batteries that are not physically damaged in the same packaging that new batteries were received in. If the batteries are physically damaged (for example, leaking), do not return them to Apple. Dispose of them according to your local ordinances.

Nickel-Cadmium Batteries

The Macintosh PowerBook 140 and 170 main battery is nickel-cadmium (NiCad). The battery, which contains hazardous materials that can be reclaimed, should be returned to Apple for recycling. Return batteries that not physically damaged in the same packaging that the new batteries were received in. If the batteries are damaged, do not return them to Apple. Instead, dispose of them according to your local ordinances.

** WARNING **
Contacting the +/- terminals with metal objects such as paper clips or key chains can cause burns or start a fire. Always store the battery in its protective cover when not in use.

Nickel-Hydride Batteries

The Macintosh PowerBook Duo batteries are nickel-hydride (NiHy). These should be returned to Apple for recycling. Return batteries that are not physically damaged in the same packaging that the new batteries were received in. If the batteries are damaged, do not return them to Apple. Instead, dispose of them according to your local ordinances.

Article Change History:
19 Feb 1996 - Emphasized that only dealers are allowed to mail in batteries.
29 Apr 1994 - Clarified use of address is for authorized service provider only.
15 Mar 1994 - Added address to send batteries to.

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Tech Info Library Article Number:14829

Power Macintosh: Customer Issues Q & A (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh: Customer Issues Q & A (3/94)

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Article Created: 8 March 1994

TOPIC -----

This article contains questions and answers related to customer issues for Power Macintosh.

DISCUSSION -----

Q) How do I briefly explain and position Macintosh with the PowerPC microprocessor?
A) Macintosh with PowerPC technology is the next generation of personal computing.
- A price/performance breakthrough based on RISC technology.
- Offers smooth migration paths for both Macintosh and PC users.
- Has excellent future growth on the Apple, IBM, and Motorola alliance.
- Introduced first in the mid to high end of product line.

Q) When should K-12 customers consider a PowerPC-based computer?
A) If a K-12 customer is currently considering a Macintosh Quadra or has cross platform needs (DOS, Windows), then the Power Macintosh would be an appropriate choice.

Q) Will a Power Macintosh "look" different than a Macintosh today?
A) The primary operating system for the Power Macintosh is System 7 the same operating system shipping with every Macintosh today. Apple is moving our mainstream operating system to PowerPC technology. Users get the power of RISC technology, familiar Macintosh user interface, and need no re-training.

Q) How do I position Power Macintosh to a DOS or Windows friendly audience?
A) Here we need to explain the advantages of making the technology leap to RISC technology, exemplifying Apple's technology leadership. Once people understand this, we can show why Apple has an excellent migration story.

Q) What sort of upgrade solutions will Apple have available at introduction, and how much will those upgrades cost?
A) Apple has stated that upgrades for Quadra and Centris models will be available at introduction. Additionally, Apple and third-party developers are working to create upgrades for other Macintosh models as well.

Q) Will important K-12 applications be compatible at introduction (for example, ClarisWorks, Mac School, HyperCard)?
A) Nearly any application that runs on current 680x0 models will be compatible on Power Macintosh. While the initial focus for native applications is targeted more towards mid-range and high-end customers, we expect most developers to start Power Macintosh projects soon if they haven't already. Claris has announced a Power Macintosh version of ClarisWorks.

Support Information Services

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Tech Info Library Article Number:14830

Tech Info Library

Power Macintosh: Software Issues Q & A (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh: Software Issues Q & A (3/94)

==========

Article Created: 8 March 1994

TOPIC -----

This article contains questions and answers related to software issues for Power Macintosh.

DISCUSSION -----

SOFTWARE ISSUES

Q) How compatible are today's applications with the PowerPC Macintosh?
A) Today's Macintosh applications should run, without modification, on Power Macintosh models. Apple expects their performance to be surprisingly responsive. In actual use, performance will range from a fast 68030 to a 68040 based Macintosh. Apple has been testing third party software at developer conferences throughout the world, as well as in our own labs. After testing over a thousand packages, we are confident that compatibility will be excellent.

Q) What about DOS or Windows?
A) Power Macintosh computers gives us a greatly improved story for DOS/Windows users. InsigniaSolutions is working on a native version of SoftPC, which they call SoftWindows, for Power Macintosh models. The PowerPC 601 microprocessor is a far better platform for their emulator than today's 68040. Consequently a DOS or Windows program can run at speeds comparable to a 486. With this technology, Power Macintosh offers a migration path for the two operating systems that really matter in the large marketplace today -— Macintosh and DOS/Windows.

Q) Will my existing peripherals work (CD-ROM, hard drives, scanners, printers)?
A) YES! AppleTalk devices (such as printers), SCSI devices (such as hard disks, scanners, and CD-ROMs), ADB devices (such as mice, trackballs and keyboards), and other Macintosh cards and peripherals are compatible with Power Macintosh. If a hardware device works with the new Macintosh

AV systems, the odds are excellent that it will work on Power Macintosh with no problems.

Q) Will PowerPC and 680x0 based microprocessor systems co-exist on the same network or environment?
A) Yes. You will be able to mix RISC based and 680x0 based Macintosh systems on the same networks, exchange files and disks between them, and enjoy all the other benefits expected from a Macintosh.

Q) Which applications will be ready at release and when will a substantial number of native applications be available?
A) Because Power Macintosh is being initially introduced at the mid to high range, areas of emphasis are business applications, high end graphics and publishing applications and higher education science and engineering applications.

Q) Will Apple be publishing a list of Power Macintosh compatible software?
A) Nearly all software that currently runs on 680x0 based Macintosh models will run on Power Macintosh. A list of exceptions is more likely than a list of compatibles, since most all applications will be running at introduction.

Support Information Services

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Tech Info Library Article Number:14831

Tech Info Library

Power Macintosh: LAN Software Compatibility (5/96)

Revised: 5/27/96
Security: Everyone

Power Macintosh: LAN Software Compatibility (5/96)

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Article Created: 8 March 1994
Article Reviewed/Updated: 27 May 1996

TOPIC ----------

This article details the Power Macintosh compatibility of these Apple client and server software products:

- AppleSearch
- AppleShare family
- Apple Remote Access family
- Apple Internet Router
- A/UX
- System 7 Pro/PowerShare Collaboration Servers

DISCUSSION ----------

For each product, there is detailed information regarding compatibility at introduction for existing products, and revision schedules and distribution plans for Power Macintosh compatible upgrades. Some of these revisions coincided with the PowerPC Server introduction in May 1994.

Apple LAN Systems - Server and Client Software Compatibility

The following two tables summarize the compatibility and upgrade information. A more detailed description follows the tables.

Begin_Table

Apple LAN Systems – Power Macintosh Server Software Compatibility

PRODUCT	COMPAT. VERSION	UPGRADE METHOD	DATE AVAIL.	PRICE

AppleSearch Server	1.0.1	Patch - On AppleLink, ftp servers, or 1-800-SOS-APPL	May 94	Free
AppleSearch Trial CD	1.0.1	Patch - Delivered with AppleSearch 1.0.1 patch	May 94	Free
AppleShare 3	N/C*	Upgrade to AppleShare 4.0.2 via AppleShare Upgrade Kit Available through dealer	May 94	$699
AppleShare 4	4.0.2	AppleShare 4.0.2 Update Kit Available through fulfill-ment house	May 94	TBD
AppleShare 4	4.1	AppleShare 4.1 Update Kit Only for Power PC processor based computers. Available through fulfill-ment house.	May 95	$199
AppleShare Pro	N/C*	N/A	N/A	N/A
Apple Remote Access Multi-Port Server	2.0.1	Apple Remote Access Multi-Port Server 2.0.1 Update Kit	Jun 94	TBD
Apple Remote Access Per-sonal Server	2.0	N/A	Now	N/A
Apple Internet Router	3.0.1	Upgrades from version 3.0 on AppleLink and ftp servers or call 1-800-SOS-APPL	Now	Free
PowerShare Collaboration	1.0**	Available on AppleLink, ftp servers, and dealer channels	TBD	TBD
A/UX	N/C*	Distribution of upgrades from A/UX to PowerOpen to be announced at a later date	TBD	TBD

NOTES: * N/C means Not Compatible
** With PowerTalk Manager 1.0.2

End_Table

Begin_Table

Apple LAN Systems – Power Macintosh Client Software Compatibility

PRODUCT	COMPAT. VERSION	UPGRADE METHOD	DATE AVAIL.	PRICE
AppleSearch Client	1.0	N/A	Now	N/A
AppleShare Client	3.5*	Already ships with Apple-Share 4.0/4.0.1, AppleShare Pro; will ship with System 7.1.2	Now	Free

AppleTalk Remote Access 1.0	N/C**	Upgrade to ARA 2.0 Client or Personal Server; available through dealer channel	Now	Client $29 Srvr. $79
System 7 Pro	***	Available on AppleLink, ftp servers, and dealer channel	Now	Free

NOTES: * Not sold stand alone
** N/C means Not Compatible
*** System 7 Pro with PowerTalk Manager 1.0.2

End_Table

Product Upgrade Strategies
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AppleSearch

Compatibility as of Mar. 14 - AppleSearch 1.0 server is incompatible with Power Macintosh at the March 14th Desktop Introduction. AppleSearch Server 1.0 Demo Version on Trial CD is also incompatible with Power Macintosh. This is because AppleSearch Server 1.0 will only run on 68040-based Macintosh computers and the Power Macintosh 68000 emulator reports itself as a 68020.

The AppleSearch 1.0 client, running in emulation mode, is compatible with Power Macintosh on March 14th.

Power Macintosh version - AppleSearch 1.0.1 Patch will provide compatibility with Power Macintosh. Version 1.0.1 will be available as a Patch which can be installed over AppleSearch 1.0. server and will run in emulation mode on the Power Macintosh.

Version 1.0.1 will also run on 68040-based Macintosh computers, but there is no need to upgrade since there is no difference between version 1.0 and version 1.0.1 on 68040-based systems.

AppleSearch 1.0.1 Patch will be available in May 1994, and will contain two versions — one for the standard AppleSearch 1.0 server and one for the AppleSearch Trial CD.

Upgrade distribution -- AppleSearch Server 1.0.1 will be free and distributed via a Patch which will be posted on AppleLink, on Apple’s Internet ftp server, and on Service Provider’s servers. AppleSearch 1.0.1 Patch will also be added to the AppleSearch 1.0 kits for new AppleSearch purchases. The AppleSearch Trial CD 1.0.1 Patch will always accompany the AppleSearch 1.0.1 Patch.
In the United States, the AppleSearch 1.0.1 Patch will also be available, for free, directly from Apple at 1-800-SOS-APPL.

AppleShare

Compatibility as of Mar. 14 - AppleShare 3.0.3 is incompatible with Power Macintosh and is not supported by Apple. Apple recommends that all customers

wishing to run AppleShare on Power Macintosh upgrade to AppleShare 4.1.

AppleShare 4.0 and 4.0.1 servers are incompatible with Power Macintosh. Customers who wish to run an AppleShare server on a Power Macintosh computer should upgrade to AppleShare 4.1.

There are no differences between AppleShare 4.0.1 and AppleShare 4.0.2 when running on a 68040 processor based Macintosh, so there is no need to upgrade to 4.0.2 for this environment.

AppleShare 4.1 is only supported on PowerPC processor based Macintosh computers. AppleShare 4.1 shipped on many PowerPC WorkGroup Servers and is available as an upgrade for existing PowerPC WorkGroup Server customers.

AppleShare Pro is incompatible with Power Macintosh since AppleShare Pro only runs on A/UX, and A/UX does not run on Power Macintosh.

The AppleShare Workstation 3.5 (client software) is compatible with Power Macintosh on March 14th and ships with System 7.1.2 (System 7 for Power Macintosh). The same version (3.5) will also work as a client with Power Macintosh-based AppleShare servers (description to follow).

Upgrade Distribution - AppleShare 4.0.2 will be available for a nominal fee to all users of AppleShare 4.0 or 4.0.1 and will be distributed as an Update Kit in the U.S. via the Apple Order Center only. This special software kit contains the full AppleShare 4.0.2 software, but no manuals or serial numbers. A valid AppleShare 4 serial number is required to order the Update Kit.

Both the regular AppleShare 4 software kit and the AppleShare Upgrade Kit (for customers upgrading from AppleShare 2 or AppleShare 3) will be revised to version 4.0.2 and available through Apple’s standard software distribution channels.

Customers in the United States and Pacific region who buy a PowerPC Logic Board upgrade to their Apple Workgroup Server 60 or 80 will receive the AppleShare 4.0.2 Update Kit as part of the Logic Board accessory kit.

Customers in the U.S. wanting to upgrade from AppleShare 4.0, 4.0.1 or 4.0.2 to AppleShare 4.1 need to obtain the AppleShare 4.1 Update Kit (proof of 4.0.x purchase is required). The update can be obtained by calling the Apple Order Center. This program begins April 24, 1995 and ends December 29, 1995. Orders must be post marked by December 29, 1995.

Apple Remote Access

Compatibility at introduction -- AppleTalk Remote Access 1.0 Client and Server are incompatible with Power Macintosh.

The Apple Remote Access 2.0 Client and Personal Server are compatible with Power Macintosh running in emulation mode.

The Apple Remote Access MultiPort Server 2.0 is incompatible with Power Macintosh.

Power Macintosh Version -- Apple Remote Access MultiPort Server v.2.0.1 will provide Power Macintosh compatibility running in emulation mode. Version 2.0.1 is expected to ship in June 1994.

Upgrade Distribution -- Apple Remote Access MultiPort Server 2.0.1 will be available to all users of Apple Remote Access MultiPort Server 2.0 as an Update Kit via a fulfillment house for a nominal shipping and handling fee. The update kits will modify the Apple Remote Access MultiPort Server software only. No other changes are necessary. A valid Apple Remote Access MultiPort Server serial number is required to order the MultiPort Server Update Kit.

Owners of AppleTalk Remote Access Client/Server 1.0 wishing to run this software on a Power Macintosh must upgrade to version 2.0. These upgrades are available through regular Apple software distribution channels.

Apple Internet Router

Compatibility as of Mar. 14 - Apple Internet Router 3.0 is incompatible with Power Macintosh. The Apple Internet Router 3.0.1 is shipping now and is compatible with Power Macintosh running in emulation mode.

Power Macintosh Version - Apple Internet Router 3.0.1 is currently available as both a full kit for new purchases and as a Tune-Up to upgrade from version 3.0.

Upgrade Distribution - Apple Internet Router 3.0.1 is free to all users of Apple Internet Router 3.0 and is available as a Tune-up kit. The Tune-up kit provides a patch which can be installed over the Apple Internet Router 3.0. The Apple Internet Router 3.0.1 is available in the U.S. directly from Apple at 1-800-SOS-APPL, on AppleLink, and on Apple’s ftp servers. The regular Apple Internet Router 3.0.1 kits are available through Apple’s normal software distribution channels.

A/UX

Compatibility as of Mar. 14 - A/UX is incompatible with Power Macintosh.

Power Macintosh Version - Apple’s strategy is to migrate A/UX server (Apple Workgroup Server 95) customers to PowerOpen, which is based on IBM’s AIX UNIX operating system. PowerOpen availability dates have not yet been announced.

Distribution - The distribution plan for software upgrades from A/UX to PowerOpen will be announced at a later date.

System 7 Pro: PowerShare Collaboration Servers

Compatibility at introduction - PowerShare Collaboration Servers 1.0 and System 7 Pro (including PowerTalk) are incompatible with Power Macintosh at the March 14th Desktop Introduction. This is because the PowerTalk Manager needs to be revised to work with Power Macintosh.

Power Macintosh version - PowerTalk Manager 1.0.2 is required to use either

System 7 Pro or PowerShare Collaboration Servers on a Power Macintosh computer. A new Install Me First disk containing the PowerTalk Manager 1.0.2 will be available at the time of Power Macintosh introduction.

Upgrade distribution - This disk is available from the following electronic bulletin board services:

The Safe House DesignLink BBS
MacHaven BBS
America Online
Connect Inc.
General Videotex Corp./Delphi
Toronto Mac Developers Association
John Crow
The Rest of Us
Resource Central, Inc. (Genie)
San Diego Macintosh User Group
TwinCity Mac
Information Access Technologies, Inc.
MacRefuge BBS
MAUG/Micronetworked Apple (CompuServe) Users
MauiLink
Netrunner BBS
North Start computer Ltd
PressLink, Inc.
Deep Cove BBS
ZiffNet
Alaska Mac
Greyland BBS
Mac’s Place BBS

It is also available from Apple user groups, the Apple Volume License program, and Apple resellers.

The Tech Info Library article titled "Locating Vendor Information" can help you search for the Apple Order Center's phone number.

Article Change History:
27 May 1996 - Updated for technical accuracy.
01 Sep 1995 - Updated with AppleShare 4.1 information.
10 Oct 1994 - Reviewed and updated; added additional keyword

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Tech Info Library Article Number:14833

Tech Info Library

Short Description Of The PowerPC 601 Processor (3/94)

Revised: 3/11/94
Security: Everyone

Short Description Of The PowerPC 601 Processor (3/94)

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Article Created: 8 March 1994

TOPIC ----------

This is a short description of the features of the PowerPC 601 processor which will be used for Apple Computer's first RISC products.

The organization of this description follows that of the PowerPC ISA document. Some familiarity with processor architectures, particularly of RISC processors, is assumed in the following. Since the PowerPC 601 is close to "traditional" RISC processors in many ways, the amount of detail in this document will reflect areas which are different. In areas where PowerPC (and/or the 601) are similar to normal chips, very little verbage will be spent.

DISCUSSION ----------

Architecture

The 601 is the first chip to implement the new PowerPC architecture (as described in the Version 1.01 documents). However, since it is intended as a bridge chip for IBM, it also includes the existing POWER instruction set. It is, therefore, the union of the two instruction sets.

There are several areas where the architectures differ in a rather fundamental way (for example, virtual address translation); in these areas, PowerPC prevails.

Branch Processor

The Branch Processor is logically responsible for all instruction fetching of the PowerPC architecture. It also decodes instructions to determine to which execution unit they should be sent for execution. The 601 uses pre-fetching to attempt to keep ahead of the execution units. Up to 9 instructions are contained within the Branch Processor, in a so-called "pre-fetch pipeline". In the 601, the bottom stage of the pipeline is what is normally referred to as the "Decode" stage of traditional RISC pipelines.

As instructions fall out of the bottom of the pipe (that is, proceeding from Decode to Execute, by being sent to the Fixed Point and/or Floating Point processors), the pipeline is filled by the pre-fetch logic.

Branch Instruction Processing:

The Branch Processor in PowerPC (as in POWER) "executes" all branch instructions. Note that "executing" a branch simply means to continue fetching from a different location than the current sequential stream implies. The 601 examines the last 4 stages of the pre-fetch pipeline, looking for branches.

Unconditional branches cause the pipeline stages above (and, including) the stage in which the branch is detected to be "flushed". Fetching of instructions to re-fill the pipe are then made from the "target address" of the branch. (Note that a conditional branch whose condition is determined early enough is processes the same as an unconditional branch.)

Conditional branches whose condition is not yet known when processed by the Branch Processor are "predicted". That is, instruction pre-fetching will be attempted along a path (taken vs. not taken) which is "guessed" by the hardware. In the 601, this prediction is based upon the direction of the branch (that is, the sign of its displacement). A "backwards" branch is predicted as taken; a "forwards" branch is predicted as not taken.

When the first instruction of a predicted path reaches the Decode stage (that is, the bottom of the pre-fetch pipe), and the condition is not yet known, the Branch Processor will stall, waiting for an indication of whether its prediction was correct. When the condition becomes known, the Branch Processor will either let the instruction in Decode proceed to Execute (if it predicted correctly) or flush the entire pipeline and re-fetch from the correct path.

When a branch is detected early enough, the pipe can be refilled before it would run "dry". As long as branches can be detected (and, for conditional branches, the proper direction can be determined) early enough, branches "execute" in "zero" time. In the 601, this translates into a general rule that branches which are separated by at least two non-branch instructions will execute without branch-induced delays.

In the 601, only one "predicted" conditional branch can be "outstanding" at any time.

Mini-TLB.

Code fetches have to be translated like any other memory access. In order to minimize the overhead of translating every code fetch, the Branch Processor contains a copy of the last four page translations which were most recently fetched. Any fetch to one of these pages will not cause any explicit address translation. However, when a branch is taken to a page not contained within this mini-TLB, the branch is sent to the Fixed Point Processor, which performs the address translation. The resulting translation will update one of the 4 entries in the mini-TLB.

Accesses to addresses not contained in the mini-TLB will not be attempted until the branch is known to be taken. Thus, conditional branches will incur extra delay if they are not to one of the 4 most recently used pages.

Non-Branches

PowerPC includes a group of instructions which primarily operate upon the Condition Register. They are described within the Branch Processor chapter, because they were processed by the Branch Processor in the original POWER chip-set.

However, in the 601, only branch instructions are processed by the Branch Processor. All of the other "branch processor" instructions are actually executed by either the Fixed Point Processor or the "Sequencer".

Fixed Point Processor

The Fixed Point Processor is primarily intended to execute the Fixed Point instructions of PowerPC. However, as mentioned above, the 601's Fixed Point Processor also executes most of the non-branch instructions described in the PowerPC Branch Processor chapter.

The Fixed Point Processor also performs all address translation. Thus, all loads and stores (both Fixed and Floating Point) have their address generation (that is, computing the Effective Address) and translation (converting from EA->VA->RA) executed within the Fixed Point Processor. (A complete description of Address Translation appears as a separate section in this document).

In general, all Fixed Point instructions execute in one clock, and the result of the operation is immediately avaiable to a successive instruction. The exceptions to this rule are Loads (discussed below), Multiplies (which take 5 clocks for short results and 9 clocks for long) and Divides (which take up to 36 clocks). Multply and Divide instructions actually "stall" in the Execute stage of the Fixed Point Processor, thereby preventing execution of any following Fixed Point instructions until they complete.

The important timing number of Loads is its "latency". For example, if one has a "dependent" operation, how many extra clocks are required. In the 601, assuming that the data is aligned and in the cache, one "extra" clock is required to load the register with the correct data. This implies a general rule that one should have at least one instruction between a load and any dependent instruction in order to eliminate extra clocks.

Floating Point Processor

The Floating Point Processor executes all of the Floating Point instructions of PowerPC. In general, Floating Point instructions take 3 clocks to produce a result, with the exception being FP Divide, which takes up to 31 clocks. Thus, sequences of dependent Floating Point computations will execute at 1 every 3 clocks. However, sequences of Adds, Subtracts and Multiplys which can overlap their computations so that no dependencies are within the 3 clock latency will execute at 1 per clock.

A Floating Point Add or Subtract can be "issued" every clock, as long as its sources are available. Floating Point Multiplys can be issued every other clock. A Floating Point Divide stalls the entire unit.

Note that all Floating Point Loads and Stores require processing by the Fixed Point Processor (for address computation and translation). Thus, they fill a slot in both units.

Address Translation

The 601 implements the PowerPC translation mechanism, which is different from that of the original RS/6000s and the RSC. (See the Storage Control chapter in the PowerPC Operating Environment Architecture document for details.)

The PowerPC documents define the memory structure which is used for address translation (the Hash Table). Like most processors, the 601 uses a Translation Lookaside Buffer (TLB) to "cache" recently used translations to minimize the overhead of a full "table lookup" for translations. Addresses which translate to "recently used" pages will be found within the TLB, thereby circumventing the complete process of table walking.

The 601's TLB is organized as a 2-way set-associative cache with 128 sets, using LRU updating. Thus, up to 256 translations are available with no extra processing time required. (Note: if an operating system uses the full capabilities of the PowerPC translation mechanism, no explicit "flushing" of the TLB is necessary.)

If a translation is not available within the TLB, the Sequencer is invoked to perform the actual Hash Table walking.

Cache

The 601 contains a 32 KB Unified cache, organized as 8-way set-associative, with 64 sets, using LRU updating. Each cache line is 64 Bytes, divided into two "sectors"; a sector is the unit which is processed as a single burst transaction on the bus. (The term Unified means that the cache is shared between Code and Data.)

The cache is normally run in "Store-In" (CopyBack). This means that stores are performed by updating the cache contents and marking that cache sector as "dirty". Subsequent re-use of the cache line will cause dirty sectors to be written to memory.

Sequencer

In addition to the "architected" functional units described in the PowerPC documents, the 601 also contains a micro-coded "Sequencer". This sequencer performs any of the "hard" tasks which the hardware can't. This includes such things as Loads and Stores to "I/O" space (that is, accesses where the Segment Register has its T-bit == 1), TLB misses, exception processing (that is, processing interrupts).

Note that the Sequencer is normally inactive. When it does become activated

(for example, by a TLB miss), all processing in the Branch and Fixed Point and Floating Point Processors is suspended. In other words, the Sequencer "takes over" the hardware.

(The only reason for mentioning the Sequencer is that it is referred to in various other documents.)

Support Information Services

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Tech Info Library Article Number:14834

Tech Info Library

Power Macintosh: Audio Recording & Playback (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh: Audio Recording & Playback (3/94)

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Article Created: 8 March 1994

TOPIC -----

How do you record audio from a camcorder or VCR into the AV versions on the Power Macintosh? These devices use a line level audio source while the Power Macintosh 6100/60AV sound in uses a mic level audio source? I'm evaluating a 6100/60AV, and I've done extensive testing but cannot get the sound to play. The video digitizes and the sound digitizes but does not play. I'm an advanced multimedia user having worked extensively with these various media sources. The speaker on the 6100/60AV works because you can hear normal Macintosh sounds from it. The 6100/60AV is configured with 16MB RAM. I've done the testing with both Fusion Recorder and native Video Vision.

DISCUSSION -----

If you try to start recording audio with the Fusion Recorder without doing anything else, the problem that is described here will occur. The sound input has to first be chosen from the Sound Control Panel in the System Folder. Select AudioVision Sound in the pop-up menu and then choose Line Level input as a selection.

Support Information Services

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Tech Info Library Article Number:14835

Tech Info Library

QuickTime 2.0 and Audio AIFF (3/94)

Revised: 3/10/94
Security: Everyone

QuickTime 2.0 and Audio AIFF (3/94)

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Article Created: 10 March 1994

TOPIC -----

Does the audio side of QuickTime 2.0 use AIFF as the standard file format or do we use some other format?

DISCUSSION -----

QuickTime has its own internal audio file format. All versions of QuickTime can point to an AIFF file as a source file, but no version of QuickTime uses AIFF as a native file format.

Support Information Services

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Tech Info Library Article Number:14836

Tech Info Library

Macintosh Display Card 24AC: Technical Specifications (12/94)

Revised: 12/21/94
Security: Everyone

Macintosh Display Card 24AC: Technical Specifications (12/94)

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Article Created: 9 March 1994
Article Reviewed/Updated: 21 December 1994

TOPIC ----------

This article gives the technical specifications for the Apple Macintosh Display Card 24AC.

DISCUSSION ----------

System Requirements

- To use the Apple Macintosh Display Card 24AC, you need a Macintosh II family with NuBus slot, Centris, Quadra, or Power Macintosh computer.

  Note: Certain Macintosh II family computers can use this card with an additional NuBus adapter card.

- Macintosh-compatible monitor

- Hard disk

- 2 MB of RAM or more (4 MB or more recommended)

- Macintosh System software version 7.1 or later

Operating Environment

- Temperature: 10 to 55 degrees C (50 to 131 degrees F)

- Humidity: 5% to 95% noncondensing

- Altitude: 10,000 ft. Maximum (3048 m)

Dimensions

• 6.5x4 in.

Technical Specifications

Interface: NuBus

Connector: 15-pin D-Style (RS-343A)

Display Modes: The Apple Macintosh Display Card 24AC works with any of the following monitor modes:

Macintosh Resolutions	Additional Resolutions
640x480 @ 67Hz	640x480 @ 60Hz
832x624 @ 75Hz	800x600 @ 60Hz
1024x768 @ 75Hz	1024x768 @ 60Hz
1152x870 @ 75Hz	
640x870 @ 75Hz	

Maximum Bit Depth: 24-bit (all resolutions)

Maximum Colors: 16.7 million

NuBus Power Consumption: The maximum power allowances form different voltage sources are:

Voltage	Current (A)
+5	1.8
+12	0.0
-12	0.01

Video Port Specifications

Pin	Output Signal
1	Red Return
2	Red Video
3	C Sync
4	ID 1
5	Green Video
6	Green Return
7	ID 2
8	Reserved
9	Blue Video
10	ID 3
11	C Sync and V Sync Return
12	V Sync

13	Blue Return
14	H Sync Return
15	H Sync
Shell	Shell Ground

Article Change History:
21 Dec 1994 - Added Power Macintosh to computers supporting the card.

Support Information Services

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Tech Info Library Article Number:14837

Newton MessagePad 100: Specifications (3/94)

Revised: 3/10/94
Security: Everyone

Newton MessagePad 100: Specifications (3/94)

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Article Created: 7 March 1994

TOPIC ----------

This article discusses the technical specifications of the Newton MessagePad 100.

DISCUSSION ----------

Newton Recognition Architecture

- Recognizes handwriting: printed, cursive, or mixed-word recognition with the assistance of a 13,000-word built-in word list
- Allow addition of up to 1000 words by user
- Recognizes writing letter-by-letter or word-by-word
- Recognizes graphics and the inherent symmetry in objects
- Allows deferred recognition; can store notes in handwritten for later recognition

Newton Information Architecture

- Object-oriented data storage optimized for storing, finding, and linking small pieces of information
- Easy creation of custom forms applications via the flexible graphical view Toolbox
- Easy data sharing using standard tags
- Object-oriented database provides flexible view of data

Newton Communications Architecture

- Provides single interface for all communication services
- Integrated to support easy communications with minimum setup requirements
- Designed in modules to support new communications capabilities

Intelligent Assistance Architecture

- Assists users in completing repetitive tasks done in multiple categories, including communications, scheduling, finding, and reminding functions
- Contains smart defaults to reduce complexity
- Functions across applications transparently
- Allows extensions by third-party developers

Newton Hardware Architecture

- ARM 610 processor at 20 MHz
- Apple custom system ASIC
- Low-power, reflective LCD display (336 x 240 pixels)
- Transparent tablet with passive pen
- 4MB of ROM
- 640K of RAM
- One PCMCIA Type 2 card slot
- LocalTalk-compatible serial port
- Low-power, half-duplex, infrared transceiver (up to 38.4 kilo bits per second (kbps) at 1 meter)
- Protective screen lid

Communications Capabilities

- Print to Apple LaserWriters and StyleWriters with serial cable and to popular parallel printers using Newton Print Pack
- Fax with optional fax modem (9600 baud fax send, automatic cover-page generation, post-formatting)
- Send notes, name cards and appointments at up to 38.4 kbps within 1-meter (3.28 feet) using high-speed “beaming” via infrared technology
- Handle telephony needs with assistance for intelligent auto dialing (DTMF or modem dialing)
- Receive and store wireless messages using optional Messaging Card*
- Use NewtonMail* to exchange electronic mail with other Newton MessagePad users, as well as with Windows-based and Macintosh computer users with an optional modem

* This service may not be available in all countries

Size and Weight

- Height: 7.25 in. (184.75 mm)
- Width: 4.50 in. (114.3 mm)
- Depth: .75 in. (19.05 mm)
- Weight: .9 lb. (0.4 kg)

Operating Environment

- Temperature: 32 degrees to 104 degrees Fahrenheit (+0 to +40 degrees Celsius)
- Storage temperature: -4 to 117 degrees Fahrenheit (-20 to +60 degrees Celsius)
- Relative Humidity: 20 percent to 90 percent noncondensing

Power Requirements

- Power adapter:
  - -- Universal, 100 to 240 VAC, 50/60 Hz
  - -- Four plug configurations: U.S., U.K., Europe, and Australia
- Battery type: alkaline or nickel-cadmium
  - -- Alkaline output: 6.0V DC, 1.1 WH (nominal)
  - -- Nickel-cadmium output: 4.8V DC, 200 mAh (nominal)
- Lithium cell: CR2032
- Operating range: 3 V (nominal)
- Power source: Four AAA batteries (included), optional AC adapter or optional Rechargeable Nickel-cadmium Battery Pack

Connecting Kit System Requirements

- Works with PC compatible computers with 80386DX or better processors running Microsoft Windows 3.0 or later, using the Newton Connection Kit for Windows
- Works with Macintosh personal computers with 68030 or faster processors running system software version 7.1 or later, using the Newton Connection Kit for Macintosh

Printer Support

- Built-in printer support for the Apple StyleWriter and StyleWriter II, Personal LaserWriter LS and Personal LaserWriter 300 printers, and Apple PostScript laser printers from the LaserWriter Plus and up
- Works with most popular PC printers, including the Hewlett-Packard LaserJet, Hewlett-Packard DeskJet, Canon BubbleJet, and Epson LQ and FX using the Newton Print Pack option

Fax Machine Support

- Supports Group 3 fax machines

Support Information Services

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Tech Info Library Article Number:14838

Newton MessagePad 100: Description (3/94)

Revised: 3/10/94
Security: Everyone

Newton MessagePad 100: Description (3/94)

==========

Article Created: 4 March 1994

TOPIC -----

This article describes the functions and capabilities of the Newton MessagePad 100.

DISCUSSION -----

The Newton MessagePad 100 personal digital assistant is the affordable member of the Newton family.

While it looks like the original Newton MessagePad, it has important new features that make it more powerful and more useful.

These features mean the Newton MessagePad 100 personal digital assistant can help you manage information, stay in touch via fax, e-mail, and paging, and exchange information with your computer.

It can help you stay in touch and communicate more effectively. You can send faxes and receive pages and messages. You're able to tap into on-line services or electronic mail. You can even exchange business cards via built-in infrared technology.

The MessagePad 100 can help you share and synchronize information with your Windows-based or Macintosh computer.

It can help you organize ideas, take notes, make sketches, format and print letters.

Additionally, you can expand its capabilities, with new software titles that help you keep track of your time, find your way around unfamiliar cities, and even deliver better-organized speeches.

The Newton MessagePad 100 has powerful handwriting-recognition capabilities for both printed and cursive writing. So it can transform your handwriting into

text letter-by-letter, or word-by-word. It can also leave your notes handwritten should you prefer to defer recognition until later.

As time goes by, it learns about you, your handwriting, and the way you work, helping you get more done.

It comes with a built-in-notepad, to-do list, datebook and name file to get you started. When combined with software titles offering new capabilities, the Newton MessagePad is likely to become your most treasured possession.

FEATURES

Built-in Applications

- Let you capture, organize, and communicate business and personal information
- Allow free-form notetaking, mixing handwriting, printed text and graphics
- Turn printed or cursive handwriting into typed text or leave it handwritten
- Recognize writing letter-by-letter or word-by-word
- Update daily to-do lists, help assign priority to tasks
- Let you create name files with a business-card look for hundreds people
- Help you plan monthly, weekly, and daily calendars
- Include information and productivity tools (such as time-zone maps, calculator, and currency-exchange formulas)

Communications Capabilities

- Send notes or messages, schedule appointments, or exchange business cards with other nearby Newton users via built-in, infrared beaming technology
- Print formatted letters and notes to serial and parallel printers
- Send faxes anywhere with an optional fax modem
- Receive and store wireless paging messages with the optional Newton Messaging Card
- Share your Newton information and keep files synchronized and updated with personal computers running Microsoft Windows or with Macintosh computers (requires optional Newton Connection Kit)
- Tap into electronic mail and on-line services with an optional fax modem

Intelligent Assistance

- Knows how you work and actively assists you in completing tasks
- Assists you in making phone calls, faxing, finding information, sending electronic mail, printing, scheduling meetings, and completing to-do lists

ORDERING INFORMATION

Newton MessagePad 100

Order No. H0123LL/A
- Newton MessagePad 100 personal digital assistant
- Stylus
- Batteries
- Welcome to Newton video
- Complete setup, learning and reference documentation
- Limited warranty statement

Newton MessagePad 100 Upgrade

This product will become available soon to upgrade original Newton MessagePad personal digital assistants to the capabilities of the Newton MessagePad 100.

Support Information Services

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Tech Info Library Article Number:14839

Tech Info Library

Newton MessagePad 110: System Update and ROM Versions (5/94)

Revised: 5/16/94
Security: Everyone

Newton MessagePad 110: System Update and ROM Versions (5/94)

==========

Article Created: 9 March 1994
Article Reviewed/Updated: 16 May 1994

TOPIC ----------

This article describes the ROM and system update versions that shipped with the MessagePad 110 beginning on March 4, 1994.

DISCUSSION ----------

The Newton MessagePad 110 ships with ROM version 1.2. Installed at the factory is a system update bringing the ROM up to version 1.3. You can see which version of the system software you have installed on the MessagePad by going to the preferences screen. The version is listed at the bottom.

Starting with the release of the MessagePad 110, the version number also includes a special service control number, in parenthesis, designating the physical ROM the system update works with. For future system updates, this number will remain the same. Use this control number to identify which system update to install on your MessagePad.

The first update version number is "1.3 (344052)" and appears in the preferences screen.

The service control number in parenthesis are part of the ROM version number. If there is ever an update to the ROM, you would end up with a different ROM number. For example system software 1.31, 1.32, or 1.4.

Article Change History:
16 May 1994 - Added ROM update version information.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14840

Tech Info Library

Power Macintosh: Description of Integrated Circuits (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh: Description of Integrated Circuits (3/94)

==========

Article Created: 9 March 1994

TOPIC ----------

This article provides an overview of the various controller chips present on the Power Macintosh logic boards.

DISCUSSION ----------

Main Processor

The main processor in the Power Macintosh 6100/60, 7100/66, and 8100/80 computers is a PowerPC 601 microprocessor. The principal features of the PowerPC 601 microprocessor include:

- full RISC processing architecture
- parallel integer and floating-point processing units
- a branch manager that can usually implement branches by reloading the incoming instruction queue without using any processing time
- an internal memory management unit (MMU)
- 32 Kbit of on-chip cache memory

ROM

Power Macintosh computers contain 4MB of ROM with 100ns access time. Some of the system software that was on disk in previous Macintosh computers is in ROM in Power Macintosh models.

RAM

RAM for Power Macintosh computers is provided by dynamic random-access memory (DRAM) chips, of which the first 8MB of RAM capacity is soldered to the main logic board. Users may expand RAM capacity by adding 72-pin Single Inline Memory Modules (SIMMs) in pairs. Each SIMM contains two banks of DRAM with up to 16MB of capacity per bank.

High-Speed Memory Controller

The high-speed memory controller (HMC) is an ASIC (application specific integrated circuit) that controls all memory operations in Power Macintosh computers. The HMC has the following features that support data transfers to and from the PowerPC 601 microprocessor:

- support for all basic transfer protocols, including all single cycle accesses
- support for four-cycle 32-byte cache accesses
- translation of misaligned read actions into double-word read actions
- implementation of address-only transactions
- bus arbitration (of the address bus only)

The HMC does not support the following features:

- pipelining of memory bus transactions
- cache snooping
- recovery from transfer error acknowledge signals
- little-endian transfer mode

Apple Memory-Mapped I/O Controller

The Apple Memory-Mapped I/O Controller (AMIC) is a 160-pin gate array chip that performs most I/O logic and control for Power Macintosh computers. It supports the following functions:

- handling interrupts received through Versatile Interface Adapter (VIA) channels
- DMA for Ethernet I/O
- DMA for the SWIM III floppy disk drive controller
- DMA for the Serial Communications Controller (SCC) I/O
- DMA for Small Computer Systems Interface (SCSI) support
- DMA for sound I/O
- monitor support

The AMIC does not support the extended transfer protocols for the PowerPC 601 processor; using these protocols will cause a transfer error exception.

Data Path Chips

Two data path (DP) chips provide buffering between I/O and DRAM accesses and the cached CPU bus. They perform the following functions:

- route byte lanes between 8-bit and 16-bit I/O processes and the 64-bit CPU bus
- provide first-in, first-out (FIFO) buffering for video monitor data, which is fetched from RAM as eight-cycle bursts
- supply the Ariel II video chip with appropriate timing signals for video monitor data

The Ariel II video chip is described in the next section.

Ariel II Video Chip

The Ariel II video chip provides a color lookup table (CLUT) and digital-to-analog converter (DAC) for driving an AudioVision monitor.

SWIM III Floppy Disk Drive Controller

The SWIM III floppy disk drive controller is an extension of the SWIM II circuitry used in models such as the Macintosh Quadra 800 and Macintosh Quadra 650. It includes the following new features:

- support for DMA data transfers, which minimize use of the main processor
- no requirement that interrupts be disabled during floppy disk accesses
- support for GCR and MFM formats on 1.44MB disks
- compatibility with the manual-inject floppy disk drive

Floppy disk drives designed to be compatible with the New Age controller used in the Macintosh Quadra 840AV and Macintosh Quadra 660AV computers can easily be adapted for compatibility with the SWIM III controller.

Curio I/O Chip

The Curio is a multipurpose I/O chip that contains a Media Access Controller for Ethernet (MACE), a SCSI controller, and a Serial Communications Controller (SCC).

The SCC section of the Curio includes 8-byte FIFO buffers for both transmit and receive data streams.

Cuda Microcontroller Chip

The Cuda is a microcontroller chip. Its function is to:

- turn system power on and off
- manage system resets from various commands
- maintain parameter RAM
- manage the Apple Desktop Bus (ADB)
- manage the real-time clock
- let an external signal from either Apple GeoPort serial port control system power

AWAC Sound Chip

The audio waveform amplifier and converter (AWAC) is a 44-pin chip that combines a waveform amplifier with a 16-bit digital sound encoder and decoder (codec). It conforms to the IT&T ASCO 2300 Audio-Stereo Codec Specification and furnishes high quality sound I/O for Power Macintosh computers.

BART NuBus Controller

The BART NuBus controller chip provides the data gateway between NuBus and the CPU bus. It acts as a CPU bus master, transferring one-cycle or four-cycle transactions. It supports all NuBus burst transactions and is

compliant with the IEEE Standard 1196.

Squidlet Chip

Squidlet is a 28-pin chip that provides a set of synchronized system clocks for Power Macintosh computers.

Support Information Services

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Tech Info Library Article Number:14841

Tech Info Library

Power Macintosh: 68LC040 Emulator (4/94)

Revised: 4/14/94
Security: Everyone

Power Macintosh: 68LC040 Emulator (4/94)

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Article Created: 9 March 1994
Article Reviewed/Updated: 14 April 1994

TOPIC

This article describes the 68LC040 emulator found on Power Macintosh.

DISCUSSION

The 68LC040 emulator provides an environment by which 680x0 applications can execute on a Power Macintosh computer. The emulator converts 680x0 instructions into PowerPC instructions and sends them to the PowerPC runtime environment. The emulator also maintains the emulated 680x0 environment (such as 680x0 registers).

This emulator uses the basic Motorola 68040 instruction set. However, it does not support instructions from the optional 68881 or 68882 floating-point coprocessor. Those applications which use the SANE math routines will be compatible with PowerPC systems and gain the benefit of the PowerPC's fast floating point unit.

A PowerPC implementation of System 7's Virtual Memory Manager is supported by the system. Applications that use the System 7 VM interface should work correctly, but those relying on directly accessing the 68K PMMU will break.

Note: The 680x0 emulator most resembles the Macintosh Centris 610. Applications or other software which runs on the Centris 610 will most likely run without problems under the emulator.

The emulator maintains tables which maps a 680x0 instruction to one or more PowerPC instructions. On average, one 680x0 instruction requires 10 PowerPC instructions. A PowerPC application will be slightly larger than its 680x0 counterpart because it generally takes more instructions to accomplish the same work on a RISC system than a CISC system.

Compatibility

The emulator has been designed to be highly compatible with those applications which adhere to the Macintosh programming guidelines. However, there are operational difference between the emulator and an actual 680x0 processor. The known exceptions are the following:

- No support for coprocessor's (FPU or MMU) instruction set (as mentioned above)

- The emulator will runs as fast as the system will allow. There is no attempt to maintain the same instruction timing as a 68040 microprocessor.

- The 68020 module calls, CALLM and RTM were deleted in subsequent 680x0 microprocessor. These calls are not supported by the emulator. Calling them will result in an illegal instruction exception. This should not be a problem for applications which run on 68030 or 68040 based systems.

- Within the 680x0 family, there are several instructions which have reserved fields. Although unlikely to have been intentionally done, accidental reliance on these fields may result in unexpected behavior when run under the 68LC040 emulator.

- Address error exceptions are handled differently under the emulator. A 680x0 microprocessor checks for address errors before completing the execution of a branch instruction. For performance reasons, the emulator checks after executing the branch with PowerPC systems. This may cause problems with applications which install an address error exception handler.

- Bus error exceptions are also handled differently under the emulator. Thus, applications with bus error handlers need to account for these differences.

- It may be necessary to modify some memory-mapped I/O calls to perform certain I/O accesses.

Note: For details on these compatibility issues refer to the Inside Macintosh: PowerPC System Software book. Available from Apple Programmer's Developers Association (APDA).

Article Change History:
14 April 1994 - Corrected a wording problem.
21 March 1994 - Made miscellaneous corrections.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14842

Tech Info Library

Power Macintosh: Mixed Mode Manager (3/94)

Revised: 3/21/94
Security: Everyone

Power Macintosh: Mixed Mode Manager (3/94)

==========

Article Created: 9 March 1994
Article Reviewed/Updated: 21 March 1994

TOPIC -----

The Mixed Mode manager is a new system level manager that handles switches between the native PowerPC and 680x0 environment.

DISCUSSION -----

Applications, device drivers, and even portions of system software which were not ported to PowerPC code will run under the 680x0 emulator. The Mixed Mode manager will make sure that the code is properly routed to the correct environment.

The Mixed Mode Manager is designed to be completely transparent to 680x0 applications. If, for example, an application makes a toolbox trap call, the Mixed Mode Manager may be invoked to call a PowerPC version of the trap, but the application is not aware of that fact.

PowerPC applications, however, will have to be aware of the Mixed Mode Manager. The Mixed Mode Manager performs the same services for 680x0 applications as for PowerPC applications. For example, a PowerPC application making a toolbox call could end up in a 680x0 implementation of the call via the Mixed Mode Manager.

More importantly for PowerPC applications is the case where the application expects to be called-back by the system, for example, with a ModalDialog filter procedure. In this case, the application must make the filter procedure Mixed Mode compatible by creating a data structure called a routine descriptor that is used by Mixed Mode when the system calls the function.

Assistance in avoiding mode switches is provided by fat traps. A fat trap is a Toolbox routine that is available in both 68000 and native implementations. The two versions are enclosed in a "routine descriptor" that tells the mixed mode manager how to call it from either environment.

Article Change History:
21 March 1994 - Added in-depth description of Mixed Mode Manager and its function.

Support Information Services

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Tech Info Library Article Number:14843

Tech Info Library

Power Macintosh: Brief Description Of System Software (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh: Brief Description Of System Software (3/94)

==========

Article Created: 9 March 1994

TOPIC -----

The Power Macintosh 6100/60, 7100/66, and 8100/80 require System software 7.1.2 and the appropriate system enabler.

DISCUSSION -----

This version of system software is based on System 7.1, with modifications to run on a PowerPC processor. It has been architected to support both 680x0 and PowerPC software. The mixed mode operation is accomplished using an efficient 68LC040 Emulator which emulate 680x0 instructions with PowerPC instructions.

If a 680x0 application conforms to the basic programming requirements imposed by System Software version 7.0 or later; it is highly probable that it will run with no problems on a Power Macintosh.

The Mixed Mode Manager handles switches between the PowerPC and 680x0 runtime environments. Note, even if a program is completely written in 680x0 or PowerPC instructions, there may be switches between runtime environments. Portions of the Macintosh Toolbox have been rewritten into PowerPC code to take advantage of the processor's speed. However, the entire Toolbox was not converted. Thus, a PowerPC application may call a 680x0 coded Toolbox routine.

A major change introduced with the new PowerPC runtime environment is a new method of organizing code and data. It is called a fragment. It can be an application, import library, or an extension. These fragments are handled by the new Code Fragment Manager. These fragments are the basis by which the Macintosh Operating System can be modernized (for example, the implementation of a microkernal).

In addition, the New Exception Manager allows applications to specify a call back routine that will be called if an exception is generated. At the very least applications will be able to make a more graceful crash. In some cases the application may actually be able to handle the exception and continue

execution.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14844

Tech Info Library

Performa: Versions of ClickArt on computer (3/94)

Revised: 3/9/94
Security: Everyone

Performa: Versions of ClickArt on computer (3/94)

==========

Article Created: 9 March 1994

TOPIC ----------

This article describes what versions of T/Maker's ClickArt come bundled with the Macintosh Performa computer and how to open the files.

DISCUSSION ----------

The spring 1993 line of Performa computers are bundled with "Best of ClickArt." These are in a MacPaint format and can be opened with the bundled ClickArt Clipout desk accessory.

The fall 1993 line of Performa computers are bundled with "ClickArt." These are in ClarisWorks 2.0 format and can be opened with the bundled ClarisWorks 2.0 application program.

Note: ClarisWorks 1.0 will not open ClarisWorks 2.0 graphic files.

Spring Line of Performa computers:
Performa 405
Performa 430
Performa 450

Fall Line of Performa computers:
Performa 410
Performa 460
Performa 466
Performa 467
Performa 475
Performa 476
Performa 550
Performa 560

Support Information Services

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Tech Info Library Article Number:14845

Tech Info Library

At Ease 2.0: Cannot print with HP Deskwriter (8/95)

Revised: 8/9/95
Security: Everyone

At Ease 2.0: Cannot print with HP Deskwriter (8/95)

==========

Article Created: 9 March 1994
Article Reviewed/Updated: 9 August 1995

TOPIC ----------

With At Ease 2.0 for WorkGroups and a Hewlett-Packard DeskWriter 500c, the HP Print Monitor will not send documents to the printer. Documents print fine from the Finder, just not while in At Ease 2.0. Why?

DISCUSSION ----------

The problem is not with At Ease, but with the version of the DeskWriter printer driver that is installed. Customers with versions earlier than those listed below need to contact Hewlett-Packard to get updates.

Hewlett-Packard's phone number can be found by using Hewlett-Packard Co. as the search string.

Begin_Table

Printer	Printer Driver Version
DeskWriter C	3.0
DeskWriter 550c	2.0
DeskWriter	3.9

End_Table

Latest HP drivers are also available through HP dealers who can download it from the HP email system or CompuServe (Go HPPER).

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.

Support Information Services

..TIL14846-At_Ease_2-0-Cannot_print_with_HP_Deskwriter_8-95_(TA31323).pdf

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Tech Info Library Article Number:14846

PowerPC 601: Data Path Structure (3/94)

Revised: 3/11/94
Security: Everyone

PowerPC 601: Data Path Structure (3/94)

==========

Article Created: 9 March 1994

TOPIC ----------

What data path structure does the PowerPC 601 miroprocessor use?

DISCUSSION ----------

The PowerPC 601 chip utilizes a 64-bit wide data bus and a 32-bit wide address bus.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14847

Tech Info Library

System 7.1.2: Support for 68040 or Earlier Macintosh (4/97)

Revised: 4/8/97
Security: Everyone

System 7.1.2: Support for 68040 or Earlier Macintosh (4/97)

==========

Article Created: 9 March 1994
Article Reviewed/Updated: 8 April 1997

TOPIC ----------

Can I use System 7.1.2 to update the operating system of my 680x0 Macintosh?

DISCUSSION ----------

Yes. Several 680x0 Macintosh, Performa, and PowerBook systems shipped with System 7.1.2 installed. If your computer has earlier versions of sytstem software, you may safely update to 7.1.2 (which includes System Update 3.0).

Article Change History:
08 Apr 1997 - Reviewed for technical accuracy.
21 Mar 1994 - Clarified which systems support System 7.1.2.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14848

Tech Info Library

Macintosh Quadra 840AV: Horizontal Line in Captured Video (3/94)

Revised: 3/10/94
Security: Everyone

Macintosh Quadra 840AV: Horizontal Line in Captured Video (3/94)

==========

Article Created: 10 March 1994

TOPIC ----------

When displaying live video from a video camera, or in a captured frame or movie on a Quadra 840AV there appears to be a horizontal line going through the image. It is more noticeable on curves or diagonal lines in the image.

The line stays in the same position so it doesn't appear to be a sync problem. I don't seem to get the same problem when capturing from a VCR. Is this a known issue?

DISCUSSION ----------

What you are seeing is a scaling artifact, and is normal in some situations. It may be seen whenever an image is scaled vertically; but it should be most noticeable when the image is scaled vertically so that it is smaller than full size and greater that half.

The scaler works by low-pass filtering and subsampling. In the vertical dimension, this means that some of the horizontal scan lines are dropped, but the data contained in the dropped lines is averaged into the remaining lines. This averaging minimizes the dropped line effect, but it is not perfect; it is an approximation of perfect (you may see perfectly scaled images on television, but the equipment that does this costs thousands more than the entire computer).

In the case where an image is scaled vertically by less than full but greater than half, the image displayed on the screen consists of two video fields interlaced onto the monitor. The video scaling processes fields and it takes two fields to make a frame. When a line is dropped in one field, the corresponding line in the opposite field is also dropped. When the two fields are reconstructed on the display, the effect is that two vertically adjacent lines are dropped, and this can be visible in some cases.

The most likely reason it is not as visible when using a VCR is that the

image from a VCR is lower resolution from the filtering done in the recording process. The artifact is still there, but the lower resolution hides it.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14850

Tech Info Library

Apple Multiple Scan 20 Display: Specifications (10/95)

Revised: 10/17/95
Security: Everyone

Apple Multiple Scan 20 Display: Specifications (10/95)

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Article Created: 9 March 1994
Article Reviewed/Updated: 17 October 1995

TOPIC -----

This article gives the technical specifications for the Apple Multiple Scan 20 Display.

DISCUSSION -----

Picture Tube

- 20-inch diagonal Trinitron CRT
. Minimum viewable area: 292.6 mm x 388.4 mm (11.52-inch x 15.29-inch)
- Multiple scan
- Resolution range: 640x480 to 1280x1024

Screen

- .31 millimeter (mm) pitch (Rev A)
- .26 millimeter (mm) pitch (Rev B)
- Bonded glass panel with antiglare/antistatic multilayer coating

Input Signals

Red, green, and blue signals; separate sync, composite sync, and composite video

Power Savings feature

Conforms to the Energy Star program of the United States Environmental Protection Agency

User Controls

- Power-on switch

- Automatic degauss at power-up; manual degauss by turning power switch
. off, then on (capable of full degauss after monitor is turned off for
. 20 minutes or more)
- Control buttons: Reset, Control, Command, Brightness, Contrast
- Additional picture controls available using the Command button:
. horizontal and vertical shift, horizontal and vertical size,
. rotation, horizontal and vertical convergence, and color temperature

Begin_Table

Active Video Image Area

Adjusted at the factory for the following standard modes:

Mode	Resolution	Vertical Refresh Rate (hertz)	Horizontal Scan Rate (kilohertz)
VGA	640x480	59.95	31.47
Macintosh	640x480	66.7	35.0
VESA	640x480	75.0	37.5
VESA	800x600	75.0	46.9
Macintosh	832x624	75.0	49.73
Macintosh	1024x768	74.93	60.24
VESA	1024x768	75.0	60.02
Macintosh	1152x870	75.0	68.7
VESA	1280x1024	75.0	79.98

End_Table

Input Electrical Requirements

- Voltage: 90-132, 198-264 V
- Frequency: 47-63 Hz
- Power: 180 W maximum (Rev A)
  165 W maximum (Rev B)

Weight

Approximately 66 pounds (30 kilograms)

Dimensions

- Height: 474 mm +/- 5 mm
- Width: 474 mm +/- 5 mm
- Depth: 501.5 mm +/- 5mm

Tilt Swivel Base

- Tilt: -5 to +15 degrees
- Swivel Range: +/- 45 degrees minimum

Interfaces

Apple Desktop Bus (ADB): one input port and two pass-thru output ports

Operating Environment

Temperature

- Operating: 10 to 40 degrees C (50 to 104 degrees F)
- Storage: 0 to 60 degrees C (32 to 140 degrees F)
- Shipping: -40 to 60 degrees C (-40 to 140 degrees F)

Humidity (noncondensing)

- Operating: 10% to 80%
- Storage: 5% to 90%
- Shipping: 5% to 95%

Altitude (maximum)

- Operating: 10,000 ft. (3048 m)
- Shipping: 35,000 ft. (1067 m)

Safety

Meets strict SWEDAC MPR-2 requirements for low-frequency (ELF and VLF) magnetic and electric emissions.

System Requirements

- Power Macintosh, Macintosh Centris, Macintosh Quadra, or any NuBus compatible Macintosh with a Macintosh Display Card 24AC.
- Macintosh II family, PowerBooks, Duo Dock* and MiniDock, Macintosh Performa, Macintosh LC, LC II, LC III, and Macintosh computers with 8•24, 8•24GC, 4•8 video cards installed work in the 640x480 video mode. Other modes are possible with additional adapters.
- System software version 7.1 or later

* - The Duo Dock requires a video display adapter to change resolutions unless System 7.5 is installed.

Article Change History:
17 Oct 1995 - Updated Rev. B specifications.
10 Oct 1995 - Added Rev. B specifications.
05 May 1995 - Made minor corrections.

Support Information Services

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Tech Info Library Article Number:14851

Tech Info Library

SoftWindows: Hard Disk File C (1/95)

Revised: 1/17/95
Security: Everyone

SoftWindows: Hard Disk File C (1/95)

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Article Created: 9 March 1994
Article Reviewed/Updated: 17 January 1995

TOPIC --

What is the Hard Disk File C in my SoftWindows folder? Can I delete it? Can I make it smaller?

DISCUSSION --

The Hard Disk File C is actually file where all of your MS-DOS and Windows applications and files are stored when running under SoftWindows. It is in fact your virtual hard drive when using SoftWindows. Deleting it causes you to lose everything installed or saved in on drive "C" while under SoftWindows.

The Hard Disk File C is created upon installation of SoftWindows and cannot be changed dynamically. It should be considered as a hard drive, and like a hard drive, would need to be reformatted to make specific partition changes (making it larger or smaller).

You can create a Macintosh Shared folder as another drive, and copy the contents of C into the newly created drive. You are then able to delete, and then recreate the "C" drive the exact size you want. If you delete the Hard Disk File C, you should also throw-away the SoftWindows Prefs file, located in the Preferences folder in your System folder.

Double-clicking on the Hard Disk File C launchs SoftWindows.

Article Change History:
17 Jan 1995 - added removing the SoftWindows Prefs file.

Support Information Services

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Tech Info Library Article Number:14852

Tech Info Library

Performance Tips for SoftWindows (3/94)

Revised: 3/11/94
Security: Everyone

Performance Tips for SoftWindows (3/94)

==========

Article Created: 9 March 1994

TOPIC ----------

Here are some recommendations for SoftWindows setup when comparing the speed to a PC.

DISCUSSION ----------

If you're comparing SoftWindows with a 4 MB PC:

- 16 MB of RAM on the Power Macintosh is the minimal configuration.
- Set the Monitors control panel to 256 colors.
- In the Memory control panel, turn Modern Memory manager ON, Virtual Memory OFF, reduce Disk Cache to the minimum.
- Set SoftWindows' application size to 12000K.
- Launch SoftWindows
- Select PC Memory under the Setup Menu
- Set Expanded Memory (EMS) to ZERO, and Extended Memory (XMS) to 3 MB or 4 MB (this will leave between 1 MB and 2 MB of RAM unused, but will improve performance significantly).
- In Windows Desktop, set the size to 640X480, with 256 colors.

If you're comparing SoftWindows with a PC that has 8 MB RAM (or more):

- The Power Macintosh should have a minimum of 24 MB of RAM.
- Set the Monitors control panel to 256 colors.
- In the Memory control panel, turn Modern Memory manager ON, Virtual Memory OFF, reduce Disk Cache to the minimum.
- Set SoftWindows' application size to 18000K.
- Launch SoftWindows.
- Select PC Memory under the Setup Menu
- Set Expanded Memory (EMS) to ZERO, set Extended Memory (XMS) to 10 MB (this will leave about 2 MB of RAM unused, but will improve performance significantly).
- In Windows Desktop, set the size to 640X480, with 256 colors.

Additional Speed Tips:

1) Use the HPV video in the 7100 or 8100.
2) Add a cache card if you're using a 6100 or 7100, for a boost of about 20%.
3) Install a fast hard disk (such as a 1 GB drive) to significantly boost Windows performance in general, and database access in particular.

NOTE: Some applications may require even more RAM than the minimum stated.

The difference in performance between the worst settings and optimum settings can be more than 100%.

Support Information Services

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Tech Info Library Article Number:14853

Tech Info Library

SoftWindows: Problems Printing (3/94)

Revised: 3/11/94
Security: Everyone

SoftWindows: Problems Printing (3/94)

==========

Article Created: 9 March 1994

TOPIC ----------

I can't print from my Windows application running under SoftWindows, what's wrong?

DISCUSSION ----------

Try the following:

1) Open the Chooser under the Apple Menu and choose the printer you want to use
2) Open the ReadMe in found in the SoftWindows folder (open with SimpleText)
3) Choose Print from the File Menu

If your document successfully prints, then continue with the next instructions. If not, then make sure your printer is on, double-check your network connection, and ensure that you have the correct printer drivers installed.

4) Launch SoftWindows
5) Under the Setup menu, choose printer
6) Make sure "Epson LQ 2500" is selected
7) Make sure that within the DOS or Windows application that the "Epson LQ" or "Epson Basic" is also selected

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14854

Tech Info Library

SoftWindows: CD ROM Problems (3/94)

Revised: 3/11/94
Security: Everyone

SoftWindows: CD ROM Problems (3/94)

==========

Article Created: 9 March 1994

TOPIC --

I'm using SoftWindows on my Power Macintosh and am trying to use a DOS CD-ROM. I can't seem to get it to work, what could be wrong?

DISCUSSION --

Try the following:

1) Launch SoftWindows
2) At the C:\> prompt, type 'usecd' (don't type the quotes) and hit Enter
3) Insert the CD

If this fails, then remove the file "Foreign File Access" from your Macintosh System folder and restart. Repeat items 1-3 again.
If that continues to fail, then do the following:

1) Put the "Foreign File Access" file back into your System Folder
2) Restart
3) Insert the CD (it should appear on the Desktop. If it does not, then you may have a bad CD)
4) Under the Setup menu, select "Mac/PC Shared Folders..."
5) Find the CD on the Desktop
6) Select the drive you want the CD mounted to (for example: G:\ )
7) Click on "Use Macintosh HD" button at the bottom of the dialog

You should now be able to access the files on the CD from SoftWindows.

Note: you can only use one CD-ROM drive under SoftWindows.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14855

Tech Info Library

SoftWindows and the DOS Compatibility Card (3/94)

Revised: 9/29/95
Security: Everyone

SoftWindows and the DOS Compatibility Card (3/94)

==========

Article Created: 9 March 1994
Article Reviewed/Updated: 28 September 1995

TOPIC ----------

How does SoftWindows and the DOS Compatibility Card compare as far solutions for running DOS on a Macintosh?

DISCUSSION ----------

The Macintosh Quadra 610 DOS Compatible and the SoftWindows bundle on the Power Macintosh are complementary approaches to provide cross-platform compatibility solutions. The Macintosh Quadra 610 is the only Macintosh that supports the DOS Compatibility Card. The Macintosh Quadra 610 DOS Compatible includes both a Motorola 68040 and an Intel486sx microprocessor enabling customers to run Macintosh, DOS and Windows software concurrently. It comes with MS-DOS 6.21. The DOS Compatible Card does not provide NetWare, or any network support.

SoftWindows is a native Power Macintosh application that runs solely on the Power Macintosh Computers. It emulates the 80286/287 microprocessors, and provides application performance comparable to the speed of entry level 386 to 486 personal computers when running DOS and Windows applications. It comes with MS-DOS 6.21 and Windows 3.1. SoftWindows also provides PC network support such as Netware, LAN Manager, Windows NT Server, and TCP/IP.

Support Information Services

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Tech Info Library Article Number:14856

Tech Info Library

SoftWindows on the Power Macintosh: Description (3/94)

Revised: 3/11/94
Security: Everyone

SoftWindows on the Power Macintosh: Description (3/94)

==========

Article Created: 9 March 1994

Power Macintosh with SoftWindows provides the increased performance of RISC microprocessing and the compatibility of Macintosh, DOS and Windows software.

SoftWindows is a native PowerPC application developed by Insignia Solutions which emulates a 80286 microprocessor and allows Power Macintosh computers to run MS-DOS and Windows applications at speeds of entry-level 386 and 486 personal computers.

SoftWindows 1.0 runs on Power Macintosh Computers only, and is not compatible with any 68000 processor. SoftPC is available from Insignia for MS-DOS solutions on a 68000 based Macintosh.

Processor emulated:	Intel 80286, and Math Co-processor 80287
Performance:	Speeds estimated between 386SX to 486SX (depending on the application)
Video Supported:	CGA (Color Graphics Array), EGA (Enhanced Graphics Array), and VGA (Video Graphics Array)
Memory:	640K Plus expanded and extended memory (up to 64 MB)
Dos:	Version 6.21
Windows:	Version 3.1
Networking:	Novell NetWare 3.11 Client, LAN WorkPlace for DOS, LAN Manager, Windows for Workgroups, and TCP/IP
Applications:	Tens of thousands of compatible applications for Windows, DOS and network applications are compatible
CD ROM:	PC CD ROM support
Minimum RAM:	Requires a Power Macintosh with a minimum of 16 MB RAM. Compatible with Virtual Memory

SoftWindows uses the Macintosh hardware to emulate a full range of PC devices including: COM, LPT ports, floppy drives, memory systems, video displays and the CD-ROM.

SoftWindows 1.0 Capabilities

Users can:

- Run Windows and DOS applications
- Run MS-DOS Shell
- Print from a DOS or Windows application
- Print to all Apple-compatible printers
- Print to a PC printer such as a HP LaserJet via the serial port
- Have support of PC-formatted CD-ROMs on all Apple-compatible CD-ROM drives
- Copy and Paste between Macintosh and PC applications (text and graphics supported in both directions)
- MS-Video/Windows-No audio support however
- Launch Windows from a server
- Share the Macintosh file system (up to 22 shared folders or Drives E: through Z:)

Performance

SoftWIndows will provide Power Macintosh customers with DOS and Windows application performance that is comparable to the speed of entry-level 386 and 486 personal computers (without a Math Co-processor). This will depend on the Power Macintosh system and configuration, as well as the specific applications used.

Compatibility

SoftWindows runs virtually all DOS and Windows applications in standard mode. Some Windows applications require a 386 processor to run in Windows enhanced Mode. Programs running in Windows Enhanced Mode will not run on version 1.0, but will be supported in later versions.

Support

Power Macintosh computers are supported by the Power Macintosh group at Apple Assurance. SoftWindows is supported by the publisher, Insignia Solutions. Search on Insignia Solutions to find specific company information.

SoftWindows Upgrade

Registered users of SoftPC and SoftPC Professional can upgrade to SoftWindows for $149; registered users of SoftPC with Windows can upgrade for $99 (pricing pertains to North American customers). Upgrades are available from Insignia Solutions.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14857

Tech Info Library

SoftWindows: Readme (3/94)

Revised: 5/10/94
Security: Everyone

SoftWindows: Readme (3/94)

==========

Article Created: 9 March 1994

SoftWindows, Version 1.0 - ReadMe information
_____

This file contains the latest information relating to SoftWindows, Version 1.0.

1. Contents
==========

• What's New in SoftWindows
• Memory settings - for best performance
• More Performance Tips - Getting the best out of SoftWindows
• Other Tips
• SoftNode - Networking Support for SoftWindows
• CD ROM Support
• AccessPC compatibility
• External floppy drive support
• Miscellaneous
• Acknowledgements
• Your Comments Please

2. What's New in SoftWindows
==========
This is the first version of SoftWindows for the Power Macintosh. If you are familiar with the SoftPC family of products for the 68k Macintoshes, then these are the key features introduced in SoftWindows:
• It's fast - running at entry level 486 speeds. This is achieved through: - being a PowerPC native application which takes full advantage of the performance of your Power Macintosh - Insignia's advanced emulation technology - Having access to the source code of Windows from Microsoft, which enables us to modify Windows to give extra speed, without jeopardising compatibility.
• Improved SmartCopy - the Windows utility that links the Macintosh and Windows clipboards now allows bi-directional transfer of text and bitmap graphics data between PC and Macintosh applications.
• Improved networking - the list of supported network operating systems now includes Banyan Vines, so you can connect to Novell NetWare, LAN Manager, LAN

Server, Windows NT Advanced server, and Banyan Vines servers. Also, using Novell's LAN Workplace for DOS, you can connect to UNIX fileservers through TCP/IP.
• Improved PC CD ROM support - Audio CD support is better and dual format CDs are supported.

3. Memory settings - for best performance
==========
The amount of memory that you dedicate to SoftWindows is set up by the SoftWindows installer, depending on the options you select during installation.

This determines three key features:
i) The maximum amount of PC memory available to your PC applications
ii) The maximum size and depth you may specify for the Windows desktop
iii) The performance of SoftWindows.

Stated simply, the more memory you give to SoftWindows, the better it will be. However, devoting a large portion of your Macintosh memory to running SoftWindows will limit your ability to run other Macintosh applications simultaneously.

If you want to dedicate more memory to SoftWindows:
• Make sure SoftWindows is not running: Quit SoftWindows if it is.
• Select SoftWindows in the Finder by clicking its icon once.
• Select “Get Info” from the Finder's File Menu
• Enter a higher number in both the Minimum and Preferred Size boxes.
• Click the close box for the dialog.
If you have given too much memory to SoftWindows, go through the above procedure typing a smaller number into the Minimum and Preferred Size boxes.

To see the effect of your changes, select PC Memory… from the SoftWindows Setup menu. The size of the “DeltaCache” (which controls the SoftWindows performance - bigger is better) is displayed in the top right hand corner of the dialog. This should be between 0k (slowest) and 1024k (fastest). For some applications, there is an extra performance boost with a DeltaCache of 2048k. Additional DeltaCache beyond 2048k will have little effect on SoftWindows performance.

4. More Performance Tips - Getting the best out of SoftWindows
==========
• Make sure that SoftWindows is set up to use at least 3Mb of PC Extended memory, by using the PC Memory… command from the SoftWindows Setup menu. Windows runs much better with 3Mb rather than the minimum 1Mb of extended memory - even on a hardware PC.
• Make sure the setting in your Macintosh “Monitors” Control Panel matches the number of colors you have selected for the Windows Desktop. This is displayed by selecting the Windows Desktop… command from the SoftWindows Setup menu.
• Make sure the Windows Desktop is entirely on one monitor.
• Make sure the Windows Desktop is unobscured by other windows.
(Note that when the Windows desktop is in an optimal position, the title bar will have a check mark (√) appended. If there is no title bar then holding down Command and option keys will display a hand icon with a dot in the middle).
• Try boosting the DeltaCache to about 2048k, as described above.
• Try turning File Sharing off, it can slow down your applications on the Power

Macintosh.
• Make sure you do not have the MacsBug debugger installed - it slows down the entire Power Macintosh.

5. Other Tips

5.1 Loading DOS High

In order to maximize the amount of available conventional memory to PC applications, you may load DOS high by adding the line

```
DOS=high
```

to the CONFIG.SYS file.

5.2 DoubleSpace

DOS 6.2 is supplied with the DoubleSpace utility which enables the available disk space on a SoftWindows hard disk file to be doubled. Type "HELP DBLSPACE" at the DOS prompt for more information.

6. SoftNode - Networking Support for SoftWindows

6.1 Ethernet card compatibility

SoftNode is compatible with the on-board Ethernet fitted in all Power Macintoshes and virtually all Macintosh Ethernet cards.

If you are using third party Ethernet solutions, please ensure with the manufacturer that you have the latest version of the driver software.

The Apple Ethernet NB card has had a number of problems in the past. These are all believed to be addressed in version 1.4.2 of Apple's Network Software Installer disk.

SCSI based Ethernet - A number of SCSI Ethernet adapters have drivers which pad out the packets of the Ethernet II frame type. This causes illegal instructions in PC applications using this frame type, although other frame types work well. If it is not possible to use a different frame type, this problem may be solved by connecting via a SoftNode Ethernet Gateway for IPX protocols. This applies to the Focus Nuvo-Link SC and to Dayna's DaynaPORT SCSI/Link products.

6.2 Token Ring card compatibility

SoftNode is compatible with Token Ring cards which support the Apple .TOKN standard. At the time of writing, only the Apple 4/16 card works, and it has some restrictions. Other third party cards are likely to be fixed by the time the Power Macintoshes are available. These include cards from DCA, Asanté and CableTron (which work in SoftPC on today's 68k Macintoshes). Please contact the relevant manufacturers to check on the PowerPC compatibility of their cards.

The driver for Apple's Token Ring cards does not support the Token Ring 802.2 frame type. However, Apple are aware of the problem and a fix is expected from

Apple shortly.

You can use SoftNode in an environment where other cards are installed by:

- installing a supported card in one Macintosh
- installing a SoftNode Token Ring Gateway on that Macintosh
- using the SoftNode ATALK.BAT batch file from other Macs to access the Novell file server via the SoftNode Gateway

6.3 Windows for Workgroups Support

There is a problem with two files in the \INSIGNIA\SOFTNODE directory on newly created SoftWindows hard disks. The files NET.WFW and NET.WFT are example NET.CFG configuration files for using Windows for Workgroups client software over Ethernet and Token Ring respectively. Both contain the line:

```
protocol IPX 0  ETHERNET_802.3
```

instead of the line:

```
protocol SMB f0  ETHERNET_802.2
```

This stops Windows for Workgroups working when the Network Control Panel is set up to use the Ethernet or Token Ring card for AppleTalk. There is no problem if the Network Control Panel is set up to use LocalTalk.

To fix the problem, you must replace the first line with the second line, or if you need simultaneous NetWare and Windows for Workgroups support, you may add the second line to the file, immediately after the first line.

7. CD ROM Support

Audio CD ROM support is much improved over previous versions of SoftPC. In addition, it is now possible to use CD ROMs that have both a Macintosh (HFS) partition and a PC (ISO 9660) partition. Use of these hybrid CDs requires that you have a CD ROM driver that is capable of accessing both partitions. The Apple CD ROM driver is not one of these, but Insignia's RapidCD product will replace the Apple CD driver to enable this functionality. FWB's CD ROM Toolkit is also compatible.

8. AccessPC compatibility

Insignia's AccessPC product allows you to mount SoftPC hard disk files on the Macintosh desktop so that you can see the DOS files and directories as documents and folders. Version 3.0.2 of AccessPC also allows you to mount SoftWindows hard disk files. If you have an earlier version (3.0 or 3.01) you may patch it to give this extra feature. Simply run the application called “PatchAccessPC” which is on the first SoftWindows installation disk and follow the instructions in the subsequent dialogs. Note that the AccessPC control panel should be closed when you patch it, and you will need to restart the Macintosh afterwards.

9. External floppy drive support

At the time of writing, the only diskette drive that may be set up as SoftWindows A: or B: drive is the internal FDHD drive (also known as the “SuperDrive”) in the Power Macintosh. Other diskette drives supplied by third party manufacturers work with SoftPC on 68k Macintoshes and are expected to work as soon as the drivers for these devices are fixed to work on Power Macintoshes.

Since every Power Macintosh is equipped with a SuperDrive, lack of support of 3rd party 3.5" drives is not expected to be a big issue. If you really need to use 5.25" PC diskettes, the DaynaFile drives from Dayna Communications and the DOSFloppy from PLI work with SoftPC on 68k Macintoshes. No information is currently available for when these devices will work on Power Macintoshes.

10. Miscellaneous

10.1 Tutorial Error

Some configurations of SoftWindows are NOT supplied with a tutorial diskette. If this is the case, you may install the tutorial application from your SoftWindows hard disk. To do this, you should choose Run… from the Windows Program Manager File menu, and type C:\WNPST\SETUP in the command line field and click OK. (The manual incorrectly uses the WINPST directory instead of the WNPST directory).

10.2 Windows Desktop Size

Note that changing monitors, or monitor resolutions, between invocations of Windows, can lead to a Windows Desktop which is larger than the current monitor size. This may be fixed by manually resizing the Windows desktop from the SoftWindows Setup menu. The changes will take effect the next time Windows is run.

11. Acknowledgements

11.1 WinPost

The tutorial Windows application supplied with SoftWindows is WinPost, by Eastern Mountain Software. Please note that this is a shareware version of WinPost: if you decide to continue using it, please send the registration fee of $30 (USA/Canada/Mexico) or $35 (all other countries) to
Eastern Mountain Software, P.O. Box 6394, Bellevue, WA 98008-0394, USA.
Telephone: (206) 391-3483.

11.2 DEVLOD

SoftWindows is supplied with a version of DEVLOD.COM from "Undocumented DOS" by Schulman et al. (Addison-Wesley, 1993). Copyright (c) 1993 Andrew Schulman, Ralf Brown, Jim Kyle, David Maxey, Ray Michels.

11.3 DOS for Dummies/ Windows for Dummies

The SoftWindows User Guide is not intended to be a reference guide for using DOS and Windows. If you need a DOS or Windows reference, we recommend DOS for Dummies by Dan Gookin and Windows for Dummies by Andy Rathbone, both by IDG

books. These excellent books are used and recommended by the Insignia Technical Support specialists who are certainly not “dummies”!

12. Your Comments Please

The SoftWindows User Guide has details of how to contact Insignia's Technical Support or Customer Service departments. Please contact these departments if you have any problems with the software or wish to get further product information.

If you have any comments about the SoftWindows software or documentation, please send them by letter, fax or AppleLink to:

Insignia Product Marketing
Insignia Solutions Inc.
1300 Charleston Avenue
Mountain View CA 94043

Fax: (415) 964 5434

or

Insignia Product Marketing
Insignia Solutions Ltd.
Kingsmead Business Park
London Road
High Wycombe HP11 1JU
UK

Fax: +44 494 459720

AppleLink: INSIGNIA.PMG

Support Information Services

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Tech Info Library Article Number:14858

Tech Info Library

LC 575, Quadra 650: Maxtime Cable Message Upon Startup (6/94)

Revised: 6/29/94
Security: Everyone

LC 575, Quadra 650: "Maxtime Cable" Message Upon Startup (6/94)

==========

Article Created: 10 March 1994
Article Reviewed/Updated: 29 June 1994

TOPIC ----------

In booting up a Quadra 650 or Macintosh LC 575, a message that says "Sending handshake byte in postburn. Please plug in Maxtime cable for postburn." may be generated.

This article describes how to get rid of this message.

DISCUSSION ----------

This message occurs when the burn-in software is not erased off of the hard drive at the factory prior to shipping.

To remove the software:

1) Boot from the Disk Tools diskette or the InstallMeFirst CD.
2) Trash the files in the Startup Items folder.

Or another alternative is to reinitialize the drive and reinstall system software.

Article Change History:
14 April 1994 - Added Quadra 650 to the article title and discussion.
29 June 1994 - Cleaned up the discussion.

Support Information Services

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Tech Info Library Article Number:14859

Tech Info Library

Macintosh LC 520: Part Number For FPU (3/94)

Revised: 3/10/94
Security: Everyone

Macintosh LC 520: Part Number For FPU (3/94)

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Article Created: 10 March 1994

TOPIC ----------

Will the FPU (Floating Point Unit) listed for a Macintosh LC III work in a Macintosh LC 520?

DISCUSSION ----------

Yes, the FPU for the Macintosh LC III, part number M6775LL/A, can be installed in the Macintosh LC 520.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14860

Tech Info Library

Power Macintosh: AV Upgrade and Composite Video Ports (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh: AV Upgrade and Composite Video Ports (3/94)

==========

Article Created: 10 March 1994

TOPIC ----------

This article describes the missing composite video ports when upgrading a Macintosh Quadra 840AV or 660AV to a Power Macintosh.

DISCUSSION ----------

When a Macintosh Quadra 840AV or 660AV is upgraded to a Power Macintosh AV, the composite video ports will be missing.

These ports are provided via a composite video adapter which is connected to the S-video ports of the AV card.

Support Information Services

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Tech Info Library Article Number:14861

Tech Info Library

JLK 1.0: Compatibility with Overseas Power Macintosh 1/96

Revised: 1/26/96
Security: Everyone

JLK 1.0: Compatibility with Overseas Power Macintosh 1/96

==========

Article Created: 3 May 1994
Article Reviewed/Updated: 26 January 1996

TOPIC ----------

This article describes a problem with the Power Macintosh and Japanese/Chinese Language Kit (version 1.0) installer in Japan. This does not affect Power Macintosh computers running version 1.0 of the Japanese/Chinese Language Kits in the United States. The Power Macintosh and the Japanese/Chinese Language kits version 1.0 are compatible in the U.S.

DISCUSSION ----------

Version 1.0 of the Japanese Language Kit installer will replace the NuScript manager with an old version. Version 1.1 of JLK/CLK is available internationally to fix this problem. This issue does not affect the systems used in the United States in any way.

Article Change History:
26 Jan 1996 - Made minor technical updates.
03 Mar 1995 - Changed title slightly, added Japanese Language Kit 1.1.
03 May 1994 - Updated article to reflect this as an international issue, not a U.S. issue.

Support Information Services

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Tech Info Library Article Number:14863

Tech Info Library

Power Macintosh: Run Time Environment (3/95)

Revised: 3/6/95
Security: Everyone

Power Macintosh: Run Time Environment (3/95)

==========

Article Created: 10 March 1994
Article Reviewed/Updated: 6 March 1995

TOPIC ----------

This article provides a technical description of the Run Time Environment and the switch from the 680x0 segment loader to the new Code Fragment Manager.

DISCUSSION ----------

A run-time environment is a set of conventions that determine how code and data are loaded into memory and managed. The PowerPC run-time environment is significantly different from the one provided in 680x0-based Macintosh System Software. Fortunately, this change is for the better. The most significant change is the use of fragments to organize code and data in memory. Fragments can be an application, import library (such as system software), or extension. Fragments provide the following benefits:

• Fragments let software in import libraries be easily shared with other programs.

• Fragments provide a simplified means for all software components to address global data. With 680x0 systems, it was provided only for applications.

• The use of fragments is one of the elements that allow future modernization of the Macintosh operating system. It lets new system features such as a microkernal be easily implemented.

Fragments

A fragment is a method of organizing code and data. Fragments can loosely be categorized into three areas:

• An Application is a fragment launched by the user.

• Extensions are fragments which extend the capabilities of other fragments.

• Import library -- These fragments can be shared with other fragments. System software is an example of this type of fragment. Since this fragment can be shared, an import library is also referred to as a shared library. In addition, since import libraries are linked dynamically at application launch time (that is, not when the application was created or installed), they are also referred to as dynamically linked libraries.

At application launch time, the Code Fragment Manager makes sure all the necessary fragments are loaded to memory and prepared for execution. This manager uses the Code Fragment Loader to perform the loading into memory.

Fragment Storage

The physical storage for a fragment is called a container. A container can be any logically contiguous memory location such as a data fork of a file, Macintosh ROM, or a resource.

PowerPC executable code is stored in the data fork of the application file. A 'cfrg'0, is added to the resource fork to indicate that this application is a PowerPC application. In contrast, 680x0 applications place executable code as 'CODE' resources in the resource fork.

This arrangement of code and resources allows the creation of a single application that can run on both 680x0- and PowerPC-based Macintosh computers. By combining the two structures together, you get what is called a fat application.

Fat Applications

If a fat application is executed on a 680x0-based Macintosh computer, the system software ignores the 'cfrg'0 resource because it is an unknown type and loads just the 680x0 'CODE' resources. If executed on a Power Macintosh, the system software recognizes the 'cfrg'0 resource and loads the PowerPC code from the data fork.

A fat application is very useful when supporting mixed 680x0 and PowerPC environments. However, it may not be desirable to have a fat application. For example, there may be cases where the 680x0 performance is insufficient to run the application. In this instance, a 'CODE' resource should be installed so when the PowerPC-only application is run on a 680x0 system, a dialog box shows up to explain the situation.

A developer can distribute a single fat application. With Installer 4.0, the user has the option of installing only PowerPC or 680x0 executable application or both.

Import Library

==========

An import library (shared library or dynamically linked library) makes applications be smaller. Since import code is loaded dynamically at application launch time, this code does not have to be part of the application. If only one application utilizes this library, there is little advantage unless the import library is stored in ROM (like system software).

The big advantage of an import library is when multiple applications utilize the same import library since a library is loaded into memory only once. Thus, several applications can have access to the library, without each having to have the RAM overhead to support the functionality.

In addition, centralizing functionality lets updates be made easily. By changing only one set of code, many applications are updated simultaneously.

An import library can be created for such sharable functions such as a spell checker. In addition, it can be used to support infrequently used application functions. The Code Fragment Manager can load these functions on demand after application launch. This results in smaller RAM usage and quicker launching.

Memory Organization

==========

The organization of memory in the PowerPC run-time environment is reasonably similar to the 680x0 environment. The system partition occupies the lower memory addresses while applications take the remaining space starting at the higher memory addresses. As with the 680x0 application partition, the Process Manager allocates space for a stack, heap, and global variable space.

The main difference between the PowerPC and 680x0 memory organization is the location of an application's code section and global variables. This difference varies depending on whether the Power Macintosh has virtual memory turned on or not.

In 680x0 environment, virtual memory uses a single monolithic file on a single volume as backing store. This backing store is mapped to a virtual memory address space. Its size is set via the Memory Control Panel. Unused pages of memory are written to this backing store and loaded into main memory as needed.

This backing store is necessary because the Resource Manager is not re-entrant. Since 68K code is found in code resources in the resource fork of an application, it is accessed by the Resource Manager. However, since it is not re-entrant, the manager cannot be accessed at an interrupt level. Therefore when a page fault occurs, the code must be written to the system wide backing file because it cannot be retrieved from its original location.

A backing store sometimes prolongs the launch of an application. This occurs when an application’s code is loaded into main memory only to be immediately written out to the backing store file.

This virtual memory delay is eliminated by the use of a scheme called file

mapping. The Virtual Memory Manager uses the data fork of the application as the paging file. The entire code fragment is mapped to logical address space. Assuming the application code does not change (this is a guideline), it can be presumed to be read-only. As such, only the needed portions of code are actually loaded into physical memory.

NOTE: This file mapping only applies to native applications. These applications have code stored in the data fork.

As a result of this file paging scheme, native applications have a special note attached to their Get Info boxes. At the bottom of Get Info window, there is a message indicating that if virtual memory is turned on, the application’s RAM requirements change.

The same application's memory requirement changes when Virtual Memory is turned on (which is indicated in the note). This change in memory requirements is made automatically by the system.

If virtual memory is not turned on, code is loaded into the application heap. The Finder and Process Manager will automatically expand the memory as necessary. This is similar to the 680x0 run-time environment.

Article Change History:
06 Mar 1995 - Added keyword; made multiple technical updates.
11 May 1994 - Changed Title to better reflect the article.
21 Mar 1994 - Made various corrections to the Fragment section.

Support Information Services

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Tech Info Library Article Number:14865

Tech Info Library

Power Macintosh: New Control Panels (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh: New Control Panels (3/94)

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Article Created: 10 March 1994

TOPIC ----------

This article describes the changes made to the Monitors and Memory Control Panels.

DISCUSSION ----------

The Monitor Control Panel has been modified so a change in the desktop (moving of the menu bar for example) takes affect either after restart or upon close of the control panel. This option is selected using the radio button located on the bottom left hand corner of the window.

With the new Memory Manager (called Modern Memory Manager), there is a modification to the Memory Control Panel. It is possible to disable this new Memory Manager and revert to the old Memory Manager in ROM for software compatibility. This is done through the Modern Memory Manager section in the Memory Control Panel. The default setting is using the new Memory Manager.

Support Information Services

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Tech Info Library Article Number:14866

Tech Info Library

Power Macintosh: Sampled Sound Playback Issue (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh: Sampled Sound Playback Issue (3/94)

==========

Article Created: 10 March 1994

TOPIC -----

This article describes sampling rate playback change.

DISCUSSION -----

The sampling rate of 22.05 kHz replaced the sampling rate of 22.254 kHz in older Macintosh models. This new rate was changed for compatibility with the 44.1 kHz audio CD sampling rate.

For sound samples made at the 22.254 kHz rate, playback at the 22.05 kHz results in a 1% change in pitch (lower).

Support Information Services

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Tech Info Library Article Number:14867

Tech Info Library

Power Macintosh: Upgrade Card and Card Control Panel (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh: Upgrade Card and Card Control Panel (3/94)

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Article Created: 10 March 1994

TOPIC --------------------

This article briefly describes the new Control Panel that comes with the Power Macintosh Upgrade Card.

DISCUSSION --------------------

Macintosh computers with a 68040 processor direct slot can be upgraded to a PowerPC processor via an expansion card. In order to support this card, a Power Macintosh bootable system folder is required. Within this system folder is a Power Macintosh specific system enabler and a new control panel.

The Power Macintosh Card Control Panel allows the user the option of selecting which processor to use. This selection is made via the Power Macintosh Card control panel. It is a simple off or on selection. The system has to be restarted for the new selection to take effect.

Support Information Services

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Tech Info Library Article Number:14868

Tech Info Library

LaserWriter 8.x: Configuring Paper Trays (3/94)

Revised: 3/14/94
Security: Everyone

LaserWriter 8.x: Configuring Paper Trays (3/94)

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Article Created: 14 March 1994

TOPIC ----------

How can I configure the LaserWriter 8.x software so that it uses the 500 sheet tray?

DISCUSSION ----------

Once the LaserWriter 8.x software is installed, it needs to be configured.

1) Open the Chooser
2) Select the LaserWriter 8.x driver
3) Select your printer
4) Click "Setup"
5) Click "Configure". If you don't see the "Configure" button, Click the "More Options" button
6) Select your cassette preference:
   - Not Installed
   - Installed
   - Installed and Preferred

After configuring the print driver, those paper tray options appear in the Print dialog.

Support Information Services

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Tech Info Library Article Number:14869

Tech Info Library

Memory Configurations: Portables & PowerBook (9/96)

Revised: 9/24/96
Security: Everyone

Memory Configurations: Portables & PowerBook (9/96)

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Article Created: 10 March 1994
Article Reviewed/Updated: 23 September 1996

TOPIC ----------

What are the memory configurations for the Portable and PowerBook computers?

DISCUSSION ----------

The following table includes the memory configurations for Portable and PowerBook computers.

For information about upgrading the memory in another Macintosh computer, use the search string "memory configurations" to locate the following articles:
"Memory Configurations: Power Macintosh (1 of 4)"
"Memory Configurations: Servers (2 of 4)"
"Memory Configurations: Other Desktop Macintosh (4 of 4)"

This article has two parts:

- A table of portable Macintosh computers' RAM Configurations.
- A series of notes, each with a number corresponding to a number in the table's "Notes" column.

Begin_Table

Portable Macintosh RAM Configurations

System	MB of RAM Soldered on Board	Number of Expansion Slots	Possible RAM Configs (MB)	RAM Speed	Notes
Portable*	1	1	1,2,3,4,5,6, 7,8,9	100ns	2,3,4
Portable*	1	1	1,2,3,4,5,6,	100ns	2,3,4

(backlit)			7,8		
PowerBook 100*	2	1	2,4,6,8	100ns	1,5
PowerBook 140*, 145*	2	1	2,4,6,8	100ns	1,6
PowerBook 145B*	4	1	4,6,8	100ns	1,7
PowerBook 150	4	1	4 to 40	70ns	1,10
PowerBook 160*	4	1	4,6,8,10,12,14	100ns	1,7
PowerBook 165*	4	1	4,6,8,10,12,14	85ns	1,7,8
PowerBook 165c*	4	1	4,6,8,10,12,14	85 or 100ns	1,7,8
PowerBook 170*	2	1	2,4,6,8	100ns	1,6
PowerBook 180*	4	1	4,6,8,10,12,14	85 or 100ns	1,7,8
PowerBook 180c*	4	1	4,6,8,10,12,14	85 or 100ns	1,7,8
PowerBook 520/520c	4	1	4 to 36	70ns	1
PowerBook 540*/540c	4	1	4 to 36	70ns	1
PowerBook Duo 210*	4	1	4 to 24	70ns	1,9
PowerBook Duo 230*,250*	4	1	4 to 24	70ns	1,9
PowerBook Duo 270c*	4	1	4 to 32	70ns	1,9
PowerBook Duo 280*/280c	4	1	4 to 40	70ns	1
PowerBook 190, 190cs	4 or 8	1	4 to 36 or 40	70ns	1,14

PowerBook 5300	8	1	8 to 64	70ns	1
PowerBook 5300c, 5300cs	8 or 16	1	4 to 64	70ns	1,11
PowerBook 5300ce	16	1	4 to 64	70ns	1,12
PowerBook 2300c	8	1	4 to 56	70ns	1,13

End_Table

Notes
=====

* Product no longer being produced by Apple.

1) These systems have 32-bit-clean ROMs. Computers with 32-bit-clean ROMs can take advantage of more than 8 MB of physical RAM under System 7 or higher.

2) The ROMs in these systems are not 32-bit-clean, but with the 32-Bit System Enabler under System 7.1 or MODE32 with versions of System 7 prior to 7.1, they can run in 32-bit mode and can take advantage of more than 8 MB of physical RAM.

3) The Macintosh Portable has 1 MB of RAM soldered to the main logic board. You can add more RAM using an expansion card. The Macintosh Portable memory expansion card can have from 1 MB to 4 MB of RAM. The backlit Macintosh Portable memory expansion card can have 1 MB to 3 MB of RAM.

4) If the processor-direct slot (PDS) is used for other peripherals, the maximum RAM is 5 MB for the Macintosh Portable and 4 MB for the backlit Macintosh Portable, using a memory expansion card.

5) The PowerBook 100 has 2 MB of pseudostatic RAM on the main logic board and one expansion slot. Additional RAM can be added using a RAM expansion card for a maximum of 8 MB.

6) The PowerBook 140, 145, and 170 have 2 MB of pseudostatic RAM on the main logic board and one expansion slot. The 4 MB configuration shipped from Apple has a 2 MB RAM expansion card installed. To expand up to 8 MB, replace the 2 MB RAM expansion card (if installed) with either a 4 MB or 6 MB RAM expansion card.

7) The PowerBook 145B, 160, 165c, 180 and 180c have 4 MB of pseudostatic RAM on the main logic board and one expansion slot. The 4 MB configuration shipped from Apple has no RAM expansion card installed. To expand up to 6 MB, 8 MB, or 14 MB, install a 2 MB RAM expansion card, 4 MB RAM expansion card, or 10 MB RAM expansion card, respectively (note

that the PowerBook 145B can be expanded to a maximum of 8 MB).

8) For the PowerBook 165, 165c, 180, and 180c, we suggest 85ns pseudostatic RAM. Use of 100ns pseudostatic RAM results in a performance decrease of approximately 5-10%.

9) The PowerBook Duo 210, Duo 230, Duo 250 and Duo 270c have 4 MB of low-power DRAM on the main logic board and one expansion slot. The 4 MB configuration shipped from Apple has no RAM expansion card installed, while the 12 MB configuration has a 8 MB expansion card installed. To expand your Duo, add the appropriate size memory expansion card.

10) The PowerBook 150 uses Duo type memory. However in order to add more RAM, you must first have a memory adapter installed. The part number for this adapter is M3179LL/A.

11) The PowerBook 5300cs and 5300c come with either 8 or 16 MB of RAM soldered on to the logic board. Either configuration is expandable to 64 MB of RAM.

12) The PowerBook 5300ce comes with a 16 MB expansion card installed.

13) The PowerBook 2300c has 8 MB of RAM on the main logic board and one expansion slot. The 8 MB configuration shipped from Apple has no RAM expansion card installed, while the 20 MB configuration has a 12 MB expansion card installed.

14) The PowerBook 190 and 190cs come with either 4 or 8 MB of RAM soldered on the main logic board and one expansion slot. The model that comes with 4 MB on the logic board is expandable to 36 MB. The model that comes with 8 MB on the logic board is expandable to 40 MB.

Article Change History:
23 Sep 1996 - Updated title and added blurb for related articles.
18 Oct 1995 - Removed irrelevant column from table.
12 Oct 1995 - Added new PowerBook computers to table.

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Tech Info Library Article Number:14870

Tech Info Library

Newton Connection Kit 2.0: Description (3/94)

Revised: 3/31/94
Security: Everyone

Newton Connection Kit 2.0: Description (3/94)

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Article Created: 8 March 1994
Article Reviewed/Updated: 31 March 1994

TOPIC -----

This article describes the Newton Connection Kit 2.0.

DISCUSSION -----

Newton Connection Kit 2.0 makes it simple for people to exchange Newton information with common Macintosh and Windows applications.

Newton Connection Kit 2.0 enables users to exchange and share their MessagePad information---notes, letters, name-cards, to-do lists, appointments, and even information created with many third party applications---with common desktop personal information management (PIM), word-processing, spreadsheet and database applications. It also enables users to access and edit MessagePad information easily using common desktop applications with which they may already be familiar.

Direct Export and Import from Macintosh applications

Newton Connection 2.0 enables people to import and export native files directly from many common supported Macintosh applications to Newton's address book, calendar and notepad, by incorporating portions of the award-winning MacLinkPlus file translation library, a product from DataViz Inc. (Trumbull, CT). Supported Macintosh applications include common titles such as: Portfolio Software's Dynodex; Symantec's Act!; Now Software's Now-Upto-Date; Aldus' DateBookPro; PowerUp's Addressbook Plus; Microsoft's Excel, Word and Works; Lotus 1-2-3; WordPerfect; Nisus; and WriteNow, among others.

Industry Standard Text Files

Newton Connection v 2.0 enables people to create, save and modify industry

standard tab-separated and comma-separated text files for exchanging (importing and exporting) Newton information with numerous PIM, database and spreadsheet applications, such as Aldus' TouchBase Pro, Claris Corporation's FileMaker Pro and Hypercard Address Stacks, among others. For example, a list of names, addresses and phone numbers stored in Claris' Filemaker Pro can easily be imported into the MessagePad address book.

Newton Connection File Format

Newton Connection has a rich intermediate text file format which supports all Newton information, enabling cooperating desktop applications to synchronize, as well as exchange information with a Newton MessagePad. Many desktop application developers are already working with Apple to support this format directly within their applications.

System Requirements

Newton Connection Kit 2.0 for Macintosh requires 2000K of RAM, but preferably 2500K, System 7 or later, Apple SuperDrive, and at least a 68030 processor. The Windows version requires at least a 386SX with 4MB RAM and Windows 3.1 or later.

Compatibility

Backup files created with Newton Connection Kit 1.0 are not compatible with version 2.0. Customers are advised to backup with version 1.0, then with version 2.0 before erasing any backup files.

Special Software Offer

In a limited special offer, the Newton Connection kit for both Windows and Macintosh will include several sample Starcore Newton applications, while supplies of these samples last: Columbo's Mystery Capers, Silicon Casino, GoFigure, Fortune 500 Guide To American Business and Dell Crossword Puzzles and Other Word Games (demo versions). In addition, Newton Book--an electronic book containing descriptions of numerous Newton commercial and shareware applications--will be included in the special offer, as will the Newton DataViewer, which enables the import and export of spreadsheet data. The Newton DataViewer allows people to manipulate spreadsheet data from their desktop on their Newton MessagePad by scrolling horizontally and vertically, sorting by column, and exporting back to the desktop spreadsheet.

Free Upgrades

Apple will send all registered purchasers of Newton Connection v 1.00 a free upgrade to Newton Connection v 2.0. Customers who received a complimentary preview version of the Newton Connection Kit at MacWorld Expo in Boston in August 1993 will also be receiving a free upgrade to Newton Connection v 2.0.

Registered users may expect to receive their upgrades in the latter part of March. The Windows version should arrive approximately eight to ten weeks after the Macintosh version ships. If you do not receive the upgrade, call the Newton Fullfillment Center at 1-800-242-3374.

Article Change History:
31 March 1994 - Added additional system requirements for Macintosh connection.

Support Information Services

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Tech Info Library Article Number:14871

Tech Info Library

Quadra 700: Power Macintosh PDS Upgrade Blocks NuBus Slot (3/94)

Revised: 3/10/94
Security: Everyone

Quadra 700: Power Macintosh PDS Upgrade Blocks NuBus Slot (3/94)

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Article Created: 10 March 1994

TOPIC --------------------

If I install the Power Macintosh PDS Upgrade Card in my Quadra 700, can I still use both NuBus slots?

DISCUSSION --------------------

No, the $E NuBus slot (the one closest to the outside case) must be empty in order to install the Power Macintosh PDS Upgrade Card. The PDS and NuBus slots are in line with each other in the Quadra 700, you can install either a PDS card or a NuBus card but not one of each.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14872

Tech Info Library

Quadra 610: NuBus & Power Macintosh PDS Card Not Possible (3/94)

Revised: 3/10/94
Security: Everyone

Quadra 610: NuBus & Power Macintosh PDS Card Not Possible (3/94)

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Article Created: 10 March 1994

TOPIC ----------

If I install the Power Macintosh PDS Upgrade Card in my Quadra 610, can I still use a NuBus card?

DISCUSSION ----------

As the Quadra 610 has only one PDS expansion slot, to install the Power Macintosh PDS Upgrade Card you must first remove any existing expansion cards.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14873

Tech Info Library

Power Macintosh: SimpleText, Extras Folder, System 7.1.2 (1/95)

Revised: 1/19/95
Security: Everyone

Power Macintosh: SimpleText, Extras Folder, System 7.1.2 (1/95)

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Article Created: 10 March 1994
Article Reviewed/Updated: 09 January 1995

TOPIC

This article describes the new SimpleText application and the contents of the Extras Folder that come with System 7.1.2 on the original Power Macintosh 6100, Power Macintosh 7100 and Power Macintosh 8100.

DISCUSSION

The three Power Macintosh systems initially were loaded with System 7.1.2. This release of system software was modified to support the PowerPC processor. In addition, the following items were included with System 7.1.2:

SimpleText

TeachText has been updated. This new version is called SimpleText. It allows the selection of different fonts, font sizes and styles. It also supports sound. A SimpleText document can store a single digital recording. In addition, there are menu selections which support PlainTalk of the text.

Extras Folder

In addition to the PowerPC system changes the following items are bundled with the system and installed in an Extras folder:

- AppleScript 1.1 extension including Script Editor application, sample scripts and "Getting Started With AppleScript" in DocViewer format.

- CPU Energy Saver (for Power Macintosh 7100/66, 7100/66AV, 8100/80, and 8100/80AV computers): The computer can be set to turn on or off automatically, using the CPU Energy Saver control panel.

  IMPORTANT: CPU Energy Saver does not work on Power Macintosh 6100/60 or 6100/60AV computers.

- Energy Saver (for monitors): This control panel allows the monitor to go into low power mode after the computer has been idle for a specified amount of time.

  The Energy Saver can be used in the following situations:
  - A Power Macintosh computer (or a Macintosh Quadra, Centris, or LC III computers)
  - 2 MB of available RAM
  - System Software version 7.1
  - An Apple monitor that complies with the United States Environmental Protection Agency's Energy Star guidelines for energy conservation (the monitor must be plugged into the built-in monitor port, not into an expansion card)

- FusionRecorder: This audio and video capture program records and plays high-quality sound and, if you have an AV-equipped Power Macintosh, QuickTime video movies.

- LaserWriter 8.1.1: The LaserWriter 8.1.1 driver is installed in the Extras folder. The System folder has the LaserWriter 7.1.2 driver installed.

- Graphing Calculator: This program demonstrates your Power Macintosh computer's speed, and shows how speed can improve a Macintosh application program's performance. For more information about this program, start the program and select Help from the Equation menu. A self-running demonstration program can be viewed by selecting Full Demo from the Demo menu.

- Video Monitor: The Video Monitor program allows the computer to display a live video image in a window on the screen and to capture one frame of the video image. A Power Macintosh 6100/60AV, 7100/66AV, or 8100/80AV computer is required. In addition video equipment must be connected to your computer's video ports.

- DocViewer: To view the AppleScript Guide or the FusionRecorder Read Me file, a program called DocViewer is required. DocViewer displays files for you to read on the screen. It can be used to search for specific topics in files, and print out pages of information. The DocViewer Read Me file explains how to use DocViewer.

Article Change History:
09 Jan 1995 - Noted that 7.1.2 was installed on the early Power Macintosh computers.

Support Information Services

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Tech Info Library Article Number:14874

Tech Info Library

At Ease 2.0: Problems with Color Selection Dialog (8/95)

Revised: 8/9/95
Security: Everyone

At Ease 2.0: Problems with Color Selection Dialog (8/95)

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Article Created: 10 March 1994
Article Reviewed/Updated: 9 August 1995

TOPIC ----------

When I hold down the Option key to select the number of colors an application can use when launching, I can't choose the down arrow to display more choices.

DISCUSSION ----------

This is actually a problem with At Ease 2.0 in both Workgroups and the Non-Workgroups version when setting monitor bit depth.

There are two issues:

• The options will include "thousands" and "millions of colors" and other choices, whether your video card supports it or not.

• The 'hot spot' on the pull down selection is mapped to the wrong spot. Clicking and holding on the actual name (to the left of the triangle) will display all the available options for color choices. You can then set the color selection for that particular application.

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.
26 May 1994 - Added info that gives you options your system may not support.

Support Information Services

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Tech Info Library Article Number:14875

Tech Info Library

CD Sampler.BW Gives an Error in HyperCard (3/94)

Revised: 3/11/94
Security: Everyone

CD Sampler.BW Gives an Error in HyperCard (3/94)

==========

Article Created: 10 March 1994

TOPIC ----------

The CD Sampler.BW on Apple's CD-ROM Titles Sampler give error T63 when attempting to run demos. The CD Sampler.Color works fine.

To duplicate: Open the CD Sampler.BW stack, click on Topics. Click on Entertainment. Click on Baseballs Greatest Hits. Click on "Run Demo." Error T63 occurs. Also occurs for other demos.

DISCUSSION ----------

Opening the stack with the complete version of HyperCard 2.2 instead of the Player will generate a different error. At the point where the t63 error had appeared, the error "Don't understand "colorizeHC" now appears. The colorHC reference is to a series of XCMDs that add color to the HyperCard interface.

This XCMD has been used with the Sampler stacks. There appears to be a problem with properly handling the color depth when using these XCMDs. This should be handled more gracefully than it is.

Unfortunately, there is no workaround for this problem. Since the stack is a protected stack, there is no way to workaround the presentation of the error messages.

Support Information Services

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Tech Info Library Article Number:14876

Tech Info Library

A/UX: Can't Connect to the Toolbox, Can't Launch Macgetty (3/94)

Revised: 3/29/94
Security: Everyone

A/UX: Can't Connect to the Toolbox, Can't Launch Macgetty (3/94)

==========

Article Created: 10 March 1994
Article Reviewed/Updated: 29 March 1994

TOPIC ----------

I'm getting the error on the A/UX console stating:
"Can't Connect to the ToolBox environment - Can't launch macgetty-Launching getty instead." Then the startup fails.

DISCUSSION ----------

Here are some trouble-shooting steps you should try if you are getting this error:

1) ls -l /etc/macgetty should give you
   -rwxr-x--- root sys (for the permissions, owner, and group)
   if they aren't set that way
   chmod 750 /etc/macgetty will change the permissions
   chown root /etc/macgetty will change the ownership
   chgrp sys /etc/macgetty will change the group

2) If you notice in step 1. above that both owner and group are set to root, issue the command:
   ls -l /etc

If you notice that every file is set with root ownership and root groupship, it is probably time to reinstall the core A/UX.
The only way to tell how many files and directories are messed up is to mount the installation cd and check all the files.
This is often the vestige of someone having changed permissions on a folder from the file menu's "UNIX permissions ..." choice and having checked the "make all currently enclosed ..." option.

3) If the file permissions seem to be set correctly, try the command:
   su sys

If that fails with an error like "can't execute /bin/sh",
issue the commands:

cd /
ls -la
make sure that the entries for "/etc" and ".." (which is "/" itself)
are set to:
drwxrwxr-x   bin sys   for /etc
drwxr-xr-x   root root   for ..
as long as they are listed as "d" for directory chmod 775 /etc ;
chown bin /etc; chgrp sys /etc will fix "/etc"
and
chmod 755 /; chown root /; chgrp root /
will fix "/"

4) If the permissions seem OK on the files and directories, and the error specifically refers to the ToolBox, then the solution may be to replace the /mac/lib/Patches/Patch* files from the CD or from a working A/UX machine running the same version of A/UX (open a command shell and type uname -a to find A/UX version number). The easiest way to get these files would be to ftp them over from another machine.

Filenames are: Patch.0178 & Patch.067C

To get them from the CD-ROM, you must mount the CD as a Unix Filesystem using the mount command:

mount -o r /dev/dsk/c10xdos0 /mnt where the 'x' indicates the SCSI id of the CD ROM drive, and the 'c1' on an Apple WorkGroup Server 95 could be c1-4, depending to which SCSI bus the CD-ROM drive is attached. Once mounted, you can copy the files using the cp command:

cp /mnt/mac/lib/Patches/Patch* /mac/lib/Patches/*

5) If none of the above troubleshooting tips help, then a complete reinstall of core A/UX is most likely in order. Remember to backup any system specific files (such as hosts, or NETADDRS, Users and Groups datafile, etc.) whenever doing a reinstall.

Article Change History:
29 Mar 1994 - Added trouble-shooting tips for problem. Combined can't launch toolbox and Macgetty into one. Added reinstall as final option.

Support Information Services

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Created: 3/10/94
Author: EL

Source: DRC
Library: TECHINFO

Tech Info Library Article Number:14877

Tech Info Library

MacTCP: Invalid Address (3/94)

Revised: 3/11/94
Security: Everyone

MacTCP: Invalid Address (3/94)

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Article Created: 10 Mar 1994

TOPIC --------------------

Every time I manually enter an address in the MacTCP control panel, and then close the Control Panel, I get an error that the address is invalid.

DISCUSSION --------------------

First verify with your network administrator that the address you are using is indeed a valid address, and that there are no duplicate addresses on your network.

If your address is valid, make sure when you enter the address that no additional characters are accidentally added. Characters such as <Return> and <Ctrl> accidentally added after entering the address can cause this error.

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Tech Info Library Article Number:14878

Tech Info Library

A/UX: mail and not a typewriter (2/95)

Revised: 2/27/95
Security: Everyone

A/UX: mail and "not a typewriter" (2/95)

==========

Article Created: 10 March 1994
Article Reviewed/Updated: 27 February 1995

TOPIC ----------

What does "not a typewriter" mean when sending mail in A/UX?

DISCUSSION ----------

The "user unknown: not a typewriter" error message is most likely caused by the sendmail program mapping the user's name to lowercase before checking /etc/password for the user's account. For example, a username of Mike or Jim would be mapped to 'mike' or 'jim', and then the passwd file is checked for those names. This is the way login names are supposed to appear in the passwd file.

The solution would be to create a username in the passwd file all in lowercase. "Jim" would have an entry of "jim" as well.

The error saying "not a typewriter" is a historical error. The text for this error message was created when the terminals attached to the system were teletypes. The error is saying that there is no terminal attached to the process where the process can send messages generated by either STDIO (standard output) or STDERR (standard error). This message is common on processes that are started from a script, from cron, or from inittab. It can also be encountered if a process is started as a background process. If the process generates any kind of output, the message "not a typewriter" is displayed.

Article Change History:
27 Feb 1995 - Added historic information on "not a typewriter".

Support Information Services

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..TIL14879-A-UX-mail_and_not_a_typewriter_2-95_(TA31349).pdf

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Created: 3/10/94
Author: EL
Source: DRC
Library: TECHINFO

Tech Info Library Article Number:14879

Tech Info Library

Macintosh AV: Noise With Sampled Audio (3/94)

Revised: 3/23/94
Security: Everyone

Macintosh AV: Noise With Sampled Audio (3/94)

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Article Created: 11 March 1994
Article Reviewed/Updated: 23 March 1994

TOPIC ----------

Customers are complaining about hiss and popping within a recorded audio sample. They are sampling from their internal CD-ROM drive using the CD-Remote DA with Fusion Recorder or MacroMedia's SoundEdit Pro v1.0.5.

• Configuration:
  Macintosh Quadra 840AV 8/230/Int.CD 300i & External CD 150
  System Software: Clean Installed 7.1 from CD;
  Express Modem Software;
  Virtual Memory: OFF
  File Sharing: OFF
  Express Modem: OFF
  Sound Out: 44 kHz; 16 Bit & Stereo
  Sound In: Internal CD & Playthrough selected
  **For Internal Sampling Sound In: External Audio & Playthrough selected

  **For External Sampling:

1) Sampling a sound via the internal CD 300i OR external audio source using both SoundEdit Pro v1.0.5 and Fusion Recorder v1.0.1 and the Apple CD Remote DA produces a poor quality sound with "hiss", "popping" and hesitation or skipping through both the internal speaker and external headphones.

NOTE: With Fusion Recorder we also heard a high pitched tone at random times of a sampled sound. During the recording of the audio, the sound is perfect while playing through internal speaker or head phones.

2) Sampling a sound via the internal CD 300i using the Apple ATG Group's Zounds(1/20/93) application products a clean and acceptable sound (AIFF format) on playback. Appears to just dump the sound right to the hard drive during recording in a "ZoundsTemp1", "ZoundsTemp2", etc. file.

3) Converting audio track via the internal CD 300i using Fusion Recorder v1.0.1 and QuickTime 1.6.1 produces a clean and acceptable sound (MooV format) on playback.

The questions raised are:

- Can the Sound Manager be interfering in our samplings?
- Is there a setting that we have overlooked to eliminate the additional sound introduced in the sampling?

DISCUSSION ----------

There are several issues to be considered here. First, the firmware present in most CD300 drives has difficulty correctly transferring digital audio. The problem has been corrected in the newer CD300 Plus drives.

Second, there is a basic throughput issue. In order to correctly read digital audio data, you need to read a chunk of audio, byte swap it, write it to disk, and issue another read command to the CD ROM drive before the drive overruns its read buffer. If you try this on a Macintosh with synchronous read and write calls, it is impossible to do.

There are a few things which the user can do to get the best performance from the Macintosh AV machines:

- Disable File Sharing. File sharing slows down overall system performance. For best results, disable file sharing before using digital audio software. Use the "Sharing Setup" control panel to disable file sharing.

- Unmount File Servers. For the reason mentioned above, unmount any network file servers before using digital audio software.

- Turn off Virtual Memory. Virtual Memory (VM) allows you to use part of your hard disk as if is was RAM. In general, sound editing applications do not work well with VM enabled. Use the Memory control panel to turn off VM and reboot your Macintosh.

- Turn off Speech Recognition. Apple's Speech Recognition software on the 660 and 840AV uses the DSP (Digital Signal Processor) to do its processing. Digital audio software requires nearly 100% of the DSP to perform its operations. Use the Speech setup control panel to disable Speech Recognition.

- Turn off the Express Modem. Apple's Express Modem software also makes heavy use of the DSP. Use the Express Modem control panel to turn off the Express Modem before using digital audio software.

- "Run Lean". Disable any unnecessary Extensions and Control Panels in the System Folder. Many Extensions and Control Panels use up some of the processing power of your Macintosh. To get the best performance from digital audio software, disable any unnecessary Extensions and Control Panels.

- Use High Speed Hard Disks. High Speed internal or external hard disks with SCSI-2 interfaces will work best for recording digital audio. You should also look for disks that don't use thermal recalibration or do it in the background when you are not recording audio.

- Optimize Your Hard Disk. Recording digital audio places a large burden on your hard disk. For best results use a hard disk optimizing program such as Speed Disk which is included in the Norton Utilities or the FWB Toolkit from FWB Software.

Article Change History:
23 March 1994 - Added specific tips on getting the most from the AV.

Support Information Services

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Tech Info Library Article Number:14880

Tech Info Library

Power Macintosh: SNA•ps Is Compatible (5/94)

Revised: 6/2/94
Security: Everyone

Power Macintosh: SNA•ps Is Compatible (5/94)

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Article Created: 14 March 1994
Article Reviewed/Updated: 26 May 1994

TOPIC ----------

The following compatibility information was provided by Wall Data, Inc. and describes compatibility of the SNA•ps product line with Power Macintosh.

DISCUSSION ----------

The SNA•ps product line is compatible with Power Macintosh computers running in emulation mode.

Details of SNA•ps Compatibility

The entire SNA•ps product line was tested with prototypes of the Power Macintosh. SNA•ps 3270 Gateway Client (GC) (v1.1.3), SNA•ps 5250 GC (v1.2) and SNA•ps Print (v1.2) were all found to be compatible running in the emulation mode. The SNA•ps Gateway (v2.0.1) configuration and administration applications were also compatible. The SNA•ps Gateway code extension loaded correctly and did get downloaded to the various NuBus cards (4/16 Token Ring, Serial NB, and Coax). Be sure to use A/ROSE 1.2.1 with Macintosh Coprocessor Platform (MCP) NuBus cards (4/16 Token Ring and Serial NB) in Power Macintosh computers; it is expected that all gateways will operate in a stable fashion on released Power Macintosh hardware and system software. Below is a list of SNA•ps software versions which are compatible with Power Macintosh, however be sure that the Power Macintosh Modern Memory Manager is ON before attempting to launch any SNA•ps software:

SNA•ps 3270	V 1.1.2 or later
SNA•ps 3270 GC	V 1.1.2 or later
SNA•ps 5250	V 1.0 or later
SNA•ps 5250 GC	V 1.0 or later
SNA•ps Print	V 1.0 or later
SNA•ps Gateway/10	V 2.0 or later
SNA•ps Gateway/35	V 2.0 or later

SNA•ps Gateway/70 V 2.0 or later

Also, there seem to be some system extension and Control Panel device conflicts between SNA•ps and other third-party software running in emulation mode on a Power Macintosh. The known incompatible software with SNA•ps is NOW Up-to-Date and Norton Utilities Disk Light, and there may be others. If problems are encountered while attempting to boot a Power Macintosh or launch SNA•ps software, it is recommend the user remove all other third-party system extensions and Control Panel devices from the System Folder. The Power Macintosh should boot and SNA•ps should then run OK. Then go through a process of elimination to determine which third-party system extension or Control Panel device is conflicting with SNA•ps.

Native Power Macintosh Version

As of March 1994, there is no delivery date for native versions of the SNA•ps product line.

Upgrade Distribution

The Wall Data upgrade program for SNA•ps is expected to start June 13, 1994. Wall Data will manage upgrades through a FAX program using a Wall Data SNA•ps Registration form. The customer must complete the form, and FAX it to Wall Data at the California FAX number to get the upgrade. All upgrades are priced but most are offered at 100% discount until August 31, 1994. There will always be a charge for SNA•ps 5250 upgrades. The Registration form calls for details about proof of purchase and how to pay for any upgrades. To get an Registration form FAXed to you, call Wall Data's Inside Sales group or the regular 408 area code number. Customers can also mail forms to Wall Data's California address.

To locate a vendor's address and phone number, use the vendor name as a search string.

The versions of SNA•ps software offered by Wall Data is NOT native Power Macintosh software, and you may experience the same problems with Modern Memory Manager and/or third-party extension conflicts. Available from Wall Data are the following versions of SNA•ps:

SNA•ps 3270	V 1.1.3
SNA•ps 3270 GC	V 1.1.3
SNA•ps 5250	V 1.2
SNA•ps 5250 GC	V 1.2
SNA•ps Print	V 1.2
SNA•ps Gateway/10	V 2.0.1
SNA•ps Gateway/35	V 2.0.1
SNA•ps Gateway/70	V 2.0.1

Article Change History:
26 May 1994 - Updated information from Wall Data, Inc.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14882

Tech Info Library

Power Macintosh: Both Serial Ports Support GeoPort (3/94)

Revised: 3/11/94
Security: Everyone

Power Macintosh: Both Serial Ports Support GeoPort (3/94)

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Article Created: 10 March 1994

TOPIC -----

Does it matter if I use the printer serial port, or modem serial port on a Power Macintosh when making a GeoPort connection?

DISCUSSION -----

No. Both serial ports support the GeoPort protocols, and they utilize a 9-pin mini-DIN connector.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14884

Apple, DayStar PowerPC Upgrade Cards Compared (3/94)

Revised: 3/11/94
Security: Everyone

Apple, DayStar PowerPC Upgrade Cards Compared (3/94)

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Article Created: 11 March 1994

TOPIC ----------

This article compares the Apple PowerPC Upgrade Card with the DayStar PowerPro 601 PowerPC Upgrade Cards

DISCUSSION ----------

Feature:	Apple PowerPC Upgrade Card	DayStar PowerPro 601
RISC processor	PowerPC 601	PowerPC 601
Processor Speed(s)	66 MHz	66 MHz, 80 MHz*
Restart with 68040	No	Yes
Maximum Operating Speed:		
- Centris 650	50 MHz	80 MHz
- Quadra 700, 900	50 MHz	80 MHz
- Quadra 650, 800, 950	50 MHz	80 MHz
Memory Expansion (on the card)	0 MB	128 MB
Maximum System Memory		
- Quadra 700	68 MB	196 MB
- Centris 650	136 MB	264 MB
- Quadra 650, 800	136 MB	264 MB
- Quadra 900, 950	256 MB	384 MB
Cache size available	1 MB	1 MB
Direct access to 64-bit memory	No	Yes

* The DayStar PowerPro 601 comes in two versions: one with a 601 chip running at 66 MHz and the second with a 601 chip running at 80 MHz.

To locate a vendor's address and phone numbers, use the vendor name as a search string.

..TIL14885-Apple_DayStar_PowerPC_Upgrade_Cards_Compared_3-94_(TA31353).pdf

Support Information Services

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Tech Info Library Article Number:14885

Tech Info Library

Calculator: Divide by 0 gives Infinity (3/94)

Revised: 3/11/94
Security: Everyone

Calculator: Divide by 0 gives Infinity (3/94)

==========

Article Created: 11 Mar 1994

TOPIC -----

When I divide the number 1 by the number 0, using the Calculator DA, I get the answer ‘infinity.’ Why does the calculator give me this answer?

DISCUSSION -----

Any number divided by “nothing,” or “zero” is undefined.

You can take the limit of 1/n as n->0 and you’ll see that as ”n” is in the whole number domain and decreases from +∞ toward 1, and that the result approaches “1.” As “n” decreases from 1 toward 0 (.9,.8,.7,...,.0000003, ...,.00000000002, etc.) the result gets larger (for example: 1/.2 = 5, 1/.02 = 50, 1/.002 = 500, etc.). As the “n” gets smaller, the result gets larger. As “n” approaches 0, the result approaches +∞.

In Calculus, lim (1/n) as n->0 => +∞ which is undefined, so either “infinity” (∞) or “undefined” is the correct answer.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14887

Tech Info Library

Macintosh Displays: Overview of Sense Codes and Adapters (5/95)

Revised: 5/5/95
Security: Everyone

Macintosh Displays: Overview of Sense Codes and Adapters (5/95)

==========

Article Created: 10 March 1994
Article Reviewed/Updated: 5 May 1995

TOPIC ----------

This article describes sense codes and sense adapters and why they are used.

DISCUSSION ----------

Apple computers and video cards rely on sense codes in the display's video cable to determine what resolution at which to run. For example, an Apple 13-inch RGB monitor tells the Macintosh that it supports 640x480, so the Macintosh computer responds by displaying that resolution. When an Apple Multiple Scan Display is connected, it signals to the Macintosh that it can run in a range of resolutions. For example, a Multiple Scan 20 Display can support resolutions from 640x480 up to 1152x870. Sense Code technology is how Apple displays know what resolution to display.

Older Macintosh computers and Apple video cards do not have reprogramable video drivers that allow them to switch to higher resolutions. If a Multiple Scan Display is connected to an older Macintosh or video card, it will be limited to 640x480 resolution.

Macintosh computers and video cards that fall into this class are:

Video Cards - 4•8, 8•24, and 8•24GC
LC , LC II, LC III (except 475, 476, and 630)
Performa (except the 475, 476, and 630 family)
PowerBook
Duo Dock and MiniDock*
Macintosh II family

The sense adapter attaches to the display's video cable, and has a sense code for a higher resolution.

* - The Duo Dock does not require a video adapter to change resolutions when

System 7.5 is installed.

Sense Adapters

Sense code cable adapters allow older Macintosh and video cards to display higher resolutions on multiple scan displays. The adapters have a sense code for a higher resolution. This tricks the Macintosh into thinking it is hooked to a fixed frequency display like our 16-inch and 21-inch RGB displays.

The other solution when using a multiple scan display, is to use a programmable display card like a Macintosh Display Card 24AC. Because this card is fully capable of recognizing the multiple scan sense codes and changing resolutions without restarting, even older Macintosh Systems work fine if they have a 24ac card.

Sense Code Adapter Specifications

832x624 Adapter - 16-inch Display

DB15M	DB15F	Pin Assignments
1	1	RED GND
2	2	RED VIDEO
3	3	C SYNC
5	5	GREEN VIDEO
6	6	GREEN GND
9	9	BLUE VIDEO
11	11	C & V SYNC GND
12	12	V SYNC
13	13	BLUE GND
14	14	H SYNC GND
15	15	H SYNC
SHELL	SHELL	

Notes:
PINS 4 & 10 JUMPERED TOGETHER ON DB15 MALE END.

1152x870 Adapter - 21-inch Display

DB15M	DB15F	Pin Assignments
1	1	RED GND
2	2	RED VIDEO
3	3	C SYNC
5	5	GREEN VIDEO
6	6	GREEN GND
9	9	BLUE VIDEO
12	12	V SYNC
13	13	BLUE GND

14	14	H SYNC GND
15	15	H SYNC
11	11	C & V SYNC GND
SHELL –	SHELL	

Notes:
PINS 4,7,10,11 JUMPERED TOGETHER ON DB15 MALE END.

Article Change History:
05 May 1995 - Made minor corrections.
21 Apr 1995 - Added Duo Dock and System 7.5 information.
14 Mar 1995 - Corrected wording of MiniDock.

Support Information Services

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Tech Info Library Article Number:14890

Tech Info Library

Apple Multiple Scan 20 Display: Macintosh Video Support (2/96)

Revised: 2/8/96
Security: Everyone

Apple Multiple Scan 20 Display: Macintosh Video Support (2/96)

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Article Created: 8 March 1994
Article Reviewed/Updated: 8 February 1996

TOPIC ----------

This article gives the video modes supported on each Macintosh computer with the Apple Multiple Scan 20 Display, and which computers require display adapters.

DISCUSSION ----------

Begin_Table

(1) - 640x480 - 14-in Display
(2) - 832x624 - 16-in Display
(3) - 1024x768 - 19-in Display
(4) - 1152x870 - 21-in Display

Macintosh	Video Available				Display Manager
	(1)	(2)	(3)	(4)	Mode Switching?
Power Macintosh - 45 Pin conn	Y	Y	N	N	Y
Power Macintosh - AV card	Y	Y	Y	Y	Y
Power Macintosh - 2 MB VRAM*	Y	Y	Y	Y	Y
Power Macintosh - 4 MB VRAM*	Y	Y	Y	Y	Y

Notes:
* - Additional RAM goes into the VRAM expansion card

Quadra 700	Y	Y	N	Y	Y
Quadra 900	Y	Y	N	Y	Y
Quadra 800	Y	Y	Y	Y	Y
Quadra 950	Y	Y	Y	Y	Y
Quadra 660AV	Y	Y	Y	Y	Y
Quadra 840AV	Y	Y	Y	Y	Y
Quadra 610	Y	Y	Y	Y	Y

Quadra 650	Y	Y	Y	Y	Y
Quadra 605	Y	Y	Y	Y	Y
Centris 610	Y	Y	Y	Y	Y
Centris 650	Y	Y	Y	Y	Y
Macintosh IIci	Y	N	N	N	N
Macintosh IIsi	Y	N	N	N	N
Macintosh IIvx	Y	N	N	N	N
Macintosh 630 family	Y	N	N	N	Y (6)
DIsplay Card 24AC	Y	Y	Y	Y	Y
8•24	Y	Y	N	Y	N
8•24 GC	Y	Y	N	Y	N
4•8	Y	Y	N	Y	N
Mac II cx	N	N	N	N	N/A
Mac II	N	N	N	N	N/A
Mac IIx	N	N	N	N	N/A
Mac IIfx	N	N	N	N	N/A
Performa 400	Y	N	N	N	N
Performa 410	Y	N	N	N	N
Performa 430	Y	N	N	N	N
Performa 405	Y	N	N	N	N
Performa 450	Y	Y	N	N	N
Performa 460	Y	Y	N	N	N
Performa 466	Y	Y	N	N	N
Performa 467	Y	Y	N	N	N
Performa 475	Y	Y	Y	Y	Y
Performa 476	Y	Y	Y	Y	N
Performa 550	Y	Y	N	N	N
Performa 600	Y	N	N	N	N
Performa 600CD	Y	N	N	N	N
PowerBook 180	Y	Y	N	N	N
PowerBook 180c	Y	Y	N	N	N
PowerBook 165	Y	Y	N	N	N
PowerBook 165c	Y	Y	N	N	N
PowerBook 160	Y	Y	N	N	N
PowerBook 100	N	N	N	N	N/A
PowerBook 140	N	N	N	N	N/A
PowerBook 145	N	N	N	N	N/A
PowerBook 170	N	N	N	N	N/A
PowerBook Duo 210	N	N	N	N	N/A
PowerBook Duo 230	N	N	N	N	N/A
PowerBook Duo 250	N	N	N	N	N/A
PowerBook Duo 270C	N	N	N	N	N/A
PowerBook 500 Series	Y	Y	N	N	Y
MiniDock	Y	Y	N	N	N

DUO DOCK	Y	Y	N	N	N (5)
DUO DOCK II	Y	Y	Y	Y	Y
Mac LC 475	Y	Y	Y	Y	Y
Mac LC III	Y	Y	N	N	N
Mac LC	Y	N	N	N	N
Mac LC II	Y	N	N	N	N

Notes:
(1) - 640 x 480 - 14-in Display
(2) - 832 x 624 - 16-in Display
(3) - 1024 x 768 - 19-in Display
(4) - 1152 x 870 - 21-in Display
(5) - The Duo Dock supports mode switching when System 7.5 is installed.
(6) - The Macintosh 630 family only supports a Macintosh resolution of 640x480. However, other VGA and SuperVGA resolutions are available.

End_Table

Computers and Video Cards Not Requiring Video Adapters

Power Macintosh family
Macintosh Centris family
Macintosh Quadra family
Macintosh LC 475
Macintosh Performa 475 and 476
Macintosh Display Card 24AC
Duo Dock II
Macintosh 630 family

These units use the Apple Multiple Scan software to change resolutions.

Computers and Video Cards Requiring Video Adapters

Macintosh II Family
PowerBook computers
PowerBook Duo and MiniDock
PowerBook Duo and Duo Dock*
Macintosh Performa Computers (except 475 and 476)
Macintosh LC, LC II, LC III
Video Cards - 4•8, 8•24, 8•24GC

* - The Duo Dock does not require a video adapter to change resolutions when System 7.5 is installed.

Maximum Resolutions With Video Adapters

Begin_Table

Computer	832x624	1152x870	Notes
Macintosh II	No	No	1
Macintosh IIx	No	No	1
Macintosh IIfx	No	No	1
Macintosh IIcx	No	No	1
Macintosh IIci	No	No	2
Macintosh IIsi	No	No	2
Macintosh IIvx	No	No	2
Macintosh LC	No	No	2
Macintosh LC II	No	No	2
Macintosh LC III	Yes	No	3
Performa 400	No	No	2
Performa 405	No	No	2
Performa 410	No	No	2
Performa 430	No	No	2
Performa 450	Yes	No	3
Performa 460	Yes	No	3
Performa 466	Yes	No	3
Performa 467	Yes	No	3
Performa 600	No	No	2
PowerBook 160	Yes	No	3
PowerBook 165	Yes	No	3
PowerBook 165C	Yes	No	3
PowerBook 180	Yes	No	3
PowerBook 185C	Yes	No	3
Duo and MiniDock	Yes	No	3
Duo and Duo Dock	Yes	No	3,4
4•8, 8•24, 8•24GC	Yes	Yes	

Notes:
1) No built-in video. Video is limited only by the video card used.
2) Limited to a resolution of 640x480 with built-in video.
3) Limited to a resolution of 832x624.
4) The Duo Dock does not require a video adapter to change resolutions when System 7.5 is installed.

End_Table

Display Adapters

The Apple Multiple Scan 20 Display has several resolutions. Macintosh computers designed before the introduction of Apple Multiple Scan 20 Display will only recognize the display as a 14-in color display without an adapter. The adapters, available through Apple Resellers and third party companies, contain a sense code that tells the Macintosh that the display is fixed frequency 16-in. or 21-in. display. Without the adapter, the display will be fixed at a 640x480 resolution.

Display adapters are available from several third-pary companies such as Enhanced Cable Technology, Griffin Technology, and MacAdapt.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Article Change History:
08 Feb 1996 - Added additional adapter information.
16 Nov 1995 - Removed part numbers for cable adapters.
20 Apr 1995 - Added information on System 7.5 and Duo Dock.

Support Information Services

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Tech Info Library Article Number:14894

Tech Info Library

Macintosh LC 500 Series: Flashing ? At Startup (3/94)

Revised: 3/14/94
Security: Everyone

Macintosh LC 500 Series: Flashing "?" At Startup (3/94)

==========

Article Created: 14 March 1994

TOPIC -----

Upon startup, my Macintosh LC 5xx shows a flashing question mark on the screen. When I insert my Install Me First CD and restart the computer, it still refuses to boot up.

Trying to force it to startup from the CD by pressing the Command, Option, Shift, and Delete key combination to bypass the hard drive doesn’t allow the system to boot either. What could be wrong?

DISCUSSION -----

Resetting the PRAM (Parameter RAM) by holding down the Command, Option, P, and R key combination at startup can fix this problem. If it will boot from the CD but not the hard drive, proceed with a clean reinstallation of the system software.

** NOTE: When trying to do keyboard commands before start up make, sure the CAPS LOCK key is not depressed.

Support Information Services

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Tech Info Library Article Number:14896

..TIL14897-Apple_Personal_Diagnostics_in_the_Background_3-94_(TA31360).pdf

Apple Personal Diagnostics in the Background (3/94)

Revised: 3/14/94
Security: Everyone

Apple Personal Diagnostics in the Background (3/94)

==========

Article Created: 14 March 1994

TOPIC -----

This article discusses what effect putting Apple Personal Diagnostics in the background has.

DISCUSSION -----

Some applications (including disk protection/security utilities) can be preset to launch automatically. When APD is moved to the background, either by you or by an application that has launched automatically, any Diagnostic Test or Benchmark Check that was running at the time of the move will be stopped.

Support Information Services

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Tech Info Library Article Number:14897

Tech Info Library

Apple Personal Diagnostics:Emergency Disk Fulfillment (5/96)

Revised: 5/24/96
Security: Everyone

Apple Personal Diagnostics:Emergency Disk Fulfillment (5/96)

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Article Created: 14 March 1994
Article Reviewed/Updated: 24 May 1996

TOPIC ----------

The emergency disks that come with Apple Personal Diagnostics v 1.0 (APD) do not cover my Macintosh, what do I use?

DISCUSSION ----------

If you use APD Version 1.0 on one of the system configurations listed below, you may encounter a situation that requires an emergency disk not included in the APD package. Please call Apple Order Center and request that the appropriate disk be mailed to you.

The Tech Info Library article titled "Locating Vendor Information" can help you search for Apple Order Center's phone number.

System Configurations Affected

The emergency disk called "APD Emergency Disk 3 - Miscellaneous Macintoshes" supports these systems:

- Macintosh Quadra 610, 650, 660AV, 800, 840AV
- Centris 610, 650, 660AV
- Macintosh TV
- Apple Workgroup Server 60, 80

The emergency disk called "APD Emergency Disk 4 - 800K Drives Only" supports any Macintosh CPU that does NOT have a 1.44 MB floppy drive.

Version 1.1 of Apple Personal Diagnostics comes with emergency disks that cover all Macintosh models except the Workgroup Server 9150.

Article Change History:

24 May 1996 - Updated for technical accuracy.
21 Feb 1995 - Added keyword; made minor technical updates.
05 Jan 1995 - Added information on version 1.1.

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Tech Info Library Article Number:14898

Tech Info Library

Apple Personal Diagnostics: Low Memory Alerts (3/94)

Revised: 3/14/94
Security: Everyone

Apple Personal Diagnostics: Low Memory Alerts (3/94)

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Article Created: 14 March 1994

TOPIC ----------

This article deals with the issue of low memory and Apple Personal Diagnostics.

DISCUSSION ----------

Apple Personal Diagnostics returns a low-memory alert when the APD application does not have enough memory to run or is running low on memory. For example, if you've created a report that requires more memory than is currently available. To allocate more memory to the APD application, you can do one or more of the following:

If you are using System 7, or System 6 with MultiFinder:

- Quit other applications that may be running at the same time as APD
- If you have sufficient RAM installed in your system, quit the APD application, open the Apple Personal Diagnostics Get Info box and increase the "preferred" application memory size to 1500K. (The application memory size is initially set to 1200K.)
- Close any open report.
- Reduce the size of any installed RAM disk and the system RAM cache.

If you are using System 6 with Finder rather than MultiFinder:

- Close any open report.
- Reduce the size of any installed RAM disk and the system Disk cache.

Support Information Services

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Tech Info Library Article Number:14900

Tech Info Library

Apple Personal Diagnostics and Video Mirroring (3/94)

Revised: 3/14/94
Security: Everyone

Apple Personal Diagnostics and Video Mirroring (3/94)

==========

Article Created: 14 March 1994

TOPIC -----

Apple Personal Diagnostics has known incompatibilities with video mirroring.

DISCUSSION -----

If you sometimes use the video mirroring option, we strongly recommend that you make sure video mirroring is turned off before running APD.

Support Information Services

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Tech Info Library Article Number:14901

Tech Info Library

Chinese Language Kit: Description (2/95)

Revised: 2/15/95
Security: Everyone

Chinese Language Kit: Description (2/95)

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Article Created: 18 October 1993
Article Revised/Updated: 15 February 1995

TOPIC --------------------

This article describes the features of the Chinese Language Kit, and gives the technical specifications.

DISCUSSION --------------------

Solutions

• Create documents and presentations in both Chinese and English, or Chinese and other languages supported by your system.
• Produce promotional materials, foreign-language textbooks, bilingual educational materials, and more.
• Insert Chinese text into letters, presentations, spreadsheets, and other documents.
• Boost language learning by using interactive practice drills and other learning tools.

Ease of Use

• Fast, simple installation.
• Enables you to easily create, edit, and print Chinese.
• Comes with an input guide which includes instructions in Chinese and English.

Compatibility

• Runs applications that have been localized, including WordPerfect or Nisus, or localized applications such as ClarisWorks Chinese, and TurboWriter.
• Recommended for all QuickDraw printers; also works with Postscript-compatible printers.

Flexibility

- Comes with TrueType fonts: LiSung for traditional and Song for simplified.
- Provides four additional fonts on the compact disk.
- Allows you to use simplified Chinese characters, traditional characters, or both.
- Provides a choice of input methods: Pinyin, Zhuyin, Cangjie, and others.

The Apple Chinese Language Kit contains everything you need to easily add Chinese text in your letters, presentations and reports.

Whether you're a desktop publisher or business professional, you can use the Language Kit to develop Chinese-language materials such as brochures, posters, business cards, presentations, and restaurant menus. Students and teachers can use it to run interactive Chinese-language programs and produce compelling term papers in Chinese. Although the Chinese Language Kit does not translate text, it does let you easily input, edit, and print in Chinese.

The Chinese Language Kit works as an extension to System 7.1 (or higher) and allows you to run Chinese applications. Because the Language Kit uses the operating system you already have, there's no need to store an additional system on your hard disk. The Chinese Language Kit also contains simplified and traditional characters, as well as a wide choice of input methods.

Many major software programs have a version that has been localized for use in Chinese-speaking countries. All you need to run them is the Chinese Language Kit and System 7.1 (or higher). You can even use non-localized programs, such as Nisus 3.4, that take advantage of WorldScript. WorldScript, introduced with System 7.1, simplifies the way in which a single operating system can support multiple languages.

The Chinese Language Kit comes with several TrueType fonts, which produce high-quality output from any Macintosh-compatible printer. Documentation is provided in both Chinese and English, making the Language Kit easy to use, whether you're a native speaker or just learning Chinese.

Technical Specifications

- Compatible applications

You can use the Chinese Language Kit with a variety of Chinese-localized applications. They include:

Canvas 3.5 Chinese, from Deneba
ClarisWorks 1.0 Chinese (Simplified) from Claris
ClarisWorks 1.0 Chinese (Traditional) from Claris
FileMaker Pro 1.0 Chinese (Traditional) from Claris
Imprint 1.35 Chinese, from Ivy Systems
Lotus 1-2-3 1.0 Chinese (Simplified) from Lotus
Lotus 1-2-3 1.0 Chinese (Traditional) from Lotus
NewsMaker Chinese, from Compose
Nisus 3.50 Chinese (Simplified) from Nisus
Nisus 3.50 Chinese (Traditional) from Nisus
PageMaker 3.0 Chinese (Simplified) from Aldus

PageMaker 3.5 Chinese (Traditional) from Aldus
TurboWriter 2.0.5 Chinese (Traditional) from Transpac
WordPerfect 2.2 Chinese (Simplified) from WordPerfect

• You can use the Chinese Language Kit with many non-localized programs that employ Apple WorldScript software technology.

These programs include:

AllPage 1.82, from MicroMacro
AllScript 1.81, from MicroMacro
FreeHand 3.1 Asian, from Aldus
Imprint 3.5, from Ivy Systems
In Control 2.0, from Attain
Nisus 3.482, from Nisus
Persuasion 2.1 Asian, from Aldus
Sindex 2.0, from WinSoft
StatView 4.01, from Abacus Concepts
WinFile 1.7, from WinSoft
WinText 2.7.1, from WinSoft
WinView 1.7, from WinSoft
WordPerfect 2.1.4, from WordPerfect

Note:
Apple has tested only a limited number of applications; these lists aren't intended to be comprehensive. Many non-localized applications that don't employ WorldScript software technology may provide limited functionality and allow input of Chinese characters.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Supported Fonts

The Chinese Language Kit contains several fonts, some automatically installed and some manually installed.

These CD-ROM based fonts are automatically installed with Traditional Chinese:

• Taipei (Bitmap font)
• Apple LiSung Light (TrueType font)

These CD-ROM based fonts are automatically installed with Simplified Chinese:

• Beijing (Bitmap font)
• Song (TrueType font)

These CD-ROM based fonts can be manually installed by putting them in your Fonts folder (found inside your System Folder):

• Apple LiGothic Medium (TrueType font for Traditional Chinese)
• Fang Song (TrueType font for Simplified Chinese)

• Hei (TrueType font for Simplified Chinese)
• Kai (TrueType font for Simplified Chinese)

Printers supported

Recommended: QuickDraw printers, including the Apple StyleWriter line, the Apple Personal LaserWriter, and the ImageWriter line. PostScript-compatible printers, including Personal LaserWriter NTR printers and other LaserWriter printers. (Although PostScript printers can produce Chinese, performance may vary.)

System requirements

• Apple Macintosh computer with at least 4 MB of RAM (5 MB recommended for multiple applications)
• Hard disk with at least 10 MB of space available (17 MB for both Simplified and Traditional Characters)
• Apple SuperDrive floppy disk drive
• Apple Macintosh System 7.1 or later (Updater required for System 7.5)
• An application that is Chinese-localized or that uses WorldScript software technology
• CD-ROM drive to use additional Chinese fonts

Kit Components

The Chinese Language Kit includes:

• Chinese Language Kit on thirteen 1.4 MB floppy disks
• WorldScript II system extension
• Chinese Language Kit Installation and User's Guide
• Macintosh Chinese Input Method Guide (simplified)
• Macintosh Chinese Input Method Guide (traditional)
• CD-ROM with additional fonts

Ordering Information

In the USA, order number M2368LL/A
Outside the USA, order number M2368Z/A

Article Change History:
15 Feb 1995 - Updated to include info on System 7.5.
26 Jan 1994 - Added ordering info and updated list of Chinese localized applications.
19 Jan 1994 - Added a list of supported fonts.

Support Information Services

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Tech Info Library Article Number:14903

Newton Connection Kit: Syncing After PowerBook Sleeps (3/94)

Revised: 3/14/94
Security: Everyone

Newton Connection Kit: Syncing After PowerBook Sleeps (3/94)

==========

Article Created: 14 March 1994

TOPIC -----

When using the Newton Connection Kit and a PowerBook through AppleTalk, I have to reboot the Newton Connection for Macintosh to synchronize the units again after the PowerBook goes into the sleep mode. Why?

DISCUSSION -----

This is the expected behavior if any PowerBook is set up to "synchronize automatically" using AppleTalk. The Newton Connection for Macintosh does not know to revive the AppleTalk connection.

What happens is comparable to a file server connection between a PowerBook and an AppleShare server when the PowerBook goes to sleep and is awakened. The AppleTalk connection between the machines is broken when the PowerBook goes to sleep. After the PowerBook wakes up, the connection is still broken unless the control panel AutoRemounter is installed and remounts the server. With the Newton Connection for Macintosh, when configured to synchronize automatically, AppleTalk is being utilized to broadcast the PowerBook's name continuously on the network. When the PowerBook goes to sleep, the broadcasting stops because AppleTalk is shut down. When the computer is awakened, the Newton Connection application does not resume the broadcasting because it is unaware that AppleTalk has started up again.

Workarounds

- Go to preferences, deselect "synchronize automatically", click OK, go to preferences again, and select "synchronize automatically." This causes the software to check for AppleTalk again and start up broadcasting.

- Quit the Macintosh Connection Kit and restart. This causes the software to check AppleTalk and start broadcasting.

- Do not use "synchronize automatically". Then AppleTalk broadcasting only happens when the synchronize button on the Macintosh Connection Kit is activated. Only activate the synchronization when the PowerBook is awake.

Support Information Services

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Tech Info Library Article Number:14904

Tech Info Library

AddMotion: No Missing Disks in Apple Bundle (3/94)

Revised: 3/14/94
Security: Everyone

AddMotion: No Missing Disks in Apple Bundle (3/94)

==========

Article Created: 14 March 1994

TOPIC ----------

AddMotion from Motion Works is bundled with HyperCard 2.2 from Apple. Due to a change, cusomters may report that they are missing a disk mentioned in the AddMotion manual.

DISCUSSION ----------

Customers are not missing any disks. There is a change mentioned in the manual, but many customers are overlooking the change. Included in the AddMotion manual is a "Changes to Installation Procedure" sheet that clearly notes that "There is no longer a Media Sampler Disk" and "There is no longer a Principles of Animation Disk".

All customers who call inquiring about these disks should be informed of these changes, and reminded to call Motion Works USA, not Motion Works Canada for tech support. The Motion Works USA phone number is printed on a sticker applied to the front of the manual.

Support Information Services

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Tech Info Library Article Number:14905

Tech Info Library

StyleWriter: How to Print a Test Page (3/94)

Revised: 3/14/94
Security: Everyone

StyleWriter: How to Print a Test Page (3/94)

==========

Article Created: 14 March 1994

TOPIC ----------

How do I print a test page on a Stylewriter?

DISCUSSION ----------

To print a test page, hold down the form feed and power buttons at the same time, then release both at the same time.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14906

Tech Info Library

Apple Displays: No Shielding Suggestions For Interference (3/94)

Revised: 3/15/94
Security: Everyone

Apple Displays: No Shielding Suggestions For Interference (3/94)

==========

Article Created: 15 March 1994

TOPIC -----

A customer has multiple Apple monitors that shake and jiggle. None of the VGA monitors connected to MS-DOS computers exhibit this behavior. The company is located next to some older electrical lines and believes these to be the source of the problem. Are there any suggestions for shielding the monitors that will prevent the interference?

DISCUSSION -----

There is good chance that the problem could very well be related to arcing electrical lines. The reason the problem does not affect the VGA monitors is because they operate at a refresh rate of 60 Hz. The 60 Hz noise occurs at the exact time intervals that these displays are in refresh and therefore does not interfere with the screen display. When higher refresh rates are used, as in the case of Macintosh Displays, 60 Hz noise can adversely affect the display.

There are two things to try. First, turn off all the fluorescent lights in the office. If that cures the problem, you most likely have an arcing fluorescent lamp operating near the monitors. Replacement of the defective lamps or ballast should cure the problem. Also, try turning the monitor on its axis to see if that helps. There are no practical shielding solutions for a problem of this type.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14908

Tech Info Library

AppleDesign Powered Speakers: AM Stations Amplified (3/94)

Revised: 3/15/94
Security: Everyone

AppleDesign Powered Speakers: AM Stations Amplified (3/94)

==========

Article Created: 15 March 1994

TOPIC --------------------

A pair of the AppleDesign Powered Speakers (M4475LL/B) are picking up AM radio signals. What can I do to prevent this?

DISCUSSION --------------------

This problem is very common, and does not reflect on the design of the speakers. The audio/video industry has been plagued with complaints of this nature for years. The problem is the speaker wires act as an AM antenna. The AM signal is picked up by the wires, and sent to the amplifier to be amplified along with the intended signal. If the pre-amp stage has a noise gate, like the inputs on the Apple Powered Speakers, the amplitude of the AM signal is usually not high enough to pass the gate, and it is not amplified.

The only thing that can be done to alleviate this problem is to purchase some higher quality shielded cables. Two possible sources are TASCAM and Monster Cable.

Again, this is not a design flaw in the speakers. Apple is responsible for designing equipment that adheres to Federal Communications Commission (FCC) regulations, and have done so with the AppleDesign Powered Speakers.

Another option is to log the interference complaint with the FCC. The FCC is the governing body for Radio Frequency (RF) emissions in the United States.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14909

Tech Info Library

QuickTime 1.6.1: ReadMe (3/94)

Revised: 3/15/94
Security: Everyone

QuickTime 1.6.1: ReadMe (3/94)

==========

Article Created: 14 March 1994

WELCOME TO QUICKTIME 1.6.1

The QuickTime 1.6.1 software consists of

- the QuickTime system software extension
- a new version of the Macintosh Scrapbook
- a Scrapbook file with a sample movie

The QuickTime system software extension adds capabilities that let your application programs integrate graphics, sound, video, and animation into documents. By providing a standard way for all Macintosh programs to control these multimedia elements, QuickTime makes them easier to use.

In the new Scrapbook, you can cut, copy, paste, and play QuickTime movies. Larger images will also shrink to fit so that you can see the entire image in the Scrapbook window. This Scrapbook is otherwise identical to the standard Macintosh Scrapbook.

If you obtained QuickTime by purchasing it separately, by ordering it over the phone, or by downloading it from an electronic mail system, follow the instructions below to install the QuickTime extension and the new Scrapbook.

If QuickTime was already installed on your hard disk when you bought your computer, skip ahead to the section "Installing the Scrapbook."

INSTALLING QUICKTIME

To install QuickTime:

1. If you received a floppy disk labeled "QuickTime," insert it into your computer and open it. If you downloaded QuickTime electronically, make sure the QuickTime files you downloaded are visible.
2. Drag the QuickTime and Scrapbook icons from the QuickTime disk to your System Folder icon (not into the open folder).

3. Click OK in the dialog box that appears.
4. Restart your Macintosh.

INSTALLING THE SCRAPBOOK

Before you install the new Scrapbook file:

Installing the new Scrapbook File in your System Folder will delete your current Scrapbook File. If you have stored any items in your current Scrapbook that you want to keep, drag the Scrapbook File from your System Folder to any other folder. This prevents the file from being deleted when you install the new Scrapbook File. (To open the old Scrapbook File in the future, you'll need to move the new one out of your System Folder and move the old one back in.)

To install the new Scrapbook File:

1. Find the folder called Replacement Scrapbook File. (If QuickTime was already installed on your computer, this folder is on your computer's hard disk. If you obtained QuickTime separately, this folder is on the QuickTime disk.)
2. Drag the contents of the Replacement Scrapbook File folder to your System Folder icon.
3. If you haven't moved your old Scrapbook File out of the System Folder, a message asks you whether you want to replace it. Click OK to replace your old Scrapbook File.

To use the new Scrapbook File:

1. Choose Scrapbook from the Apple menu.
2. When a picture appears in the Scrapbook window, use the buttons in the movie control bar, to play the movie.

You can use standard Cut, Copy, and Paste commands to copy movies to and from the Scrapbook. To copy a movie from the Scrapbook to a document, you need to use a program that supports QuickTime movies. If the program doesn't support movies, only a single PICT image is pasted into the document (the first frame of the movie segment in the Scrapbook).

NEW FEATURES OF QUICKTIME 1.6.1

Smaller Size
The QuickTime 1.6.1 system extension takes up only about 20K of memory when it is not in use.

Converting Audio Tracks to Movies
You can convert tracks from audio compact discs into movies and add the sound to your own movies. To convert an audio track, you must be using a program that can play QuickTime movies, and you must have an AppleCD 300 or 300i CD-ROM drive connected to your Macintosh. Follow these steps:

1. Insert an audio CD into your computer's CD-ROM drive.

2. In the program you are using, choose Open from the File menu.

3. Click Desktop, then double-click Audio CD.

4. Click the name of the audio track you want to convert to a movie.

5. Click Convert.

6. Type a name for the new movie, and choose a place to save it.
To choose additional settings or to trim the length of the movie, click Options.

7. When you are ready to convert the movie, click Save.
The audio track is saved as a QuickTime movie. You can now copy and paste sound from it into other movies.

Macintosh Easy Open Support
QuickTime 1.6.1 supports the Macintosh Easy Open system extension. You can use this extension to translate sound and image files from a variety of formats into QuickTime formats--just by double-clicking them.

ColorSync Support
QuickTime 1.6.1 supports ColorSync. You can use the ColorSync control panel to obtain accurate color in your compressed still-image files, for all the devices connected to your Macintosh.

Improved Grayscale
QuickTime 1.6.1 now supports 4-bit grayscale dithering, providing a wider range of shades of gray.

Smoother Text
You can now have smoother-looking (anti-aliased) text in the text track of movies.

Cinepak Compression-Decompression Software
The Apple Compact Video compression-decompression software is now called Cinepak. The features and functionality of the software have not changed.

USING THE QUICKTIME EXTENSION

You do not interact directly with the QuickTime extension. It works behind the scenes as part of your system software, providing new features to the application programs that support QuickTime. The specific features of QuickTime that you use and how they are presented depend on the programs you use.

TO LEARN EVEN MORE

The best way to get started with QuickTime is to purchase the QuickTime Starter Kit from Apple Computer. This kit contains four programs with which you can play and edit QuickTime movies, convert existing files to movies, record video or audio movies (with digitizing hardware), and compress still photos. The kit also includes a CD-ROM disc filled with examples of QuickTime video, animation, and photos, and a catalog of products that work with QuickTime.

The QuickTime Starter Kit is available from your local hardware or software dealer.

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Support Information Services

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Tech Info Library Article Number:14910

Tech Info Library

QuickTime 1.6.2: ReadMe (3/94)

Revised: 3/15/94
Security: Everyone

QuickTime 1.6.2: ReadMe (3/94)

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Article Created: 14 March 1994

WELCOME TO QUICKTIME 1.6.2

The QuickTime 1.6.2 software consists of

- the QuickTime system software extension
- a new version of the Macintosh Scrapbook
- a Scrapbook file with a sample movie

The QuickTime system software extension adds capabilities that let your application programs integrate graphics, sound, video, and animation into documents. By providing a standard way for all Macintosh programs to control these multimedia elements, QuickTime makes them easier to use.

In the new Scrapbook, you can cut, copy, paste, and play QuickTime movies. Larger images will also shrink to fit so that you can see the entire image in the Scrapbook window. This Scrapbook is otherwise identical to the standard Macintosh Scrapbook.

If you obtained QuickTime by purchasing it separately, by ordering it over the phone, or by downloading it from an electronic mail system, follow the instructions below to install the QuickTime extension and the new Scrapbook.

If QuickTime was already installed on your hard disk when you bought your computer, skip ahead to the section "Installing the Scrapbook."

INSTALLING QUICKTIME

To install QuickTime:

1. If you received a floppy disk labeled "QuickTime," insert it into your computer and open it. If you downloaded QuickTime electronically, make sure the QuickTime files you downloaded are visible.
2. Drag the QuickTime and Scrapbook icons from the QuickTime disk to your System Folder icon (not into the open folder).

3. Click OK in the dialog box that appears.
4. Restart your Macintosh.

INSTALLING THE SCRAPBOOK

Before you install the new Scrapbook file:

Installing the new Scrapbook File in your System Folder will delete your current Scrapbook File. If you have stored any items in your current Scrapbook that you want to keep, drag the Scrapbook File from your System Folder to any other folder. This prevents the file from being deleted when you install the new Scrapbook File. (To open the old Scrapbook File in the future, you'll need to move the new one out of your System Folder and move the old one back in.)

To install the new Scrapbook File:

1. Find the folder called Replacement Scrapbook File. (If QuickTime was already installed on your computer, this folder is on your computer's hard disk. If you obtained QuickTime separately, this folder is on the QuickTime disk.)
2. Drag the contents of the Replacement Scrapbook File folder to your System Folder icon.
3. If you haven't moved your old Scrapbook File out of the System Folder, a message asks you whether you want to replace it. Click OK to replace your old Scrapbook File.

To use the new Scrapbook File:

1. Choose Scrapbook from the Apple menu.
2. When a picture appears in the Scrapbook window, use the buttons in the movie control bar, to play the movie.

You can use standard Cut, Copy, and Paste commands to copy movies to and from the Scrapbook. To copy a movie from the Scrapbook to a document, you need to use a program that supports QuickTime movies. If the program doesn't support movies, only a single PICT image is pasted into the document (the first frame of the movie segment in the Scrapbook).

NEW FEATURES OF QUICKTIME 1.6.1 and 1.6.2

Smaller Size
The QuickTime 1.6.2 system extension takes up only about 20K of memory when it is not in use.

Converting Audio Tracks to Movies
You can convert tracks from audio compact discs into movies and add the sound to your own movies. To convert an audio track, you must be using a program that can play QuickTime movies, and you must have an AppleCD 300 or 300i CD-ROM drive connected to your Macintosh. Follow these steps:

1. Insert an audio CD into your computer's CD-ROM drive.

2. In the program you are using, choose Open from the File menu.

3. Click Desktop, then double-click Audio CD.

4. Click the name of the audio track you want to convert to a movie.

5. Click Convert.

6. Type a name for the new movie, and choose a place to save it.
To choose additional settings or to trim the length of the movie, click Options.

7. When you are ready to convert the movie, click Save.
The audio track is saved as a QuickTime movie. You can now copy and paste sound from it into other movies.

Macintosh Easy Open Support
QuickTime 1.6.2 supports the Macintosh Easy Open system extension. You can use this extension to translate sound and image files from a variety of formats into QuickTime formats--just by double-clicking them.

ColorSync Support
QuickTime 1.6.2 supports ColorSync. You can use the ColorSync control panel to obtain accurate color in your compressed still-image files, for all the devices connected to your Macintosh.

Improved Grayscale
QuickTime 1.6.2 now supports 4-bit grayscale dithering, providing a wider range of shades of gray.

Smoother Text
You can now have smoother-looking (anti-aliased) text in the text track of movies.

Cinepak Compression-Decompression Software
The Apple Compact Video compression-decompression software is now called Cinepak. The features and functionality of the software have not changed.

USING THE QUICKTIME EXTENSION

You do not interact directly with the QuickTime extension. It works behind the scenes as part of your system software, providing new features to the application programs that support QuickTime. The specific features of QuickTime that you use and how they are presented depend on the programs you use.

TO LEARN EVEN MORE

The best way to get started with QuickTime is to purchase the QuickTime Starter Kit from Apple Computer. This kit contains four programs with which you can play and edit QuickTime movies, convert existing files to movies, record video or audio movies (with digitizing hardware), and compress still photos. The kit also

includes a CD-ROM disc filled with examples of QuickTime video, animation, and photos, and a catalog of products that work with QuickTime.

The QuickTime Starter Kit is available from your local hardware or software dealer.

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Tech Info Library Article Number:14911

Tech Info Library

Macintosh Application Environment (MAE): Description (10/94)

Revised: 10/13/94
Security: Everyone

Macintosh Application Environment (MAE): Description (10/94)

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Article Created: 15 Mar 1994
Article Reviewed/Updated: 13 October 1994

TOPIC ----------

This article describes the Macintosh Application Environment (MAE).

DISCUSSION ----------

The Macintosh Application Environment (MAE) is an X-Windows client that currently runs on a Sun SPARCstation or an HP 9000/700. MAE provides you with a complete Macintosh environment in an X Window.

Within this environment you can use Macintosh applications, print, move files, create folders, and copy and paste between Macintosh applications and UNIX applications.

MAE works within the industry-standard X Window System running on UNIX workstations. This means that you realize all the benefits of the Macintosh desktop while still gaining access to the UNIX environment and X Windows. You are able to resize the Macintosh X Window to any size desired.

MAE Emulation
==========

MAE emulates the Motorola 68LC040, but a number of the most used instructions have been translated into native UNIX code, thereby taking advantage of the native performance of the system CPU.

The 68K emulator handles instructions from the application by reading the application’s 680x0 code, and performing the equivalent sequence of instructions for the host’s RISC processor. To increase efficiency and processing speed, the emulator works hand-in-hand with a Mixed Mode Manager to make direct calls to the RISC processor whenever possible.

System 7 Support

==========

MAE supports System 7 version 7.1 features on top of UNIX. It is well integrated into the standard UNIX graphics system and the X Window System. You have access to Macintosh System 7.0 features such as Aliases, TrueType, AppleEvents, publish-and-subscribe, Balloon Help, QuickDraw, and 32-bit addressing. Version 1.0 of MAE does not support system extensions such as QuickTime. The Sound Manager and Serial Managers are also not supported. Any software product that requires direct access to the Macintosh hardware does not work.

You can access Macintosh high-density floppy disks and CD-ROMs using MAE.

Because the native UNIX operating systems don't handle floppy or CD interrupts in the same way that the Macintosh operating system does, a new button has been added for CD and floppy inserts. The button appears at the bottom of the Macintosh X Window. You insert the floppy or CD, and choose this button to have it mount on your desktop, within the Macintosh X Window.

MAE supports the Network File System (NFS), which lets you access, display, and manipulate remote and local Macintosh, PC, and UNIX files. The first version of MAE does not support AppleTalk, and behaves just like a Macintosh with AppleTalk networking turned off. This means that the Network extension, the File Sharing control panel, the Sharing Setup control panel, and the Users & Groups control panel are not shipped with MAE. Other areas normally associated with the Finder that are a part of MAE include: Finder Help, Labels control panel, and the Views control panel.

MAE lets you print UNIX and Macintosh files on printers that support PostScript, using the Apple Chooser and the Print command. It also includes QuickDraw to manage all graphics operations required by Macintosh applications.

MAE Components

Macintosh Application Environment consists of three distinct components:

Macintosh Desktop Services

Windows, menus, general Macintosh look and feel.

Macintosh Application Engine

Complete Macintosh run-time layer existing within the X Window. Macintosh applications and control panels and other elements of the Macintosh run as if on a Macintosh computer.

Macintosh System Services

File management, memory management, and system services. This is the portion that lets you manipulate both Macintosh files and UNIX files and applications.

The file manager seamlessly integrates the UNIX file system with the Macintosh file system. Similarly, UNIX printing is be accessible to Macintosh applications

through the Print Manager. A Macintosh user who happens to be using MAE should not see a major difference between it and a Macintosh.

Hardware Requirements

- Sun SPARC workstation running Solaris 2.3 or later
- HP workstation running HP-UX 9.01
- X Window System 11 release 4 or later
- Window Manager such as Motif or Open Look
- RAM: 16 MB minimum, 32 MB recommended
- Hard disk space: 16 MB minimum, 22 MB recommended for greater performance

Performance

You can expect anywhere from Macintosh LC to Quadra performance, depending on the platform, processor speed, and system resources of the system that it is installed on.

Application performance on MAE very much depends on the system in which it is installed. MAE is designed so that key components execute as native RISC code. Therefore, the more powerful the system and the greater the system resources (system cache, hard disk, and RAM) the better the MAE performance. It also employs an Operating System Access library to further take advantage of the native performance. The library lets the Macintosh Application Environment directly access the services provided by the host operating system, such as system calls or graphics library routines.

Article Change History:
13 Oct 1994 - Added keyword; made several technical updates.

Support Information Services

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Tech Info Library Article Number:14912

Tech Info Library

Berkeley Systems, Inc.

Revised: 4/7/97
Security: Everyone

Berkeley Systems, Inc.

==========

Article Created: 15 March 1994
Article Reviewed/Updated: 7 April 1997

Berkeley Systems, Inc.

2095 Rose Street
Berkeley, CA 94709

510-540-5535

510-549-2300 (Technical Support or Customer Relations)

America Online: keyword is "berksys"

Compuserve: go macbven>library>library 5

Company Profile:
Develops and markets screen saver software and productivity applications for Macintosh and Windows computers.

Article Change History:
05 Jun 1996 - Updated for technical accuracy.
25 May 1995 - Added online service addresses and information.

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Tech Info Library Article Number:14913

Tech Info Library

Language Kits: Changing File Names and Renaming Folders (3/94)

Revised: 3/15/94
Security: Everyone

Language Kits: Changing File Names and Renaming Folders (3/94)

==========

Article Created: 15 March 1994

TOPIC ----------

I have the Japanese Language Kit installed, and am trying to rename a folder in the Finder. The keyboard menu changes from U.S. System 7 (a blue diamond) to Kotoeri (a red sun with an apple) automatically. If I select U.S. System 7 in the keyboard menu, I can enter the name in English. Why does the keyboard layout switch occur?

DISCUSSION ----------

Apple Language Kits provide Finder support for English in addition to the other language each installs. When you modify a file or folder name, the language kit defaults to its primary keyboard layout: Japanese to Kotoeri; Traditional Chinese to Pin yin; Simplified Chinese to Shuru Fangfa.

The Japanese Language Kit displays keyboard layouts based on the 'Font for views' selected in the Views control panel. When 'Osaka' is selected, the keyboard menu will offer U.S. System 7 and Kotoeri because Osaka supports both character sets. Selecting a Roman-only font like Palatino or Helvetica displays U.S. System 7 in the keyboard menu.

The Chinese Language Kit behaves the same way. Selecting 'Beijing' as the 'Font for views' will display 'Shuru Fangfa' and U.S. System 7 layouts in the keyboard menu because 'Beijing' supports both Simplified Chinese and Roman character sets.

Similarly, selecting 'Taipei' displays Traditional Chinese and U.S. System 7 layouts in the keyboard menu because 'Taipei' supports both Traditional Chinese and Roman character sets.

Support Information Services

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Tech Info Library Article Number:14914

Tech Info Library

LaserWriter Select 300: Word 4.0 Incompatible (3/94)

Revised: 3/15/94
Security: Everyone

LaserWriter Select 300: Word 4.0 Incompatible (3/94)

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Article Created: 11 Mar 1994

TOPIC ----------

There is an incompatibility between the LaserWriter select 300 and Word version 4.0.

DISCUSSION ----------

The word wrap is incorrect when using Word 4.0 and printing to a LaserWriter Select 300. Words are printed in the margins, or are printed on top of one another.

Version 4.0d is needed for compatibility. Contact Microsoft Corporation for an upgrade to Word 4.0.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14915

Tech Info Library

Peter's Adventures CDs: System Freeze (3/94)

Revised: 3/15/94
Security: Everyone

Peter's Adventures CDs: System Freeze (3/94)

==========

Article Created: 15 March 1994

TOPIC --------------------

This article describes a problem with Peter's Adventures CDs with Virtual Memory (VM) running on a LC II. The system freezes.

DISCUSSION --------------------

On an LCII with 4 MB RAM running System 7.0, with Virtual Memory is active (4 MB real memory and VM set to 8 MB). When Peter's Alphabet Adventure is launched, the system locks or freezes when the first QuickTime element is played (at the first musical note).

This does not occur on the same Mac LCII running with VM turned off.

This occurs for Peter's Alphabet, Peter's Magic, and Peter's Number Adventures (versions that do not include the Sound Manager 3.0 fix).

There is no known workaround other than to turn VM off. In general, MultiMedia CDs should not be used in conjunction with VM since this will severely degrade the performance.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14917

Tech Info Library

Rescue CD-ROM: Software Restoration Toolkit (3/94)

Revised: 3/15/94
Security: Everyone

Rescue CD-ROM: Software Restoration Toolkit (3/94)

==========

Article Created: 15 March 1994

TOPIC -----

I've heard there's a Rescue CD-ROM called the Software Restoration Toolkit which contains net install versions of System Software, as well as bundled software for all Macintosh computers. How can I purchase a copy?

DISCUSSION -----

The Rescue CD-ROM you refer to is called the Software Restoration Toolkit and is solely for Authorized Service Providers to restore software bundles (System Software and bundled applications) to computers that have had hard disks repaired or replaced during service. If you are an Authorized Service Provider, you can purchase one from the Apple Service order line.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14918

Tech Info Library

SAM 3.5.x & Apple File Exchange: Error Type 33 (3/94)

Revised: 3/15/94
Security: Everyone

SAM 3.5.x & Apple File Exchange: Error Type 33 (3/94)

==========

Article Created: 15 March 1994

TOPIC ----------

Using SAM 3.5.x and Apple File Exchange (AFE) together on any Macintosh, can cause AFE to quit with a type 33 error.

DISCUSSION ----------

There is a known conflict between SAM 3.5.x and Apple File Exchange. If SAM is turned on, and Apple File Exchange is used with only the translator that comes with it, then Apple File Exchange will quit with a Type 33 error.

Symantec is aware of the problem, and has suggested as a workaround to install additional translators in the Apple File Exchange folder. Even just one additional translator seems to fix the problem. It will also work if there is just one translator, as long as it is not the one that came with Apple File Exchange. Symantec is sending out a "dummy" translator to customers that isn't functional, but the presence in the AFE folder solves the problem. Any other translator will also work, MacLink translators for example.

Version 3.5.9 of SAM does not fix the problem, but a future version of SAM will. There is currently no estimated release date for a version that will fix this problem. Customers can either be referred to Symantec for the workaround translator, or encouraged to use PC Exchange instead of Apple File Exchange.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14919

Writing Center: Reinstall Problems (3/94)

Revised: 3/15/94
Security: Everyone

Writing Center: Reinstall Problems (3/94)

==========

Article Created: 15 March 1994

TOPIC ----------

I am trying to reinstall my Writing Center application from my Apple Early Language Connections Backup CD. When I click on Customize, I do not see it listed. Where is it?

DISCUSSION ----------

When you click on Customize on the Apple Early Language Connections Backup CD, the Writing Center is not one of the options available. If you click on Teacher's Software (either version 7.0 or 7.1), you will find the Writing Center as an option to install. So, first click on Teacher's Software for your specific System Software version, and then click install.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14920

Tech Info Library

Agfa Corporation

Revised: 3/15/94
Security: Everyone

Agfa Corporation

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Article Created: 15 March 1994

Agfa Corporation
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90 Industrial Way
Wilmington, MA 01887

Telephone: 800-424-8973 (Sales, Technical Support)

Company Profile:
Makers of TrueType fonts and font collections.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14921

Tech Info Library

Aatrix Software, Inc.

Revised: 3/15/94
Security: Everyone

Aatrix Software, Inc.

==========

Article Created: 15 March 1994

Aatrix Software, Inc.

PO Box 5359
Grand Forks, ND 58201

701-746-6801

800-426-0854 (Sales)

707-746-7202 (Technical Support)

701-746-4249 (fax)

Company Profile:
Makers of accounting and payroll software

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14922

Tech Info Library

MECC

Revised: 3/15/94
Security: Everyone

MECC

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Article Created: 15 March 1994

MECC

6160 Summit Dr. N
Minneapolis, MN 55430

612-569-1500 (Sales, Technical Support)
800-685-6322
612-569-1551 (fax)

Company Profile:
Creator of software games and educational titles for Macintosh

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14923

Tech Info Library

Thought I Could

Revised: 3/15/94
Security: Everyone

Thought I Could

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Article Created: 15 March 1994

Thought I Could
---
107 University Pl., Ste. 4D
New York, NY 10003

212-673-9724 (Sales, Technical Support)
212-260-1194 (fax)

Company Profile:
Creator of Wallpaper, a background display creator and utility

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14924

..TIL14925-Reality_Technologies_Inc.pdf

Tech Info Library

Reality Technologies, Inc.

Revised: 3/15/94
Security: Everyone

Reality Technologies, Inc.

==========

Article Created: 15 March 1994

Reality Technologies, Inc.

2200 Renaissance Blvd.
King of Prussia, PA 19406

215-277-7600 (Technical Support)
800-346-2024
215-278-6115 (fax)

Company Profile:
Creators of WealthBuilder, financial planning and investment software.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14925

Tech Info Library

Teleware, Inc.

Revised: 3/15/94
Security: Everyone

Teleware, Inc.

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Article Created: 15 March 1994

Teleware, Inc.
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300 Roundhill Dr.
Rockaway, NJ 07866

201-586-2200

201-586-2269 (Technical Support)

800-322-6962

201-586-8885 (fax)

Company Profile:
Creators of personal finance software, including Mind Your Own Business.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14926

Tech Info Library

Start Accounting

Revised: 3/16/94
Security: Everyone

Start Accounting

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Article Created: 13 March 1994

Start Accounting
---
a Division of State Of The Art, Inc.
56 Technology
Irvine, CA 92718

714-753-0203

800-690-5575 (Technical Support inside CA)
800-847-7750 (Technical Support outside CA)

714-753-0374 (fax)

Company Profile:
Accounting software: MacP&L.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14927

Tech Info Library

Personal Training Systems

Revised: 3/15/94
Security: Everyone

Personal Training Systems

==========

Article Created: 15 March 1994

Personal Training Systems
---
828 S. Bascom Ave., Suite 100
San Jose, CA 95128

408-286-1635

800-832-2499

408-977-1166 (fax)

Company Profile:
Creators of interactive training products for learning to use popular Macintosh products.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14928

Tech Info Library

Psygnosis, Ltd

Revised: 3/15/94
Security: Everyone

Psygnosis, Ltd

==========

Article Created: 15 March 1994

Psygnosis, Ltd
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29 Saint Mary's Court
Brookline, MA 02146

617-731-3553

617-497-7794 (Technical Support)

Company Profile:
Creators of Lemmings, a Macintosh arcade style game.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14929

Tech Info Library

Radius Video Cards: Pointer Freezes With System 7 (6/95)

Revised: 6/6/95
Security: Everyone

Radius Video Cards: Pointer Freezes With System 7 (6/95)

==========

Article Created: 15 March 1994
Article Reviewed/Updated: 6 June 1995

TOPIC ----------

After installing System 7.x on my Macintosh computer with a Radius video card, the pointer freezes in the upper left corner of the display. What is causing this?

DISCUSSION ----------

This is caused by incompatible ROMs on the Radius Video card.

Workarounds

- Go back to an earlier version of Apple System software (6.0.8 or earlier).

- Contact Radius to update the ROMs. If the card is under warranty, the upgrade is free. If the card is not under warranty there is a cost to upgrade the ROMs.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor, Radius, for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
06 Jun 1995 - Revised keyword information.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14930

Tech Info Library

GeoPort: Supports 14.4 Kbps (3/94)

Revised: 3/15/94
Security: Everyone

GeoPort: Supports 14.4 Kbps (3/94)

==========

Article Created: 15 March 1994

TOPIC --

What is the greatest transfer rate of the GeoPort?

DISCUSSION ---

When the manuals were written, we could only guarantee 9600 bps. However, we now support 14.4 Kbps with the GeoPorts.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14931

Tech Info Library

Macintosh Quadra AV: Activating Ethernet Requires Update (3/94)

Revised: 3/15/94
Security: Everyone

Macintosh Quadra AV: Activating Ethernet Requires Update (3/94)

==========

Article Created: 15 March 1994

TOPIC ----------

When using a Macintosh Quadra 660AV or 840AV, Ethernet cannot be turned on while Virtual Memory and Speech Recognition are active. Is there a way to turn on Ethernet?

DISCUSSION ----------

The version of the network software being used needs updating. Use Network Software Installer v1.4.2 or higher to update the software.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14932

Tech Info Library

DOS Compatibility Card: Macintosh Models Supported (6/95)

Revised: 6/28/95
Security: Everyone

DOS Compatibility Card: Macintosh Models Supported (6/95)

==========

Article Created: 16 March 1994
Article Reviewed/Updated: 28 June 1995

TOPIC -----

Which Macintosh computers can I use the DOS Compatibility Cards with?

DISCUSSION -----

The DOS Compatibility Card (M2153LL/A) can be used with the Quadra 610 and Centris 610. It cannot be used with any other Macintosh models.

The DOS Compatibility Card for Power Macintosh (M3581LL/A) can be used with the Power Macintosh 6100/60, 6100/66, or Performa 6100 series. It cannot be used with the Power Macintosh 6100/AV series or any other Macintosh models.

Part numbers mentioned in this article are accurate as of this writing. Before ordering, verify that they are still correct as they are subject to change.

Article Change History:
28 Jun 1995 - Added DOS Compatibility Card for Power Macintosh.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:14938

Tech Info Library

Time Almanac CD: Maintenance Update Available (4/94)

Revised: 4/7/94
Security: Everyone

Time Almanac CD: Maintenance Update Available (4/94)

==========

Article Created: 16 March 1994
Article Reviewed/Updated: 7 April 1994

TOPIC ----------

When using the Time Almanac CD, the video is jerky. Sometimes gets type 1 errors or cannot play QuickTime movies. Is there a way to correct this?

DISCUSSION ----------

Compact Publishing Inc. has a maintenance update available to fix these problems. The update installs on the hard drive and should be run in place of the Time Almanac icon on the CD-ROM. Contact Compact Publishing Inc. to receive the update.

The TIME Almanac CD update is available for downloading from America Online.
Keywords: TIME ALMANAC CD PATCH UPGRADE KIT Macintosh Multimedia Forum.
Use Keyword: MMM

Use the vendor's name as the search string to locate the address and phone number of the vendor.

Article Change History:
7 April 1994 - Updated to include information on where to download upgrade from.

Support Information Services

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Tech Info Library Article Number:14939

Tech Info Library

CD300i Plus: Removing Stuck CD-ROM (3/94)

Revised: 3/16/94
Security: Everyone

CD300i Plus: Removing Stuck CD-ROM (3/94)

==========

Article Created: 16 March 1994

TOPIC ----------

I have a CD-ROM installed in my CD300i Plus drive, but I don't have an icon for it on the desktop and the tray will not open when the Open/Close button is pushed. How do I remove a stuck CD-ROM?

DISCUSSION ----------

WARNING: Turn off your computer before you attempt to eject the tray using a paper clip. If you don't turn off the computer, you may damage the CD-ROM drive.

1) Turn off your computer

2) Locate the small pinhole to the lower right of the CD-ROM tray opening.

3) Insert the end of a large straightened paper clip firmly and horizontally into the pinhole.

4) Push gently until the tray is released, then carefully pull the tray open.

Do not force the tray open; wait until the paper clip has dislodged it or you may break the front of the tray.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14940

Tech Info Library

Macintosh AV Series: Common Video Playthrough Solutions (5/95)

Revised: 5/31/95
Security: Everyone

Macintosh AV Series: Common Video Playthrough Solutions (5/95)

==========

Article Created: 16 March 1994
Article Reviewed/Updated: 31 May 1995

TOPIC

This article discusses a few common problems on the Macintosh AV computers and using video capture or playthrough.

DISCUSSION

Video Application Does Not Show A Video Window

If you launch a video application, such as VideoMonitor or FusionRecorder, and do not get a video image, there are two possible reasons:

• Your monitor is connected to a NuBus video card instead of the on-board video. To do capture or playthrough, the computer must have a monitor connected to the on-board video, even if you have a second monitor connected to a NuBus video card and are running the video application on that monitor.

• The video application may already be launched. Check the Application Menu to see if the video application is already open. If so, make the application the current window. Then for VideoMonitor, choose Open from the File menu. For FusionRecorder, choose Show Record Window from the Record menu.

Cannot Display Video While In The Current Number Of Colors

If you get the error message "The Built-In Digitizer cannot display video while in the current number of colors". Use your Monitors control panel to select Thousands or 256 colors. This is necessary because the video RAM (VRAM) must be shared between the monitor and the incoming video.

No Built-in Digitizers Are Available

If you are trying to switch the image from your Macintosh monitor to a TV monitor and you get the message "there are no built-in digitizers available", it is because your monitor is connected to a NuBus video card. You must have a monitor connected to your on-board video for this to work.

Other possible causes include the AV card being loose and not seated properly, or system software corruption. The affected component is usually the QuickTime extension. Reinstallation of the QuickTime extension would be the first troubleshooting step followed by a clean system software install.

The Image In Your Video Window Has Black Lines And Scrolls Upwards

---

You need to change the video source to NTSC. In Video Monitor, go into the Monitor menu, choose Video Settings, then from the pop-up menu in the upper left, choose Source, and for Format select NTSC. In FusionRecorder, go into the Record menu, choose Video Settings, and choose Format: NTSC. In any other application, refer to the documentation or software publisher for assistance.

This article was published in the "Information Alley":
Volume II, Issue 3, Page 5

Article Change History:
31 May 1995 - Added Info Alley information; made minor updates.
15 Mar 1995 - Additional troubleshooting added to No Digitizers Available.

Support Information Services

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Tech Info Library Article Number:14941

Tech Info Library

Kid Works 2: File Menu Items Grayed Out (1/95)

Revised: 1/19/95
Security: Everyone

Kid Works 2: File Menu Items Grayed Out (1/95)

==========

Article Created: 17 March 1994
Article Reviewed/Updated: 09 January 1995

TOPIC ----------

When running Kid Works 2 on my Macintosh I cannot select Quit from the File menu. The Preferences menu item in the Options menu is also grayed out.

DISCUSSION ----------

You have most likely turned on Child Safety Mode. This option grays out Quit in the File menu and the Preferences menu item in the Options menu. This feature also does not allow you to select another item in the Applications menu.

There are two ways to resolve this issue. You can throw away the Kid Works 2 Preferences file from the Preferences folder inside the system folder.

The other alternative is to hold down the Command and Shift keys before opening the File menu which will allow you to select Quit. You can also hold down the Command and Shift keys while opening the Options menu, select Preferences, and turn off Child Safety Mode.

Article Change History:
09 Jan 1995 - Revised entire article.

Support Information Services

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Tech Info Library Article Number:14944

Tech Info Library

Hardware System Update 2.0.1: Installing on Performa (3/94)

Revised: 3/17/94
Security: Everyone

Hardware System Update 2.0.1: Installing on Performa (3/94)

==========

Article Created: 17 March 1994

TOPIC -----

How do I install Hardware System Update (HSU) 2.0.1, the Sound Manager Extension 3.0, and the Sound Control Panel 8.0.1 on my Performa?

DISCUSSION -----

To install HSU 2.0.1, simply run Apple Restore from a set of System 7.1p5 backup disks.

To install the Sound Manager Extension 3.0 and the Sound Control Panel 8.0.1, run custom install from the HSU 2.0.1 update disk.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14945

Tech Info Library

Power Mac 8100/80: PDS Video Card vs. Third-Party Cards (4/95)

Revised: 4/26/95
Security: Everyone

Power Mac 8100/80: PDS Video Card vs. Third-Party Cards (4/95)

==========

Article Created: 17 March 1994
Article Reviewed/Updated: 26 April 1995

TOPIC -----

I need the specification on the 4MB Power Macintosh Video Card for the Power Macintosh 8100. I'm interested in refresh speed and a quantifiable way to compare the performance of this card to an accelerated video card.

DISCUSSION -----

Given equivalent VRAM configuration and price range, the 4MB Power Macintosh Video Card should run faster than any comparable third party video accelerator cards in today's marketplace. This is due to the video card's high data transfer rate, which is in part attributed to its 64-bit data bus as compared to the 32-bit data bus available to NuBus video cards.

Article Change History:
26 Apr 1995 - Corrected name of video card.
10 Jun 1994 - Changed article status to "Everyone"

Support Information Services

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Tech Info Library Article Number:14946

Tech Info Library

FAX Blind Dialing and LaserWriter Select 360 (3/94)

Revised: 3/18/94
Security: Everyone

FAX Blind Dialing and LaserWriter Select 360 (3/94)

==========

Article Created: 17 March 1994

TOPIC ----------

Is there a way to have the FAX card on the LaserWriter Select 360 perform a "blind dial" (dial without needing a dial tone)?

DISCUSSION ----------

There is a %Fax% PostScript device parameter WaitForDialTone which controls this. This is a boolean parameter which if set to FALSE, will permit the FAX card to do "blind dialing". If set to TRUE, the FAX card will insist on receiving a dial tone first. The following PostScript segment will set this parameter:

```
(%Fax%) <</WaitForDialTone false>> setdevparams
```

If you would like this setting to persist beyond power cycles, then the following PostScript code which exits the PostScript server loop, must precede the command line above:

```
serverdict begin 0 exitserver
```

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14953

Tech Info Library

LaserWriter Select 310: No support for 8.x Driver (3/94)

Revised: 3/18/94
Security: Everyone

LaserWriter Select 310: No support for 8.x Driver (3/94)

==========

Article Created: 18 March 1994

TOPIC -----

Does the LaserWriter Select 310 support any of the LaserWriter 8.x features? I specifically want to know this information:

- Can the Select 310 use an "installed and preferred" option for selecting paper trays as does the LaserWriter 8.x driver?
- Can the Select 310 driver continue to draw paper from an additional cassette if the first cassette runs out?
- Can the 310 draw the first sheet from one tray and all remaining pages from a second tray?
- Can the Select 310 handle "n-up" reductions when printing multiple pages?
- Does the Select 310 offer any kind of resolution enhancement?
- Is Apple considering releasing a serial version of the LaserWriter 8.x driver?

DISCUSSION -----

The LaserWriter Select 310 does not support the LaserWriter 8.x printer driver, and so does not support a lot of the features you asked about.

- Can the Select 310 use an "installed and preferred" option for selecting paper trays as does the LaserWriter 8.x driver?

  This is not possible as the LaserWriter Select 310 driver does not save any preference information in the LaserWriter 8 Prefs file as does the LaserWriter 8 driver, nor does it have the "Auto Select" feature to execute it.

- Can the Select 310 driver continue to draw paper from an additional cassette if the first cassette runs out?

  No. Tray Switching is not implemented in the LaserWriter Select 310 Driver.

- Can the 310 draw the first sheet from one tray and all remaining pages from a second tray?

  This is a built-in feature of the LaserWriter Select 310 driver and can be used via the Print dialog box.

- Can the Select 310 handle "n-up" reductions when printing multiple pages?

  No. This feature was not implemented in the LaserWriter Select 310 driver, so you cannot print multiple pages on one sheet of paper.

- Does the Select 310 offer any kind of resolution enhancement?

  The only type of enhancement offered is via the ability to change "Print Density" in the Options dialog within the Print dialog.

- Is Apple considering releasing a serial version of the LaserWriter 8.x driver?

  No, Apple has no plans to release a serial version of the LaserWriter 8.x printer driver.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14955

Tech Info Library

Color StyleWriter Pro: Color Discrepancies (7/95)

Revised: 7/19/95
Security: Everyone

Color StyleWriter Pro: Color Discrepancies (7/95)

==========

Article Created: 18 March 1994
Article Reviewed/Updated: 17 July 1995

TOPIC ----------

I cannot get the Color StyleWriter Pro to print Reflex Blue. When I try it looks purple. How true of a blue can I print?

DISCUSSION ----------

Colors may differ from the screen when printed to the Color StyleWriter Pro. For example, Reflex Blue may look purple when printed. This is due to the following:

• Monitors "emit" colored light, whereas, colors on a printed page are "reflected" by whatever the light source may be. This has a large effect on the colors our eyes perceive.

• The Apple monitors are for the most part blue-ish in color, so this component also affects the colors that we see.

• There is a limitation of the ink and the color space that can be produced by printers. Basically, all printers (including non-Apple color printers) in this price range can only produce a subset of the CMYK color space. With some programs, you may be able to modify the CMYK values to alter the numbers a bit, which may help to produce specific colors you need.

ColorSync goes a long way in synchronizing the monitor with the printer, so Apple suggests that you use ColorSync and select the respective Color Matching Methods for your monitors or printers.

This article was published in the "Information Alley":
Volume II, Issue 5, Page 14

Article Change History:
19 Jul 1995 - Updated from Info Alley; retitled article.
03 Mar 1995 - Corrected Product name.
13 Dec 1994 - Added additional details on why colors don't match.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14957

Tech Info Library

ARA, Personal FileSharing: Can't Find File Server On Net (3/94)

Revised: 3/18/94
Security: Everyone

ARA, Personal FileSharing: Can't Find File Server On Net (3/94)

==========

Article Created: 16 March 1994

TOPIC -----

If I dial into a network with Apple Remote Access (ARA) 2.0 and the Macintosh that is dialing in has personal file sharing turned on with a name the same as a server on the dialed-in network zone, the server becomes unavailable. Sometimes I see two servers sometimes one server, but every time I try to log in to a server I log in to the ARA Client.

What I've found as a short term solution is to move the ComServer to its own zone with nothing else on it, but this problem still exists. Users can still setup individual ARA servers on their Macintosh computers thus opening up the possibility of further problems on the network.

DISCUSSION -----

Some quick workarounds are:

- Use the Remote Only setting in the Network control panel, this is exactly one of the situations it was designed to handle.

- Turn off FileSharing at the ARA client.

- Advertise the names of the servers on the ARA Server's zone and tell people not to use them as their personal server names.

NOTE: If you were to try to bring up a personal server with the same name as an existing one while already connected to the network you are told the name is in use and to select another. You will get the same error if you attempt to change the name of an existing FileSharing server to that of an existing server. This is not an ARA limitation, it just gets more complicated with ARA since both servers are already up when the ARA client joins the network.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14958

Tech Info Library

SNA•ps Gateway to AS/400 Configuration (3/95)

Revised: 3/29/95
Security: Everyone

SNA•ps Gateway to AS/400 Configuration (3/95)

==========

Article Created: 14 March 1994
Article Reviewed/Updated: 29 March 1995

TOPIC ----------

This article outlines the SNA•ps Gateway software configuration for connection to an IBM AS/400.

DISCUSSION ----------

The first part of this article shows a Token Ring configuration; the second part shows an SDLC Serial configuration. There is no SNA•ps support for Twinax connections to the AS/400.

The SNA•ps software will only run on Apple 4/16 Token Ring or Serial NB communications cards. Apple Computer's cards are MCP (Macintosh Coprocessor Platform) compliant. Before beginning the SNA•ps software configuration, be sure you have installed an Apple 4/16 Token Ring or Serial NB card and that the card has a minimum of 1 MB RAM installed (Use Macintosh Coprocessor Platform Memory Expansion Kit - M0145LL/A).

NOTE: Apple Computer's MCP communications cards (Apple Token Ring 4/16 NB Card, and Apple Serial NB Card) will NOT fit in the Centris or Quadra 610, 660AV, Power Macintosh 6100/60, or Workgroup Server 6150. The Apple Token Ring NB/c card does not support the SNA•ps Gateway, SNA•ps 5250 or SNA•ps 3270 software.

Token Ring
==========

From the Macintosh Control Panel, open the Token Ring control panel window and note the Apple 4/16 Token Ring card's network address. This will correspond to the AS/400 Controller LAN remote adapter address.

SNA•ps TR Line Description

TR Line Name:	LINE01
All timers at default values	
Maximum I-Field Length:	2057

SNA•ps Partner Description

Partner Name:	HOST01
Peer (Node type 2.1)	
SAP Address:	04
Link Address:	Corresponds to AS/400 TR Line local adapter address
Partner XID:	056XXXXX - AS/400 TR Line exchange ID
Gateway XID:	050XXXXX - AS/400 Controller exchange ID
Gateway Network Name:	AS/400 Controller remote control point
Gateway Network Qualifier:	AS/400 default network ID

SNA•ps Local LU

Name:	PASSTHRU - Apple default
LU ID:	01 - Must be unique
Max TPs:	Must match the AS/400 Mode maximum sessions (Typically 10, 35, or 70)
Network LU Name:	LU01 - AS/400 Device remote location name
Network Qualifier:	APPN - AS/400 Local network ID

SNA•ps TPs

TP Name:	* - Allows all transaction programs
All other parameters at Apple default.	See SNA•ps Gateway Configuration Guide for details.

SNA•ps Remote LU

Name:	AS400
Parallel Sessions	
Network LU Name:	AS400 - AS/400 Default local location name
Network Qualifier:	APPN - AS/400 Local network ID

SNA•ps Mode

Name:	MACMODE - Must match AS/400 Mode name. You cannot use QPCSUPP.
Queue Binds	
Maximum Sessions:	Same value as AS/400 Mode description maximum sessions
Contention Winner:	Same as maximum sessions. AS/400 Mode locally controlled sessions=0.
Prebound Sessions:	Same as maximum sessions. AS/400 Mode Pre-established sessions=0.
Pacing at default	
Maximum RU Upper:	2048
Maximum RU Lower:	256

SDLC
====

SNA•ps SDLC Line Description

Name:	LINE01
Port:	1A and 1B for use with V.35. 2A and 2B for use with V.24. Use Half Duplex for dial-up and multidrop lines. Be sure AS/400 line data link role is set to negotiated. Set SNA•ps line to Secondary.
All timers at default values.	

SNA•ps Partner Description

Name:	HOST01
Peer (Node Type 2.1)	
Link Address:	C1 - Must match AS/400 SDLC Line station address
Partner XID:	056XXXXX - AS/400 Line exchange ID
Gateway XID:	050XXXXX - AS/400 Controller exchange ID
Gateway Network Name:	AS/400 Controller remote control point name
Gateway Network Qualifier:	APPN - AS/400 local network ID

SNA•ps Local LU

Name:	PASSTHRU - Apple default
LU ID:	01 - Must be unique
Max TPs:	Must match the AS/400 Mode maximum sessions (Typically 10, 35, or 70)
Network LU Name:	LU01 - AS/400 Device remote location name
Network Qualifier:	APPN - AS/400 Local network ID

SNA•ps TPs

TP Name:	* - Allows all transaction programs
All other parameters at Apple default.	See SNA•ps Gateway Configuration Guide for details.

SNA•ps Remote LU

Name:	AS400
Parallel Sessions	
Network LU Name:	AS400 - AS/400 Default local location name
Network Qualifier:	APPN - AS/400 Local network ID

SNA•ps Mode

Name:	MACMODE - Must match AS/400 Mode name.
.	You cannot use QPCSUPP.
Queue Binds	
Maximum Sessions:	Same value as AS/400 Mode description
.	maximum sessions
Contention Winner:	Same as maximum sessions. AS/400 Mode
.	locally controlled sessions=0.
Prebound Sessions:	Same as maximum sessions. AS/400 Mode
.	Pre-established sessions=0.
Pacing at default	
Maximum RU Upper:	2048
Maximum RU Lower:	256

Before starting the gateway, verify that the AS/400 Line, Controller, and Device are Active or Varied On. Also, verify the AS/400 system value QAUTOVRT. This value must be a non-zero number in order for the AS/400 to automatically configure the virtual controller and virtual devices required by the Display Station Pass-Through application.

See the SNA•ps Gateway Configuration Guide Appendix B for more details on AS/400 configuration.

Article Change History:
29 Mar 1995 - Added Workgroup Server 6150 and updated format.
19 Sep 1994 - Added info on Token Ring NB/c card.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:14963

Tech Info Library

CD Speed Switch: Compatibility With 68LC040 Computers (4/95)

Revised: 4/5/95
Security: Everyone

CD Speed Switch: Compatibility With 68LC040 Computers (4/95)

==========

Article Created: 29 March 1994
Article Reviewed/Updated: 05 April 1995

TOPIC ----------

I have a LC 475 with an external AppleCD 300 drive. When sound is played from my Time Almanac CD, the sound is choppy. When I double-click on the CD Speed Switch Control Panel, as explained in Apple's documentation, I get a message that the control panel can't be used on that model of Macintosh.

DISCUSSION ----------

There are two separate issues involved in this situation. First, the AppleCD Speed Switch software is not compatible with computers using the 68LC040 microprocessor. This includes the LC 475, 476, 575, Quadra 605, Quadra 610, and many PowerBook models. Check the specification sheet for your computer to verify it it has a 68LC040 processor.

You should install version 5.0 or greater of the CD-ROM software for the CD-300 external drive. This version is fully compatible with the LC 475 and has the equivalent of the Speed Switch integrated into the driver. This version of the CD-ROM driver has been tested with the LC 475 and it works just fine, it did not solve the choppy sound problem however.

The second issue revolves around the Time Almanac CD itself. Testing the Time 1993 Almanac with the LC 475 produced the same audio results as the you encountered. Playing the Almanac's movies with the Apple MoviePlayer program works fine. So, it seems that the problem was with the Time Almanac application.

Compact Publishing, Inc. said they were aware of the problem and are working on a patch to resolve it. Contact them directly to receive the patch when it becomes available.

To find the latest version of the CD-ROM software, search for these articles:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates
- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
05 Apr 1995 - Added Centris 610 to list of 68LC040 computers
05 May 1994 - Made article more generic on version numbers and on-line software resources.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:14966

A/UX 3.1 Console Emulator Problem and Workaround (3/94)

Revised: 6/22/94
Security: Everyone

A/UX 3.1 Console Emulator Problem and Workaround (3/94)

==========

Article Created: 23 March 1994

TOPIC ----------

The A/UX 3.1 console emulator will hang if CONTROL-S is used to stop the display from scrolling. This is due to a bug in the streams code. The following ADB patch addresses this problem. Engineering does not expect this to be a significant problem since the large majority of our customers do not use the Console Emulator.

DISCUSSION ----------

NOTE: This problem has to do with the console emulator, not the console in the command shell.

Patch to fix the problem:

```
cd   /etc/config.d
adb -w newunix
getq_loop1+16?W   0x2e8a4eb9
getq_loop1+1a?W   0x100540a4
getq_loop1+1e?w   0x602e
```

To confirm that the patch has been entered correctly, the disassembled code should closely resemble the following:

```
getq_loop1+16?i     mov.l   %a2,(%a7)
getq_loop1+18?i     jsr     qenable
getq_loop1+1e?i     bra.b   getq_done1
```

After applying this patch with adb, you must run:

```
newconfig
```

and restart the system

..TIL14968-A-UX_3-1_Console_Emulator_Problem_and_Workaround_3-94_(TA31405).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14968

Tech Info Library

Portable StyleWriter: Print Dialog Box Time Varies (3/94)

Revised: 3/25/94
Security: Everyone

Portable StyleWriter: Print Dialog Box Time Varies (3/94)

==========

Article Created: 24 March 1994

TOPIC ----------

The Portable StyleWriter manual states that after you click Print in the Print dialog box, a message appears on your screen for a few seconds, then disappears. The Dialog box stays on my screen longer, is the manual incorrect?

DISCUSSION ----------

The proper time frame for seeing the Print dialog box is actually dependent on if background printing is enabled or disabled, as well as the length of the print job. Thus, the dialog can remain on the screen for as little as a few seconds, or may last much longer if background printing is OFF or if you are printing a large job.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14969

Tech Info Library

Performa 550: Description of Backup Partition (3/94)

Revised: 3/22/94
Security: Everyone

Performa 550: Description of Backup Partition (3/94)

==========

Article Created: 22 March 1994

TOPIC -----

What is the Backup Partition on the Performa 550?

DISCUSSION -----

The Apple Backup application creates a backup recovery partition that allows the Performa to boot even when the System Software on the main hard drive has been corrupted. The partition is invisible to the user.

When a system problem (one that prevents the Performa from booting) is detected, a dialog is displayed that informs the user of a system problem. The user can choose to fix the problem manually or to reinstall software from the backup partition's Mini System Folder. If the user chooses to install software from the Mini System Folder, the cursor becomes a watch, the hard disk spins for a brief time, the Mini System Folder is copied to the main volume and the system restarts booting from the main volume. The backup is then reset to invisible. The user can then copy the System, Finder and System Enabler to the main System Folder.

There is no built-in limit to the number of times the backup partition can be used. However, the partition will be lost if the hard drive is re-formatted. At this time the backup partition is used only on the Performa 550.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14970

Tech Info Library

ARA: Modifying Serial Port B & MacEKG (3/94)

Revised: 3/22/94
Security: Everyone

ARA: Modifying Serial Port B & MacEKG (3/94)

==========

Article Created: 15 March 1994

TOPIC --------------------

MacEKG shows that ARA is touching, and modifying the node id of serial port B, even though the modem in the modem port, port A. The node id bounces around whenever he chooses "answer Calls" in the setup. Why is ARA doing anything to serial port B?

DISCUSSION --------------------

Micromat Tech Support indicates that they have had similar problem reports recently. MacEKG should be performing its tests before any other software is loaded, including ARA.

The workaround is to rename the control panel "•MacEKG" to " MacEKG™" (three spaces at the beginning of the name) and to move it from the Control Panels folder to the Extensions folder. This should ensure that MacEKG is indeed loading first. Once this is done MacEKG should no longer report that port B is being "touched", according to Micromat Tech Support.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14971

Tech Info Library

HyperCard:Problem Pasting Fields-Bad Script (3/94)

Revised: 3/22/94
Security: Everyone

HyperCard:Problem Pasting Fields-Bad Script (3/94)

==========

Article Created: 22 March 1994

TOPIC --

I am trying to paste the card number field from "Display the card number" from Readymade Fields Stack into the Addresses stack in HyperCard 2.2, but it's not working. It pastes fine into a new blank field. Both stacks come on the standard HyperCard distribution disks.

DISCUSSION --

The problem is with the script in the stack that came with HyperCard.

Below is a portion of the original script.

```
on addStackScript fieldType
  get script of fieldType
  if "openCard" is in it then
    if (fieldType && "field id" && id of me) is not in it then
      put scriptBody(fieldType) & return after char ¬
      (offSet("openCard",it) + 8) of it
      set script of fieldType to it
    end if
  else
    if it ≠ empty then
      if last char of it = return then put return after it
      else put return & return after it
    end if
    -- write the full handler
    put "on openCard" & return & scriptBody(fieldType) & return & ¬
    "pass openCard" & return & "end openCard" after it
    set script of fieldType to it
  end if
end addStackScript
```

The first "if" statement (if "openCard" is in it then) should really test for

"on openCard" instead of "openCard". Many stacks list handlers included in a script at the top of the script. This allows programmers to easily search a script for a particular handler. The addresses stack does this. When this button is pasted into it, the "openCard" in the handler list makes the conditional true and the script to include the card number is pasted into the handler list (where it will never execute).

Change"openCard" to "on openCard" in two places (as below in line 3 and 6) and the script works as advertised.

```
on addStackScript fieldType
  get script of fieldType
  if "on openCard" is in it then
    if (fieldType && "field id" && id of me) is not in it then
      put scriptBody(fieldType) & return after char ¬
      (offSet("on openCard",it) + 8) of it
      set script of fieldType to it
    end if
  else
    if it ≠ empty then
      if last char of it = return then put return after it
      else put return & return after it
    end if
    -- write the full handler
    put "on openCard" & return & scriptBody(fieldType) & return & ¬
    "pass openCard" & return & "end openCard" after it
    set script of fieldType to it
  end if
end addStackScript
```

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14972

Tech Info Library

Express Modem: Fax Queue & Phone Number Limits (3/94)

Revised: 3/29/94
Security: Everyone

Express Modem: Fax Queue & Phone Number Limits (3/94)

==========

Article Created: 23 March 1994

TOPIC ----------

How many fax documents can be placed in a queue, and how many addresses can be added to the phone number data base for the Express Modem software?

DISCUSSION ----------

There is no actual limit to the number of faxes you can have in the queue. You will be limited by hard drive space, and memory allocation. In testing we were able to get up to 145 recipients in the Send To without any problem.

The address book will hold up to 1000 addresses.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14973

Tech Info Library

Apple Multiple Scan 20 Display: Text Appears Large (3/94)

Revised: 5/20/94
Security: Everyone

Apple Multiple Scan 20 Display: Text Appears Large (3/94)

==========

Article Created: 24 March 1994

TOPIC --------------------

Shopping around for monitors today, I looked at 14, 16 and 20-in monitors. The spreadsheet file we had been using as a sample was not much wider on the 20-in monitor. In fact, the type was about 25% larger on the Apple Multiple Scan 20 Display than on a 14-in or 16-in display. Why?

DISCUSSION --------------------

Depending on the resolution of the monitor, the text can appear to be 25% larger. This monitor can display information in one of four selectable resolutions. The resolution changes are implemented through the Monitors control panel. All changes take place immediately, so you do not have to reboot to see the resolution change.

The four resolutions are:

- 640x480 --Presentation view (this is the one that you probably saw)
- 832x624 --Publishing view
- 1024x768 --Two-page layout view
- 1152x1024 --Enlarged layout view

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14976

Tech Info Library

QuickTake 100: No OCR Support (3/94)

Revised: 5/12/94
Security: Everyone

QuickTake 100: No OCR Support (3/94)

==========

Article Created: 23 March 1994

TOPIC -----

Can I use the Apple QuickTake 100, like I would a scanner and take pictures of a document, then use Optical Character Recognition (OCR) software to convert the picture into text?

DISCUSSION -----

Apple does not support this. One of the main problems would be the focal range. The QuickTake 100 has a 4-foot focal range. At 4-feet, the document image is too small to use with OCR software.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14977

Tech Info Library

LaserWriter Pro 810: Time Out Error Using LocalTalk (3/94)

Revised: 3/23/94
Security: Everyone

LaserWriter Pro 810: Time Out Error Using LocalTalk (3/94)

==========

Article Created: 17 March 1994

TOPIC ----------

What causes time out errors when two or more documents are spooled to the LaserWriter Pro 810 connected using AppleTalk?

DISCUSSION ----------

When additional RAM is added to the LaserWriter Pro 810, the configuration changes, and the Macintosh needs to be aware of these changes. If extra memory is added without changing the memory configuration, then time out errors occur.

Changing Memory Configuration
---

1) Open the Chooser
2) Select the LaserWriter 8 icon
3) Click the Setup button
4) Click the Configure button
5) Change the memory configuration to match the amount installed in the LaserWriter Pro 810

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14978

Tech Info Library

Newton MessagePad 100: Clock Gains Time (3/94)

Revised: 3/23/94
Security: Everyone

Newton MessagePad 100: Clock Gains Time (3/94)

==========

Article Created: 17 March 1994

TOPIC -----

What causes the clock in the Newton MessagePad 100 to gain time and how can I fix it?

DISCUSSION -----

There are two things that could cause the clock to gain time.

1) The Newton was previously in a diagnostic mode. The clock's speed is too fast in the diagnostic mode for everyday use. If the Newton is not reset after leaving diagnostic mode, then the clock continues to run fast. Reseting the Newton returns the clock to normal speed.

2) A faulty battery cell also causes the clock to skip ahead. Usually this happens if you are using the rechargeable battery pack but it can also happen with alkaline batteries. If you are using a rechargeable battery pack, try to drain the battery and then recharge the battery in the Newton recharger. If the clock still has problems, have the rechargeable battery pack serviced. One of the battery cells may not be charging properly. If you are using alkaline batteries, make sure all the batteries are from the same package. You should not mix old and new batteries.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14980

Tech Info Library

Express Modem Installer: Version 1.1.2 Used In U.S. (3/94)

Revised: 3/23/94
Security: Everyone

Express Modem Installer: Version 1.1.2 Used In U.S. (3/94)

==========

Article Created: 23 March 1994

TOPIC ----------

My GeoPort Telecom Adapter came with Express Modem Installer software v1.1.2. A friend received Express Modem Installer software v1.2. What is the difference between the two versions?

DISCUSSION ----------

The Express Modem Installer Software v1.2 only ships in Europe. The primary changes were made to meet European PTT certification requirements.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14982

Tech Info Library

LaserWriter Select 360: Fax Dates & Times Incorrect (2/97)

Revised: 2/21/97
Security: Everyone

LaserWriter Select 360: Fax Dates & Times Incorrect (2/97)

==========

Article Created: 23 March 1994
Article Reviewed/Updated: 21 February 1997

TOPIC ----------

On all the faxes I send or receive, the time and date is incorrect. The year is always set to 1980 and the time does not change. How can I correct this?

DISCUSSION ----------

The optional fax card for the LaserWriter Select 360, uses a clock chip with a 3.6 volt lithium battery. If the fax card was shipped without setting the time and date, then it must be set before the clock starts keeping time. The LaserWriter Fax Utility allows you to set the date and time.

If the fax card contains a dead battery, then you could set the proper time and date, but the card would continually lose the time and date. If this happens, you need to replace the battery (service part number 742-0011*).

*NOTE:
Service parts can only be ordered by authorized Apple Service technicians. These parts are not available to the general public because only authorized Apple technicians are approved to install them.

The part numbers mentioned in this article are accurate as of this writing. Before ordering or inquiring about an order, you need to verify the number is still correct, as they are subject to change.

Article Change History:
21 Feb 1997 - Added info about part number.

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Tech Info Library Article Number:14983

Tech Info Library

Apple IIe Card: How To Partition the Hard Drive (7/96)

Revised: 7/15/96
Security: Everyone

Apple IIe Card: How To Partition the Hard Drive (7/96)

==========

Article Created: 23 March 1994
Article Reviewed/Updated: 9 July 1996

TOPIC ----------

This article explains the steps needed to partition a hard disk for the IIe Card for the LC series, Performa 400 series, Performa 550, Quadra 605 and the Color Classic computers.

DISCUSSION ----------

Protecting the disks

Before proceeding, lock the disks that came with the Apple IIe Card

- "IIe Installer Disk"
- "IIe Startup Disk"

Locking a disk protects its files from being changed or erased.

To lock a disk, slide the plastic tab on the back upper left-hand corner of the disk from the bottom to the top. When you can see through the hole, the disk is locked.

Reserving hard disk space for Apple IIe files

You can use a portion of the hard disk connected to your Macintosh computer to store Apple IIe files. The hard disk can be built into the Macintosh or connected by a SCSI cable. The process of reserving part of the hard disk for Apple IIe files is called partitioning the hard disk.

Partitioning a hard disk completely erases all files stored on it. Before partitioning your hard disk, you must make backup copies of any files you want to keep. This section explains:

- Backing up the contents of your hard disk
- Creating an Apple IIe partition on your hard disk
- Restoring the original contents of your hard disk

Backing up your hard disk

To back up your hard disk, follow the steps in this section. If you normally use another method of backing up your files, such as copying them to another hard disk or to a tape cartridge, you can use that method instead.

You do not need to back up your System Folder, because you have System disks. You only need to backup things you have added to the System Folder. In addition, you don't need to back up any applications that you have on original disks.

Performa Owners - Use the Apple Backup program that was installed on your computer to perform your backup. Make sure that you backup your entire hard drive, not just the System folder. Once you finish backing up with Apple Backup, skip to the section "Partitioning Your Hard Disk".

Step 1

Turn on your Macintosh computer. If your computer is already on, quit any programs you are running.

Step 2

Insert a blank 3.5-inch floppy disk into the built-in disk drive. If you see a message asking if you want to initialize the disk, click Initialize. If you are using an 800K disk, click Double-Sided.

Note:
If you are using PC Exchange, choose Macintosh 800K. Double-Sided does not appear when you use PC Exchange.

Step 3

Copy your files and folders to the floppy disk. Drag each icon from your hard disk to the floppy disk's icon until you get a message that the floppy disk is full. Then eject the floppy disk and repeat the procedure until you've backed up all the files you want to save.

Some folders may be too big to fit on floppy disks. If so, you can open the folder and drag its contents one icon at a time to the floppy disk icon.

For more information about copying files and folders, see the manual that came with your Macintosh computer.

Step 4

Label the disks so you can remember what is on them.

Partitioning your hard disk

This section explains how to partition your hard disk using a program called Apple HD SC Setup.

- The procedure described in this section sets aside 10 MB (megabytes) of space for Apple IIe files. If you need a different amount, turn now to Appendix C. "Creating Custom Partition", of the Apple IIe Card Owner's Guide. When you finish, skip to the next section in this chapter, "Restoring the Contents of the Hard Disk."

- Follow these steps to partition the hard disk:

WARNING:
Partitioning erases all information stored on your hard disk. To preserve your information, see the previous section, "Backing Up Your Hard Disk".

Step 1

Turn off your Macintosh computer. Choose the Shut Down command from the Special menu. You do not have to turn off the power.

Step 2

Insert the Disk Tools disk (from System 7 disks) into the built-in disk drive. Performa owners - Use the Utilities disk in place of the Disk Tools Disk.

Step 3

Turn on the Macintosh. Click the Restart button if your Macintosh is already on; otherwise, turn on the power.

Step 4

If necessary, open the Disk Tools or Utilities disk by double-clicking its icon. The disk's window appears.

Step 5

Double-click the Apple HD SC Setup icon. The Set up program opens.

Step 6

If you have more than one hard disk, click the Drive button to select the one that you want to partition.

Step 7

Click the Initialize button. A dialog box appears to confirm that you want to

erase your hard disk.

Step 8

Click Init in the dialog box. Once the initialization is complete, click the Partition button. A dialog box appears to confirm that you want to erase your hard disk.

Step 9

Click OK in the dialog box.

Step 10

Click "10 MB ProDOS, Maximum Macintosh", then click OK. The program takes a few moments to partition the disk drive and then asks you to name the new Apple IIe partition.

Step 11

Type a name and then click OK. The dialog box appears with a suggested name in it. As soon as you start typing, the suggested name is replaced by what you type.

You can give the new partition any legal ProDOS name, and you can use lowercase letters. ProDOS names can not have any special characters, and they must begin with a letter, as opposed to a number. The program does not let you continue if you used an illegal name. The program informs you of any illegal names.

Step 12

Click Quit. You return to the regular desktop.

(NOTE: The new partition appears only after you reinstall the Macintosh system software and then install the IIe Card software - see the following steps).

Reinstalling your System 7.x Software
=====================================

After completing the Partition, choose Restart from the Special menu. The computer will turn on and you will see a disk with a flashing or blinking ?.

Insert the Install or Install Me First disk that came with your Macintosh computer. When you get to the "Welcome to the Apple Installer" screen click OK.

Note:
Performa Owners - Use the Utilities Disk and the Apple Restore application to place the software on your computer.

Make sure that your Macintosh hard disk is selected (if not, click the Drive button) and then click Install. Follow the computer's directions.

When the computer has finished installing system software you will see "The

installation has been successfully completed". Click Quit and then click Restart.

Installing your IIe Card Software

After the computer has restarted insert the "IIe Installer Disk".

If needed, double-click on the disk icon. Then double-click on the "Installer" icon.

When you get the message that the "Installation was successfully completed" click Quit and Restart."

After restart, the Apple IIe partition mounts on the desktop.

Article Change History:
09 Jul 1996 - Removed keyword no longer a fax document.
28 Jun 1996 - Updated text format in step 12; added statement to last section to indicate point the IIE partition mounts.
24 Feb 1995 - Updated format and corrected note in Reserving Space.

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Tech Info Library Article Number:14984

Tech Info Library

Adjustable Keyboard: Software Part of System Update (2/95)

Revised: 2/27/95
Security: Everyone

Adjustable Keyboard: Software Part of System Update (2/95)

==========

Article Created: 24 March 1994
Article Reviewed/Updated: 27 February 1995

TOPIC ----------

Upon installation of the Adjustable Keyboard software on my Power Macintosh, I get an error message stating "The software to be installed is older than software on this system. This installation is not allowed."

Is System Update 2.0.1 built into System 7.1.2?

DISCUSSION ----------

When installing the Adjustable Keyboard on a Power Macintosh, or a Macintosh with the System Update 2.0.1 or later installed, no additional software is necessary. Macintosh computers after the 660AV and 840AV support the Adjustable Keyboard out of the box.

The reason for this is that System Update 2.0.1 was included in the ROM beginning with the AV computers and it is therefore included in the ROM of the Power Macintosh computers. The Record extension is also no longer included as a separate extension since Sound Manager 3.0.1 includes its functionality.

Article Change History:
27 Feb 1995 - Reviewed for technical accuracy.
05 Aug 1994 - Noted that issue occurs with any Macintosh with the System Update 2.0.1 or later installed.

Support Information Services

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Tech Info Library Article Number:14987

Tech Info Library

Power Macintosh: Sound Voice Capabilities (3/94)

Revised: 3/24/94
Security: Everyone

Power Macintosh: Sound "Voice" Capabilities (3/94)

==========

Article Created: 24 March 1994

TOPIC -----

I have a question about the sound capabilities of the Power Macintosh computers. Are they capable of playing more than four "voices"?

I have a professor at a music school and he wants to be able to play back a composition which has 6 to 8 "voices" in it. Is it a hardware constraint or is it software? He is using HyperCard 2.1 also. Would upgrading make a difference?

DISCUSSION -----

The Power Macintosh computers include Sound Manager 3.0 which supports multiple voice capability. They are capable of playing 6 to 8 voices should not be a problem with the Power Macintosh. Constraints to the number of voices would be in the speed of the hardware, the bit resolution, 8 or 16, and the sampling rate, from 22kHz to 48kHz.

HyperCard 2.2 supports sound better than HyperCard 2.1 and there is an XCMD from Jeff Iverson Software of Burnsville, Minn. that supports HyperCard 2.2 with Sound Manager 3.0 available. Another solution would be to record sounds into a QuickTime format which can have up to 99 soundtracks.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14990

Tech Info Library

QuickTake 100: Power Macintosh Compatible (1/97)

Revised: 1/24/97
Security: Everyone

QuickTake 100: Power Macintosh Compatible (1/97)

==========

Article Created: 24 March 1994
Article Reviewed/Updated: 24 January 1997

TOPIC -----

Is the QuickTake 100 compatible with the Power Macintosh?

DISCUSSION -----

The current QuickTake 100 software shipping with the QuickTake 100 camera (M1644LL/B) is compatible with the Power Macintosh computers. However, if your QuickTake 100 model number is M1644LL/A, then you need to obtain an update disk for the Power Macintosh. The QuickTake for PwrMac v1.0 disk is used in conjunction with the two QuickTake disks you received with your camera. The additional software disk is available from online services.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" - Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" - Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
21 Jan 1997 - Updated to include software title.
27 May 1996 - Updated for technical accuracy.
02 Aug 1994 - Clarified what is needed to use the camera

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Tech Info Library Article Number:14991

Tech Info Library

Personal LaserWriter LS: Needs Updated Driver for AV's (10/95)

Revised: 10/30/95
Security: Everyone

Personal LaserWriter LS: Needs Updated Driver for AV's (10/95)

==========

Article Created: 24 March 1994
Article Reviewed/Updated: 30 October 1995

TOPIC ----------

My Personal LaserWriter LS won't print properly when connected to any AV Macintosh Computer. It prints one page then gives a time out error and tells me to check the serial cable. How can I fix this?

DISCUSSION ----------

Use the newer version of the driver for the Personal LaserWriter LS named 'LaserWriter 300' v1.2. Using this driver allows printing from the AV Series Macintosh computers. This software originally shipped with the AV Macintosh computers and is included in System 7.5.x.

Article Change History:
30 Oct 1995 - Updated driver availability in System 7.5.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:14992

Tech Info Library

Apple Multiple Scan 20 Display: Control Panel Video Size (3/94)

Revised: 4/1/94
Security: Everyone

Apple Multiple Scan 20 Display: Control Panel Video Size (3/94)

==========

Article Created: 24 March 1994

TOPIC ----------

Why does the Apple Multiple Scan 20 Display User's Guide show numerical resolutions in the Monitors control panel, when my control panel only shows monitor sizes?

DISCUSSION ----------

The Monitors control panel displays either resolutions or monitor sizes depending on the video drivers in the Macintosh ROMs or video card firmware. So, the Monitors control panel will vary depending on these factors.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14993

Tech Info Library

Power Macintosh: User Removal of PDS Card Not Allowed (3/94)

Revised: 3/24/94
Security: Everyone

Power Macintosh: User Removal of PDS Card Not Allowed (3/94)

==========

Article Created: 24 March 1994

TOPIC ----------

Can the Power Macintosh VRAM Expansion Card or Power Macintosh AV Card be removed by the end user of the computer?

DISCUSSION ----------

No, due to the risk of damage to the logic board or the card itself during the removal process, the VRAM Expansion Card or the AV Card must not be removed by the user. The computer should be serviced by an Apple authorized service technician only.

The Power Macintosh 7100/66 and Power Macintosh 8100/80 have the VRAM Expansion Card installed in the PDS connector, while the AV models have the AV card installed. In both cases, the card MUST remain installed to properly terminate the PDS bus.

Removal of the card or operating the computer with the PDS card removed can result in damage to the logic board of the Power Macintosh.

Installation of a NuBus card can be performed by the user, provided they follow the instructions for installation in the "Power Macintosh Getting Started" manual.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:14994

Tech Info Library

Power Macintosh: AV Card Available Separately (1/95)

Revised: 1/19/95
Security: Everyone

Power Macintosh: AV Card Available Separately (1/95)

==========

Article Created: 24 March 1994
Article Reviewed/Updated: 09 January 1995

TOPIC ----------

Are the Power Macintosh AV Card or the Power Macintosh VRAM Expansion Card available separately?

DISCUSSION ----------

The Power Macintosh AV Card is available as a separate item to upgrade any non-AV model Power Macintosh. The finished goods part number is M3447LL/A.

The VRAM Expansion Card is not available as a separate item.

Article Change History:
09 Jan 1995 - Updated to show AV card available for all Power Macintosh models.
06 Oct 1994 - Updated to show AV card now available separately for 6100.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:14995

..TIL14996-Power_Macintosh_8100-Description_of_Dual_SCSI_Channels_1-95_(TA31432).pdf

Tech Info Library

Power Macintosh 8100: Description of Dual SCSI Channels (1/95)

Revised: 1/19/95
Security: Everyone

Power Macintosh 8100: Description of Dual SCSI Channels (1/95)

==========

Article Created: 24 March 1994
Article Reviewed/Updated: 09 January 1995

TOPIC

This article discusses the two SCSI channels present within the Power Macintosh 8100 series.

DISCUSSION

The Power Macintosh 8100 series computer has a dual channel SCSI bus, there are two physical connectors on the logic board. The first SCSI channel supports only the internal hard drive.

The second channel supports any additional internal or external SCSI devices. The two SCSI busses are independent of each other, both have their own SCSI controller chip.

As with other Macintosh computers, the SCSI bus must be terminated at both ends. The first channel is terminated by the internal hard drive and the logic board.

Termination for the second channel is a bit more complicated. For CD ROM equipped 8100's, the cable for the CD has an additional SCSI connector, and a terminator on it similar to that on the Quadra 900/950.

If the unit does not have an internal CD ROM drive, termination is provided by the logic board. Any external device must also be terminated completing the necessary termination at both ends of the SCSI bus.

The faster processing rates and tighter tolerances of the Power Macintosh require using cables and terminators with the correct impedance. We strongly recommend using Apple cables and terminators or third party equivalents which meet Apple standards.

Article Change History:

09 Jan 1995 - Updated product name to relate article to all Power Macintosh
8100 models.
08 Apr 1994 - Clarified first SCSI channels' capabilities.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:14996

Tech Info Library

CheckMark Software, Inc.

Revised: 3/24/94
Security: Everyone

CheckMark Software, Inc.

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Article Created: 24 March 1994

CheckMark Software, Inc.
---
724 Whalers Way, Bldg. H
Fort Collins, CO 80525

Telephone: 303-225-0522

Telephone: 800-444-9922

Fax: 303-225-0611

Company Profile:
Makers of personal finance software for Macintosh computers.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14997

Tech Info Library

DeltaPoint, Inc.

Revised: 3/24/94
Security: Everyone

DeltaPoint, Inc.

==========

Article Created: 24 March 1994

DeltaPoint, Inc.
---
2 Harris Court, Suite B-1
Monterey, CA 93940

Telephone: 408-648-4000

Telephone: 800-446-6955

Fax: 408-648-4020

Company Profile:
Makers of graphing and productivity software for Macintosh and Windows computers.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14998

Tech Info Library

Maxis

Revised: 3/24/94
Security: Everyone

Maxis

==========

Article Created: 24 March 1994

Maxis
-----
2 Theatre Square, Suite 230
Orinda, CA 94563

Telephone: 800-336-2947

Telephone: 510-254-9700

Company Profile:
Makers of games for Macintosh, DOS and Windows computers.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:14999

Tech Info Library

MECA Software, Inc.

Revised: 3/24/94
Security: Everyone

MECA Software, Inc.

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Article Created: 24 March 1994

MECA Software, Inc.
---
55 Walls Dr., P.O. Box 912
Fairfield, CT. 06430

Telephone: 800-288-6322

Company Profile:
Makers of personal finance software.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15000

Tech Info Library

Velocity Development

Revised: 3/24/94
Security: Everyone

Velocity Development

==========

Article Created: 24 March 1994

Velocity Development

P.O. Box 875
Palatine, IL. 60078

Telephone: 708-991-0594

Company Profile:
Makers of computer games for Macintosh and Windows computers.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15001

..TIL15002-Vividus_Corporation.pdf

Tech Info Library

Vividus Corporation

Revised: 3/24/94
Security: Everyone

Vividus Corporation

==========

Article Created: 24 March 1994

Vividus Corporation
---
378 Cambridge Ave., Suite C
Palo Alto, CA 94306

Telephone: 415-321-2221

Fax: 415-321-2282

Company Profile:
Makers of 3D rendering and display software for Macintosh computers.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15002

Tech Info Library

ARA and X.25: MultiPort Server X.25 - Description (6/95)

Revised: 6/8/95
Security: Everyone

ARA and X.25: MultiPort Server X.25 - Description (6/95)

==========

Article Created: 22 March 1994
Article Reviewed/Updated: 8 June 1995

TOPIC ----------

This article describes the X.25 connection for Apple Remote Access.

DISCUSSION ----------

The X.25 Network Extension Kit for the Apple Remote Access MultiPort Server allows users to connect from Apple Remote Access clients to Apple Remote Access MultiPort Servers through both public and private X.25 telephone networks.

X.25 networks allow dial-in users to call a local phone number to access a remote connection. This allows users to access local-area networks remotely while only being charged for local phone connection rates, therefore, companies with large, mobile work forces can use X.25 networks to reduce phone charges.

X.25 Provides:

- Connection to an X.25 network
- No need for modems on the Multiport Server
- Maximum of eight X.25 ports on a single Serial NuBus card (practical limit could be much less)
- X.25 support to any number of clients (each client must have the ARA Client application installed)

What You Need to Set Up an X.25 ARA Connection

- Apple Remote Access MultiPort Server which includes:
  - one serial number
  - one Apple Serial NuBus Card
  - one Apple RS-232 C Cable
  - four client software packages

- Apple MacX25 which requires:

- one or more serial cards, and V.35 or RS-232-C cabling
- Apple Part Number: M0711Z/E
- MacX25 supports up to 64 virtual circuits and operates at up to 64 Kbps with the V.35 cable

You do need to subscribe to and pay all fees for the X.25 network to which you connect.

- Apple Remote Access X.25 Extension which includes:
  - X.25 Server software which is installed on the MP server
  - X.25 Clients software which is installed on all ARA Client Macintosh Computers (NOTE: it is not necessary for clients to install the MacX25 user software)

  X.25 Extension Package does not provide any additional Client packages. Four Client packages are provided with the Apple Remote Access MultiPort Server.

Information Users Need to Access the X.25 Server

- the name of the network to which the X.25 server is connected (CompuServe, InfoNet, SprintNet, Tymnet inbound/outbound, or Vanilla X.28)
- The X.25 network address of the server
- their X.25 user id, if needed
- their X.25 user password, if needed
- whether reverse charging or local charging is permitted
- any other connection details

Clients will use the Options button in the Remote Access Connection window to indicate an X.25 connection. The Apple Remote Access Client User's Guide also provides instructions on connecting to an X.25 network.

Availability and Pricing

Apple's X.25 Network Extension Kit is available now through authorized Apple resellers at an Apple Price of $199 in the U.S.

MacX25 is available through resellers at an Apple Price of $599 in the U.S.

To find a nearby Apple dealer or reseller in the U.S., call 1-800-538-9696. For information about product support outside the U.S., contact the local Apple subsidiary or distributor. Prices and configurations may vary outside the U.S. For more information on any Apple Remote Access products, call the Apple Network Information Line at (408) 862-3385.

Article Change History:
08 Jun 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

..TIL15003-ARA_and_X-25-MultiPort_Server_X-25_-Description_6-95.pdf

Tech Info Library Article Number:15003

A/UX 3.0: Quadra 950 Serial Port Problem (3/94)

Revised: 3/24/94
Security: Everyone

A/UX 3.0: Quadra 950 Serial Port Problem (3/94)

==========

Article Created: 15 March 1994

TOPIC -----

The serial port, and sometimes the Quadra, freezes up when I use lp, then cancel the spooled job.

DISCUSSION -----

The Quadra 950 running A/UX 3.0 using the System V spooler (lp) to a serial printer has the same problem that the Macintosh IIfx had running A/UX 2.0.

As with the Macintosh IIfx, you must use the Serial Switch (1.1) set to compatible mode to succesfully use the System V spooler on the Quadra.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15004

Tech Info Library

SNA•ps to IBM 5494 Configuration Parameters (3/94)

Revised: 3/25/94
Security: Everyone

SNA•ps to IBM 5494 Configuration Parameters (3/94)

==========

Article Created: 24 March 1994

TOPIC ----------

The information below shows how the SNA•ps Gateway configuration parameters should correlate with the IBM AS/400 and 5494 Remote Control Unit.

DISCUSSION ----------

SNA•ps Line Configuration

Line Name:	TRLINE
Line Type:	Token Ring
	All timers at default
Max I-Field Length:	2057

SNA•ps Partner Configuration

Partner Name:	AS400
Network Name:	AS400 - AS/400 Local control point name
Network Qualifier:	APPN - AS/400 Local network ID
Gateway XID:	05000000 - Does not correspond to anything in the 5494 connection
Partner XID:	07300000 - Must be this value for 5494 connection
Link Address:	400000005494 - Token ring address of 5494
Node Type:	Peer

SNA•ps Local LU

Local LU:	PASSTHRU - This is the Apple default
LU ID:	2 - Must be unique ID
Max TPs:	32 - IBM limit.
Network Name:	MACLU01 - AS/400 Device remote location name
Network Qualifier:	APPN - AS/400 Remote network ID

SNA•ps TP

TP Name: * - Allows all transaction programs
All other parameters at default. See SNA•ps Gateway Configuration Guide.

SNA•ps Remote LU

Remote LU: AS400 - This is the Apple default
Network Name: AS400 - AS/400 Device local location name
Network Qualifier: APPN - AS/400 Local network ID
Parallel Sessions: Supported

SNA•ps Mode

Mode Name: Must match the mode name created on the AS/400. See Gateway Config Guide. You cannot use the QPCSUPP mode.

There are some peculiarities with the 5494. It will not support more than 32 parallel workstation sessions per LU. Also, IBM recommends that the *APPC controller remote control point name match the 5494 controller remote location name. We believe this is to avoid confusion over the device description that is auto configured for the 5494. Apple support reps cannot assist in the setup or configuration of the IBM 5494. Refer to the IBM Redbook on configuring the 5494 to AS/400 (IBM P/N GG24-3828-00).

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15005

Tech Info Library

X.25 Extension: Error in Port Configuration (3/94)

Revised: 3/24/94
Security: Everyone

X.25 Extension: Error in Port Configuration (3/94)

==========

Article Created: 24 Mar 1994

TOPIC -----

I'm getting an error in the port configuration for the X.25 port on my ARA MultiPort server with the X.25 extension installed.

DISCUSSION -----

You should check the following:

- Verify that the MacX25 Admin program is running, and has started the MacX25 server assigned to the port's serial card.
- If necessary, start the MacX25 Admin and server programs, and then try again to turn on the port
- If the Apple Remote Access MultiPort Server starts up automatically from the Startup Items folder, verify that the MacX25 program is also set for automatic startup, and that it starts up before the MultiPort Server program. In addition, make sure the at you have selected the "Auto Start" option for the MacX25 server in MacX25 Admin's Server Info dialog box.
- If MacX25 is running, and you still get errors when turning on X.25 ports, then check the server log for additional information. If the log indicates that the port's serial card is in use by the Modem Service, use the Remote Access Manager to turn off the modem ports, and then try to turn on the X.25 ports again. You can't have modem ports and X.25 ports active on the same serial card.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15006

Tech Info Library

X.25: Number of Serial Ports on a Serial NB Card (3/94)

Revised: 3/24/94
Security: Everyone

X.25: Number of Serial Ports on a Serial NB Card (3/94)

==========

Article Created: 24 Mar 1994

TOPIC ----------

How many ports can I configure on my Apple Remote Access Multiport Server when using MacX25 and the X.25 Extension?

DISCUSSION ----------

You can configure a maximum of eight ports per card, however, the practical limit may be lower. The limit varies directly with the X.25 link speed for your network (usually measured in kilobits per second, or Kbits/sec.) and inversely with the speed of the connecting modems (usually measured as bits per second, or bps).

If your X.25 link is shared by other services in addition to Apple Remote Access, the actual limits may be even lower. In general, X.25 performance will always be somewhat lower with X.25 than with a modem-to-modem connection.

The following table gives you an idea of possible variations for the maximum practical ports per serial card:

	9.6Kbits/sec link speed	19.2 Kbits/sec link speed	56/64 Kbits/sec link speed
all client modems 2400 bps	3 ports per card	6 ports per card	8 ports per card
half 2400 half 9600 bps modems	1 port per card	2 ports per card	6 ports per card
all 9600 bps modems	1 port per card	2 ports per card	4 ports per card

|_____|_____|_____|_____|

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15007

Tech Info Library

LaserWriter Pro 810: Password not Accepted (3/94)

Revised: 3/24/94
Security: Everyone

LaserWriter Pro 810: Password not Accepted (3/94)

==========

Article Created: 23 March 1994

TOPIC ----------

This article describes what to do if you cannot log into the "super user account" on the LaserWriter Pro 810.

DISCUSSION ----------

If a VT series terminal is connected to the maintenance port on the LW Pro 810, and you are unable to login to the "super user" account by typing the password "system," the following is a solution:

1) Hit the "F3" key on the terminal (this should put the terminal into setup mode)
2) Go to "General" setup
3) Under this area you should see "New Line" on the end of the third row
4) Change this entry to "No New Line" and retry the password

The problem stems from the fact that the printer is expecting "system" as a password and with the terminal set to "New Line" the VT is sending "system•" where the "•" is a carriage return; hence the printer thinks the password is wrong and displays the password> prompt again.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15008

Tech Info Library

Exide Electronics (2/95)

Revised: 2/28/95
Security: Everyone

Exide Electronics (2/95)

==========

Article Created: 25 March 1994
Article Reviewed/Updated: 28 February 1995

Exide Electronics

Austin, TX

800-365-4892

Company Profile:
Onlinet is a UPS (universal power supplies) system for the Workgroup Server 95. It consists of hardware and software that will perform an orderly shutdown of the AWS 95 in the event of a power failure.
Article Change History:
20 Jun 1994 - Corrected phone number

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15009

Tech Info Library

Charles River Analytics Inc.

Revised: 3/25/94
Security: Everyone

Charles River Analytics Inc.

==========

Article Created: 25 March 1994

Charles River Analytics Inc.
---
55 Wheeler St.
Cambridge, MA 02138

Telephone: 617-491-3474

Fax: 617-868-0780

Company Profile: develops and markets Macintosh utility software, including Open Sesame!

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15011

Tech Info Library

Quadra 610 DOS Compatible: Image not centered (3/94)

Revised: 9/29/95
Security: Everyone

Quadra 610 DOS Compatible: Image not centered (3/94)

==========

Article Created: 24 March 1994
Article Reviewed/Updated: 28 September 1995

TOPIC ----------

I have an NEC 15-in monitor attached to my Quadra 610 DOS Compatible. When I switch to the DOS side, the image is off-center. If I adjust it to center, then enter Windows, it's off center again and I have to re-adjust it. The monitor works fine in the Mac environment. What's wrong?

DISCUSSION ----------

The off center problem is caused by the different scan rate used by the graphics subsystem when in DOS as opposed to Windows. Basically it's in "graphics" mode when in Windows, and "text" mode when in DOS. Most of the newer multisync monitors have a way to center the picture in each environment and then save the settings. This is not specific to the Quadra 610 DOS Compatible computer or the DOS Compatibility Card. This is more a function of the way the monitor syncs to an incoming signal. The phenomena happens all the time in the DOS world, which is why the monitor manufacturers came up with monitors that had settings you could save.

MS-DOS itself uses no video drivers, so none are provided. The DOS Compatibility Card and the Quadra 610 DOS Compatible come with the Chips & Technologies (C&T) video drivers for the graphics chip the DOS Compatibility Card uses (C&T 450). The drivers disks are labelled "Display Drivers Disk 1" and "Display Drivers Disk 2".

Installing the C&T 450 drivers in Windows is going to be the best solution Apple can provide. Any additional adustments are up to the "adjustability" of the monitor.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15012

Tech Info Library

Portable StyleWriter: Pitch Button Not Used (3/94)

Revised: 3/25/94
Security: Everyone

Portable StyleWriter: Pitch Button Not Used (3/94)

==========

Article Created: 24 March 1994

TOPIC ----------

The pitch button is not mentioned in the manual, how do I use it?

DISCUSSION ----------

The pitch button is not used on the Portable StyleWriter, so it is not covered in the manual.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15013

Tech Info Library

StyleWriter II: Software Install Error (8/94)

Revised: 8/31/94
Security: Everyone

StyleWriter II: Software Install Error (8/94)

==========

Article Created: 24 March 1994
Article Reviewe/Updated: 30 August 1994

TOPIC ----------

I'm trying to install StyleWriter II software from our original StyleWriter II disks on a Power Macintosh 7100/66. I'm getting the following error when doing an Easy Install:

"The selected disk has System 7 installed, the custom installation you have selected is only for disks where System 6 is installed. Please click Switch Disk to choose a different disk or insert a floppy disk."

DISCUSSION ----------

We were able to duplicate this problem, and most likely the original StyleWriter II Installer script wasn't aware of the new Power Macintosh computers or new system software. This issue can also arise on any computer introduced after the StyleWriter II such as the PowerBook 500 series and 280/280c.

The latest StyleWriter II software (version 1.2) is on the Power Macintosh Install disks, and is part of the Easy Install for the Power Macintosh as well as being pre-installed on the PowerBook computers.

You might want to do a Custom Install, so that the additional fonts are installed on your Power Macintosh. The fonts are the only things that you need to install from the StyleWriter II software disks.

Article Change History:
30 Aug 1994 - Revised to show that issue can arise on any computer introduced after the StyleWriter II.
17 May 1994 - Included custom install information.

Support Information Services

Copyright 1994, Apple Computer, Inc.

..TIL15015-StyleWriter_II-Software_Install_Error_8-94.pdf

Tech Info Library Article Number:15015

Tech Info Library

Universal Power Supply (UPS) and Retrospect (3/94)

Revised: 3/28/94
Security: Everyone

Universal Power Supply (UPS) and Retrospect (3/94)

==========

Article Created: 28 March 1994

TOPIC ----------

I am having problems with my UPS and Retrospect on my AWS 95.

DISCUSSION ----------

Retrospect does some sort of script verification and notification at quitting time, and this can cause problems with quitting Retrospect and a UPS. These Retrospect notifications require user input, and if no one is at the machine to answer this dialog box, the computer never shuts down and a dirty file system occurs when power is cut off.

The solution is to uncheck the "Check Validity of Next Script" option in Retrospect. To get to this option, click on the Configure icon in the Retrospect Directory, click on the "Options" button, then click on "Quit Action" in the Program Options window. There you should see "Check Validity of Next Script." Retrospect will now quit without stopping for user input.

Another option in "Quit Action" is "Rewind Tapes." This will rewind any accessed tape to the beginnings. The purpose of this is to speed future access to Retrospect. This option should also be off for machines on a UPS. The UPS may not be able to keep the computer up long enough to finish rewinding the tape.

Note: These tips can also be applied to AWS60/80.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15016

Network Software Installer 1.4.3: Contents & ReadMe (3/94)

Revised: 3/28/94
Security: Everyone

Network Software Installer 1.4.3: Contents & ReadMe (3/94)

==========

Article Created: 28 March 1994

TOPIC --------------------

This article lists the software components for the Network Software Installer (NSI) 1.4.3.

DISCUSSION --------------------

This installer works on either System 6.0.5 or later, or System 7 Macintosh computers. You can use this Network Software Installer to install the following networking products:

Product	Version	Notes
AppleTalk version	58.1.2	
Network Control Panel	3.0.2	
AppleTalk Internet Router	2.0	requires router installation disk
Ethernet driver	6.0.5	for the Apple EtherTalk NB Card
EtherTalk	2.5.6	
Ethernet driver	1.1.1	for the Apple Ethernet NB Card, Twisted-Pair Card, for the Apple Ethernet LC Card, the Macintosh Quadra 700/900/950/800, Centris 610/650, built-in Ethernet port. Apple Ethernet LC Twisted-Pair Card, for the Apple Ethernet CS Twisted-Pair/Coaxial/AAUI Card
Ethernet driver	1.0.1	for the Macintosh Quadra 840AV and Centris 660AV
TokenTalk	2.5.6	
Token Ring Control Panel	1.0.1	
Token Ring driver	2.5.2	for the TokenTalk NB and Token Ring 4/16 Cards

In addition, this Installer installs the following related products:

A/ROSE 1.2.1

NOTE:
=====

On Macintosh computers with a 68040 microprocessor (Quadra, Centris, and Performa 470 series), some programs may quit unexpectedly or cause the computer to freeze when you attempt to open them over the network. This problem is fixed by using the Network Launch Fix available from AppleLink or the InterNet (ftp.apple.com).

Restrictions:
=============

This software should not be installed with AppleTalk Internet Router and AppleShare client on a Macintosh with only 1 Megabyte of memory.

If this release of the Network Software Installer is being used in conjunction with an Apple Internet Router v. 3.0 Installer, Router 3.0 MUST be installed first. This will ensure that the Router installation does not overwrite the newer AppleTalk software contained on NSI 1.4.2.

Release notes for each item follows:

AppleTalk version 58.1.2
========================
A problem existed with the LocalTalk SNMP byte counting code that would cause an occasional bus error. We were wrongly assuming that we ALWAYS had a WDS pointer and looking at that address to calculate the byte counts.

Now we check for Slotless networking devices when coming out of sleep for the PowerBook Duos.

Lap Manager only intercepts packets for SAP 0xAA or 0x00. We will attempt to deliver any packet for a destination SAP that is not 0xAA or 0x00 to the SAP listener. If no SAP listener is found, then the packet will be ignored.

Add check in LLCAttach for duplicate SAP or SNAP addresses. If so, then an error is returned.

Ethernet driver version 1.1.1 for the Apple Ethernet NB Card
==
Ethernet driver version 1.1 now allows the SONIC to transmit packets by building chains "on the fly". This results in a faster Ethernet driver.

This card no longer uses A/ROSE, but runs in "slave" mode. It now uses the same Ethernet driver that the Ethernet NB Twisted-Pair card uses.

Better allocation of memory when Virtual Memory is on.

Ethernet driver version 1.1.1 for the Apple Ethernet NB Twisted-Pair and LC

Cards
==========
Ethernet driver version 1.1 now allows the SONIC to transmit packets by building chains "on the fly". This results in a faster Ethernet driver.

Better allocation of memory when Virtual Memory is on.

Note: The faster Ethernet driver will only speed up Apple's LC Cards and not Third Party LC Cards.

Fixed a problem where the cpu could possible "hang" when the card was selected.

Ethernet driver version 1.1.1 for the Macintosh Quadra 700/900/950/800, Centris 610/650, built-in Ethernet ports.
==========
Ethernet driver version 1.1 now allows the SONIC to transmit packets by building chains "on the fly". This results in a faster Ethernet driver.

QuickTime on a Quadra 800, Centris 610 or a Centris 650 has much better performance.

Better allocation of memory when Virtual Memory is on.

Ethernet driver version 1.1.1 for the Apple Ethernet LC Twisted-Pair Card
==========
The Apple Ethernet NB LC Twisted-Pair Card is now supported.

Fixed a problem where the cpu could possible "hang" when the card was selected.

Ethernet driver version 1.1.1 for the Apple Ethernet CS Twisted-Pair/Coaxial/AAUI Card
==========
The Apple Ethernet CS Twisted-Pair/Coaxial/AAUI Cards are now supported.

EtherTalk for EtherTalk NB
==========
Internal build process has changed, but no changes to the driver code except the version number.

EtherTalk and TokenTalk version 2.5.6
==========
Fixed a multinode occasional crashing problem where packets were being sent to a node that was in the middle of being acquired.

A/ROSE 1.2.1
==========
Added support for Power Macintosh Systems.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15017

Tech Info Library

AV Systems: How To Adjust Auto Video Gain (12/94)

Revised: 12/2/94
Security: Everyone

AV Systems: How To Adjust Auto Video Gain (12/94)

==========

Article Created: 30 March 1994
Article Reviewed/Updated: 2 December 1994

TOPIC ----------

We would like to utilize the AV technology in the Quadra or Power Macintosh computers, but we understand it has an auto-gain feature that cannot be turned off via software, or at least in the Quadra 840AV.

There are some indications that the auto-gain feature in the Power Macintosh may be turned off under software control and the gain adjusted manually. How can this be done?

DISCUSSION ----------

The Fusion Recorder utility program that comes bundled with the Macintosh Quadra 840AV and the Power Macintosh AV models doesn't support video gain (black level or white level), or contrast control. If you purchase VideoFusion software from VideoFusion, Inc., you will have the ability of adjusting the contrast control on only the Power Macintosh AV models.

There are third-party companys that provide hardware like the Radius' Video Vision or SuperMac's Video Spigot for greater video control on the Quadra 840AV.

To locate a vendor's address and phone number, use the vendor's name as a search string in the Tech Info Library.

Article Change History:
15 Nov 1994 - Corrected contrast control with VideoFusion software.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15018

Tech Info Library

Hypercard XCMD for Comm Toolbox & Geoport (3/94)

Revised: 3/29/94
Security: Everyone

Hypercard XCMD for Comm Toolbox & Geoport (3/94)

==========

Article Created: 29 March 1994

TOPIC ----------

I have built a customer HyperCard stack that will greet visitors, but I need the system to automatically dial from HyperCard using the GeoPort. I then need the system to detect a dial tone when the call is completed, and do an automatic hang-up and continue with the next process.

Is anyone aware of an XCMD that will provide this feature? OR, is there a HyperCard script that you are aware of that will provide this feature?

DISCUSSION ----------

There are a couple of companies that have supplied XCMDs for HyperCard that utilize the Apple Communications Toolbox which in turn communicates with the GeoPort. They are:

- Full Moon Software, Inc. PO Box 700237, San Jose, CA 95170 408 253-7199 or 408 252-2378 (fax).

- Pacer Software, Inc. 7911 Hershel Ave, La Jolla, CA 92037 619 454-0565 800-722-3702 or 619-454-6267 (fax).

- Mitem Corporation, 2105 Hamilton Ave., San Jose, CA 95125 408 559-8801 MitemView 3.2 is a complete client/server communications framework for $7000.

Another way to solve the problem would be to use AppleScript within HyperCard 2.2 to communicate with an AppleScript-aware communications application such as:

- PhonePro from Cypress Research Corporation, 240 East Caribbean Drive, Sunnyvale, CA 94089 408 752-2700.

- SITcomm 1.0 from Aladdin Systems, 165 Westridge Drive, Watsonville, CA 95076 408-761-6200

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15019

Tech Info Library

Power Macintosh and MacX (11/95)

Revised: 11/9/95
Security: Everyone

Power Macintosh and MacX (11/95)

==========

Article Created: 28 March 1994
Article Reviewed/Updated: 9 November 1995

TOPIC ----------

I'm trying to run MacX on a Power Macintosh 8100/80AV, and I'm not having any success. Is there a known problem with running MacX on a Power Macintosh? I'm running MacX version 1.2, is there a newer version I should use? I get an error saying something about the Comm tolls not loading properly.

DISCUSSION ----------

In order for Power Macintosh to properly work with MacX 1.2, you have to use MacTCP 2.0.4 or later. We have verified that MacTCP CDEV (1.1.1) which originally came with MacX 1.2 does not work on Power Macintosh. However the MacTCP Tool 1.2 which came with MacX 1.2 is still valid to use. Also the latest version of MacX is MacX 1.5.

MacTCP can be purchased off the Retail Price List as part number:
M8113Z/A - TCP/IP Connection for Macintosh

Article Change History:
09 Nov 1995 - Added latest version of MacX.
08 Jul 1994 - Added part number for the TCP connection product.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15020

Tech Info Library

Power Macintosh: Files on System Diskettes Are Compressed (3/94)

Revised: 3/16/95
Security: Everyone

Power Macintosh: Files on System Diskettes Are Compressed (3/94)

==========

Article Created: 29 March 1994

TOPIC ----------

Why do all the files on the diskettes for my Power Macintosh appear as generic documents?

DISCUSSION ----------

Due to space constraints on the diskettes, all the files have been compressed and as such must be installed via the Installer program, this includes the print drivers as well. It is not possible to drag copy the files from the diskettes.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15021

Tech Info Library

Power Macintosh: Why SIMMs Must Be Installed In Pairs (1/95)

Revised: 1/19/95
Security: Everyone

Power Macintosh: Why SIMMs Must Be Installed In Pairs (1/95)

==========

Article Created: 29 March 1994
Article Reviewed/Updated: 09 January 1995

TOPIC ----------

My Centris 610 has one 16MB SIMM installed. I'd like to put that SIMM in my Power Macintosh 6100 but Apple tells me I can't. Why can't I use just one SIMM in my Power Macintosh?

DISCUSSION ----------

The Centris SIMM you have is the right kind for your Power Macintosh 6100, but you need a matching pair to do the upgrade. The Centris has a 32-bit wide memory system, and the SIMM is 32 bits wide, so a single SIMM is all you need to add memory. On the Power Macintosh 6100, though, we have a 64-bit wide memory system. This requires two matching SIMMs to perform an upgrade.

If you only install one SIMM, the machine still boots, but it will not use that memory because the full 64-bit wide memory isn't there. As to where the RAM goes, there are two SIMM connectors next to the power supply for the two SIMMs.

The same two SIMM installation requirement holds true for the Power Macintosh 7100 and the Power Macintosh 8100.

Article Change History:
09 Jan 1995 - Removed speed from Power Macintosh model numbers.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15022

Tech Info Library

Power Macintosh: 6100/60 Contents Of Upgrade (3/94)

Revised: 3/29/94
Security: Everyone

Power Macintosh: 6100/60 Contents Of Upgrade (3/94)

==========

Article Created: 29 March 1994

TOPIC -----

What is contained in the M2343LL/A Power Macintosh 6100/60 Logic Board Upgrade?

DISCUSSION -----

The Power Macintosh 6100/60 upgrade contains the following items:

- HDI-45 To DB-15 Video Cable
- 50 Pin SCSI Cable
- Rear Housing Assembly, I/O bezel
- Floppy Drive Shield
- 6100 Logic Board
- Logic Board Insulator
- Power Mac 6100 Nameplate
- EMI Gasket
- Rubber Foot

- Power Macintosh 6100/60 Getting Started Manual
- Macintosh Reference Guide
- Registration Card
- A Note About Power Macintosh Logic Board Upgrade
- Additional Tips And Troubleshooting Manual
- Resource Guide 6100
- Power Macintosh CD
- Power Macintosh System Software Diskettes

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15023

Tech Info Library

Power Macintosh 6100/60AV: Contents Of Upgrade (3/94)

Revised: 3/29/94
Security: Everyone

Power Macintosh 6100/60AV: Contents Of Upgrade (3/94)

==========

Article Created: 29 March 1994

TOPIC ----------

What is contained in the M2901LL/A Power Macintosh 6100/60AV Logic Board Upgrade?

DISCUSSION ----------

The Power Macintosh 6100/60AV Logic Board Upgrade contains the following:

- HD-I45 To DB-15 Video Cable
- 50 Pin SCSI Cable
- Rear Housing Assembly, I/O bezel
- Floppy Drive Shield
- 6100 Logic Board
- Logic Board Insulator
- Power Mac 6100 Nameplate
- EMI Gasket
- Rubber Foot

- Power Macintosh 6100/60 Getting Started Manual
- Macintosh Reference Guide
- Registration Card
- A Note About Power Macintosh Logic Board Upgrade
- Additional Tips And Troubleshooting Manual
- Resource Guide 6100
- Power Macintosh CD
- Power Macintosh System Software Diskettes

- Speech Kit Instructions
- S-Video To Composite Video Input Adapter Cable
- S-Video To Composite Video Output Adapter Cable
- Plaintalk Mic
- AV Video Card
- PDS Adapter Board

..TIL15024-Power_Macintosh_6100-60AV-Contents_Of_Upgrade_3-94.pdf

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15024

Tech Info Library

Power Macintosh 7100/66: Contents of Upgrade (3/94)

Revised: 3/29/94
Security: Everyone

Power Macintosh 7100/66: Contents of Upgrade (3/94)

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Article Created: 29 March 1994

TOPIC -----

What is contained in the M2474LL/A Power Macintosh 7100/66 Logic Board Upgrade?

DISCUSSION -----

The Power Macintosh 7100/66 Logic Board Upgrade contains the following:

- HDA/CD ROM Cable Assembly
- Internal Chassis
- Housing Assembly, Bottom Case
- Top Cover With Front Panel
- Manual Insert Floppy Panel
- FCC Approval Label
- 7100 Logic Board
- CD 300 Plus Shield
- 2MB Video RAM Expansion Card

- Power Macintosh 7100/66 Getting Started Manual
- Macintosh Reference Guide
- Registration Card
- A Note About Power Macintosh Logic Board Upgrade
- Additional Tips And Troubleshooting Manual
- Resource Guide 7100
- Power Macintosh CD
- Power Macintosh System Software Diskettes

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15025

Tech Info Library

Power Macintosh 7100/66AV: Contents Of Upgrade (3/94)

Revised: 3/29/94
Security: Everyone

Power Macintosh 7100/66AV: Contents Of Upgrade (3/94)

==========

Article Created: 29 March 1994

TOPIC ----------

What is contained in the M2840LL/A Power Macintosh 7100/66AV Logic Board Upgrade?

DISCUSSION ----------

The Power Macintosh 7100/66AV Logic Board Upgrade contains the following:

- HDA/CD ROM Cable Assembly
- Internal Chassis
- Housing Assembly, Bottom Case
- Top Cover With Front Panel
- Manual Insert Floppy Panel
- FCC Approval Label
- 7100 Logic Board
- CD 300 Plus Shield

- Power Macintosh 7100/66 Getting Started Manual
- Macintosh Reference Guide
- Registration Card
- A Note About Power Macintosh Logic Board Upgrade
- Additional Tips And Troubleshooting Manual
- Resource Guide 7100
- Power Macintosh CD
- Power Macintosh System Software Diskettes

- Speech Kit Instruction
- S-Video To Composite Video Input Adapter Cable
- S-Video To Composite Video Output Adapter Cable
- Plaintalk Microphone
- AV Video Card

Support Information Services

..TIL15026-Power_Macintosh_7100-66AV-Contents_Of_Upgrade_3-94_(TA31452).pdf

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15026

Tech Info Library

Power Macintosh 8100/80: Contents Of Upgrade (3/94)

Revised: 3/29/94
Security: Everyone

Power Macintosh 8100/80: Contents Of Upgrade (3/94)

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Article Created: 29 March 1994

TOPIC -----

What is contained in the M2344LL/A Power Macintosh 8100/80 Logic Board Upgrade?

DISCUSSION -----

The Power Macintosh 8100/80 Logic Board Upgrade contains the following:

- 256K Cache Simm
- Cable Assembly, Power Harness
- SCSI Cable Assembly
- SCSI Cable Assembly, CD ROM Drive
- 8100 Logic Board
- Front Panel
- Rear Panel
- Internal Bottom And Top Chassis
- Top Cover
- NMI/Reset Actuator
- 4MB Video RAM Expansion Card

- Power Macintosh 8100/80 Getting Started Manual
- Macintosh Reference Guide
- Registration Card
- A Note About Power Macintosh Logic Board Upgrade
- Additional Tips And Troubleshooting Manual
- Resource Guide 8100
- Power Macintosh CD
- Power Macintosh System Software Diskettes

Support Information Services

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Tech Info Library Article Number:15027

Power Macintosh 8100/80AV: Contents Of Upgrade (3/94)

Revised: 3/29/94
Security: Everyone

Power Macintosh 8100/80AV: Contents Of Upgrade (3/94)

==========

Article Created: 29 March 1994

TOPIC -----

What is contained in the M2902LL/A Power Macintosh 8100/80AV Logic Board Upgrade?

DISCUSSION -----

The Power Macintosh 8100/80AV Logic Board Upgrade contains the following:

- 256K Cache Simm
- Cable Assembly, Power Harness
- SCSI Cable Assembly
- SCSI Cable Assembly, CD ROM Drive
- 8100 Logic Board
- Front Panel
- Rear Panel
- Internal Bottom And Top Chassis
- Top Cover
- NMI/Reset Actuator

- Power Macintosh 8100/80 Getting Started Manual
- Macintosh Reference Guide
- Registration Card
- A Note About Power Macintosh Logic Board Upgrade
- Additional Tips And Troubleshooting Manual
- Resource Guide 8100
- Power Macintosh CD
- Power Macintosh System Software Diskettes

- Speech Kit Instruction
- S-Video To Composite Video Input Adapter Cable
- S-Video To Composite Video Output Adapter Cable
- Plaintalk Microphone
- AV Video Card

..TIL15028-Power_Macintosh_8100-80AV-Contents_Of_Upgrade_3-94_(TA31454).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15028

Tech Info Library

Power Macintosh: Explanation Of Naming Format (3/95)

Revised: 3/28/95
Security: Everyone

Power Macintosh: Explanation Of Naming Format (3/95)

==========

Article Created: 29 March 1994
Article Reviewed/Updated: 28 March 1995

TOPIC -----

Can you explain the format used for naming the Power Macintosh?

DISCUSSION -----

The naming of the Power Macintosh models utilizes the following format.

The first digit tells the form factor: 6xxx is the thin form factor as in the Quadra 610; 7xxx, the taller form as in the Quadra 650 (but the number derives from the Quadra 700); and 8xxx, the mini-tower form as in the Quadra 800.

The second digit indicates the generation of Power Macintosh computer.

The last two digits signify any particular market designation.

For example, the Workgroup Server 9150 uses the 9 series chassis (large tower), is among the first generation of Power Macintosh computer and the utilizes the server market designation of 50 in the name..

Finally, the digits following the slash indicate the chip's clock speed.

Article Change History:
28 Mar 1995 - Updated naming convention information.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15029

Tech Info Library

Power Mac Upgrade Card Not Switching To PowerPC Mode (10/96)

Revised: 10/2/96
Security: Everyone

Power Mac Upgrade Card Not Switching To PowerPC Mode (10/96)

==========

Article Created: 28 March 1994
Article Reviewed/Updated: 2 October 1996

TOPIC ----------

I cannot get the Power Macintosh Upgrade Card to come up in Power Macintosh mode.

DISCUSSION ----------

When the control panel has been switched to the correct mode, you must then Shut Down (from the Special menu) and power on the computer. A restart will not work because the computer's Application Specific Integrated Circuits (ASIC) do not get reset unless they are powered off. A hard reset (Control-Command-Power) will reset the ASICs, but you can also corrupt the System file by doing this.

In addition, resetting the PRAM (Option-Command-P-R) at startup will bring the system up in 68000 mode regardless of the setting.

Article Change History:
02 Oct 1996 - Reworded for clarity.

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Tech Info Library Article Number:15030

Tech Info Library

System 7.5: Error Installing Printer Software (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Error Installing Printer Software (2/95)

==========

Article Created: 1 April 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

We have a Power Macintosh 6100/60 and are getting the following error message when selecting Easy Install with the LaserWriter Select 300 disks:

"The selected disk has System 7 installed, the custom installation you have selected is only for disks where System 6 is installed. Please click Switch Disk to choose a different disk or insert a floppy disk".

DISCUSSION ----------

You will only receive this error performing an Easy Install, Custom installs are unaffected. Any computer with System 7.1.2 or System 7.5 installed can have this problem.

This problem also occurs with the StyleWriter II installation on the Power Macintosh computers. Basically, the LaserWriter Select 300 and StyleWriter II Installer scripts are not aware of the Power Macintosh computers and new system software.

The printer drivers for the LaserWriter 300 and StyleWriter II are installed as part of the normal Easy Install of both System 7.1.2 and System 7.5. You should use this printer software, and not try to install the printer software from the disks provided with your printer. If you used the Custom Install and did not include the printer software for your printer, use the Custom Install from the System software again to install the proper printer software.

To install the additional TrueType fonts included with your printer, use the Custom Install on the printer software disks. You should only install fonts from these disks. Do not install the printer software from these disks. This replaces your Chooser and PrinterShare with older versions.

Here is a summary of the related print drivers:

- LaserWriter 300 - Print driver for Personal LaserWriter 300, LaserWriter Select 300, and Personal LaserWriter LS printers.

- StyleWriter II - Print driver for the StyleWriter II, and StyleWriter I printers.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
06 Jan 1995 - Corrected method of installing software.
21 Nov 1994 - Added Custom will replace Chooser and PrinterShare.

Support Information Services

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Tech Info Library Article Number:15031

Tech Info Library

Power Macintosh: VRAM Expansion Card Minimum Bit Depth (3/94)

Revised: 3/30/94
Security: Everyone

Power Macintosh: VRAM Expansion Card Minimum Bit Depth (3/94)

==========

Article Created: 30 March 1994

TOPIC -----

My new Power Macintosh has the VRAM Expansion Card installed. When I connect my display to it the lowest bit depth I can select is 8 bit (256 colors/grays).

DISCUSSION -----

The Power Macintosh was determined to have sufficient processing power with the VRAM Expansion Card to support 256 colors/grays at similar speeds as lower bit depths. Thus the VRAM Expansion Card only supports 256, Thousands, and Millions as options.

The AV Card has the traditional set of color depths, from black and white up to Millions.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15032

Tech Info Library

Power Macintosh: Removable Cartridge Drive Compatibility (8/94)

Revised: 3/23/95
Security: Everyone

Power Macintosh: Removable Cartridge Drive Compatibility (8/94)

==========

Article Created: 31 March 1994
Article Reviewed/Updated: 25 August 1994

TOPIC ----------

Will my removable cartridge drive (SyQuest) be compatible with a Power Macintosh?

DISCUSSION ----------

The Power Macintosh incorporates a new version of the SCSI Manager, version 4.3. In order for your SyQuest to be compatible, the software driver for the cartridge drive must be SCSI Manager 4.3 aware and also be able to recognize the Power Macintosh.

To verify compatibility with the Power Macintosh, you should contact the vendor of your cartridge drive or the vendor of the software driver itself.

It is possible for you to determine the likelihood of compatibility of your drive. Using SCSI Probe, you can check the revision of the drive. If the prefix is E, it is an older drive that did not support the full SCSI command set (SCAI a precursor to SCSI) and does not support disconnect/reconnect.

All other SyQuest drives built after 1990 should support the SCSI manager 4.3 commands. Cartridges from earlier drives should be readable in a newer drive as long as the drivers are up to date.

If the rev level is F2G or earlier as viewed from SCSI probe on a 44mb drive ONLY, the same compatibility issue would be present. Any drive after F2G (for example F2H) will work fine with a Power Macintosh. Verify that the driver from the drive vendor is SCSI Manager 4.3 compatible.

To locate a vendor's address and phone number, use the vendor's name as a search string in the Tech Info Library.

Article Change History:

25 Aug 1994 - Revised compatibility information.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15036

Tech Info Library

DOS Compatibility Card: PC Control Panel Memory Dimmed (3/94)

Revised: 9/29/95
Security: Everyone

DOS Compatibility Card: PC Control Panel Memory Dimmed (3/94)

==========

Article Created: 30 March 1994
Article Reviewed/Updated: 28 September 1995

TOPIC ----------

The PC Control Panel on my Quadra 610 with the DOS Compatibility Card has the memory section dimmed. I could change the RAM amount in this control panel at one time. How can I make this section of the control panel active again?

DISCUSSION ----------

The DOS Compatibility Card for the Quadra 610 and Centris 610, comes with a 72 pin SIMM slot. When the unit is shipped there is not a SIMM in the slot. When the slot is empty, the DOS Compatibility card uses the RAM installed in the Macintosh. When it uses memory from the Macintosh, the PC control panel allows you to pick how much of memory the DOS Compatibility Card uses. However, if a 72 pin SIMM is added to the DOS Compatibility Card, memory is not shared so memory section of the PC control panel dims. Even with the memory section dimmed, it displays the word SIMM to let you know it is using a SIMM located on the DOS Compatibility Card.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15037

Tech Info Library

DOS Compatibility Card: System Using Large Amount of RAM (9/95)

Revised: 9/29/95
Security: Everyone

DOS Compatibility Card: System Using Large Amount of RAM (9/95)

==========

Article Created: 29 March 1994
Article Reviewed/Updated: 28 September 1995

TOPIC ----------

In the About This Macintosh dialog box, the system software on my Quadra 610 with the DOS Compatibility Card is using over 5.5 MB. Before I started using the DOS Compatibility Card, my system software was only using 1.5 MB. Why is there an increase in the size of the system software?

DISCUSSION ----------

The DOS Compatibility Card comes with a 72-pin SIMM expansion slot. This SIMM slot ships without a SIMM installed. Without a SIMM installed, the Macintosh and the DOS Compatibility Card share the memory installed in the Macintosh. In the PC Setup control panel, the amount of RAM that is shared can be changed in the memory section. The default amount of shared memory is 4 MB. The shared amount of RAM shows up in the About This Macintosh dialog box as part of the System software memory amount.

The PC Setup control panel allows you to change the amount of shared RAM. This allows you to lower the system software usage, by decreasing the amount of RAM set aside for the DOS Compatibility Card. The PC Setup Control panel also has an ON and OFF switch. This allows you to turn off the DOS Compatibility Card and free up all the shared memory if you aren't going to use DOS. After turning off the PC Setup control panel and restarting, the amount of RAM used by the system software returns to the original amount, in this case 1.5 MB.

If a SIMM is installed on the DOS Compatibility Card, then there is no shared memory, so the system software remains at the original amount.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15038

Tech Info Library

Power Macintosh: Don't Drag Copy System Enabler (2/95)

Revised: 2/27/95
Security: Everyone

Power Macintosh: Don't Drag Copy System Enabler (2/95)

==========

Article Created: 28 March 1994
Article Reviewed/Updated: 27 February 1995

TOPIC -----

In the past, I could drag an enabler off of the Disk Tools disk to replace the enabler on the hard drive. With the new Power Macintosh computers this doesn't work anymore.

DISCUSSION -----

The Power Macintosh Enabler now joins the System & Finder as NOT being complete versions on the Disk Tools disk. As such, it also is not recommended to be dragged from the Disk Tools disk.

Article Change History:
27 Feb 1995 - Revised title slightly.

Support Information Services

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Tech Info Library Article Number:15041

Tech Info Library

AWS 95: Hardware Upgrade Program (3/94)

Revised: 4/4/94
Security: Everyone

AWS 95: Hardware Upgrade Program (3/94)

==========

Article Created: 13 February 1994

TOPIC ----------

This article describes the hardware upgrade program for the Apple Workgroup Server 95 (AWS 95) which provides support for up to five hard drives.

DISCUSSION ----------

There is a new disk subsystem that provides support for up to five hard drives inside the AWS 95 enclosure (older configurations support two internal hard drives). The new disk subsystem will be included with the two new AWS 95 configurations. Existing AWS 95 customers can obtain the hardware upgrade (new hard drive bracket and new SCSI cable) from their local Apple Authorized Service Provider or Apple Reseller. An Apple Authorized Service Provider is required to install the new disk subsystem.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15044

Tech Info Library

AWS 95: New A/UX 3.1 and AppleShare Pro 1.1 (5/96)

Revised: 5/24/96
Security: Everyone

AWS 95: New A/UX 3.1 and AppleShare Pro 1.1 (5/96)

==========

Article Created: 13 February 1994
Article Reviewed/Updated: 24 May 1996

TOPIC ----------

This article provides an overview of software improvements, install media, and upgrades available for recently purchased systems.

DISCUSSION ----------

Program Overview

Enhancements to the Apple Workgroup Server 95 (AWS 95) was announced on January 4, 1994. The AWS 95 system has been shipping since April, 1993 and these announcements represent the first improvements since the product's introduction. Apple is offering a software upgrade kit to existing AWS 95 users (customers who purchased an AWS 95 or bought a PDS Card Upgrade to Quadra 900/950) so they can take advantage of the new software. All AWS 95 and AWS 95 PDS Upgrade Kit customers are eligible to receive the software upgrade kit.

The AWS 95 system software was improved in several areas. The new software versions are:

NEW: A/UX 3.1 and AppleShare Pro 1.1

OLD: A/UX 3.0.2 and AppleShare Pro 1.0

Software Improvements

- AppleShare Pro file server performance improved an average of 40%

- TCP/IP and NFS software is now pre-installed on the AWS 95 hard drive

- Software bug fixes from the Tune-up Kit issued in September, 1993 have been included

- Support for Syquest Drives

- Support for Apple's new 2 GB hard drive

Installing the New Software

The software upgrade kit is available on CD-ROM. There is one CD which provides the A/UX and AppleShare Pro enhancements. The software upgrade includes just the incremental code needed to enhance your current system software and will take up an additional 10 MB on your hard drive. The CD installer will automatically upgrade the A/UX software first, then search for AppleShare Pro software. If AppleShare Pro is resident on the AWS 95, it will be upgraded to AppleShare Pro 1.1. If AppleShare Pro is not used on the AWS 95, the setup process will be complete. AppleShare Pro users and/or groups settings will be maintained through the software upgrade process.

Upgrade for Recently Purchased Systems

Users that purchase an Apple Workgroup Server 95 or Apple Workgroup Server 95 PDS Upgrade Kit between December 1, 1993 and October 1, 1994 will receive the upgrade kit for a nominal fee. There will be a $10 charge for shipping and handling.

Customers are required to prove that they purchased the Apple Workgroup Server 95 or Apple Workgroup Server 95 PDS Upgrade Kit between December 1, 1993 and October 1, 1994 to receive the upgrade kit for a nominal fee. Customers will mail in (or Fax) a copy of the appropriate proof of purchase to the Apple Order Center along with a completed fulfillment coupon. Coupons can be obtained by calling the Apple Order Center.

The Tech Info Library article titled "Locating Vendor Information" can help you search for Apple Order Center's phone number.

Article Change History:
24 May 1996 - Updated for technical accuracy.

Copyright 1994-96, Apple Computer, Inc.

Tech Info Library Article Number:15045

Tech Info Library

Power Macintosh Upgrade Card and System 7 Pro (3/95)

Revised: 3/21/95
Security: Everyone

Power Macintosh Upgrade Card and System 7 Pro (3/95)

==========

Article Created: 1 April 1994
Article Reviewed/Updated: 21 March 1995

TOPIC ----------

I am getting the error "You cannot install PowerTalk software on a hard drive with no System Software" when trying to install System 7 Pro on my Quadra 800 with a Power Macintosh Upgrade Card installed.

The system works perfectly otherwise and I did a "Clean Install" of the system software.

DISCUSSION ----------

There is no way for the Apple Installer to sense the presence of the Power Macintosh Upgrade Card, unless it is the active processor. Therefore, the Power Macintosh Card Control Panel will never be installed with System Software unless selected via a custom install.

System 7 Pro
==========

Regarding System 7 Pro, a problem was discovered with the installer script on the PowerTalk For Power Macintosh (1.0.3) Install Me First disk, where it would not install properly on systems with Power Macintosh Upgrade Cards. This problem does not exist on the PowerTalk For Power Macintosh (1.0.2) Install Me First disk. Except for the installer script, the software contained within the 1.0.2 and 1.0.3 Install Me First disks is identical. Apple recommends that customers use the 1.0.2 PowerTalk Install Me First disk when installing PowerTalk on Power Macintosh and Power Macintosh Upgrade Card systems.

NOTE:

Install the System 7 Pro software prior to installing the Power Macintosh Upgrade Card System Software.

The only "strange" thing that might happen after the install involves the Alert sound. After starting in 601 mode, the Alert sound only flashes the menu bar as though the volume is set to zero, but the Alert sound setting in the Sound control panel is set to normal. Changing the setting or the sound does not resolve the problem.

Check the Volumes setting for the built-in speaker to make sure it is not set to zero. Increasing this value brings the sound back. (This relationship is not discussed in the Power Macintosh Upgrade Card manual.)

System 7.5 PowerTalk

Regarding System 7.5 PowerTalk, there seems to be no restrictions on how it is installed. We installed base System 7.5 on a Centris 610 with a Power Macintosh Upgrade Card present, by selecting custom install to select the Power Macintosh Card Control Panel as well as software for any Macintosh. With that System 7.5, we could run either under the 68040 of the Centris or the 601 of the Power Macintosh Upgrade Card while installing PowerTalk successfully. In either case we got PowerTalk system software that would run on either the 68040 or 601 processor.

Article Change History:
21 Mar 1995 - Added System 7.5 information; clarified reason for error.

Support Information Services

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Tech Info Library Article Number:15047

Tech Info Library

Macintosh Display Card 24AC: Compatibility With Power Macintosh

Revised: 7/27/94
Security: Everyone

Macintosh Display Card 24AC: Compatibility With Power Macintosh

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Article Created: 4 April 1994
Article Reviewed/Updated: 18 April 1994

TOPIC ----------

I installed the Macintosh Display Card 24AC software on my Power Macintosh but it gives me an error that the board can not be used in accelerated mode.

Is the card and software compatible with the Power Macintosh?

DISCUSSION ----------

The Macintosh Display Card 24AC and its software are fully compatible with the Power Macintosh beginning with revision 1.2 of the software.

Earlier versions of the 24AC software currently did not support accelerated operation on Power Macintosh computers.

To locate software updates mentioned in this article please refer to the following Tech Info Library articles:

Where to Find Apple Software Updates
Obtaining Apple Product Support in the USATo locate software updates mentioned in this article please refer to the following Tech Info Library articles:

Where to Find Apple Software Updates
Obtaining Apple Product Support in the USA

Article Change History:
27 Jul 1994 - Added that software is now fully compatible with Power Macintosh.
18 Apr 1994 - Added information about new version of software for Power Macintosh computers.

Support Information Services

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Tech Info Library Article Number:15049

Tech Info Library

LaserWriter Pro 810: Installing on Alpha/Open VMS (5/94)

Revised: 5/3/94
Security: Everyone

LaserWriter Pro 810: Installing on Alpha/Open VMS (5/94)

==========

Article Created: 3 May 1994

TOPIC ----------

Is there a specific version of the LaserWriter Pro 810's VMS install program for OpenVMS? Also, do you have a file PRO810V1.SYS generated and compatible with OpenVMS?

DISCUSSION ----------

Currently, there is no version of the LaserWriter Pro 810 VMS install for OpenVMS. In terms of a file PRO810V1.SYS compatible with OpenVMS, we do not have one. This file is actually not needed as the "net load" feature of the LaserWriter Pro 810 is not utilized. All of the information needed to boot the printer is already in its ROMs.

You can get the LaserWriter Pro 810 to work with OpenVMS by bypassing the VMS install procedure and perform the following commands:

1) Run backup to unpack saveset in the same directory as it is in currently (generally this would be sys$common.[decserver] or [decserver.apple] if using mom$load).

2) Run psform.

3) Run applequeue (he will need last 6 digits of ethernet address and a unique LAT #).

For remote LAT admin:

1) Enter "mc ncp" at the vms prompt
2) Then "connect via 'svao' physic addr 'ethernet address'"
3) password= "access"
4) a "#" prompt indicates that a terminal session has been established with the printer.

To make changes in the printer's server card, get into the printer's RCF (remote console facility) and login in superuser mode ("su";password="system").

Support Information Services

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Tech Info Library Article Number:15051

Apple OneScanner: Scan-in-progress LED Doesn't Function (4/94)

Revised: 4/5/94
Security: Everyone

Apple OneScanner: Scan-in-progress LED Doesn't Function (4/94)

==========

Article Created: 4 April 1994

TOPIC -----

In the Color OneScanner and OneScanner manual, it states that the scan–in–progress light comes on while scanner is scanning an image. My scan–in–progress light does not do this. Is the Scanner defective?

DISCUSSION -----

The scan-in-progress LED indicator only operated in early versions of the unit. The User's Manual was written and printed when the early units were available. Later when firmware enhancements were made, the functionality of the scan–in–progress LED ceased. The LED simply has no useful function on later versions of the scanner. However, this does not imply that the unit is defective.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15052

Tech Info Library

Set MacSNMP Variables At The Console (4/94)

Revised: 4/5/94
Security: Everyone

Set MacSNMP Variables At The Console (4/94)

==========

Article Created: 4 April 1994

TOPIC ----------

I'm confused over how to set the variables in MacSNMP.

I've installed MacSNMP and I'm trying to change the protocol and destination variables. This is described in the MacSNMP Admin guide on page 25 which states, "You specify where SNMP traps are sent by setting the variables in the trapTable within the Macintosh System Agent. ... To enable a console to receive all the traps sent by a a Macintosh computer, you must set the following variables in the trapTable (defined in the Macintosh System MIB) to the values specified on the next page. This information is stored in the Preferences file." I'm using the MacSNMP Admin program and can find the variables but I can't change the content! After selecting the variable in question, protocol or destination, I can under the Option menu "Get value" or "Get info", but I have found no way to change or set the value. What am I missing?

DISCUSSION ----------

First, MacSNMP does not allow you to set any of the MIB variables.

Second, you're correct, the manual does indeed explain that in order to send traps you need to set the various associated variables within MacSNMP. The point that is not very clear is that these variables can only be set from the SNMP console and not from within MacSNMP. In the second paragraph on page 25 you'll see that it says, "To copy these MIBs to your console and set the variables, refer to the administrators guide that came with your console."

Support Information Services

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Tech Info Library Article Number:15055

Tech Info Library

SNA•ps Gateway Config. To A Channel Attached 3174 (3/94)

Revised: 4/5/94
Security: Everyone

SNA•ps Gateway Config. To A Channel Attached 3174 (3/94)

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Article Created: 24 March 1994

TOPIC ----------

I am setting up a SNA•ps gateway on Token Ring at a user site. According to the user, the 3174 is connected by subchannel directly to the host and a Macintosh IIx (gateway computer) is on Token Ring connected to the 3174. The user gave me the address for the 3174. I went into SNA•ps Manager, set up a Token Ring config, put in the address: 400025400003, keeping display LU's as 1, and Printer LU's as 0, left the XID blank (what bother's me is on page 20 of the gateway manual it says you must enter the Exchange ID), and left the default Token Ring card address. I started the gateway, setup connection and tried to connect, and I immediately get a 510 comm error. I have two questions so I can be more knowledgeable with them.

1) Is it okay to leave the default Token Ring card address? The user says on his PC's he doesn't have to change it. If yes, where does the user get this ID, from Question 940 on the 3174 configuration?

2) Is the XID required? Again, if yes, where do I point the user to get this?

DISCUSSION ----------

1) Is it okay to leave the default Token Ring card address? Generally this is not the correct thing to do.

   The user says on his PC's he doesn't have to change it. Perhaps they are getting the client connection to a NetBios gateway mixed up with being the gateway. A NetBios connection to a 3270 IBM downstream gateway would use the Burned-in address. Kind of like using the burned-in Macintosh Ethernet address when running EtherTalk.

   If yes, where does the user get this ID, from Question 940 on the 3174 configuration? YES.

2) Is the XID required? Again, if yes, where do I point the user to get this? In this connection, a Downstream PU off a 3174, an XID is NOT used in the configuration. The SNA•ps engineers wrote the configurator for Token Ring requiring an XID always. Just enter 000-00000 and let it be. It is never sent to the host or the 3174.

It could be the user is not following IBM's suggestions about how to customize the 3174. IBM suggests using locally administered Token Ring addresses so you can change the physical Token Ring hardware, and not have to alter the customization of the 3174 each time. The user may have entered the "burned-in" addresses of specific cards into the 3174 customization, which is very time consuming.

This is how the connections work:

In the 3174, Question 900 is the Token Ring address of the 3174 (the one it is known as on the Ring). This is the Address you put in the SNA•ps config as the "gateway" Token Ring address.

A channel attached 3174 has a channel address and several sub-channel addresses. The first subchannel address is associated with the Coax ports on the 3174. The 2nd through 5th (however many) subchannel addresses are associated with downstream PUs, which are "3174" like controllers such as a SNA•ps gateway. The downstream controller is not located in the channel attached 3174 but on the Token Ring. The 3174 offers the service of doing a Link layer remapping of the Subchannel address to the proper Token Ring address. That is the function of question 940.

Subchannel 560 ----> TR 4000 0000 4444 0000
Subchannel 561 ----> TR 3E89 EEEE 8990 C667
And so on.

The host has a configuration in NCP for LU (displays and printers) associated with these subchannel addresses. When it "polls" the subchannel address, the 3174, passes the SNA request out it's Token Ring port to the Token Ring address shown in Question 940. The SNA•ps downstream PU gets connected by using a proper and configured Token Ring address from question 940.

If you do not use one of these configured addresses, you get a Comm 510, which means, "I passed my address to the 3174 and it did not match any of the values found in question 940, so I could not become an active downstream PU."

You have to use one of the configured addresses. Try to verify which PC is using one of the configured addresses. Make sure it is powered down, and us it's Token Ring address value (also shown in question 940) in the Macintosh Token Ring control Panel. Remind the user you are NOT changing the 3174, you are configuring the Macintosh to match up with their 3174 customization.

Support Information Services

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Tech Info Library Article Number:15056

Tech Info Library

LaserWriter with Fax: Setting Fax Paper Tray (4/97)

Revised: 4/14/97
Security: Everyone

LaserWriter with Fax: Setting Fax Paper Tray (4/97)

==========

Article Created: 11 April 1994
Article Reviewed/Updated: 14 April 1997

TOPIC ----------

Is there a way to change the default paper tray the fax uses on the LaserWriter Select 360 or LaserWriter 16/600 PS printer?

DISCUSSION ----------

The PostScript code for setting the default paper tray can be used to set the default paper tray for incoming faxes on both the LaserWriter Select 360 and the LaserWriter 16/600 PS. The only disadvantage with this approach is that the user must manually select the desired paper tray from the print dialog box when printing from any other tray.

The following PostScript code changes the default paper tray to the 500-sheet tray. Use any word processor or TeachText to edit the code below and then save the file as a text document. Use the LaserWriter Utility to download the PostScript file to the printer.

If you decide to use the PostScript code below, you need to be very careful in selecting the default tray. If the multipurpose tray is set as the default and there is no paper in it, the paper out LED will light for EVERY PRINT JOB until paper is placed in the tray. This problem has caused some users (others on the network) to think that the printer is malfunctioning and needs to be repaired. Please forewarn users about this so they can understand, that the printer's behavior has changed.

Caution:

If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

This is PostScript Level 1 code:

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin 2 setdefaultpapertray end
%
% end PostScript Code
%=========================================================
```

To change the default tray to another tray, simply change the number before the "setdefaultpapertray" operator to one of the following values.

Begin_Table

Value	Tray Selection
0	250 Sheet Cassette
1	Multi-purpose/manual feed tray
2	500 Sheet Cassette

End_Table

This is the equivalent PostScript Level 2 code:

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
1 dict dup /InputAttributes 1 dict dup /Priority [2 1 0] put put setpagedevice
%
% End PostScript Code
%=========================================================
```

This sets the paper tray priority to:
1st Priority - Cassette (500 Sheets) - designated by the "2" in the array above.
2nd Priority - Multipurpose Tray - designated by the "1" in the array above.
3rd Priority - Cassette (250 Sheets) - designated by the "0" in the array above.

You can change the paper tray priority order by changing the values in "/Priority [2 1 0]".
For example, /Priority [0 1 2] makes the 250 sheet cassette first priority, then the Multipurpose tray next, then the 500 sheet cassette.

Article Change History:
14 Apr 1997 - Added PostScript Level 2 code.
11 Dec 1995 - Changed distribution status.
23 May 1995 - Added section on notify others about default tray change.

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..TIL15058-LaserWriter_with_Fax-Setting_Fax_Paper_Tray_4-97_(TA31479).pdf

Tech Info Library Article Number:15058

Tech Info Library

Performa Basics: Can't Access Quit Button (4/94)

Revised: 4/6/94
Security: Everyone

Performa Basics: Can't Access Quit Button (4/94)

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Article Created: 6 April 1994

TOPIC -----

When running Performa Basics, I am unable to access the Quit button, or the guidance buttons. There is about an inch at the top of the program that has nothing in it.

DISCUSSION -----

You probably have 640x400 video mode turned on in your Monitor Control Panel. Open your Monitor Control Panel, and reset the monitor back to "Macintosh High Resolution" and restart. That will return your system to 640x480, and Performa Basics should run fine.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15059

Tech Info Library

System Update Disk v 3.0: How to Install (3/94)

Revised: 5/10/94
Security: Everyone

System Update Disk v 3.0: How to Install (3/94)

==========

Article Created: 30 March 1994

TOPIC -----

This article details the installation process for System Update Disk v 3.0

DISCUSSION -----

To install the 3.0 update, you need to do three tasks:

1. Install the System Update
2. Update your Apple Utilities
3. Update your Apple drivers

TASK 1—INSTALL THE SYSTEM UPDATE

The Easy Install process for System Update 3.0 automatically determines what elements if any, of the updated system software your computer needs.

To install the software update, follow these steps:

1. If you currently have the Connectix Enabler Patch on your hard disk, remove it from your hard disk before proceeding with this installation.

2. Insert System Update 3.0 Disk 1 in your floppy disk drive.

3. Double-click the Installer icon.

4. Read the Welcome screen, and then click OK.

5. Click the Install button.

The Easy Install process for System Update 3.0 automatically determines what elements of the updated system software your computer needs.

6. When you see a message that installation is complete, click the Restart

button.

7. When you finish, continue with “Step 2: Update Your Apple Utilities” below.

NOTE: None of the packages on System Update 3.0 are removable, so they will all be dimmed if you select “Custom Remove” in the pop-up menu.

TASK 2: UPDATE YOUR APPLE UTILITIES

The “Utilities ƒ” folder on the System Update 3.0 Disk 1 contains Apple HD SC Setup version 7.3.1 and Apple Disk First Aid version 7.2. These updates are intended to permanently replace the copies of Apple HD SC Setup and Apple Disk First Aid on your System 7.1, 7.1.1, or 7.1.2 Disk Tools disk. This update is recommended even if you have already installed System Update 2.0.1.

Follow these steps to update your utilities:

1. Insert the System Update 3.0 Disk 1 in your floppy disk drive.

2. Choose Eject Disk from the Special menu.

3. Insert the Disk Tools disk in your floppy disk drive.

4. Click the “Utilities ƒ” window to make it active.

5. Drag the HD SC Setup and the Disk First Aid icons to the Disk Tools disk.

6. When your Macintosh warns you that the files on your Disk Tools disk have the same names as the items that you are moving, click OK.

7. Insert specific disks as requested until the files are fully copied.

8. When you finish, continue with “Step 3: Update Your Apple Drivers” below.

TASK 3: UPDATE YOUR APPLE DRIVERS

System Update 3.0 also contains a driver update for Apple hard disk drives. You should install the driver update even if you have already installed System Update 2.0.1. Follow the steps below to install the driver update on each Apple hard disk drive you own:

1. With your computer off, insert the Disk Tools disk in your floppy drive.

2. Turn on your computer.

3. Double-click the Disk Tools icon.

4. Double-click the Disk First Aid icon in the Disk Tools window. (NOTE: If you completed “Step 2: Update Your Apple Utilities” above, the Disk First Aid utility on your Disk Tools disk should be version 7.2)

5. Click the driver icon that corresponds to your Apple hard disk drive. If you have more than one Apple hard disk drive, hold down the Shift key and click each icon for the drives that you will be updating.

6. Click the Repair button. Disk First Aid will now run some diagnostic tests and make any necessary repairs on your drive. This may take a few minutes depending on the size of your drive.

7. Open the File menu and choose Quit.

8. Double-click the Apple HD SC Setup icon in the Disk Tools window. (NOTE: For more information on Apple HD SC Setup, see your Macintosh user’s guide. If you completed “Step 2: Update Your Apple Utilities” above, the HD SC Setup utility on your Disk Tools disk should be version 7.3.1)

9. Click the Drive button until the name of the hard drive you want to update appears.

10. Click the Update button.

11. Repeat steps 9 and 10 for any other Apple hard disk drives you own.

12. Click the Quit button.

NETWORK INSTALLATION INSTRUCTIONS

Preparation

Users that wish to install System Update 3.0 on a number of Macintosh computers on a network may find it simpler to install System Update 3.0 over their network rather than shuffling the two 1.4 MB floppies on each Macintosh. Creation of the “net install” package can be accomplished by following these steps:

1. Create a folder on the server named “System Update 3.0 Net Install”.

2. Insert System Update 3.0 Disk 1 and drag the icon for the disk into the folder created in Step 1. This will copy the entire contents of the first disk into a folder within the “System Update 3.0 Net Install” folder.

3. Insert System Update 3.0 Disk 2 and drag the icon for the disk into the folder created in Step 1. This will copy the entire contents of the second disk into a folder within the “System Update 3.0 Net Install” folder.

4. Open the folder named “System Update 3.0 Net Install”.

5. Open the folder named “System Update 3.0 Disk 1” and drag the Installer and Install System Update into the folder named “System Update 3.0 Net Install”.

6. Verify that there are four icons showing in the “System Update 3.0 Net Install” folder. They should be the Installer, Install System Update, the “System Update 3.0 Disk 1” folder, and the “System Update 3.0 Disk 2” folder.

Installation

To install System Update 3.0 over a network, log onto the server containing the folder created above and double click the Installer. You can have multiple Macintosh computers installing from the same “System Update 3.0 Net Install” simultaneously. This should simplify, and speed up, the process for updating numerous networked Macintosh computers.

What Other Enhancements Does System Update 3.0 Provide?

System Update 3.0 includes enhancements from System Update 2.0.1, Hardware System Update 2.0, and Hardware System Update 1.0 (listed below). Some enhancements are Macintosh-model specific while others apply to a range of models.

- Improves the reliability of high-speed modems and similar devices connected to Macintosh LC, LC II, IIsi, IIvx, IIvi, Classic II, Quadra 900, and Quadra 950 computers.

- Improves the accuracy of the system clock in Macintosh LC, LC II, IIsi, IIvx, IIvi, Classic II, Quadra 900, and Quadra 950 computers.

- Corrects problems ejecting floppy disks when the computer is shut down on Macintosh IIsi, IIci, IIvx, IIvi, Macintosh Quadra 700, and Macintosh Quadra 950 computers.

- Addresses possible floppy disk drive and hard disk problems with the Macintosh IIsi, IIci, IIvx, IIvi, Centris, Quadra, and PowerBook and PowerBook Duo computers.

- Removes horizontal white lines that may appear while scrolling on Quadra and Centris systems with a Macintosh 16" Color Display.

- Prevents fonts from being needlessly locked in memory during the boot process. This frees up memory on affected machines.

- Corrects color problems with the Apple Basic Color monitor on Macintosh Centris and Quadra computers. (NOTE: If Hardware System Update 1.0, Hardware System Update 2.0, or System Update 2.0.1 extensions or the Basic Color Monitor extension are already installed on your computer, this update replaces them. The 3.0 update removes the Basic Color Monitor and the ADBReInit extensions and replaces them with a System Update 3.0 extension.)

- Adds software for the Apple Adjustable Keyboard, allowing you to connect the keyboard to any Macintosh computer without separately installing special keyboard software. This software is not needed by Power Macintoshes, but is needed by the Power Macintosh Upgrade Card.

- Updates the Macintosh Color Classic System Enabler (System Enabler 401, version 1.0.5). This new version allows the Apple IIe Card and software to be used with the Color Classic. In addition, this revised System Enabler improves mouse performance with the Color Classic. (NOTE: To use the Apple IIe Card with system software version 7.1 on a Color Classic, you need to have version 2.2.1 of the Apple IIe Card software. You can obtain an upgrade package for the Apple IIe Card software by contacting an Apple-authorized dealer, or by using the AppleLink path Apple Products: Apple SW Updates: Macintosh: Peripheral Software: Apple IIe Card for Macintosh LC.)

- Updates System Enabler 131 (version 1.0.3) for the PowerBook 160, 165, 165c, and 180 to support 12" monitors and improve reliability. (NOTE: There is a very small chance that your PowerBook may not boot when you turn it on for the first time after installing the update. If this happens, turn the computer off and back on, and press Command-Option-P-R while the computer starts up.) System Enabler 131 replaces System Enabler 121 and System Enabler 111 (and the Installer will delete these files).

- Installs the Sound Manager Update to improve sound performance on most Macintosh computers. (NOTE: When this software is installed, your system sound will revert to the Simple Beep. After installation, you may wish to reset the Sound control panel to your preferred sound.)

- Installs AutoRemounter 1.2. This release significantly reduces network traffic compared to version 1.0.

- Includes Disk First Aid 7.2, a utility that repairs damaged disks.

Support Information Services

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Tech Info Library Article Number:15060

Tech Info Library

System Update Disk 3.0: Description (5/95)

Revised: 5/2/95
Security: Everyone

System Update Disk 3.0: Description (5/95)

==========

Article Created: 30 March 1994
Article Reviewed/Updated: 2 May 1995

TOPIC ----------

This article describes the System Update 3.0, its contents, the intended audience, and system requirements.System Update Disk v 3.0 is a set of software enhancements for any Macintosh computer running System 7.1, 7.1.1, or 7.1.2.

This update also applies to any Performa version of 7.1.

DISCUSSION ----------

System Update Disk v 3.0 ships in these configurations:

• The Standard Configuration ships ast wo 1.4 high density floppy disks

• A single 800K floppy configuration. This configuration provides the features of System Update Disk v 3.0 needed by machines that may not support FDHD floppies (the Macintosh Plus, SE and Macintosh II).

General Enhancements
==========

These general enhancements are for all Macintosh computers running 7.1 or later.

• Provides system-level improvements to increase overall system performance and reliability on most Macintosh models.

• Corrects a problem that allowed the system to become corrupted during a power failure or crash and prevented it from restarting.

• Prevents a PowerBook from trying to spin up its hard drive when the system is warning you that there is only 10 seconds of battery power remaining.

• Fixes the About This Macintosh box so the memory usage line doesn’t get drawn outside of its bounds.

• Provides a solution to prevent the file corruption that can happen when a file is being modified remotely (Remote Access or file server) and the connection is unexpectedly broken. Now, when the remote volume is lost, its icon remains dimmed on the desktop.

• Updates the Standard File package to include many fixes and enhancements. The most significant fix allows more than 20 volumes to be mounted, and the use of color icons.

• Provides increased reliability for remote file saving when the client is running System 7.1 or greater while the server is running a pre-7.0 System and using pre-3.0 AppleShare.

• Fixes a problem with throwing away folders which were on an AppleShare volume. Sometimes after attempting to empty the Trash the Finder would warn you that the folder contains items that are in use and could not be deleted. The Trash now properly handles folders from AppleShare volumes.

• Updates the Easy Access Control Panel to version 7.2, fixing a wake up problem on PowerBooks. It now remembers whether sticky keys, mouse keys, and slow keys were on or off between restarts.

• Includes SimpleText version 1.0, which replaces TeachText.

• Includes Apple HD SC Setup version 7.3.1

Who Should Install System Update Disk v 3.0?

Install this update only if you have Macintosh system software version 7.1, 7.1.1, or 7.1.2 installed on your computer. It is compatible with the Performa versions of 7.1.x.

If you have already installed the earlier updates, you should still install System Update 3.0 in order to have the latest version of all system software. System Update 3.0 provides additional functionality and fixes problems that the earlier updates did not address.

Systems bought after May, 1994 have the System Update Disk v 3.0 already installedon their system.

System Update Disk v 3.0 FDHD Contents and Detailed Changes

NOTE: 800K version only contains items marked with an asterisk (*)

DETAIL	MODELS AFFECTED
System Update ReadMe*	All

System Update 3.0 Extension*	All
SimpleText 1.0*	All
New Standard File Package*	All
Easy Access Control Panel 7.2*	All
Memory Control Panel 7.3*	All
Sound Manager 3.0 & Sound Control Panel 8.0.1*	All except AV machines & Quadra 605, 650
Apple Adjustable Keyboard resources* (The software components needed to use an Apple Adjustable Keyboard)	All except MacPlus
Grayshare serial driver patches* (Improves serial driver reliability; at higher speeds reduces interrupt latency)	All
HDSC Setup 7.3.1 (Ability to format large drives up to 4 GB)	All
Disk First Aid 7.2* (Improved interface and bug fixes)	All
The PowerBook Display Control Panel 1.1	All PowerBooks
The PowerBook Control Panel 7.3.1 (To simplify the user experience with the PowerBook, the functionality of the previous PowerBook control panel has been split between this control panel and the PowerBook Setup Control Panel 7.3 - also part of this release).	All PowerBooks
The PowerBook Setup Control Panel 7.3.1	All PowerBooks
The PowerBook Duo Enabler 1.0 (It fixes the ADB problems for PowerBook Duo machines.)	All Duos
Duo Battery Patch 1.0 (Fixes a problem with type II batteries in the PowerBook Duo Family Enabler 1.0.)	All Duos except the 270c
AutoRemounter 1.2 (This version greatly decreases the network traffic that the 1.0 release generated. A "crashing" bug on an SE at start up was also	All PowerBooks

fixed.)	
Battery DA 7.1.1	All PowerBooks
TV Setup Control Panel 1.0.1 (Support has been added for HRC cable systems. A problem was fixed that would sometimes cause the screen to darken after returning from TV mode.)	Macintosh TV
Screen Control Panel 1.0.4 (This version fixes a problem on LC 575 systems where a single PRAM location was serving two different and conflicting purposes.)	Macintosh LC 520, 550, 575, Color Classic, Color Classic II, and Macintosh TV
System Enabler 003 v1.1	LC III
System Enabler 040 v1.1 (Added support for Quadra 610 and 650.)	Quadra 800, 610, and 650; Centris 610 and 650
System Enabler 065 v1.2	Quadra 605, LC 475, and LC 575
System Enabler 088 v1.2 (Added support for Quadra 660AV.Increased File Manager performance and Resource Manager performance Corrects failure to print to the LW Select 310 printer. Improves network reliability.)	840AV, 660AV
System Enabler 131 v1.0.3 (Provides the latest software the Enabler dependent all in one Powerbook line.)	PowerBook 160, 165c, 180, and 180c
System Enabler 401 v1.0.5 (Fixes a problem of erratic mouse movement. The problem surfaces when using Double Exposure.)	Color Classic
System Enabler 403 v1.0.2	Color Classic II, LC 520, and LC 550
PowerPC Enabler 1.0.1	Power Mac 6100, 7100, and 8100
PowerPC Upgrade Card Enabler 1.0.1	Upgrade Card in: Centris 610, 650,Quadra 610, 650, 700, 800, 900, and 950
PC Setup Control Panel 1.0.2	Centris/Quadra

w/DOS Compatbility
Card

* - indicates items only found on 800K disk version.

Article Change History:
02 May 1995 - Corrected spelling of all Macintosh LC computers named in this article.
10 October 1994 - Reviewed and made minor updates

Support Information Services

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Tech Info Library Article Number:15062

System Update 3.0: Disk Contents (4/94)

Revised: 5/3/94
Security: Everyone

System Update 3.0: Disk Contents (4/94)

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Article Created: 30 March 1994

TOPIC --

This article describes the contents of the two FDHD disks that come with System Update Disk v 3.0, and the single 800K disk for the 800K version.

DISCUSSION --

System Update 3.0 Disk 1 contains:

- Installer and Installer script
- System Update 3.0 Read Me
- System Update 3.0 Archive
  This file is an InstaCompOne archive which contains the following files:
  - Battery (v 7.1.1)
  - System Update (v 3.0)
  - Record Button (v. 1.0, from Norsi)
  - Sound Manager (v. 3.0)
  - Duo Battery Patch (v 1.0)
  - Easy Access (v 7.2)
  - Memory (v 7.3)
  - Sound (v 8.0.1)
  - PowerBook Display (v. 1.1)
  - PowerBook (v. 7.3.1)
  - PowerBook Setup (v. 7.3.1)
  - AutoRemounter (v 1.2)
  - TV Setup (v 1.0.1)
  - PC Setup (v1.0.2)

System Resources in a folder named System Resources *f*:

- Keyboard Resources (v1.0.3)
- Serial Resources (for Grayshare)
- StandardFile Resources (v1.0)

Utility applications in a folder named Utilities *f*:

- Apple HD SC Setup (v 7.3.1)
- Disk First Aid (v 7.2)

System Update 3.0 Disk 2 contains:

System Enablers at the Root Level:
- System Enabler 131 (v1.0.3)
- System Enabler 401 (v1.0.5)
- System Enabler 088 (v1.2)
- PowerBook Duo Enabler (v1.0)
- System Enabler 403 (v1.0.2)
- System Enabler 065 (v1.2)
- System Enabler 003 (v1.1)
- System Enabler 040 (v1.1)
- PowerPC Enabler (v1.0.1)
- PowerPC Upgrade Card Enabler (v1.0.1)

System Update 3.0 (800K) contains:

Items at the root level:
- Installer and Installer script
- System Update 3.0 800K Read Me
- System Update 3.0 800K Archive

This file is a System Update archive which contains the following files:
   - System Update (v 3.0)
   - Record Button (v. 1.0)
   - Sound Manager (v. 3.0)
   - Easy Access (v 7.2)
   - Memory (v 7.3)
   - Sound (v 8.0.1)

System Resources in a folder named System Resources ƒ:
- Keyboard Resources (v1.0.3)
- Serial Resources (for Grayshare)
- StandardFile Resources (v1.0)

Utility applications in a folder named Utilities ƒ:
- Apple HD SC Setup (v 7.3.1)
- Disk First Aid (v 7.2)

Support Information Services

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Tech Info Library Article Number:15063

Tech Info Library

Apple IIe Card: Can't Use Comm slot device With Card (9/96)

Revised: 9/17/96
Security: Everyone

Apple IIe Card: Can't Use Comm slot device With Card (9/96)

==========

Article Created: 6 April 1994
Article Reviewed/Updated: 17 September 1996

TOPIC ----------

Does the Apple IIe Card work with Macintosh computers that have a Comm Slot, such as the Macintosh LC 575?

DISCUSSION ----------

The Apple IIe Card does not work in multiple card environments. Because of this, the Apple IIe Card will not work when there is any device in the comm slot on the Macintosh LC 575.

This article was published in the 17 September 1996 issue of the Information Alley.

Article Change History:
17 Sep 1996 - Retitled, and rewrote discussion.

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Tech Info Library Article Number:15065

Tech Info Library

LaserWriter IIf/IIg: Communication Switch Settings (4/94)

Revised: 4/6/94
Security: Everyone

LaserWriter IIf/IIg: Communication Switch Settings (4/94)

==========

Article Created: 5 April 1994

TOPIC ----------

This article discribes the communication switch settings on the LaserWriter IIf and LaserWriter IIg printer.

Discussion----------

The LaserWriter IIg contains an ethernet port, the LaserWriter IIf does not, so when the chart indicates ethernet, it only applies to the LaserWriter IIg printer.

The following table shows the communication settings in effect when the printer is new. The push-button switch on the printer's connector panel can be set to positions 0-9. Switch positions 0-5 are fixed, and the settings for these positions cannot be changed. Positions 6-9 are user-configurable; you can change the settings for these positions to match the needs of the computer you are connecting. The section "Available Settings," at the end of this article, lists all the options available for each setting.

From a Macintosh computer, you use the LaserWriter Utility program to display and change communication settings. From a computer other than a Macintosh, you can send PostScript commands to the printer to change the communication settings.

Settings

Switch Number	Port Name	Connect Type	Baud Rate	Parity	Data Bits	Stop Bits	Flow Cntrl	Protocol	Mode
0	Din-8	LocalTalk	-	-	-	-	-	-	PS
	RS-232	Serial	9600	None	8	1	XON/XOFF	Normal	PS
	Ethrnet	EtherTalk	-	-	-	-	-	-	PS

1	Din-8	LocalTalk	-	-	-	-	-	-	PS
	RS-232	Serial	9600	None	8	1	DTR	Raw	HP
	Ethrnet	EtherTalk	-	-	-	-	-	-	PS
2	Din-8	LocalTalk	-	-	-	-	-	-	PS
	RS-232	Serial	19.2K	None	8	1	XON/XOFF	Normal	PS
	Ethrnet	EtherTalk	-	-	-	-	-	-	PS
3	Din-8	LocalTalk	-	-	-	-	-	-	PS
	RS-232	Serial	9600	None	8	1	XON/XOFF	Raw	*
	Ethrnet	EtherTalk	-	-	-	-	-	-	PS
4	Din-8	LocalTalk	-	-	-	-	-	-	PS
	RS-232	Serial	1200	None	7	1	XON/XOFF	Normal	PS
	Ethrnet	EtherTalk	-	-	-	-	-	-	PS
5	Din-8	Serial	9600	None	8	1	XON/XOFF	Normal	PS
	RS-232	Serial	9600	None	8	1	XON/XOFF	Normal	PS
	Ethrnet	EtherTalk	-	-	-	-	-	-	PS
6	Din-8	LocalTalk	19.2K	None	8	1	XON/XOFF	Normal	PS
	RS-232	Serial	19.2K	None	8	1	XON/XOFF	Normal	PS
	Ethrnet	EtherTalk	-	-	-	-	-	-	PS
7	Din-8	LocalTalk	-	-	-	-	-	-	PS
	RS-232	Serial	9600	None	8	1	DTR	Normal	PS
	Ethrnet	EtherTalk	-	-	-	-	-	-	PS
8	Din-8	LocalTalk	-	-	-	-	-	-	PS
	RS-232	Serial	1200	None	8	1	XON/XOFF	Raw	HP
	Ethrnet	EtherTalk	-	-	-	-	-	-	PS
9	Din-8	LocalTalk	-	-	-	-	-	-	PS
	RS-232	Serial	9600	None	8	1	XON/XOFF	Binary	PS
	Ethrnet	EtherTalk	-	-	-	-	-	-	PS

PS - PostScript
HP - HP PCL 4
* - Nonprinting input: This is used when a device-such as an automatic sheet feeder-is connected to the serial port and receives special commands from a computer connected through another of the printer's ports.

Available Settings

The following table briefly describes the communication settings and lists the options available for each.

Setting	Description	Options

Baud Rate	The speed of transmission between the computer and printer.	300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600, 19200, 57600
Parity	The method used to compare transmitted and received data to check for errors.	None, odd, even, mark, space
Data Bits	The number of bits used to represent each character.	7, 8
Stop Bits	The number of bits used to indicate the end of a character.	1, 2
Flow Control	The method used to prevent transmitted data from exceeding the rate at which the receiving end can accept it.	XON/XOFF, DTR ETX/ACK
Protocol	The digital format in which the data is presented.	Normal, Raw, Binary
Mode	The communication standard used to transmit data	Postscript, HP Printer Command Language 4, and Nonprinting Input (not intended for a computer connection)

Support Information Services

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Tech Info Library Article Number:15066

Time Warner Interactive Group

Revised: 4/6/94
Security: Everyone

Time Warner Interactive Group

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Article Created: 6 April 1994

Time Warner Interactive Group

2210 W. Olive Ave.
Burbank, CA 91506

818-955-9999

800-593-6334

818-955-6499 (fax)

Company Profile:
Develops, markets and sells interactive CD-ROM, VideoDisc and software products.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15067

Tech Info Library

Performa: At Ease Workgroup Version Message (2/97)

Revised: 2/11/97
Security: Everyone

Performa: At Ease Workgroup Version Message (2/97)

==========

Article Created: 5 April 1994
Article Reviewed/Updated: 11 February 1997

TOPIC ----------

Recently I began to get a message on my Performa 550 saying that I am now using the Workgroup version of At Ease. How do I resolve this as I am not using a Workgroup version?

DISCUSSION ----------

Here is to resolve what you are experiencing. Please be aware, the steps presented below are resolving an issue occurring on a stand-along computer. In other words, not a computer networked together in a workgroup.

To resolve this follow the steps below:

Step 1

Restart your Macintosh computer from your Utilities disk.

Step 2

Open the System Folder within the hard disk icon.

Step 3

Open the At Ease Items folder within the System Folder. Drag the following items to the Trash:
-At Ease Preferences
-At Ease Setups
-At Ease Users

Step 4

Once these items are in the Trash, hold down the Option key on your keyboard

while you choose Empty Trash from the Special menu.

Step 5

Restart the computer and you should be able to get into At Ease Setup without a problem.

If you still have problems after trying all of this, please call 800-SOS-APPL for additional assistance.

Article Change History:
11 Feb 1997 - Added that this is a stand-along computer.
14 Aug 1995 - Reformatted and added keyword.
17 Mar 1995 - Corrected wording of At Ease in title.

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Tech Info Library Article Number:15068

LaserWriter Pro 600/630: Communication Switch Settings (2/95)

Revised: 2/24/95
Security: Everyone

LaserWriter Pro 600/630: Communication Switch Settings (2/95)

==========

Article Created: 5 April 1994
Article Reviewed/Updated: 24 February 1995

Topic----------

This article discribes the communication switch settings on the LaserWriter Pro 600 and LaserWriter Pro 630 printer.

Discussion----------

The LaserWriter Pro 630 contains an ethernet port, the LaserWriter Pro 600 does not, so when the chart indicates ethernet, it only applies to the LaserWriter Pro 630 printer.

The following table shows the communication settings in the printer. The push-button switch on the printer's connector panel can be set to positions 0-9. Switch positions 0-5 are fixed, and the settings for these positions cannot be changed. Positions 6-9 are user-configurable; you can change the settings for these positions to match the needs of the computer you are connecting. The Available Settings section lists the options that are available for each setting.

From a Macintosh computer, you use the LaserWriter Utility program to display and change communication settings. From a computer other than a Macintosh, you can send PostScript commands to the printer to change the communication settings.

Settings

Switch Number	Port Name	Connect Type	Baud Rate	Parity	Data Bits	Stop Bits	Flow Cntrl	Protocol	Mode
0	Din-8	LocalTalk	-	-	-	-	-	-	PS
.	RS-232	Serial	9600	None	8	1	XON/XOFF	Normal	PS
.	Ethernet	EtherTalk	-	-	-	-	-	-	PS

.	Parallel	Centronic	-	-	-	-	-	Normal	PS
1	Din-8	LocalTalk	-	-	-	-	-	-	PS
.	RS-232	Serial	9600	None	8	1	DTR	Raw	HP
.	Ethernet	EtherTalk	-	-	-	-	-	-	PS
.	Parallel	Centronic	-	-	-	-	-	Raw	HP
2	Din-8	LocalTalk	-	-	-	-	-	-	PS
.	RS-232	Serial	19.2K	None	8	1	XON/XOFF	Normal	PS
.	Ethernet	EtherTalk	-	-	-	-	-	-	PS
.	Parallel	Centronic	-	-	-	-	-	Normal	PS
3	Din-8	LocalTalk	-	-	-	-	-	-	PS
.	RS-232	Serial	9600	None	8	1	DTR	Raw	*
.	Ethernet	EtherTalk	-	-	-	-	-	-	PS
.	Parallel	Centronic	-	-	-	-	-	Raw	HP
4	Din-8	LocalTalk	-	-	-	-	-	-	PS
.	RS-232	Serial	1200	None	7	1	XON/XOFF	Normal	PS
.	Ethernet	EtherTalk	-	-	-	-	-	-	PS
.	Parallel	Centronic	-	-	-	-	-	Normal	PS
5	Din-8	Serial	9600	None	8	1	XON/XOFF	Normal	PS
.	RS-232	Serial	9600	None	8	1	XON/XOFF	Normal	PS
.	Ethernet	EtherTalk	-	-	-	-	-	-	PS
.	Parallel	Centronic	-	-	-	-	-	Normal	PS
6	Din-8	Serial	19.2K	None	8	1	XON/XOFF	Normal	PS
.	RS-232	Serial	19.2K	None	8	1	XON/XOFF	Normal	PS
.	Ethernet	EtherTalk	-	-	-	-	-	-	PS
.	Parallel	Centronic	-	-	-	-	-	Normal	PS
7	Din-8	LocalTalk	-	-	-	-	-	-	PS
.	RS-232	Serial	1200	None	8	1	ETX/ACK	Normal	PS
.	Ethernet	EtherTalk	-	-	-	-	-	-	PS
.	Parallel	Centronic	-	-	-	-	-	Normal	PS
8	Din-8	LocalTalk	-	-	-	-	-	-	PS
.	RS-232	Serial	1200	None	8	1	DTR	Raw	HP
.	Ethernet	EtherTalk	-	-	-	-	-	-	PS
.	Parallel	Centronic	-	-	-	-	-	Raw	HP
9	Din-8	LocalTalk	-	-	-	-	-	-	PS
.	RS-232	Serial	9600	None	8	1	XON/XOFF	Binary	PS
.	Ethernet	EtherTalk	-	-	-	-	-	-	PS
.	Parallel	Centronic	-	-	-	-	-	Binary	PS

PS - PostScript
HP - HP PCL 4
* - Nonprinting input: This is used when a device-such as an automatic
. sheet feeder-is connected to the serial port and
. receives special commands from a computer
. connected through another of the printer's ports.

Available Settings

The following table briefly describes the communication settings and lists the options available for each.

Setting	Description	Options
Baud Rate	The speed of transmission between the computer and printer.	300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600, 19200, 57600
Parity	The method used to compare transmitted and received data to check for errors.	None, odd, even, mark, space
Data Bits	The number of bits used to represent each character.	7, 8
Stop Bits	The number of bits used to indicate the end of a character.	1, 2
Flow Control	The method used to prevent transmitted data from exceeding the rate at which the receiving end can accept it.	XON/XOFF, DTR ETX/ACK
Protocol	The digital format in which the data is presented.	Normal, Raw, Binary
Mode	The communication standard used to transmit data	Postscript, HP Printer Command Language 4, and Nonprinting Input (not intended for a computer connection)

Article Change History:
24 Feb 1995 - Corrected Switch setting #1.

Support Information Services

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Tech Info Library Article Number:15069

Tech Info Library

Personal LaserWriter NTR: Communication Switch Settings (4/94)

Revised: 4/6/94
Security: Everyone

Personal LaserWriter NTR: Communication Switch Settings (4/94)

==========

Article Created: 5 April 1994

TOPIC ----------

This article describes the communication switch settings on the Personal LaserWriter NTR printer.

DISCUSSION ----------

WARNING: If you choose a non-LocalTalk setting for the LocalTalk (8-pin) port while the printer is connected to an AppleTalk network, you can do permanent damage to devices on the network! Settings 1, 4, 5, and 6, (and possibly 9, since you can customize 9) are non-LocalTalk settings for the 8-pin port. Before you choose one of these settings, disconnect any LocalTalk connector box connected to the printer.

If you have a non-Macintosh computer that requires special settings to work with the Personal LaserWriter NTR, you can choose a different group of settings. You use the ten-position push-button switch on the back of the printer to choose a group of setting.

If you need to change the setting, check the following table for the switch position that corresponds to the setting you need. If you need to additional settings and have access to a Macintosh computer, you can program position 9 using the LaserWriter Utility software.

Settings

Switch Number	Port Name	Connect Type	Baud Rate	Parity	Data Bits	Stop Bits	Flow Cntrl	Protocol	Mode
0	Din-8	LocalTalk	-	-	-	-	-	-	PS
	RS-232	Serial	9600	None	8	1	XON/XOFF	Normal	PS

	Parallel	Centronic	-	-	-	-	-	Normal	PS
1	Din-8	Serial	9600	None	7	1	XON/XOFF	-	PS
	RS-232	Serial	9600	None	7	1	XON/XOFF	Normal	PS
	Parallel	Centronic	-	-	-	-	-	Normal	PS
2	Din-8	LocalTalk	-	-	-	-	-	-	HP
	RS-232	Serial	9600	None	8	1	XON/XOFF	Normal	HP
	Parallel	Centronic	-	-	-	-	-	Normal	HP
3	Din-8	LocalTalk	-	-	-	-	-	-	HP
	RS-232	Serial	9600	None	8	1	DTR	Normal	HP
	Parallel	Centronic	-	-	-	-	-	Normal	HP
4	Din-8	Serial	1200	None	7	1	XON/XOFF	-	PS
	RS-232	Serial	1200	None	7	1	XON/XOFF	Normal	PS
	Parallel	Centronic	-	-	-	-	-	Normal	PS
5	Din-8	Serial	9600	None	8	1	XON/XOFF	Normal	PS
	RS-232	Serial	9600	None	8	1	XON/XOFF	Normal	PS
	Parallel	Centronic	-	-	-	-	-	Normal	PS
6	Din-8	Serial	9600	None	8	1	XON/XOFF	Binary	PS
	RS-232	Serial	9600	None	8	1	XON/XOFF	Binary	PS
	Parallel	Centronic	-	-	-	-	-	Binary	PS
7	Din-8	LocalTalk	-	-	-	-	-	-	PS
	RS-232	Serial	9600	None	8	1	XON/XOFF	Normal	PS
	Parallel	Centronic	-	-	-	-	-	Normal	PS
8	Din-8	LocalTalk	-	-	-	-	-	-	PS
	RS-232	Serial	9600	None	8	1	XON/XOFF	Normal	PS
	Parallel	Centronic	-	-	-	-	-	Normal	HP
9	Din-8	LocalTalk	-	-	-	-	-	-	PS
	RS-232	Serial	9600	None	8	1	XON/XOFF	Normal	PS
	Parallel	Centronic	-	-	-	-	-	Normal	PS

PS - PostScript
HP - HP PCL 4
* - Nonprinting input: This is used when a device-such as an automatic sheet feeder-is connected to the serial port and receives special commands from a computer connected through another of the printer's ports.

Available Settings

The following table briefly describes the communication settings and lists the options available for each.

Setting	Description	Options
Baud Rate	The speed of transmission between the computer and printer.	300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600, 19200, 57600
Parity	The method used to compare transmitted and received data to check for errors.	None, odd, even, mark, space
Data Bits	The number of bits used to represent each character.	7, 8
Stop Bits	The number of bits used to indicate the end of a character.	1, 2
Flow Control	The method used to prevent transmitted data from exceeding the rate at which the receiving end can accept it.	XON/XOFF, DTR ETX/ACK
Protocol	The digital format in which the data is presented.	Normal, Raw, Binary
Mode	The communication standard used to transmit data	Postscript, HP Printer Command Language 4, and Nonprinting Input (not intended for a computer connection)

Support Information Services

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Tech Info Library Article Number:15070

Tech Info Library

Performa: Compton's CD Text Difficult To Read (4/94)

Revised: 4/6/94
Security: Everyone

Performa: Compton's CD Text Difficult To Read (4/94)

==========

Article Created: 5 April 1994

TOPIC -----

I'm having some problems with my Compton's CD, text is displayed in an Old English font which makes it difficult to read.

DISCUSSION -----

To resolve this issue, there are two font files you need to remove from your Fonts folder. The two font files are:

(1) Remove (DO NOT TRASH) any font relating to American Heritage Dictionary in the Fonts folder inside the System Folder.

(2) Remove (DO NOT TRASH) any font relating to Holiday font suitcase in the Fonts folder inside the System Folder.

Apparently, these two font families conflict with Compton's normal accessing of fonts.

Support Information Services

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Tech Info Library Article Number:15071

Tech Info Library

Performa: Default Document Folder Selection (4/94)

Revised: 4/6/94
Security: Everyone

Performa: Default Document Folder Selection (4/94)

==========

Article Created: 5 April 1994

TOPIC -----

I would like to know how to reverse the process of making the Document folder the default. I would like the default folder to be the current folder that is open. How do I change it?

DISCUSSION -----

The answer to this depends entirely on which version of the Performa operating system you have. I'll provide both answers for you.

If you have version 7.0.1p-7.1p2:

To prevent the computer from defaulting to the Documents folder you need to remove the Launcher Control Panel from the Control Panels folder within the system folder. The Launcher is what is causing your computer to default to the Documents folder. Even though the Launcher is removed from the system folder, you will still be able to use the Launcher to access your applications.

If you have version 7.1p3 or greater:

Open the Performa Control Panel. On this Control Panel there are several options, including an option to change what you want the default folder to be. Currently it is set to default to the Documents folder, but you can change this to default to the last folder used.

Support Information Services

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Tech Info Library Article Number:15072

Tech Info Library

Performa: Launcher Unable To Find Hard Drive (4/94)

Revised: 4/6/94
Security: Everyone

Performa: Launcher Unable To Find Hard Drive (4/94)

==========

Article Created: 5 April 1994

TOPIC -----

Whenever I try to click on items in my Launcher it tells me that it cannot be opened because the disk "hard drive name" cannot be found. What should I do?

DISCUSSION -----

This is happening because the name of the hard drive has been changed from what it was originally. To fix this problem, you will just have to rename your hard drive back to its original name (Hard Disk or Macintosh HD).

You change the name of the hard drive in the same manner that you change the name of a folder. This process is described in detail in your User's Guide. Once you have renamed it back to its original name, the items in the Launcher should then work fine.

Support Information Services

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Tech Info Library Article Number:15073

Tech Info Library

LW Pro 810: Change Virtual Printer Font (10/95)

Revised: 10/18/95
Security: Everyone

LW Pro 810: Change Virtual Printer Font (10/95)

==========

Article Created: 6 April 1994
Article Reviewed/Updated: 18 October 1995

TOPIC -----

We are using the ascii_portrait service on the LaserWriter Pro 810 and need to change the default font from 10pt Courier to 9pt Courier. How do we do this?

DISCUSSION -----

As of April 1994, there is no way to change font characteristics of virtual printers. In actuality, virtual printers send down HP PCL or PostScript code before each print job to configure the printer. You can add a couple of lines of PCL to your print queue configuration (on NOVELL, UNIX, VMS) to change the font size or pitch. This should make it transparent for anyone using the print queue since the code will be downloaded automatically before the actual job.

Here are the HP PCL commands to change font size and pitch:

<esc>(s#H : pitch selection (usually 10 or 16.66 built-in)
<esc>(s#V : character height (font size in points)

<esc> is the escape character
is the actual value

For example, to change font size to 9 point:

<esc>(s9V

Article Change History:
18 Oct 1995 - Made a separate article for clarity.

Support Information Services

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Tech Info Library Article Number:15075

Tech Info Library

GeoPort: Won't Answer Incoming Calls In Originate Mode (4/94)

Revised: 4/7/94
Security: Everyone

GeoPort: Won't Answer Incoming Calls In Originate Mode (4/94)

==========

Article Created: 6 April 1994

TOPIC ----------

I want my GeoPort adapter to answer an incoming call in "originate" mode. It works with my external modems - that is I issue an "ATDT" command when the phone is ringing and the modem grabs the incoming call. With the GeoPort, I get a port in use error.

DISCUSSION ----------

With the Express Modem and GeoPort, there is a time delay of 6 seconds between when a ring is detected and when you can issue a an "ATDT" command. The way to eliminate this would be to type "ATH1DT" instead of "ATDT". The "H1" forces the modem to go off-hook. Once off-hook, the "DT" command can be issued causing the modem to think it is the originator.

Support Information Services

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Tech Info Library Article Number:15076

Tech Info Library

Express Modem Dial Back & TrackNet (4/94)

Revised: 4/7/94
Security: Everyone

Express Modem Dial Back & TrackNet (4/94)

==========

Article Created: 7 April 1994

TOPIC -----

Our PowerBooks with Express Modems are not able to dial into our network using White Knight because of a problem with our TrackNet device and the Express Modem script. TrackNet is a security device used for dial-back and works fine with everything except Express Modems in PowerBooks.

In order to make connection using other modems, or another CPU with an external modem, the command ATDT* must be entered a few milliseconds after the dial-back ring is detected by the initiating CPU. When the ATDT* command is issued, the Express Modem returns "MODEM IN USE," however, other modems do not do this.

DISCUSSION -----

Type ATH1DT* instead of ATDT* to avoid the 6 second timeout. The H1 command forces the modem to go off hook which then allows the dial command to proceed.

Support Information Services

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Tech Info Library Article Number:15077

Tech Info Library

Power Macintosh Upgrades: Transferring Serial Number (4/94)

Revised: 4/7/94
Security: Everyone

Power Macintosh Upgrades: Transferring Serial Number (4/94)

==========

Article Created: 7 April 1994

TOPIC ----------

When performing Power Macintosh upgrades, one of the items included is a new case, however the new case does not have a serial number on it. What should be done to provide the customer with a serial number on their upgraded Macintosh?

DISCUSSION ----------

The Service Provider needs to write (using either indelible ink or an engraver) the serial number from the original unit into the blank space on the rear of the Power Macintosh where the serial number would normally go.

The customer should retain receipts that pertained to the original unit as well as the new unit. (Do not try to remove the old serial number from the old unit as it might rip or tear in the process).

Support Information Services

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Tech Info Library Article Number:15078

Tech Info Library

PowerTalk and Power Macintosh Upgrade Card Problem (4/94)

Revised: 4/7/94
Security: Everyone

PowerTalk and Power Macintosh Upgrade Card Problem (4/94)

==========

Article Created: 6 April 1994

TOPIC ----------

I just installed a Power Macintosh Upgrade Card and it's software on my Macintosh and now PowerTalk acts up and I crash. What is the problem?

DISCUSSION ----------

The software Installer for the Power Macintosh Upgrade Card installs System 7.1 for 680x0 mode operation, PowerTalk requires System 7.1.1. After turning the Power Macintosh Card on in the Power Macintosh Card Control Panel, Shutting Down, and restarting you are in PowerPC 601 mode. The PowerTalk Manager contains the Drag Manager. The Drag Manager requires Process Manager 7.1.1 or later. As soon as you attempt to drag anything the computer will crash.

To use PowerTalk on a Power Macintosh Upgrade Card you must do the following:

1) Install the Power Macintosh Upgrade Card and its software.

2) Run the System 7 Pro Installer from the System 7 Pro "Install" disk. Even better, boot off that disk in 680x0 mode and run the Installer. This will re-install System 7 Pro when running your computer in 680x0 mode.

For optimum performance and stability in PowerPC mode, we recommend using the PowerTalk for Power Macintosh installer v. 1.0.2, which correctly handles both Power Macintosh computers and Power Macintosh Upgrade Cards.

The READ ME file on the NEW version of the PowerTalk for Power Macintosh installer includes these installation instructions.

All of the above applies with equal force to PowerShare Collaboration Servers, with one additional caveat: Although there are no known incompatibilities with PowerShare and Power Macintosh Upgrade Cards, we don't recommend this configuration.

Support Information Services

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Tech Info Library Article Number:15079

Communication Slot: Specifications (5/96)

Revised: 5/31/96
Security: Everyone

Communication Slot: Specifications (5/96)

==========

Article Created: 7 April 1994
Article Reviewed/Updated: 29 May 1996

TOPIC -----

I'm looking for information on the communications slot used in many Macintosh LC and Performa computers.

DISCUSSION -----

The following computers have the communications slot:

Begin_Table

Macintosh 575 family
Macintosh 630 family
Macintosh 5200 family
Macintosh 5300 family
Performa 6200CD series
Performa 6300 series

End_Table

The Communication slot is a 112 pin slot with a 32-bit wide data path.

Following is the pinout description for the communication slot:

Begin_Table

Signal Name	Pin#	Pin#	Signal Name
Audio MODEM to Host	1	2	Audio Host to MODEM
Audio MH GND	3	4	MIC to MODEM
R/W*	5	6	DS*
BERR*	7	8	DSACK1*
DSACK0*	9	10	GND

IOSIZE0*	11	12	C16M
IOSIZE1*	13	14	GND
RESET*	15	16	Bus Grant-Sacramento
IOD[31]	17	18	IOD[30]
IOD[29]	19	20	IOD[28]
IOD[27]	21	22	IOD[26]
IOD[25]	23	24	IOD[24]
IOD[23]	25	26	IOD[22]
+5V	27	28	IOD[21]
IOD[20]	29	30	IOD[19]
IOD[18]	31	32	IOD[17]
IOD[16]	33	34	IOD[15]
IOD[14]	35	36	IOD[13]
IOD[12]	37	38	IOD[11]
IOD[10]	39	40	IOD[9]
IOD[8]	41	42	GND
IOD[7]	43	44	IOD[6]
IOD[5]	45	46	IOD[4]
IOD[3]	47	48	IOD[2]
IOD[1]	49	50	IOD[0]
BGACK*	51	52	Bus Request-Sacramento
IO_CS_TIMED*	53	54	IO_CS_DSACK*
+5V	55	56	Sacramento IRQ*
IOA[1]	57	58	IOA[0]
A[2]	59	60	A[3]
A[4]	61	62	A[5]
A[6]	63	64	A[7]
A[8]	65	66	A[9]
A[10]	67	68	A[11]
A[12]	69	70	GND
A[13]	71	72	A[14]
A[15]	73	74	A[16]
A[17]	75	76	A[18]
A[19]	77	78	A[20]
A[21]	79	80	A[22]
A[23]	81	82	A[24]
+5V	83	84	A[25]
A[26]	85	86	A[27]
A[28]	87	88	A[29]
A[30]	89	90	A[31]
CPU_AS*	91	92	GND
TRICKLE+5V	93	94	System wakeup
'040 bus clock	95	96	-5V
+12V	97	98	GND
spare	99	100	C32M
spare	101	102	GND
spare	103	104	spare
SCC port A enable	105	106	spare
TxDA	107	108	RxDA
RTSA*	109	110	CTSA*
DTRA*	111	112	DCDA*

* = active low signal

End_Table

There are four communication slot cards available:

- Macintosh Express Fax/Modem - M2480LL/A (Discontinued)
- Apple Ethernet CS Twisted Pair Card - M3065Z/A
  (for use with a 10BASE-T compatible hub)
- Apple Ethernet CS Thin Coax Card - M2708Z/A
- Apple Ethernet CS AAUI Card - M3066Z/A

Note:
The following computers are in the corresponding Macintosh families and series:

- Macintosh 575 family: LC 575, 580, Performa 575, 577, 578, 580

- Macintosh 630 family: LC 630, LC 630 DOS Compatible, Quadra 630, Performa 630, 630CD, 631CD, 635CD, 636, 636CD, 637CD, 638CD, 640CD

- Macintosh 5200 family: Power Macintosh 5200/75 LC, Performa 5200, 5210, 5215, 5220.

- Macintosh 5300 family: Power Macintosh 5300/100 LC, Performa 5300.

- Performa 6200CD series: 6200, 6205, 6214, 6216, 6218, 6220, 6230.

- Performa 6300 series: Performa 6300, 6290.

*Note: To distinguish between those cards that are compatible with the Power Macintosh 5400 from those compatible with earlier models, the communication slots themselves are named distinctly. The communications slot in previous models is referred to as "comm slot I" whereas the slot in the Power Macintosh 5400 is called "comm slot II".

The Tech Info Library article "Power Macintosh 5400: New Communications Slot" contains information on the Power Macintosh 5400 communciations slot.

Article Change History:
29 May 1996 - Updated list of affected CPUs, updated other information.
26 Feb 1996 - Added Power Macintosh 5300 LC to list.
31 Aug 1995 - Reviewed and updated.

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Tech Info Library Article Number:15081

Tech Info Library

Power Macintosh Upgrade Card: RAM Upgrade Information (1/95)

Revised: 2/27/95
Security: Everyone

Power Macintosh Upgrade Card: RAM Upgrade Information (1/95)

==========

Article Created: 8 April 1994
Article Reviewed/Updated:27 February 1995

TOPIC ----------

I have a Macintosh with the Power Macintosh Upgrade Card installed. To upgrade the memory of the base computer, do I need to add memory in pairs of SIMMs like in the full Power Macintosh models?

DISCUSSION ----------

No, the Power Macintosh Upgrade Card does not override the memory upgrade requirements of the base computer. You can upgrade the base computer using the existing memory upgrade requirements for that particular computer.

Article Change History:
27 Feb 1995 - Revised title slightly.
09 Jan 1995 - Clarified that upgrade info related to base computer.

Support Information Services

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Tech Info Library Article Number:15083

Tech Info Library

Apple Multiple Scan 17 Display: Using Display Adapters (3/96)

Revised: 3/15/96
Security: Everyone

Apple Multiple Scan 17 Display: Using Display Adapters (3/96)

==========

Article Created: 8 April 1994
Article Reviewed/Updated: 15 March 1996

TOPIC

This article provides information on which Apple video cards and computers need display adapters to get greater resolution from the Apple Multiple Scan 17 Display.

DISCUSSION

The Apple Multiple Scan 17 Display has several resolutions. Macintosh computers designed before the introduction of Apple Multiple Scan 17 Display will only recognize the display as a 14-in color display without an adapter. Display adapters, available through Apple resellers and the third-party companies, contain a sense code that tricks the Macintosh into believing that the display is fixed frequency 16-in. or 19-in. display. Without the adapter, the display will be fixed at a 640x480 resolution.

Computers and Video Cards Not Requiring Video Adapters

Power Macintosh family
Macintosh Centris
Macintosh Quadra
Macintosh LC 475
Macintosh Performa 475 and 476
Macintosh Display Card 24AC
Macintosh 630 Family

These units use the Apple Multiple Scan software to change resolutions.

Computers and Video Cards Requiring Video Adapters

Macintosh II Family

PowerBooks
Duo Dock and MiniDock*
Macintosh Performa Computers (except 475 and 476)
Macintosh LC, LC II, LC III
Video Cards - 4•8, 8•24, 8•24GC

* - The Duo Dock does not require a video adapter to change resolutions when System 7.5 is installed.

Maximum Resolutions With Video Adapters

Computer	832x624	Notes
Macintosh II	No	1
Macintosh IIx	No	1
Macintosh IIfx	No	1
Macintosh IIcx	No	1
Macintosh IIci	No	2
Macintosh IIsi	No	2
Macintosh IIvx	No	2
Macintosh LC	No	2
Macintosh LC II	No	2
Macintosh LC III	Yes	
Performa 400	No	2
Performa 405	No	2
Performa 410	No	2
Performa 430	No	2
Performa 450	Yes	
Performa 460	Yes	
Performa 466	Yes	
Performa 467	Yes	
Performa 600	No	2
PowerBook 160	Yes	
PowerBook 165	Yes	
PowerBook 165C	Yes	
PowerBook 180	Yes	
PowerBook 180C	Yes	
Duo & MiniDock	Yes	3
4•8, 8•24, 8•24GC	Yes	

Notes:
1) No built-in video. Video is limited only by the video card used.
2) Limited to a resolution of 640x480 with built-in video.
3) The Duo Dock does not require a video adapter to change resolutions when System 7.5 is installed.

Display adapters are available from several third-pary companies such as Enhanced Cable Technology, Griffin Technology, and MacAdapt.

This article provides information about a non-Apple product. Apple Computer,

Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Article Change History:
15 Mar 1996 - Corrected PowerBook model.
09 Feb 1996 - Added additional adapter information.
20 Apr 1995 - Added System 7.5 and Dou Dock information.

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Tech Info Library Article Number:15084

Tech Info Library

Apple Multiple Scan 17 Display: Specifications (5/95)

Revised: 5/5/95
Security: Everyone

Apple Multiple Scan 17 Display: Specifications (5/95)

==========

Article Created: 8 April 1994
Article Reviewed/Updated: 5 May 1995

TOPIC ----------

This article gives the technical specifications for the Apple Multiple Scan 17 Display.

DISCUSSION ----------

Picture Tube

- 17-inch diagonal Trinitron CRT (16.5-inch viewable)
- Multiple scan
- Resolution range: 640x480 to 1024x768

Screen

- .26 millimeter (mm) stripe pitch
- Bonded glass panel with antiglare/antistatic multilayer coating

Input Signals

Red, green, and blue signals; separate sync, composite sync, and composite video

Power Savings feature

Conforms to the Energy Star program of the United States Environmental Protection Agency

User Controls

- Power-on switch
- Automatic degauss at power-up; manual degauss by turning power switch
. off, then on (capable of full degauss after monitor is turned off for

. 20 minutes or more)
- Control buttons: Reset, Control, Command, Brightness, Contrast
- Additional picture controls available using the Command button:
. horizontal and vertical shift, horizontal and vertical size, rotation,
. horizontal and vertical convergence, and color temperature

Active Video Image Area

Adjusted at the factory for the following standard modes:

Mode	Resolution	Vertical Refresh Rate (hertz)	Horizontal Scan Rate (kilohertz)
VGA	640x480	59.95	31.47
Macintosh	640x480	66.7	35.0
VESA	640x480	75.0	37.5
VESA	800x600	75.0	46.9
SVGA	800x600	55.98	35.16
800x600	800x600	60.0	37.8
Macintosh	832x624	75.0	49.73
Macintosh	1024x768	75.0	60.2
1024x768	1024x768	60.0	48.3

Input Electrical Requirements

Voltage: 90-132, 198-260 V
Frequency: 47-63 Hz
Power: 150 W maximum

Weight

Approximately 50 pounds (22.5 kilograms)

Dimensions

Height: 424 mm +/- 5 mm
Width: 405 mm +/- 5 mm
Depth: 452.3 mm +/- 5mm

Interfaces

- Apple Desktop Bus (ADB): one input port and two pass-thru output ports
- Microphone: One Input and one pass-thru port
- Headphone/Speaker: One input and one pass thru output port

Operating Environment

Temperature
- Operating: 10 to 40 degrees C (50 to 104 degrees F)
- Storage: 0 to 60 degrees C (32 to 140 degrees F)
- Shipping: -40 to 60 degrees C (-40 to 140 degrees F)

Humidity (noncondensing)
- Operating: 10% to 80%
- Storage: 5% to 90%
- Shipping: 5% to 95%

Altitude (maximum)
- Operating: 10,000 ft. (3048 m)
- Shipping: 35,000 ft. (1067 m)

Safety

Meets strict SWEDAC MPR-2 requirements for low-frequency (ELF and VLF) magnetic and electric emissions.

System Requirements

- Power Macintosh, Macintosh Centris, Macintosh Quadra, or any NuBus
. compatible Macintosh with a Macintosh Display Card 24AC.
- Macintosh II family, PowerBooks, Duo Dock* and MiniDock, Macintosh
. Performa, Macintosh LC, LC II, LC III, and Macintosh computers with
. 8•24, 8•24GC, 4•8 video cards installed work in the 640x480 video
. mode. Other modes are possible with additional adapters.
- System software version 7.1 or later

* - The Duo Dock requires a video display adapter to change resolutions unless System 7.5 is installed.

Monitor Cable Specifications

15-pin miniature D-type connector

Monitor Signals
===============

Pin	Output Signal
1	Red video ground
2	Red video
3	Not used
4	ID 1
5	Green video
6	Green video ground
7	ID 2
8	Not used
9	Blue video
10	ID 3
11	V Sync return
12	V Sync
13	Blue video ground
14	H Sync return
15	H Sync
Shell	Shield ground

Article Change History:
05 May 1995 - Made minor corrections.
20 Apr 1995 - Added information on System 7.5 and Duo Dock.
14 Mar 1995 - Corrected wording of MiniDock.

Support Information Services

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Tech Info Library Article Number:15085

Tech Info Library

Apple Multiple Scan 17 Display: Macintosh Video Support (2/96)

Revised: 2/9/96
Security: Everyone

Apple Multiple Scan 17 Display: Macintosh Video Support (2/96)

==========

Article Created: 8 April 1994
Article Reviewed/Updated: 9 February 1996

TOPIC -----

This article gives the video modes supported on each Macintosh computer with the Apple Multiple 17 Display.

DISCUSSION -----

(1) - 640x480 - 14-in Display
(2) - 832x624 - 16-in Display
(3) - 1024x768 - 19-in Display

Macintosh	Video Available			Display Manager
	(1)	(2)	(3)	Mode Switching?
Power Macintosh - 45 Pin conn	Y	Y	N	Y
Power Macintosh - AV card	Y	Y	Y	Y
Power Macintosh - 2 MB VRAM*	Y	Y	Y	Y
Power Macintosh - 4 MB VRAM*	Y	Y	Y	Y

Notes:
* - Addtional RAM goes into the VRAM expansion card

Quadra 700	Y	Y	N	Y
Quadra 900	Y	Y	N	Y
Quadra 800	Y	Y	Y	Y
Quadra 950	Y	Y	Y	Y
Quadra 660AV	Y	Y	Y	Y
Quadra 840AV	Y	Y	Y	Y
Quadra 610	Y	Y	Y	Y
Quadra 650	Y	Y	Y	Y
Quadra 605	Y	Y	Y	Y
Centris 610	Y	Y	Y	Y
Centris 650	Y	Y	Y	Y

Macintosh IIci	Y	N	N	N
Macintosh IIsi	Y	N	N	N
Macintosh IIvx	Y	N	N	N
Macintosh 630 family	Y	Y	N	Y(4)
DIsplay Card 24AC	Y	Y	Y	Y
8•24	Y	Y	N	N
8•24 GC	Y	Y	N	N
4•8	Y	Y	N	N
Macintosh IIcx	N	N	N	N/A
Macintosh II	N	N	N	N/A
Macintosh IIx	N	N	N	N/A
Macintosh IIfx	N	N	N	N/A
Performa 400	Y	N	N	N
Performa 410	Y	N	N	N
Performa 430	Y	N	N	N
Performa 405	Y	N	N	N
Performa 450	Y	Y	N	N
Performa 460	Y	Y	N	N
Performa 466	Y	Y	N	N
Performa 467	Y	Y	N	N
Performa 475	Y	Y	Y	Y
Performa 476	Y	Y	Y	Y
Performa 600	Y	N	N	N
Performa 600CD	Y	N	N	N
PowerBook 100	N	N	N	N/A
PowerBook 140	N	N	N	N/A
PowerBook 145	N	N	N	N/A
PowerBook 170	N	N	N	N/A
PowerBook 160	Y	Y*	N	N
PowerBook 165	Y	Y*	N	N
PowerBook 165c	Y	Y*	N	N
PowerBook 180	Y	Y*	N	N
PowerBook 180c	Y	Y*	N	N
PowerBook 500	Y	Y	N	Y
PowerBook Duo 210	N	N	N	N/A
PowerBook Duo 230	N	N	N	N/A
PowerBook Duo 250	N	N	N	N/A
PowerBook Duo 270C	N	N	N	N/A
MiniDock	Y	Y	N	N
DUO DOCK	Y	Y	N	N(5)
DUO DOCK II	Y	Y	Y	Y
Mac LC 475	Y	Y	Y	Y
Mac LC III	Y	Y	N	N
Mac LC	Y	N	N	N

Mac LC II	Y	N	N	N

Notes:
 * - Requires video display adapter
(1) - 640 x 480 - 14-in Display
(2) - 832 x 624 - 16-in Display
(3) - 1024 x 768 - 19-in Display
(4) - The Macintosh 630 family computers can use larger monitors such as the Multiple Scan 17 and Multiple Scan 20, however the maximum resolution on these monitors is 832x624, and at this resolution they cannot support the TV/Video System.
(5) - The Duo Dock requires a video display adapter to change resolutions unless System 7.5 is installed.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Display adapters are available from several third-pary companies such as Enhanced Cable Technology, Griffin Technology, and MacAdapt.

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Article Change History:
09 Feb 1996 - Added additional display adapter information.
21 Apr 1995 - Added information on System 7.5 and Duo Dock.
18 Jan 1995 - Added PowerBook video display adapter information.

Support Information Services

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Tech Info Library Article Number:15086

Tech Info Library

Apple Displays: Model Numbers (1/95)

Revised: 1/19/95
Security: Everyone

Apple Displays: Model Numbers (1/95)

==========

Article Created: 7 April 1994
Article Reviewed/Updated: 9 January 1995

TOPIC -----

This article lists model numbers that appear on the information tag on the back of Apple displays.

DISCUSSION -----

Many times the only information people have is the model number. This chart can be used to determine the monitor they have from the model number.

Number on Monitor	Monitor Name
M0400	Apple High-Resolution Monochrome Monitor
M0401	AppleColor High-Resolution RGB Monitor (13-in Rev A)
M0402	Apple Two-Page Monochrome Monitor (Rev A)
M1025	Apple Two-Page Monochrome Monitor (Rev B)
M0404	Macintosh Portrait Display (Rev A)
M1030	Macintosh Portrait Display (Rev B)
M1297	AppleColor High-Resolution RGB Monitor (13-in Rev B)
M1050	Macintosh 12-in Monochrome Display
M1296	Macintosh 12-in RGB Display
M1212	Macintosh Color Display
M2001	AudioVision 14 Display
M1298	Macintosh 16-in Color Display
M1787 or M2346	Apple Color Plus 14-in Display
M1823	Apple Multiple Scan 20 Display
M3502	Macintosh 21-in Color Display
M2494	Apple Multiple Scan 17 Display
M2943	Apple Multiple Scan 15 Display

Article Change History:

09 Jan 1995 - Added New number for Color Plus Display.
13 Dec 1994 - Corrected MS 17 and 15 family numbers.
22 Sep 1994 - Added Multiple Scan 17 and 15 Displays

Support Information Services

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Tech Info Library Article Number:15087

Tech Info Library

AWS 95: SyQuest and Removable Media Support (4/94)

Revised: 4/11/94
Security: Everyone

AWS 95: SyQuest and Removable Media Support (4/94)

==========

Article Created: 8 April 1994

TOPIC -----

I'm curious about support for removable media under A/UX 3.1 running on an Apple Workgroup Server 95 (AWS 95). People have indicated to me that there were plans for removable media support in A/UX 3.1, but they are unclear if this feature made it into the final release of software.

Specifically, with AppleShare Pro and A/UX 3.1 on an AWS 95, can SyQuest and Magneto Optical drive be supported so that the media can be ejected and changed without shutting down AppleShare Pro?

DISCUSSION -----

The AWS 95+ Upgrade ReadMe files states that support has been added, "for automatic mounting and unmounting of removable media SCSI drives from the Finder." But that is all it says. Here is a little more detail:

Under A/UX 3.1, the SyQuest disks can be mounted and unmounted. To unmount a disk, you push the eject button on the drive and then throw the drive icon in the trash. The optical drives should work as well. To unmount a disk, you throw the drive icon in the trash and then push the eject button on the drive.

NOTE: Magneto Optical drives have not been tested on A/UX 3.1 so we cannot say for sure how well they will work.

Support Information Services

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Tech Info Library Article Number:15089

Tech Info Library

GeoPort: Maximum Number Of Simultaneous Addresses (4/94)

Revised: 4/11/94
Security: Everyone

GeoPort: Maximum Number Of Simultaneous Addresses (4/94)

==========

Article Created: 11 April 1994

TOPIC -----

I have a customer who wants to know maximum number of addresses he can send the same fax to simultaneously using the GeoPort for Power Macintosh (version 1.0) software.

DISCUSSION -----

Previous testing allowed up to 145 recipients in the Send To field. According to the engineering team there is no limit to the number of recipients for a fax. Since the Fax software for GeoPort is the same as the PowerBook Fax software, this applies to the PowerBook family as well.

Support Information Services

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Tech Info Library Article Number:15090

Tech Info Library

LaserWriter Select 360: Canceling a Fax Job (4/94)

Revised: 4/11/94
Security: Everyone

LaserWriter Select 360: Canceling a Fax Job (4/94)

==========

Article Created: 11 April 1994

TOPIC ----------

How do I cancel a fax job which I have set to retry five times on the LaserWriter Select 360 with fax option?

DISCUSSION ----------

At this time, there is no way to cancel fax jobs or retries except to turn the printer off. Apple and Adobe are looking to add a feature in a successive release of software, which will enable a user to cancel fax jobs or retries.

Support Information Services

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Tech Info Library Article Number:15091

Tech Info Library

Extension Manager: Not all Control Panels Listed (4/94)

Revised: 4/11/94
Security: Everyone

Extension Manager: Not all Control Panels Listed (4/94)

==========

Article Created: 8 April 1994

TOPIC -----

Why doesn't Extension Manager 2.01 list all control panels in the Control Panels folder?

DISCUSSION -----

Extensions Manager will only list those files that have an INIT resource, or files that are set to be listed regardless of whether they have INIT code in them or not.

Using the Configure option you can add you own file types that Extensions Manager should list. To find out the file type of a given control panel or extension you may use DeskZap (a shareware desk accessory) or ResEdit.

Support Information Services

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Tech Info Library Article Number:15093

Tech Info Library

DOS Compatibility Card: How Memory Is Allocated (9/95)

Revised: 9/29/95
Security: Everyone

DOS Compatibility Card: How Memory Is Allocated (9/95)

==========

Article Created: 11 April 1994
Article Reviewed/Updated: 28 September 1995

TOPIC ----------

When using the DOS Compatibility Card, is it possible to allocate all of the memory in the computer to the DOS side if that is the only thing that I need use during a session?

DISCUSSION ----------

Memory is allocated in the PC Setup Control Panel. The memory allocated is physical RAM on the main logic board of the Quadra or Centris 610. You have to have a minimum of 4 MB allocated to the Macintosh operating system. This means that you cannot allocate all the RAM on the logic board to the DOS Compatibility Card. As you upgrade RAM on the Quadra or Centris 610 logic board you can allocate more memory to the DOS Compatibility Card. For example, if you installed a 16 MB SIMM in a Quadra 610, you can assign 12 MB of RAM to the DOS Compatibility Card.

You can also add memory to the DOS Compatibility Card by installing a SIMM into the SIMM slot on the DOS Compatibility Card. However, you can't use any of the RAM installed on the Macintosh for the DOS Compatibility Card once you install a SIMM on the DOS Compatibility card. You also can't use the DOS Compatibility Card RAM as part of your Macintosh computer's memory.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15095

Tech Info Library

PlainTalk Microphone: Not Supported On Current Displays (4/95)

Revised: 4/19/95
Security: Everyone

PlainTalk Microphone: Not Supported On Current Displays (4/95)

==========

Article Created: 11 April 1994
Article Reviewed/Updated: 19 April 1995

TOPIC ----------

I have connected my Apple Microphone (round) to the microphone pass through port on my Macintosh 16-in. Color Display. When I attempt to record sound to my Macintosh Quadra 840AV, nothing happens.

DISCUSSION ----------

The AV Macintosh computers and all Power Macintosh models use the PlainTalk Microphone instead of the older Apple Microphone. The PlainTalk Microphone requires additional voltage from the Macintosh to amplify the signal. All of Apple's current displays, includes all Multiple Scan Displays, are not setup to pass the voltage to the PlainTalk Microphone. To use the PlainTalk Microphone, it must be connected directly to the Macintosh AV or Power Macintosh computer.

Article Change History:
18 Apr 1995 - Added information on all Multiple Scan Displays.
13 Apr 1994 - Added Power Macintosh and the MS 17 Display.

Support Information Services

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Tech Info Library Article Number:15096

Tech Info Library

Imagewriter II: Paper Guide Screw Specifications (4/94)

Revised: 4/12/94
Security: Everyone

Imagewriter II: Paper Guide Screw Specifications (4/94)

==========

Article Created: 12 April 1994

TOPIC ----------

What are the specifications for the screws that hold the clear plastic paper guide in place on the ImageWriter II?

DISCUSSION ----------

The paper guide is mounted using two 6mm long, 2.6 mm wide metric threaded panhead screws with a captive lock washer. The screws can be very difficult to find. To locate possible sources for metric screws, check your local yellow pages under "screws" for possible suppliers. Some hobby and hardware stores may also carry compatible screws.

Support Information Services

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Tech Info Library Article Number:15097

Tech Info Library

Power Macintosh: Some Printer Drivers Not Installed (2/96)

Revised: 2/19/96
Security: Everyone

Power Macintosh: Some Printer Drivers Not Installed (2/96)

==========

Article Created: 12 April 1994
Article Reviewed/Updated: 19 February 1996

TOPIC ----------

I cannot find the printer driver for several Apple printers on my Power Macintosh 6100 computer. Where are the printer drivers?

DISCUSSION ----------

As you mentioned, several Apple printer drivers were not included with the System 7.1.2 software. Below is a list of printer drivers not included. All the printer drivers are available through online services Apple publishes software updates on.

Begin_Table

Printer	Print Driver Used	Version
LaserWriter IISC	Personal LaserWriter SC	7.0.1
Personal LaserWriter SC	Personal LaserWriter SC	7.0.1
ImageWriter LQ	LQ ImageWriter	7.0.1
AppleTalk ImageWriter LQ	LQ AppleTalk ImageWriter	7.0.1
LaserWriter Select 310	LW Select 310	7.0
Apple Color Printer	Apple Color Printer	1.0
Color StyleWriter Pro	Color StyleWriter Pro	1.5.2
Portable StyleWriter	Portable StyleWriter	1.0.1

End_Table

As a reminder, the StyleWriter II and LaserWriter 300 drivers on the Power Macintosh disks are also used for the original StyleWriter, and Personal LaserWriter LS and LaserWriter Select 300 printers respectively.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" - Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" - Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
19 Feb 1996 - Replaced entire discussion with updated information.

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Tech Info Library Article Number:15098

Tech Info Library

LaserWriter Pro 810 and NetWare 3.1x (7/96)

Revised: 7/1/96
Security: Everyone

LaserWriter Pro 810 and NetWare 3.1x (7/96)

==========

Article Created: 15 April 1994
Article Reviewed/Updated: 1 July 1996

TOPIC ----------

This article describes an incompatibility when connecting a LaserWriter Pro 810 to a NetWare 3.1x server, and a workaround configuration.

DISCUSSION ----------

Apple Computer's LaserWriter Pro 810 can work with Novell NetWare networks, but you'll find that a combination of software compatibility problems and documentation shortcomings make it challenging to configure for this environment using the information supplied with the printer. This document covers NetWare 3.11 and 3.12 using NetWare for Macintosh 3.011 or 3.12. Since most users will be connecting NetWare 3.1.X servers, we will focus on this configuration.

Configuring a NetWare 4.x server is not discussed in this document; however, most of the issues are the same. The configuration of printers and print queues in a 4.x environment is handled with different utilities.

Background

NetWare 3.1x servers can drive printers in one of two ways in the DOS/Windows environment:

- Use a PC on the network as a "Remote Print Server" with printers directly attached through serial or parallel connections.

- Locally attach a printer to the file server.

The "front end" remains the same with either of these configurations. You select a "print queue" to use on your DOS workstation that is defined and managed by the NetWare server. Your print job is spooled on the server and fed directly to the printer or remote print server. The capture of a print queue on a workstation is accomplished in a number of ways depending on the operating

system and user configuration of the workstation.

When an AppleTalk printer is attached to a NetWare network, a Macintosh may print to this printer:

- Directly to the printer in the traditional fashion, with no interaction with NetWare.

- Print via NetWare's ATPS (AppleTalk Print Spooler) which is part of Novell's NetWare for Macintosh product. This behaves much as Apple's AppleShare Print Server does by advertising a spooler in the Chooser and accepting print jobs from a Macintosh. ATPS normally sends spooled jobs directly to AppleTalk printers or it can pass the job to the DOS/Windows queues for processing on non-AppleTalk printers.

Incompatibility

The incompatibility, caused by a "half-open" PAP (Printer Access Protocol) session being created, is due to the implementation of the AppleTalk PAP protocol used in the LaserWriter Pro 810. The LaserWriter Pro 810 uses a different implementation of the AppleTalk stack and PAP protocol than was used in previous LaserWriter printers. NetWare uses a version of AppleTalk designed for most of Apple Computer's LaserWriter printers. A more in-depth description of a "half-open" PAP session follows.

The behavior of the NetWare ATPapOpenConn() call is to try one PAP OpenConn ATP TReq transaction for four seconds, then to give up and try an OpenConn on a new ATP (AppleTalk Transaction Protocol) transaction and PAP conn ID. The wait time field of the OpenConn request is only incremented when a new transaction is issued. This behavior was designed to allow for incrementing the OpenConn wait time without violating the internal boundaries between PAP and ATP in our protocol stack.

If a printer responds to an OpenConn request after the ATP transaction has expired, and ATPS has moved on to a new connection session, it can lead to a half open connection which takes two or three minutes to time out. The printer will not accept any other connections during this period. Due to this potential weakness in PAP, Inside AppleTalk recommends allowing twelve seconds before using a new ATP transaction and PAP conn ID to issue the OpenConn requests (5 tries at two second intervals).

As of April 1994, ATPS' behavior is to transmit one retry at two second intervals, for a total of only four seconds. ATPS is technically within the AppleTalk specification, but these intervals don't work with the LaserWriter Pro 810. This is not an issue with other Apple LaserWriters as they do not use the LaserWriter Pro 810 implementation of AppleTalk.

The result is the LaserWriter Pro 810 will look at one PAP connection session, while ATPS has moved on to another PAP session requesting attention on a new connection session. The printer will report its status as idle, but it's still busy (looking at the incorrect PAP connection). When that session finally times out, the LaserWriter Pro 810 will then try to service other PAP sessions that may have been waiting for its attention, but by that time, the newly created

ATPS PAP session has timed out, and it has moved on to creating another PAP session. The two versions of AppleTalk will then continue to chase each others out of sync "half open" PAP sessions endlessly.

SOLUTION

Configure NetWare print services to spool jobs to a LaserWriter Pro 810 from DOS and/or Windows computers, perform the following steps:
---

1) Determine if the DOS computers need to print to PCL4 (HP emulation) and/or Postscript printers.

2) PSERVER must be configured and run on the NetWare server using PCONSOLE from a DOS workstation. A print server must be defined, new printers must be defined, and the printers must be connected to queues. The PSERVER process will think it is using a remote print server when it prints to the LaserWriter Pro 810.

3) Ensure the server is configured to support the 802.3 frame type on the interface card that will provide IPX traffic to the LaserWriter Pro 810. The printer will not respond to 802.2 packets.

4) ATPS must be configured and loaded on the NetWare server to accept print jobs from Macintosh computers and pass the spooled print jobs to non-AppleTalk printers using NetWare's PSERVER NLM.

Configure the LaserWriter Pro 810 for DOS/Windows Use
---

1) Start by resetting the printer to factory defaults using the control panel on the front. This assures the factory printer setup is pristine and ready for NetWare use.

2) Print the Printer Status pages from the control panel on the front of the printer. This provides a list of default virtual printers. Make note of the two that begin with PSL20N… and LJL20N…

Modify File Server Configuration
---

1) Edit the AUTOEXEC.NCF file on the server to change or add a frame type of ETHERNET_802.3 to the Ethernet interface that the printer traffic will flow through. Without IPX bound to this frame type the PSERVER NLM on the NetWare server will never connect to the printer.

Creating & Configuring PSERVER

2) Log into the NetWare server from a DOS workstation as Supervisor and run the PCONSOLE utility.

3) Select "Print Server Information"

4) You may use an existing print server or press the Insert key to create a new print server.

5) After selecting the print server to configure select the "Print Server Configuration" option.

Configure the Printers

6) Select "Printer Configuration" option. You'll be presented with an empty list if this is a new print server configuration, otherwise you'll see a list of existing configured printers.

7) Select an unused printer number, unconfigured printers are labeled "Not Installed".

8) Name the printer with the appropriate name that appears on the printout of the virtual printers you obtained earlier. It will be the "LJL20N....." for HP Emulation, and/or "PSL20N....." for a Postscript printer.

9) Select the "Remote Parallel, LPT1" as the printer type. You can use this same type for all the printer definitions. There is no need for different IRQs or LPTs.

10) Retain the defaults for the rest of the settings and save changes by pressing the Esc key.

11) Repeat these steps for a second printer if you are configuring both HP and Postscript printers.

Creating the Print Queues

12) If you intend to add the configured printers to existing queues then skip to step 16.

13) Escape back to the main menu of PCONSOLE and select the "Print Queue Information" option.

14) Press the Insert key to create and name a new print queue. This name is the one the DOS stations will see when they capture the queue to print to so select a useful name.

15) Repeat the process to create a second queue if you are using both the HP and Postscript printers.

Attaching the Printers and Queues

16) Escape back to the main menu and select the "Print Server Information" option.

17) Select the print server you previously created and then select the "Print Server Configuration" option.

18) Select the "Queues Serviced by Printer" option. You'll see a list of the printers you created in the previous section.

19) Select each printer and use the Insert key to bring up a list of defined queues and attach the queue to the appropriate printer. You should be attaching one queue to one printer. Use the Esc key to save each one.

20) Escape back to the main menu and exit PCONSOLE.

At this point PSERVER is configured and ready to go. It will support DOS/Windows computers printing to Postscript or PCL4 virtual printers through NetWare queues.

If PSERVER is not currently running, it needs to be loaded at the System Console with a "load pserver [the name of your PSERVER]" command. If one is already running it needs to be unloaded and reloaded to run with the new name. After it loads you'll get a new screen on the console that shows the status of each of the defined printers. You'll notice that the initial status will be "Not Connected". Be patient! Eventually the status will change to "Waiting for job" as the server connects to the LaserWriter Pro 810 over the network. This can take several minutes.

Don't forget to edit your AUTOEXEC.NCF file if you want the PSERVER to load automatically at server boot time.

Configure the LaserWriter Pro 810 for Macintosh Printing Through NetWare

These steps are only needed when Macintosh computers will be printing through NetWare queues to the LaserWriter Pro 810. If printing straight to the printer the next section can be skipped.

Configure ATPS

ATPS is a NetWare module that drives AppleTalk printers and advertises a NetWare print queue in the Macintosh computer's Chooser. Because of the incompatibilities mentioned earlier, ATPS can't be used to print to the AppleTalk virtual printers in the LaserWriter Pro 810. Therefore, the Macintosh computer's print jobs must be routed from ATPS to PSERVER which will send it to the IPX virtual printer. ATPS must be configured and loaded if it is not currently in use on the NetWare server.

1) Load the Install NLM on the server.

2) Use the Alt-Esc keys to switch to the Install screen and select "Product Options".

3) Select the "NW-MAC" product.

4) Select the ATPS.CFG file.

5) If this file doesn't exist it will ask if you want to create it. Edit this file so it contains the following line;

```
-O "LW810 on IPX" -WB -L -F APPLWNTX
```

This example assumes the name you want to present in the Mac chooser for this queue is "LW810 on IPX". This name must match the queue name created in PCONSOLE.

Refer to the NetWare for Macintosh documentation for more information on the ATPS.CFG options.

6) Press the Esc key to save changes and exit the Install NLM.

7) If ATPS is currently running unload and reload it at the System Console prompt.

8) Edit the AUTOEXEC.NCF file to auto load ATPS at boot time if you desire.

The queue will now be advertised in the Chooser, users can submit their print jobs to this queue via ATPS and the print job will be serviced by PSERVER.

Create a New Virtual Printer on the LaserWriter Pro 810

A new LaserWriter Pro 810 Virtual Printer will need to be created because many Macintosh applications print in a BINARY form as opposed to DOS systems printing postcript in ASCII, and the Novell print server combination not being able to convert Binary to ASCII and vice versa. Not doing this last step will cause some (EPS) postcript print jobs to go into the Novell print Queue and then get flushed with no output to the printer.

1) Connect to the printer's command console through TelNet or serial connection through the command console connector. Login as the Super User. For more information on cable see Appendix A.

2) Issue these commands to create a new virtual Postscript Printer for Macintosh printing use. Select a name for the a new virtual printer that explains what it is like "MacIPX". This name is "(a name)" in the following steps.

3) CHANGE SERVICE (a name) COPY (Name of existing virtual Postscript printer. Begins with "PSL20Nxxxxxx".)

4) CHANGE SERVICE (a name) PORT 1

5) CHANGE SERVICE (a name) PROTOCOL NETWARE ENABLE

6) CHANGE SERVICE (a name) PROTOCOL LAT DISABLE

7) CHANGE SERVICE (a name) BINARY ENABLED

8) Print the Printer Status pages from the control panel on the front to verify the new Virtual Printer setup. It should appear the same as the original PostScript virtual printer except for a different name and the Binary Mode will be enabled.

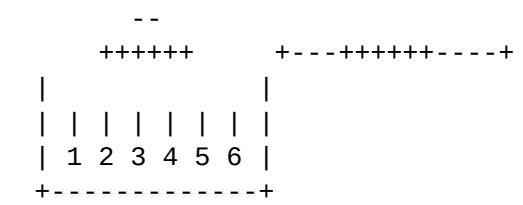
Add a new Queue and printer definition to the NetWare server's Pserver

configuration just as the previous section details. The new queue you're setting up is only for use by Macintosh computers, it will not print DOS jobs correctly!

Appendix A.

The LaserWriter Pro 810 includes an RJ12 maintenance port that can be accessed via a standard DEC terminal or almost any terminal emulation software package. In order to connect a Macintosh to the port special cable needs to be constructed. The cable requires an RJ12 and a DIN-8 connector, along with suitable 6 wire cable.

RJ12 Diagram



DIN-8 (male) Diagram

Maintenance port to Macintosh wiring diagram

RJ12		DIN-8	
		2	---------- 5 (RXD)
5	----------	3	(TXD)
3,4	----------	4,6,8	(GND)
6	----------	1	(DTR)
1	----------	2	(CTS)

Configure a terminal emulation package for 9600 baud, 8 data bits, 1 stop bit, and no parity. After turning the printer on the terminal should display a list of diagnostic information which will continue until the printer is ready to print.

In order to log into the remote Console Facility (RCF), wait until the message 'Server -993- Server ready for logins' appears and then press return. The terminal should prompt for a username. The default username is 'access.' Typing 'show server status' at the 'server>' prompt is one of many commands that can be entered in order to obtain statu information about the printer.

In order to make changes to the print server you must have superuser status. Enter 'su' at the 'server>' prompt. The terminal will then ask for a password.

The default password is 'system.' As long as the password is correct the prompt will change from 'server>' to 'server>>' indicating that the superuser mode is enabled. For additional information regarding the remote console facility (RCF) consult the network installation and configuration manual.

Article Change History:
01 Jul 1996 - Update for technical accuracy.
14 Oct 1994 - Added Create a New Virtual Printer section.
28 Jun 1994 - Included NetWare for Macintosh versions.

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Tech Info Library Article Number:15100

Tech Info Library

Power Macintosh: Software Included With Upgrades (4/94)

Revised: 4/12/94
Security: Everyone

Power Macintosh: Software Included With Upgrades (4/94)

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Article Created: 12 April 1994

TOPIC -----

A customer purchased a Power Macintosh upgrade and wants to know whether or not he is entitled to the extra software that ships with Power Macintosh systems.

DISCUSSION -----

The Power Macintosh Logic Board Upgrade ships with both:

- The CD that contains the software that comes installed on a Power Macintosh (except for PlainTalk, which is not on the CD, but is included on the hard drive of AV Power Macintosh configurations). This would include the Apple Extras folder.

- The 5 disks which contain only the system software necessary to install the Power Macintosh System Software. These disks do not include the Apple Extras folder. These disks are included in this upgrade kit for customers who are upgrading a system which does not have a CD-ROM drive installed.

The Power Macintosh Upgrade Card, on the other hand, ships with only the System Software (5 disks) required to install the Power Macintosh System Software. The Apple Extras folder is not included with these disks (same disks as the second bullet above).

A customer is only entitled to the software that ships with whichever upgrade product he purchased. If he purchased the Upgrade Card, he will not receive the Apple Extras folder. If he purchased a Logic Board Upgrade and does not have a CD drive, he has the additional software but would need access to a CD drive long enough to copy it to his hard drive.

Support Information Services

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Tech Info Library Article Number:15101

Tech Info Library

Enhance Cable Technology

Revised: 11/8/95
Security: Everyone

Enhance Cable Technology

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Article Created: 12 April 1994
Article Reviewed/Updated: 8 November 1995

Enhance Cable Technology

2035 O'Toole Avenue
San Jose, California 95131

Phone: (800) 717-8757
(408) 232-0200
(408) 232-0205
Fax: (408) 232-0210

Previous phone number, (800) 343-2425, has been disconnected.

Company Profile: Enhanced Cable Technology provides cable adapters for Apple Multiple Scan Displays. These cable adapters allow multiple frequency monitors to be used on Macintosh computers that only support one frequency. The cable adapters can also be used on other multiple frequency monitors manufactured by other vendors.

Enhance Cable Technology sells individual cable adapters through MacMall (800) 222-2808.

Article Change History:
08 Nov 1995 - Corrected phone number.
01 Nov 1995 - Added new 800 phone number.
10 Jul 1995 - Added keyword.

Support Information Services

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Tech Info Library Article Number:15103

Tech Info Library

Newton Connection Kit: Import & Export Translation Errors (4/94)

Revised: 4/12/94
Security: Everyone

Newton Connection Kit: Import & Export Translation Errors (4/94)

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Article Created: 12 April 1994

TOPIC -----

I am trying to setup a template for importing and exporting to-do items from the datebook application using the Macintosh version of the Newton Connection Kit 2.0. However I have found that if there is a carriage return embedded within the text of a to-do item, the exported files don't contain the information after the carriage return in the proper record. The information ends up in multiple records when imported into another application. How can I get all the information in one record?

DISCUSSION -----

Export templates in the Newton Connection Kit for Macintosh write data into ASCII text files. Fields are delimited by a TAB character and records are delimited by a Carriage Return (CR) character. This is customizable within the connection kit. The problem here is that the text being exported from the Newton, a to-do item, contains one of the delimiting characters, a carriage return. When another program reads the exported file, it will read the embedded carriage return in the text as a record separator. The following excerpt from the Newton Connection Kit 2.0 read me file details the problem:

"There are situations in which a file exported using a template and then reimported into a Newton Connection Kit file may lose information. The templates import and export files with text only. This means that any graphics in your Newton data will not be exported if you use a template. Furthermore, if your data contains tabs, returns or multiple paragraphs (**), some of it may be lost if you export with a template that uses Tab and Return as the field and record separators. To avoid this, click Options in the Template dialog and choose a character that does not appear in your data as the separator, or export in Newton Connection format. If you want to move all information from one Newton Connection Kit file to another, it is strongly recommended that you use the Newton Connection format to import and export the information.

(**) Multiple paragraphs are concatenated with Carriage Returns. "

This type of problem is common throughout the computer industry.

Workaround

An option is configuring the Newton connection kit to have specific delimiters with the import and export programs.

With Newton Connection 2.0 for Macintosh, you can do the following:

1) Go to the File menu and choose "Create Template..." and pick an application you wish to create a template for. Use "Edit Template..." if you are modifying an existing template.

2) Click on the "Options" button

3) Configure the record and field separator characters in the spaces provided. It is helpful to choose "non" display characters that will not be embedded in the text. The "Key Caps" application available from the Apple Menu can provide some good choices.

Then, when you want to import the data in another application, configure the import option to use the same delimiters. You need to consult the documentation for your specific application if you need additional information on how to do this. However, there can be additional problems since not all applications can be configured. In those cases, the only solution is to change the text that contains one of the delimiters on the Newton.

Support Information Services

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Tech Info Library Article Number:15104

Tech Info Library

Starcore Dyno Notepad: Note Size Limit (4/94)

Revised: 4/12/94
Security: Everyone

Starcore Dyno Notepad: Note Size Limit (4/94)

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Article Created: 12 April 1994

TOPIC -----

Can I create files that are greater than 4k in the Starcore Newton application called Dyno NotePad?

DISCUSSION -----

Both the Newton MessagePad and Dyno Notepad limit the size of note of 4k. The Dyno Notepad limit is on the sizes of individual note items or "topics". Dyno Notepad allows more flexibility in individual notes, by allowing multiple 4k topics.

Each topic of a dynonote can be up to 4K in size. When it reaches that 4K limit, the segment's bar stops and its length cannot be extended (the bar is just like the bar in the todo section of the Datebook application). This happens even if it is the bottom-most segment (you will just have an empty screen below it).

Once you reach the 4k barrier, you can draw a line to create a new topic segment, and you can continue the note what you were writing. It looks like one long segment (the bar remains contiguous between the two segments) but has an extra triangle next to the bar indicating that it is physically two parts. So it flows well, even though it is physically two different segments.

Support Information Services

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Tech Info Library Article Number:15105

Tech Info Library

LaserWriter 8.1.1: Setting Default Paper Tray (4/94)

Revised: 4/14/94
Security: Everyone

LaserWriter 8.1.1: Setting Default Paper Tray (4/94)

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Article Created: 14 April 1994

TOPIC ----------

I am using a LaserWriter Select 360 with the LaserWriter 8.1.1 printer driver, and cannot make the lower tray the preferred tray option. After printing a document, the printer always defaults back to ALL trays. How can I make the lower tray the preferred paper tray?

DISCUSSION ----------

If you performed a set-up in the print window, the information is not stored for later print jobs. If you want to set the default paper tray, you need to configure the LaserWriter 8.1.1 in the chooser.

To select the default paper tray:

1) Open the chooser and select the LaserWriter 8.1.1. driver
2) Click SETUP
3) Click Configure
3) Select 250/500 Installed and Preferred.

Once the printer software is configured, the printer uses the paper tray you selected.

Support Information Services

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Tech Info Library Article Number:15108

Tech Info Library

AWS 95: NCSC Security Levels Available (4/94)

Revised: 4/22/94
Security: Everyone

AWS 95: NCSC Security Levels Available (4/94)

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Article Created: 12 April 1994

TOPIC ----------

I'm using an Apple Workgroup Server 95 (AWS 95) with Oracle in a TCP/IP environment. I am very concerned about the AWS 95 computer's security, since it will be serving mission-critical data and will be Internet accessible.

I'd like to know what additional security measures are available for A/UX, and to ensure that they will not break Oracle. Minimally, I need support for a shadow password file, but I would prefer full C2 security.

Does Apple have a C2 secure version of A/UX, and is it compatible with the AWS 95 with Oracle7?

DISCUSSION ----------

According to the NCSC (National Computer Security Center) evaluation criteria, seven levels of trust called Classes have been defined. The AWS 95 server based on A/UX 3.1 (the latest version) doesn't, in general, meet the C2 class requirements, it only meets the C1 class level. AppleShare and AppleShare Pro also are in the C1 class security category.

As of April 1994, Apple doesn't have a C2 security version of A/UX.

Below is more information on the NCSC security classes:

The increasing order of trust (from left to right),
D, C1, C2, B1, B2, B3, and A1.

```
     D       C1       C2      B1      B2     B3      A1
  <-------------------------------------------------------->
     not               increasing security           highly
     secure                                          secure
```

D systems aren't trusted. A1 systems are extremely resistant to compromise.

Up to level B3, each Class introduces additional features and functions to counter specific threats that weren't countered by lower Classes. For example:

- C2 introduces the "audit" function.
- B1 adds "security labels" to all objects.
- B2 adds a "trusted path."
- B3 adds a "trusted recovery" feature.

Class A1 adds no features or functions over a Class B3 system. The software system for a Class A1 system is identical to Class B3 system. However, the Class A1 system is more trusted because it is subjected to extremely rigorous design verification, threat analysis, construction, testing, inspection, distribution, and operational procedures covering hardware, firmware, and software.

Support Information Services

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Tech Info Library Article Number:15109

Apple MessagePad: Use Of Third Party PCMCIA Cards (5/95)

Revised: 5/9/95
Security: Everyone

Apple MessagePad: Use Of Third Party PCMCIA Cards (5/95)

==========

Article Created: 13 April 1994
Article Reviewed/Updated: 9 May 1995

TOPIC ----------

An Apple MessagePad customer would like to use a low-capacity PCMCIA storage card (256KB) for data transfer. The customer is quite sensitive to the cost of the equipment for this project and can get 256K PCMCIA RAM cards inexpensively.

The customer needs to know the following:

• Can the Apple MessagePad 100/110 use a 256K card?

• Will any third party storage cards work in the MP 100/110?

• If so, what does the customer need to know about a third party storage card to ensure that it will work in the MP 100/110?

DISCUSSION ----------

The Apple MessagePad and Apple MessagePad 110 have very specific requirements for the types and kinds of PCMCIA cards that can be used. In general there are two types of RAM cards that currently work with the Apple MessagePad PCMCIA slot: static-RAM (SRAM) and Flash RAM. The PCMCIA slot uses Type II cards which are 5 mm thick and support a 16-bit data bus.

SRAM cards generally write data to memory more quickly than Flash RAM but both types provide similar data-access speeds. SRAM is volatile so it requires the card be powered at all times or the data disappears. Most SRAM cards ship with batteries that must be changed intermittently, usually between two and four years. Additionally SRAM cards generally have smaller capacities ranging between 256K and 1 MB of storage.

Flash RAM cards for the Apple MessagePad must be Series II Flash RAM sold by Apple. These cards have the Intel-made interface chip, which the Apple MessagePad looks for, including the FlashFile System that functions as the OS

for the card. Other manufacturers' Flash RAM, which may also include the Intel Flash RAM chips, are incompatible with the Apple MessagePad because the interface chip is not part of these cards.

Third party SRAM cards, while not supported for use in the Apple MessagePad, generally work. The primary limitation in using an SRAM card is the size and type of data that can be stored on the card. Most data types can be placed on static-RAM cards including small applications and soups. The exception is a backup archive. No backup files can be placed on any SRAM card.

Finally, while the Apple MessagePad most likely supports the 256K card you describe, Apple recommends using Flash RAM cards for Apple MessagePad storage because Flash RAM is usually less expensive per MB than SRAM.

Article Change History:
09 May 1995 - Updated Newton reference to Apple MessagePad.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15110

Tech Info Library

Newton: Assistant Uses Last Written Text (4/94)

Revised: 4/13/94
Security: Everyone

Newton: Assistant Uses Last Written Text (4/94)

==========

Article Created: 12 April 1994

TOPIC -----

When I write in the notepad, then press the Assist button, the last couple of sentences written on the notepad appear in the Assist window. The Newton then tries to interpret the text and fails. Why does the Assistant do this?

DISCUSSION -----

The assistant was designed to take what was last written in a note area and use the text to assist the user. For example, you can write "CALL STEVE" in the notepad and tap assist without highlighting the text. This makes Newton's notepad acts like a slip of paper where you can jot down an instruction and say "do it."

You should tap once somewhere in a blank space area on the notepad and then tap assist if you want the assistant to come up without text in the assistant window.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15112

Tech Info Library

Newton Connection Kit: Exporting Repeating Meetings (4/94)

Revised: 4/13/94
Security: Everyone

Newton Connection Kit: Exporting Repeating Meetings (4/94)

==========

Article Created: 12 April 1994

TOPIC -----

Why does the Newton Connection Kit 2.0 for Macintosh export repeating meetings to other applications as individual meetings?

DISCUSSION -----

Repeating meetings are exported as individual meetings to handle the requirements of the application program that the information is imported into. This is done because there is a need to handle exception meetings. Most applications do this by storing repeating meetings as individual meetings. For example, create a repeating meeting for every Tuesday. Then pick one week that you have to go to the dentist on Tuesday but you still need to have the meeting so you change the meeting to Wednesday. Now you have repeating meetings for Tuesdays with one exception meeting for one week on Wednesday. This information would be lost if repeating meetings were not exported as multiple single meetings.

Support Information Services

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Tech Info Library Article Number:15113

Tech Info Library

Newton Connection Kit for Windows: Using a Logitech Mouse (4/94)

Revised: 4/13/94
Security: Everyone

Newton Connection Kit for Windows: Using a Logitech Mouse (4/94)

==========

Article Created: 12 April 1994

TOPIC -----

This article describes compatibility problems between the Logitech Mouse and the Newton Connection Kit for Windows.

DISCUSSION -----

When using the Newton Connection for Windows with a Logitech FirstMouse, the mouse cursor, or arrow, will travel across the screen in random direction without user interaction.

This is usually caused by a misconfigured Windows mouse driver. Change the configuration of the mouse using the Windows Setup program from "Microsoft or IBM PS/2 mouse" to "Logitech Mouse".

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15114

DOS Compatibility Card: No Print Drivers Required for DOS (4/94)

Revised: 9/29/95
Security: Everyone

DOS Compatibility Card: No Print Drivers Required for DOS (4/94)

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Article Created: 12 April 1994
Article Reviewed/Updated: 28 September 1995

TOPIC ----------

How does the DOS Compatibility Card print to a printer? Do I redirect the output to one of the Macintosh serial ports, or are there drivers included for Window and DOS applications?

DISCUSSION ----------

The DOS Compatibility Card uses the printer selected in the Chooser. The DOS Compatibility Card software supports Epson and PostScript printer output. QuickDraw printers such as the StyleWriter or ImageWriter work only with Epson drivers (if a printer is not a PostScript Printer, it's considered a QuickDraw printer). When choosing a non-PostScript printer in DOS, you should select either an Epson LX or Epson LQ printer driver.

IMPORTANT: If you try to print a file and you're using a PostScript printer driver for a non-PostScript printer, your file will not be printed. Instead, the spool file will be moved to a folder called "Spooler Rejected" in the Macintosh Environment. To print the file, choose the proper printer driver in the DOS environment and try again.

The DOS Compatibility card supports two serial ports, COM1 and COM2. You can map these ports, in the PC Setup control panel, to an unused Macintosh printer or modem port, a text file, or to a setting of none.

When printing to non-PostScript printers from DOS, the information goes through printer emulation and also through the Macintosh printer driver. This process makes printing multiple pages from DOS slower than printing from a Macintosh application. Because of this, whenever possible you should print from the Macintosh side of the computer.

To print a DOS document from a Macintosh application, you need to cut and paste

the information. The DOS Compatibility Card comes with software that converts the DOS or Windows clipboard into information the Macintosh clipboard can use.

If a PostScript printer is attached to the Macintosh computer, then DOS and Windows doesn't have to go through the printer emulation process. This enables DOS and Window documents to print at the same speed as Macintosh documents to the same printer.

When using a PostScript printer in DOS or Windows, choose the driver that matches your printer. Some DOS applications only let you select the option of printing to a generic PostScript printer. This works fine except you will not be able to use any of the special paper tray capabilities of you printer.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15115

Tech Info Library

Power Macintosh AV: Monitors Ctrl Panel Shows Ghost Monitor 1/96

Revised: 1/23/96
Security: Everyone

Power Macintosh AV: Monitors Ctrl Panel Shows Ghost Monitor 1/96

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Article Created: 15 April 1994
Article Reviewed/Updated: 23 January 1996

TOPIC ----------

When I go into the Monitors control panel on any Power Macintosh with more than one NuBus or PCI bus video card installed, it indicates that I have two monitors connected, but I only have one. Why does this happen?

DISCUSSION ----------

On the AV Power Macintosh computers, if you have a monitor connected to the high-density monitor port, the Monitors control panel assumes that a television is connected to the S-video output port, even if there is no television connected. The control panel displays an image of a second "ghost" monitor. Unless there is a monitor connected to the standard monitor port, the Monitors control panel cannot tell whether or not a television is connected to the S-video output port and automatically assumes that a television is present.

WARNING Do not attempt to move the menu bar to the "ghost" monitor. If you do, the menu bar will disappear, and you will not be able to restore normal video until you attach a monitor to the standard monitor port and reconfigure your Monitors control panel.

Follow these steps to restore normal video:

1) Shut down your computer.

2) Connect a monitor to the standard monitor port*.

*Note: If you are using the AudioVision monitor with the HDI-45 connector you will need to attach the AudioVision 14 Display Adapter cable to your monitor in order to connect it to the standard monitor port.

3) Turn on your computer.

4) Choose Control Panels from the Apple menu and open the Monitors control panel.

5) Verify that menu bar shows up on your primary monitor.

6) Close the Monitors control panel.

7) Turn off your computer.

8) Reconnect the monitor to the HDI-45.

9) Turn on your computer.

If you do not have the AudioVision adapter cable and/or another monitor that will plug into the DB-15 port of the AV card then you will need to use the following procedure to restore normal video:

1) Start up from the Power Macintosh CD.

2) Drag the "System" file from the "System Folder" of the hard drive and place it at the same level as the "System Folder" itself.

3) Copy the System file from the Power Macintosh CD into the System Folder on located on the hard drive.

4) Restart the system, hold the mouse button down to eject the Power Macintosh CD to allow the system to boot the machine from the hard drive.

5) Open Monitors control panel and verify that the menu bar is set to the primary monitor.

6) Restart the machine so that it starts up from the Power Macintosh CD.

7) Drag your original "System" file back into the "System Folder" on the hard drive.

8) Click "OK" when the dialog box appears asking to replace the "System" file.

9) Shut down the computer.

10) Reconnect the monitor to the HDI-45.

11) Restart the machine so that it boots to the hard drive.

Article Change History:
23 Jan 1996 - Updated to include all AV Power Macintosh computers.
08 Jul 1994 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15118

Tech Info Library

LC 575: Screen Control Panel Won't Maintain Setting (5/94)

Revised: 5/10/94
Security: Everyone

LC 575: Screen Control Panel Won't Maintain Setting (5/94)

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Article Created: 9 May 1994

TOPIC ----------

Something strange happened with the Screen CDEV 1.0.2 on the LC Macintosh 575. When you set it, close the window and restart, the CDEV resets to default settings.

Our setup;

- Formatted drive
- New System 7.1 and enabler
- No Extensions
- No control panels except "Screen"

- Open the Screen CDEV and view: Checkbox is unchecked, and timeframe is default to 60 minutes. Hit the checkbox to activate the conservation mode, then select the timeframe to 15 mins before dimming occurs.

- Close window

- Restart

You will see that the Screen CDEV has reverted back to default settings.

This problem can be reproduced EVERY TIME.

- Intermittently even locking the CDEV fails to retain the settings too.

DISCUSSION ----------

Apple Engineering is aware of the situation and an updated version of the Screen control panel has been released, version 1.0.4.

This file fixes a PRAM conflict bug which occurs between the Screen control panel and the slot manager on LC 575 units. The Screen control panel used a

PRAM location assigned to the communications slot on the 575.

Version 1.0.4 is included in the System Update 3.0, which was announced in April. It will also be updated on the 575's CD Install Me First and system floppy disks.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15119

Tech Info Library

GeoPort Software: Current Version in Apple Telecom 2.3.2 (1/96)

Revised: 1/10/96
Security: Everyone

GeoPort Software: Current Version in Apple Telecom 2.3.2 (1/96)

==========

Article Created: 1 April 1994
Article Reviewed/Updated: 10 January 1996

TOPIC ----------

The Express Modem 1.5.2 READ ME says I need, "(GeoPort rev 1.2.1 or greater) provided with GeoPort disks" for Quadra 660AV and 840AV computers. Where can I get it?

DISCUSSION ----------

NOTE THE FOLLOWING CORRECTIONS TO THE EXPRESS MODEM 1.5.2 READ ME

- The Express Modem II Card is only available outside of the U.S. on PowerBook 500 Series computers.

New versions of Express Modem software have been released. The latest version of the Express Modem software is 2.3

What you should use

Apple released Apple Telecom software v2.3.2 which includes all the latest versions of extensions and communications software to use with all Apple PowerBook Express Modems, all Apple Comm Slot Express Modems, and Apple GeoPort Telecom Adaptors.

If you own a PowerBook 500 Series computer with a PC Card Modem, or PowerBook 5300 series, or PowerBook 190 series, you should install the Apple Telecom/PC Card Modem v2.3.1 software package.

The installer in both Apple Telecom software packages automatically places the correct software on your hard drive for your computer's configuration. Both versions of the Apple Telecom software packages are available on online services.

These articles can help you locate the Telecom 2.3.x software mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
10 Jan 1996 - Updated with Telecom 2.3.x information.
15 Dec 1995 - Updated with Apple Telecom 2.3 information.
19 Jan 1995 - Updated with current versions.

Support Information Services

Copyright 1994-96, Apple Computer, Inc.

Tech Info Library Article Number:15121

Tech Info Library

AV Monitors: Missing Part of the Sound Control Panel (10/95)

Revised: 10/5/95
Security: Everyone

AV Monitors: Missing Part of the Sound Control Panel (10/95)

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Article Created: 14 April 1994
Article Reviewed/Updated: 5 October 1995

TOPIC ----------

I have a 14" AudioVision monitor on a Power Macintosh and there are parts of the Sound Control Panel that are missing. Specifically, the AudioVision Speakers & AudioVision Headphones sliders (under Volumes in pop-up menu) and AudioVision Sound in pop-up menu.

DISCUSSION ----------

Both the AudioVision 14" Display and the AppleVision 1710 AV Display have their own processor chip which receives signal through the ADB channel in the monitor cable. Restarting the CPU may not clear the chip. The following steps should clear up this problem and restore the proper control panels settings and functionality:

Step 1

Shutdown CPU and monitor. Wait 30 seconds.

Step 2

Double-check monitor cable(s) for proper connection(s). Because the ADB signal is used by the monitor and the computer to determine configuration, you should connect the ADB devices this way: mouse to keyboard, keyboard to monitor, monitor to cpu.

Step 3

Next power up the computer first, and THEN the monitor.

Step 4

If problem remains, reset the PRAM by restarting the machine and holding down

the CMD-OPTION-P-R just after you hear the startup tones, and let go as soon as you hear them again.

Step 5

If problem still remains, system software (which includes the proper AV software) may be at fault. Options are to custom reinstall AV software or, follow steps for a clean install of system software on page 7 of "Additional Tips & Troubleshooting" addendum for Power Macintosh manuals.

The Video Control panel provides software control for brightness and contrast on the AudioVision 14" Display with System 7.1. In System 7.5, this control panel is replaced by the AppleVision Setup control panel which works on both AV monitors.

Article Change History:
05 Oct 1995 - Updated to include AppleVision information.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15122

Tech Info Library

Power Macintosh: Speech Recognition Locks Up (4/94)

Revised: 5/27/94
Security: Everyone

Power Macintosh: Speech Recognition Locks Up (4/94)

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Article Created: 14 April 1994

TOPIC -----

The Power Macintosh seems to lock up right after turning on Speech Recognition.

DISCUSSION -----

Do the following:

1) Turn Speech Recognition off.
2) Check to see if Sound Out in Sound Control Panel is set to 44 KHz.
   If so, click 22 KHz setting.
3) Close Sound Control Panel and turn on Speech Recognition.

The Sound control panel should always be set to 22 KHz when using Speech Recognition. Setting Sound Out to 44.1kHz does not affect the audio off the CDs. Audio CDs just play through, the Sound Out settings are used for digital recording only.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15123

Tech Info Library

Newton MessagePad: Special Symbols in the calling options (4/94)

Revised: 4/14/94
Security: Everyone

Newton MessagePad: Special Symbols in the calling options (4/94)

==========

Article Created: 14 April 1994

TOPIC -----

In the call slip under "options" (available when trying to dial the phone with Newton), what do "!" and ">" in the prefix area stand for?

DISCUSSION -----

The characters you reference are special dialing commands for accessing PBX systems. The exclamation symbol (!) is a flash hook command with a 2 second wait. It is used to wait for a clear line before initiating a call. The function is very similiar to a flash button on a phone set.

The greater than symbol (>) is a special symbol used on phone systems in Germany.

Support Information Services

NEWTON - "!" and ">" in the calling options
Tech.DB # 1755
Submitted by: Anthony Snyder
Date Received: 4/12
Assigned to:
TIL#
Action:
Date Closed.

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15126

Tech Info Library

Newton MessagePad: Lithium batteries work well (4/94)

Revised: 4/14/94
Security: Everyone

Newton MessagePad: Lithium batteries work well (4/94)

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Article Created: 14 April 1994

TOPIC --------------------

Do lithium AA batteries work with the MessagePad?

DISCUSSION --------------------

Lithium batteries work well in all current Newton MessagePad models. The main differences between Lithium batteries and standard alkaline batteries are battery life and cost. Lithium batteries are more expensive, however they also last longer.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15127

Tech Info Library

Newton MessagePad: Meaning of Assistant's Where Field (4/94)

Revised: 4/14/94
Security: Everyone

Newton MessagePad: Meaning of Assistant's Where Field (4/94)

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Article Created: 14 April 1994

TOPIC ----------

When using the intelligent assistant with the datebook, what does the "where" field mean?

For instance, when I write "talk to Bill Clark Mon 12:00pm", the Newton presents several options for the WHERE field in the scheduled meeting slip. Most of the options at least have the letters M and O. One options name is Monica and another is Mozgia. How does the Newton MessagePad determine what should be offered in the choice list for where?

DISCUSSION ----------

The assistant uses the name information stored in your Newton MessagePad to determine the where field contents when scheduling a meeting. This is because the names information can also be used to store locations.

First, the Newton MessagePad searches the names database on each word for the "who" field list. The Newton MessagePad also searches names for the "where" list. "Where" searches also look in the notes fields of the name cards. That is why the "where" list can contain some strange entries.

For instance, when I enter "Schedule meeting with Steve on Monday" on my Newton MessagePad, it put Electric in the "where" field because I had written the word "Monday" in the notes for my electric company name card. The Newton MessagePad is being as complete as it can by giving you the broadest range of options for "who" and "where."

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15129

Tech Info Library

Power Macintosh 8100AV: Video Out Choices (4/94)

Revised: 4/15/94
Security: Everyone

Power Macintosh 8100AV: Video Out Choices (4/94)

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Article Created: 15 April 1994

TOPIC -----

A customer has a monitor connected to the S-Video port on his Power Macintosh 8100/80 AV. He gets two options for 640x480; 640x480 (NTSC - TV only) & 640x480 (NTSC) and wants to know the difference.

DISCUSSION -----

The reason that the S-Video output to your monitor allows you two choices at the same resolution is because of convolution. The NTSC-TV selection provides convolution and the NTSC selection does not.

Using the NTSC-TV option will provide a raster with substantially less jitter than with the NTSC option.

As far as not being able to see the menu bar is concerned, the reason is due to being in the overscan mode. Select a reduced resolution (underscan mode) and you will see the menu bar.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15130

Tech Info Library

QuickTake 100: Some TWAIN Support (2/95)

Revised: 2/6/95
Security: Everyone

QuickTake 100: Some TWAIN Support (2/95)

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Article Created: 19 April 1994
Article Reviewed/Updated: 3 February 1995

TOPIC ----------

Is the QuickTake 100 camera TWAIN compliant?

DISCUSSION ----------

The QuickTake camera and software are not TWAIN compliant using the Macintosh OS at this time and there are currently no plans to make it compliant. Microsoft Window users can use a third party product called PhotoNow by PictureWorks Technology.

However, the QuickTake camera already provides TWAIN-like functionality.

The QuickTake software lets you download pictures that are already stored in the camera, while in any application that opens or imports PICT files. This can be done by connecting to the QuickTake camera using the QuickTake Setup control panel. An icon representing the camera shows up on the desktop just like any other disk. Once this is done, the user's application can open QuickTake image files like it would any other PICT file. For example, MacWrite Pro can use its "Insert..." command to place a QuickTake image into a document.

Explanation of TWAIN

One apparent advantage of TWAIN is that TWAIN-compliant programs let you scan images directly from the application. This is not applicable to the camera that is not attached to the CPU when acquiring an image.

TWAIN is an API standard for scanners that provides across-the-board compatibility between scanners and software. The specification's open industry interface lets hardware developers and applications programmers support a wide range of devices by writing one standard device driver.

Users also benefit from the spec because it lets them directly acquire images

from within TWAIN-compliant software applications, including word processors, spreadsheets, and desktop-publishing programs.

A cross-platform API, TWAIN works with both Windows 3.1 and Macintosh System 7. Windows NT support for TWAIN is in beta testing by developers for 32-bit applications.

The TWAIN specification was developed by the Working Group for TWAIN, a consortium of hardware and software vendors that includes Aldus Corp., Caere Corp., Eastman Kodak Co., Hewlett-Packard Co., and Logitech, Inc.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Article Change History:
03 Feb 1995 - Added information on PhotoNow product.

Support Information Services

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Tech Info Library Article Number:15134

Tech Info Library

PowerTalk: Using With Power Macintosh Upgrade and 68K Mac (4/94)

Revised: 4/20/94
Security: Everyone

PowerTalk: Using With Power Macintosh Upgrade and 68K Mac (4/94)

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Article Created: 15 April 1994

TOPIC ----------

Is it possible to install a Power Macintosh Upgrade Card and its software along with PowerTalk for Power Macintosh and utilize PowerTalk when using the 68040 processor instead of the PowerPC 601 processor?

DISCUSSION ----------

Here are steps required to facilitate the proper installation and usage of PowerTalk under both 68K and Power Macintosh modes.

0) (OPTIONAL, but recommended) Install a clean version of System 7.1.
1) Install the Power Macintosh Upgrade Card Software.
2) Install System 7 Pro (Boot off the System 7 Pro Install Me First disk).
3) Install Rev. 2 of the PowerTalk for PowerMacintosh Software.
4) Restart.

All three steps are required to utilize PowerTalk features in 68K and Power Macintosh modes. Though the process is rather convoluted currently, the process will be smoothed out with the advent of System 7.5 later this year.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15136

Tech Info Library

LaserWriter Pro 810: Startup Page and Printer Name (4/94)

Revised: 4/15/94
Security: Everyone

LaserWriter Pro 810: Startup Page and Printer Name (4/94)

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Article Created: 14 April 1994

TOPIC ----------

The startup page doesn't reflect the correct printer name. The printer has been named LW Pro Room 218, the test page says LW Pro 810f. If I check the name with the LW Utility it shows the correct name. The correct name also appears in the Chooser of all Macintosh computers. The correct name was on the test page but we had big problems with the printer and had to reset it to factory defaults. Since then I cannot get the test page to show the correct printer name. How can I force the printer to print the correct name on the test page?

DISCUSSION ----------

The start up page reflects the name assigned to the LocalTalk side of the printer. Due to the I/O architecture of this printer it was not possible to set the LocalTalk name from the EtherTalk side and vice versa. To have the start up page reflect the correct name simply connect to the printer with LocalTalk and use the LaserWriter Utility to rename it.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15140

Tech Info Library

Power Macintosh: Memory Does Not Add Up Under About This Mac

Revised: 4/15/94
Security: Everyone

Power Macintosh: Memory Does Not Add Up Under "About This Mac"

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Article Created: 15 April 1994

TOPIC -----

When I check the memory allocation under "About this Macintosh", it doesn't add up to the amount of RAM installed, even after restarting. On an 8MB Power Macintosh 8100/80, the System Software has 3154K allocated, and the largest unused block is 2192K so almost 3 MB RAM is missing.

DISCUSSION -----

The available memory calculation is an estimate at best and should never be used as the last word on how much memory is actually allocated or in use.

There have been cases where an Extension conflict or corruption have caused the memory shown to be less than is actually installed. Booting with Extensions off should be the first step in this process. If the memory allocation is correct you should then verify compatibility with any Extension installed.

If that does not resolve the problem, the next steps towards resolution would be zapping PRAM by holding down the Command/Option/P/R keys at startup. Updating the driver on the hard drive would be next and finally a clean reinstallation of system software should resolve the problem.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15141

Tech Info Library

DOS Compatible Card: Copying & Pasting Problems (4/94)

Revised: 4/18/94
Security: Everyone

DOS Compatible Card: Copying & Pasting Problems (4/94)

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Article Created: 15 April 1994

TOPIC --------------------

When I try to copy or cut anything more complicated than a couple of lines of text from Windows or DOS to a Macintosh application, the machine either locks up at the "translating clipboard box," or nothing shows up in the clipboard. I have a brand-new system straight out of the box. What's wrong?

DISCUSSION --------------------

The problem is memory related - there's not enough Macintosh memory for the translation. Sometimes this is handled gracefully, as when there's nothing in the clipboard, and sometimes the machine will crash when out of memory. If purchasing more memory is not an option, then turn Virtual Memory on and restart. Virtual Memory should be no greater than double the total amount of physical RAM. For example, on a machine with 8 MB physical RAM, Virtual Memory should be set to no more than 16 MB.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15146

Tech Info Library

Upgrading Newton: Recognition Tip (4/94)

Revised: 4/18/94
Security: Everyone

Upgrading Newton: Recognition Tip (4/94)

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Article Created: 15 April 1994

TOPIC -----

This article describes a tip for better handwriting recognition when upgrading from a Newton MessagePad to either the MessagePad 100 or Messagepad 110.

DISCUSSION -----

After restoring your data from your Newton Messagepad to your MessagePad 100 or MessagePad 110, go to the preferences section and reset your letter styles training.

You can do this by choosing Preferences in the Extras drawer, choosing Letter Styles, and tapping on "Return to original settings.” Your recognition should be better than it was on the old unit even with the 'old' training data.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15147

DOS (486) Compat Card: Frequently Asked Questions (3/97)

Revised: 3/14/97
Security: Everyone

DOS (486) Compat Card: Frequently Asked Questions (3/97)

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Article Created: 15 April 1994
Article Reviewed/Updated: 14 March 1997

TOPIC ----------

These are frequently asked questions (FAQ) about the DOS Compatibility card.

Questions in this FAQ:
==========

1) Is the socketed 486SX processor upgradable?

2) How do I capture the screen from DOS without a mouse?

3) Does the PC board maintain it's own clock?

4) What is the purpose for the unused connector on the DOS Compatibility Card?

5) Why do the video driver disks install a 1024X768 video driver in Windows? Is it supported?

6) What is the required speed of the SIMMs for the card?

7) Will Virtual Memory allow me to allocate more memory to the DOS card?

8) Are disk compression programs such as Disk Doubler, Spacemaker and DOS's Doublespace supported?

9) Will DOS disks be included with the purchase of this product?

10) How do I use my Apple Keyboard II? It doesn't have any function keys?

DISCUSSION ----------

1) Question: Is the socketed 486SX processor upgradable?

Answer: No, a 486DX chip at the same clock speed could be inserted with a few minor modifications to the board but is not supported by Apple.

2) Question: How do I capture the screen from DOS without a mouse?

Answer: Use the arrow keys to move the cursor to the desired location, and hold the shift key down when marking the region. Let go of the shift key and the marked region will be captured.

3) Question: Does the PC board maintain it's own clock?

Answer: No. The PC card polls the Macintosh at startup for the correct date and time. If the date and time are changed with the DOS date and time commands they will be reset when the Macintosh is restarted.

4) Question: What is the purpose for the unused connector on the DOS Compatibility Card?

Answer: This connector is actually a subset of the PC ISA bus. It was designed specifically for possible future enhancements, but has no real use at present.

5) Question: Why do the video driver disks install a 1024X768 video driver in Windows? Is it supported?

Answer: The video driver disks have not been modified for Apple's use and were provided by CHIPS & Technology. The DOS Compatibility Card only has 512K of VRAM and supports a maximum resolution of 800X600.

6) Question: What is the required speed of the SIMMs for the card?

Answer: 80ns or faster.

7) Question: Will Virtual Memory allow me to allocate more memory to the DOS card?

Answer: No, the DOS Compatibility Card only sees physical memory.

8) Question: Are disk compression programs such as Disk Doubler, Spacemaker and DOS's Doublespace supported?

Answer: Apple recommends that the customer don't use DOS's Doublespace even though it appears to work. There are no known compatibility issues with Macintosh compression programs. DOS Doublespaced containers will appear empty except for command.com when mounted from the Macintosh finder.

9) Question: Will DOS disks be included with the purchase of this product?

Answer: Yes.

10) Question: How do I use my Apple Keyboard II? It doesn't have any function keys?

Answer: Page 13 in the DOS Compatibility Card manual describes how to do this The OPTION key in combination with a number corresponds to function key of the same number.

Article Reviewed/Updated:
14 Mar 1997 - Changed title to distinguish from newer PC cards.
13 Nov 1995 - Updated title.

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Tech Info Library Article Number:15148

Tech Info Library

PowerBook: Problems Waking From Sleep or Dimming (6/96)

Revised: 6/6/96
Security: Everyone

PowerBook: Problems Waking From Sleep or Dimming (6/96)

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Article Created: 18 April 1994
Article Reviewed/Updated: 5 June 1995

TOPIC ----------

This article provides some troubleshooting tips for a PowerBook that enters a dimmed state or that freezes up while it is waking up from sleep.

DISCUSSION ----------

Software
========

Step 1

See if the PowerBook has gone to sleep with an external monitor attached.* Select "Don't sleep" when plugged into AC. Always use the AC Adaptor when external devices are attached to a PowerBook.

* NOTE: Some software applications may not "understand" the PowerBook sleep function. If you discover your PowerBook always freezes when it goes to sleep if a certain application is open, you should contact the software vendor for more information.

Step 2

Check for SCSI driver problem. Some possibilities:
• SCSI driver is not system 7.x compatible
• SCSI driver is corrupt (Update with HDSC Setup for Apple Drives)

Step 3

Check to see if incompatible software is installed. Some possibilities:
• Screen Savers
• security software

To test for incompatibility, remove the software and then get an update if the removal solved the problem.

Step 4

Check for older third party products, which should be updated. Consult third party developers for updates.

Step 5

Reset PRAM by holding down COMMAND-OPTION-P-R after the startup tones. Once you hear the tones again, release the keys.

If none of the preceding steps help, the System may be corrupt. Perform clean install and run Disk First Aid (See Clean Install article).

Software and Screen Dimming

If the PowerBook has an external display attached and dims the display, some programs lock up when the PowerBook tries to use the external monitor again. The solution is to set the PowerBook not to dim when plugged in. Since the PowerBook must be plugged in to use the external display this should solve the problem.

If the PowerBook is running System 7.0.1 or 7.1, then this setting is in the PowerBook Display control panel. If the PowerBook is running System 7.1.1, 7.5, or has v1.5 or later of the Express Modem software, then the setting is in the PowerBook control panel. The PowerBook control panel must be set to Custom, the Power Conservation at the bottom of the control panel must be set to Power Adapter, and the slider marked Screen Dims should be moved to Never.

With the PowerBook configured this way, it still dims the built-in display when running off of battery power and should not diminish the amount of time that you can expect to get out of a battery charge.

Potential Hardware Problems

Possible hard drive failure
Update SCSI driver, run Disk First Aid and HDSC setup test, and reformat the drive if HDSC Setup finds errors.

Hard drive cable
If a new hard drive has been installed, the cable may need replacement.

Possible logic board failure
Check with an Apple Authorized Reseller for a replacement or repair.

This article was published in the "Information Alley":
Volume II, Issue 1, Page 16

Article Change History:
05 Jun 1996 - Added note on software apps and screen dimming.
03 May 1995 - Added keyword; made several technical updates.
02 Mar 1995 - Information on screen dimming added.

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Tech Info Library Article Number:15149

Tech Info Library

Newton MessagePad: Caps Lock Appears As Line On Screen (4/94)

Revised: 4/18/94
Security: Everyone

Newton MessagePad: Caps Lock Appears As Line On Screen (4/94)

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Article Created: 14 April 1994

TOPIC -----

When I am in the date application, there is a intermittent line in the top left corner of the screen. It's appearance has no effect on any operations. What does it do?

DISCUSSION -----

The line that appears at the top of the screen is a Caps Lock indicator. On the "soft" keyboard, if Caps Lock is left on, the small line appears in the upper left corner of the screen. In the notepad and names applications, the line gets hidden because windows on the screen cover it.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15150

Tech Info Library

Newton Connection Kit: No Export Into ClarisWorks Database 4/94

Revised: 4/19/94
Security: Everyone

Newton Connection Kit: No Export Into ClarisWorks Database 4/94

==========

Article Created: 18 April 1994

TOPIC -----

Does the Newton Connection for Macintosh support import/export of data from ClarisWorks database files?

DISCUSSION -----

The Newton Connection File does not support a direct translation into the ClarisWorks database module. The ClarisWorks database can export data as tab delimited text, so you can use the Newton Connection Kit to create an import/export option for ClarisWorks.

The ClarisWorks database module cannot import text data into a database file, so you cannot export data from the Newton MessagePad into a ClarisWorks database file.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15151

Tech Info Library

Power Macintosh: NTSC Video Out Choice & Menu Bar Missing (2/96)

Revised: 2/22/96
Security: Everyone

Power Macintosh: NTSC Video Out Choice & Menu Bar Missing (2/96)

==========

Article Created: 18 April 1994
Article Reviewed/Updated: 22 February 1996

TOPIC ----------

I have an NEC monitor connected to my Power Macintosh 8100 AV system with the monitor connected to the S-Video port. I have two options for 640x480; 640x480 (NTSC - TV only) & 640x480 (NTSC).

What is the difference?

I also have a Power Macintosh 8500 with 4 MB of Video RAM (VRAM), a Multisync 15 inch display, and a 27 inch television set. I am attempting to use the highest resolution (800x600) available for both the monitor and television set. I am mirroring the computer's monitor onto the television screen.

I cannot see the menu bar on the NEC display or the TV in either of these setups. What is wrong?

DISCUSSION ----------

NTSC Options

The reason that the S-Video output from your Power Macintosh 8100 to your NEC monitor allows you two choices at the same resolution is because of convolution.

- The NTSC-TV selection provides convolution.

- The NTSC selection does not provide convolution.

Using the NTSC-TV option will provide a raster with substantially less jitter than with the NTSC option.

Missing Menu Bar

As far as not being able to see the menu bar is concerned, it is because you are in the overscan mode. Select a reduced resolution (underscan mode) and you will see the menu bar.

NTSC (S-Video) video output has different capabilities when compared to standard RGB display output. NTSC output on the Power Macintosh 8500 series computers only supports resolutions up to 640x480 output. In resolutions at 640x480 and above, the menu bar will disappear and the picture will appear to go off the sides of the screen. This is called overscan mode.

Apple does provide lower resolutions that better match the capabilities of NTSC. These are 512x384 and 320x240. Both resolutions will show the whole display area and the menu bar will not be cropped. This is because the conversion from RGB resolution to NTSC scan lines better match the capabilities of NTSC devices in these resolutions.

In fact, 320x240 is an excellent resolution to use for outputting QuickTime video. The computer can playback video faster at 320x240 resolution and the Power Macintosh 8500 series computer's hardware will optimize playback at 320 to fill an entire NTSC video screen.

Article Change History:
22 Feb 1996 - Added information about 8500.

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Tech Info Library Article Number:15152

Tech Info Library

Chinese Language Kit:PC Exchange & Freeze w/ Disk Format (5/96)

Revised: 5/27/96
Security: Everyone

Chinese Language Kit:PC Exchange & Freeze w/ Disk Format (5/96)

==========

Article Created: 18 April 1994
Article Reviewed/Updated: 27 May 1996

TOPIC -----

I use a Quadra 840AV with the Chinese Language Kit and PC Exchange 1.0.3. When I try to format a floppy disk, the machine hangs or does not complete the formatting process.

DISCUSSION -----

There is a known conflict between PC Exchange 1.0.3 and the Chinese Language Kit. Apple has corrected this problem in PC Exchange 1.0.4. PC Exchange 1.0.5 is the current version which is also compatible with all the Power Macintosh computers.

All existing PC Exchange customers can call the Apple Order Center for an update to version 1.0.5.

The Tech Info Library article titled "Locating Vendor Information" can help you search for the Apple Order Center's phone number.

Article Change History:
27 May 1996 - Updated for technical accuracy.

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Tech Info Library Article Number:15153

Tech Info Library

MacCheck: RAM Doubler Caused ROM Check to Fail (4/94)

Revised: 4/18/94
Security: Everyone

MacCheck: RAM Doubler Caused ROM Check to Fail (4/94)

==========

Article Created: 18 April 1994

TOPIC ----------

When I run MacCheck on my Performa 550, the ROM check failed and Logic Board test failed.

DISCUSSION ----------

You probably have a third party extension such as RAM Doubler that patches the ROM code. Start with Extensions off by holding down the Shift key after choosing Restart. Then run MacCheck again. It should not report a problem.

RAM Doubler patches the ROM which causes the Checksum to no longer match. This will cause the error in MacCheck.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15154

Tech Info Library

Newton MessagePad 110: Not Recognizing Messaging Card (4/94)

Revised: 4/18/94
Security: Everyone

Newton MessagePad 110: Not Recognizing Messaging Card (4/94)

==========

Article Created: 18 April 1994

TOPIC -----

This article describes a problem with the Newton MessagePad 110 recognizing the Newton Wireless Messaging card.

DISCUSSION -----

If you are having problems with the Newton Wireless Messaging card being recognized, remove the spacer clip attached to the card underneath the battery compartment. This allows the card to make better contact with the PCMCIA slot. The spacer is needed on the card when it is used with the original MessagePad or the MessagePad 100.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15155

Tech Info Library

Dell Crosswords: Removing puzzle data (4/94)

Revised: 4/18/94
Security: Everyone

Dell Crosswords: Removing puzzle data (4/94)

==========

Article Created: 18 April 1994

TOPIC ----------

Once a puzzle is completed in Dell Crosswords on a PCMCIA ROM card, how do you clear the puzzle so that it can be played again by another player?

DISCUSSION ----------

The steps for removing data from a puzzle are listed below. You may want to erase the data to save internal memory space in addition to removing it to let someone else play the puzzle. You save internal memory space because the PCMCIA ROM card stores the solutions and scores on internal Newton memory.

Puzzle data can be removed by following these steps:

1) Navigate to a puzzle pack screen which contains a list of available puzzles. The Dell Crosswords PCMCIA card comes with 13 different puzzle packages. The top of the screen displays "Contents of Dell CW Pack #Cx", where x is the number of the puzzle pack.

2) Tap once on the puzzle you want remove the data from.

3) Tap on the Cleanup Data button.

4) Tap on the Remove data for this pack button.

Support Information Services

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Tech Info Library Article Number:15156

Tech Info Library

Newton MessagePad: Preventing Early Alarms For Events (4/94)

Revised: 4/18/94
Security: Everyone

Newton MessagePad: Preventing Early Alarms For Events (4/94)

==========

Article Created: 18 April 1994

TOPIC -----

This article describes a workaround that prevents alarms for repeating events in the Newton Datebook from going off early.

DISCUSSION -----

Sometimes Datebook alarms go off days, weeks, or months early. But, if events are created in a specific order, then the alarm for these events is not activated prematurely.

When creating the repeating event, create the item in the following order:

1) Create the meeting or day note
2) In the event slip, set the Alarm
3) Set the Frequency

Make sure you set the Alarm before you set the Frequency. If you set the frequency first, the alarm for the event may go off early.

Support Information Services

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Tech Info Library Article Number:15157

Tech Info Library

Express Modem 1.5.1: Default Profile of atN from 0 to 1 (4/94)

Revised: 6/17/94
Security: Everyone

Express Modem 1.5.1: Default Profile of atN from 0 to 1 (4/94)

==========

Article Created: 1 April 1994

TOPIC ----------

One of the changes in Express Modem software from 1.1.2 to 1.5.1 was to change the default factory profile of atN value from 0 to 1.

DISCUSSION ----------

The change of the default factory profile of atN value from 0 to 1 effects users who are using an S37 command. What this means is if you need to force connect at a speed less than 14.4, for example when calling America Online (AOL), you have to add "n0" (N-Zero) to your initialization string. The initialization string we have been using for AOL includes setting S37 to 6 to force the connection at 2400 bps. "n1" causes the modem to ignore the value in S37.

Support Information Services

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Tech Info Library Article Number:15158

Tech Info Library

Power Macintosh: SoftWindows, NetWare, Token Ring (5/94)

Revised: 5/23/94
Security: Everyone

Power Macintosh: SoftWindows, NetWare, Token Ring (5/94)

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Article Created: 4 April 1994
Article Reviewed/Updated: 20 May 1994

TOPIC ----------

I've looked at Power Macintosh in my environment which includes a Token Ring network with both Windows and Macintosh computers, mainframe access, and NetWare (including NetWare for Macintosh).

I've seen a Power Macintosh 7100/66 with the Apple Token Ring 4/16 NB Card. Everything worked fine where TokenTalk connected to NetWare volumes with NetWare for Macintosh, we accessed the mainframe with MacMainFrame, and we accessed the Internet with MacTCP and MacTCP Token Ring.

With SoftWindows I could access applications from a mounted NetWare volume through SoftWindows' Shared Volumes feature. Finally I wanted to login to NetWare via IPX. The SoftWindows README said IPX is supported on Token Ring, provided the card is written to Apple Computer's .TOKN specifications.

I launched NetWare, and did login by typing 'token', and various drivers loaded, LSL, tokenspc, ODI, and so on. NETX launched to attach to the server, but the process failed with the message, "Can't find network server."

What do I need to make this work?

DISCUSSION ----------

The issue is the ability of an Apple Token Ring card and associated driver to send and receive SPX packets. SPX packets are the 802.2 version of Novell's IPX packet format whereby the SAP is 0xE0 as opposed to 0xFF. Novell has gotten around this problem with MacIPX by manipulating the Token Ring driver directly.

The Token Ring drivers on the NSI 1.4.5 disk make it possible for both the Apple Token Ring 4/16 NB Card and the Apple Token Ring NB/c Card to send and receive SPX packets as well as other packets types that have non-SNAP SAPs. The API is identical to Ethernet Card API.

These drivers are what we would call "dumb" drivers. In the case of the Apple Token Ring 4/16 NB Card driver, the 68000 processor on card is not used at all. This is a good thing for most situations. The driver is faster than the old driver and has an added benefit of not putting the card in bus master mode. The only caveat here is the dumb driver does not work with the SNA•ps Gateway product. A "smart" driver is included on the NSI 1.4.5 disk just for the SNA•ps Gateway product which puts the card in bus master mode.

Another issue to note here is that it's not possible to have the "dumb" and "smart" drivers for the Apple Token Ring 4/16 NB Card installed and used at the same time. If both drivers are installed, the "smart" driver will be used.

The Apple Token Ring NB/c Card is never in bus master mode and has only one driver. This driver does not support the SNA•ps Gateway product at this time.

Article Change History:
20 May 1994 - Additional information and clarification.
09 May 1994 - Updated article with NSI 1.4.5 information.

Support Information Services

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Tech Info Library Article Number:15160

Tech Info Library

AppleShare File Server Software Will Not Start (11/96)

Revised: 11/13/96
Security: Everyone

AppleShare File Server Software Will Not Start (11/96)

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Article Created: 14 April 1994
Article Reviewed/Updated: 13 November 1996

TOPIC ----------

After turning on the AppleShare File Server and the message, "Starting AppleShare File Server. This may take a few minutes.", is displayed, but the file server never becomes active. What is wrong?

DISCUSSION ----------

If the invisible AppleShare PDS file becomes corrupted the AppleShare File Server software will not be able to start. You will need to remove the invisible AppleShare PDS file from the root level of the hard disk being shared and allow AppleShare to build a new PDS file.

If you are using a Macintosh other than a Workgroup Server 95, please refer to Technical Information Library article, "AppleShare & System 7.x.x: Removing a Corrupt PDS File," for information on removing a corrupted PDS file.

Apple Workgroup Server (AWS) 95

To create a new AppleShare PDS file on a AWS 95 running A/UX, follow the steps below:

IMPORTANT: All access privileges information will be lost. If you proceed with the following steps, access privileges will have to be recreated using the AppleShare Admin application.

Step 1
From the Apple Menu Open the Command shell. If a window does not appear then open a new window via the File pull down menu.

Step 2
Type in "pwd" to confirm you are in the / directory. If not, type in the command "cd /" and press the return key.

Step 3
Type "ls" and press the return key to view the files. Use the scroll bar to scroll to the top of the display until you see the AppleShare PDS file.

Step 4
Use the command 'mv /"AppleShare PDS" temppds' to rename the PDS file.

Step 5
Do another "ls" command to be sure the file has been renamed.

Step 6
Restart the AWS 95 and launch AppleShare Pro.

Article Change History:
13 Nov 1996 - Made correction for technical accuracy.
26 Aug 1996 - Updated article for clarity.
15 Jun 1996 - Refer to TIL article for correction.

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Tech Info Library Article Number:15161

Tech Info Library

A/UX 3.1: Maximum UFS Partition Size (4/94)

Revised: 4/20/94
Security: Everyone

A/UX 3.1: Maximum UFS Partition Size (4/94)

==========

Article Created: 20 April 1994

TOPIC -----

I understand that A/UX 3.1 would support UFS partitions up to 4 GB. Is it true or is it still 2 GB as the limitation for an UFS partition?

DISCUSSION -----

The latest version of A/UX 3.1 (the version used on the Workgroup Server 95) can support up to a 4 GB Unix UFS file system. However, the HFS limit for an AppleShare Pro volume is still limited to 2 GB.

NOTE (from the A/UX 3.1 ReadMe file):

Limit on File System Check Command

When the Apple Workgroup Server 95 starts up, the fsck command is run from the A/UX Startup application. It CANNOT check a file system larger than 2 GB. Therefore, limit the size of your root file system to 2,097,151 KB so that the root file system can be checked at system startup. Once A/UX is running, the fsck command can check file systems as larger than 4 GB.

Support Information Services

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Tech Info Library Article Number:15162

Tech Info Library

Installing 810 Software on Sparc Station (4/94)

Revised: 4/20/94
Security: Everyone

Installing 810 Software on Sparc Station (4/94)

==========

Article Created: 20 April 1994

TOPIC ----------

Software installation fails when installing on a Sun Sparc Classic running Solaris 2.2. Software installs properly on a Sun Sparc 10 model 41 running SunOS.

DISCUSSION ----------

There was a minor problem with the first release of LaserWriter Pro 810 enstall utilities for compiling the codes on SunSparc station running Solaris 2.2 or 2.3. There is a newer version which is available. Users should run the "enstall" with the -b option to install on the system without compiling the codes.

The LaserWriter Pro 810 Utilities with pre-compiled executable binaries for Sun Solaris 2.2 or 2.3 has been posted to on-line services.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates
- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

It is also available in ftp.support.apple.com via Internet anonymous ftp.

Support Information Services

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Tech Info Library Article Number:15163

LaserWriter 8 Driver: Printing Always Uses Hard Drive (5/95)

Revised: 5/19/95
Security: Everyone

LaserWriter 8 Driver: Printing Always Uses Hard Drive (5/95)

==========

Article Created: 20 April 1994
Article Reviewed/Updated: 3 May 1995

TOPIC ----------

You may not think that printing is in any way related to the amount of hard disk space you have available, but when you are using the LaserWriter 8.x printer driver it is a factor to consider. Even if you have a lot of hard disk space available, it may not be enough to print a very large file.

DISCUSSION ----------

LaserWriter driver 8.x actually spools the entire job to disk regardless of whether or not background printing is enabled or disabled; this is different from previous drivers. It does this to perform analysis on the print job while it is being spooled (first pass).

During the second pass (where the QuickDraw code gets converted to PostScript), it uses the data analysis from the first pass to optimize the PostScript code it generates.

LaserWriter driver 8.x performs the following types of analysis:

- Font analysis
- Image analysis
- Pattern analysis
- Bounding box accumulation
- Text measurement

In foreground printing, the performance penalty is negligible for typical short printing jobs, and is outweighed by the performance gains resulting from PostScript code optimization.

It is possible, however, that large foreground printing jobs may incur significant penalties, in both processing time and disk space, as a result of the separate spool pass.

Workarounds

The only workarounds to the problem are to free up space on the hard drive or use an older version of the LaserWriter driver, such as v7.2, and print in the foreground.

QuickDraw GX also uses a two-pass driver, so it also needs free space on the hard drive to print files.

This article was published in the "Information Alley"
Volume II, Issue 1, Page 11

Article Change History:
03 May 1995 - Added keyword; made minor technical updates.
07 Mar 1995 - Article reviewed.
09 Jun 1994 - Added information on QuickDraw GX and tracking information.

Support Information Services

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Tech Info Library Article Number:15164

Tech Info Library

LaserWriter Select 360: Fax Speed (4/94)

Revised: 4/21/94
Security: Everyone

LaserWriter Select 360: Fax Speed (4/94)

==========

Article Created: 20 April 1994

TOPIC ----------

What's the specifications for the fax speed on the Laser 360f?

DISCUSSION ----------

The LaserWriter Select 360 and LaserWriter Pro 810 PostScript Fax Cartridges follows the CCITT (International Telephone and Telegraph Consultative Committee) Group III transmission standard of up to 9600bps.

Each time a facsimile device attempts to establish a connection, a training signal will be transmitted from the sending device to the receiving device. If impairments on the line cause the receiving device to get errors in the training signal, the receiving device will signal the transmitting device to repeat the training signal at a lower baud rate. This repeats until the receiving device receives an error-free training signal or, if the receiving device does not receive an error-free signal at every baud rate (9600bps, 7200bps, 4800bps and 2400bps), the transaction will be terminated.

Additional attempts to establish a connection will be attempted if you have requested so in the Fax Options dialog box: in the "Maximum number or retries" box, type the maximum number of times, 0 to 100, the fax software should redial the fax number of if it cannot connect.

Failures to connect at any baud rate due to impairments on the telephone line should be brought to your telephone service provider's attention.

Support Information Services

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Tech Info Library Article Number:15165

Tech Info Library

LaserWriters: Printing 2-byte Languages/Characters (4/94)

Revised: 5/24/94
Security: Everyone

LaserWriters: Printing 2-byte Languages/Characters (4/94)

==========

Article Created: 19 April 1994

TOPIC --------------------

We want to use third-party Chinese fonts which require a 2-byte printer. We were told the LaserWriter 810 is 1-byte and won't work. Is the Apple LaserWriter Pro 630 1-byte or 2-byte, and specifically what does this mean?

DISCUSSION --------------------

If the Chinese fonts are TrueType then printer type is not an issue as the fonts will work with all Apple printers, and prints well on a QuickDraw printer (StyleWriter). The best printers to use are the ones with the TrueType interpreter in the ROMs:

- LaserWriter IIf/IIg
- LaserWriter Pro 600/630
- LaserWriter Select 360
- Personal LaserWriter NTR
- Personal LaserWriter 320

The LaserWriter Pro 630 supports composite fonts but has not been tested nor optimized for use with third party composite fonts (on a hard disk); the same holds true for the LaserWriter Pro 810. Apple released a Kanji version of the LaserWriter Select 360 optimized for printing Kanji characters. This printer is available in Japan and may be something you should look into. The entire system (printer, hard disk, fonts) has been tested and optimized. The main difference between the Kanji optimized printer and one bought in the United States is the speed in which documents print. In terms of the specific printer suggested by the font supplier, the same requirements above hold true for that printer.

Explanation of 1-byte and 2-byte

The difference between a "1-byte" or "2-byte" printer can be summarized by whether or not the printer supports composite font technology. Thus, the LaserWriter Pro 630 and 810 can both be considered "2-byte" printers, however,

there are various other requirements for printing large character sets such as Chinese or Japanese.

These requirements are as follows:

- The printer must support composite font technology. PostScript Level 2 has built-in support, though there are some PostScript Level 1 implementations that have the composite font extensions (that is, LW NTX-J). As stated in the "PostScript Language Reference Manual" from Adobe, "A composite font is a collection of base fonts organized heirarchically."

  This basically means that instead of the typical 1-byte-per-character mapping when using a single base font (1 byte = 256 characters), the usage of multiple base fonts allows for a 2-byte-per-character mapping to represent up to 65,536 characters.

- The composite fonts themselves must have some intelligence built-in. The "daughter" fonts need to have some instructions to access their glyphs from storage (that is, instructions to access the hard drive where the glyphs reside).

- A hard disk of composite fonts, supplied with the printer. Since one composite font takes up a large amount of memory (for example, 7MB), the fonts need to reside on a hard drive, as opposed to being downloaded or in RAM.

- The printer should be designed and tested for use with composite fonts. Generally, any PostScript Level 2 printer processes composite fonts, but without any design changes or testing there could be some serious bugs and/or poor performance. Some of the most important design changes are ones such as font caching or file system utilization to handle the large amounts of font data.

Support Information Services

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Tech Info Library Article Number:15167

Tech Info Library

HyperCard: Apple Videodisc Drivers (4/94)

Revised: 4/20/94
Security: Everyone

HyperCard: Apple Videodisc Drivers (4/94)

==========

Article Created: 20 April 1994

TOPIC --------------------

I have been told that there is a videodisc driver that is made by Apple that I can use with the NEW HyperCard 2.2. Where do I get it? I have both Sony and Pioneer players -- does it give you a choice of laserdisc players?

DISCUSSION --------------------

Neither Apple Computer nor the Apple Programmers and Developers Association carry video disc drivers any longer. However, third party developers such as the Voyager Company in New York and Objectic Systems in Renton Washington carry videodisc drivers compatible with HyperCard 2.2 and work with a variety of laserdisc players. Search on the company names for address and phone information.

Support Information Services

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Tech Info Library Article Number:15171

Tech Info Library

QRG: LW Pro 810 Installation on UNIX Based Hosts (5/94)

Revised: 5/11/94
Security: Everyone

QRG: LW Pro 810 Installation on UNIX Based Hosts (5/94)

==========

Article Created: 11 May 1994

TOPIC ----------

This article is the LaserWriter Pro 810 Quick Reference Guide, Installation on UNIX Based Hosts.

DISCUSSION ----------

Who should read this guide: This Quick Reference Guide is designed to assist the person responsible for installing the LaserWriter Pro 810 and configuring it to work on a customer's network. This guide assumes a high level of knowledge in the areas of Unix administration and TCP/IP network administration. This guide is designed to act as a pointer to the "LaserWriter Pro 810 Printer Server Installation and Configuration Guide," it is not meant to replace it.

1) Due to the additional networking protocols supported by the LaserWriter Pro 810, this printer is different than any other Apple LaserWriter you have seen before, we highly recommend that you become thoroughly familiar with the printer before attempting to install it at a customer site. If you are installing the LaserWriter Pro 810 on a network that you do not normally administer you should familiarize yourself with the target environment and have answers to questions such as:

   • What OS is being used?
   • Will the connection be 10 base 2 (BNC) or 10 base T (RJ-45)?
   • What is the configuration of the host CPU?

   You WILL need a C compiler and linker on at least one host for each type of system on which the utilities will be installed.

2) The LaserWriter Pro 810 does NOT have an IP address in firmware when it is shipped from the factory, it must be assigned as part of the installation procedure. There are two ways to set the IP address of the printer, Remote Address Resolution Protocol (RARP) and Remote Console Facility (RCF).

a) Using the RARP protocol. Many network administrators will not allow RARP to work as a permanent solution to assign an IP address. They may allow you to use it temporarily to set the printer's IP address. You can use the existing network to assign the IP address for the first time using RARP and then go in to the RCF and make the address permanent. If you are unable to run RARP on the network you will need to set up a separate two node network. (See Part 1, Section 2.3.3).
   NOTE: A/UX does not include RARP. You must either use method a) above or find a public domain RARP that can be used with A/UX.

b) Accessing the Remote Console Facility (RCF) by using the RJ-12 maintenance port, (see Part 1, Section 2.3.2). The default Super User password is SYSTEM, (you need this when you use "su" to get into Super User mode). This password is needed when using the maintenance port and Telnet. This option requires a unique RJ-12 to mini DIN-8 cable.

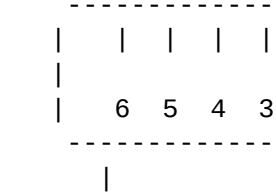
Cable information is located in Part 1, Appendix A of the LaserWriter Pro 810 Printer Server Installation and Configuration Guide; to save you time, the pin assignments for a LaserWriter Pro 810 to Macintosh cable are shown later in this document.

Pin 1 is the pin on the far right of the male RJ-12 connector on the cable and on the far left side of the female RJ-12 connector on the printer. The numbering scheme for the male 8 pin Macintosh connector is also shown below:

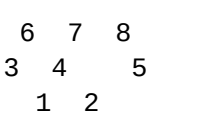
Connector Reference:
RJ-12 is the LaserWriter Pro 810 Maintenance Port, Mini DIN-8 is the Macintosh Serial Port

RJ-12 Connector		DIN-8 Connector	
Signal name	Pin	Pin	Signal name
TxD-	2 <->	5	RxD-
RxD-	5 <->	3	TxD-
GND	3 & 4 <->	4, 6 & 8	GND
DTR	1 <->	2	CTS
CTS	6 <->	1	DTR

RJ-12 Plug Connector



DIN-8 Plug Connector



Note:
Pin 1 is on the right side of the connector.

Notes:
Shown looking at pin side of connector. Note Space between pins 4 and 5.

3) The bootp protocol can be used to load upgraded printer server firmware. This requires a binary image of the ROMs which Apple is not providing at this time since the firmware in ROM is the latest version available. As a result of this you can disregard all references to using bootp in the "LaserWriter Pro 810 Printer Server Installation and Configuration Guide" at this time.

4) Copy the utility software onto the host and run the install program (see Part 3, Section 2.2). You will be presented with a startup screen informing you that in order to use one of the three options (-b, -m, -u) you must quit and restart the program. The first time you run install you should run it without any of the options selected. You will use the -m option to modify virtual printers after the initial installation. The -b option will be used if the utilities were compiled on another system. At this time there is no software upgrade so the -u option is not needed.

5) If you plan on compiling the utilities on a system other than the host where the utilities will actually be used See Part 3, Section 2.4.

6) For the initial installation use the default values presented by the install program. These can be modified at a later time if necessary.

7) The Remote Console Facility (RCF) can also be accessed via Telnet once the printer's IP address has been set. The default password for the RCF over Telnet is access, See Part 3, Section 4.2, 5.2 or 6.2.

8) If you plan on using the RCF extensively you should order the "Apple LaserWriter Pro 810 TCP/IP - LAT Protocol and Command Reference."

Support Information Services

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Tech Info Library Article Number:15172

Tech Info Library

PrintMonitor: Manual Feed Notification (4/94)

Revised: 4/21/94
Security: Everyone

PrintMonitor: Manual Feed Notification (4/94)

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Article Created: 21 April 1994

TOPIC -----

I have two computers that print to the same LaserWriter Pro 630 using different applications. On one system, whenever I select manual feed I get a box that says to insert paper in the manual tray and then go to Print Monitor and tell it to print. It prints fine but this is an annoyance. On my other system I don't get this dialog box.

I am using LaserWriter driver version 8.1.1.

DISCUSSION -----

It's very likely that your PrintMonitor Preferences is set differently on the two systems. When the PrintMonitor window is active, select Preferences in the File menu. One of PrintMonitor's preferences is the ability to set:

"When a Manual feed job starts:"
Give no notification
Display icon in menu bar
Also display alert

The system giving you the additional dialog most likely has the third option selected, whereas the one not giving you the error most likely has the first option selected.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15173

Tech Info Library

Apple Media Kit Version 1.1: Description (10/94)

Revised: 10/11/94
Security: Everyone

Apple Media Kit Version 1.1: Description (10/94)

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Article Created: 20 April 1994
Article Reviewed/Updated: 11 October 1994

TOPIC ----------

Version 1.1 of the Apple Media Kit, Apple Computer's cross-platform multimedia authoring tool, includes enhanced features for both the Apple Media Tool and the Apple Media Tool Programming Environment. The Media tool lets users assemble interactive multimedia presentations that can run on Macintosh and Windows computers without using a programming language. The tool uses object-based authoring for rapid creation of presentation prototypes using rough-draft media elements such as text, pictures, sounds and QuickTime movies.In addition, version 1.1 ships with a demo CD.

DISCUSSION ----------

New Apple Media Tool Features
==========

To give designers and producers more power and flexibility in the project development process, the Tool includes these new features:

- Scrollable PICT and text files, which let designers scroll a picture or text image.
- A selection of cursors, controllers, and scrollbars, which lets designers personalize their projects with a variety of styles.
- QuickTime controller support, which lets designers assign QuickTime movie controllers to movies.
- Improved support for editable text, which lets the designer choose text font, style and color.
- A dissolve effect, which lets users fade from one screen image to another.
- A cross-platform utility that checks movie, picture, sound, and text files for compatibility with the Microsoft Windows platform and converts, if necessary, the files to the cross-platform formats of the Apple Media Kit.

- An addendum, which explains the new features and answers the most commonly asked questions about project creation using the Tool.

Enhanced Apple Media Tool Programming Environment

The number of classes in the Programming Environment (PE) has doubled in size from version 1.0, so programmers have a richer development environment in which to work. These classes have also been enhanced to support the new Tool features previously described.

The PE now includes sample source code that programmers can incorporate into their own projects or use as a reference. Programmers may customize cursors, scrollbars and controllers using common resource editing tools such as ResEdit.

The new version of the PE also has improved documentation and support. The revised PE documentation, which ships with version 1.1, is more comprehensive, providing detailed descriptions of new and existing features. It also includes an index that allows programmers to quickly locate a reference.

Demo CD

The demo CD that ships with the new software is included as a reference tool for designers and programmers and includes, among other things, a number of sample projects with source code. It lets users view projects and understand how to better utilize the Apple Media Tool and Programming Environment. The Demo CD includes the following components:

- A demo version of the Apple Media Tool, which lets designers create, edit and preview interactive multimedia projects. The only feature that is not enabled in this demo version of the Tool is the ability to create a runtime for the project;

- Four sample Apple Media Tool projects. Among the projects is a complete copy of "Peter's Magic Adventure", a children's edutainment title published under Apple's StarCore label, valued at $29.95. Designers can open up the projects to see how they were created;

- A sample Programming Environment (PE) animation project entitled "Gearhead", which was created by Art Technology Group in Cambridge, MA. This sample project illustrates how the PE can be used to create extensions to Apple Media Kit projects. The PE includes a number of sophisticated animations and special effects. Source code for the project is also included enabling programmers to better understand how to use the object-oriented development environment to enhance projects;

- Additional Programming Environment sample code, which provides examples of possible extensions that may be incorporated into projects. These possibilities include flipbook animations; Hypertext links, which enable the user to click and browse through information; and the use of Plaintalk, Apple's text-to-speech technology;

- A complete electronic version of the Programming Environment

documentation;

- A list of Programming Environment consultants who can provide project support, with background on their specific areas of specialty.

Ordering and Support Information

Pricing

The Apple Media Tool is available for US $795, the Apple Media Tool Programming Environment is US$995 and the Apple Media Kit, which includes both the Tool and the Programming Environment, is US$1,495. The demo CD, which ships with version 1.1 of the Kit, is also available separately for US $10.

Upgrades

Version 1.1 of the Apple Media Tool will be sent free to all registered users of version 1.0. Customers who do not receive their upgrade will be referred to APDA.

Usage Requirements

- Macintosh IIci or later with at least 8MB DRAM
- System 7.1
- AppleCD CD-ROM or comparable CD-ROM drive

Support

Up and Running support for the Apple Media Tool is provided by the Software Support group at Apple Assurance.

Article Change History:
11 Oct 1994 - Reviewed for technical accuracy; made minor additions.
10 Jun 1994 - Added some additional configuration and support information.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15174

Tech Info Library

LaserWriter Pro 810: VMS Missing PRO810V1.SYS File (4/94)

Revised: 7/7/94
Security: Everyone

LaserWriter Pro 810: VMS Missing PRO810V1.SYS File (4/94)

==========

Article Created: 20 April 1994

TOPIC ----------

We are having problems setting up the connection between VMS and our LaserWriter Pro 810. We have VMS 5.5, and LaserWriter Pro 810 on 10Base-T which we're trying to connect, but we can't configure the Ethernet port.

We copied the disk image over to the VAX. Went through installation, and noticed that something was missing, the "PRO810V1.SYS" file. We checked the Saveset, and it wasn't there, either.

We ran APLCONFIG and also had a problem, the Ethernet address specified was incorrect (specifies 00-0C-25 as Ethernet address instead of 00-C0-25...), so we entered the correct address by running dsv config. We then went into NCP and connected to the printer by doing "Connect Via" using the printers Ethernet address; we connected to the server port on the printer, which we could configure, and did a LAT command test. We could see that data get to the printer, but it didn't print.

We weren't able to connect the node by using node name from NCT. We could only connect using physical address.

We then went into LAT CP and created a port, then tried a copy data to that port, but it didn't do anything, it just hung. We set host /dte to that port and a session hung.

What are we doing wrong?

DISCUSSION ----------

The PRO810V1.SYS file is not necessary with a LaserWriter Pro 810. PRO810V1.SYS is a file that is loaded remotely from the VAX to boot the printer. This file instead, is in the ROM of the printer and is auto-loaded when the printer is started.

You ran APLCONFIG and the Ethernet address was inverted. You found a valid bug, but since the PRO810V1.SYS file is not required, APLCONFIG is also not required.

Since the documentation does not specifically tell a user what to do if the PRO810V1.SYS file is not present, I have enclosed a log file that explains the install step by step.

•••• Step #1 - reinstall the LaserWriter Pro 810 software using the VMSINSTAL as instructed in the printers manual.

•••• Step #2 - re-set the printer back to factory specs.

```
$ mc ncp
NCP>connect via qna-0 physic addr 00-c0-25-01-04-88
Console connected (press CTRL/D when finished)

#access

---------------------------------------------------- 24-APR-1987 07:22:40 -
- LW Pro 810 AppleTalk/NetWare/TCP/LAT Printer Server -------------------

    Copyright 1992, 1993.  All Rights Reserved.

               Engineering Software Release: 930430

---------------------------------------------------- 24-APR-1987 07:22:40 -

Welcome to LW Pro 810

Enter username> "name"

Local> su
Password>
Local> init default delay 0
Local>
       Target does not respond
NCP>exit
```

••••Step #3 - The printer will display a status that loops through "Waiting Data" and "Processing". The customer should verify that the printer is back into it's ready state before continueing.

••••Step #4 - Execute the command procedure that sets up the form to be used by the printer.

```
 $ @psform
```

••••Step #5 - Execute the command to setup the que, and respond to the prompts accordingly. In this example I created a regular ascii que. The customer must enter their own queue name, E-net address and Lat unique Lat number.

```
$ @apple_que
```

```
••••••••This is a log of the apple que set up••••••••••
;*****************************************************************
;         Apple Computer LaserWriter PRO 810 Printer
;                    Make Print Queue  Utility
;                        Rev 1.0
;*****************************************************************
;       APPLE_QUE.COM           09/15/93
;       CREATE AND START A PRINT QUE ON Apple Computer PRO810 Printers
;       P1      PRINTER OR PRINT SERVER TYPE
;       P2      ETHERNET ADDRESS
;       P3      QUE NAME
;       P4      LTA NUMBER
;       P5      VIRTUAL PRINTER NAME
;       P6      FORM NAME
;*****************************************************************
press any key to continue :

        In order to create a LAT port, the exact name of the printer
        server is needed. PRO810 by default uses the name APL followed
        by its last 6 digit's of Ethernet address. this data found on
        the printer's status page. It is necessary to have this address
        to continue. Eaxmple  00C530

Last 6 digits of Server Ethernet Address : 010488

        Select a VMS queue name to be used for this printer. It is
        recommened to select a simple descriptive name that describes
        the printer type and possible location.

        Examples: post330_eng text_ls_room2 post800_vp_sales

        using this method should make tracking printers, queues and
        printer names cleaner

VMS queue name : test_ascii

        Select an LTA port number to be used for this printer.
        It is recommended to check the numbers already used to
        avoind duplicates. Example  101

LTA number : 927

        Please provide the type of Virtual Printer Service
        this  queue is being made for
        Valid Services are:
                        1. POSTS300 PostScript 300 dpi
                        2. POSTS400 PostScript 400 dpi
                        3. POSTS600 PostScript 600 dpi
                        4. POSTS800 PostScript 800 dpi
                        5. ASCII_PORTRAIT ASCII text printer Portrait mode
                        6. ASCII_LANDSCAPE ""    ""    ""    Landscape ""
                        7. GENERIC
```

```
Virtual Printer Service type ?: 5

        Select a Printer Form, the factory provided form is PS this
        form defines the paper size as 8.5 X 11

enter Form Name : ps
NOTE 1:
        The print queues expect to have a valid form operational on the
        system. The Factory default generic form is PS, which is started
        by issuing the command @PSFORM.

        It is necessary to insert the following line in your system
        startup command procedure SYS$MANAGER:SYSTARTUP_V5.COM to
        create and start the queue every time the system boots.

        $ @MOM$LOAD:[DECSERVER] PSFORM.COM
        $ @MOM$LOAD:[DECSERVER]TEST_ASCII.COM

NOTE 2:
        TEST_ASCII has been defined as PRINT/QUE=TEST_ASCII
press any key to continue:
NOTE 3:
        If you wish this symbol to be defined for all users, insert the
        following line in system wide login file SYS$MANAGER:SYLOGIN.COM

        $ TEST_ASCII    :== PRINT/QUEUE = TEST_ASCII

••••There is a bug in the command procedure, where the user must enter "y" to
the next two questions.

Do you want to see the file (Y,N) [Y] :
Do you want to start the queue now (Y,N) [Y] :

Support Information Services

Copyright 1994, Apple Computer, Inc


Tech Info Library Article Number:15175
```

Tech Info Library

CPU Energy Saver & Geoport: Wake up Possible? (4/94)

Revised: 4/20/94
Security: Everyone

CPU Energy Saver & Geoport: Wake up Possible? (4/94)

==========

Article Created: 20 Apr 1994

TOPIC -----

I have a Power Macintosh 8100/80AV running the CPU Energy Saver Cdev with a GeoPort™ Telecom Adapter connected. Can I set my Power Macintosh to wake up from CPU Energy Saver when a phone call comes through on my GeoPort™ Telecom Adapter?

DISCUSSION -----

The answer is NO. Here's why:

The Power Macintosh needs to be ON to be able to answer the phone using a GeoPort™ Telecom Adapter and Express Modem Software. The CPU Engergy Saver software shuts down your system at a time you specify. With your Macintosh shut down your GeoPort™ Telecom Adapter cannot be utilized.

The CPU Engergy Saver software does have a feature called "Do not shut down if a serial port is being used". If either port is active (i.e. Geoport waiting for a phone call), the system will not shut down. You can disable this feature by unchecking this option.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15177

Tech Info Library

LaserWriter Pro 810: Postscript using lpr from Unix (4/94)

Revised: 4/20/94
Security: Everyone

LaserWriter Pro 810: Postscript using lpr from Unix (4/94)

==========

Article Created: 20 April 1994

TOPIC ----------

This article describes how to print Postscript files to the LaserWriter Pro 810 using lpr in Unix.

DISCUSSION ----------

The Postscript port on the LaserWriter Pro 810 is defined as port 3107. You can find the port definition of the other ports by taking the printer off line and telling it to print a status page.

The following is the printcap file from a Sun computer. The Printer is called 'reams' and it is the 8th printer defined in the printcap. Replace 'reams' with the name of your printer in the appropriate place if you want to print Postscript from Unix to the LaserWriter Pro 810.

```
# ** |reams8| entry maintained by Apple Printer Installation Program **
# printer type =PRO810
# printer interface type =Ethernet
# printer physical port number =1
reams8|reams8|Apple remote printer on port 1:\
        :lp=/dev/reams8:\
        :sd=/usr/spool/reams8:\
        :of=/home/software/apple/bin/apprint:\
        :mx#0:\
        :sf:\
        :sh:\
        :pw#0:\
        :apple_n=17.127.4.47:\
        :apple_pcs=:\
        :apple_scs=:\
        :apple_text=disable:\
        :apple_p=3107:
```

It is important to note the apple_text=disable and the apple_p=3107. Now any job printed to the Reams8 print queue will be printed as a Postscript job.

In order to print a Postscript file once this printcap is in place you should type lpr -P reams8 <filename>.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15178

Tech Info Library

PowerTalk: Version 1.0.2 vs 1.0.3 on Power Macintosh (4/94)

Revised: 4/20/94
Security: Everyone

PowerTalk: Version 1.0.2 vs 1.0.3 on Power Macintosh (4/94)

==========

Article Created: 20 April 1994

TOPIC -----

Why is PowerTalk For Power Macintosh version 1.0.2 being made available? Wasn't PowerTalk For Power Macintosh version 1.0.3 already available?

DISCUSSION -----

Apple is recommending that customers use version 1.0.2 PowerTalk Install Me First disk when installing PowerTalk on Power Macintosh and Power Macintosh Upgrade Card systems.

A problem was discovered with the installer script on the PowerTalk For Power Macintosh version 1.0.3 Install Me First disk. The problem was that it would not install properly on systems with Power Macintosh Upgrade Cards. This problem does not exist on the PowerTalk For Power Macintosh version 1.0.2 Install Me First disk. Except for the installer script, the software contained within the 1.0.2 & 1.0.3 Install Me First disks is identical.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15179

Tech Info Library

Newton MessagePad: Newton Data Viewer Not Available (12/94)

Revised: 12/8/94
Security: Everyone

Newton MessagePad: Newton Data Viewer Not Available (12/94)

==========

Article Created: 19 April 1994
Article Reviewed/Updated: 8 December 1994

TOPIC ----------

Bundled with my Connection Kit 2.0 software is a card I can send in for some free software. What is this software, and what does it do?

DISCUSSION ----------

The card can be sent to Apple in order to receive the Newton Data Viewer software from StarCore. The card states that it takes 4-8 weeks for delivery of the software.

What is the Newton Data Viewer?

Mobile Information Management is as close as your Newton with Newton Data Viewer, an exciting new software title, available from StarCore.

With the Newton Data Viewer software, you can now take any text, spreadsheet or list file from your desktop computer to your next meeting with the Newton MessagePad. All you need to do is download the data to your Newton MessagePad. Once the information is on your Newton MessagePad, you can review and update any of the files. With the Newton Data Viewer, all your information is at your fingertips.

Availability

The Newton Data Viewer software is not currently available.

Article Change History:
08 Dec 1994 - Added availability information.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15180

Tech Info Library

StyleWriter II: Removing White Lines In Text (4/94)

Revised: 4/21/94
Security: Everyone

StyleWriter II: Removing White Lines In Text (4/94)

==========

Article Created: 21 April 1994

TOPIC --

I keep getting horizontal white lines through my text. I have purged the cartridge several times and even replacing the ink cartridge, but this has not fixed the problem. How can I get rid of the white lines?

DISCUSSION --

The horizontal white lines are caused by an accumulation of lint on the left side of the wiper. If the wiper is cleaned so the lint is removed, the problem disappears. The lint absorbs the ink and causes the white lines. The printing nozzles should not come in contact with anything during printing. But when lint is present, it attaches to the nozzles damaging the nozzle. This damage can be temporary or permanent. This is why changing the ink cartridge doesn't fix the problem.

Preventing White Lines

Environmental conditions are the primary cause of the lint build-up. If paper is left in the paper tray for a period of time, then the top sheet should be removed prior to printing. The nozzle should also be checked periodically and any lint build-up removed.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15181

Tech Info Library

Fax Viewer: Reversed Text Caused By Number of Colors (1/97)

Revised: 1/20/97
Security: Everyone

Fax Viewer: Reversed Text Caused By Number of Colors (1/97)

==========

Article Created: 21 April 1994
Article Reviewed/Updated: 20 January 1997

TOPIC ----------

This article describes a problem with the Fax Viewer application that shipped with early GeoPort Telecom Adaptor and Express Modem software kits.

DISCUSSION ----------

If colors in the Monitors control panel are greater than 256, received Fax documents display and print white letters on a black background, rather than black on white. Changing the colors to 256 or less fixes the problem. Sent Faxes are not affected by the number of colors and are sent properly with any amount of colors displayed.

This problem was corrected for PowerBook computers as early as Express Modem software version 1.5.2.

This issue has been resolved on all Macintosh computers and PowerBooks that use either a GeoPort or Express Modem with Apple Telecom 2.1 or higher software. You should upgrade your Fax software by installing Apple Telecom 2.x. Apple Telecom 2.1 is available on many on-line services. The Apple Telecom 2.x software package is available on the following online locations:

- On the Internet at the following sites:
  - Worldwide Web: <http://www.info.apple.com/swupdates>
  - ftp: <ftp://ftp.info.apple.com/>
- On America Online, use keyword: applecomputer

- On CompuServe, use GO: APLSUP

These articles can also help you locate software mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
20 Jan 1997 - Updated online references.
07 Aug 1995 - Added Apple Telecom 2.1 information.
14 Dec 1994 - Added Express Modem 1.5.5 and where to obtain it.

Support Information Services

Copyright 1994-97, Apple Computer, Inc

Tech Info Library Article Number:15182

Tech Info Library

ImageWriter II: Needs Updated Version of SimpleText (10/94)

Revised: 10/13/94
Security: Everyone

ImageWriter II: Needs Updated Version of SimpleText (10/94)

==========

Article Created: 19 April 1994
Article Reviewed/Updated: 13 October 1994

TOPIC ----------

When I try printing a multiple page document from SimpleText 1.0 to my ImageWriter II, it prints about a quarter of the first page and then stops. I can print this document from other application programs, but not from SimpleText. Why?

DISCUSSION ----------

SimpleText 1.0 seems to be incompatible with the ImageWriter II. In order to print from SimpleText, use Version 1.1.1. SimpleText 1.1.1 ships with System 7.5 and is also available on online services where Apple posts software updates.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
13 Oct 1994 - Added SimpleText 1.1.1 information.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15183

Tech Info Library

LW Pro 810 Won't Print Two Chinese TrueType Fonts per Page 4/94

Revised: 4/22/94
Security: Everyone

LW Pro 810 Won't Print Two Chinese TrueType Fonts per Page 4/94

==========

Article Created: 21 April 1994

TOPIC ----------

When printing a single page PageMaker 3.5 (Chinese version) document an A3 size paper consisting of more than one Chinese TrueType font, the LaserWriter Pro 810 produces a page with one of the fonts printed correctly, while the other is unintelligible. If the same document is converted to contain only one TrueType Chinese font, the result was fine.

We have tried all of the print options in both PageMaker and the LaserWriter Pro 810, that is printing with effects not checked, different resolutions, and so on, but with no avail. Is there anything we can try?

The printer's configuration is as follows:

Interpreter version	2011.113
Revision	1
Installed Memory	16 MB
VM Maximum	1,335 KB
VM Available	1,300 KB
Resolution	400 DPI

I was told the value of VM affects the size of the font cache, is that true? If it is, can it be changed to resolve this problem?

DISCUSSION ----------

This problem can most likely be attributed to not enough RAM in the printer. Even though there is 16MB of RAM in the printer, the majority of it, about 14MB, is set aside for a page buffer. To explain more specifically, when the printer is powered ON it checks for the total amount of RAM and then allocates a page buffer to accommodate the largest page size available at the highest DPI. Thus, for the LaserWriter Pro 810, the page buffer allocated would be for a tabloid size page at 800dpi.

Increasing the RAM should resolve this issue as there is probably not enough memory to handle all of the outlines. One thing you might try to help alleviate the problem is to enable Unlimited Downloadable fonts in the Options dialog of Page Setup. This will purge a font automatically once it is used which will free up RAM, however a print job may take longer.

With regard to the font cache, it's size varies with the amount of VM available but again comes back to the amount of total RAM in the printer.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15185

Tech Info Library

Multiple Scan 20 Display: Older Video Cards Incompatible (4/94)

Revised: 4/25/94
Security: Everyone

Multiple Scan 20 Display: Older Video Cards Incompatible (4/94)

==========

Article Created: 25 April 1994

TOPIC ----------

I have a Macintosh IIfx with an 8-bit video card and a video card for a 21-in Apple Monitor. Can I use either of these cards with the new Apple Multiple Scan 20 Display?

DISCUSSION ----------

Apple Computer makes every practical attempt to allow older products, such as the video cards you have mentioned, to function with new state of the art products like the Apple Multiple Scan 20 Display. However, is this particular case it was not possible to incorporate the old video card technology to perform with the new display. So, neither of these cards will operate with the multiple scan display.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15186

Tech Info Library

LaserWriter Pro 810: Getting The Ethernet Address (4/94)

Revised: 4/22/94
Security: Everyone

LaserWriter Pro 810: Getting The Ethernet Address (4/94)

==========

Article Created: 21 April 1994

TOPIC -----

Is there a utility to query the Ethernet address of a LaserWriter Pro 810? This would prevent me from dismantling the printer to look at the label on the Ethernet card.

DISCUSSION -----

There are a couple of ways to get the Ethernet address of the LaserWriter Pro 810 without having to look at the card. They are as follows:

- Print the "Printer Configuration" page which has the Ethernet address under the 10-base-2 values, here's how:

  1) Hit "Online" in the printer's control panel, this will take it offline.

  2) Press "Print Status" which will print out a couple of pages, one of which is the Printer Configuration page.

- The other way to get the Ethernet address is to download the following PostScript code to the printer:

```
/Times-Roman findfont
15 scalefont
setfont
72 700 moveto
/str 20 string def
(Ethernet Address:  ) show
(%EtherTalk%) currentdevparams /EthernetAddress get str cvs show
showpage
```

Support Information Services

..TIL15187-LaserWriter_Pro_810-Getting_The_Ethernet_Address_4-94_(TA31580).pdf

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15187

Tech Info Library

Power Macintosh: S-Video In and Out (4/94)

Revised: 3/23/95
Security: Everyone

Power Macintosh: S-Video In and Out (4/94)

==========

Article Created: 20 April 1994

TOPIC ----------

I am trying to digitize video on a NTSC monitor, and am having some problems. Here is my configuration:
- Power Mac 6100/60 AV
- 14" monitor on HDI-45 (no adapter for DB-15 on AV card)
- video camera connected to S-video-in
- 9" NTSC monitor on S-video-out

I cannot do anything more than "Identify" the 9" monitor (shows "2" on the screen) unless S-video-in for camera is unplugged. Then NTSC monitor seems to work fine.

DISCUSSION ----------

You should be able to use and digitize video on a NTSC monitor. This configuration has tested and worked fine.

Here are some thing you should check or try:
1. Check to see that the AV card's monitor is not set to millions of colors -- the video digitizer only works up to thousands of colors.
2. Disable third-party extensions. If this fixes the situation, the conflict may be with a specific extension.
3. Try a clean install of the System Software.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15194

Tech Info Library

Power Macintosh: CloseView Not Compatible (10/96)

Revised: 11/2/96
Security: Everyone

Power Macintosh: CloseView Not Compatible (10/96)

==========

Article Created: 22 April 1994
Article Reviewed/Updated: 2 November 1996

TOPIC ----------

I have a Power Macintosh 7100/66. I recently installed System 7.5 Update 2.0. While I was looking at the custom installation components, I noticed that the information box for the CloseView control panel states that it is not compatible with PowerPC-based computers. Is this true?

DISCUSSION ----------

At this time, the CloseView control panel is not compatible with PowerPC-based computers.

Article Change History:
02 Nov 1996 - Corrected typographical error.
20 May 1996 - Updated to show CloseView is not Power Macintosh compatible.
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Copyright 1994-96, Apple Computer, Inc

Tech Info Library Article Number:15195

Tech Info Library

Apple Shared Library Manager: Errors And Resolution (3/95)

Revised: 3/15/95
Security: Everyone

Apple Shared Library Manager: Errors And Resolution (3/95)

==========

Article Created: 22 April 1994
Article Reviewed/Updated: 15 March 1995

TOPIC -----

Earlier revisions of the Apple Shared Library Manager may cause problems with the AV enabler or with the GeoPort on AV or Power Macintosh computers.

DISCUSSION -----

The Shared Library Manager extension and System Enabler 088 v1.0 are not compatible and may cause bus errors at startup. Both the QuickTake and GeoPort software install the Shared Library Manager extension. The Shared Library Manager makes the Macintosh operating system more efficient for developers.

System Enabler 088 v1.1 is compatible with the Shared Library Manager and fixes the bus error that may occur with version 1.0 of the System Enabler. An upgrade to the Shared Library Manager, to 1.1.2 or later, will resolve the problems also.

Article Change History:
15 Mar 1995 - Corrected name of product in title.
08 Jul 1994 - Added info on the 1.1.2 version of the ASLM to resolve problems, retitled to more accurately reflect the contents of the article.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15197

Tech Info Library

Objectic Systems, Inc.

Revised: 4/22/94
Security: Everyone

Objectic Systems, Inc.

==========

Article Created: 22 April 1994

Objectic Systems, Inc.

PO Box 58292
Renton, WA 98058

206-271-0204

800-859-9543

Company Profile:
Develops and markets Fast Pitch Pro for the Macintosh

Support Information Services

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Tech Info Library Article Number:15198

Tech Info Library

Power Macintosh AV: No color on NTSC Monitor (4/94)

Revised: 4/22/94
Security: Everyone

Power Macintosh AV: No color on NTSC Monitor (4/94)

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Article Created: 22 April 1994

TOPIC ----------

I have a TV or Composite/NTSC monitor connected to my Power Macintosh AV system, and I can only get grayscale or B&W, even though it is capable of displaying color. What's wrong?

DISCUSSION ----------

First double-check that color is selected in the monitors control panel. Next, double-check that the correct S-Video adapter cable is being used to connect the RCA cable from the TV/monitor to the AV card. If the S-Video-IN cable is used by mistake, you will only get grayscale/B&W on the screen. Replace with the correct S-Video-OUT cable, and you should get a color display on your TV/monitor.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15199

Generic Icons: Applications on Removable Media (4/94)

Revised: 4/22/94
Security: Everyone

Generic Icons: Applications on Removable Media (4/94)

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Article Created: 22 April 1994

TOPIC ----------

I have documents on a boot volume and their applications on another volume. Sometimes my documents have generic icons and some times they are normal. Why?

DISCUSSION----------

The Finder uses a file called the Desktop Database on each volume to keep track of icons and other important file information. The Desktop Database on a given volume is only updated when a file with a "bundle resource" is copied to that volume. Bundle resources are found in applications, control panels, extensions or files with custom icons. An Adobe postscript font is an example of a file with a bundle resource (also called bundle bit) that isn't an application, control panel or extension.

Documents and other files associated with a specific application (help files, dictionaries, etc.) do not have this bundle resource and depend on the application to provide this information to the Desktop Database and in turn the Finder.

We don’t have all files use their own bundle resource because it's more efficient in regards to space and copying time to limit the files with bundle resources.

If you have a folder with 100 files with the same custom icon, each will have an entry in the Desktop Database. This is very inefficient. Adobe postscript font files do this for example. Even though they all use the same icon, each one updates the desktop database when copied and has its own unique entry in the desktop database. The desktop database views them
all separately and has 100 entries. By referencing the application, we can have one entry to these same 100 files or 10,000 files, which is much more efficient.

There are some caveats when working with multiple volumes and/or servers. If an application is on a volume that is not available at startup (CD, Syquest, File Server), then document icons on the volumes will appear as generic document icons. If you mount a volume with the application after booting the CPU, the document icons may or may not be generic depending on the sequence of events initiated by the user. Here are some examples:

- If you attempt to ‘view’ a document icon on a start up drive that does not contain the application first, and get the generic icon (have it's window left open or intentionally open it's window), all files of the same ‘type’ will be generic on any volume until you restart.
- If you do not ‘view’ the document icon, mount the volume with the application, and then attempt to view the document on the boot volume, their icons will appear normal.
- You can get an inconsistency if you ‘view’ the document icon but not another file associated with the application (like a dictionary). In this case all occurrences of the document icon will be generic, but the dictionary icons will be normal because they are different file types with different icons.
- Additionally, you can change views to small icon and you will see the correct small icon for the document while the normal size icon is generic.

This starts over again when you restart the CPU.

Suggested work arounds:

1) Have the volume with the application mount on the desktop when the CPU is turned on or restarted.
2) Do not “view” the document icons until the volume with the application is mounted.
3) Copy the application to the volume with the documents. This updates the desktop database, then you can delete the application. The proper document icons will be displayed for that application until the desktop file is rebuilt. If the desktop is rebuilt, the above situation returns since the application with its bundle resource is not there to add the information to the desktop database.

For additional details on bundle resources and the desktop database, refer to the Inside Macintosh series of books and page 118 of "Technical Introduction to the Macintosh Family" second edition. See also the article “Generic (Document or Application) Icons: Restoring Proper Icons.”

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15200

Tech Info Library

AudioVision Monitor: Power on Before Power Macintosh (3/95)

Revised: 3/17/95
Security: Everyone

AudioVision Monitor: Power on Before Power Macintosh (3/95)

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Article Created: 27 April 1994
Article Reviewed/Updated: 17 March 1995

TOPIC -----

The AudioVision extension does not appear on restart along bottom of the screen unless I turn on the AudioVision monitor after the Power Macintosh. The AudioVision Sound slider switch is also missing from the Volumes section of the Sound control panel.

DISCUSSION -----

This is a known feature. It is described in the "Additional Tips and Troubleshooting" manual (page 5) for the PowerPC.

Article Change History:
17 Mar 1995 - Corrected wording of PowerPC, made article public.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15202

Tech Info Library

Apple Displays: Changes In Colors Requires Degaussing (4/94)

Revised: 4/25/94
Security: Everyone

Apple Displays: Changes In Colors Requires Degaussing (4/94)

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Article Created: 25 April 1994

TOPIC ----------

What can cause the below symptoms?

When the computer and monitor are powered on, a green an area on bottom left of the monitor changes colors depending on what is displayed on screen. Another less intense area is directly in the center of the screen. Both distortions are approximately one inch high and 3.5 to 4 inches wide.

The display has been moved in the house and checked for any environmental factors but this didn't change anything. The monitor was left off for over 24 hours but the discolored areas didn't change.

DISCUSSION ----------

This sounds like a classic case of magnetic field interference. Evidently the CRT has come in contact with a strong magnetic field that magnetized the CRT screen and thus created the problem you are now having. The magnetic field could have been generated by anything from a small magnet to the electric motor on a vacuum cleaner. The cure is fairly simple. The unit should be degaussed with an external manual degaussing coil, as used by TV technicians. They can be purchased at most good electronic parts stores and cost about $30.00.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15205

Tech Info Library

Workgroup Server 6150/60: Description (5/95)

Revised: 5/15/95
Security: Everyone

Workgroup Server 6150/60: Description (5/95)

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Article Created: 25 April 1994
Article Reviewed/Updated: 15 May 1995

TOPIC ----------

This article provides a description, and features for the Apple Workgroup Server 6150/60.

DISCUSSION ----------

The Workgroup Server 6150 is the most affordable member of the PowerPC processor–based Workgroup Server family from Apple. It delivers the file and print or applications server performance that small workgroups in business and education demand.

Delivering all the benefits of PowerPC performance—while maintaining Macintosh ease of use—the Workgroup Server 6150 features a 60-megahertz PowerPC 601 processor, on-chip and level-2 cache, a large-capacity hard disk drive, and responsive service and support.

The Workgroup Server 6150 also supports third-party electronic mail, calendar, information-retrieval, and database server applications.

But what's really important to the people who set up, maintain, and use this server is that it's very simple to operate. And the software packages that run on it—AppleShare, AppleSearch, Apple Remote Access, PowerShare collaboration server, and a variety of third-party server applications—are all built on the assumption that you shouldn't have to be a computer engineer to run a server.

So if you're considering a server for your workgroup, or an additional server for your network, look closely at the Workgroup Server 6150. It has all the server features most small workgroups need, at a price most can afford.

Workgroup Server 6150 Features

Expansion and storage

- Slot for processor-direct card or NuBus expansion card
- Internal 500MB hard drive
- Internal double-speed CD-ROM drive
- Apple RAID Software
- SCSI bus to support up to seven devices (two internal, five external)
- Eight ports to support a wide range of peripherals

Networking
- Built-in Ethernet and LocalTalk capabilities
- Support for AppleTalk networking protocols
- Token Ring support optional (with expansion card)

Power, speed, and memory
- 60-MHz PowerPC 601 RISC microprocessor with floating-point processor and 32K on-chip cache
- 256K level-2 cache
- 8MB of RAM, expandable to 72MB

Features Built Into Every Workgroup Server

Fast, easy setup
- Comes with System 7 software installed
- Includes AppleShare 4.0.2 file and print server software

Compatibility
- Runs Apple server software and third-party server applications
- Supports Macintosh and Power Macintosh desktop clients, as well as clients running Windows and MS-DOS, depending on server software*
- Reads Macintosh, Windows, MS-DOS and OS/2 floppy disk formats

Service and support**
- Includes 24-hour telephone support
- Includes within-two-business-day, on-site service response
- Offers optional within-four-hour or next-business-day on-site service response

* Additional third-party server software may be required and must be purchased separately.

** These services are available only in the United States.

Article Change History:
15 May 1995 - Change title to reflect processor speed.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15206

Tech Info Library

Workgroup Server 6150/60: Specifications (5/95)

Revised: 5/15/95
Security: Everyone

Workgroup Server 6150/60: Specifications (5/95)

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Article Created: 25 April 1994
Article Reviewed/Updated: 15 May 1995

TOPIC ----------

This article provides specifications and order information for the Apple Workgroup Server 6150/60.

DISCUSSION ----------

Technical Specifications

Microprocessor
- PowerPC 601 RISC microprocessor running at 60 MHz
- Integrated floating-point unit and 32K on-chip cache
- 256K level-2 cache

Memory
- 8MB of RAM
- Can be expanded to up to 72MB of RAM

Drives
- One 500MB internal hard disk
- One AppleCD 300i Plus CD-ROM drive (up to 342K-per-second streaming data-transfer rate)
- One Apple SuperDrive 1.4MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, Windows, MS-DOS and OS/2 disks

Networking
- Built-in Ethernet
- Two serial ports for LocalTalk

Displays
- Supports up to 14-inch Apple displays at 32,768 colors, and 16- and 17-inch Apple displays at 256 colors

- Supports most third-party displays as well as VGA and SVGA monitors

Video support
- Built-in DRAM display support

Interfaces
- One Apple Desktop Bus (ADB) port for a keyboard, mouse, and other device
- AAUI-15 Ethernet connector
- High-density display port supports Apple AudioVision monitors directly and supports other displays via a Power Macintosh Display Adapter
- Two DMA serial (RS-232/RS-422) ports compatible with LocalTalk
- High-speed asynchronous SCSI interface connects up to seven SCSI devices
- 16-bit stereo sound input and output ports
- Internal expansion slot for processor-direct or 7-inch NuBus expansion card (both require adapter that must be purchased separately)

Clock/calendar
- Custom integrated circuit with long-life lithium battery

Disability access
- Easy Access and visible beep included with system software to provide alternative input and output devices for people with disabilities

Electrical requirements
- Line voltage: 100 to 240 volts AC, RMS single phase, automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 210 W maximum, not including display

ADB power requirements
- Maximum current draw for all ADB devices: 500 mA (a maximum of three ADB devices is recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA (varies with keyboard model used)

Keyboard and mouse
- Supports ADB keyboards with numeric keypads
- ADB Mouse II included

Size and weight
- Height: 3.4 in. (8.5 cm)
- Width: 16.3 in. (41.5 cm)
- Depth: 15.6 in. (399.7 cm)
- Weight: 14.0 lbs. (6.4 kg) (varies based on internal devices installed)

Operating environment
- Operating temperature: 50 to 104 degrees F (10 to 40 degrees C)
- Storage temperature: –40 to 116.6 degrees F (–40 to 116.6 degrees C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 ft. (3,048 m)

Regulatory approval
- FCC Class B

Ordering Information

Workgroup Server 6150
Order No. M3358LL/A

- Workgroup Server 6150 computer with 8MB of RAM, 256K level-2 cache, 500MB hard disk drive, internal CD-ROM drive, and 1.4MB Apple SuperDrive floppy disk drive
- Mouse
- System 7 software
- AppleShare 4.0.2 software
- Power Macintosh Display Adapter
- Complete setup, learning, and reference documentation
- Limited one-year warranty

Workgroup Server 6150 Logic Board Upgrade
Order No. M2913LL/A

- Upgrades a Workgroup Server 60 to a Workgroup Server 6150 (must be installed by an Apple authorized service provider); includes 8MB of RAM, 256K level-2 cache, as well as AppleShare 4.0.2

Macintosh Memory Expansion Kits
Order No. M1507LL/A

- 4MB (1–4MB SIMM)

Order No. M1508LL/A

- 8MB (1–8MB SIMM)

Order No. M3372LL/A

- 16MB (1–16MB SIMM)

Order No. M3373LL/A

- 32MB (1–32MB SIMM)

Note: SIMMs must be installed in pairs by an authorized Apple service provider. The Work-group Server 6150 comes with 8MB of RAM on the logic board and two available SIMM sockets.

Power Macintosh 6100/60 NuBus Adapter Card
Order No. M2337LL/A

- Allows you to add support for one 7-inch NuBus card to Workgroup Server 6150

Apple Token Ring NB/c Card
Order No. M1769Z/A

Article Change History:
15 May 1995 - Change title to reflect processor speed.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15207

Workgroup Server 8150/80: Description (5/95)

Revised: 5/15/95
Security: Everyone

Workgroup Server 8150/80: Description (5/95)

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Article Created: 25 April 1994
Article Reviewed/Updated: 15 May 1995

TOPIC ----------

This article provides a description, and features for the Apple Workgroup Server 8150/80.

DISCUSSION ----------

The Workgroup Server 8150 is the midrange member of the PowerPC processor–based Workgroup Server family from Apple. It's designed to meet the varied price, performance, and expansion needs of medium-sized workgroups in education, business, and publishing.

Delivering all the benefits of PowerPC performance—while maintaining Macintosh ease of use—the Workgroup Server 8150 features an 80-megahertz PowerPC 601 processor, on-chip and level-2 cache, a large-capacity hard disk drive, Retrospect Remote automatic client and server backup software, and responsive service and support.

Not only is the Workgroup Server 8150 easy to set up, it's also designed to work with easy-to-use Apple server software programs such as AppleShare, AppleSearch, Apple Remote Access, and PowerShare collaboration server, as well as third-party server software. And it's perfect for publishing, database, accounting, electronic-mail, calendar, and remote-access server applications.

If you're looking for a server that can accommodate today's budget and expand to handle tomorrow's demands, the Workgroup Server 8150 is likely to bring your search to a very positive conclusion.

Workgroup Server 8150 Features

Expansion and storage
• Three NuBus slots for expansion cards
• One processor-direct slot

- Internal 1GB hard disk drive
- Internal DDS-2 Digital Audio Tape (DAT) drive
- Internal double-speed CD-ROM drive
- Retrospect Remote automatic server and client backup software
- Apple RAID software
- Support for up to eight SCSI devices (three internal, five external)
- Nine ports to support a wide range of peripherals

Networking
- Built-in Ethernet and LocalTalk capabilities
- Support for AppleTalk networking protocols
- Token Ring support optional (with expansion card)

Power, speed, and memory
- 80-MHz PowerPC 601 RISC microprocessor with floating-point processor and 32K on-chip cache
- 256K level-2 cache
- 16MB of RAM, expandable to 264MB

Features Built Into Every Workgroup Server

Fast, easy setup
- Comes with System 7 software installed
- Includes AppleShare 4.0.2 file and print server software (in some configurations)

Compatibility
- Runs Apple server software and third-party server applications
- Supports Macintosh and Power Macintosh desktop clients, as well as clients running Windows and MS-DOS, depending on server software*
- Reads Macintosh, Windows, MS-DOS and OS/2 floppy disk formats

Service and support**
- Includes 24-hour telephone support
- Includes within-two-business-day, on-site service response
- Offers optional within-four-hour or next-business-day on-site service response

* Additional third-party server software may be required and must be purchased separately.

** These services are available only in the United States.

Article Change History:
15 May 1995 - Changed title to reflect processor speed.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15208

Tech Info Library

Workgroup Server 8150/80: Specifications (5/95)

Revised: 5/15/95
Security: Everyone

Workgroup Server 8150/80: Specifications (5/95)

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Article Created: 25 April 1994
Article Reviewed/Updated: 15 May 1995

TOPIC ----------

This article provides specifications and order information for the Apple Workgroup Server 8150/80.

DISCUSSION ----------

Technical Specifications

Microprocessor
- PowerPC 601 RISC microprocessor running at 80 MHz
- Integrated floating-point unit and 32K on-chip cache
- 256K level-2 cache

Memory
- 16MB of RAM
- Can be expanded to up to 264MB of RAM

Drives
- One 1GB Apple hard disk drive
- One DDS-2 DAT drive (4 GB uncompressed, 10-14 GB compressed)
- One AppleCD 300i Plus CD-ROM drive (up to 342K- per-second streaming data-transfer rate)
- One Apple SuperDrive 1.4MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, Windows, MS-DOS and OS/2 disks

Displays
- Supports up to 14-inch Apple displays at 32,768 colors, and 16- and 17-inch Apple displays at 256 colors
- Supports most third-party displays as well as VGA and SVGA monitors

Video support

- Built-in DRAM display support

Interfaces
- Three NuBus expansion slots
- One processor-direct slot
- One Apple Desktop Bus (ADB) port for a keyboard, mouse, and one additional ADB device
- AAUI-15 Ethernet connector
- High-density display port supports Apple AudioVision monitors directly and supports other displays via a Power Macintosh Display Adapter (included)
- Two DMA serial (RS-232/RS-422) ports compatible with LocalTalk
- Dual-channel, asynchronous SCSI DMA interface; one channel supports up to five external and two internal SCSI devices, the other channel supports an internal hard disk
- 16-bit stereo sound input and output ports

Networking
- Built-in Ethernet
- Two serial ports for LocalTalk

Clock/calendar
- Custom integrated circuit with long-life lithium battery

Disability access
- Easy Access and visible beep included with system software to provide alternative input and output devices for people with disabilities

Electrical requirements
- Line voltage: 100 to 240 volts AC, RMS single phase, automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 200 W maximum, not including display

ADB power requirements
- Maximum current draw for all ADB devices: 500 mA (a maximum of three ADB devices is recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA (varies with keyboard model used)

Keyboard and mouse
- Supports ADB keyboards with numeric keypads
- ADB Mouse II included

Size and weight
- Height: 14.25 in. (30.6 cm)
- Width: 8.9 in. (19.6 cm)
- Depth: 16.0 in. (39.6 cm)
- Weight: 25.3 lbs. (11.5 kg) (varies based on internal devices installed)

Operating environment
- Operating temperature: 50 to 104 degrees F (10 to 40 degrees C)
- Storage temperature: –40 to 116.6 degrees F (–40 to 116.6 degrees C)

- Relative humidity: 20% to 80% noncondensing
- Maximum altitude: 10,000 ft. (3,048 m)

Regulatory approval
- FCC Class A

Ordering Information

Workgroup Server 8150
Order No. M3300LL/A
  - Workgroup Server 8150 with 16MB of RAM, 256K level-2 cache, 1GB hard disk drive, DDS-2 DAT drive, CD-ROM drive, and 1.4MB Apple SuperDrive floppy disk drive
  - Mouse
  - System 7 software
  - Retrospect Remote software
  - Power Macintosh Display Adapter
  - Complete setup, learning, and reference documentation
  - Limited one-year warranty

Workgroup Server 8150 with AppleShare
Order No. M3359LL/A
  - Identical to above configuration, with the addition of AppleShare 4.0.2 software

Workgroup Server 8150 Logic Board Upgrade
Order No. M2915LL/A
  - Upgrades a Workgroup Server 80 to a Workgroup Server 8150 (must be installed by an Apple authorized service provider); includes AppleShare 4.0.2, and Retrospect Remote software upgrade

Macintosh Memory Expansion Kits
Order No. M1507LL/A
  - 4MB (1-4MB SIMM)

Order No. M1508LL/A
  - 8MB (1-8MB SIMM)

Order No. M3372LL/A
  - 16MB (1–16MB SIMM)

Order No. M3373LL/A
  - 32MB (1–32MB SIMM)

NOTE: SIMMs must be installed in pairs by an authorized Apple service provider. The Workgroup Server 8150 has four pairs of SIMM sockets, some of which may be occupied.

Apple Token Ring NB/c Card (7-inch)
Order No. M1769Z/A

Apple Token Ring 4/16 Card (12-inch)
Order No. M0415LL/B

Article Change History:

15 May 1995 - Changed title to reflect processor speed.
21 Feb 1995 - Corrected size of DAT tape included.
31 Jan 1995 - Removed reference to high-speed SCSI interface.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15209

Tech Info Library

Workgroup Server 9150/80: Description (5/95)

Revised: 5/15/95
Security: Everyone

Workgroup Server 9150/80: Description (5/95)

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Article Created: 25 April 1994
Article Reviewed/Updated: 15 May 1995

TOPIC ----------

This article provides a description, and features for the Apple Workgroup Server 9150/80.

DISCUSSION ----------

The Workgroup Server 9150 is the most expandable and powerful member of the PowerPC processor–based Workgroup Server family from Apple. It delivers file and print, database and communications capabilities that meet the needs of growing work-groups in education, business, and publishing.

Delivering all the benefits of PowerPC performance while maintaining Macintosh ease of use, the Workgroup Server 9150 features an 80-megahertz PowerPC 601 processor, on-chip and level-2 cache, two large-capacity hard disk drives with space for three more, Retrospect Remote automatic client and server backup software, and responsive service and support.

Not only is the Workgroup Server 9150 easy to set up and administer, it's also designed to work with easy-to-use server software programs such as AppleShare, AppleSearch, Apple Remote Access, and PowerShare collaboration server, as well as third-party server software. And it's perfect for publishing, database, accounting, electronic-mail, calendar, and remote-access applications.

So if you need a server for a large and expanding workgroup that runs sophisticated applications, we have the solution: the powerful and expandable Workgroup Server 9150.

Workgroup Server 9150 Features

Expansion and storage
• Four NuBus slots for expansion cards
• One processor-direct slot (PDS)

- Two internal 1GB or 2GB hard disk drives
- Space for a total of five internal 3.5-inch half-height hard disk drives
- Internal DDS-2 Digital Audio Tape (DAT) drive
- Internal double-speed CD-ROM drive
- Retrospect Remote automatic server and client backup software
- Apple RAID software
- Two SCSI DMA buses to support up to 14 devices (7 internal, 7 external)
- Nine ports to support a wide range of peripherals

Networking
- Built-in Ethernet and LocalTalk capabilities
- Support for AppleTalk networking protocols
- Token Ring support optional (with expansion card)

Power, speed, and memory
- 80-MHz PowerPC 601 RISC microprocessor with floating-point processor and 32K on-chip cache
- 512K level-2 cache
- 16MB of RAM, expandable to 264MB

Features Built Into Every Workgroup Server

Fast, easy setup
- Comes with System 7 software installed
- Includes AppleShare 4.0.2 file and print server software (in some configurations)

Compatibility
- Runs Apple server software and third-party server applications
- Supports Macintosh and Power Macintosh desktop clients, as well as clients running Windows and MS-DOS, depending on server software*
- Reads Macintosh, Windows, MS-DOS and OS/2 floppy disk formats

Service and support**
- Includes 24-hour telephone support
- Includes within-two-business-day, on-site service response
- Offers optional within-four-hour or next-business-day on-site service response

* Additional third-party server software may be required and must be purchased separately.

** These services are available only in the United States.

Article Change History:
15 May 1995 - Change title to reflect processor speed.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15210

Tech Info Library

Workgroup Server 9150/80: Specifications (5/95)

Revised: 5/15/95
Security: Everyone

Workgroup Server 9150/80: Specifications (5/95)

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Article Created: 25 April 1994
Article Reviewed/Updated: 15 May 1995

TOPIC ----------

This article provides specifications and order information for the Apple Workgroup Server 9150/80.

DISCUSSION ----------

Technical Specifications

Microprocessor
- PowerPC 601 RISC microprocessor running at 80 MHz
- Integrated floating-point unit and 32K on-chip cache
- 512K level-2 cache

Memory
- 16MB or 24MB of RAM
- Can be expanded to up to 264MB of RAM

Drives
- Two 1GB or 2GB Apple hard disk drives
- One DDS-2 DAT drive (4MB uncompressed, 10-14GB compressed)
- One AppleCD 300i Plus CD-ROM drive (up to 342K- per-second streaming data-transfer rate)
- One Apple SuperDrive 1.4MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, Windows, MS-DOS and OS/2 disks

Displays
- Supports up to 14-inch Apple displays at 32,768 colors, and 16- and 17-inch Apple displays at 256 colors
- Supports most third-party displays as well as VGA and SVGA monitors

Video support

- Built-in DRAM display support

Interfaces
- Four NuBus expansion slots
- One processor-direct slot
- One Apple Desktop Bus (ADB) port for a keyboard, mouse, and other device
- AAUI-15 Ethernet connector
- Two DMA serial (RS-232/RS-422) ports compatible with LocalTalk
- Dual-channel, high-speed asynchronous SCSI DMA interface; one supports up to seven external SCSI devices, the other supports up to seven internal SCSI devices (for a total of 14)
- 16-bit stereo sound input and output ports
- DB-15 video port for display support

Networking
- Built-in Ethernet
- Two serial ports for LocalTalk

Clock/calendar
- Custom integrated circuit with long-life lithium battery

Disability access
- Easy Access and visible beep included with system software to provide alternative input and output devices for people with disabilities

Electrical requirements
- Line voltage: 100 to 240 volts AC, RMS single phase, automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 303 W maximum, not including display

ADB power requirements
- Maximum current draw for all ADB devices: 500 mA (a maximum of three ADB devices is recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA (varies with keyboard model used)

Keyboard and mouse
- Supports ADB keyboards with numeric keypads
- ADB Mouse II included

Size and weight
- Height: 18.6 in. (47.3 cm)
- Width: 8.9 in. (22.4 cm)
- Depth: 20.6 in. (52.3 cm)
- Weight: 36.8 lbs. (16.7 kg) (varies based on internal devices installed)

Operating environment
- Operating temperature: 50 to 95 degrees F (10 to 35 degrees C)
- Storage temperature: –40 to 116.6 degrees F (–40 to 116.6 degrees C)
- Relative humidity: 20% to 80% noncondensing
- Maximum altitude: 10,000 ft. (3,048 m)

Regulatory approval
• FCC Class A

Ordering Information

Workgroup Server 9150 (16MB/2 x 1GB)
Order No. M3272LL/A
- Workgroup Server 9150 with 16MB of RAM, 512K of level-2 cache, two 1GB hard disk drives, CD-ROM drive, DDS-2 DAT drive, CD-ROM drive, and 1.4MB Apple SuperDrive floppy disk drive
- Mouse
- System 7 software
- Retrospect Remote software
- Complete setup, learning, and reference documentation
- Limited one-year warranty

Workgroup Server 9150 with AppleShare (16MB/2 x 1GB/AppleShare)
Order No. M3357LL/A
- Identical to above configuration, with the addition of AppleShare software version 4.0.2

Workgroup Server 9150 (24MB/2 x 2GB)
Order No. M3183LL/A
- Workgroup Server 9150 with 24MB of RAM, 512K of level-2 cache, two 2GB hard disk drives, CD-ROM drive, DDS-2 DAT drive, CD-ROM drive, and 1.4MB Apple SuperDrive floppy disk drive

Workgroup Server 9150 Logic Board Upgrade
Order No. M3262LL/A
- Upgrades a Macintosh Quadra 900 or 950 to a Workgroup Server 9150.
- Includes 8MB of RAM, and Retrospect Remote Software Upgrade. AppleShare software must be purchased separately. Additional RAM required.

NOTE: This upgrade is not for the Workgroup Server 95.

Macintosh Memory Expansion Kits
Order No. M1507LL/A
- 4MB (1–4MB SIMM)

Order No. M1508LL/A
- 8MB (1–8MB SIMM)

Order No. M3372LL/A
- 16MB (1-16MB SIMM)

Order No. M3373LL/A
- 32MB (1-32MB SIMM)

NOTE: SIMMs must be installed in pairs by authorized Apple service provider. The Work-group Server 9150 has four pairs of SIMM sockets, some of which may be occupied.

Apple Token Ring NB/c Card (7-inch)
Order No. M1769Z/A

Apple Token Ring 4/16 Card (12-inch)

Order No. M0415LL/B

Article Change History:
15 May 1995 - Change title to reflect processor speed.

Support Information Services

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Tech Info Library Article Number:15211

Tech Info Library

CD Remote: Changing the Track Order (6/94)

Revised: 6/9/94
Security: Everyone

CD Remote: Changing the Track Order (6/94)

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Article Created: 26 April 1994
Article Reviewed/Updated: 9 Jun 1994

TOPIC ----------

I have a Power Macintosh 8100/80AV and I'm using CD Remote to play an audio CD. I can create a customized play list, but I'd like to change the playing order of the the tracks. How do I play track 8 before track 2? I think it's possible, but the manual doesn't explain how.

DISCUSSION ----------

The Power Macintosh uses CD Remote 4.5, which is identical to the CD Remote used on other Macintosh computers.

After you click on the zoom box to reveal the customized Play List, change the playing order of a particular track by holding down the command key and dragging the track before or after another track as it appears in the Play List.

Article Change History:
9 Jun 1994 - Corrected article. It said option key, and is really command key.

Support Information Services

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Tech Info Library Article Number:15213

Tech Info Library

Performa 575, 577, 578: Specifications (Discontinued)

Revised: 8/19/96
Security: Everyone

Performa 575, 577, 578: Specifications (Discontinued)

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Article Created: 25 April 1994
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

This article provides technical specifications for the Macintosh Performa 575, 577, and 578 computer systems. These products differ in four ways:
• Amount of RAM installed
• Hard drive capacity
• Application software installed
• Where sold

DISCUSSION ----------

Microprocessor

• MC68LC040, 33 MHz clock speed; 32-bit data bus
• Built-in memory-management unit

Memory

• 5MB or 8MB RAM (4MB RAM on logic board)
• Expandable to as much as 36MB by adding 1MB, 2MB, 4MB, 8MB, 16MB, or 32MB SIMM to a single 72-pin slot. Requirement: 72-pin fast-paged, 80ns or faster.
• 1MB ROM

Storage

• One built-in Apple SuperDrive 1.4MB floppy disk drive
• One internal 250MB or 320MB hard disk
• Internal AppleCD 300i Plus CD-ROM drive with new tray-loading design
  - Does not require a CD caddy
  - Average access time: 295 ms
  - Capacity: 650MB
  - Supported formats: Multisession Photo CD, High Sierra (ISO 9660),

Macintosh HFS, Audio CD, CD + G/CD + MIDI,
CD-ROM XA, CD-I
• Start-up (bootable) CD-ROM with system software

Video Display

• Integrated Macintosh Color Display with 14-inch Trinitron CRT
• Resolution: 640 x 480 pixels, 69 dpi, .26 mm dot pitch
• Standard 1MB VRAM supports 32,768 colors (16-bit color)

Interfaces

• Internal expansion slot for one Macintosh LC processor-direct expansion card. Compatible with Apple IIe Card.
• SCSI interface for connecting up to five external devices
• Communication slot can be easily configured -- by the user -- to accept any of three Ethernet cards (10BASE-T, Thin Coax, Apple AUI), or a high-speed 14.4 KB fax/modem (based on PowerBook Express Modem).
• Two serial (RS-232/RS-422) ports
• One stereo sound-output port for external audio amplifier or headphones
• One Apple Desktop Bus (ADB) ports for keyboard, mouse, and other devices
• Front headphone jack
• Built-in microphone above display
• One sound-input port for four sources: internal or external microphone*, internal CD-ROM, or external audio

* - Note: Requries PlainTalk microphone.

Pull-out Logic Board

Allows easy upgrades to DRAM, VRAM, PDS, and communication slot.

Sound Generator

• Stereo 8-bit digital-analog conversion using 22-kHz sample rate, capable of driving stereo headphones or other stereo equipment through the sound jack and headphone jack
• Two built-in stereo speakers
• CD output is 16-bit digital

Keyboard and Mouse

• ADB Mouse II
• Apple Desktop Bus (ADB) keyboard with numeric keypad and two-level tilt adjustment

Clock/Calendar

• Custom integrated circuit with long-life alkaline battery.

Disability Access

- CloseView, Easy Access, and visible-beep software are built in.
- Third-party options provide alternative input and output devices

Power Requirements

- Line voltage: 90 to 264 V AC, RMS single phase, automatically configured
- Frequency: 47 to 63 Hz
- Power: 40 W maximum, not including display
  60 W maximum, including display
- Energy-saving feature reduces power consumption by 50%
- One AC outlet powers computer, display, drives, and speakers

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 mA (three ADB devices maximum is recommended)
- Mouse draws 10 mA
- Keyboard draws 25 to 80 mA, depending model used

Software

- Macintosh System Software version 7.1P6, designed specifically for Performa computers. The Performa 575 series requires System Enabler 364.
- At Ease software lets adults share the computer with children -- while protecting valuable data.
- Macintosh PC Exchange lets you work with MS-DOS and Windows disks.
- Application software: a selection of productivity and communication tools already installed on the hard drive.
- Launcher software provides easy way to launch applications, and provides easy access to service and support information, user tips, etc.

Telecommunications

- External Global Village TelePort Bronze modem includes fax send software, (receive software upgrade available from Global Village).

Service and Support

- One year limited warranty
- One year free in-home service
- Toll-free help line
- Support for non-Apple software is provided by the respective software publishers.

Size and Weight

Main unit:

- Height: 17.9 in. (45.5 cm)
- Width: 13.5 in. (34.4 cm)
- Depth: 16.5 in. (42.0 cm)
- Weight: 40.5 lbs (18.4 kg)

Mouse:
• Height: 1.3 in. (3.3 cm)
• Width: 2.4 in. (6.2 cm)
• Depth: 4.2 in. (10.7 cm)
• Weight: 4.0 oz. (0.10 kg)

Operating Environment

• Operating temperature: 50 to 104° F (10 to 40° C)
• Storage temperature: –40 to 116.6° F (–40 to 47° C)
• Relative humidity: 20% to 85% noncondensing
• Maximum altitude: 15,000 ft. (4,722 m)

Article Reviewed/Updated:
19 Aug 1996 - Changed misspelling.
16 May 1995 - Added microphone information.
18 Oct 1994 - Updated modem information.

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Tech Info Library Article Number:15214

Tech Info Library

Workgroup Server 9150: External Cache (4/94)

Revised: 4/26/94
Security: Everyone

Workgroup Server 9150: External Cache (4/94)

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Article Created: 26 April 1994

TOPIC ----------

This article describes the external cache of the Workgroup Server 9150 (WS 9150).

DISCUSSION ----------

The optional external cache in the WS 9150 is a direct mapped, write through, 2nd level (L2) cache capable of 2-1-1-1 operation. It is selectable to either unified or instruction only operation, and can be a variety of sizes by the choice of components installed in the cache SIMM. Two pins on the SIMM socket are read by the High speed Memory Controller (HMC) at reset, and are intended to indicate the cache size to the Operating System software so meaningful diagnostics can be performed. If the SIMM is not present, pullup resistors on these pins disable all L2 cache related operations. If the SIMM is installed, the cache can be enabled or disabled from the HMC control register, although updates will still be performed to insure coherency.

Tag Organization

The L2 cache tags all 32 bits of the PowerPC 601 processor's physical address. Address bits A(0:14) comprise the tag, A(15:26) index the set location, and A(27:31) form the line offset as shown in figure 4. In addition to A(0:14) the tag also compares a valid bit. The valid bit is cleared by a system reset and set by a cache line allocate operation.

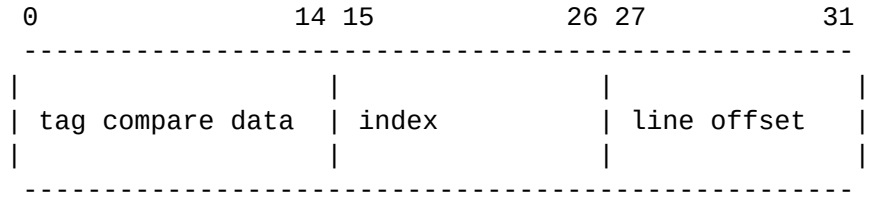

Figure 4: Address Tag Organization

Cache Coherency

The L2 cache maintains a single valid bit for each 32 byte line. The valid bits are cleared by a system reset and individually set when a line is allocated in the cache. When the L2 cache is operating in the unified mode, a cache line is never invalidated other than system reset.

The PowerPC 601 processor broadcasts primary cache manipulation instructions so that other caches in the system can mirror the functionality of the instruction. Since the HMC makes the assumption that the L2 cache is bound to main memory rather than the processor, it ignores these broadcasts. Executing these invalidate memory cycles potentially discards useful data. In order to keep the L2 cache coherent without invalidating, all PowerPC 601 processor's write transactions, force a tag compare. Cache-inhibited write data is tag compared due to the possibility that the data was formerly cache-enabled and allocated.

Configuring the L2 cache as instruction-only alters the line allocation policy but does not affect the write-update procedure. This prevents stale instruction data that could be caused by relocating program code.

Whenever the tag matches on a write cycle, data is updated in the cache simultaneously with the write-buffer being filled. Bus cycles that write less than the full 64 bit data bus width, utilize the cache data RAM synchronous write-enables to select the appropriate byte lanes. To permit writes to execute as quickly as possible, the cache data RAM write-enables are qualified with the state of the tag match. As a result, the first beat of a two-clock write that misses the cache will be aborted asynchronously.

Since all 32 address bits are significant to the cache, but not to the physical memory decode (there are physical aliases of both DRAM and ROM), access of physical memory aliases is not recommended as it can result in stale data in the L2 cache. This feature allows cache testing.

Line Allocation

Cache lines are allocated only on PowerPC 601 processor's burst read memory cycles. Read data is forwarded to the CPU in conjunction with the line fill. The L2 cache is write-through so write transactions are never allocated. Setting the HMC control register bit, L2_INST, forces the L2 to cache only instruction fetches. The PowerPC 601 processor's TC(0) output distinguishes whether the bus read data is instruction or data.

The L2 cache attempts to allocate cache lines similarly to the PowerPC 601 processor primary cache. The PowerPC 601 processor bus transaction modifiers that affect line allocation are cache-inhibit and transfer-burst. Cache-inhibiting an address space prevents the L2 cache from allocating lines in that address space. Thus memory areas such as DMA buffer space that might be marked cache-inhibited will not thrash the L2 cache. The HMC also watches the transfer-burst signal for single-beat transactions. Because the granularity of the L2 cache valid data is 32 bytes, single-beat transactions are not allocated. Additionally, single beat reads are never looked up in the cache even if the cache-inhibit line is de-asserted.

The cacheable address spaces are RAM at $00000000-$3FFFFFFF, Macintosh ROM at $40000000-$4FFFFFFF, and PowerPC ROM at $FF000000-$FFFFFFFF. Other address locations, such as the PDS (processor direct slot), are not cached in the L2, but may be cached in the PowerPC 601 processor's primary cache.

Testing

Since all of the address bits are tagged, aliases of physical RAM space will appear distinct to the cached, but not to uncached data. This allows testing to determine proper cache operation. Normally the L2 cache ignores ROM writes. However, by setting the L2ROMW bit, ROM writes will update the cache. For normal ROMs, the cache will now be inconsistent with memory, allowing ROM caching to be tested.

Support Information Services

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Tech Info Library Article Number:15215

Tech Info Library

Workgroup Server 9150: Internal Cache Brief Description (4/94)

Revised: 4/26/94
Security: Everyone

Workgroup Server 9150: Internal Cache Brief Description (4/94)

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Article Created: 26 April 1994

TOPIC ----------

This article briefly describes internal cache on the Workgroup Server 9150 (WS 9150).

DISCUSSION ----------

The PowerPC 601 processor maintains a 32 kilobyte, unified, set associative internal cache, organized as 64 sets of 8 lines were each line is divided into 2 sectors of 32 bytes each. The cache supports inhibit, copy back or write-though on a page basis, and both refills and writes back are 4 double word burst transactions.

Support Information Services

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Tech Info Library Article Number:15216

Workgroup Server 9150: Memory Bus Operations (4/94)

Revised: 4/26/94
Security: Everyone

Workgroup Server 9150: Memory Bus Operations (4/94)

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Article Created: 26 April 1994

TOPIC ----------

This article describes the memory bus operations of the Workgroup Server 9150 (WS 9150).

DISCUSSION ----------

The High speed Memory Controller (HMC) contains a single read/write control register and resets to a "least critical" state to guarantee operation on power up. The HMC supports the basic PowerPC 601 processor's transfer protocol, including all of the PowerPC 601 processor's single beat accesses with the addition of the 4 beat 32 byte cache line access. Only the transfer codes in the basic protocol will generate a response from the HMC. Extended protocol codes will result in a transfer error exception from the WS 9150 I/O controller. The WS 9150 does not support the Little Endian mode of the PowerPC 601 processor.

Misalignment

Misaligned reads from the PowerPC 601 processor are translated into standard double-word reads by the HMC. However misaligned writes are fully decoded so only the appropriate DRAM CAS signals are selected. The L2 cache mirrors this functionality through the cache data RAM asynchronous write-enables so that RAM write hits are updated properly.

Address Only Transaction

The PowerPC 601 processor initiates address-only transactions when instructions that affect the level 1 cache are executed. These transactions never require data bus tenure but do require an address acknowledgment. The HMC decodes the TT(1) input to identify the address only cycles and asserts AACK_ on the third clock following transfer start.

Arbitration

Bus arbitration is fielded by the HMC on the address bus only. Granting of the data bus is implicit based on successful arbitration for the address bus. The PowerPC 601 processor's bus protocol specifies an arbitration overhead of one CPU clock unless bus parking is used. Bus parking is a situation that occurs when bus grant is asserted to a bus master who is not currently requesting the bus. Since the PowerPC 601 processor is the primary WS 9150 bus master, the HMC eliminates one clock of the PowerPC 601 processor's memory latency by parking the PowerPC 601 processor on the bus. The HMC arbitration logic is a simple combinational decode of the bus request signals. Priority of bus granting is fixed in the order of DMA, PDS, and lastly the PowerPC 601 processor. The PowerPC 601 processor is only granted the bus in the absence of other bus requests. As a result the PowerPC 601 processor bus request is not an HMC input. Receiving a bus grant from the HMC does not imply that the bus is unused. It is the responsibility of the requesting device to verify that the bus is indeed free by qualifying bus grant with the de-assertion of ABB_. The WS 9150 adds an extra level of decode in order to have both the VRAM frame buffer and the NuBus controller use the same bus request bus grant lines to HMC. The NuBus controller has priority over the VRAM based frame buffer.

Pipelining

All memory bus transactions are non-pipelined.

Snooping

The primary focus of the WS 9150 is uni-processing, and provisions for snooping would lengthen the latency to 2nd level cached data by 50% (from 2 clocks minimum to 3 clocks). For this reason, snooping of other processor internal caches is not supported on the WS 9150 memory bus. Alternate masters can be designed to snoop the PowerPC 601 processor's internal cache, provided certain restrictions are followed. When the alternate master reads data from DRAM that data must not be forwarded or acted upon until the ARTRY_ window has expired. If the PowerPC 601 processor does assert ARTRY_, then the alternate master discards the read data and backs off the bus allowing the PowerPC 601 processor to update memory. The alternate master then reruns the bus cycle to obtain the updated copy. If the alternate master is writing data to DRAM then an ARTRY_ from the PowerPC 601 processor implies a pipeline collision. The alternate master must retain the data so that the write cycle can continue to be rerun until the PowerPC 601 processor pipeline collision clears. This scenario has the benign side-effect that DRAM is updated with the same data more than once.

Bus Errors

Any access to undecoded address space will result in a Transfer Error Acknowledge (TEA) asserted by FAT AMIC after a 40 µsec time-out. While in 680x0 based Macintosh computer's BERR time-outs where frequently generated by the Slot Manager, SCSI driver, and so on, and were generally recoverable, this is not the case in WS 9150. A cycle terminated with TEA is not in general recoverable due to the more or less independent operation of the Bus Interface, Branch, and Integer Execution Units within the PowerPC 601 processor. To prevent this, the Memory Management Unit (MMU) should be used to map only that space which is decoded by hardware. This can be determined at start-up by testing the various

optional address spaces in the PDS range, using carefully written code. With the proper MMU setup, accesses to undecoded address space will generate an addressing exception from the MMU, which is recoverable. The only changes made to the PDM bus operation for WS 9150 are the expansion of the arbitration to allow for both the NuBus controller and the VRAM based frame buffer. PDM only accommodates one at a time.

Support Information Services

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Tech Info Library Article Number:15217

Tech Info Library

Workgroup Server 9150: Memory Overview (4/94)

Revised: 4/26/94
Security: Everyone

Workgroup Server 9150: Memory Overview (4/94)

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Article Created: 26 April 1994

TOPIC -----

This article provides a memory overview of the Workgroup Server 9150 (WS 9150).

DISCUSSION -----

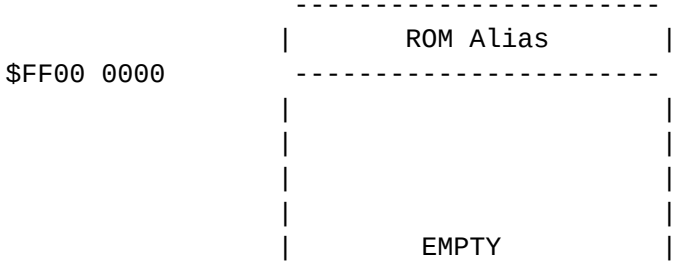
The Workgroup Server 9150 computer's memory is organized in three levels:

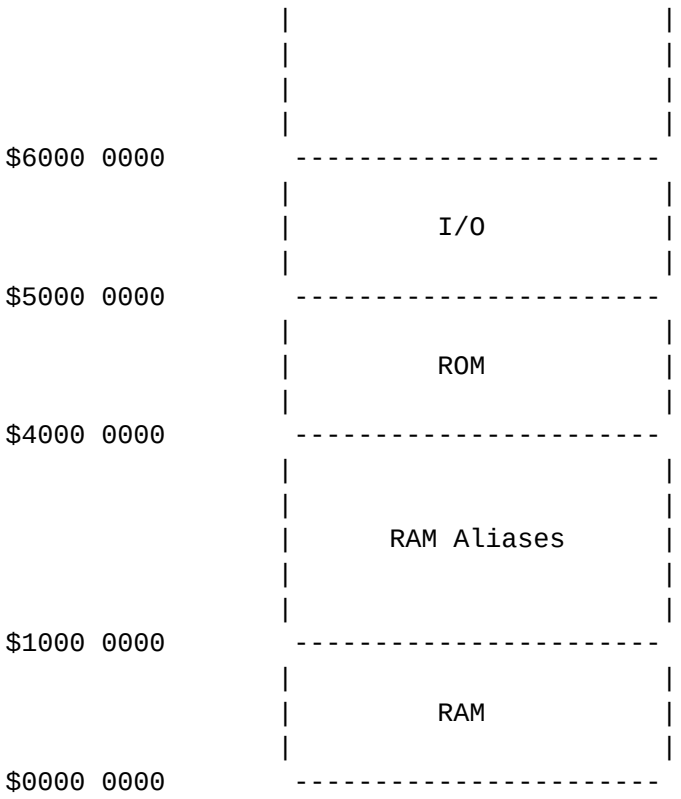
- Internal cache
- External second level cache
- Main memory array

Access to data or instructions in memory, including routine copy back and refill maintenance is controlled by hardware. The main memory array is buffered from the cached bus so that external second level cache operations can proceed simultaneous with video refresh, I/O DMA, and other operations.

All memory operations are controlled by the High speed Memory Controller (HMC) ASIC.

Workgroup Server 9150 supports a single 32 bit memory map. Virtual memory is supported through the PowerPC 601 processor's internal memory management unit. The physical memory map is shown below. Of course the logical memory map is up to the discretion of the system programmer and may be configured to provide a Macintosh compatible 24 bit address space.





Support Information Services

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Tech Info Library Article Number:15218

Tech Info Library

Workgroup Server 9150: Video Support (4/94)

Revised: 4/26/94
Security: Everyone

Workgroup Server 9150: Video Support (4/94)

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Article Created: 26 April 1994

TOPIC ----------

This article describes the video capability of the Workgroup Server 9150 (WS 9150).

DISCUSSION ----------

The WS 9150 uses DRAM for video buffering when connecting to the built-in DB-15 socket on the back of the computer. This DB-15 socket supports these monitors:

Monitor	Size (pixels)	Color depth (bits)
12-inch RGB	512 by 384	16
14-inch RGB	640 by 480	16
15-inch portrait	640 by 870	8
16-inch RGB	832 by 624	8
VGA	640 by 480	8

Bandwidth limitations prevent the WS 9150 from supporting 16 bit pixel depths on the larger monitors.

For larger monitors on the WS 9150 use either a NuBus, or PDS video card. The amounts of VRAM on the card will support larger monitors at greater color depth.

Support Information Services

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Tech Info Library Article Number:15219

Tech Info Library

Workgroup Server 6150, 8150, and 9150: DRAM Expansion (4/94)

Revised: 4/26/94
Security: Everyone

Workgroup Server 6150, 8150, and 9150: DRAM Expansion (4/94)

==========

Article Created: 26 April 1994

TOPIC --------------------

This article describes the DRAM expansion for the Workgroup Server (WS) 6150, WS 8150, and WS 9150.

DISCUSSION --------------------

Like the Power Macintosh models, RAM for the Workgroup Server computers is provided by dynamic random-access memory (DRAM) chips, of which the first 8MB of RAM capacity is soldered to the main logic board. Users may expand RAM capacity by adding 72-pin Single Inline Memory Modules (SIMMs) of 80ns or better in pairs of 4 MB, 8 MB, 16 MB, or 32 MB in size.

The WS 6150 has two SIMM slots, the WS 8150 has eight SIMM slots, and the WS 9150 has eight SIMM slots.

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Tech Info Library Article Number:15220

Tech Info Library

DOS Compatibility Card: Using Newton Connection Kit (5/95)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Using Newton Connection Kit (5/95)

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Article Created: 28 April 1994
Article Reviewed/Updated: 9 May 1995

TOPIC ----------

I Want to be able to use the Newton Connection Kit for Windows on Quadra 610 DOS Compatible computer. Is this possible?

DISCUSSION ----------

We were successful in connecting an Apple MessagePad to the Quadra 610 running the DOS Compatible Card. The following steps were taken. The sequence is important, start with the Macintosh configuration, then Windows, then Apple MessagePad.

Macintosh Configuration

Step 1:
Open PC Setup in the control panel. Select the "Modem Port" option under the "comm1" pull down menu.

Step 2:
Close the control panel.

Step 3:
Switch back to the PC environment by pressing Command-Return.

Step 4:
Connect the Apple MessagePad to the Modem Port.

Windows Configuration

Step 1:
Install the Windows Newton connection software.

Step 2:

Launch windows.

Step 3:
Launch the Newton Connection application.

Step 4:
Pull down the Newton menu and select "preferences".

Step 5:
Select the "port setup..." button.

Step 6:
Make sure only comm1 is checked in the check boxes to the right.

Step 7:
Select 19,200 as the maximum baud rate.

Step 7:
Click OK. Then click OK again to exit all open windows.

Step 8:
Exit the Newton Connection application and then re-launch it.

Apple MessagePad

Launch the connection icon on the Apple MessagePad, and it should work.

Article Change History:
09 May 1995 - Made minor technical updates and reformatted.

Support Information Services

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Tech Info Library Article Number:15221

Tech Info Library

Windows LaserWriter Utility (5/95)

Revised: 5/24/95
Security: Everyone

Windows LaserWriter Utility (5/95)

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Article Created: 27 April 1994
Article Reviewed/Updated: 16 May 1995

TOPIC ----------

There is a Windows utility included with the Laserwriter Select 360 printer that performs similar functions as the LaserWriter Utility in the Macintosh environment.

Does this updated software come with the LaserWriter Pro 630 printers that are currently shipping?

If the software does not come with this printer can our dealers copy the Windows utility software and distribute it to customers who want its functionality?

DISCUSSION ----------

The LaserWriter Utility for Windows provides similar functionality to the Macintosh version. This utility only started shipping with the LaserWriter Select 360, and will ship with future printers. The utility was not rolled into the LaserWriter Pro 600/630 because there was minimal testing on this printer. It should, however, work without any problems.

Apple currently supports this utility only on the LaserWriter Pro 600/630 and LaserWriter Select 360. It should, however, work with Apple's other DOS/Windows-marketed printers (such as Personal LaserWriter NTR and LaserWriter Select 310).

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple

support information, and a subset of the Apple Tech. Info. Library

Article Change History:
16 May 1995 - Reviewed for technical accuracy.
12 Oct 1994 - Added note about where to find SW updates.

Support Information Services

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Tech Info Library Article Number:15223

Tech Info Library

Performa 550, 575, 577, 578, & Mac LC 575 Differences (4/95)

Revised: 4/20/95
Security: Everyone

Performa 550, 575, 577, 578, & Mac LC 575 Differences (4/95)

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Article Created: 26 April 1994
Article Reviewed/Updated: 20 April 1995

TOPIC ----------

What are the differences between the Performa 550, 575, 577, 578, and Macintosh LC 575?

DISCUSSION ----------

The following table shows the differences between the Performa 550, 575, 577, 578 and Macintosh LC 575.

	550	575	577	578	LC 575
Processor	68030	68LC040	68LC040	68LC040	68LC040
Clock Speed	33MHz	33MHz	33MHz	33MHz	33MHz
FPU Socket	Yes	No	No	No	No
Std. RAM	5 MB	5 MB	5 MB	8 MB	5 MB
Max. RAM	36 MB	36 MB	36 MB	36 MB	36 MB
Std. Hard Drive	160MB	250MB	320MB	320MB	160MB/320MB
Display*	14-in	14-in	14-in	14-in	14-in
Std. VRAM	512K	1 MB	1 MB	1 MB	512K
Max. VRAM	1 MB	1 MB	1 MB	1 MB	1 MB
Slots	1 PDS	2 PDS/COMM	2 PDS/COMM	2 PDS/COMM	2 PDS/COMM
Modem^	Included	Included	Included	Included	N/A
Min. System Software	7.1P5	7.1P6	7.1P6	7.1P6	7.1
Bundled Software~	Yes	Yes	Yes	Yes	No

Market	Home	Home	Home	Home	Education

Key:
---
* - All models have a built-in .26 mm Trinitron display.

^ - Each computer with included modem has a Global Village Teleport Bronze for Performa fax/data modem (2400 bps data/9600 bps fax).

~ - Each computer with bundled software has a set of application, communication, and utility software. This software varies between models.

Article Change History:
20 Apr 1995 - Corrected LC 550 VRAM configurations.

Support Information Services

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Tech Info Library Article Number:15225

Tech Info Library

AppleShare 4.0.2 READ ME File (4/94)

Revised: 5/10/94
Security: Everyone

AppleShare 4.0.2 READ ME File (4/94)

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Article Created: 27 April 1994

TOPIC -----

This article is the AppleShare 4.0.2 READ ME file.

DISCUSSION -----

This document provides important information about AppleShare 4.0 (including version 4.0.2). Some of this information is not included in the "AppleShare Administrator's Guide." You may want to print this document and keep it with the "AppleShare Administrator's Guide."

Choose Screen Savers Carefully

There are many screen savers on the market that can be used to prevent screen burn-in on AppleShare servers. Some screen savers are quite elaborate and perform many complex calculations to draw a single picture on the screen. Since they require significant amounts of CPU time, the more complex screen savers will reduce the performance of your AppleShare server. Please choose the screen saver that interferes the least with your AppleShare server.

Some screen savers are not compatible with AppleShare 4.0 and can cause your AppleShare file server to crash or hang. Before purchasing or using a screen saver, check with the screen saver's manufacturer to determine if the screen saver will work properly with your AppleShare file server.

Optimize Memory Usage

AppleShare 4.0 uses caching techniques to improve the performance of the file server. Caching stores frequently used items, such as folders, icons, and parts of documents, in high-speed memory. Items in memory can be retrieved faster than items stored on disk.

In general, the more you increase the size of the cache, the better your AppleShare file server will perform. However, increasing the size of the cache

also increases the amount of server memory your AppleShare file server requires. If you increase the size of the cache by too much, your other server application programs (such as AppleShare Print Server) may not be able to run in the remaining memory.

To be sure that all your server application programs have enough memory to operate correctly, start AppleShare file service after you have opened all your other server application programs. If there is not enough memory to start AppleShare file service with the cache size you requested, AppleShare will decrease the size of the cache until it fits in the available memory.

If, however, the primary purpose of your server system is to provide AppleShare file service, then you may want to start AppleShare file service first. This will allow AppleShare to allocate all the memory it needs. You can then use the remaining memory for your other server application programs.

If you are using a backup utility that periodically backs up your file server data, be sure to leave enough memory available for the backup utility to function properly.

If you are having problems opening windows in the Finder, reduce the size of the cache until there is enough memory for the Finder to work properly.

Using System 7 Disk Cache With AppleShare 4.0

In addition to the caching provided in AppleShare 4.0, System 7 also provides disk caching. Depending on how you use AppleShare 4.0, you may notice an improvement in performance by adjusting the server computer's disk cache size. Cache sizes in the range 32K to 128K are valid settings for use with AppleShare. Settings higher than 128K will provide little additional improvement in performance and will waste memory. In general, increasing the size of the cache for your AppleShare file server will provide a more substantial performance improvement than increasing the size of the System 7 disk cache.

System 7 ships with disk cache turned on and set to 96K. You may wish to experiment with higher settings. (You adjust the cache size in the Memory control panel.) Depending on the type of server usage in your work environment, you may notice better server performance.

If you change the size of the disk cache, be sure to restart the server computer for the new size to take effect.

Using Virtual Memory With AppleShare 4.0

Using virtual memory affects the performance of your server application programs. DO NOT turn on virtual memory with your Workgroup Server.

Using Special Characters in Server Names

AppleShare Admin will not allow the administrator to enter a server name that contains a "/" character. If you must have a "/" character in the name of your server, use the following workaround:

1) Shut down file service.
2) Quit AppleShare Admin.
3) Drag the Users & Groups Data File from the Preferences folder to the System Folder.
4) Using the Sharing Setup control panel, change the Macintosh name to the Server name you want.
5) Start AppleShare Admin.
6) Fill out the information in the Administrator Information and Serial Number dialog box.
7) When the Server Name dialog box appears, do not change the server name. Just enter the Admin Key and click OK.
8) Quit AppleShare Admin.
9) Drag the Users & Groups Data File from the System Folder to the Trash. It is no longer needed. A new Users & Groups Data File has been created in the Preferences folder.

Retaining Access Privileges While Upgrading From Macintosh File Sharing
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If you are upgrading from Macintosh file sharing while using new server hardware, your original access privileges will not be retained in some circumstances. Specifically, if you copy information from the startup volume using the Finder, your access privileges for that volume will not be retained. The "AppleShare Administrator's Guide" instructs you how to manually re-establish those access privileges on the new server. For startup volumes that have only a few shared items and only a limited number of folders with specific access privileges, this is the best approach. However, if your startup volume has many folders with different access privileges, then you may want to use the following workaround.

Follow the instructions in the "AppleShare Administrator's Guide" for upgrading from Macintosh file sharing. When the instructions ask you to copy the data from the startup volume, use the instructions below instead. Then finish the rest of the instructions in the "AppleShare Administrator's Guide."

1) Connect an empty (unused) external disk to your old system.
2) Copy AppleShare Admin from your AppleShare 4.0 Installer disk to your startup volume. AppleShare Admin is in the "AppleShare File Server" folder. If you received the AppleShare CD-ROM disc, the "AppleShare File Server" folder is in the "AppleShare" folder, which is in the "AppleShare for Power Macintosh" folder.
3) Open AppleShare Admin. The "Users & Groups Data File was not found" dialog box appears.
4) Select "Use System 7," and click OK.
5) Enter a serial number in the Administrator Information and Serial Number dialog box.
6) Enter a server name and Admin Key in the Server Information dialog box.
7) Wait for Admin to finish starting up.
8) Use the Copy <item> command to copy the contents of your startup volume to the external disk.
9) Quit AppleShare Admin, and drag it to the Trash.
10) Drag the newly created Users & Groups Data File from the Preferences folder to the Trash.
11) Drag the old Users & Groups Data File from the floppy (where you saved

it earlier) to the Preferences folder.
12) Attach the external disk to your new server.

AppleShare Admin 4.0 runs on 68040- and PowerPC-based systems. If you are running Macintosh file sharing on other than a 68040 or PowerPC system, use either AppleShare Admin 3.0 or a third-party backup program to copy your startup volume. Contact your Apple support representative for assistance.

Install Fonts Before Using Online Documentation

If you received AppleShare 4.0 on a CD-ROM disc, online documentation for the "AppleShare Administrator's Guide" is included on the CD-ROM disc. Before you can use the documentation, you must first install the fonts required by DocViewer into your system. Those fonts are on your CD-ROM disc in the "Apple DocViewer Fonts" folder, which is in the "Apple DocViewer 1.1" folder. The "Apple DocViewer 1.1" folder is inside the "AppleShare Electronic Library" folder. You can install the required fonts into your system by dragging their icons into the Fonts folder, which is in the System Folder. Some DocViewer fonts may already be in your Fonts folder. Drag only those fonts that are missing from your Fonts folder.

Use Caution When Removing the Workstation

The Installer will allow you to remove AppleShare 4.0 software as well as install it. Be aware that removing the Workstation software requires you to restart your Macintosh computer. Restarting your Macintosh computer will break your connection with your AppleShare file server. Since there is no longer any Workstation software on your Macintosh computer, you will be unable to reconnect to your AppleShare File Server. You will need to reinstall the Workstation software from the "AppleShare Workstation" floppy disk before you can reconnect to your AppleShare File Server.

Install System 7.1 First

Always install System 7.1 first, then install AppleShare 4.0. If you install System 7.1 after you install AppleShare 4.0, the Apple Shared Library Manager will not function correctly. Since AppleShare 4.0 uses the Apple Shared Library Manager, it will also not function correctly.

If you need to reinstall System 7.1 for any reason, remove the Shared Library Manager from the Extensions folder and then reinstall AppleShare 4.0.

Use Separate Aliases for Shared Items

Aliases to shared folders can be created by the AppleShare server (using the Finder). Those aliases can be shared with workstations by placing them in a shared folder. If a shared alias is used by a workstation, the alias may be modified in such a way that it is no longer usable by the Finder on the AppleShare server. This can only happen with shared-item aliases created on an AppleShare server.

To avoid this problem, use separate aliases for shared items. Create two aliases to the same shared item, using the Finder on the AppleShare server.

Place one alias in a shared folder for use by workstations. Keep the other alias in a folder that is not shared with workstations.

Serial Numbers Are Not Updated Immediately

Using AppleShare Admin, you can change serial numbers while file service is running. However, the old serial number will remain in effect until you restart file service.

If you change serial numbers to eliminate a duplicate serial number, you will continue to receive duplicate serial number notifications until you restart file service. Likewise, if you accidentally change the serial number to one that is already in use by another file server, you will not receive duplicate serial number notifications until you restart file service.

In addition, once you change to a new serial number, the old serial number will no longer be displayed by AppleShare Admin. To avoid confusion about which serial number is in use, restart file service immediately after changing the serial number.

Some Greeting Messages May Not Appear on System 7 Workstations

Macintosh system software includes AppleShare Workstation software. You can use that software to log on to and use any AppleShare server, including an AppleShare 4.0 server. However, the AppleShare Workstation software supplied with system software does not accept the full range of server greeting messages that can be sent from an AppleShare 4.0 server.

To ensure that the full range of greeting messages is displayed on all workstations, use the AppleShare Workstation software included with your AppleShare 4.0 software. See your "AppleShare Administrator's Guide" for how to install the Workstation software.

Working With a Large Users & Groups Data File

AppleShare Admin is factory configured to work with a Users & Groups Data File that has a maximum of 1900 users. If you have a large user community, you may need to increase the capacity of AppleShare Admin. You can increase the capacity of AppleShare Admin by increasing the preferred memory size in the Admin Info window. (In the Finder, select the AppleShare Admin icon, then choose Get Info from the File menu.) AppleShare Admin needs a minimum of 400K of memory. Increase Admin's preferred memory size by 100K for each additional 1000 users in your user community. For example, AppleShare Admin needs 500K of memory to handle 2900 users. Likewise, it needs 600K of memory to handle 3900 users.

Using Retrospect Remote With AppleShare 4.0

If you are backing up a large number of files, you may need to give Retrospect Remote more application memory. See your "Retrospect Remote User's Guide" for guidelines on when to increase the size of your Retrospect Remote application.

Using Microsoft Mail Client Software on Your Server

If you are using Microsoft Mail client software on your AppleShare server, use these directions for installing your Microsoft Mail software:

1) On your server computer, turn AppleTalk off. (Open the Chooser, then select the AppleTalk Inactive radio button.)
2) Follow the instructions included in your documentation for installing Microsoft Mail in low-memory conditions.
3) Drag and drop all the Microsoft Mail files in their proper location except the AppleTalk files. Those files should not be installed on your server system.
4) Turn AppleTalk back on. (Open the Chooser, then select the AppleTalk Active radio button.)
5) Restart your server system.

Capitalize Apple II Shared Items

If you are experiencing problems moving files between your AppleShare file server and your Apple II workstation, try capitalizing the name of the shared item. For example, use a shared item named ARTCLASS rather than ArtClass.

Use QuickTime 1.6.1 on Workstations

If you are using NOW utilities on your workstation, and also have QuickTime 1.6 on your workstation, your workstation may hang when logging on to an AppleShare file server. This may occur when logging on to a server through either the chooser, or through an alias. To correct this problem, install QuickTime 1.6.1 on your workstation. Alternatively, removing QuickTime 1.6 or the NOW utilities from your workstation will also fix the problem. You may also experience problems if you are using the HAM (HierArchial Menu) utility.

If you received AppleShare 4.0 on a CD-ROM disc, QuickTime 1.6.1 is in the "Extras" folder, which is in the "AppleShare Tidbits" folder. The "AppleShare Tidbits" folder is in the "AppleShare" folder, which is in the "AppleShare for Power Macintosh" folder. If you received AppleShare 4.0 on floppy disk, QuickTime 1.6.1 is inside the "Extras" folder on the floppy disk labeled "AppleShare Tidbits."

Using the Apple IIe or the IIe Card for the Macintosh LC

If you are experiencing problems logging on to an AppleShare 4.0 File Server from either an Apple IIe or a Macintosh LC with a IIe card, contact your Apple support representative. Ask your representative to supply you with the upgraded software required to fix the problem.

Use the International Menu to Choose the Roman Keyboard

Using KanjiTalk 7.1, there are two ways to select the Roman keyboard. You can use either the international menu or the keyboard palette. When entering the product serial number into the File Server Serial Number Preferences dialog, use the international menu to select the Roman keyboard rather than the keyboard palette. The keyboard palette does not work correctly.

Specifically, before you open AppleShare Admin for the first time, use the international menu to select the Roman keyboard. Afterwards, open AppleShare Admin and enter the serial number into the File Server Serial Number Preferences dialog.

If you need to change your serial number, remember to select the Roman keyboard before selecting File Server Serial Number Preferences from the Server menu.

Logging On to an AppleShare File Server From a PhoneNet PC Client

Using AppleShare Admin, you can force new AppleShare users to change their password the first time they log on to your server. If new users are experiencing problems logging on to an AppleShare file server with PhoneNet PC, try letting the user keep the original password.

Modifying Users & Groups Information on a Server That Also Has Apple Remote Access

If you install AppleShare on a server that also has Apple Remote Access, the ability to work with Users and Groups from Apple Remote Access is disabled. Instead, use AppleShare Admin to work with Users and Groups.

Avoid Giving Users Access to the Root of a Volume

Using AppleShare Admin, you can give workstation users access to either the root of a volume, or to specific shared items within that volume. To ensure the security of your file server, give workstation users access to shared items only.

Opening Applications over the Network

If you are experiencing problems opening applications over the network from your AppleShare file server, and your workstation is a 68040-based Macintosh, try installing "Network Launch Fix" into the Extensions folder of your workstation.

If you received AppleShare 4.0 on a CD-ROM disc, "Network Launch Fix" is in the "Extras" folder, which is in the "AppleShare Tidbits" folder. The "AppleShare Tidbits" folder is in the "AppleShare" folder, which is in the "AppleShare for Power Macintosh" folder. If you received AppleShare 4.0 on floppy disk, "Network Launch Fix" is inside the "Extras" folder on the floppy disk labeled "AppleShare Tidbits."

Using a Macintosh Quadra 605 or Macintosh LC 475 as a File Server

If you are experiencing problems using a Macintosh Quadra 605 or a Macintosh LC 475 as a file server, try setting the server monitor to black and white. Open the Monitors control panel and select "Grays: Black & White."

Improving File Server Performance

AppleShare 4.0 allows you to adjust the amount of cache used for each open file. Normally, this value is set to 64K bytes per file. You may see better performance by setting this value to 128K bytes or higher. Using AppleShare

Admin, you can change this value by selecting File Server Cache Preferences from the Server menu.

Negative File Sizes

In some views, the Finder displays the size of a file next to the file's name. If the Finder is displaying negative file sizes for files stored on AppleShare servers, upgrade to the latest version of AppleShare Workstation. Use the "AppleShare Workstation" disk provided with your AppleShare software to install the latest version. You can also install the AppleShare Workstation software over the network. Follow the instructions in the "AppleShare Administrator's Guide" to install the AppleShare Workstation software.

Using Apple Internet Router With AppleShare 4.0

If you are running an AppleShare 4.0 file server on the same machine as an Apple Internet Router, when shutting down the machine, be sure to quit the file server before quitting the router.

Mounting CD-ROM Discs While the File Server Is Running

If you are experiencing problems mounting CD-ROM discs on your AppleShare file server, make sure the "Desktop Manager Fix" is in the Extensions folder of your server.

If you received AppleShare 4.0 on a CD-ROM disc, "Desktop Manager Fix" is in the "Extras" folder, which is in the "AppleShare Tidbits" folder. The "AppleShare Tidbits" folder is in the "AppleShare" folder, which is in the "AppleShare for Power Macintosh" folder. If you received AppleShare 4.0 on floppy disk, "Desktop Manager Fix" is inside the "Extras" folder on the floppy disk labeled "AppleShare Tidbits."

Initializing Floppy Disks on an AppleShare 4.0 File Server

If you are experiencing problems initializing floppy disks on an AppleShare 4.0 file server that has connected users, try removing the PC Exchange control panel from the Control Panels folder in the System Folder, and then restarting.

Opening documents using an alias

Your AppleShare file server can contain aliases for documents that are located on other AppleShare file servers. If you are experiencing problems opening documents on other servers using an alias, contact your Apple support representative for a fix.

Support Information Services

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Tech Info Library Article Number:15226

Tech Info Library

Workgroup Server 6150/60, 8150/80, and 9150/80: Matrix (5/95)

Revised: 5/15/95
Security: Everyone

Workgroup Server 6150/60, 8150/80, and 9150/80: Matrix (5/95)

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Article Created: 27 April 1994
Article Reviewed/Updated: 15 May 1995

TOPIC ----------

This article is a matrix of the Workgroup Server (WS) 6150/60, WS 8150/80, and WS 9150/80.

DISCUSSION ----------

	PM 6100 / WS 6150	PM 8100 / WS 8150	WS 9150
Processor	PowerPC 601-60 MHz integrated FPU & 32K Cache	PowerPC 601-80 MHz integrated FPU & 32K Cache	PowerPC 601-80 MHz integrated FPU & 32K Cache
Level-2 Cache	0/256 K	256/256 K	512 K
RAM	8MB, expandable to 72	16MB, expandable to 264	16MB, expandable to 264
Display Supt	Apple 12 inch to 17 inch displays Most VGA & SVGA	Apple 12 inch to 17 inch displays Most VGA & SVGA	Apple 12 inch to 17 inch displays Most VGA & SVGA
Video	HDI-45 Monitor Port	HDI-45 Monitor Port	DB-15 Video Port
NuBus Slots	One with NuBus Adapter Card	Three	Four
PDS	PowerPC 601	PowerPC 601	PowerPC 601
Expansion Bays	Three- Floppy, CD, & one 3.5 inch, ≤ 1.6 inch h	Four- Floppy, CD, DAT & one 3.5 inch, ≤ 1.6 inch h	Eight- Floppy, CD, DAT & Five 3.5 inch, ≤ 1.6 inch h

Hard Disks	One 500 MB	One - 1 GB	Two - 1 GB
Floppy Drive	1.44 MB w/ DMA	1.44 MB w/ DMA	1.44 MB w/ DMA
CD-ROM Drive	AppleCD 300i Plus	AppleCD 300i Plus	AppleCD 300i Plus
DAT Drive	N/A	DDS-2, ≤ 120 meter media	DDS-2, ≤ 120 meter media
Networking	Built-in LocalTalk & AAUI-15 Ethernet	Built-in LocalTalk & AAUI-15 Ethernet	Built-in LocalTalk & AAUI-15 Ethernet
SCSI	8-bit support for ≤ 7 devices	Dual-Channel support for ≤ 7 devices	Dual-Channel, 2 buses support for ≤ 14 devices
Sound In	Stereo In 16-bit w/ DMA	Stereo In 16-bit w/ DMA	Two RCA jacks for 16-bit stereo in w/ DMA
Sound Out	Stereo out w/ DMA	Stereo out w/ DMA	16-bit stereo out w/ DMA
Other Ports	Two DMA serial (GeoPort) ADB	Two DMA serial (GeoPort) ADB	Two DMA serial (GeoPort) ADB
Security	N/A	N/A	Three position key
Bundled Sfwr	System 7.1.2 RAID (Summer) DocViewer & docs AShare 4.0.2 (select configs)	System 7.1.2 RAID (Summer) DocViewer & docs AShare 4.0.2 (select configs)	System 7.1.2 RAID (Summer) DocViewer & docs AShare 4.0.2 (select configs)

Article Change History:
15 May 1995 - Change title to reflect processor speed.

Support Information Services

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Tech Info Library Article Number:15227

Tech Info Library

Apple Data Modem 2400: Pass Through Port Problem (4/94)

Revised: 4/29/94
Security: Everyone

Apple Data Modem 2400: Pass Through Port Problem (4/94)

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Article Created: 25 April 1994

TOPIC ----------

The pass through port on my Apple Data Modem 2400 has worked to connect to the administrator port on a Farallon Star Controller, but it won't work to a Personal LaserWriter LS.

In further testing, I found the pass through port works on a StyleWriter II, but not a Personal LaserWriter LS. I used a Macintosh SE/30 (system 7.0.1•) and Macintosh Classic II (System 7.1) with the Personal LaserWriter LS driver from System 7 and the Personal LaserWriter 300 v1.2 driver. The printer will not identify -- yes, and the light was amber (to allow pass through), not green on all four tests.

Why isn't this working?

DISCUSSION ----------

The problem is related to the modems inability to effectively handle high speed serial communication. The modem was developed before the personal LaserWriter series was developed. The Personal LaserWriter LS printers reach speeds of 769 Kbps. The modem can only handle 57.6 Kbps.

Support Information Services

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Tech Info Library Article Number:15228

Tech Info Library

Apple Color Printer: Use ColorSync instead of CIE Values (4/94)

Revised: 4/28/94
Security: Everyone

Apple Color Printer: Use ColorSync instead of CIE Values (4/94)

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Article Created: 28 April 1994

TOPIC --

Customer is looking for the Adobe Photoshop Patch Color Values for the Apple Color Printer. Customer has contacted Adobe and they have informed her that this would be information that would have to be obtained from the manufacturer. Customer says that this would be the CIE coordinates for these colors used in the printer.

DISCUSSION --

What the customer is looking for here can easily be resolved by using ColorSync which is included with the Apple Color Printer software.

Assuming that they are looking for the x,y,Y values for CMYK which are in the "Custom" Ink Colors popup in "Printing Inks Setup", this feature of Photoshop allows the user to manually calibrate to the printer. The easier way to obtain calibration would be to use ColorSync which automatically calibrates between the monitor and printer. There is an Apple Color Printer profile which ColorSync uses and can be selected in the "Color" options dialog in the Print dialog of the Apple Color Printer.

Support Information Services

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Tech Info Library Article Number:15229

Tech Info Library

LaserWriter Select 360f: Fax Imaging Information (4/94)

Revised: 4/28/94
Security: Everyone

LaserWriter Select 360f: Fax Imaging Information (4/94)

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Article Created: 28 April 1994

TOPIC ----------

I have a LaserWriter Select 360 with the Fax option and want to know:

* If the images are stored as bitmaps, or if it buffers the Postscript code itself?

* If they are bitmaps, what resolution (fax resolution or full 600dpi)?

* How does broadcasting affect the RAM usage?

* What is the "faxopsexec" that is on the sample cover page that is used to access the fax features?

DISCUSSION ----------

There are two types of PostScript Fax jobs. You can able to select between transmission of PostScript Language data and raster data. Subsequently, PostScript Fax printers may send faxes as raster data, or when communicating with another PostScript fax printer they may send PostScript language data. Either way a PostScript job is sent from the client to the printer to be either transmitted or rastorized then transmitted.

Single destination

A fax transmission in raster form to a single destination will be made in a single call if there is sufficient storage to hold all of the raster pages of the job. However, the transmission may be broken into multiple calls if there is not sufficient storage. If the storage of the raster pages is exhausted, then a call will be made before rasterization is complete. Transmission and raterization will then take place simultaneously. If transmission succeeds in sending all prepared pages before raterization of the job is finished, the call will end. A subsequent call will be made either when all of the rasterization is done or when storage is again exhausted. Thus, a transmission may be broken up

into multiple calls. It is also possible that when transmission and raterization are taking placed simultaneoulsy, rasterization keeps up with transmission. In this case, this transmission will be the last call for the job. If the storage in use is a disk, there will typically be sufficient storage for all of the raster pages of a job and the fax will be transmitted in a single call.

It is possible to request that a transmission take place at a particular time. These delayed transmissions, of course, are made with a single call. Since the pages of a raster job are prepared when the job is submitted, all of th pages of a delayed raster transmission must fit in storage, otherwise, the job will fail.

Multiple destinations

For a raster fax, the common body is rasterized and compressed only once. For a PostScript language file transmission, the out-bound file is assembled only once. Then, in either case, the previously prepared material is transmitted multiple times - one copy to each different recipient specified. Thus, one requirement for a broadcast job to succeed is there must be sufficient storage (RAM or disk) to hold all outgoing files that form the fax. Broadcast transmissions are not broken into multiple calls.

Resolution

Raster data - the specification for CCITT fax resoution is approximately, but not precisely, 200 dots per inch (dpi). A non-integral resolution would drastically decrease the efficiency of the PostScript interpreter. More importantly, the precise scaling generates moiré patterns in halftones rasters, that may be prevented by rounding. Therefore, a rounded scaling to 200 dpi is performed.

PostScript data - PostScript file transmission to another PostScript compatible faxscimile is output at printer resolution (300 dpi or better).

faxopsexec
---
faxopsexec is an exec, that pushes the Fax Options dictionary onto the stack, in order to execute the PostScript operand that precedes it.

Adobe uses faxopsexec to access predefined PostScript procedures implemented in an invisible, inaccessible dictionary. These ProcSets (dictionaries containing procedures) are not documented as they are either confidential, likely to change, reserved, have functionality useful only to Adobe, etc.

Support Information Services

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Tech Info Library Article Number:15230

Tech Info Library

System Update 3.0 Read Me (5/96)

Revised: 9/30/96
Security: Everyone

System Update 3.0 Read Me (5/96)

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Article Created: 28 April 1994
Article Reviewed/Updated: 27 May 1996

TOPIC ----------

This is the Read Me for System Update Disk v 3.0

DISCUSSION ----------

System Update 3.0 (1.44 MB floppy disk version)

What is System Update 3.0?

System Update 3.0 is a set of software enhancements that improves the performance and reliability of Macintosh computers running system software version 7.1, 7.1.1 (System 7 Pro), or 7.1.2 (for Power Macintosh).

System Update 3.0 provides all of the enhancements of System Update 2.0.1, Hardware System Update 2.0, and Hardware System Update 1.0, plus additional enhancements. (For a review of the System Update 2.0.1, Hardware System Update 2.0, and Hardware System Update 1.0 enhancements, see "What Other Enhancements Does System Update 3.0 Provide?" at the end of this document.)

What are the enhancements that System Update 3.0 provides?

System Update 3.0 introduces the following enhancements:

• Provides system-level improvements to increase overall system performance and reliability on most Macintosh models.

• Corrects a problem that caused some programs to quit unexpectedly or caused the computer to freeze when you attempted to open programs over the network. This includes/replaces all of the functionality of Network Launch Fix (and the Installer will delete it).

• Corrects a problem that potentially allowed the system to become corrupted during a power failure or a crash. This corruption would prevent the Macintosh from restarting.

• Prevents a PowerBook from trying to spin up its hard drive when the system needs to warn the user that there are only 10 seconds of battery power remaining.

• Fixes a problem that prevented the Macintosh Plus from using any system software newer than 7.1. Users wishing to upgrade to newer system software must also delete the Finder Preferences file from the Preferences folder and restart.

• Fixes the "About This Macintosh" box so the memory usage line does not get drawn outside of the box's bounds.

• Prevents the potential file/media corruption that can happen when working with a file that is on a remote volume and the connection to that volume is lost. Now, when the remote volume is lost, its icon will remain dimmed on the desktop (similar to what happens to the icon for a manually ejected floppy disk). All attempts to open items on the lost volume will result in an access privilege error. If you need to save your work on the open file, you will need to use "Save As..." (or the equivalent) to save it to a different volume. In order to re-connect with the lost volume, you will first need to close the file you were working with, then drag the lost volume's dimmed icon to the Trash.

• Increases reliability for remote file saving when the client is running System 7.1 or greater and the server is running a pre-7.0 system and using pre-3.0 AppleShare.

• Fixes a problem with throwing away folders that are on an AppleShare volume. Sometimes when attempting to empty the Trash, the Finder would warn that the folder contained items in use and could not be deleted. The Finder will now properly delete such folders.

• Fixes a problem where a Power Macintosh, Quadra 840AV, or 660AV may hang if a CD-ROM disk is inserted when file sharing is on and a large file is being transferred.

System Update 3.0 includes the following updates:

• Updates the Standard File package to include many fixes and enhancements. The most significant fix corrects a crash problem when more than 20 volumes are mounted. The most significant enhancement is the use of color icons.

• Updates the Easy Access control panel to version 7.2. This new version allows Sticky Keys to remain active after waking up if it was active when the PowerBook or Portable went to sleep. Also, Easy Access now remembers whether sticky keys, mouse keys, and slow keys were on or off between restarts.

• Replaces TeachText with SimpleText version 1.0. Among other improvements, SimpleText allows multiple documents to be open simultaneously, and allows users to easily use a variety of fonts, font sizes, and font styles.

• Includes Apple HD SC Setup version 7.3.1,. This new version fixes a crash problem version 7.3 has when run on Macintosh models that do not support virtual memory.

• Updates the Memory control panel to version 7.3. This new version prevents a potential crash during boot if the RAM disk was set too large. Also, this control panel now opens with 32-bit addressing on.

• Updates the PowerBook control panel to version 7.3.1, the PowerBook Setup control panel to version 7.3.1, and the PowerBook Display control panel to version 1.1. This package of related control panels reorganizes and simplifies several controls.

• Updates the Battery desk accessory to version 7.1.1. This new version provides better support for the Duo 230.

• Updates the TV Setup control panel to version 1.0.1. This new version supports HRC cable systems. This version also fixes a problem that would sometimes cause the screen to darken after returning from TV mode.

• Updates the Screen control panel to version 1.0.4. This new version corrects a problem on the LC 575.

• Updates the PC Setup control panel to version 1.0.2. This version provides a fix for users of the Macintosh DOS Compatibility Card that are experiencing interference when using a single 14" display and the PC is in the foreground. If you are experiencing an interference problem, make sure the "Fade Screen" option is selected in the updated PC Setup control panel. With this option selected, switching to the Macintosh will be slightly slower but the video interference will disappear.

• Updates System Enabler 003 to version 1.1 for use with the LC III.

• Updates System Enabler 040 to version 1.1 for use with the Quadra 610, 650, and 800 and the Centris 610 and 650. This update also adds support for the Quadra 610 and 650.

• Updates System Enabler 065 to version 1.2 for use with the Quadra 605, LC 475, and LC 575. This new version removes some minor unnecessary components.

• Updates System Enabler 088 to version 1.2 for use with the Quadra 840AV and 660AV. This update fixes some serial communication problems and delivers improvements to the Resource Manager and other system components that increase system performance.

• Updates System Enabler 403 to version 1.0.2 for use with the Color Classic II, LC 520, and LC 550.

• Updates the PowerBook Duo Enabler to version 1.0 for use with the PowerBook Duo 210, 230, 250, and 270c. This new version allows the use of type II batteries. It also incorporates the Duo Battery Patch for all PowerBook Duo models except the Duo 270c, which does not need it.

• Updates the PowerPC Enabler to version 1.0.1 for use with the Power Macintosh 6100, 7100, and 8100. This new version fixes a problem with some large monitors connected to the AV video card, improves Energy Star compatibility for certain monitors connected to the built-in video port, updates the Communications Toolbox, fixes an occasional memory manager problem, improves the serial port performance, improves the video quality of the High Performance Video card in certain situations, and preserves the "Playthrough" and "CD Audio In" settings in the Sound Control panel across reboots. The PowerPC Enabler also supersedes the files "!TYC" and "!PowerAV Update" (and the Installer will delete them).

• Updates the PowerPC Upgrade Card Enabler to version 1.0.1 for use with the PowerPC Upgrade Card installed in the Centris 610 and 650 and the Quadra 610, 650, 700, 800, 900, and 950. This new version updates the Communications Toolbox and fixes an occasional memory manager problem.

Installing System Update 3.0

Before you install...

Do you use a Macintosh II, a Macintosh SE or a Macintosh Plus?

If you use a Macintosh II, a Macintosh SE, or a Macintosh Plus computer, then you need the version of System Update 3.0 that comes on an 800K floppy disk, unless your computer has been upgraded with a 1.4 MB floppy disk drive or you have network access to a Macintosh that has 1.4 MB floppies (see "Network Installation Instructions" below for information on installing over a network). The 800K package is a special version of System Update 3.0, including only the files needed for those three models of Macintosh. If your computer has been upgraded with a 1.4 MB floppy disk drive, then you can use the version of System Update 3.0 that comes on the high-density (1.4 MB) floppy disks.

If you have any Macintosh computer other than these three, you must use the version of System Update 3.0 that comes on two high-density (1.4 MB) floppy disks. Do not use the version of System Update 3.0 that comes on an 800K disk. It does not include all of the files that you need.

Do you have Macintosh system software version 7.1, 7.1.1, or 7.1.2?

You should install this update only if you have Macintosh system software version 7.1, 7.1.1, or 7.1.2 installed on your computer.

If you have already installed earlier system updates, you should still install System Update 3.0 in order to have the latest version of all system software. System Update 3.0 provides additional functionality and fixes problems that the earlier updates did not address.

Installation of System Update 3.0 includes three steps:

1. Install the System Update
2. Update your Apple utilities
3. Update your Apple drivers

See the step-by-step instructions below.

Step 1: Install the System Software Update

To install the system software update, follow these steps:

1. If you currently have the Connectix Enabler Patch on your hard disk, remove it from your hard disk before proceeding with this installation.

2. Insert System Update 3.0 Disk 1 in your floppy disk drive.

3. Double-click the Installer icon.

4. Read the Welcome screen, and then click OK.

5. Click the Install button.

The Easy Install process for System Update 3.0 automatically determines what elements of the
updated system software your computer needs.

6. When you see a message that installation is complete, click the Restart button.

7. When you finish, continue with "Step 2: Update Your Apple Utilities" below.

NOTE: None of the packages on System Update 3.0 are removable, so they will all be dimmed if you select "Custom Remove" in the pop-up menu.

Step 2: Update your Apple Utilities

The "Utilities ƒ" folder on the System Update 3.0 Disk 1 contains Apple HD SC Setup version 7.3.1 and Apple Disk First Aid version 7.2. These updates are intended to permanently replace the copies of Apple HD SC Setup and Apple Disk First Aid on your System 7.1, 7.1.1, or 7.1.2 Disk Tools disk. This update is recommended even if you have already installed System Update 2.0.1.

Follow these steps to update your utilities:

1. Insert the System Update 3.0 Disk 1 in your floppy disk drive.

2. Choose Eject Disk from the Special menu.

3. Insert the Disk Tools disk in your floppy disk drive.

4. Click the "Utilities ƒ" window to make it active.

5. Drag the HD SC Setup and the Disk First Aid icons to the Disk Tools disk.

6. When your Macintosh warns you that the files on your Disk Tools disk have the same names as the items that you are moving, click OK.

7. Insert specific disks as requested until the files are fully copied.

8. When you finish, continue with "Step 3: Update Your Apple Drivers" below.

Step 3: Update your Apple drivers

System Update 3.0 also contains a driver update for Apple hard disk drives. You should install the driver update even if you have already installed System Update 2.0.1. Follow the steps below to install the driver update on each Apple hard disk drive you own:

1. With your computer off, insert the Disk Tools disk in your floppy drive.

2. Turn on your computer.

3. Double-click the Disk Tools icon.

4. Double-click the Disk First Aid icon in the Disk Tools window. (NOTE: If you completed "Step 2: Update Your Apple Utilities" above, the Disk First Aid utility on your Disk Tools disk should be version 7.2)

5. Click the driver icon that corresponds to your Apple hard disk drive. If you have more than one Apple hard disk drive, hold down the Shift key and click each icon for the drives that you will be updating.

6. Click the Repair button. Disk First Aid will now run some diagnostic tests and make any necessary repairs on your drive. This may take a few minutes depending on the size of your drive.

7. Open the File menu and choose Quit.

8. Double-click the Apple HD SC Setup icon in the Disk Tools window. (NOTE: For more information on Apple HD SC Setup, see your Macintosh user's guide. If you completed "Step 2: Update Your Apple Utilities" above, the HD SC Setup utility on your Disk Tools disk should be version 7.3.1)

9. Click the Drive button until the name of the hard drive you want to update appears.

10. Click the Update button.

11. Repeat steps 9 and 10 for any other Apple hard disk drives you own.

12. Click the Quit button.

Network Installation Instructions

Preparation

Users wishing to install System Update 3.0 on a number of Macintosh computers on

a network may find it simpler to install System Update 3.0 over their network rather than shuffling the two 1.4 MB floppies on each Macintosh. Creation of the "net install" package can be accomplished by following these steps:

1. Create a folder on the server named "System Update 3.0 Net Install".

2. Insert System Update 3.0 Disk 1 and drag the icon for the disk into the folder created in Step 1. This will copy the entire contents of the first disk into a folder within the "System Update 3.0 Net Install" folder.

3. Insert System Update 3.0 Disk 2 and drag the icon for the disk into the folder created in Step 1. This will copy the entire contents of the second disk into a folder within the "System Update 3.0 Net Install" folder.

4. Open the folder named "System Update 3.0 Net Install".

5. Open the folder named "System Update 3.0 Disk 1" and drag the Installer and Install System Update into the folder named "System Update 3.0 Net Install".

6. Verify that there are four icons showing in the "System Update 3.0 Net Install" folder. They should be the Installer, Install System Update, the "System Update 3.0 Disk 1" folder, and the "System Update 3.0 Disk 2" folder.

Installation

To install System Update 3.0 over a network, log onto the server containing the folder created above and double click the Installer. You can have multiple Macintosh computers installing from the same "System Update 3.0 Net Install" simultaneously. This should simplify, and speed up, the process for updating numerous networked Macintosh computers.

What Other Enhancements Does System Update 3.0 Provide?

System Update 3.0 includes enhancements from System Update 2.0.1, Hardware System Update 2.0, and Hardware System Update 1.0 (listed below). Some enhancements are Macintosh-model specific while others apply to a range of models.

• Improves the reliability of high-speed modems and similar devices connected to Macintosh LC, LC II, IIsi, IIvx, IIvi, Classic II, Quadra 900, and Quadra 950 computers.

• Improves the accuracy of the system clock in Macintosh LC, LC II, IIsi, IIvx, IIvi, Classic II, Quadra 900, and Quadra 950 computers.

• Corrects problems ejecting floppy disks when the computer is shut down on Macintosh IIsi, IIci, IIvx, IIvi, Macintosh Quadra 700, and Macintosh Quadra 950 computers.

• Addresses possible floppy disk drive and hard disk problems with the Macintosh IIsi, IIci, IIvx, IIvi, Centris, Quadra, and PowerBook and PowerBook Duo computers.

• Removes horizontal white lines that may appear while scrolling on Quadra and Centris systems with a Macintosh 16" Color Display.

• Prevents fonts from being needlessly locked in memory during the boot process. This frees up memory on affected machines.

• Corrects color problems with the Apple Basic Color monitor on Macintosh Centris and Quadra computers. (NOTE: If Hardware System Update 1.0, Hardware System Update 2.0, or System Update 2.0.1 extensions or the Basic Color Monitor extension are already installed on your computer, this update replaces them. The 3.0 update removes the Basic Color Monitor and the ADBReInit extensions and replaces them with a System Update 3.0 extension.)

• Adds software for the Apple Adjustable Keyboard, allowing you to connect the keyboard to any Macintosh computer without separately installing special keyboard software. This software is not needed by Power Macintoshes, but is needed by the Power Macintosh Upgrade Card.

• Updates the Macintosh Color Classic System Enabler (System Enabler 401, version 1.0.5). This new version allows the Apple IIe Card and software to be used with the Color Classic. In addition, this revised System Enabler improves mouse performance with the Color Classic. (NOTE: To use the Apple IIe Card with system software version 7.1 on a Color Classic, you need to have version 2.2.1 of the Apple IIe Card software. You can obtain an upgrade package for the Apple IIe Card software by contacting an Apple-authorized dealer, or by using the AppleLink path Apple Products: Apple SW Updates: Macintosh: Peripheral Software: Apple IIe Card for Macintosh LC.)

• Updates System Enabler 131 (version 1.0.3) for the PowerBook 160, 165, 165c, and 180 to support 12" monitors and improve reliability. (NOTE: There is a very small chance that your PowerBook may not boot when you turn it on for the first time after installing the update. If this happens, turn the computer off and back on, and press Command-Option-P-R while the computer starts up.) System Enabler 131 replaces System Enabler 121 and System Enabler 111 (and the Installer will delete these files).

• Installs the Sound Manager Update to improve sound performance on most Macintosh computers. (NOTE: When this software is installed, your system sound will revert to the Simple Beep. After installation, you may wish to reset the Sound control panel to your preferred sound.)

• Installs AutoRemounter 1.2. This release significantly reduces network traffic compared to version 1.0.

• Includes Disk First Aid 7.2, a utility that repairs damaged disks.

Special Note For Power Macintosh Upgrade Card Users

If you are using System 7 Pro software, you must reinstall it after installing the Power Macintosh Upgrade Card software. To reinstall System 7 Pro software, follow these steps:

1. After installing the Power Macintosh Card software, restart your computer and insert the Install disk that came with your System 7 Pro package.

2. If the Installer application did not launch automatically, double-click the Installer application icon on the Install disk. The Easy Install dialog box will appear.

3. Click the Install button. The Installer takes a few moments to calculate what needs to be done and then begins to copy files. The whole process may take several minutes.

4. When the Install disk is ejected, follow the instructions you see on the screen. You will need to swap disks several times.

Important: If you see a message that says the Finder you are about to install is older than the Finder already on the disk, click "Continue."

5. When you see a message reporting that the installation has been successfully completed, follow the instructions on the screen.

For best performance when running PowerTalk on the Power Macintosh Card, you should install the PowerTalk for Power Macintosh software, which is available by calling the Apple Order Center for only a $15 shipping and handling fee. This disk is also available from the following electronic bulletin board services: The Safe House, DesignLink BBS, MacHaven BBS, America Online, Connect Inc., General Videotex Corp./Delphi, Toronto Mac Developers Association, John Crow, The Rest of Us, Resource Central, Inc. (Genie), San Diego Macintosh User Group, TwinCity Mac, Information Access Technologies, Inc., MacRefuge BBS, MAUG/Micronetworked Apple (CompuServe) Users, MauiLink, Netrunner BBS, North Start computer Ltd., PressLink, Inc., Deep Cove BBS, ZiffNet, Alaska Mac, Greyland BBS, Mac's Place BBS, and from Apple user groups, the Apple Volume License program, and Apple resellers. To install PowerTalk for Power Macintosh, follow the instructions that come with the disk.

Apple strives to provide maximum reliability for its customers. This update provides specific improvements that many Apple Macintosh customers will find helpful.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

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Business Machines Corporation, used under license therefrom.

Article Change History:
27 May 1996 - Updated for technical accuracy.
02 May 1995 - Corrected spelling of all Macintosh LC computers named in this article.
08 Aug 1994 - Change title to reflect the actual file name.

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Tech Info Library Article Number:15231

Tech Info Library

StyleWriter II: Self Test Prints Blank Page (4/94)

Revised: 4/28/94
Security: Everyone

StyleWriter II: Self Test Prints Blank Page (4/94)

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Article Created: 28 April 1994

TOPIC ----------

My StyleWriter II will not print from my computer. When I do a self test, it just prints a blank sheet of paper and the error light comes on. Why?

DISCUSSION ----------

Verify the type of cable that is connected the StyleWriter II. Make sure that it is an Apple System Peripheral 8 cable (M0197LL/B) or compatible as described in the StyleWriter II manual. When a network cable, such as a PhoneNet or LocalTalk RJ11 Connector, is connected to the printer the symptoms you mentioned appear.

To verify the problem is cable related follow these steps:

1) Turn the printer off
2) Unplug the printer cable
3) Press and hold down the printer power button until the yellow light turns off.

The printer should print a self-test. If it prints the self test, the problem was cable related. If the StyleWriter II does not print a self-test with the cables disconnected, have the printer looked at by an Authorized Apple Service Provider.

Support Information Services

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Tech Info Library Article Number:15233

Tech Info Library

Power Macintosh: System 7.1.2 Software Clean Install (7/96)

Revised: 7/1/96
Security: Everyone

Power Macintosh: System 7.1.2 Software Clean Install (7/96)

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Article Created: 22 April 1994
Article Reviewed/Updated: 01 July 1996

TOPIC ----------

This article overviews specifics of performing a clean install of System Software 7.1.2 on a Power Macintosh.

There are some differences between the directions published in the Additional Tips and Troubleshooting manual when doing a clean install from CD. These differences are noted below.

DISCUSSION ----------

1) Power Macintosh computers will allow a bootable CD to function in the same way as a bootable floppy disk. When booting from the CD, you need to hold down the letter C key until the Welcome to Macintosh screen appears. There *is* a slight disadvantage, however - Power Macintosh computers will not eject CDs and reboot as with floppies.

2) After rebooting on the Power Macintosh CD which is now called "Power Macintosh CD" (PM CD), customers will need to double click on the CD volume icon first before selecting Disk First Aid (DFA). Customers may note that the boot process using the CD is much slower when compared to booting from the hard drive. Disk First Aid 7.2 is used on the PM CD and Power Macintosh system disks. Customers who haven't used DFA 7.2 previously may not be accustomed to the new interface.

3) In the next step, updating the SCSI driver with Apple HD SC Setup (version 7.3), there is a new dialog presented after clicking "Update". It says "Because this driver is in use, the new driver will not be available until you restart the machine." The only button available is "Continue". Otherwise, it functions in the same way.

4) In this version of the clean install, the current System is moved to the Preferences folder inside the current system folder. Then the system folder is

renamed "Storage" as we currently recommend.

5) Step 12 is "Shut down your computer". Step 13 is "Turn on your Computer. The blinking question mark should occur."

• Important difference - if using the original Power Macintosh CD version 1.0, the computer will boot off the CD again since it was not automatically ejected. For users that are very confident that a second system folder (with a Finder) does not exist, this may be fine. Otherwise, we may wish to have customers hold down the eject button on the CD-ROM drive after rebooting to eject the CD to check for the actual "?" appearing on their screen.

• Also, the PM CD cannot be dragged to the Trash (it's the Startup Volume) and Eject Disk is grayed out in the Special menu.

• If customers do eject the CD, and get a "?" on their screen - putting the PM CD into the Power Macintosh will not do anything! The "?" will remain on the screen. Once the user does a soft restart (control-command-power), the Power Macintosh will reboot on the PM CD.

6) There are some new items available from Custom install - CD ROM software, QuickTime software, AudioVision software, and Updates System Software for Any Mac. *Note: some of these may have been available on the AV Macintosh computers.

7) The Installer dialog box (after the Welcome/Splash screen) presents a slightly different window than what is shown in the "Additional Tips and Troubleshooting":

- instead of "Click install to place" it now says "Click Install to place version 7.1.2 of"
- instead of "System Software for Your Macintosh" it says "Macintosh Family System Software"
- instead of "Any existing Printing Software" it says "All printing software"
- the version number 3.4.4 is included in the lower left corner of the dialog box.

8) The actual system software floppy disks are now InstallMeFirst, Disk Tools (in place of Install 2 like the Quadra 605 generation of CPUs), Goodies (new), Additions (new), and Printing & Fonts (now combined).

9) At the end of the install process, Step 19 says "When you see a message reporting that the installation was successful, click Restart".

- What actually happens is the usual dialog reporting Installation was successful with Continue and Quit buttons. Once the user quits, they are back in the Finder.

•• If the user then Restarts - once again - the Power Macintosh will restart on the CD, unless the user holds down the mouse button to eject the CD. After ejecting the CD, if a clean install was done, a "?" may appear on the screen. This does NOT mean another clean install is required! A soft-restart (depressing the Control-Command-power on keys) will allow the system to boot off the hard

drive's new system folder.

The "Additional Tips and Troubleshooting" *does* include advice on moving "control panels, extensions, or custom utilities back to your System Folder one at a time, restarting each time". It does *not* mention the possibility of corrupted fonts, so customers (particularly in the graphics industry or any heavy users of fonts) may need additional advice on this.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
01 Jul 1996 - Added Fax Doc Word
22 Aug 1995 - Clarified versions where workaround was necessary.
01 Nov 1994 - Modified process for disabling old system folder.
14 Sep 1994 - Reviewed for technical accuracy, revised formatting.

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Tech Info Library Article Number:15234

Tech Info Library

PowerTalk: For France Version (4/94)

Revised: 5/10/94
Security: Everyone

PowerTalk: For France Version (4/94)

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Article Created: 20 April 1994

TOPIC --------------------

What is the "For France" version of the PowerTalk & PowerShare software posted on AppleLink?

DISCUSSION --------------------

The French government does not allow encryption of data over a network, and the standard version of PowerTalk encrypts data. The "For France" version does not encrypt data.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates
- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

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Tech Info Library Article Number:15235

Tech Info Library

Color StyleWriter Pro: Minimum Margins (4/94)

Revised: 5/9/94
Security: Everyone

Color StyleWriter Pro: Minimum Margins (4/94)

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Article Created: 28 April 1994

TOPIC -----

What are the minimum margins on the Color StyleWriter Pro printer? Can I do an edge to edge print out?

DISCUSSION -----

You cannot perform a full page printout. The minimum page margins are:

Left margin - 0.1-in
Right margin - .4-in

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Tech Info Library Article Number:15236

PC Exchange: Incompatibility with Toner Tuner (4/94)

Revised: 4/28/94
Security: Everyone

PC Exchange: Incompatibility with Toner Tuner (4/94)

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Article Created: 28 April 1994

TOPIC ----------

This article describes an incompatibility that exists when using PC Exchange with Toner Tuner 1.0 from Working Software.

DISCUSSION ----------

Toner Tuner 1.0 from Working Software will cause PC Exchange to crash when a user attempts to initialize an unformatted floppy disk. This problem applies to all versions of PC Exchange. This problem has been fixed in Version 1.05 of Toner Tuner. Customers reporting this problem should contact Working Software to obtain an upgrade to Toner Tuner 1.05. To locate a vendor's address and phone number, use the vendor name as a search string.

Support Information Services

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Tech Info Library Article Number:15237

Tech Info Library

Apple Token Ring NB/c Card: Hardware Overview (3/95)

Revised: 3/27/95
Security: Everyone

Apple Token Ring NB/c Card: Hardware Overview (3/95)

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Article Created: 28 April 1994
Article Reviewed/Updated: 27 March 1995

TOPIC -----

This article provides a hardware overview of the Apple Token Ring NB/c Card.

DISCUSSION -----

The Token Ring NB/c Card is a 7 inch single board communications controller that occupies a NuBus slot on a Macintosh computer, and is the only Token Ring card from Apple supported for the Centris/Quadra 610, Quadra 660AV, and Power Macintosh 6100 when installed with the NuBus adapter card. It provides high speed (4 and/or 16 Mbps) Token Ring network communications and is compatible with the IBM Token Ring adapter at the physical transmission level. The transmission speed is selectable under software control.

Designed to the 2.0 NuBus specifications, the Token Ring NB/c Card functions as a NuBus slave device. As a NuBus slave, it will relinquish control of all of its internal resources to the NuBus master.

The overall design of the Token Ring NB/c Card can be divided into two main functional blocks, the Macintosh Coprocessor Platform and the Token Ring Interface.

Macintosh Coprocessor Platform (MCP) Slave-only Interface

The MCP consists of 4 major components: the MCP/Token Ring Interface, PROM, OTPROM, and the NuBus interface. Each of these components is discussed below:

• Read Only Memory
The Token Ring NB/c Card provides space for 32KB of ROM, provided by a 32K x 8 bit OTPROM. This ROM contains the NuBus configuration information required to interface the Token Ring NB/c Card into the Macintosh environment; the Slot Manager configuration information, checksum, version number, and copyright notice. The ROM is mapped at adapter addresses Fc000 - FFFFF. It appears as an

8-bit device on byte lane 1 to NuBus.

• NuBus Interface
The NuBus interface provides an 8/16/32 bit interface between the Token Ring NB/c Card's Token Ring interface and NuBus. It is based on the NuBus MCP ASIC's jointly developed by Apple and TI, the 74ACT2441 and 74BCT2425. Access to the NuBus interface is controlled through a set of Control Registers located at addresses C0000 - C800F.

• MCP/Token Ring Interface
The MCP/Token Ring interface consists of a 64 KByte region of RAM which is shared between the IBM chipset and NuBus as well as a set of shared registers resident on the IBM chipset. Buffers and Data are stored in the Shared RAM, while interrupts and status are obtained through the chipset's registers. The IBM chipset does not have DMA capability, and as such the NuBus host must perform the transferring of data between the Shared RAM and its own RAM. Both Shared RAM and the chipset's registers are 16 bit entities.

Token Ring Interface

The Token Ring Interface section of the Token Ring NB/c Card is implemented using the "IBM Token-Ring Mini-Card Sub-Assembly". This module includes the Token Ring Controller, the analog circuitry for the front end, and chipset ROM containing the microcode executed by the controller. 64 KBytes of Shared RAM is accessible by both the IBM chipset and the NuBus host.

• The Ring Interface
Physical connection to the ring is through a IBM Token Ring Adapter compatible DB-9 nine pin connector. This connector provides correct signal connection to the IBM-specified Type 1 Cabling System.

• Burned-in UnitID
The UnitID or Serial number is stored in a separate 32 byte PROM, occupying six words of address space of the NuBus host processor, starting at location 40000. The UnitID is the network node address of a Token Ring NB/c card and its host. Each Token Ring Adapter has a unique six byte (48 bit) burned-in UnitID. The UnitID contained in this PROM is to be used as the default node address when the adapter is opened. If desired, an alternate node address may be specified. In either case, it is the responsibility of the low level protocol firmware to supply the address to be used when the adapter is opened. Failure to do so will result in an open error. Assignment of a range of UnitIDs is coordinated by the IEEE. Note that before the BIA PROM can be accessed, the "external DMA register" must be initialized to the value "000A" by the NuBus host.

• UnitID PROM Addressing
The format of the UnitID/Burned-in Address consists of two 24 bit fields:

- The Corporate ID (assigned by IEEE)
- The Manufacturer-provided address (assigned by Apple)

The latter is unique for every Networking product sold by Apple computer.

Article Change History:
27 Mar 1995 - Added Quarda 610, 660AV,and 6100 computers are supported.

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Tech Info Library Article Number:15239

Tech Info Library

Apple Token Ring NB/c Card: Pinouts (4/94)

Revised: 4/28/94
Security: Everyone

Apple Token Ring NB/c Card: Pinouts (4/94)

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Article Created: 28 April 1994

TOPIC -----

This article contains the NuBus and DB-9 pinouts of the Apple Token Ring NB/c Card.

DISCUSSION -----

NuBus pinouts (as viewed from the front edge of the card) are as follows:

Pin #	Row A	Row B	Row C
1	-12	-12	/RESET
2	N.C.	GND	N.C.
3	/SPV	GND	+5
4	/SP	+5	+5
5	/TM1	+5	/TM0
6	/AD1	+5	/AD0
7	/AD3	+5	/AD2
8	/AD5	N.C.	/AD4
9	/AD7	N.C.	/AD6
10	/AD9	N.C.	/AD8
11	/AD11	N.C.	/AD10
12	/AD13	GND	/AD12
13	/AD15	GND	/AD14
14	/AD17	GND	/AD16
15	/AD19	GND	/AD18
16	/AD21	GND	/AD20
17	/AD23	GND	/AD22
18	/AD25	GND	/AD24
19	/AD27	GND	/AD26
20	/AD29	GND	/AD28
21	/AD31	GND	/AD30
22	GND	GND	GND
23	GND	GND	/PFW

24	/ARB1	N.C.	/ARB0
25	/ARB3	N.C.	/ARB2
26	/ID1	N.C.	/ID0
27	/ID3	N.C.	/ID2
28	/ACK	+5	/START
29	+5	+5	+5
30	/RQST	GND	+5
31	/NMRQ	GND	GND
32	+12	+12	/CLK

Pinouts for the DB-9 are:

Pin #	Wire #	Signal
Shield	1, Shield	Chassis Ground
1	4, Red	Receive
2		Digital Ground
3		+5 Volts, fused
4		Digital Ground
5	3, Orange	Transmit
6	5, Green	Receive
7		Digital Ground
8		Digital Ground
9	2, Black	Transmit

Support Information Services

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Tech Info Library Article Number:15240

Tech Info Library

Apple Token Ring NB/c Card: Adapter Memory Map (3/95)

Revised: 3/29/95
Security: Everyone

Apple Token Ring NB/c Card: Adapter Memory Map (3/95)

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Article Created: 28 April 1994
Article Reviewed/Updated: 29 March 1995

TOPIC ----------

This article provides a complete address map of all adapter resources on the Apple Token Ring NB/c Card.

DISCUSSION ----------

The complete address map of all adapter resources is listed below. Note that there is a distinction between accessing Borg's registers as a byte versus a word. For example, a byte read of address C0004 clears the "NuBus slot interrupt", while a word read of the same location returns the high byte of the current timer value. This method of operation was used to decrease the number of address inputs required by the NuBus interface ASIC's, and is common to all boards based on these chips. Also note that some registers are at C0xxx, while others are at C8xxxx. Again, this was done to save address inputs.

Address	Function
FE000-FFFFF	Declaration ROM (8KB)
. F0000	Write - Place NuBus local bus in "latched reset"
E0000-EFFFF	Test ROM (off card, used by manufacturing)
D0000-EFFFF	NuBus access via second register set when enabled (Do not access)
. C800E	Read Byte - Set NMRQ master mode (Do not use)
. C800C	Read Byte - Clear NMRQ master mode (Do not use)
. C800A	Read Byte - Set Interrupt "Borg" request (Do not use)
. C8008	Read Byte - Clear Interrupt "Borg" request (Do not use)
. C0006	Read Byte - Set NuBus slot Interrupt request (Do not use)
. C0004	Read Byte - Clear NuBus slot Interrupt request (Do not use)
. C0002	Read Byte - Clear Timer Interrupt (Do not use)
. CXXXX	Read Byte - Clear "latched reset"
. C800F	R/W Byte - DTACK Control Register 1 (07)
. C800D	R/W Byte - DTACK Control Register 0

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.     C800B   R/W Byte - Programmable timer low byte
.     C8009   R/W Byte - Programmable timer high byte
.     C0007   R/W Byte - TMS chipset Addr.Ext.reg.D4-7->AD20-23  (Do not
.             use)
.     C0005   R/W Byte - TMS chipset Addr.Ext.reg.D0-7->AD24-31  (Do not
.             use)
.     C0003   R/W Byte - 68000 Addr. Ext. reg.  D4-7->AD20-23  (Do not
.             use)
.     C0001   R/W Byte - 68000 Addr. Ext. reg.  D0-7->AD24-31  (Do not
.             use)
.     C800E   Word - undefined  (Do not use)
.     C800C   Word - undefined  (Do not use)
.     C800A   Read Word - XDMA pins (D0-2) last TMx (D6-7)
.     C8008   R/W Word - XDMA/Address Decode control byte  (Set to 000A)
.     C0006   Read Word - Current low byte timer value in low byte
.     C0004   Read Word - Current high byte timer value in low byte
.     C0002   R/W Word - NuBus Interface Hardware Configuration reg.  (Set
.             to 0000)
.     C0000   Read Word - Interrupt and Slot ID register in low byte  (Do
.             not use)
A0000-BFFFF   NuBus (Unused, do not access)
93000-9FFFF   Reserved  (Do not use)
82000-92FFF   Shared RAM (64 KBytes)  (After writing "10" to RRR at 81E00)
81E80-81FFF   Reserved  (Do not use)
81E00-81E7F   Shared Memory Control Registers
60002-81DFF   Reserved  (Do not use)
.     60001   Borg's Control Register (LED, speed, module reset)
40040-5FFFF   Reserved  (Do not use)
40000-4003F   Burned-In Address PROM
00000-3FFFF   Unused
```

Article Change History:
29 Mar 1995 - Reviewed and updated format.

Support Information Services

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Tech Info Library Article Number:15241

Tech Info Library

Express Modem: Converting faxes to PICT file (5/94)

Revised: 5/13/94
Security: Everyone

Express Modem: Converting faxes to PICT file (5/94)

==========

Article Created: 02 May 1994

TOPIC -----

I have been using the Express Modem in my PowerBook Duo computer to receive fax documents. I am trying to convert a FAX document to a PICT file, however on a 13-page document only the first page is converted. The user's guide states that it will convert all pages at once. Is there a way to do this?

DISCUSSION -----

The manual is in error. The latest manual (beige cover) which is shipping with PowerBook Duos correctly states that the conversion to a PICT file happens one page at a time.

Support Information Services

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Tech Info Library Article Number:15242

Tech Info Library

LaserWriter Pro 810: PRO810V1 UNIX File Not Missing (5/94)

Revised: 5/2/94
Security: Everyone

LaserWriter Pro 810: PRO810V1 UNIX File Not Missing (5/94)

==========

Article Created: 2 May 1994

TOPIC ----------

I am trying to get the LaserWriter Pro 810 to boot it's IP address from my Sun using RARPD. I was installing the support software from the floppy provided and I noticed the load file described in the manual, PRO810V1, was not on the disk. I would like to request the LaserWriter Pro 810 load file so that our Sun workstations can print to our LaserWriter.

DISCUSSION ----------

The load file PRO810V1 is not needed. The ROMs that are installed in the LaserWriter Pro 810 contain the only (and therefore latest) version of ROM code. The PRO810V1 file is only used to allow updates of the ROM. This is why this file is not included with the printer. The IP address can be set using RARPD without the PRO810V1 file.

Support Information Services

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Tech Info Library Article Number:15243

Tech Info Library

Retrospect for A/UX: Backing Up Shared Data (4/94)

Revised: 4/29/94
Security: Everyone

Retrospect for A/UX: Backing Up Shared Data (4/94)

==========

Article Created: 29 April 1994

TOPIC --

I selected the Shared Data folder as a subvolume in my scripts expecting that Retrospect would backup the data on the external hard drives attached to the Workgroup Server 95 (there are mount points inside that folder). Why can't I just select "Shared Data" and have it backup all the mounted volumes?

DISCUSSION --

The "Retrospect A/UX" manual states in two places that mounts points must be specifically scripted to back up individually.

On Chapter 1 Page 11, the first paragraph mentions "you need to specify each mount point as a subvolume and back it up as a separate source"

On Chapter 2 page 14, there is a "Caution at the bottom of the page that reads "CAUTION: If you fail to specify mount points as separate source subvolumes, any data stored on additional hard disks will not be backed up.

Support Information Services

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Tech Info Library Article Number:15244

Tech Info Library

System 7.1: Font Styles Do Not Appear Correct (8/95)

Revised: 8/7/95
Security: Everyone

System 7.1: Font Styles Do Not Appear Correct (8/95)

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Article Created: 29 April 1994
Article Reviewed/Updated: 7 August 1995

TOPIC ----------

I've noticed that sometimes my bold or italic style for a TrueType font appears bold/italic rather than just bold or italic. For example if I have Lucida Bright, Lucida Bright (bold), Lucida Bright (bold, italic), and Lucida Bright (italic) sometimes Lucida Bright (bold) and Lucida Bright (italic) both display as Lucida Bright (bold, italic) and some times they appear correctly.

What would cause this problem? Do all the styles of a TrueType font have to be in the same suitcase?

DISCUSSION ----------

If you are using System 7.1 or later, all the styles of a font family should be in the same font suitcase.

Fonts DO NOT look correct if:
- All the styles of a font are ‘loose’ in the fonts folder
- If some styles are in a font suitcase, and other styles are loose in the fonts folder

Fonts DO look correct if:
- All the styles of a font family are in the same suitcase
- The styles that were previously loose are removed from the fonts folder entirely

The work around to solve the problem is to make sure all fonts on a specific font family such as Lucida Bright are in the same font suitcase and not loose in the fonts folder, or split among different suitcases. You can have multiple font families in the same suitcase, but do not split them among suitcases. The only limit on a suitcase is that it must be less than 16 MB in size.

To create a new font suitcase, open the Fonts folder and duplicate an existing

font suitcase. Delete the contents, and rename the suitcase. Copy the fonts of the font family you want into the newly created suitcase.

Article Change History:
07 Aug 1995 - Made minor corrections; reformatted.

Support Information Services

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Tech Info Library Article Number:15245

Tech Info Library

Apple Token Ring NB/c Card: NuBus and IBM Chipset Reset (4/94)

Revised: 4/29/94
Security: Everyone

Apple Token Ring NB/c Card: NuBus and IBM Chipset Reset (4/94)

==========

Article Created: 29 April 1994

TOPIC ----------

This article describes NuBus reset, IBM Chipset reset, and Interrupts on the Apple Token Ring NB/c Card.

DISCUSSION ----------

Local NuBus Reset

The local NuBus host may be reset by two methods; "NuBus reset" and "Latched reset".

A "NuBus reset" occurs whenever the Macintosh is reset, for example when the "reset" programmer switch is pressed or "restart" is selected. NuBus reset also resets the Token Ring NB/c Card's Control Register to its default values.

"Latched reset" is accomplished by writing to address F0000 on the card. This is useful for downloading code over NuBus. "Latched Reset" will cease when a byte is read from address C0000 or whenever NuBus is reset. Latched reset does not alter the contents of the Token Ring NB/c Card's Control Register.

IBM Chipset Reset

The IBM Chipset can be reset by two methods; soft reset and hard reset. Soft reset is accomplished by accessing Shared Memory Register "SRR", while Hard reset is effected via bit 3 of the Token Ring NB/c Card's Control Register. Note that the IBM chipset will not be reset by a "Latched reset", but will be reset by a NuBus reset.

Interrupts

The Token Ring NB/c Card interrupts the Macintosh via the NuBus "slot interrupt", which is accomplished by a direct connection to the NMRQ slot interrupt line on NuBus.

Support Information Services

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Tech Info Library Article Number:15246

Tech Info Library

Token Ring NB/c Card: IBM Chipset Shared Memory Register (4/94)

Revised: 4/29/94
Security: Everyone

Token Ring NB/c Card: IBM Chipset Shared Memory Register (4/94)

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Article Created: 29 April 1994

TOPIC ----------

This article describes the IBM chipset shared memory register on the Apple Token Ring NB/c Card.

DISCUSSION ----------

The definitions and addresses of the Shared Memory Control Registers on the IBM module are shown below. Each register is 16 bits, with the upper byte being addressed by an even address (for example 81E00) and the lower byte being addressed by an odd address (for example 81E01). Either byte or word accesses may be used. Refer to section 6.6 of the "Token-Ring Mini-Card Technical Reference" for explanations of these registers. Chapter 7 of the "IBM Local Area Network Technical Reference" has additional information, though the Mini-Card specification supersedes it in the event of a discrepancy. Also note that the bit ordering is different between these two manuals; The former labels the most significant bit as bit "15", while the latter calls the same bit "0".

Address	Function
81E00	RRR - Shared RAM Relocation Register (set upper byte to "10")
81E02	WRBR - Write Region Base Address Register
81E04	WWOR - Write Window Open Register
81E06	WWCR - Write Window Close Register
81E08	UISR (ISRP) - User Interrupt Status Register (adapter-to-host)
81E0A	LISR (ISRA) - Adapter Interrupt Status Register (host-to-adapter)
81E0C	TCR - Timer Control Register
81E0E	TVR - Timer Value Register
81E10	UER - Reserved
81E12	SRR - Soft Reset Register
81E14	IVR - Interrupt Vector Register (not used)
81E16	JR - Jumper Register
81E18	SRPR - Shared RAM Page Register (set upper byte to "C0")

The above registers are duplicated 3 times, for a total of 4 banks of registers. The registers present in each bank are identical, however the operation performed changes based on the bank addressed. The following shows the address ranges of each bank, and the resulting operation.

Range	Operation
81E00-81E1F	Read or Write
81E20-81E3F	Read/Reset under mask (0)
81E40-81E5F	Read/Set under mask (1)
81E60-81E7F	Read only

Support Information Services

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Tech Info Library Article Number:15247

Tech Info Library

Apple Token Ring NB/c Card: Card Registers (3/95)

Revised: 3/29/95
Security: Everyone

Apple Token Ring NB/c Card: Card Registers (3/95)

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Article Created: 29 April 1994
Article Reviewed/Updated: 29 March 1995

TOPIC ----------

This article describes these Registers:

- Interrupt and Slot ID Register
- MCP Status Register
- Control Register (Pass/Fail LED, and Ring Speed Select)
- NuBus Hardware Configuration Register
- Non-Optional Registers

DISCUSSION ----------

Interrupt and Slot ID Register

The IBM Token-Ring module can interrupt the host processor by externally asserting its /INT interrupt that directly drives the /NMRQ NuBus interrupt line. Refer to the Token-Ring data sheet for setting and resetting the interrupt line.

MCP Status Register

Do not use the MCP Status register, it resides at word location C200A. It is provided here for completeness. Its contents are:

Bit	Function	Notes
7	Last TM1 returned from NuBus	
6	Last TM0 returned from NuBus	
5	Status of /RESET from NuBus	Delayed 4 10MHz clocks
4	Status of "latched reset" signal	
3	Not Used, always 0	
2	Status of XBACK signal	BIAEN* select signal
1	Status of XBG signal	

0 Status of XBR signal

Control Register (Pass/Fail LED, and Ring Speed Select)

Read:

4-7	3	2	1	0
Not Implemented	IBM chipset hard reset	4/16 Mbps Speed Jumper	Yellow-Green LED readback	Not Implemented

Write:

4-7	3	2	1	0
Not Implemented	IBM chipset hard reset	Yellow LED	Green LED	Not Implemented

One green LED and one yellow LED are provided on the Token Ring NBH/c Card. Upon power-up or any type of reset, both LEDs will clear, indicating that the card is off-line. Once the initialization code has run and determined that the board is operating normally, the green LED will be illuminated by the software writing to the register and reading a speed of 16 Mbps in the speed jumper. If 4 Mbps operation is selected, the Yellow LED should be illuminated. Bit 1 controls the green. A "0" indicates the LED is lit. Bit 2 controls the yellow. A "0" indicates the LED is lit. For diagnostic purposes a logical AND of the LED enables is feedback to bit 1 so that if either LED is on, bit 1 will be active low. To correctly set the LED register, the software should write a 0 to the appropriate bit. For example, to power up the IBM module and turn on the LED for 4Mbps operation, write a byte of $0A at $60001. To power up the IBM module and turn on the LED for 16 Mbps operation, write a byte of $0C.

Also included in this register is the 4/16 Mbps Ring Speed Jumper bit, which passes on the speed selected by the RING SPEED jumper on the card and determines whether the adapter will operate at 4 or 16 Mbps. If bit 2 is set to a 1, 4 Mbps is selected, while a zero means 16 Mbps. This bit is read by the IBM chipset only upon coming out of hard reset.

Bit 3 is connected to the hardware reset line of the IBM chipset. The default is "0", which holds the chipset in the reset state. Upon coming out of reset, the state of the "speed select" bit will be loaded into the chipset. Write a 1 to remove the reset condition.

NuBus Hardware Configuration Register

The NuBus Hardware Configuration Register is not used. Note that this register must be accessed as a word entity.

Non-Optional Registers

The following registers control features of the ACT2441-based NuBus interface which are not used on the Token Ring NBH/c Card. For this reason, only the desired value of each register is listed. The power-up default of all of these registers is 0. These registers must be written with the indicated values to ensure proper functioning of the card:

Address	Size	Register	Value (Hex)
C8008	Word	External DMA Control	000A
C800D	Byte	DTACK Control 0	00
C800F	Byte	DTACK Control 1	07

These locations are the only initialization necessary for correct operation of the Token Ring NBH/c Card.

Article Change History:
29 Mar 1995 - Reviewed and updated format.

Support Information Services

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Tech Info Library Article Number:15248

Tech Info Library

LaserWriter Select 360: Most Should Have LW 8.1.1 Driver (5/94)

Revised: 5/2/94
Security: Everyone

LaserWriter Select 360: Most Should Have LW 8.1.1 Driver (5/94)

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Article Created: 2 May 1994

TOPIC ----------

Is there a projected date when the LaserWriter Select 360 disks will ship with the LaserWriter Driver 8.1.1?

DISCUSSION ----------

The LaserWriter Select 360 disks were revised in January 1994 to include LaserWriter driver 8.1.1 in-box. Some customers may get units that were produced before January 1994 and will still have the LaserWriter 8.0 driver software.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15249

Tech Info Library

Laserwriter Pro 810: PhotoGrade and FinePrint (5/94)

Revised: 5/2/94
Security: Everyone

Laserwriter Pro 810: PhotoGrade and FinePrint (5/94)

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Article Created: 02 May 1994

TOPIC ----------

Does the Laserwriter Pro 810 support the Photograde and FinePrint technologies?

DISCUSSION ----------

The LaserWriter Pro 810 does not support or use the PhotoGrade or FinePrint technologies which were developed at Apple. Instead, the LaserWriter Pro 810 uses other proprietary third-party resolution enhancement techniques to improve the image resolution beyond the 400 DPI capabilities of the print engine which is used by this printer. Although the end result may be similar to a printer containing FinePrint™ and PhotoGrade™ these technologies were not used in the printer.

Apple obtained the LaserWriter Pro 810 from another printer vendor who did not license these enhancement technologies from Apple. As a result, they could not be used in the LaserWriter Pro 810.

Support Information Services

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Tech Info Library Article Number:15250

PowerTalk: Number of Enclosures Stored (4/94)

Revised: 5/2/94
Security: Everyone

PowerTalk: Number of Enclosures Stored (4/94)

==========

Article Created: 29 April 1994

TOPIC -----

I'm confused about PowerTalk and mail enclosures. When mail is sent with an attachment it appears that the attachment and the mail are copied into the mailbox (so you have two copies of it on the system). Then it is sent to the destination, arrives in the mailbox, and is copied into the receiving system. Does this mean you end up with four copies??

DISCUSSION -----

The total number of copies can be as few as three (this includes the original document). Only two copies actually sit in the mail system - one in your out-tray and one on the mail server.

The following outlines the path mail takes when using PowerTalk:

1) A document resides on your computer's hard drive that was created in an application.
2) You send the document to someone through a PowerShare server.
   - a copy is retained in your out tray
   - a copy of your document is now on the mail server
3) The recipient logs into the server to check his/her mail.
   - the item is listed in the in-tray as remote. (Remote means that the document is stored on the server only.)
5) The recipient selects the document and then selects "copy local" under the mailbox menu.
   - so a copy exists on the recipients hard drive now.

SO, if you set your mailbox preferences to age outbound mail for a short period of time, then mail in your out tray will just go away in 1-99 days.

How does this differ from other mail systems, Microsoft Mail for instance? MS MAIL stores outbound mail on the server, and not on the local machine.

Why does PowerTalk retain a copy in the out-tray? Because PowerTalk does

peer-to-peer mail which eliminates the need for a server in some situations. If the recipient copies the document to his/her local hard drive, then the remote copy can be thrown away.

Support Information Services

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Tech Info Library Article Number:15251

Macsbug 6.5d6: ReadMe (4/94)

Revised: 5/2/94
Security: Everyone

Macsbug 6.5d6: ReadMe (4/94)

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Article Created: 29 April 1994

TOPIC --------------------

This is the complete ReadMe file from Macsbug version 6.5d6

DISCUSSION --------------------

New Features in 6.5d6

- MacsBug can now scramble and walk heaps when running under the New (Modern) Memory Manager.

- All "standard" resources (which includes macros, dcmds, templates and the like) can now be found inside MacsBug's own resource file. You may add and delete resources there, but the preferred method of modifying MacsBug's behaviour is to add your resources to the Debugger Prefs file. This includes macros, templates, dcmds, color and preference resources. The Debugger Prefs file is always searched first, so you may override default MacsBug behaviour by placing your resources there.

- If you have duplicate dcmds installed, MacsBug will display a duplicates list the first time you enter the debugger.

- The “DH” command can now disassemble 18 words (previously it could only do 6).

- You can now set the various types of breaks on selector-based A-Trap calls, just as though they were A-Traps to themselves. Simply type ATB, followed by the tool call name as it appears in Inside Macintosh. You no longer need to specify a conditional break expression as part of your break command for these types of tool calls, MacsBug handles it automatically.

As part of this new feature, MacsBug now can properly disassemble the actual

names of toolcalls if they are selector-based. For instance, the call GetFrontProcess is actually a call through the A-Trap OSDispatch with the immediate data word of $0039 pushed on the stack. If you encounter this in a disassembly, MacsBug will now display "_GetFrontProcess" instead of "OSDispatch". Most tool call names have been added to MacsBug's database, however, at this time there may be a few oversights.

- MacsBug now supports a new preference resource that lets you control some low-level internal debugger behaviour. You can now disable the checksum that MacsBug performs on itself, and you can now stop the screen from swapping during a step (not swapping is now the default behaviour). Both have been added to speed up the debugger so you can spend more time finding you bugs, and less time waiting. The resource to modify is of type 'mxpr', and a ResEdit template is provided which defines the various bits.

- This version works correctly on 68040LC-based machines which do not include a math coprocessor. Previous versions were instable on such configurations and may cause a system crash.

Warnings

- This version of MacsBug has not been thoroughly tested, and it is not guaranteed to work on all machines or all configurations. That being said, it has been used extensively in-house by Apple engineers, and thus far there have been no reports of compatibility problems.

- This version has not been fully tested to work on 68000-based Macintosh models. For now it is best to continue using version 6.2.2 if you wish to debug on a machine which has a 68000 processor.

Support Information Services

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Tech Info Library Article Number:15252

Tech Info Library

PowerBook Duo Dock: NuBus Power Requirements (3/95)

Revised: 3/22/95
Security: Everyone

PowerBook Duo Dock: NuBus Power Requirements (3/95)

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Article Created: 02 May 1994
Article Reviewed/Updated: 22 March 1995

TOPIC ----------

This article discusses the power requirements for the PowerBook Duo Dock NuBus slots.

DISCUSSION ----------

The Duo Dock power supply is rated at 75 W continuous power, 85 W surge power. The two internal NuBus slots will allow two 15 W cards or one each at 25 W and 5 W.

Article Change History:
22 Mar 1995 - Corrected wording of Duo Dock.

Support Information Services

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Tech Info Library Article Number:15253

Tech Info Library

Apple Multiple Scan Displays: Read Me file (5/94)

Revised: 5/2/94
Security: Everyone

Apple Multiple Scan Displays: Read Me file (5/94)

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Article Created: 2 May 1994

TOPIC -----

This article contains the Read Me file that comes with the Apple Multiple Scan 17 Display and Apple Multiple Scan 20 Display.

DISCUSSION -----

INFORMATION ABOUT YOUR APPLE MULTIPLE SCAN DISPLAY SOFTWARE

This document contains some important reminders and some information that is not in the user's guide.

- To print this file, choose Print from the File menu.
- To leave this file, choose Quit from the File menu.

WHAT THIS SOFTWARE DOES

As described in the user's guide, you can use the software on this disk to change the resolution of your monitor, adjust the number of colors it can display, and control your monitor's energy-saving features.

For more information about these and other features of your display, see your user's guide.

SYSTEM REQUIREMENTS

Though your monitor works with both Macintosh computers and PC-compatible computers, the software on this disk works only with Macintosh computers. You must have system software version 7.1 or later to use this Macintosh software.

INSTALLING YOUR MULTIPLE SCAN DISPLAY SOFTWARE

Follow the instructions in the user's guide to install this software on this disk. If you upgrade your system software, you must reinstall the Multiple Scan Display software.

TROUBLESHOOTING

This section lists some potential problems and solutions.

- AFTER CHANGING SCREEN RESOLUTION IN THE MONITORS CONTROL PANEL, I CAN'T MOVE A WINDOW, OR IT IS HALFWAY OFF THE SCREEN OR ALTOGETHER MISSING.

  Try one of the following:
  - Close the Monitors control panel before using any other window.
  - Quit the program you're running and then open it again.
  - Use the Monitors control panel to revert to the resolution you were using before making the change.
  - If you have problems with one particular program, contact the publisher of that program. Not all programs can take advantage of the Multiple Scan Display's new features.

- THE COLORS DON'T LOOK RIGHT AFTER I CHANGE THE NUMBER OF COLORS IN THE MONITORS CONTROL PANEL.

  Try one of the following:
  - Quit the program you're running and start it again.
  - Use the Monitors control panel to revert to the number of colors you were using before making the change.

- THE ICONS ON MY DESKTOP MOVE AFTER I CHANGE SCREEN RESOLUTION IN THE MONITORS CONTROL PANEL.

  Because changing resolutions affects how much you can fit on your screen, the display software automatically repositions the icons after you change the screen resolution. In most cases, it repositions them as you would expect. You can use the mouse to move the icons where you like.

- I CHANGED THE KIND OF MONITOR ATTACHED TO MY COMPUTER, AND THE NEW MONITOR IS BLANK OR SHOWS "GARBAGE" OR "SNOW."

  Try the following:
  - Turn off the computer and detach the new monitor. Start the computer with no monitor attached. Turn off the computer again and reattach the new monitor.

- I CAN'T SEE SOME OF THE WINDOWS IN MY PROGRAMS AFTER CHANGING THE SCREEN RESOLUTION IN THE MONITORS CONTROL PANEL.

  Try one of the following:

If your program has a Windows menu, use the commands in the menu to "hide" each invisible window and then to show it again, using the commands in the Windows menu.
- Use the Monitors control panel to revert to the resolution you were using before making the change.
- Quit and reopen the application that has the missing window.

• AFTER USING THE ENERGY SAVER CONTROL PANEL TO TURN ON THE ENERGY-SAVING FEATURES, ONE OR MORE OF MY MONITORS DO NOT DIM.

Not all monitors and video cards support this feature. See the user's guide for more information.

• WHEN I TRY TO USE BOTH ENERGY SAVER AND A SCREEN SAVER PROGRAM, THE SCREEN FREEZES.

Turn off either the screen saver program or the Energy Saver control panel.

IMPORTANT: Some programs and video cards do not yet take advantage of the Multiple Scan Display's new features. If you experience problems with your application programs or video cards, contact the publisher or manufacturer.

Support Information Services

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Tech Info Library Article Number:15254

Tech Info Library

DOS Compatibility Card: How To Share a CD-ROM Drive (10/95)

Revised: 10/23/95
Security: Everyone

DOS Compatibility Card: How To Share a CD-ROM Drive (10/95)

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Article Created: 2 May 1994
Article Reviewed/Updated: 23 October 1995

TOPIC ----------

This article describes how to either share a CD-ROM between the Mac OS and MS-DOS/Windows, or access the CD-ROM directly from MS-DOS/Windows on a Macintosh DOS Compatible computer.

DISCUSSION ----------

There are two ways to use a Macintosh CD-ROM drive with the DOS Compatibility Card.

1) Install the proper CD-ROM driver in MS-DOS/Windows
2) Share the CD-ROM from the Macintosh

How to Share a CD-ROM drive
==========

Step 1

Load the CD-ROM disc.

Step 2

Open the PC Setup Control Panel.

Step 3

Under the Sharing section of the control panel, click on the pop-up menu labeled drives and select the driver letter you want to use on in MS-DOS to access the CD-ROM.

Step 4

A dialog box appears requesting you to select a drive/folder to share.

Step 5

Once you select the CD-ROM as the drive, close the PC Setup Control Panel.

Once you go to MS-DOS, you can access the CD-ROM Drive like any other drive.

Note: This solution frees up additional conventional memory, since you can
remove all CD-ROM drivers from the autoexec.bat and config.sys files.

Using a CD-ROM Drive without Sharing

If you are trying to access a CD-ROM drive without sharing it from the Macintosh side, you need to load the proper driver in the CONFIG.SYS file for the CD-ROM drive mechanism you are using. This driver should be supplied by the drive manufacturer. Apple ships a CD-ROM driver that supports the CD300 and CD150.

The AppleCD 600 is supported with the DOS Compatibility card in certain configurations. The TIL article titled "AppleCD 600: Compatible with DOS Compatibility Card" contains additional information on this topic.

Follow these steps to install the Apple CD-ROM drivers included with your DOS Compatibility Card installation disks:

Step 1

Switch to the MS-DOS environment.

Step 2

Insert the disk with the label "DOS Compatibility Card Installer Disk for DOS environment."

Step 3

At the MS-DOS prompt, type WIN A:SETUP, then press return.

Note: If you only use MS-DOS, then you can type A:INSTALL.BAT to run the DOS batch program.

Step 4

The installation program prompts you to install the CD-ROM driver as well as other DOS Compatibility options.

Step 5

Restart your computer after the installation is complete.

After installing the proper drivers, the CD-ROM drive is recognized in the MS-DOS/Windows environment as drive E:.

Article Change History:
23 Oct 1995 - Clarified driver installation procedure.

Support Information Services

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Tech Info Library Article Number:15255

Tech Info Library

Power Macintosh: Video Monitor Screen Disappears (6/94)

Revised: 3/23/95
Security: Everyone

Power Macintosh: Video Monitor Screen Disappears (6/94)

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Article Created: 29 April 1994
Article Reviewed/Updated: 02 June 1994

TOPIC ----------

I am using a Power Macintosh 6100/60AV with a 14-inch AV monitor connected to the HDI-45 port. While using the program Video Monitor, I selected full screen, then I lost the Video Monitor window. If I connect the monitor to the DB-15 video connector on the AV card, I am able to use Video Monitor again. This same problem occurs with the program Fusion Recorder as well. How can I get the window to appear on my display again when I am connected to the HDI-45?

DISCUSSION ----------

When selecting full screen, the Video Monitor application assumes that you have another display connected to the AV card to view the incoming signal on. To get the Video Monitor window back to your display, remove the Video Monitor Preferences file from the Preferences folder.

When digitizing video on the Power Macintosh AV configurations, a monitor should be attached to the AV card's DB-15 connector for better performance (up to 30 frames per second opposed to 1-2 frames per second). Fusion Recorder and Video Monitor are assuming a monitor is attached to this port. This is why the window moves to the monitor attached to the AV card. The performance is better with a monitor attached to the AV card because all video processing can happen on the card avoiding the bottlenecks that occur when moving digitized data from the card to the system bus and on to built-in video.

Article Change History:
2 June 1994 - Added information regarding Fusion Recorder and details on why this problem occurs.

Support Information Services

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Tech Info Library Article Number:15257

Apple Multiple Scan Display: Troubleshooting Tips (5/94)

Revised: 5/2/94
Security: Everyone

Apple Multiple Scan Display: Troubleshooting Tips (5/94)

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Article Created: 2 May 1994

TOPIC -----

This article lists some potential problems and solutions when using the Apple Multiple Scan 17 Display and Apple Multiple Scan 20 Display.

DISCUSSION -----

- AFTER CHANGING SCREEN RESOLUTION IN THE MONITORS CONTROL PANEL, I CAN'T MOVE A WINDOW, OR IT IS HALFWAY OFF THE SCREEN OR ALTOGETHER MISSING.

  Try one of the following:
  - Close the Monitors control panel before using any other window.
  - Quit the program you're running and then open it again.
  - Use the Monitors control panel to revert to the resolution you were using before making the change.
  - If you have problems with one particular program, contact the publisher of that program. Not all programs can take advantage of the Multiple Scan Display's new features.

- THE COLORS DON'T LOOK RIGHT AFTER I CHANGE THE NUMBER OF COLORS IN THE MONITORS CONTROL PANEL.

  Try one of the following:
  - Quit the program you're running and start it again.
  - Use the Monitors control panel to revert to the number of colors you were using before making the change.

- THE ICONS ON MY DESKTOP MOVE AFTER I CHANGE SCREEN RESOLUTION IN THE MONITORS CONTROL PANEL.

  Because changing resolutions affects how much you can fit on your screen, the display software automatically repositions the icons after you change the screen resolution. In most cases, it repositions them as you would expect. You can use the mouse to move the icons where you like.

- I CHANGED THE KIND OF MONITOR ATTACHED TO MY COMPUTER, AND THE NEW MONITOR IS BLANK OR SHOWS "GARBAGE" OR "SNOW."

  Try the following:
  - Turn off the computer and detach the new monitor. Start the computer with no monitor attached. Turn off the computer again and reattach the new monitor.

- I CAN’T SEE SOME OF THE WINDOWS IN MY PROGRAMS AFTER CHANGING THE SCREEN RESOLUTION IN THE MONITORS CONTROL PANEL.

  Try one of the following:

  If your program has a Windows menu, use the commands in the menu to "hide" each invisible window and then to show it again, using the commands in the Windows menu.
  - Use the Monitors control panel to revert to the resolution you were using before making the change.
  - Quit and reopen the application that has the missing window.

- AFTER USING THE ENERGY SAVER CONTROL PANEL TO TURN ON THE ENERGY-SAVING FEATURES, ONE OR MORE OF MY MONITORS DO NOT DIM.

  Not all monitors and video cards support this feature. See the user’s guide for more information.

- WHEN I TRY TO USE BOTH ENERGY SAVER AND A SCREEN SAVER PROGRAM, THE SCREEN FREEZES.

  Turn off either the screen saver program or the Energy Saver control panel.

IMPORTANT: Some programs and video cards do not yet take advantage of the Multiple Scan Display’s new features. If you experience problems with your application programs or video cards, contact the publisher or manufacturer.

Support Information Services

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Tech Info Library Article Number:15258

Tech Info Library

GeoPort: Maximum Throughput Speed (12/95)

Revised: 12/3/96
Security: Everyone

GeoPort: Maximum Throughput Speed (12/95)

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Article Created: 2 May 1994
Article Reviewed/Updated: 3 December 1996

TOPIC ----------

This article discusses the speed of the GeoPort.

DISCUSSION ----------

Question: What is the throughput on the Power Macintosh GeoPort?

Answer: The theoretical throughput of the GeoPort port is 2 Mbps.

Question: Is the throughput in the Power Macintosh GeoPort faster than the throughput of the modem ports in our earlier Macintosh computers?

Answer: Yes, the Quadra 900, 950, 660AV, 840AV, Power Mac 6100, 7100, and 8100 Macintosh models all have SerialDMA capabilities which allow them much greater throughput than previous (non-DMA) based 680x0 Macintosh models.

Question: Is the Power Macintosh GeoPort fast enough to keep up with the 28.8 Kbps V.34 class of modem?

Answer: Apple is looking into supporting the V.34 specification in a future release of GeoPort software. We do not have a time frame on when this will be available.

Article Change History:
03 Dec 1996 - Corrected spelling.
12 Apr 1995 - Revised for technical accuracy.
10 Jan 1995 - Corrected spelling in title.

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Tech Info Library Article Number:15259

Tech Info Library

Macintosh AVs: AV Card Video vs. Onboard Video Speed (5/94)

Revised: 5/2/94
Security: Everyone

Macintosh AVs: AV Card Video vs. Onboard Video Speed (5/94)

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Article Created: 2 May 1994

TOPIC ----------

I read a magazine article that claimed that the Power Macintosh onboard video is faster than the AV card video. Is this correct?

DISCUSSION ----------

Yes, the display speed of the internal video is faster than the AV card. This is because the AV card uses a 32-bit wide data path for video (as does the 840AV), while the DRAM-based video and HPV cards use a 64-bit wide video path. This means that video is technically faster on the non-AV Macintosh computers, although this is only a benchmark. In real applications, you should not notice the video speed differences between an AV and a non-AV system. So, the raw video speed is a trade-off of delivering video-in and video-out features, but you won't be able to tell the difference in actual system performance.

Support Information Services

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Tech Info Library Article Number:15260

Tech Info Library

Apple Remote Access 2.0.1 Client: Description (5/94)

Revised: 5/2/94
Security: Everyone

Apple Remote Access 2.0.1 Client: Description (5/94)

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Article Created: 2 May 1994

TOPIC -----

This article provides a description of Apple Remote Access (ARA) 2.0.1 Client.

DISCUSSION -----

Apple Remote Access Client for Macintosh software provides an easy, productive, and secure way to connect a desktop Apple Macintosh or PowerBook computer to information and resources at a remote location. And because it works with all Apple Remote Access–compatible servers—including the Apple Remote Access MultiPort Server and Personal Server software—it lets you choose the level of server support you need, whether you belong to a small workgroup or a multinational corporation.

Apple Remote Access Client for Macintosh is designed with efficiency and productivity in mind. It installs in minutes and is remarkably easy to use, minimizing the need for ongoing support. For example, the software's built-in DialAssist technology makes dialing back to the office network simple, even for international travelers. It lets you build dialing sequences that help mask the complexities of the worldwide telephone system—so you can connect easily from anywhere in the world. And Apple Remote Access Client for Macintosh has features that help you manage everything from repeat connections to connection time.

In addition, because it supports System 7, Apple Remote Access Client for Macintosh software lets you work with such familiar features as the Chooser, the Finder, and the Alias Manager. In short, it provides everything Macintosh or PowerBook users need to help them get their work done easily and efficiently—wherever they are.

Features

Ease of installation and use
• Lets you get started in only minutes
• Allows you to access services remotely, in the same intuitive way as you

work with services locally
- Provides built-in context-sensitive help

Adaptability
- Works with all Apple Remote Access– compatible servers, including both the Apple Remote Access Personal Server and the Apple Remote Access MultiPort Server
- Supports both Apple Remote Access 1.0-and 2.0-compatible servers
- Offers a range of dialing and connection options
- Supports a variety of leading modems

Remote productivity
- Supports System 7, so you can work with such familiar features as the Chooser, Finder, and Alias Manager
- Helps you manage everything from repeat connections to connection time
- Masks the complexities of the worldwide telephone system through its integrated DialAssist technology

Powerful security features
- Allows administrators to select the level of security that's most appropriate for their organization's needs (when used in conjunction with the Apple Remote Access MultiPort Server software)
- Provides you with a secure method of access, whether you're connecting from home or from a hotel outside the country

Support Information Services

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Tech Info Library Article Number:15261

Tech Info Library

Apple Remote Access 2.0.1 Client: Specifications (5/94)

Revised: 5/2/94
Security: Everyone

Apple Remote Access 2.0.1 Client: Specifications (5/94)

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Article Created: 2 May 1994

TOPIC --------------------

This article provides the Technical specifications and order information for Apple Remote Access (ARA) 2.0.1.

DISCUSSION --------------------

Technical Specifications

Modem support and scripts

- Supports any Hayes-compatible 2,400-bps, 9,600-bps, or higher-speed modem with the appropriate script. Modem scripts for many popular modems are included:
  - V.32bis modems (14,400 bps): Apple Express Modem, Global Village PowerPort Gold, Global Village TelePort Gold, Hayes Optima 144, Microcom QX4232bis, Prometheus ProModem 144e, PSI Powermodem IV, Supra SupraFax v.32bis, Telebit T3000, Telebit WorldBlazer
  - V.32 modems (9,600 bps): Global Village PowerPort Silver, Global Village TelePort Silver, Prometheus Promodem 96, PSI Powermodem III, Supra SupraFax Modem Plus, Telebit QBlazer, Telebit T1600, US Robotics Sportster, US Robotics Worldport
  - V.22bis modems (2,400 bps): Apple 2400, Global Village PowerPort Bronze, Global Village TelePort Bronze, Hayes Optima 2400, Microcom AX 2400C, Prometheus Promodem 24, PSI PowerModem II
- Cellular Support: Applied Engineering DataLink PB and Applied Engineering Axcell Interface, Microcom Cellular Data Link 300
- ISDN support: Hayes ISDN adapter
- 9,600-bps or higher-speed scripts included with the Apple Remote Access MultiPort Server can also be used with the Apple Remote Access Client for Macintosh.
- Additional scripts may be available. Contact an authorized Apple reseller or representative or your modem manufacturer for more details.
- If you understand connection control languages (CCLs) and are an experienced programmer, you may be able to write the necessary modem

script yourself. The Apple Remote Access Modem Toolkit (see ordering information) includes everything you need to write these scripts.

Dialing and connection management
- Built-in DialAssist technology automatically generates dialing sequences for mobile users
- Manual or automatic dialing
- Redial or alternate number option
- Tone and pulse dialing
- Ignore dial tone option supports nonstandard telephone equipment
- Adjustable connection reminders
- Universal disconnect desk accessory

Compatibility
- Works with any Apple Remote Access–compatible server
- Supports both Apple Remote Access 1.0- and 2.0- compatible servers

Connection types supported
- Standard telephone
- X.25*
- ISDN*
- Cellular*

Error detection/Data compression
- Includes several built-in components that allow for error-free and optimized delivery of data
  - Smart buffering (developed by Apple Computer, Inc.) for data-transfer optimization
  - MNP, an industry standard for error detection
  - V.42bis, an industry standard for data compression

Specifications
- User name maximum length: 31 characters
- Password maximum length: 8 characters

Operating requirements
- A Macintosh computer with at least 4MB of RAM or a Power Macintosh computer
- Macintosh system software version 7.0 or later
- A hard disk drive
- An Apple or other Hayes-compatible modem (2,400 baud minimum; 9,600 baud or higher recommended) and modem cable, if needed
- Apple Remote Access Personal Server or MultiPort Server (or any Apple Remote Access–compatible server)

* X.25, ISDN, and cellular connections require additional Apple or third-party products.

Ordering Information

Apple Remote Access Client for Macintosh (single-pack)
Order No. M5227Z/B
- Apple Remote Access Client software and installer

- Apple Remote Access Client for Macintosh User's Guide
- Apple Remote Access DialAssist quick reference card

Apple Remote Access Client for Macintosh 10-Pack
Order No. M2692Z/B
  Includes 10 copies of the Apple Remote Access Client for Macintosh User's Guide and one disk set containing the Apple Remote Access Client software and installer.

Apple Remote Access Client for Macintosh (Volume Licensing)
  Client software can be volume licensed separately for quantities of 50 or more users; consult your authorized Apple reseller or representative for purchasing information.

Apple Remote Access MultiPort Server
Order No. M5214Z/B

Apple Remote Access Personal Server for Macintosh
Order No. M2726Z/B

Apple Remote Access Modem Toolkit version 2.0
Order No. R0129LL/C
  This product is available from APDA.

Support Information Services

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Tech Info Library Article Number:15262

Apple Remote Access 2.0.1 MultiPort Server: Description (5/94)

Revised: 5/2/94
Security: Everyone

Apple Remote Access 2.0.1 MultiPort Server: Description (5/94)

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Article Created: 2 May 1994

TOPIC ----------

This article provides a description or the Apple Remote Access (ARA) 2.0.1 MultiPort Server.

DISCUSSION ----------

The Apple Remote Access MultiPort Server provides a flexible, scalable, and secure way to offer network access to large numbers of remote or mobile users. Used in conjunction with one or more Apple Remote Access Serial Cards, it allows a Macintosh computer or a Workgroup Server to support from 4 to 16 simultaneous dial-up connections.* This provides an ideal solution for workgroups or entire organizations that want to enable employees to work productively and efficiently no matter what their location—whether they're at home, out of town, or even out of the country.

Unlike conventional complex server software, the Apple Remote Access MultiPort Server is designed to streamline administrative tasks, while maximizing administrator productivity and control. The software installs in minutes and features sophisticated management capabilities, including industry-standard Simple Network Management Protocol (SNMP) support. This allows administrators to flexibly manage and maintain connections. Adding ports is simple, and the server features an automatically generated activity log that can be exported to a variety of programs for further analysis.

On the client side, the Apple Remote Access Client for Macintosh software is also designed with efficiency and productivity in mind. From its single-step installation to such productivity-enhancing features as full System 7 integration and extensive connection-management capabilities, it provides everything users need to help them get their work done easily and efficiently—wherever they are.

Users can also be confident that their work will be secure. The Apple Remote Access MultiPort Server offers a host of sophisticated security features that

allow administrators to maintain the integrity of the network. These features—such as password aging, location validation, and the ability to filter access to services—make it one of the most secure remote access servers available. And because its security architecture is supported by leading third-party security vendors, administrators can choose to augment the server's built-in security features with additional challenge-and-response security modules.

Features

Ease of installation and use
- Takes only minutes to set up a server and to add users or ports as needed
- Provides built-in context-sensitive help

Multilevel security
- Provides a variety of sophisticated security features, making it one of the most secure remote access servers available
- Is supported by leading third-party security vendors, so administrators can choose to augment its built-in capabilities with additional security modules

Scalable solution
- Allows a Macintosh computer, Power Macintosh computer, or a Workgroup Server to support from 4 to 16 simultaneous dial-up connections*
- Runs on a variety of Macintosh computers, so you can choose the system that's appropriate for your needs

Powerful administrative capabilities
- Allows flexible port configurations
- Offers comprehensive user-management facilities
- Supports industry-standard SNMP
- Tracks resource usage and automatically generates an activity log that can be exported for further analysis

Flexible client capabilities
- Supports a variety of connections, including cellular, X.25, and ISDN**
- Is fully integrated with Macintosh System 7, so remote users can work with such familiar tools as the Chooser, Alias Manager, and the Finder

* The Apple Remote Access MultiPort Server includes support for 4 ports and is available for Macintosh and Power Macintosh computers and Workgroup Servers (Macintosh operating system-based). Support for 8, 12, or 16 ports requires purchase of 1, 2, or 3 Apple Remote Access MultiPort Server 4-Port Expansion Kits respectively. These expansion kits are not available for Power Macintosh computers or Workgroup Servers 6150, 8150, or 9150.

** X.25, ISDN, and cellular connections require additional Apple or third-party products.

Support Information Services

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..TIL15263-Apple_Remote_Access_2-0-1_MultiPort_Server-Description_5-94.pdf

Tech Info Library Article Number:15263

ARA 2.0.1 MultiPort Server: Specifications (5/94)

Revised: 5/2/94
Security: Everyone

ARA 2.0.1 MultiPort Server: Specifications (5/94)

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Article Created: 2 May 1994

TOPIC ----------

This article provides the technical specifications and order information for Apple Remote Access (ARA) 2.0.1 MultiPort Server.

DISCUSSION ----------

Technical Specifications

Administrator control and monitoring
- Ability to monitor and manage server activity by port and user
- Ability to broadcast messages or send them to selected users
- Ability to adjust connection time by user
- Ability to disconnect any single user or all users
- Built-in Simple Network Management Protocol (SNMP), enabling you to monitor the server from any SNMP-based network management station

Security
- User name and password authentication
- Adjustable password length
- Filtering of network services by account
- Ability to disallow client use of Save Password option
- Account disable after specified number of password failures
- Password aging
- External security architecture (for example, for providing challenge-and-response authentication through a third-party security module)
- Callback feature that verifies the user's identity by returning calls to a predetermined phone number
- Activity log for recording user and server activities
- Administrative password option

Modem support and scripts
- Supports any Hayes-compatible 9,600-bps or higher-speed modem with the

appropriate script. Modem scripts for many popular modems are included:
  - V.fast modems: Motorola Codex 3260 Fast
  - V.32bis modems (14,400 bps): Hayes Ultra 144, Motorola Codex 3260, US Robotics Courier V.32bis
  - V.32 modems (9,600 bps): Hayes Ultra 96, Telebit T1600, UDS/Motorola 3225, UDS/Motorola 3227, US Robotics Sportster, US Robotics Worldport
- ISDN support: Hayes ISDN adapter
- 9,600-bps or higher-speed scripts included with the Apple Remote Access Client for Macintosh can also be used with the Apple Remote Access MultiPort Server
- Additional scripts may be available. Contact an authorized Apple reseller or representative or your modem manufacturer for more details.
- Administrators or other programmers familiar with connection control languages (CCLs) can also write the necessary scripts using the Apple Remote Access Modem Scripting Guide and Modem Workshop software, which are included with the Apple Remote Access MultiPort Server.

Network types supported
- Support for any AppleTalk network; the most common network choices include:
  - LocalTalk
  - Ethernet
  - Token Ring

Connection types supported
- Support for a range of connection types:
  - Standard telephone
  - Cellular*
  - X.25*
  - ISDN*

Error detection/Data compression
- Includes several built-in components that allow for error-free and optimized delivery of data
  - Smart buffering (developed by Apple Computer, Inc.) for data-transfer optimization
  - MNP, an industry standard for error detection
  - V.42bis, an industry standard for data compression

Specifications
- Maximum number of simultaneous connections: 16
- User name maximum length: 31 characters
- Password maximum length: 8 characters
- Total number of user records: 8,192
- Maximum connect time: selectable
- Maximum number of activity log entries: 32,767

Licensing information
- Comes with license to install Apple Remote Access MultiPort software on a single Macintosh and to install Apple Remote Access Client for Macintosh software on up to four systems
- Additional client software must be purchased or licensed separately; consult your authorized Apple reseller or representative for information

Operating requirements
For the server side
- A Macintosh computer with one or more NuBus slots and at least 5MB of RAM, a Power Macintosh computer, or a Workgroup Server. For configurations with more than four ports, additional memory is required, and a high-performance system is recommended**.
- Macintosh system software version 7.0 or later (version 7.1 or later recommended)
- A hard disk drive and an Apple SuperDrive floppy disk drive
- Apple Remote Access Serial Card and Apple RS-232 Cable
- One or more Hayes-compatible 9,600 bps/V.32 or higher-speed modems
- Apple Remote Access Client for Macintosh

For the client side
- A Macintosh Plus or later model with at least 4MB of RAM or a Power Macintosh computer
- Macintosh system software version 7.0 or later
- A hard disk drive
- An Apple or other Hayes-compatible modem (2,400 bps minimum; 9,600 bps or higher recommended) and appropriate modem cable, if needed

* X.25 support requires purchase of Apple Remote Access MultiPort Server X.25 Extension; ISDN or cellular support requires additional third-party products.

** Support for Macintosh computers that require 7-inch NuBus cards may not be available at this time; consult your authorized Apple reseller or representative.

Ordering Information

Apple Remote Access MultiPort Server
Order No. M5214Z/B
- Apple Remote Access MultiPort Server software and installer (includes support for four ports)
- Apple Remote Access Client for Macintosh software and installer (with license to install software on up to four client systems); additional client software can be purchased separately
- Apple Remote Access Serial Card
- Apple RS-232 Cable

Apple Remote Access MultiPort Server 4-Port Expansion Kit
(Includes Apple Remote Access Serial Card and Apple RS-232 Cable)
Order No. M2384Z/B
Expands your Apple Remote Access MultiPort Server by four ports—up to a maximum of 16 ports

Apple Remote Access MultiPort Server X.25 Extension
Order No. M1998Z/A
Adds X.25 dial-in capability to your Apple Remote Access MultiPort Server and Client software. (Not available for Power Macintosh computers or Workgroup Servers 6150, 8150, or 9150.)

Apple Remote Access Client for Macintosh (single-pack)
Order No. M5227Z/B

Apple Remote Access Client for Macintosh 10-Pack
Order No. M2692Z/B

Apple Remote Access Client for Macintosh (Volume Licensing)
Client software can be volume licensed separately for quantities of 50 or more users; consult your authorized Apple reseller or representative for purchasing information.

Support Information Services

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Tech Info Library Article Number:15264

Apple Remote Access 2.0.1 Personal Server: Description (10/94)

Revised: 10/13/94
Security: Everyone

Apple Remote Access 2.0.1 Personal Server: Description (10/94)

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Article Created: 2 May 1994
Article Reviewed/Updated: 13 October 1994

TOPIC ----------

This article provides a description of Apple Remote Access (ARA) 2.0.1 Personal Server.

DISCUSSION ----------

ARA Personal Server software includes everything you need to let a Macintosh computer communicate with another Macintosh or an entire AppleTalk network over standard telephone lines. It takes only minutes to set up and offers powerful capabilities that can help make an individual or a small workgroup of Macintosh users even more productive, no matter where they are.*

With Apple Remote Access Personal Server, you can work wherever you like—-at home or on the road—-and retain access to all of the resources of your office computer or network. You and your colleagues can send and receive electronic mail, collaborate on a shared project, or print to a network-connected printer. Yet doing all of this is as simple as if you were working at your office.

Getting started with Apple Remote Access Personal Server is easy. The software features single-step installation that requires no special technical knowledge. And because the Apple Remote Access Personal Server adjusts automatically to your network, it leaves you free to focus on your own work instead of worrying about the details of networking.

In today's increasingly complex and mobile world, Apple Remote Access Personal Server provides convenient, direct access to information and resources at a remote location for computer users on the go. So, whether you want to share files with a neighbor or collaborate on a project with colleagues around the world, Apple Remote Access Personal Server can help you get the job done—quickly, easily, and affordably.

Features

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Ease of use

- Installs in only minutes
- Provides everything you need for both the calling and the answering Macintosh computers—-client and server software—-in one convenient package**
- Lets individuals or small organizations access services remotely, in the same intuitive way as they work with services locally
- Requires no specialized equipment

Adaptability

- Enables individuals or small organizations to take advantage of remote access to a single Macintosh computer or an entire AppleTalk network
- Supports a variety of leading modems
- Supports a range of network types, including LocalTalk, Ethernet, and Token Ring

High performance

- Features built-in industry-standard data compression and error detection
- Provides increased efficiency, with Apple's smart buffering technology
- Is optimized for a variety of connection types

Built-in security

- Includes several security options that allow you to restrict access to information
- Generates an activity log to track usage

Flexible client capabilities

- Supports a variety of connections, including cellular and ISDN**
- Is fully integrated with Macintosh System 7, so remote users can work with such familiar tools as the Chooser, Alias Manager, and the Finder

* Includes software for one client. Additional client software must be purchased or licensed separately. Consult your authorized Apple reseller or representative for more information.

** ISDN and cellular connections require additional third-party products.

Article Change History:
13 Oct 1994 - Added keyword; made minor technical updates.

Support Information Services

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Tech Info Library Article Number:15265

Tech Info Library

ARA 2.0.1 Personal Server: Specifications (5/94)

Revised: 5/2/94
Security: Everyone

ARA 2.0.1 Personal Server: Specifications (5/94)

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Article Created: 2 May 1994

TOPIC -----

This article provides technical specifications and order information on Apple Remote Access (ARA) 2.0.1 Personal Server.

DISCUSSION -----

Technical Specifications

Modem support and scripts

- Supports any Hayes-compatible 2,400-bps, 9,600-bps, or higher-speed modem with the appropriate script. Modem scripts for many popular modems are included:
  - V.32bis modems (14,400 bps): Apple Express Modem, Global Village PowerPort Gold, Global Village TelePort Gold, Hayes Optima 144, Microcom QX4232bis, Prometheus ProModem 144e, PSI Powermodem IV, Supra SupraFax v.32bis, Telebit T3000, Telebit WorldBlazer
  - V.32 modems (9,600 bps): Global Village PowerPort Silver, Global Village TelePort Silver, Prometheus Promodem 96, PSI Powermodem III, Supra SupraFax Modem Plus, Telebit QBlazer, Telebit T1600, US Robotics Sportster, US Robotics Worldport
  - V.22bis modems (2,400 bps): Apple 2400, Global Village PowerPort Bronze, Global Village TelePort Bronze, Hayes Optima 2400, Microcom AX 2400C, Prometheus Promodem 24, PSI PowerModem II
- Cellular Support: Applied Engineering DataLink PB and Applied Engineering Axcell Cellular Interface, Microcom Cellular Data Link 300
- ISDN support: Hayes ISDN adapter
- Additional scripts may be available. Contact an authorized Apple reseller or representative or your modem manufacturer for more details.
- If you understand connection control languages (CCLs) and are an experienced programmer, you may be able to write the necessary modem script yourself. The Apple Remote Access Modem Toolkit (see ordering information) includes everything you need to write these scripts.

Network types supported
- Support for any AppleTalk network; the most common network choices include:
  - LocalTalk
  - Ethernet
  - Token Ring

Connection types supported
- Standard telephone*
- Cellular*
- ISDN*

Error detection/Data compression
- Includes several built-in components that allow for error-free and optimized delivery of data
  - Smart buffering (developed by Apple Computer, Inc.) for data-transfer optimization
  - MNP, an industry standard for error detection
  - V.42bis, an industry standard for data compression

Performance
Spreadsheets, text, and files with redundant data can be compressed more efficiently than certain other files (such as programs) and can therefore be transferred at much higher rates.

Security
- User name and password authentication
- Callback feature that verifies the user's identity by returning calls to a predetermined phone number
- Activity log for recording calling and answering activities
- User account disabled after seven incorrect password attempts

Specifications
- Maximum number of simultaneous connections: 1
- User name maximum length: 31 characters
- Password maximum length: 8 characters
- Maximum connect time: selectable
- Total number of user records: 100
- Maximum number of activity log entries: 1,000

Licensing information
- Comes with license to copy and install the Apple Remote Access Personal Server software for your own use on up to two Apple computers owned and/or operated by you.
- Additional client software must be purchased or licensed separately; consult your authorized Apple reseller or representative for information.

Operating requirements
- A Macintosh computer with at least 4MB of RAM, a Power Macintosh computer, or Workgroup Server
- A hard disk drive
- Macintosh system software version 7.0 or later
- An Apple or other Hayes-compatible modem (2,400 bps minimum; 9,600 bps or

higher speed recommended) and appropriate modem cable, if needed
• Apple Remote Access Client for Macintosh version 2.0

* ISDN and cellular connections require additional third-party products.

Ordering Information

Apple Remote Access Personal Server for Macintosh
Order No. M2726Z/B
• Apple Remote Access Personal Server software and installer
• Apple Remote Access Personal Server for Macintosh User's Guide
• Apple Remote Access DialAssist quick reference card

Apple Remote Access Client for Macintosh (single-pack)
Order No. M5227Z/B

Apple Remote Access Client for Macintosh 10-Pack
Order No. M2692Z/B

Apple Remote Access Personal Server for Macintosh (Volume Licensing)
Personal Server software can be volume licensed separately for quantities of 50 or more users: consult your authorized Apple reseller or representative for purchasing information.

Apple Remote Access Modem Toolkit version 2.0
Order No. R0129LL/C
This product is available from APDA.

Support Information Services

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Tech Info Library Article Number:15266

Tech Info Library

Apple Workgroup Server 95: AFP and NFS File Locking (5/94)

Revised: 5/3/94
Security: Everyone

Apple Workgroup Server 95: AFP and NFS File Locking (5/94)

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Article Created: 2 May 1994

TOPIC -----

We would like to share files from an Apple Workgroup Server (AWS) 95, using AppleTalk Filing Protocol (AFP) for Macintosh clients, and Network File System (NFS) for an OS/2 client. We understand that user security is separately maintained, and it's not an issue for us. However, we are concerned about file locking. Will a file locked under NFS appear locked via AFP, or the other way around?

DISCUSSION -----

You understand some of the security issues. Here are two important notes in the "Tuning Server Performance and Addition Internal Hard Driver" documentation for the AWS 95. These notes regard an AWS 95 running both AppleShare Pro and an NFS server, or running AppleShare Pro and operating the server as an NFS client. You should be aware of the following:

• Operating as both an AppleShare Pro and an NFS server

  When using the Apple Workgroup Server 95 as both an AppleShare server and an NFS server, be sure that the two services DON'T share the SAME files, folders, and volumes (file systems). If they do, you'll incur considerable problems because the two services use different means to assign and manage users, groups, and access privileges. You can use AppleShare to access an NFS shared file system without encountering any conflicts. The potential problem arises when an attempt is made to create or modify files that are shared by AppleShare and NFS that reside on the SAME volume.

  In addition, sharing the SAME volume through both services creates a security problem for users of NFS. Because AppleShare Pro runs from the root account, all AppleShare users have root-level privileges on the volumes being shared by NFS and AppleShare Pro. Therefore, the AppleShare Pro users can read and make changes to all files on a volume

shared by AppleShare Pro and NFS. Be aware of the vulnerability of the NFS files; to avoid potential problems, DON'T allow the SAME volume to be shared by both AppleShare Pro and NFS.

- Running AppleShare Pro and operating the server as an NFS client

  AppleShare Pro is designed to share LOCAL volumes; it is not designed to share volumes over the network. Therefore, if you configure the server as an NFS client, DON'T use it to share NFS mounted file systems. If you do, and the NFS server crashes, AppleShare Pro will become unresponsive.

  AppleShare Pro is not programmed to respond to the NFS timeout errors. In A/UX, Macintosh virtual memory is an A/UX process that handles multiple client sessions. One of the many client sessions trying to access the unresponsive server can cause AppleShare Pro and all its clients to become unresponsive. The other A/UX processes on the Apple Workgroup Server 95 will be unaffected.

With the above notes in mind, and because the two services use different locking mechanisms, we don't recommend using the AWS 95 as both an AppleShare server and an NFS server sharing the SAME files, folders, and volumes.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15267

Tech Info Library

DOS Compatible Card: Video Noise in PC Environment (5/96)

Revised: 5/27/96
Security: Everyone

DOS Compatible Card: Video Noise in PC Environment (5/96)

==========

Article Created: 4 May 1994
Article Reviewed/Updated: 26 May 1996

TOPIC ----------

When I connect my Apple 14 inch Macintosh Color Display to my Quadra 610 DOS Compatible system I notice that there are horizontal wavy lines across the screen when I am in the DOS/Windows environment. There is no problem when I work in the Macintosh environment. How can I correct this?

DISCUSSION ----------

Some customers using an Apple 14 inch Macintosh Color Display with a Macintosh Quadra 610 DOS Compatible, or a DOS Compatibility Card may experience video noise in the DOS/Windows environment when using a single monitor.

The symptom associated with this problem is noticeable horizontal wavy lines or flickering on the edges of the video when in the DOS/Windows environment. This anomaly is only associated with DOS Compatible card customers using the Apple 14-in. Macintosh Color Display in a single monitor configuration. The wavy lines and flickering is caused by interference on the horizontal sync line of the display.

Version 1.2 or later of the PC Setup control panel corrects this problem and is included as part of the Custom install in System Update 3.0. Once System Update 3.0 is installed, the "Fade Screens" option must be selected in the PC Setup control panel in order to enable the fix. System Update 3.0 is available from online services, and from the Apple Order Center.

The Tech Info Library article titled "Locating Vendor Information" can help you search for the Apple Order Center's phone number.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" - Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" - Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
26 May 1996 - Updated for technical accuracy.
23 May 1994 - Added information on how to enable fix once S.U. 3.0 is installed.

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Tech Info Library Article Number:15268

Tech Info Library

LaserWriter Pro 810: Selecting Different Paper Trays (2/95)

Revised: 2/8/95
Security: Everyone

LaserWriter Pro 810: Selecting Different Paper Trays (2/95)

==========

Article Created: 4 May 1994
Article Reviewed/Updated: 8 February 1995

TOPIC ----------

I am trying to get a LaserWriter PRO 810 to use the tabloid tray for plotting CADD files. I am using postscript, and have a copy of the LWPRO81_.ppd file. The problem I am having is trying to find the proper syntax. For most printers we use a command like:

```
statusdict begin n setdefaultpapertray end
```

where n is the tray number.

Several attempts at variations of this command, and using the .ppd to make more educated guesses have failed to get the desired results. I would appreciate any advice on the proper syntax to include in our postscript file.

DISCUSSION ----------

Caution:
=========
If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

We also verified that the "setdefaultpapertray" command was not accepted by the LaserWriter Pro 810. Typically, most PostScript level 2 printers have compatibility operators for PostScript level 1 code so we are unsure why "setdefaultpapertray" is not working. However, there are other ways to choose paper trays:

1) The "setpapertray" compatibility operator can be used for the LaserWriter Pro 810 with the following values below:

```
    0 for the Upper tray
    1 for the Middle tray
    2 for the Lower tray
    4 for the Manual tray

  Thus, "statusdict begin 1 setpapertray end" will use the Middle tray for
  printing.

  NOTE: Since this command does not exit the PS server loop, the paper tray
        selection is valid ONLY for the current job being printed.

  By the way, this command does not work if the PostScript file being
  downloaded was generated by LaserWriter 8.x driver.  This is because the
  paper selection code in LaserWriter 8.x driver overrides any code sent
  beforehand.

2) The following segments of code (taken from the LaserWriter Pro 810 PPD) will
    also select the various paper trays:

% Upper tray
  currentpagedevice /InputAttributes get
  0 get dup
  null eq {pop}
  { dup
    /InputAttributes
    1 dict dup /Priority [0 1 2 3] put
    put  setpagedevice
  } ifelse

%Middle tray
  currentpagedevice /InputAttributes get
  1 get dup
  null eq {pop}
  { dup
    /InputAttributes
    1 dict dup /Priority [1 0 2 3] put
    put  setpagedevice
  } ifelse

%Lower tray
  currentpagedevice /InputAttributes get
  2 get dup
  null eq {pop}
  { dup
    /InputAttributes
    1 dict dup /Priority [2 0 1 3] put
    put  setpagedevice
  } ifelse

%Manual feed
<</ManualFeed true>> setpagedevice
```

..TIL15269-LaserWriter_Pro_810-Selecting_Different_Paper_Trays_2-95_(TA31640).pdf

Article Change History:
08 Feb 1995 - Added PostScript caution.
13 Oct 1994 - Corrected titled.

Support Information Services

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Tech Info Library Article Number:15269

Tech Info Library

LaserWriter Pro 810: PostScript Fax Q&A (4/94)

Revised: 5/4/94
Security: Everyone

LaserWriter Pro 810: PostScript Fax Q&A (4/94)

==========

Article Created: 4 May 1994

TOPIC ----------

This article discusses questions on the LaserWriter Pro 810 PostScript fax option.

DISCUSSION ----------

Q: Can you have your faxes print out on 11x17 paper?
A: I verified that you can send a PostScript file by Fax and select different, unconventional to fax jobs, paper sizes. That is, you can in the Page Setup and Print/Fax dialog boxes select, then Fax from one LaserWriter Pro 810 the PostScript job to another LaserWriter Pro 810 to output on 11x17 paper.

Q: Can you print faxes at a higher resolution than the normal fax resolution of 200dpi?
A: Unique to PostScript Fax printers is the ability to send PostScript files in the form of a fax to each other. This ability improves the quality and flexibility of the fax document because all of the benefits of printing using PostScript devices accrue to faxing when sending the fax as a PostScript file. If the receiving fax printer is capable of large format media, gray scale, higher resolutions, color, or duplex, PostScript file faxes can use those features as well.

Q: Can you have a fax print at 800dpi?
A: Yes

Q: Do you need more than 8mb to fax at 800dpi?
A: You need 16MB of RAM to print a PostScript fax at 800dpi.

Q: Can you have a stand alone Pro 810 with no computer on a fax line to handle faxes?
A: The LaserWriter Pro 810 does not need to be connected to a computer or

network to receive incoming faxes.

Q: Would there be a potential problem without a computer attached?
A: No

Q: If I have a LaserWriter Select 360 with the fax option, how can I send an 11x17 document?
A: You need to reconfigure the Select 360 to use the LaserWriter 810f PPD using the Chooser and Setup options. You need to specifically select the LaserWriter Pro 810f PPD. Do not select autoconfigure. Then Choose the larger paper size in Page Setup and Print/Fax dialog boxes, and fax the PostScript job. We recommend switching back to the LaserWriter Select 360's proper PPD when you have completed faxing a ledger sized document.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15270

Tech Info Library

Apple Monitors: Stripe Pitch vs Dot Pitch (5/94)

Revised: 5/3/94
Security: Everyone

Apple Monitors: Stripe Pitch vs Dot Pitch (5/94)

==========

Article Created: 3 May 1994

TOPIC -----

I have noticed that many articles which describe monitors have ratings in "stripe pitch" or "dot pitch." I assume this is due to differences in the CRT technologies used, but isn't stripe pitch REALLY the same as dot pitch?

DISCUSSION -----

The terms stripe pitch and dot pitch are both associated with CRT pixels. In today's marketplace, a CRT pixel can take the physical form of a dot (conventional method) or a stripe (as in the case of Trinitron CRTs).

In its dot form, a single pixel is three dots consisting of one red, one green, and one blue phosphor dot and is usually positioned in a triangular fashion. In the case of a stripe pixel, you have three small phosphor stripes (R, G, and B) that are positioned vertically and are set side by side.

The term "pitch" refers to the distance between pixels. Therefore, the reference when referring to Trinitron CRTs is to list the stripe pitch and in conventional CRTs the term is dot pitch.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15271

Tech Info Library

Apple Remote Access 2.0.1 Client: Read Me File (5/94)

Revised: 5/3/94
Security: Everyone

Apple Remote Access 2.0.1 Client: Read Me File (5/94)

==========

Article Created: 3 May 1994

TOPIC -----

This article is the Apple Remote Access (ARA) 2.0.1 Read Me File.

DISCUSSION -----

APPLE REMOTE ACCESS CLIENT
FOR MACINTOSH READ ME
==========

This document provides late-breaking news about the Apple Remote Access Client that is not covered in the "Apple Remote Access Client User's Guide." You may need to refer to that guide to understand the use of several terms in this document, and you may want to print this document to keep with your user's guide.

Modems Supported by the Apple Remote Access Client
==========

Scripts that support most popular modems are provided on the Remote Access Client installation disks. The majority of these scripts are supplied in all countries in which the Remote Access Client is sold. Additional scripts are also provided for a number of countries to meet the particular needs of those communications environments. The scripts include:

All countries

V.32bis modems (14,400 bps):
- Apple Express Modem
- Global Village PowerPort Gold
- Global Village TelePort Gold
- Hayes Optima 144
- Microcom QX4232bis
- Prometheus ProModem 144e

```
    PSI Powermodem IV
    Supra SupraFax v.32bis
    Telebit WorldBlazer

  V.32 modems (9600 bps):
    Global Village PowerPort Silver
    Global Village TelePort Silver
    Prometheus Promodem 96
    PSI Powermodem III
    Supra SupraFax Modem Plus
    Telebit QBlazer
    Telebit T1600
    US Robotics Sportster

  V.22bis modems (2400 bps):
    Apple 2400
    Global Village PowerPort Bronze
    Global Village TelePort Bronze
    Hayes Optima 2400
    Microcom AX 2400C
    Prometheus Promodem 24
    PSI PowerModem II

  Cellular support:
    Applied Engineering DataLink PB and Applied Engineering Axcell Cellular
     Interface
    Microcom Cellular Data Link 300

  ISDN support:
    Hayes ISDN adapter

  Czechoslovakia
  --------------
  CZ Sample Script • Apple 2400

  Germany
  --------
  57,600 bps:
    Andante EAZ0 v2 (V.24 ISDN Adapter)
    Andante EAZ1 v2
    Andante EAZ2 v2
    Andante EAZ3 v2
    Andante EAZ4 v2
    Andante EAZ5 v2
    Andante EAZ6 v2
    Andante EAZ7 v2
    Andante EAZ8 v2
    Andante EAZ9 v2

  25,000 bps:
    Motorola 326x (Fast) v2

  19,200 bps:
```

```
  MDG 19K2-31 v2
  MDG 14MX-22 v2

14,400 bps:
  euroScout v2
  Express Modem 14400 v2
  Global Village Test v2
  PriCom 14.4  v2
  TELEJET 14400 v2

9600 bps:
  CN-3532 SA Plus v2
  CN-3532 SA v2
  FURY 9600 TI v2
  MicroLink 9624 v2

2400 bps:
  Apple PowerBook/Portable v2
  CN-3522 SA Plus v2
  CTK EuroCoupler Akustikk. v2
  CTK EuroCoupler Modem v2
  Dialog 2400 MNP v2
  FURY 2400 TI v2
  GVC SuperModem 2400 MNP v2
  GVC SuperModem 2400 v2
  MAKK-CHAMPION Akustikk. v2
  MAKK-CHAMPION Modem v2
  MDG 2400-11 v2
  MDG 2400-21 v2
  MicroLink 2410 v.2
  Personal Line 2400 MNP v2
  TELEJET 2400 v2
  Worldport 2400 MNP v2

Switzerland
-----------
19,200 bps:
  ZyXEL U-1496

9600 bps:
  FURY 9600 TI v2
  NOKIA PMD 9600

NOTE: You can delete any unneeded scripts from your Extensions folder,
      which is located inside your System Folder. To recognize scripts,
      look for files listed as "Modem Link Tool Personal documents."


Using AppleTalk Remote Access Version 1.0 or Apple Remote Access
MultiPort Server Modem Scripts With the Apple Remote Access Client
==================================================================

You can use modem scripts included with the Apple Remote Access MultiPort Server
```

with the Apple Remote Access Client. You can also use AppleTalk Remote Access version 1.0 modem scripts with Apple Remote Access Client, but certain new features, such as Ignore Dial Tone, Manual Dialing, and MNP 10 support, won't be available. You cannot use Apple Remote Access Client modem scripts with AppleTalk Remote Access version 1.0.

Calling an AppleTalk Remote Access Version 1.0 Server

The AppleTalk Remote Access 1.0 Compatibility option allows you to call a version 1.0 server and to receive callbacks from a 1.0 server. With version 2.0.1 you do not have to check the compatibility box as described in Chapter 2 of the "Apple Remote Access Client User's Guide".

Using an MNP 10 Modem

MNP 10 is an error-correction protocol that allows for more reliable data connections over cellular modems. Clicking the "Use MNP 10 error correction in modem" checkbox puts MNP 10 modems into cellular mode. Although MNP 10 is designed primarily for cellular modems, some users have found that it can also improve performance of conventional land lines. Do not click the "Use MNP 10 error correction in modem" checkbox to use MNP 10 over land lines rather than over a cellular link.

To establish an MNP 10 connection, both your modem and the modem you're calling must support MNP 10; clicking the "Use MNP 10 error correction in modem" checkbox in the Remote Access Setup window is not by itself sufficient to establish an MNP 10 connection.

Using Aliases With Apple Remote Access

To create an alias over an Apple Remote Access connection:

1. Select the alias icon.
2. Choose Get Info from the File menu.
3. Click the Locked checkbox.

If you don't lock the alias, the alias may accidentally be converted to call the wrong Apple Remote Access server or to access services across your local network.

Using the Manual Dialing Feature

Establishing a Remote Access connection with manual dialing varies according to the type of modem you are using. To ensure that you can make a connection while using Manual Dialing, you may need to experiment with pressing the Connect button slightly before or after you hear the remote modem answer the phone.

Using the Redialing Feature

Remote Access Client attempts redialing only when the phone number that has been dialed is busy. If the connection attempt fails for any other reason, Remote Access stops redialing so that you can correct any problems.

With the Redialing option, set the "Time between retries" number to five seconds or greater. Anything less than five seconds may not give your modem sufficient time to reset, so the serial port will be busy and unavailable for redialing.

With the Redialing Alternate Number option, the main number is dialed once before the redialing sequence is initiated. The redialing sequence then alternates between the main and alternate numbers.

Using DialAssist

If you are calling within a country with no city or area codes, and you encounter problems using DialAssist, try entering a space in the "Connect To City/Area Code" box in your connection document.

Serial Port Arbitration

When a Remote Access connection is established, Remote Access prevents other application programs from using the serial port selected in the Remote Access Setup control panel. Most programs will inform you that the port is in use.

Remote Access Client provides this port arbitration through a system extension called the Serial Port Arbitrator located in the Extensions folder. Some programs that use the serial port may not be compatible with this extension. If you suspect that a program is not compatible with the Serial Port Arbitrator:

1. Remove the Serial Port Arbitrator file from the Extensions folder.
2. Restart your Macintosh.
3. Try the program again.

NOTE: The Serial Port Arbitrator will not work on a Macintosh if Remote Access Client has not been installed.

Macintosh Computers Using Virtual Memory

If you are using a Macintosh IIfx, Macintosh Quadra 900, or Macintosh Quadra 950 and have virtual memory turned on:

1. If necessary, install the Serial Switch control panel from the "Install 2" disk.
2. Open the Serial Switch control panel.
3. Set the serial port setting to Compatible.

Modem Cable Requirements

Most modems require a cable that supports the data terminal ready (DTR) signal. In addition, certain modems require a cable that supports CTS/RTS hardware flow control. To support DTR, the cable must connect pin 20 on the DB-25 connector to pin 1 on the Mini DIN-8. To support CTS/RTS, the cable must connect pin 5 on the DB-25 connector to pin 2 on the Mini DIN-8 and pin 4 on the DB-25 connector to pin 1 on the Mini DIN-8. See your modem vendor or Apple-authorized dealer to obtain the necessary cable.

Using Express Modem or GeoPort

If you are using Express Modem software with either an Express Modem or a GeoPort telephone pod, you must turn on 32-bit addressing in the Memory Control Panel. Using 24-bit addressing may result in a software crash.

Support Information Services

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Tech Info Library Article Number:15272

Tech Info Library

Apple Remote Access 2.0.1 Personal Server: Read Me File (5/94)

Revised: 5/3/94
Security: Everyone

Apple Remote Access 2.0.1 Personal Server: Read Me File (5/94)

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Article Created: 3 May 1994

TOPIC ----------

This article is the Read Me file for Apple Remote Access 2.0.1 Personal Server.

DISCUSSION ----------

APPLE REMOTE ACCESS PERSONAL SERVER FOR MACINTOSH READ ME

This document provides late-breaking news about the Apple Remote Access Personal Server that is not covered in the "Apple Remote Access Personal Server User's Guide." You may need to refer to that guide to understand the use of several terms in this document, and you may want to print this document to keep with your user's guide.

Modems Supported by the Apple Remote Access Personal Server

Scripts that support most popular modems are provided on the Remote Access Personal Server installation disks. The majority of these scripts are supplied in all countries in which the Remote Access Personal Server is sold. Additional scripts are also provided for a number of countries to meet the particular needs of those communications environments. The scripts include:

All countries

V.32bis modems (14,400 bps):
- Apple Express Modem
- Global Village PowerPort Gold
- Global Village TelePort Gold
- Hayes Optima 144
- Microcom QX4232bis
- Prometheus ProModem 144e
- PSI Powermodem IV

```
  Supra SupraFax v.32bis
  Telebit WorldBlazer

V.32 modems (9600 bps):
  Global Village PowerPort Silver
  Global Village TelePort Silver
  Prometheus Promodem 96
  PSI Powermodem III
  Supra SupraFax Modem Plus
  Telebit QBlazer
  Telebit T1600
  US Robotics Sportster

V.22bis modems (2400 bps):
  Apple 2400
  Global Village PowerPort Bronze
  Global Village TelePort Bronze
  Hayes Optima 2400
  Microcom AX 2400C
  Prometheus Promodem 24
  PSI PowerModem II

Cellular support:
  Applied Engineering DataLink PB and Applied Engineering Axcell Cellular
   Interface
  Microcom Cellular Data Link 300

ISDN support:
  Hayes ISDN adapter

Czechoslovakia
--------------
CZ Sample Script • Apple 2400

Germany
--------
57,600 bps:
  Andante EAZ0 v2 (V.24 ISDN Adapter)
  Andante EAZ1 v2
  Andante EAZ2 v2
  Andante EAZ3 v2
  Andante EAZ4 v2
  Andante EAZ5 v2
  Andante EAZ6 v2
  Andante EAZ7 v2
  Andante EAZ8 v2
  Andante EAZ9 v2

25,000 bps:
  Motorola 326x (Fast) v2

19,200 bps:
  MDG 19K2-31 v2
```

```
  MDG 14MX-22 v2

14,400 bps:
  euroScout v2
  Express Modem 14400 v2
  Global Village Test v2
  PriCom 14.4  v2
  TELEJET 14400 v2

9600 bps:
  CN-3532 SA Plus v2
  CN-3532 SA v2
  FURY 9600 TI v2
  MicroLink 9624 v2

2400 bps:
  Apple PowerBook/Portable v2
  CN-3522 SA Plus v2
  CTK EuroCoupler Akustikk. v2
  CTK EuroCoupler Modem v2
  Dialog 2400 MNP v2
  FURY 2400 TI v2
  GVC SuperModem 2400 MNP v2
  GVC SuperModem 2400 v2
  MAKK-CHAMPION Akustikk. v2
  MAKK-CHAMPION Modem v2
  MDG 2400-11 v2
  MDG 2400-21 v2
  MicroLink 2410 v.2
  Personal Line 2400 MNP v2
  TELEJET 2400 v2
  Worldport 2400 MNP v2

Switzerland
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19,200 bps:
  ZyXEL U-1496

9600 bps:
  FURY 9600 TI v2
  NOKIA PMD 9600

NOTE: You can delete any unneeded scripts from your Extensions folder,
      which is located inside your System Folder. To recognize scripts,
      look for files listed as "Modem Link Tool Personal documents."


Using AppleTalk Remote Access Version 1.0 or Apple Remote Access MultiPort
Server Modem Scripts With the Apple Remote Access Personal Server
==========================================================================

You can use modem scripts included with the Apple Remote Access MultiPort
Server with the Apple Remote Access Personal Server. You can also use
```

AppleTalk Remote Access version 1.0 modem scripts with Apple Remote Access Personal Server, but certain new features, such as Ignore Dial Tone, Manual Dialing, and MNP 10 support, won't be available. You cannot use Apple Remote Access Personal Server modem scripts with AppleTalk Remote Access version 1.0.

Calling an AppleTalk Remote Access Version 1.0 Server

The AppleTalk Remote Access 1.0 Compatibility option allows you to call a version 1.0 server and to receive callbacks from a 1.0 server (with version 2.0.1 you do not have to check the compatibility box as described in Chapter 3 of the "Apple Remote Access Personal Server for Macintosh User's Guide"). However, the Compatibility option does NOT allow an Apple Remote Access Personal Server to receive calls from an AppleTalk Remote Access 1.0 client. The Apple Remote Access Personal Server can only receive calls from version 2.0 Apple Remote Access Clients.

Using an MNP 10 Modem

MNP 10 is an error-correction protocol that allows for more reliable data connections over cellular modems. Clicking the "Use MNP 10 error correction in modem" checkbox puts MNP 10 modems into cellular mode. Although MNP 10 is designed primarily for cellular modems, some users have found that it can also improve performance of conventional land lines. Do not click the "Use MNP 10 error correction in modem" checkbox to use MNP 10 over land lines rather than over a cellular link.

To establish an MNP 10 connection, both your modem and the modem you're calling must support MNP 10; clicking the "Use MNP 10 error correction in modem" checkbox in the Remote Access Setup window is not by itself sufficient to establish an MNP 10 connection.

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1. Select the alias icon.
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Establishing a Remote Access connection with manual dialing varies according to the type of modem you are using. To ensure that you can make a connection while using Manual Dialing, you may need to experiment with pressing the Connect

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Remote Access Client attempts redialing only when the phone number that has been dialed is busy. If the connection attempt fails for any other reason, Remote Access stops redialing so that you can correct any problems.

With the Redialing option, set the "Time between retries" number to five seconds or greater. Anything less than five seconds may not give your modem sufficient time to reset, so the serial port will be busy and unavailable for redialing.

With the Redialing Alternate Number option, the main number is dialed once before the redialing sequence is initiated. The redialing sequence then alternates between the main and alternate numbers.

Using DialAssist

If you are calling within a country with no city or area codes, and you encounter problems using DialAssist, try entering a space in the "Connect To City/Area Code" box in your connection document.

Serial Port Arbitration

When a Remote Access connection is established, Remote Access prevents other application programs from using the serial port selected in the Remote Access Setup control panel. Most programs will inform you that the port is in use.

If your Macintosh is set up to answer calls (the "Answer calls" checkbox in the Remote Access Setup control panel is selected), other programs are allowed to use the serial port. When the port is free, Remote Access once again enables your Macintosh to answer calls.

Remote Access Personal Server provides this port arbitration through a system extension called the Serial Port Arbitrator located in the Extensions folder. Some programs that use the serial port may not be compatible with this extension. If you suspect that a program is not compatible with the Serial Port Arbitrator:

1. Remove the Serial Port Arbitrator file from the Extensions folder.
2. Restart your Macintosh.
3. Try the program again.

NOTE: The Serial Port Arbitrator will not work on a Macintosh if Remote Access Personal Server has not been installed.

Macintosh Computers Using Virtual Memory

If you are using a Macintosh IIfx, Macintosh Quadra 900, or Macintosh Quadra 950

and have virtual memory turned on:

1. If necessary, install the Serial Switch control panel from the "Install 2" disk.
2. Open the Serial Switch control panel.
3. Set the serial port setting to Compatible.

Modem Cable Requirements

Most modems require a cable that supports the data terminal ready (DTR) signal. In addition, certain modems require a cable that supports CTS/RTS hardware flow control. To support DTR, the cable must connect pin 20 on the DB-25 connector to pin 1 on the Mini DIN-8. To support CTS/RTS, the cable must connect pin 5 on the DB-25 connector to pin 2 on the Mini DIN-8 and pin 4 on the DB-25 connector to pin 1 on the Mini DIN-8. See your modem vendor or Apple-authorized dealer to obtain the necessary cable.

Using Express Modem or GeoPort

If you are using Express Modem software with either an Express Modem or a GeoPort telephone pod, you must turn on 32-bit addressing in the Memory Control Panel. Using 24-bit addressing may result in a software crash.

Before changing modem scripts or before switching selected ports with either an Express Modem or a GeoPort telephone pod, be sure to deselect the "Answer Calls" checkbox in the Remote Access Setup control panel.

Support Information Services

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Tech Info Library Article Number:15273

Tech Info Library

AppleSearch 1.0.1 Patch: Read Me File (5/94)

Revised: 5/3/94
Security: Everyone

AppleSearch 1.0.1 Patch: Read Me File (5/94)

==========

Article Created: 3 May 1994

TOPIC -----

This article is the AppleSearch 1.0.1 Patch Read Me file.

DISCUSSION -----

About the AppleSearch 1.0.1 Patches

This document describes how to change your AppleSearch Server 1.0 software to version 1.0.1, allowing it to run in emulation mode on Power Macintosh computers. You need to use a patch only for your server software and only if your AppleSearch server is a Power Macintosh.

These patches are not required for the AppleSearch client software, nor are they required to run the AppleSearch Server 1.0 on non–Power Macintosh computers. However, the patched AppleSearch Server software is compatible with your existing AppleSearch server hardware, so you may choose to patch your software now if you intend to upgrade your server to a Power Macintosh.

Patching your server software does not affect the operation of your current information sources or their indexes. The AppleSearch Server 1.0.1 software will continue to recognize your existing AppleSearch files if they haven't been changed or moved.

These instructions are not included in your AppleSearch documentation, so you may want to print this document and keep it with your administrator's guide.

Which Patch to Use

Two applications accompany this Read Me file:

- AppleSearch Server 1.0.1 Patch. If you purchased AppleSearch 1.0, you should use this patch.

- AppleSearch TrialCD 1.0.1 Patch. If you are using the AppleSearch Trial CD to evaluate AppleSearch 1.0 on a Power Macintosh, you should use this patch.

IMPORTANT: You must use the correct patch to allow your AppleSearch Server software to run on your Power Macintosh.

Updating Your AppleSearch Server Software

You can run the patch software from the floppy disk on which it is shipped, and you can patch the AppleSearch Server software while it is on your existing Macintosh server.

To patch your software, follow these steps:

1. If you have not installed your AppleSearch Server software, do so, using the installer provided with the software.

2. Turn off any virus-detection programs on the AppleSearch server computer and quit the AppleSearch Server application if it is running.

3. Double-click the icon for the appropriate AppleSearch 1.0.1 patch. (Both patches should be in the same location as this document.) A dialog box appears, displaying information about the patch.

4. Click the Patch button. A directory dialog box appears, asking you to locate the AppleSearch Server application.

5. Select the name of the AppleSearch Server application you want to patch, then click the Patch button. When the patch operation is complete, a confirmation dialog box appears, telling you that the operation was successful.

6. Click the OK button in the confirmation dialog box.

7. Start your AppleSearch Server application.

You can use your updated server software immediately after restarting it. There is no need to index your information sources again unless you have moved them to a new disk or partition.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15274

Tech Info Library

LaserWriter Utility: Prints Samples From Any Source (5/94)

Revised: 5/5/94
Security: Everyone

LaserWriter Utility: Prints Samples From Any Source (5/94)

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Article Created: 5 May 1994

TOPIC --------------------

We have an APS Technologies 213MB hard drive internally connected to our LaserWriter Pro 630. We were able to initialize it with LaserWriter Utility 7.6.1 and download fonts to it. We can print the font catalog just fine and can also print the fonts on the hard drive from applications. We are, however, unable to print Font Samples. When we select "Print Font Samples" from the LaserWriter Utility menu, 4 pages get spooled to print monitor and only the first page prints which displays the fonts in the ROM of the printer. The rest of the pages never print and the light on the printer quits flashing after a while. Can the LaserWriter Utility print font samples for fonts on the printer's hard drive?

DISCUSSION --------------------

The LaserWriter Utility has the capability of printing font samples for all of the printers fonts, whether in ROM, RAM, or attached hard disk. Typically, when the "Print Font Samples" command is selected from the menu of the LaserWriter Utility, it will print a page for the fonts in the printer's memory (ROM and RAM), and a following page for fonts on the printer's disk if one is attached. By the way, font samples are printed for both TrueType and Type 1 fonts resident at the printer.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15276

Tech Info Library

PowerBook 500 Series: Software Bundled (2/95)

Revised: 2/7/95
Security: Everyone

PowerBook 500 Series: Software Bundled (2/95)

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Article Created: 4 May 1994
Article Reviewed/Updated: 7 February 1995

TOPIC ----------

This article describes the software packaged with the PowerBook 500 series computers: PowerBook 520, 520c, 540, 540c.

DISCUSSION ----------

BUNDLED SOFTWARE

System 7.1.1 (does not include PowerTalk)
The PowerBook 540 and 540c in the 12 MB RAM configurations ship with a PowerTalk Installer on the hard drive, but it is not pre-installed.
PowerBook Control Strip
Macintosh PC Exchange 1.0.3
PowerBook File Assistant 1.0
Apple Remote Access Client 2.0.1
HyperCard Player 2.2
MacLink Plus MCP 7.50
PowerPort and GlobalFax software when the optional modem is installed

PC Exchange, ARA Client, and MacLink Plus software are pre-installed on the hard drive. Disks for these titles are not included in the PowerBook’s accessory kit.

Article Change History:
07 Feb 1995 - Removed products not currently shipping.
29 Jun 1994 - Added information about the PowerTalk Installer on specific configurations.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15278

Tech Info Library

PowerBook 500 Series: Can Newton PCMCIA Cards Be Used? (8/95)

Revised: 8/29/95
Security: Everyone

PowerBook 500 Series: Can Newton PCMCIA Cards Be Used? (8/95)

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Article Created: 3 May 1994
Article Reviewed/Updated: 29 August 1995

TOPIC ----------

If a customer has Newton info on part of a PCMCIA card and some free space, can they store Macintosh information on the free area of the card?

DISCUSSION ----------

No. Newton Cards cannot be used by a PowerBook with the PCMCIA module. The PowerBook 500 series with PCMCIA modules do not recognize cards other than those following the ATA standard. Newton cards do not follow this standard. Newton Cards and other non-ATA standard cards would only show up as "unrecognized card" with no option to format. There is no driver support on either the Newton side or the Macintosh side for partitioning a PCMCIA card.

Article Change History:
29 Aug 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15279

Tech Info Library

PowerBook 500 Series: PDS & PCMCIA Support (3/95)

Revised: 3/31/95
Security: Everyone

PowerBook 500 Series: PDS & PCMCIA Support (3/95)

==========

Article Created: 3 May 1994
Article Reviewed/Updated: 31 March 1995

TOPIC ----------

This article describes the Processor Direct Slot (PDS) on the PowerBook 500 series (520, 520c, 540, and 540c), and the use of the Personal Computer Memory Card Information Association (PCMCIA) adapter.

DISCUSSION ----------

The PowerBook 500 series has an internal PDS connector that provides access to its 030-based I/O bus, which is accessible through a battery bay. Each of these PowerBooks has two battery bays. The left battery bay can be used as the processor direct slot for high-speed access to the system’s processor.

The I/O bus provides direct access to all parts of the machine with the exception of the DRAM and ROM. An ASIC supplies bus arbitration logic to let plug in cards act a bus masters, as long as they conform to 68030 bus protocols. This PDS expansion slot can be used for different modules, and is a 16 bit 68030 16Mhz data bus that occupies the second battery on the PowerBook 500 series.

One of the possible PDS expansion options is the PCMCIA Expansion Module which slides into the left battery bay. The innovative module design provides slots for two Type I or Type II PCMCIA cards or a single Type III card. The module itself can only be installed or removed when the PowerBook power is turned off.

What is PCMCIA?

PCMCIA is a standard for small, credit-card sized modems and other external notebook computer devices. PCMCIA standards define the size and pin configuration for these devices.

Cards used in PCMCIA expansion slots, regardless of manufacturer, are commonly referred to as PC Cards.

PCMCIA Expansion Module

PCMCIA is rapidly becoming a defacto standard for all mobile computers. This Macintosh implementation offers a new level of ease-of-use not seen in the industry's PCMCIA other implementation (DOS, Intel x86 platforms) with the use of software eject for Cards as well as the complete integration of the PCMCIA cards into the Macintosh desktop.

The PCMCIA Expansion Module can ONLY be inserted or removed while the PowerBook is off. Insertion or removal of the PDS Module at any other time will result in the PowerBook being reset.

PowerBook computers and PCMCIA expansion are a natural pair. PCMCIA provides a simple light-weight method for PowerBook expansion without adding significant power drain. The PowerBook PCMCIA implementation is a two-phase process. Initially, mass storage, memory, and modems are the only types of PCMCIA devices that are supported. A full range of PCMCIA devices, including network interface cards, will be supported in the future. If you purchase a phase one PCMCIA Expansion Module, you will be able to upgrade your units by downloading a new ROM image into the module’s flash ROM. Other software, residing in the system, will also be upgraded.

Article Change History:
31 Mar 1995 - Reviewed for technical accuracy.
15 Dec 1994 - Added keyword and definition of PCMCIA; other minor changes.
25 Aug 1994 - Revised title slightly.

Support Information Services

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Tech Info Library Article Number:15280

Tech Info Library

PowerBook 520: Specifications (5/96)

Revised: 5/31/96
Security: Everyone

PowerBook 520: Specifications (5/96)

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Article Created: 2 May 1994
Article Reviewed/Updated: 31 May 1996

TOPIC ----------

This article provides technical specifications for the PowerBook 520 computer.

DISCUSSION ----------

Provides Macintosh Quadra performance in an all-in-one notebook computer

Microprocessor

- 50/25-MHz 68LC040 microprocessor (no FPU). (the two speeds refer to the internal processor and bus interface, respectively)
- 32-bit Address and Data bus
- Daughterboard (memory expansion) runs at 32-bit

RAM

- 4 MB RAM on logic board.
- Expandable to 36 MB with 70ns low power self-refreshing DRAM (Apple 8 MB RAM Expansion Kit, or Third Party higher density RAM card)

Storage

- One built-in 1.4 MB Apple SuperDrive disk drive that uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.
- One internal 160 MB hard disk.

Display/Video Out

- 9.5-inch (diagonal), backlit, FSTN, passive matrix gray-scale display
- 640 x 480 pixels, 16 levels of gray

- Sleeps on close
- User-configurable
- External display port (mini DB-15) supports 8-bit video
- External display options:
  Macintosh 12" Monochrome Display
  Macintosh 12" RGB Display
  AppleColor High Resolution RGB Display
  Macintosh Color Display
  Macintosh 16" Color Display
  Macintosh Portrait Display
  Some VGA and SVGA monitors (third party adapter required)
- Two video-out modes:
  - Video mirroring for simultaneous display of the same image on two screens.
  - Dual display for full use of both screens.

Networking

- Serial/LocalTalk
- Built-in High Speed Ethernet with Apple AUI connector

System Software

- Requires System 7.1.1 or later (5 High Density Disks)
- PowerBook 500 Series Enabler version 1.0.2 or later

Battery

- Nickel-metal-hydride PowerBook Intelligent Batteries each provide up to 3.5 hours of use before recharge.
- EverWatch battery-saver technology
- Batteries recharge in two hours when computer is in sleep or shutdown; four hours when running.
- PowerBook Control Strip allows user to monitor time remaining, charge time, and battery usage
- Backup rechargeable lithium battery maintains RAM in sleep modem while main battery is removed for up to three minutes.

Keyboard and Tracking Device

- Built-in keyboard with standard size keyboard with 76 (US) or 77 (ISO) keys including 12 function keys
- Two-level tilt adjustment
- Power-on key located on Keyboard
- Solid-state trackpad provides precise cursor control in response to the user's fingertip over its surface

Clock/Calendar

- CMOS custom chip with long-life lithium battery.

Microphone

- Built-in omnidirectional; output voltage is 4 mV, peak to peak, at normal volume

Interfaces

- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices.
- One RS-422 serial port for LocalTalk networking, printers, modems, and other devices.
- One high-speed Ethernet port
- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices (up to 6 devices can be chained).
- One slot for optional modem.
- One video-out port, supporting 8 bit density and 256 colors.
- One stereo sound output port for external audio amplifier or headphones.
- One mono sound-in port.
- Security slot for use with third-party equipment to lock the computer.
- 90-pin processor direct slot (PDS) for connecting PDS devices or optional PowerBook PCMCIA Expansion Module allows use of two Type II or one Type III PCMCIA-type card).
- One RAM slot

Modem

- Optional Global Village PowerPort Mercury modem supports 19,200 bps data transmission and 14,440 bps fax

Built-in Stereo Sound

- CD-quality, 16-bit stereo sound capable of driving headphones or other stereo equipment.
- Two built-in stereo speakers
- Digital-to-analog and analog-to-digital conversion sampled at 11.035, 22.050, or 44.100 kHz.

Disability Access

- Easy Access and the ability to substitute visual cue for beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

ADB Power Requirements

- Maximum current draw for all ADB devices is 200 mA (a maximum of three ADB devices is recommended)

Electrical Requirements

- Line voltage: 100 to 240 volts, 50 to 60 Hz

Environmental Requirements

- Operating temperature: 50 to 104° F (10 to 40° C)

• Storage Temperature: -40°F to +149°F (-40 to +65° C)
• Relative humidity: 20% to 80% noncondensing
• Altitude: max. 10,000 ft. (3,048 m)
• Maximum Storage Altitude: 15,000 ft. (4,722 m)

Size and Weight

• Height: 2.3 in. (5.7 cm)
• Width: 11.5 in. (29.2 cm)
• Depth: 9.7 in. (24.5 cm)
• Weight: 6.3 lb. (2.8 kg)

Noise Level

• Noise free except for disk drive use.

Security

• Slot for security cable

Ordering Information

PowerBook 520 4/160
Order No. M2597LL/A
- PowerBook 520 computer with 4 MB of RAM, built-in 1.4MB Apple SuperDrive, and internal 160 MB hard disk drive
- PowerBook Intelligent Battery and AC adapter
- System 7
- Complete setup, learning, and reference documentation
- Training software
- Limited warranty
- PowerBook Mobility Bundle

PowerBook 8MB Memory Expansion Kit
Order No. M1913LL/A

PowerBook Active-Matrix
Color Display Upgrade
Order No. M3063LL/A

PowerBook Intelligent Battery
Order No. M1908LL/A

PowerBook AC Adapter
Order No. M1910LL/A

PowerBook PCMCIA Expansion Module
Order No. M2995LL/C

Apple HDI-30 SCSI Disk Adapter
Order No. M2539LL/A

Apple HDI-30 SCSI System Cable
Order No. M2538LL/A

Article Change History:
31 May 1996 - Updated part numbers.

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Tech Info Library Article Number:15281

Tech Info Library

PowerBook 520c: Specifications (5/96)

Revised: 5/31/96
Security: Everyone

PowerBook 520c: Specifications (5/96)

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Article Created: 2 May 1994
Article Reviewed/Updated: 31 May 1996

TOPIC ----------

This article provides technical specifications for the PowerBook 520c computer.

DISCUSSION ----------

Provides Macintosh Quadra performance in an all-in-one notebook computer

Microprocessor

- 50/25-MHz 68LC040 microprocessor (no FPU). (the two speeds refer to the internal processor and bus interface, respectively)
- 32-bit Address and Data bus
- Daughterboard (memory expansion) runs at 32-bit

RAM

- 4 MB RAM on logic board.
- One slot for expansion.
- Expandable to 36 MB with 70ns low power self-refreshing DRAM (Apple 8 MB RAM Expansion Kit, or Third Party higher density RAM card)

Storage

- One built-in 1.4 MB Apple SuperDrive disk drive that uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.
- One internal 160 MB hard disk.

Display/Video Out

- 9.5-inch (diagonal), backlit, dual-scan, color passive-matrix LCD

• 640 x 480 pixels, 256 colors
• Sleeps on close
• User-configurable
• External display port (mini DB-15) supports 8-bit video
• External display options:
  Macintosh 12" Monochrome Display
  Macintosh 12" RGB Display
  AppleColor High Resolution RGB Display
  Macintosh Color Display
  Macintosh 16" Color Display
  Macintosh Portrait Display
  Some VGA and SVGA monitors (third party adapter required)
• Two video-out modes:
 - Video mirroring for simultaneous display of the same image on two screens.
 - Dual display for full use of both screens.

Networking

• Serial/LocalTalk
• Built-in High Speed Ethernet with Apple AUI connector

System Software

• Requires System 7.1.1 or later (5 High Density Disks)
• PowerBook 500 Series Enabler version 1.0.2 or later

Battery

• Nickel-metal-hydride PowerBook Intelligent Batteries each provide up to 3.5 hours of use before recharge.
• EverWatch battery-saver technology
• Batteries recharge in two hours when computer is in sleep or shutdown; four hours when running.
• PowerBook Control Strip allows user to monitor time remaining, charge time, and battery usage
• Backup rechargeable lithium battery maintains RAM in sleep modem while main battery is removed for up to three minutes.

Keyboard and Tracking Device

• Built-in keyboard with standard size keyboard with 76 (US) or 77 (ISO) keys including 12 function keys
• Two-level tilt adjustment
• Power-on key located on Keyboard
• Solid-state trackpad provides precise cursor control in response to the user's fingertip over its surface

Clock/Calendar

• CMOS custom chip with long-life lithium battery.

Microphone

- Built-in omnidirectional; output voltage is 4 mV, peak to peak, at normal volume

Interfaces

- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices.
- One RS-422 serial port for LocalTalk networking, printers, modems, and other devices.
- One high-speed Ethernet port
- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices (up to 6 devices can be chained).
- One slot for optional modem.
- One video-out port, supporting 8 bit density and 256 colors.
- One stereo sound output port for external audio amplifier or headphones.
- One mono sound-in port.
- Security slot for use with third-party equipment to lock the computer.
- 90-pin processor direct slot (PDS) for connecting PDS devices or optional PowerBook PCMCIA Expansion Module allows use of two Type II or one Type III PCMCIA-type card).
- Power adapter port
- One RAM slot

Modem

- Optional Global Village PowerPort Mercury modem supports 19,200 bps data transmission and 14,440 bps fax

Built-in Stereo Sound

- CD-quality, 16-bit stereo sound capable of driving headphones or other stereo equipment.
- Two built-in stereo speakers
- Digital-to-analog and analog-to-digital conversion sampled at 11.035, 22.050, or 44.100 kHz.

Disability Access

- Easy Access and the ability to substitute visual cue for beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

ADB Power Requirements

- Maximum current draw for all ADB devices is 200 mA (a maximum of three ADB devices is recommended)

Electrical Requirements

- Line voltage: 100 to 240 volts, 50 to 60 Hz

Environmental Requirements

- Operating temperature: 50 to 104° F (10 to 40° C)
- Storage Temperature: -40°F to +149°F (-40 to +65° C)
- Relative humidity: 20% to 80% noncondensing
- Altitude: max. 10,000 ft. (3,048 m)
- Maximum Storage Altitude: 15,000 ft. (4,722 m)

Size and Weight

- Height: 2.3 in. (5.7 cm)
- Width: 11.5 in. (29.2 cm)
- Depth: 9.7 in. (24.5 cm)
- Weight: 6.4 lb. (2.9 kg)

Noise Level

- Noise free except for disk drive use.

Security

- Slot for security cable

Ordering Information

Ordering Information
PowerBook 520c 4/160
Order No. M1845LL/A

- PowerBook 520c computer with 4 MB of RAM, built-in 1.4MB Apple SuperDrive, and internal 160 MB hard disk drive
- PowerBook Intelligent Battery and AC adapter
- System 7
- Complete setup, learning, and reference documentation
- Training software
- Limited warranty
- PowerBook Mobility Bundle

PowerBook 520c 12/320
Order No. M3728LL/A
Same as Order No. M1845LL/A, but with 12 MB of RAM, 320 MB hard drive and a Global Village PowerPort Mercury Fax/Data Modem.

PowerBook Active-Matrix
Color Display Upgrade
Order No. M3063LL/A

PowerBook 8MB Memory Expansion Kit
Order No. M1913LL/A

PowerBook Intelligent Battery
Order No. M1908LL/A

PowerBook AC Adapter
Order No. M1910LL/A

PowerBook PCMCIA Expansion Module
Order No. M2995LL/C

Apple HDI-30 SCSI Disk Adapter
Order No. M2539LL/A

Apple HDI-30 SCSI System Cable
Order No. M2538LL/A

Article Change History:
31 May 1996 - Updated part number.
12 Dec 1994 - Additional configuration documented.

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Tech Info Library Article Number:15282

Tech Info Library

PowerBook 540: Specifications (Discontinued) (5/96)

Revised: 6/5/96
Security: Everyone

PowerBook 540: Specifications (Discontinued) (5/96)

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Article Created: 2 May 1994
Article Reviewed/Updated: 31 May 1996

TOPIC ----------

This article provides technical specifications for the PowerBook 540 computer.

DISCUSSION ----------

Provides Macintosh Quadra performance in an all-in-one notebook computer

Microprocessor

- 66/33-MHz 68LC040 microprocessor (no FPU). (the two speeds refer to the internal processor and bus interface, respectively)
- 32-bit Address and Data bus
- Daughterboard (memory expansion) runs at 32-bit

RAM

- 4 MB RAM on logic board.
- Expandable to 36 MB with 70ns low power self-refreshing RAM (Apple 8 MB RAM Expansion Kit, or Third Party higher density RAM card)

Storage

- One built-in 1.4 MB Apple SuperDrive disk drive that uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.
- One internal 240 MB hard disk.

Display/Video Out

- 9.5-inch (diagonal), backlit, active matrix gray-scale display
- 640 x 480 pixels, 64 levels of gray

- Sleeps on close
- User-configurable
- External display port (mini DB-15) supports 8-bit video
- External display options:
  Macintosh 12" Monochrome Display
  Macintosh 12" RGB Display
  AppleColor High Resolution RGB Display
  Macintosh Color Display
  Macintosh 16" Color Display
  Macintosh Portrait Display
  Some VGA and SVGA monitors (third party adapter required)
- Two video-out modes:
  - Video mirroring for simultaneous display of the same image on two screens.
  - Dual display for full use of both screens.

Networking

- Serial/LocalTalk
- Built-in High Speed Ethernet with Apple AUI connector

System Software

- Requires System 7.1.1 or later (5 High Density Disks)
- PowerBook 500 Series Enabler version 1.0.2 or later

Battery

- Nickel-metal-hydride PowerBook Intelligent Batteries each provide up to 3.5 hours of use before recharge.
- EverWatch battery-saver technology
- Batteries recharge in two hours when computer is in sleep or shutdown; four hours when running.
- PowerBook Control Strip allows user to monitor time remaining, charge time, and battery usage
- Backup rechargeable lithium battery maintains RAM in sleep modem while main battery is removed for up to three minutes.

Keyboard and Tracking Device

- Built-in keyboard with standard size keyboard with 76 (US) or 77 (ISO) keys including 12 function keys
- Two-level tilt adjustment
- Power-on key located on Keyboard
- Solid-state trackpad provides precise cursor control in response to the user's fingertip over its surface

Clock/Calendar

- CMOS custom chip with long-life lithium battery.

Microphone

- Built-in omnidirectional; output voltage is 4 mV, peak to peak, at normal volume

Interfaces

- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices.
- One RS-422 serial port for LocalTalk networking, printers, modems, and other devices.
- One high-speed Ethernet port
- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices (up to 6 devices can be chained).
- One slot for optional modem.
- One video-out port, supporting 8 bit density and 256 colors.
- One stereo sound output port for external audio amplifier or headphones.
- One mono sound-in port.
- Security slot for use with third-party equipment to lock the computer.
- 90-pin processor direct slot (PDS) for connecting PDS devices or optional PowerBook PCMCIA Expansion Module allows use of two Type II or one Type III PCMCIA-type card).
- One RAM slot

Modem

- Optional Global Village PowerPort Mercury modem supports 19,200 bps data transmission and 14,440 bps fax

Built-in Stereo Sound

- CD-quality, 16-bit stereo sound capable of driving headphones or other stereo equipment.
- Two built-in stereo speakers
- Digital-to-analog and analog-to-digital conversion sampled at 11.035, 22.050, or 44.100 kHz.

Disability Access

- Easy Access and the ability to substitute visual cue for beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

ADB Power Requirements

- Maximum current draw for all ADB devices is 200 mA (a maximum of three ADB devices is recommended)

Electrical Requirements

- Line voltage: 100 to 240 volts, 50 to 60 Hz

Environmental Requirements

- Operating temperature: 50 to 104° F (10 to 40° C)

• Storage Temperature: -40°F to +149°F (-40 to +65° C)
• Relative humidity: 20% to 80% noncondensing
• Altitude: max. 10,000 ft. (3,048 m)
• Maximum Storage Altitude: 15,000 ft. (4,722 m)

Size and Weight

• Height: 2.3 in. (5.7 cm)
• Width: 11.5 in. (29.2 cm)
• Depth: 9.7 in. (24.5 cm)
• Weight: 7.1 lb. (3.2 kg)

Noise Level

• Noise free except for disk drive use.

Security

• Slot for security cable

Ordering Information

PowerBook 540 4/240
Order No. M2807LL/A
- PowerBook 540 computer with 4 MB of RAM, built-in 1.4MB Apple SuperDrive, and internal 240 MB hard disk drive
- Two PowerBook Intelligent Batteries and AC adapter
- System 7
- Complete setup, learning, and reference documentation
- Training software
- Limited warranty
- PowerBook Mobility Bundle

Order No. M3120LL/A
Same as Order No. M2807LL/A, but with 12 MB of RAM and a Global Village 19.2-bps data, 14.4-bps fax send-and-receive modem

PowerBook Active-Matrix Color Display Upgrade
Order No. M3063LL/A

PowerBook 8MB Memory Expansion Kit
Order No. M1913LL/A

PowerBook Intelligent Battery
Order No. M1908LL/A

PowerBook AC Adapter
Order No. M1910LL/A

PowerBook PCMCIA Expansion Module
Order No. M2995LL/C

Apple HDI-30 SCSI Disk Adapter
Order No. M2539LL/A

Apple HDI-30 SCSI System Cable
Order No. M2538LL/A

Article Change History:
31 May 1996 - Updated part number.
31 Oct 1994 - Added Discontinued to title.

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Tech Info Library Article Number:15283

PowerBook 540c: Specifications (5/96)

Revised: 5/31/96
Security: Everyone

PowerBook 540c: Specifications (5/96)

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Article Created: 2 May 1994
Article Reviewed/Updated: 31 May 1996

TOPIC ----------

This article provides technical specifications for the PowerBook 540c computer.

DISCUSSION ----------

Provides Macintosh Quadra performance in an all-in-one notebook computer

Microprocessor

- 66/33-MHz 68LC040 microprocessor (no FPU). (the two speeds refer to the internal processor and bus interface, respectively)
- 32-bit Address and Data bus
- Daughterboard (memory expansion) has a 32-bit bus running at 33MHz

RAM

- 4 MB RAM on logic board.
- Expandable to 36 MB with 70ns low power self-refreshing RAM (Apple 8 MB RAM Expansion Kit, or Third Party higher density RAM card)

Storage

- One built-in 1.4 MB Apple SuperDrive disk drive that uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.
- One internal 320 MB hard disk.

Display/Video Out

- 9.5-inch (diagonal), backlit, active matrix color display
- 640 x 480 pixels, with 256 colors by 400 pixels with thousands of colors

- Sleeps on close
- User-configurable
- External display port (mini DB-15) supports 8-bit video
- External display options:
  Macintosh 12" Monochrome Display
  Macintosh 12" RGB Display
  AppleColor High Resolution RGB Display
  Macintosh Color Display
  Macintosh 16" Color Display
  Macintosh Portrait Display
  Some VGA and SVGA monitors (third party adapter required)
- Two video-out modes:
  - Video mirroring for simultaneous display of the same image on two screens.
  - Dual display for full use of both screens.

Networking

- Serial/LocalTalk
- Built-in High Speed Ethernet with Apple AUI connector

System Software

- Requires System 7.1.1 or later (5 High Density Disks)
- PowerBook 500 Series Enabler version 1.0.2 or later

Battery

- Nickel-metal-hydride PowerBook Intelligent Batteries each provide up to 3.5 hours of use before recharge.
- EverWatch battery-saver technology
- Batteries recharge in two hours when computer is in sleep or shutdown; four hours when running.
- PowerBook Control Strip allows user to monitor time remaining, charge time, and battery usage
- Backup rechargeable lithium battery maintains RAM in sleep modem while main battery is removed for up to three minutes.

Keyboard and Tracking Device

- Built-in keyboard with standard size keyboard with 76 (US) or 77 (ISO) keys including 12 function keys
- Two-level tilt adjustment
- Power-on key located on Keyboard
- Solid-state trackpad provides precise cursor control in response to the user's fingertip over its surface

Clock/Calendar

- CMOS custom chip with long-life lithium battery.

Microphone

- Built-in omnidirectional; output voltage is 4 mV, peak to peak, at normal volume

Interfaces

- One Apple Desktop Bus (ADB) port for keyboard, mouse, and other devices.
- One RS-422 serial port for LocalTalk networking, printers, modems, and other devices.
- One high-speed Ethernet port
- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other devices (up to 6 devices can be chained).
- One slot for optional modem.
- One video-out port, supporting 8 bit density and 256 colors.
- One stereo sound output port for external audio amplifier or headphones.
- One mono sound-in port.
- Security slot for use with third-party equipment to lock the computer.
- 90-pin processor direct slot (PDS) for connecting PDS devices or optional PowerBook PCMCIA Expansion Module allows use of two Type II or one Type III PCMCIA-type card).
- One RAM slot

Modem

- Optional Global Village PowerPort Mercury modem supports 19,200 bps data transmission and 14,440 bps fax

Built-in Stereo Sound

- CD-quality, 16-bit stereo sound capable of driving headphones or other stereo equipment.
- Two built-in stereo speakers
- Digital-to-analog and analog-to-digital conversion sampled at 11.035, 22.050, or 44.100 kHz.

Disability Access

- Easy Access and the ability to substitute visual cue for beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

ADB Power Requirements

- Maximum current draw for all ADB devices is 200 mA (a maximum of three ADB devices is recommended)

Electrical Requirements

- Line voltage: 100 to 240 volts, 50 to 60 Hz

Environmental Requirements

- Operating temperature: 50 to 104° F (10 to 40° C)

• Storage Temperature: -40°F to +149°F (-40 to +65° C)
• Relative humidity: 20% to 80% noncondensing
• Altitude: max. 10,000 ft. (3,048 m)
• Maximum Storage Altitude: 15,000 ft. (4,722 m)

Size and Weight

• Height: 2.3 in. (5.7 cm)
• Width: 11.5 in. (29.2 cm)
• Depth: 9.7 in. (24.5 cm)
• Weight: 7.3 lb. (3.3 kg)

Noise Level

• Noise free except for disk drive use.

Security

• Slot for security cable

Ordering Information

Ordering Information
PowerBook 540c 4/320
Order No. M2809LL/A
- PowerBook 540 computer with 4MB of RAM, built-in 1.4MB Apple SuperDrive, and internal 240MB hard disk drive
- Two PowerBook Intelligent Batteries and AC adapter
- System 7
- Complete setup, learning, and reference documentation
- Training software
- Limited warranty
- PowerBook Mobility Bundle

Order No. M3727LL/A
Same as Order No. M2809LL/A, but with 12 MB of RAM, 500 MB hard drive and a Global Village PowerPort Mercury Fax/Data Modem.

PowerBook 8MB Memory Expansion Kit
Order No. M1913LL/A

PowerBook Intelligent Battery
Order No. M1908LL/A

PowerBook AC Adapter
Order No. M1910LL/A

PowerBook PCMCIA Expansion Module
Order No. M2995LL/C

Apple HDI-30 SCSI Disk Adapter
Order No. M2539LL/A

Apple HDI-30 SCSI System Cable
Order No. M2538LL/A

Article Change History:
31 May 1996 - Updated part number.
12 May 1995 - Clarified speed of daughter board.
12 Dec 1994 - Additional configuration documented.

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Tech Info Library Article Number:15284

Tech Info Library

The Apple Trackpad: Description, Features and Benefits (5/94)

Revised: 5/13/94
Security: Everyone

The Apple Trackpad: Description, Features and Benefits (5/94)

==========

Article Created: 3 May 1994

TOPIC ----------

This article describes the Apple Trackpad technology, implementation and benefits.

DISCUSSION ----------

Key Points:
1) A conductive surface (such as a finger) is needed to move the cursor. Pointing devices such as pens, a Newton stylus or even a finger nail won't work. Humidity can also impair contact.
2) There is a slight learning curve. Users will have to adjust the control panel to their particular style.
3) There is a direct correspondence between the rectangular trackpad and rectangular screen, which allows even new users to quickly understand how to interact with and use the trackpad.
4) Solid state mechanism allows space to be allocated to larger, longer lasting batteries.
5) More reliable than a mouse or a trackball.

Description

The Apple trackpad is an innovative Apple Desktop Bus (ADB) pointing device that provides precise control over cursor movement. Based on user testing and feedback, Apple engineers have tuned the interface to make the trackpad a very efficient pointing device for interacting with the computer. In fact, user tests involving both the trackpad and Apple's own trackball have shown that the trackpad increases accuracy and efficiency by 20%. In the latest round of user testing, all participants preferred the trackpad over the trackball both initially and after an hour of continuous use.

Technology Overview

The technology works on a principal called coupling capacitance. As the user's

finger moves over the surface, the trackpad evaluates the change in capacitance between two layers of measurement electrodes built into the surface of the trackpad. The electrodes are arranged in a checkerboard configuration, which creates a series of intersections, or couplings, where the capacitance is measured by the trackpad. The horizontal electrodes send out a test pattern signal which the vertical electrodes sense. As a finger approaches the trackpad surface, its presence lowers the capacitance (coupling coefficient) at the closest electrode intersections and modifies the signal received by the sense electrodes. (The finger is able to effect the coupling capacitance because the human body is conductive. Other pointing devices like the Newton stylus, which are by nature nonconductive, will not effect a change in the coupling capacitance, and thus can not be used with the trackpad.)

By monitoring this change in capacitance, the trackpad is able to first locate and then compare the current location of low capacitance (where the finger is touching) to the previous location, and then moves the cursor accordingly. This cycle of sending out a test pattern, sensing the change in capacitance, and moving the cursor is constantly repeated. The high resolution of the trackpad (387 dots per inch in the horizontal and vertical directions) allows precise control over cursor movement down to the pixel level. The new Pad control panel offers the user a full range of acceleration to ensure precise control.

Implementation Issues

There is a learning curve associated with the first use of any input device. Our research has shown that the learning curve for the trackpad is the same as, or even smaller than that of, the trackball for first time users. Experienced trackball users have been able to achieve greater accuracy and efficiency with the trackpad in a very short period of time. In fact, user preference leans in favor of the trackpad. The trackpad translates finger movement into cursor movement seen on the screen, and the degree of motion is modified by what are called “acceleration curves.” Understanding how acceleration curve settings affect the control of the cursor is the major learning hurdle that new users need to overcome.

The faster a user's finger moves across the pad, the faster and farther the cursor will move across the display. If the finger moves quickly, the cursor will traverse the display completely. If the finger moves slowly, the cursor can be controlled quite precisely. In fact, just rocking the finger tip slightly on the pad gives pixel level accuracy! New trackpad users can experiment with the control settings in the Pad control panel to see which acceleration setting works best. The acceleration curve settings offered range from slow to fast. The higher the curve chosen, the farther the user will be able to traverse the screen with a shorter finger movement on the pad. The setting that is most preferred among users is the fourth setting up from the slowest setting. Once the users gain this intuitive understanding of how acceleration curves provide flexible and accurate control of the cursor, they immediately become more comfortable with the trackpad.

Benefits

There are many significant improvements and benefits afforded by going to the new trackpad as a pointing device. The first is a very important advancement in

the user interface referred to as “direct interface.” Direct interface means that there is a direct correspondence between the rectangular trackpad and rectangular screen, which allows even new users to quickly understand how to interact with and use the trackpad. Second, as a solid state device, there are no moving parts, which means that it draws less power and is much less susceptible to breakage or even contamination. Third, because of its thinner design and lighter weight, the trackpad allows Apple to allocate more space to other internal components like larger batteries, and so on. Finally, to ensure durability, the trackpad is covered by a special polymer “overcoat” that protects it from abrasion and spills. And since there are no moving parts, the trackpad is much more reliable than either a trackball or a mouse.

Support Information Services

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Tech Info Library Article Number:15285

Tech Info Library

PowerBook 500 Series: External Video Support (8/95)

Revised: 8/29/95
Security: Everyone

PowerBook 500 Series: External Video Support (8/95)

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Article Created: 2 May 1994
Article Reviewed/Updated: 28 August 1995

TOPIC ----------

What is the highest bit depth the PowerBook 520 & 520c and PowerBook 540 & 540c are capable of using with an external monitor attached?

Can the internal video RAM be expanded to provide for more colors?

DISCUSSION ----------

The highest bit depth at 640X480 (or any resolution) is 8 bits per pixel.

The PowerBook 500 series come with 512K VRAM, which is not expandable.

Begin_Table

External Video Support

Display	Resolution(HxV)	Bits/Pixel
12-in. RGB Display	512x384	1-8bpp
12-in. Monochrome Display	640x480	1-8bpp
13/14-in. RGB Display	640x480	1-8bpp
VGA (60 Hz)	640x480	1-8bpp
SuperVGA (56 Hz)	800x600	1-8bpp
VESA 1024x768 (60 Hz)	1024x768	1-4bpp
Portrait Display	640x870	1-4bpp
Portrait Display	640x818	1-8bpp
16-in. RGB Display	832x624	1-8bpp

Multiple Scan 17 Display	640x480	1-8bpp
	832x624	1-8bpp
Multiple Scan 20 Display	640x480	1-8bpp
	832x624	1-8bpp

End_Table

Article Change History:
28 Aug 1995 - Removed *s from table which referred to removed footnote.
08 Nov 1994 - Removed 15-in. Resolutions and incorrect footnote.
05 Aug 1994 - Removed sense code information.

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Tech Info Library Article Number:15287

Tech Info Library

PowerBook Duo 280: Technical Specifications (Discontinued)

Revised: 11/30/94
Security: Everyone

PowerBook Duo 280: Technical Specifications (Discontinued)

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Article Created: 4 May 1994
Article Reviewed/Updated: 30 November 1994

TOPIC ----------

This article provides the technical specifications for the Apple PowerBook Duo 280.

DISCUSSION ----------

Microprocessor

- Motorola 68LC040 66/33-MHz microprocessor with integral memory management unit (FPU not integrated)

Memory

- Comes with 4MB of DRAM
- DRAM expansion up to 8MB or 12MB with PowerBook Duo 4MB or 8MB Memory Expansion Kits, or up to 40MB with third-party memory expansion cards

Disk Storage

- One internal 240MB hard disk
- Optional external Apple SuperDrive 1.4MB floppy disk drive

Display

- 9-inch (229-mm) diagonal
- Backlit, active-matrix gray scale display, 640 by 400 pixels
- 16 shades of gray

Battery

- Nickel-metal-hydride High Capacity Type II battery provides 2 to 4 hours of computer use before recharging is necessary

• EverWatch battery-saver technology

Keyboard

• Built-in, 2.4-mm travel, 18-mm pitch
• Two-level tilt adjustment
• LED light when caps lock is engaged

Trackball

• 19-mm diameter, dual-button trackball

Clock/Calendar

• CMOS custom-integrated circuit with long-life lithium battery

Microphone

• Built-in omnidirectional microphone; output voltage of 4 mV, peak-to-peak, at normal volume

Interfaces

• Power adapter port
• 152-pin PDS connector for connecting PowerBook Duo Dock, Duo Dock II, PowerBook Duo MiniDock, PowerBook Floppy Adapter, or other expansion devices
• RS-422 serial port for LocalTalk networking, printers, modems, and other devices
• Port for optional internal modem

File-Transfer Options

• LocalTalk cables and System 7 file sharing
• Serial cable and System 7 file sharing
• Express modem and AppleTalk Remote Access software
• Duo MiniDock with external Apple SuperDrive, SCSI disk adapter, and HDI-30 SCSI system cable
• Duo Dock or Duo Dock II internal Apple SuperDrive, optional internal hard drive, and HDI-30 SCSI system cable

Docking Options

• PowerBook Duo Dock or Duo Dock II
• PowerBook Duo MiniDock
• PowerBook Duo Floppy Adapter
• Docking solutions from third-party vendors

Modem

• Optional internal PowerBook Express Modem; sends and receives data and faxes at 14,400 bps. Includes Express Fax and OCR software (OCR software available in United States and Europe only).

Sound Generator

- Built-in speaker
- Apple Sound Chip provides monophonic 8-bit sound and is capable of driving stereo headphones or other stereo equipment with the same signal supplied to both channels through any optional PowerBook Duo Dock, Duo Dock II, or PowerBook Duo MiniDock

Sound Input

- 4-voice sound with 8-bit analog-to-digital conversion recording at 11 or 22 kHz sampling rate

Disability Access

- CloseView, Easy Access, and visible-beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 25 W maximum

ADB Power Requirements

- Maximum current draw for all ADB devices is 100 mA with Powerbook Duo MiniDock or PowerBook Floppy Adapter or 500 mA with PowerBook Duo Dock or Duo Dock II (a maximum of three ADB devices is recommended) devices is recommended)

Size and Weight

- Thickness: 1.4 in. (3.6 cm)
- Width: 10.9 in. (27.7 cm)
- Depth: 8.5 in. (21.6 cm)
- Weight: 4.2 lb. (1.9 kg)

Operating Environment

- Operating temperature: 50° to 104° F (10° C to 40° C)
- Storage temperature: –13° to 140° F (–35° C to 60° C)
- Relative humidity: 20% to 80% noncondensing
- Operating altitude: 1 to 10,000 ft. (0 to 3,048 m)
- Maximum storage altitude: 15,000 ft. (4,722 m)

Article Change History:
30 Nov 1994 - Marked article as Discontinued.

Support Information Services

..TIL15288-PowerBook_Duo_280-Technical_Specifications_Discontinued_(158_Mac).pdf

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Tech Info Library Article Number:15288

Tech Info Library

PowerBook Duo 280c: Technical Specifications (5/94)

Revised: 5/13/94
Security: Everyone

PowerBook Duo 280c: Technical Specifications (5/94)

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Article Created: 3 May 1994

TOPIC ----------

This article provides the technical specifications for the Apple PowerBook Duo 280c.

DISCUSSION ----------

Microprocessor

- Motorola 68LC040 66/33-MHz microprocessor with integral memory management unit (FPU not integrated)

Memory

- Comes with 4MB of DRAM
- DRAM expansion up to 8MB or 12MB with PowerBook Duo 4MB or 8MB Memory Expansion Kits, or up to 40MB with third-party memory expansion cards

Disk Storage

- One internal 320MB hard disk
- Optional external Apple SuperDrive 1.4MB floppy disk drive

Display

- 8.4-in. diagonal
- Backlit, active-matrix, color liquid crystal display, 640 by 480 pixels
- Two display modes: 640 by 400 with thousands of colors; 640 by 480 with 256 colors
- LED indicator when computer is in sleep mode

Battery

- Nickel-metal-hydride High Capacity Type III battery provides 2 to 4 hours

of computer use before recharging is necessary
• EverWatch battery-saver technology

Keyboard

• Built-in, 2.4-mm travel, 18-mm pitch
• Two-level tilt adjustment
• LED light when caps lock is engaged

Trackball

• 19-mm diameter, dual-button trackball

Clock/Calendar

• CMOS custom-integrated circuit with long-life lithium battery

Microphone

• Built-in omnidirectional microphone; output voltage of 4 mV, peak-to-peak, at normal volume

Interfaces

• Power adapter port
• 152-pin PDS connector for connecting PowerBook Duo Dock, PowerBook Duo MiniDock, PowerBook Floppy Adapter, or other expansion devices
• RS-422 serial port for LocalTalk networking, printers, modems, and other devices
• Port for optional internal modem

File-Transfer Options

• LocalTalk cables and System 7 file sharing
• Serial cable and System 7 file sharing
• Express modem and AppleTalk Remote Access software
• Duo MiniDock with external Apple SuperDrive, SCSI disk adapter, and HDI-30 SCSI system cable
• Duo Dock or Duo Dock II internal Apple SuperDrive, optional internal hard drive, and HDI-30 SCSI system cable

Docking Options

• PowerBook Duo Dock or Duo Dock II
• PowerBook Duo MiniDock
• PowerBook Floppy Adapter
• Docking systems from third-party vendors

Modem

• Optional internal PowerBook Express Modem; sends and receives data and faxes at 14,400 bps. Includes Express Fax and OCR software (OCR software available in United States and Europe only).

Sound Generator

- Built-in speaker
- Apple Sound Chip provides monophonic 8-bit sound and is capable of driving stereo headphones or other stereo equipment with the same signal supplied to both channels through any optional PowerBook Duo Dock, Duo Dock II, or PowerBook Duo MiniDock

Sound Input

- 4-voice sound with 8-bit analog-to-digital conversion recording, sampled at 11 or 22 kHz

Disability Access

- CloseView, Easy Access, and visible-beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 36 W maximum

ADB Power Requirements

- Maximum current draw for all ADB devices is 100 mA with Powerbook Duo MiniDock or PowerBook Floppy Adapter or 500 mA with PowerBook Duo Dock or Duo Dock II (a maximum of three ADB devices is recommended)

Environmental Requirements

- Operating temperature: 50° to 104° F (10° to 40° C)
- Storage temperature: –30° to 140° F (–25° to 60° C)
- Relative humidity: 20% to 80% noncondensing
- Operating altitude: 1 to 10,000 ft. (0 to 3,048 m)
- Maximum storage altitude: 15,000 ft. (4,722 m)

Size and Weight

- Thickness: 1.5 in. (3.8 cm)
- Width: 10.9 in. (27.7 cm)
- Depth: 8.5 in. (21.6 cm)
- Weight: 4.8 lb. (2.1 kg)

Support Information Services

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Tech Info Library Article Number:15290

Tech Info Library

Fax Viewer: Incompatible With Early GCC Print Drivers (5/94)

Revised: 5/5/94
Security: Everyone

Fax Viewer: Incompatible With Early GCC Print Drivers (5/94)

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Article Created: 5 May 1994

TOPIC ----------

I have a Power Macintosh 6100 and a GCC PLP2 SCSI printer. I cannot print with the Fax Viewer 1.5.1 application program. I have the GCC PLP2 driver version 3.0.2.

When I print I only get blank pages. When I try the Print Preview option, it is also blank. Is there an incompatibility with the GCC PLP2 SCSI printer and the Fax Viewer application?

DISCUSSION ----------

Since we printed a fax successfully on a Personal LaserWriter SC, from a Power Macintosh 6100 and Fax Viewer 1.5.1, we suspect you have encountered a third party driver incompatibility.

We learned from GCC Tech Support that the PLP2 SCSI printer driver v3.0.2 is not recommended or compatible with Power Macintosh computers. They were surprised it worked in some situations. They recommend you upgrade to v4.1.2 of the print driver.

Please contact GCC Tech Support for the upgrade details.

For your information Print Preview is a GCC feature, and in this case the preview being blank is indicative, GCC says, of an incompatibility.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Support Information Services

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Tech Info Library Article Number:15291

Tech Info Library

LaserWriter Pro 630: Internal Termination Power Provided (5/94)

Revised: 5/5/94
Security: Everyone

LaserWriter Pro 630: Internal Termination Power Provided (5/94)

==========

Article Created: 5 May 1994

TOPIC ----------

We have a LaserWriter Pro 630 with an APS internal hard drive. We are having problems printing a sample of the fonts stored on the hard drive using the LaserWriter Utility 7.6.1. What can cause this to happen?

DISCUSSION ----------

It is possible that there is a termination problem. The LaserWriter Pro 630 provides internal termination power so all that is needed on the hard drive is termination; you might check with APS technologies on this. One other thing to consider is that SCSI ID's 6 and 7 are reserved, so the APS drive should be set to something different.

Support Information Services

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Tech Info Library Article Number:15292

Tech Info Library

ASFU Fixer for GDT's PowerPrint-Not Apple Print Pack (12/96)

Revised: 12/3/96
Security: Everyone

ASFU Fixer for GDT's PowerPrint-Not Apple Print Pack (12/96)

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Article Created: 3 May 1994
Article Reviewed/Updated: 3 December 1996

TOPIC ----------

The 'ASFU Fixer' from GDT does NOT patch the Apple Print Pack, only the Power Print product from GDT.

DISCUSSION ----------

In summary:

To use DOS printers on Power Macintosh computers:
1) All Apple Print Pack customers MUST upgrade to GDT's Power Print Product using the upgrade card in the original Apple Print Pack box. (approx $40)
2) GDT Technologies will then issue the "ASFU Fixer" to patch the Power Print product (not the Apple Print Pack) and then it will be compatible with Power Macintosh computers.

IMPORTANT:
You should use the system extension SerialDMA instead of ASFU Fixer. If you use ASFU Fixer with several Apple Newton software applications and tools, you may not be able to use the serial communication connection.

Article Change History:
03 Dec 1996 - Corrected spelling.
25 Apr 1996 - Added Important note.

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Tech Info Library Article Number:15293

Tech Info Library

PowerShare and Power Macintosh Computers: ReadMe (3/95)

Revised: 3/23/95
Security: Everyone

PowerShare and Power Macintosh Computers: ReadMe (3/95)

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Article Created: 5 May 1994
Article Reviewed/Updated: 23 March 1995

TOPIC ----------

The following article is the ReadMe for PowerShare on Power Macintosh.

DISCUSSION ----------

Diskettes have been built for PowerShare on Power Macintosh, and are available on some on-line bulletin boards.

The software comes on two diskettes and requires that you have already purchased the PowerShare Collaboration software. The changes are in PowerTalk not in the PowerShare software itself.

The following is the work-around until the PowerShare diskettes are widely available:

PowerTalk for Power Macintosh IS available on many on-line services, but many only have the PowerTalk software for Power Macintosh, not the PowerShare specific disks.

Until they can get the PowerShare disks, users should install PowerTalk for Power Macintosh, then Custom install the PowerShare software. An easy install of the PowerShare software will result in PowerTalk for 680X0 installation, and this would not work on the Power Macintosh.

ReadMe for PowerShare Collaboration Server Software for Power Macintosh
----

This disk allows you to install PowerShare Collaboration Servers on your Power Macintosh computer.

IMPORTANT: If you are installing PowerShare Collaboration Servers on a

Macintosh computer with a Power Macintosh Upgrade Card, please see the special instructions at the end of this document.

IMPORTANT: Before you install PowerShare Collaboration Server software, turn off any automatic virus detection programs you have on your computer. After the installation is complete, you can turn the virus detection programs back on.

Installing PowerShare Collaboration Servers on Power Macintosh computers

IMPORTANT: You must have the PowerShare Collaboration Server software, which contains the PowerShare 1, PowerShare 2, PowerShare 3, and Tidbits disks, to use the PowerShare Install Me First disk to install PowerShare Collaboration Servers on your Power Macintosh. The installation software on your PowerShare Install Me First disk will only work on Power Macintosh computers or Macintosh computers with a Power Macintosh Upgrade Card installed.

To install your PowerShare Collaboration Server software, you need five disks:
• PowerShare Install Me First for Power Macintosh (the disk that contains this document)
• PowerShare 1
• PowerShare 2
• PowerShare 3
• Tidbits
The PowerShare 1, PowerShare 2, PowerShare 3, and Tidbits disks are included in your PowerShare Collaboration Servers package.

To install PowerShare Collaboration Server software, follow these steps:

1. Go to the Finder desktop. If your computer is off, turn it on. If it’s already on, quit any programs that are running.

2. Insert the PowerShare Install Me First disk. The disk’s icon appears on the desktop.

3. Open the disk by double-clicking its icon.

4. Open the Installer by double-clicking its icon. The Easy Install dialog box appears.

5. Click the Install button. The Installer takes a few moments to calculate what needs to be done and then begins to copy files. The whole process may take several minutes.

6. When the PowerShare Install Me First disk is ejected, follow the instructions you see on the screen. You’ll have to swap disks a few times. Each time, the Installer ejects one disk and asks you to insert another.

7. When you see a message reporting that the installation has been successfully completed, follow the instructions on the screen. If you turned off any automatic virus detection programs on your Power Macintosh, turn them back on now.

Installing PowerShare Collaboration Servers on Macintosh computers with Power Macintosh Upgrade Cards

To install your PowerShare Collaboration Server software, you need:
• Your PowerShare Collaboration Server package
• PowerShare Install Me First for Power Macintosh (the disk that contains this document)

IMPORTANT: You MUST install PowerShare Collaboration Server software AFTER installing the Power Macintosh Upgrade Card software, even if you had previously installed PowerShare Collaboration Servers on your Macintosh.

If you have not previously installed PowerShare Collaboration Servers on your computer, or if you did not reinstall the software after installing the Power Macintosh Upgrade Card software, you must do so now. To install PowerShare Collaboration Server software, follow these steps:

1. Go to the Finder desktop. If your computer is off, turn it on. If it’s already on, quit any programs that are running. If you are currently using the Power Macintosh Upgrade Card, use the Power Macintosh Card Control Panel to turn the Power Macintosh Card off. Turn your Macintosh off, then turn it on again.

2. Insert the PowerShare Install Me First disk that came with your PowerShare Collaboration Server software. The disk’s icon appears on the desktop.

3. Open the disk by double-clicking its icon.

4. Open the Installer by double-clicking its icon. The Easy Install dialog box appears.

5. Click the Install button. The Installer takes a few moments to calculate what needs to be done and then begins to copy files. The whole process may take several minutes.

6. When the Install disk is ejected, follow the instructions you see on the screen. You’ll have to swap disks several times. Each time, the Installer ejects one disk and asks you to insert another. IMPORTANT: If you see a message that says that the Finder you are about to install is older than the Finder already on the disk, click “Continue.”

7. When you see a message reporting that the installation has been successfully completed, follow the instructions on the screen.

When you have completed the PowerShare Collaboration Server installation, or if you previously had installed PowerShare Collaboration Servers on your computer, follow these steps:

IMPORTANT: If any programs are running on your computer, quit them before installing. This includes the PowerShare Easy Setup application, which may have been automatically started after the previous step if you restarted your computer.

1. Insert the PowerShare Install Me First for Power Macintosh disk. The disk’s

icon appears on the desktop.

2. Open the disk by double-clicking its icon.

3. Open the Installer by double-clicking its icon. The Easy Install dialog box appears.

4. Click the Install button. The Installer takes a few moments to calculate what needs to be done and then begins to copy files. The whole process may take several minutes.

5. When you see a message reporting that the installation has been successfully completed, follow the instructions on the screen. If you turned off any automatic virus detection programs on your Macintosh, turn them back on now.

You can now use PowerShare Collaboration Servers with the Power Macintosh card on or off.

Article Change History:
23 Mar 1995 - Reformatted document.

Support Information Services

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Tech Info Library Article Number:15295

Tech Info Library

DOS Compatibility Card: PC Exchange needs 32-bit addressing 5/94

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: PC Exchange needs 32-bit addressing 5/94

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Article Created: 5 May 1994

TOPIC -----

I have a Quadra 610 DOS Compatible computer with PC Exchange 2.0DC. When I try to initialize a disk, the computer freezes on me and I have to restart my computer. Sometimes it allows me to initialize the disk, but when I click the window close box, the computer freezes on me. If I remove PC Exchange, this problem goes away. Why?

DISCUSSION -----

PC Exchange 2.0DC needs 32-bit addressing turned on. If you turn on 32-bit addressing in the Memory control panel, you won't experience this problem.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15296

Tech Info Library

AppleShare Print Server Modifications (5/94)

Revised: 5/5/94
Security: Everyone

AppleShare Print Server Modifications (5/94)

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Article Created: 4 May 1994

TOPIC ----------

This article describes how to correct the AppleShare Print Server time out problem and prevent error pages from printing by using ResEdit.

DISCUSSION ----------

AppleShare Print Server Time-out Problem

The AppleShare Print Server 3.0 and 3.0.1 will time out clients when the Print Server is not the active (front) application and the active application is busy. For example, the File Server is running with a moderate load as the active application, and the Print Server with several clients printing to it is the background application.

The AppleShare Print Server application will maintain its connections (not time out) if it is set to run in system heap memory. The Print Server, as shipped, is not configured to do this. The fix by using ResEdit is as follows:

1) Using ResEdit open the AppleShare Print Server application.

2) Open the "DRVR" resource

3) Select the "DRVR" ID 42 resource and choose "Get Resource Info" command from the Resource menu.

4) Click the Attributes checkbox for System Heap.

5) Quit ResEdit and Save the changes.

Preventing Error Pages from Printing

Here is how to prevent Error pages from printing on all printers captured by the

AppleShare Print Server:

1) Using ResEdit open the AppleShare Print Server application.

2) Open the "EXOP" resource.

3) Open the resource ID 128.

4) Change the first four zeros to ones. This will be the first line, change as shown below:

   Change from: 000000   0000 0000 0000   //////
   Change to: 000000   1111 0000 0000   //////

5) Quit ResEdit and Save the changes.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15297

Tech Info Library

Quadra 610 DOS Compatible and PC Print Spooler (5/94)

Revised: 5/24/95
Security: Everyone

Quadra 610 DOS Compatible and PC Print Spooler (5/94)

==========

Article Created: 5 May 1994

TOPIC ----------

After running Norton SI or a game on the DOS card, and I switch back to the Macintosh, the PC Print Spooler sends a blank page to the printer, or notifies me of a printing problem. I haven't tried to print, what's going on?

DISCUSSION ----------

There is a hardware problem with our implementation of an emulated parallel port. Typically when data, on a real PC, is sent to the parallel port, the signal to print is STROBE changing state, a parallel protocol signal line. We don't wait for STROBE, we immediately send the job to the print monitor. Some programs send data to the I/O port address designated for LPT1: but they don't pull the STROBE line low so nothing prints. Since we don't wait for STROBE to go low, it starts printing.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15298

Tech Info Library

Power Macintosh 8100/80AV and NEC Monitor (5/94)

Revised: 5/5/94
Security: Everyone

Power Macintosh 8100/80AV and NEC Monitor (5/94)

==========

Article Created: 5 May 1994

TOPIC -----

I have an NEC monitor connected to the S-Video port on my Power Macintosh 8100/80AV. I get two options at 640x480 resolution:

- 640x480 NTSC-TV
- 640x480 NTSC

What is the difference? Also I cannot see the menu bar, why is that?

DISCUSSION -----

The reason the S-Video output to your monitor allows you two choices at the same resolution is because of convolution. The NTSC-TV selection provides convolution and the NTSC selection does not. Using the NTSC-TV option will provide a raster with substantially less jitter than with the NTSC option.

You can not see the menu bar because you are in the overscan mode. Select a reduced resolution (underscan mode) and you will see the menu bar.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15299

Tech Info Library

PowerBook Family: Battery Information Table (4/96)

Revised: 4/18/96
Security: Everyone

PowerBook Family: Battery Information Table (4/96)

==========

Article Created: 6 May 1994
Article Reviewed/Updated: 18 April 1996

TOPIC ----------

This article provides specifications and part number information for batteries used in Macintosh Portable and PowerBook computers.

DISCUSSION ----------

The PowerBook models use these battery types:

Begin_Table

- Sealed lead acid (SLA)
- Nickel cadmium (NiCad)
- Nickel metal hydride (NiMH)

System	Battery Type	Ampere Hours	Fully Charged Voltage	Service P/N	Model No.
Macintosh Portable	SLA	5.4	6.5 V	076-0376	M5137
PowerBook 100	SLA	2.3	6.0 V	661-0782	M3053
PowerBook 140/145/170	NiCad	2.5†	6.75 V	661-0013	M5417
PowerBook 145B	NiCad	2.8†	6.75 V	661-0013	M5653
PowerBook 150	NiCad	2.8†	6.75 V	661-0013	M5653

PowerBook 160/165/180	NiCad	2.8†	6.75 V	661-0013	M5654
PowerBook 165c/180c	NiCad	2.9	6.75 V	661-0013	M5654
PowerBook 190	NiMH	1.9	16.1 V	661-1028	M3254
PowerBook 210,230	NiMH Type I	.95	13.5 V	661-1656	M7782
PowerBook 250/270c	NiMH Type II	1.4	13.5 V	661-1735	M1499**
PowerBook 280	NiMH Type II	1.4	13.5 V	661-1735	M1499**
PowerBook 280c	NiMH Type III	1.6	13.5 V	661-0053	M1499**
PowerBook 520,520c	NiMH*	1.8	10.8 V	661-0055	M1906
PowerBook 540/540c	NiMH*	1.8	10.8 V	661-0055	M1906
PowerBook 2300c	NiMH Type III	1.6	13.5 V	661-0053	M1499**
PowerBook 5300	NiMH	1.9	16.1 V	661-1028	M3254

† These computers are also compatible with Model No. M5654 2.9 Ah battery
* Uses PowerBook Intelligent Battery
** Type II and Type III batteries used in the 200 and 2300 series (Duo) have the same model # M1499, but have "Type 2" or "Type 3" printed on them

End_Table

Improving Battery Performance

When you replace used batteries, replace all the old ones with new ones. Mixing new and used batteries weakens the performance of the new ones. (If you are using rechargeable batteries, replace batteries that are running low with a complete set of fully charged batteries.

Batteries work best when positive and negative contact surfaces are clean. If necessary, clean these surfaces by gently rubbing with a clean pencil eraser or cloth.

Article Change History:
18 Apr 1996 - Added PowerBook 150 to table, corrected 145b part number.
13 Dec 1995 - Corrected service part number for 190 & 5300 battery.
02 Nov 1995 - Added PowerBook 190, 2300, and 5300 series.

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15303

Tech Info Library

Early Language Connections (ELC) & Grady Profile Stack (8/95)

Revised: 8/9/95
Security: Everyone

Early Language Connections (ELC) & Grady Profile Stack (8/95)

==========

Article Created: 6 May 1994
Article Reviewed/Updated: 9 August 1995

TOPIC -----

I have the Early Language Connections, and I seem to be missing The Grady Profile in the applications menu of At Ease 1.0. I went to the At Ease setup and gathered applications, but it did not show up. Now it's telling me there are no more applications to gather. Where is it?

DISCUSSION -----

The Grady Profile Student Index is a HyperCard stack, and therefore will not show up under the Gather Applications list. For At Ease 1.0 you will need to make an alias of this item and place it in the At Ease Items folder that resides in the System Folder. For At Ease 2.0 you will need to use the FIND ITEMS button, and add it to At Ease that way.

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:15304

Tech Info Library

AppleShare 4.0 & ARA MultiPort Server Not Compatible (5/94)

Revised: 5/9/94
Security: Everyone

AppleShare 4.0 & ARA MultiPort Server Not Compatible (5/94)

==========

Article Created: 6 May 1994

TOPIC -----

This article describes an incompatibility between AppleShare 4.0 and Apple Remote Access (ARA) 2.0 MultiPort Server.

DISCUSSION -----

AppleShare 4.0 is not compatible with ARA MultiPort Server. AppleShare 4.0 is compatible with the ARA Personal Server and ARA Client products.

AppleShare 4.0 and ARA MultiPort Server both use the Apple Shared Library Manager (ASLM). However, AppleShare 4.0 uses version 1.0 and ARA MultiPort Server uses version 1.1. Because ASLM 1.1 is not backward compatible with ASLM 1.0, AppleShare 4.0 and ARA MultiPort Server cannot run on the same server.

ARA Personal Server and ARA Client do not use ASLM, so they are compatible with AppleShare 4.0.

This incompatibility has been fixed with the release of AppleShare 4.0.1 and greater, an upgrade of AppleShare is recommended.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15306

Tech Info Library

Apple Multiple Scan Display: Resetting Display Controls (12/96)

Revised: 12/20/96
Security: Everyone

Apple Multiple Scan Display: Resetting Display Controls (12/96)

==========

Article Created: 6 May 1994
Article Reviewed/Updated: 20 December 1996

TOPIC ----------

The Multiple Scan 17, and Multiple Scan 20 Displays have adjustments that change the brightness, contrast, center, size, rotation, shape, convergence and color temperature of the picture. This article describes how to reset the display back to factor settings.

DISCUSSION ----------

There are three options when resetting the display. You can reset the brightness and contrast, or you can reset all the picture controls.

NOTE:
The User's Guide for the Multiple Scan Displays, mentions three methods of resetting the display, the two discussed in this article, and resetting the individual picture controls. You cannot reset individual picture controls.

Resetting Brightness and Contrast

You can reset brightness and contrast to their original levels. You cannot reset only brightness or only contrast; both are reset at the same time.

1) Press the Reset button using the tip of a pen. The Reset button is the button that looks like a large triangle pointing towards the left.

Resetting All Picture Controls

If you like, you can reset all of the picture controls; horizontal and vertical shift, horizontal and vertical size, horizontal and vertical convergence, rotation, picture shape, and color temperature, including brightness, and contrast, to their original levels.

1) While holding down the Control button (the round button to the right of the Reset button), press the Reset button using the tip of a pen.

Resetting All Picture Controls Except Brightness & Contrast

If any of the set-up LEDs are on, pressing the reset button returns all of the settings to their original settings, except the display brightness and contrast.

Article Change History:
20 Dec 1996 - Revised incorrect manual instructions.
07 Aug 1995 - Corrected Multiple Scan 17 Display.
31 Jul 1995 - Corrected improper procedure.

Copyright 1994-96, Apple Computer, Inc.

Tech Info Library Article Number:15307

DOS Compatibility Card: Speciality Cable Pinouts (8/94)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Speciality Cable Pinouts (8/94)

==========

Article Created: 5 May 1994
Article Reviewed/Updated: 23 August 1994

TOPIC ----------

This article lists the pinouts for the DOS Compatibility Card and Quadra 610 DOS Compatible computer specialty cable. This cable connects the DOS Compatibility Card to display devices and the game port.

DISCUSSION ----------

DESCRIPTION	PC	Mac	Monitor	Game
SW 1A	1			2
R AX	2			3
R AY	3			6
BLUE	4	9	9	
GREEN	5	5	5	
MAC CSYNC	6	3		
CABLE DET	7	14		
HSYCN OUT	8		15	
SENSE 0	9	4	4	
+ 5 VOLTS	10			1,8,9,15
R BX	11			11
R BY	12			13
SW 2A	13			7
BLUE GND	14	13	13	
GREEN GND	15	6	6	
MAC HSYNC	16	15		
VSYCN OUT	17		12	
SENSE 1	18	7	7	
SW 1B	19			10
GROUND	20	11	11,14	4,5,12
SW 2B	21			14
RED	22	2	2	
RED GND	23	1	1	

MAC VSYNC	24	12	
CSYNC OUT	25		3
SENSE 2	26	10	10

Article Change History:
23 Aug 1994 - Changed date in title. Reviewed article.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15308

Tech Info Library

PowerBook Duo Dock II: Technical Specifications (5/94)

Revised: 5/13/94
Security: Everyone

PowerBook Duo Dock II: Technical Specifications (5/94)

==========

Article Created: 6 May 1994

TOPIC -----

This article provides the technical specifications for the PowerBook Duo Dock II.

DISCUSSION -----

Coprocessor

- Built-in 68882 math coprocessor and 32K RAM cache (can be used only by 68030 Duo computers only)

Displays Supported

- Most Apple displays, including the Apple Multiple Scan 17 and Multiple Scan 20 displays
- Physically supports monitors weighing up to 85 lbs
- Most VGA and SVGA monitors with adaptor

VRAM

- 1MB of VRAM standard
  - Built-in support for 16-bit color; permits display of thousands of colors on monitors up to 17 in.

Disk Drives

- Built-in Apple SuperDrive 1.4MB floppy disk drive
- Optional internal hard disk

Interfaces

- One high-speed Ethernet port
- Two NuBus slots for expansion cards

- Apple Desktop Bus (ADB) port for supporting a keyboard, mouse, and other input devices
- Two serial (RS-422) ports for printers, modems, AppleTalk network, and other devices
- Video-out port for external monitor
- HDI-30 SCSI port for external hard disks, scanners, CD-ROM drives, and other devices
- Pass-through port for the optional modem in the PowerBook Duo computer
- Sound-in/Sound-out ports

Networking

- Built-in support for high-speed Ethernet networking
- Serial port for AppleTalk networking

Security

- Key lock prevents removal of PowerBook Duo from the Duo Dock
- Slot for cable to secure the Duo Dock to a desk

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 87 W maximum

ADB Power Requirements

- Maximum current draw for all Apple Desktop Bus devices: 500 mA
  (A maximum of three Apple Desktop Bus devices is recommended)
- Mouse draws 10 mA
- Keyboard draws 20-80 mA

Size and Weight

- Height: 4.8 in. (12.1 cm)
- Width: 12.3 in. (31.1 cm)
- Depth: 16.3 in. (41.3 cm)
- Weight: 13.1 lb. (5.95 kg)
  (weight is greater with internal hard disk)

Operating Environment

- Operating temperature: 50° to 95° F (10° to 35° C)
- Storage temperature: 40° to 116° F (-40° to 47° C)
- Relative humidity: 20% to 95% noncondensing
- Operating altitude: 0 to 10,000 ft. (0 to 3,048 m)
- Maximum storage altitude: 15,000 ft. (4,722 m)

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15309

Tech Info Library

LaserWriter Pro 810: Ethernet Card Part Numbers (1/97)

Revised: 1/24/97
Security: Everyone

LaserWriter Pro 810: Ethernet Card Part Numbers (1/97)

==========

Article Created: 6 May 1994
Article Reviewed/Updated: 24 January 1997

TOPIC ----------

This article provides the part numbers for ordering the LaserWriter Pro 810 Ethernet transceiver.

DISCUSSION ----------

The LaserWriter Pro 810 Ethernet transceivers are no longer available as a finished good. However, these parts are available as Apple Service Parts.

Apple Service part numbers for LaserWriter Pro 810 Ethernet transceivers are:

- 10BASE-T transceiver - 661-0853
- Thin Coax transceiver - 661-0854
- AAUI Ethernet Card - 661-0852

Article Change History:
24 Jan 1997 - Added AAUI Ethernet Card part number.
11 Jul 1996 - Replaced finished good PN with service parts PN.

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Tech Info Library Article Number:15310

Tech Info Library

Norton Utilities and Enabler Bundle Resource (5/94)

Revised: 5/9/94
Security: Everyone

Norton Utilities and Enabler Bundle Resource (5/94)

==========

Article Created: 6 May 1994

TOPIC -----

When I run Norton Utilities 2.0, it says that the bundle bit for my Enabler file has a problem. If I correct this or replace the Enabler with a fresh copy, the problem keeps returning.

DISCUSSION -----

Norton Disk Doctor is giving a false error message because it cannot properly check the active Enabler on the active system volume. You need to run Norton Disk Doctor while booted off the emergency disk. You will then not receive this error.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15311

Tech Info Library

Macintosh: Shutting Down Without a Mouse (1/95)

Revised: 1/12/95
Security: Everyone

Macintosh: Shutting Down Without a Mouse (1/95)

==========

Article Created: 6 May 1994
Article Reviewed/Updated: 12 January 1995

TOPIC ----------

How do I shutdown my Macintosh Performa when the mouse is missing or damaged?

DISCUSSION ----------

If your Performa has the Shut Down desk accessory under the Apple Menu, you can use Command-key equivalents to perform a shut down. If you are using System 7.5, you can also use this procedure because it also provides the Shut Down desk accessory in the Apple menu.

Follow these steps:

1) Type Command-F, the Find command brings up the Find window.

2) Type "Shut Down" into the Find Window, and press the enter or return key.

3) When the "Apple Menu Items" window appears, Type Command-O (letter O), the Open command launchs the Shut Down desk accessory and shuts down your computer.

Article Change History:
12 Jan 1995 - Added System 7.5 information.

Support Information Services

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Tech Info Library Article Number:15312

Tech Info Library

QuickTake 100: ASA Light Sensitivity Rating (5/94)

Revised: 5/9/94
Security: Everyone

QuickTake 100: ASA Light Sensitivity Rating (5/94)

==========

Article Created: 9 May 1994

TOPIC ----------

What is the equivalent ASA light sensitivity rating for the QuickTake 100 digital camera?

DISCUSSION ----------

The light sensitivity of the QuickTake 100 is equivalent to an ASA rating of 82 which is 1/4 stop below standard 100 ASA film.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15313

Tech Info Library

Macintosh AV Systems: Selecting Flicker-Free Format (5/94)

Revised: 5/9/94
Security: Everyone

Macintosh AV Systems: Selecting Flicker-Free Format (5/94)

==========

Article Created: 9 May 1994

TOPIC ----------

I have a Macintosh AV computer connected to television display and I am trying to use flicker-free format from the options in the Monitors control panel. I can display video on the television but flicker-free format is grayed out.

DISCUSSION ----------

The monitor resolution must be set to 256 colors before you can use flicker-free format on the Power Macintosh AV, Centris 660 AV, Quadra 660 AV, or Quadra 840 AV. Flicker-free format will not work in 16 or 24-bit color modes. Also, make certain you have selected 256 colors before switching to the television.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15314

Tech Info Library

PowerBook Duo: Battery Types (9/95)

Revised: 12/20/96
Security: Everyone

PowerBook Duo: Battery Types (9/95)

==========

Article Created: 9 May 1994
Article Reviewed/Updated: 28 September 1995

TOPIC ----------

What types of batteries are used in Powerbook Duo computers and how can I identify them?

DISCUSSION ----------

PowerBook Duo computers use Nickel Metal Hydride (NiMH) batteries and come in three types: Type I, II, and III. Type I batteries came installed in Duo 210 and 230 systems, Type II batteries came installed in Duo 250, 270c, and 280 systems, and Type III batteries were installed in the Duo 280c. It is possible to use both Type II and Type III batteries in Duo 210 and 230 systems with the addition of appropriate battery management software. Type I batteries can be used in newer Duo systems, but battery life is significantly reduced.

Each succeeding battery type offers improved battery life performance over the other. The Type II battery provides as much as 50% longer life than Type I batteries. The Type III battery offers up to 15% longer life than the Type II battery. Type II and Type III batteries can be recharged in as little as three hours, depending on the charging method used.

Type II and Type III batteries have the same model number, but are marked differently. Each has either a "Type 2" or "Type 3" logo printed on it. Type I batteries do not have a logo. In addition, the battery door is different on the Type II and III batteries.

This article was published in the "Information Alley":
Volume II, Issue 10, Page 7

Article Change History:
28 Sep 1995 - Added Info Alley information; updated article.

..TIL15315-PowerBook_Duo-Battery_Types_9-95_(TA31674).pdf

03 Apr 1995 - Clarified battery life and differences between batteries.

Support Information Services

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Tech Info Library Article Number:15315

Macintosh AV Series: Floppy Drive Performance (5/94)

Revised: 5/11/94
Security: Everyone

Macintosh AV Series: Floppy Drive Performance (5/94)

==========

Article Created: 11 May 1994

TOPIC ----------

I have been experiencing performance problems with floppy disk drives on Macintosh Quadra 840av and 660av systems. Tasks such as formatting floppies, duplicating files on floppy disks, and copying from the hard drive to the floppy drive take almost twice as long on the AV systems as compared to other Macintosh units.

I understand that these systems have a different floppy disk drive controller chip. Can this be causing the problem? Is there a known fix to this? Can this problem to be expected with PowerMac systems which have the floppy DMA on the new SWIM chip?

DISCUSSION ----------

GCR (800K) Performance

This microprocessor (the new integrated floppy controller), while taking over all of the timing-critical floppy control functions, does not have the computational speed of the main processor, or the speed of the 68000 used in original Macintosh systems. The result is that for GCR formatted disks (800K), the additional computation used in GCR coding and decoding makes accesses to and from an 800K floppy slower than on previous macintosh systems. Our tests show that it usually takes about 50% longer to read and write to an 800K floppy on the AV systems as compared to other Macintosh systems. Currently, there are no plans to change the floppy controller for an increase in performance. The performance of the floppy drive in 1.44M mode is comparable to other Macintosh systems.

The 800K read/write performance is a compromise in order to provide the additional functionality of those products based on the current technology, cost, and time to market constraints.

There are some extensions (created outside of Apple) that may improve the

read/write performance when using 800K floppy within the DSP based AV products. This is only mentioned as a possibility, as they are not tested by nor can be recommended by Apple.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15316

Tech Info Library

LaserWriter 8.1.1: Disable Font Downloading? (5/94)

Revised: 5/11/94
Security: Everyone

LaserWriter 8.1.1: Disable Font Downloading? (5/94)

==========

Article Created: 11 May 1994

TOPIC -----

I run into an issue regarding LaserWriter 8.1.1: when printing a document under LaserWriter 8.x the fonts that are used in the documents are downloaded before a query is enacted to determine if fonts are available at the printer or in this case a print spooler. This causes more traffic on the network than necessary, particularly since I print millions of documents a month. I am using LaserWriter driver 8.1.1, System 7.1, Quark XPress 3.2, printing to a COPs spooler (DOS) running PServe 3.0.1. (Hardware basic 486). Is there a way to not download these fonts to the spooler?

DISCUSSION -----

At the beginning of every 8.x print job, the driver first opens a query job to obtain information about the target device, including its features, fonts, and other characteristics. Some query examples include what Document Structure Convention is supported, the revision level of the PostScript interpreter, if binary transmission is supported, Font queries, and so on. Most likely this FontQuery does takes place in your setup, and could be confirmed by a packet trace of the print job.

A spooler receiving the query is expected to minimally return a default response. If the spooler cannot return a font list in a format that can be used by the printer driver, then the fonts will be downloaded with the print job.

We are not familiar with the "COPs spooler running PServer 3.0.1," but perhaps it is falls into the same category as all Netware 3.x spoolers, which do not return the font list to a PostScript Level II LaserWriter 8.x driver query resulting in the fonts being downloaded. Note that Netware 3.x does support PostScript Level 1 font queries (such as those used by the LaserWriter 7.x driver).

Suggested Alternatives

Of course use only fonts built-in to your printer, thus eliminating fonts from having to be downloaded when processing your job.

Another solution might be to use AppleShare Print Server 4.x. However, AppleShare doesn't maintain the font list dynamically, but builds the font list at the time the printer is captured. Fonts downloaded with previous jobs will not be reflected in the font list returned to the FontQuery. Since the font list isn't maintained dynamically, perhaps you could download and store typically used fonts via the LaserWriter Utility on a hard disk connected to the printer, then capture the printer with AppleShare Print Server. Thereafter, only the exceptional fonts used in a print job will be downloaded.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15317

Tech Info Library

LaserWriter Pro 600/630: Parallel Port Pinouts (5/94)

Revised: 5/11/94
Security: Everyone

LaserWriter Pro 600/630: Parallel Port Pinouts (5/94)

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Article Created: 11 May 1994

TOPIC ----------

What are the pinouts for the LaserWriter Pro 600/630 parallel port?

DISCUSSION ----------

Pin #	Signal	Description
1	/DATA STROBE	Strobe for input data, minimum pulse width is 1 µsecond
2	Data1	Data Input bit 1
3	Data2	Data Input bit 2
4	Data3	Data Input bit 3
5	Data4	Data Input bit 4
6	Data5	Data Input bit 5
7	Data6	Data Input bit 6
8	Data7	Data Input bit 7
9	Data8	Data Input bit 8
10	/ACKNOWLEDGE	Handshaking output signal; acknowledges receipt of data and indicates readiness to receive additional data.
11	BUSY	Busy output signal; indicates that a /DATA STROBE has been received, but that /ACKNOWLEDGE has not yet been given. Signal will be high when receive buffer is full or printer fault occurs.
12	PAPER ERROR	Output status signal. Indicates a paper error.
13	SELECT OUT	Not used in the LW Pro 600/630, daisy-chained printer select signal.
14	AUTO FEED	Not used in Postscript printers. Indicates that paper should be fed automatically.
15	SELECT IN	Not used in the LW Pro 600/630, daisy-chained printer select signal.
16	SIGNAL GND	Signal ground
17	CHASSIS GND	Chassis ground
18	Not used	Not used

19-30	SIGNAL GND	Signal ground
33-36	Not used	Not used

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15318

Tech Info Library

LaserWriter Utility: Windows Version Available (5/94)

Revised: 5/11/94
Security: Everyone

LaserWriter Utility: Windows Version Available (5/94)

==========

Article Created: 11 May 1994

TOPIC ----------

I am trying to locate the LaserWriter Utility for Windows. Where is this located and how can I obtain this?

DISCUSSION ----------

The LaserWriter Utility for Windows is enclosed in the disk image for the LaserWriter Select 360 For Windows because it only started shipping with that printer. Please note that the LaserWriter Utility for Windows is only supported for use with the LaserWriter Select 360, LaserWriter Pro 600, and LaserWriter Pro 630 printers as it was only tested with these printers, however, it will probably work with our other LaserWriters.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates
- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Support Information Services

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Tech Info Library Article Number:15319

Tech Info Library

MacX 1.5 and 24 bit Color (4/96)

Revised: 4/8/96
Security: Everyone

MacX 1.5 and 24 bit Color (4/96)

==========

Article Created: 9 May 1994
Article Reviewed/Updated: 8 April 1996

TOPIC ----------

I want to do 24 bit color image editing from a Sun Workstation using MacX over an Ethernet connection. It is my understanding that the current version of MacX does not support 24 bit color, is this true?

DISCUSSION ----------

You are correct. MacX 1.5, supports up to 8 bit color graphic images (256 colors). The X11 R5 server protocols can support 24 bit color graphic images, however, Apple's implementation of MacX 1.5, an X11 R5 based server, still operates at 8 bit graphic mode because some of the graphic code was from MacX 1.2.

Article Change History:
08 Apr 1996 - Updated article to MacX 1.5.

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Tech Info Library Article Number:15320

Tech Info Library

Power Macintosh Upgrade Card READ ME File (7/94)

Revised: 7/6/94
Security: Everyone

Power Macintosh Upgrade Card READ ME File (7/94)

==========

Article Created: 11 May 1994
Article Reviewed/Updated: 06 July 1994

TOPIC ----------

This article is the Power Macintosh Upgrade Card READ ME file.

DISCUSSION ----------

Important Information About Your Power Macintosh Upgrade Card

Congratulations on purchasing a Power Macintosh Upgrade Card. The information in this document adds to and updates the information in your Power Macintosh Upgrade Card User's Guide and the manuals that came with your computer. Read the tips below as well as your manuals to take full advantage of the increased speed and new capabilities your computer will have after you install the Power Macintosh Upgrade Card.

Memory Requirements of Power Macintosh Application Programs

If you run out of memory when you use Power Macintosh programs, try one of the following:

- Turn on virtual memory. (See "Turning on Virtual Memory," below.)
- Turn on the Modern Memory Manager in the Memory control panel. (Open the control panel and click On under Modern Memory Manager.)
- Have an Apple-authorized dealer or service provider install additional memory, as described in this document and in your Getting Started and Technical Information manuals.

Turning on Virtual Memory

Virtual memory is a feature of the Macintosh that lets you use part of your hard disk as additional memory. If you are using an application program designed

especially for computers with Power Macintosh capabilities, turning on virtual memory may help you avoid running out of memory. (Power Macintosh programs are often larger and require more memory than other Macintosh programs.)

To turn on virtual memory, follow these steps:

1. Choose Control Panels from the Apple (🍎) menu and open the Memory control panel.

2. Click On under Virtual Memory.

3. Open the Select Hard Disk pop-up menu and choose a hard disk to use for virtual memory.

4. Click the Up Arrow or Down Arrow to set the amount of disk space to be used as virtual memory.

IMPORTANT The preset amount sets virtual memory to twice as much as the amount of built-in memory (RAM) installed in your computer. Instead of using the preset amount, however, try setting virtual memory to the size of your computer’s RAM plus one. In other words, if built-in memory is 8M (8 megabytes), set virtual memory to 9M.

5. Choose Restart from the Special menu.

If you find that you still run out of memory when you try to open your Power Macintosh program, repeat the steps and increase the amount of virtual memory by 2 megabytes. (In other words, if you set virtual memory to 9M the first time, repeat the steps and set it to 11M.)

Keep increasing the amount of virtual memory until your Power Macintosh program opens and runs. It is best to set the size of virtual memory as small as possible. Increasing the virtual memory beyond the amount required to run your Power Macintosh program may slow your computer and take up unnecessary space on your hard disk.

Getting More Information About Memory Requirements

When virtual memory is turned on, a Power Macintosh program uses less memory than when virtual memory is turned off. If you check the program’s Get Info box before and after turning on virtual memory, you’ll see that the numbers in the Memory Requirements portion of the box have changed. This is because turning on virtual memory allows the program to use memory more efficiently.

To view a program’s Get Info box, click the program’s icon to highlight it, and choose Get Info from the File menu.

Note: Power Macintosh programs frequently use special files called shared libraries. The memory requirements of a program as reported in the program’s Get Info box don’t reflect the size of any shared libraries the program uses. You may need to turn on virtual memory, or increase the amount of virtual memory, if your Power Macintosh program uses a large shared library.

Adding Memory (RAM)

As an alternative to turning on virtual memory, you can install additional random-access memory (RAM) in your computer. The Technical Information manual that came with your computer describes how much additional memory can be installed in your Power Macintosh.

To avoid damage to your computer, Apple Computer recommends that only an Apple-authorized dealer or service provider install additional memory. Memory for your computer is provided in packages called DRAM SIMMs. The SIMMs must be the correct type for your computer. They should be installed in pairs of the same size into paired slots in your computer. It is very important that the DRAM SIMMs be correctly installed in your Power Macintosh. Incorrect installation can result in errors, unpredictable results, and damage to your equipment and data.

IMPORTANT Do not remove any factory-installed cards from inside your computer. Removing a factory-installed card at an angle can damage your equipment. Any NuBus™ expansion cards installed in your computer will not operate properly if the factory-installed card is removed. If a factory-installed card needs to be removed, see an Apple-authorized service provider.

Installation and compatibility

The Minimal PowerPC Upgrade Enabler file, which is on both the Install Me First and Disk Tools floppy disks, allows you to start the computer with either of those disks. When you start up from a hard disk, you need the complete PowerPC Upgrade Card Enabler on that disk. If you have installed your Power Macintosh Upgrade software on your hard disk, the complete PowerPC Upgrade Card Enabler was installed automatically. Don't try to use the Minimal PowerPC Upgrade Enabler file in place of the complete enabler.

If you want to change the operating mode of your Macintosh, you must do so by changing the settings in the Power Macintosh Card control panel. To change the Power Macintosh Upgrade Card settings choose Control Panels from the Apple menu and open the Power Macintosh Card control panel. Click Off to turn the card off and use the original Macintosh processor. Click On to turn the card on and use the Power Macintosh processor.

IMPORTANT In order for the change to take effect, you must shut down your Macintosh completely and then restart it.

Always unplug your computer before installing or removing the Power Macintosh Upgrade Card. If you have installed the Power Macintosh Upgrade Card in (or removed the card from) a Macintosh Quadra 900 or 950 computer and the computer then fails to start up, try unplugging your computer and then plugging it in again. (Or, you can turn the key switch on the front of the computer to the Off position—indicated by the 'O' above the switch—and then to the On position—indicated by the ' | ' above the switch.) Then reset the PRAM by holding down the Command, Option, P, and R keys simultaneously while you start up the computer. Do not release the keys until you hear the startup sound twice.

CD-ROM Users

If you install the Power Macintosh Upgrade Card software on a Macintosh that has CD-ROM software version 5.0 installed, your system will contain two audio CD players, CD Remote and AppleCD Audio Player. You can use either player. If you want to get rid of one of the audio CD players, drag its icon from the Apple Menu Items folder to the Trash. If you get rid of the CD Remote player, also get rid of the CD Remote Init by dragging it from the Extensions folder to the Trash.

Installation Tips for Advanced Users

If you remove essential files from your original System Folder (to make it no longer a true System Folder), be sure to complete the installation of your new system (with its System Folder). If you cancel installation when you don't have a true System Folder, you won't be able to use your system. You'll need to start up your Macintosh in one of these ways:

- If you want to install new system software, use the Install Me First disk as your startup disk.
- If you want to put the files you removed back into the original System Folder, use Disk Tools as your startup disk.

If you experience problems installing software not designed especially for Power Macintosh computers, turn off the Power Macintosh Upgrade Card and reinstall the software.

Network Software

Please use the following versions of networking software with your Power Macintosh computer:

AppleShare Server 4.0.2
AppleTalk Internet Router 3.0.1
Inter•Poll 1.0.1
MacTerminal 3.0
Apple Remote Access 2.0 (Client; Personal Server) 2.0.1 (Multiport Server)

If you are using the Ethernet NuBus card or Twisted Pair NuBus card, use the latest Network Software Installer disk to install the required networking software. Turn off the Power Macintosh Upgrade Card before doing the installation.

What To Do If Your Computer’s Performance Decreases

If you notice a decrease in your computer’s speed and general performance after adding special software (a control panel, system extension, or custom utility), it may be because your special software does not work well with Power Macintosh computers.

- To find out if your special software is the problem, hold down the Shift key while you restart the computer. This temporarily turns off certain kinds of software. If the computer performs better without the special software, then that software is likely to be the problem.

- Drag the problem software out of the System Folder or remove it from your hard disk. (The software might be in the Control Panels or Extensions folders, which are inside the System Folder.) If the computer performs better when the software is removed, contact the software's manufacturer for information or an upgrade.

Serial Communications Compatibility

If you experience problems with software using high speed serial communications connections on a Macintosh Quadra 900 or 950 with the Power Macintosh Upgrade Card turned on, make sure the serial port is set to Compatible. (Open the Serial Switch control panel and click Compatible.)

Using CloseView

CloseView does not work when virtual memory is turned on. To use CloseView, turn off virtual memory in the Memory control panel. (Programs designed especially for Power Macintosh may require that virtual memory be turned on. You can't use CloseView with such programs.)

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Article Change History:
06 Jul 1994 - Removed binary attachment.

Support Information Services

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Tech Info Library Article Number:15327

Tech Info Library

Dual-Scan Display Explained (2/95)

Revised: 2/2/95
Security: Everyone

Dual-Scan Display Explained (2/95)

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Article Created: 11 May 1994
Article Reviewed/Updated: 02 February 1995

TOPIC -----

With regards to the PowerBook display, what does "dual-scan" mean?

DISCUSSION -----

A dual-scan display (used in the PowerBook 520c) is a passive matrix display that delivers almost twice the refresh rate of a standard passive-matrix display.

Instead of scanning all the lines of the screen from top to bottom, as does the single-scan passive-matrix screen used in the PowerBook 165c, a dual-scan display divides the screen in two and scans the top half and bottom half simultaneously. This effectively doubles the screen's performance, and it makes colors appear brighter.

Article Change History:
02 Feb 1995 - Changed access privileges of article.

Support Information Services

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Tech Info Library Article Number:15329

Tech Info Library

QuickTake: System Requirements (5/94)

Revised: 5/11/94
Security: Everyone

QuickTake: System Requirements (5/94)

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Article Created: 11 May 1994

TOPIC -----

What are the system requirements for the QuickTake camera software? I need this information for customers who are "on the edge" in terms of memory and storage.

DISCUSSION -----

According to page 2 of the Apple QuickTake 100 User's Guide, the System requirements are as follows for the QuickTake 100:

- a Macintosh with a 68020 or higher CPU (any Macintosh except a Macintosh Plus, SE, Classic, Portable, or PowerBook 100)
- system software version 7.0.1• (with Tune-Up 1.1.1) or a later version
- 4MB of RAM with 8MB of virtual memory or 8MB of RAM
- Apple SuperDrive (or any floppy drive that can read high-density disks)
- a hard drive with at least 10MB available

Support Information Services

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Tech Info Library Article Number:15331

Tech Info Library

Early Language Connection/Writing Center: Passwd Issue (8/95)

Revised: 8/9/95
Security: Everyone

Early Language Connection/Writing Center: Passwd Issue (8/95)

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Article Created: 6 May 1994
Article Reviewed/Updated: 9 August 1995

TOPIC -----

I have the Apple Early Language Connections (AELC), and am having problems using the Writing Center. I'm asked for a password whenever I try to run the Writing Center.

DISCUSSION -----

The Writing Center is password protected with At Ease 1.0 so students can't access it, and it's the same password as the Administrator password in At Ease. The Writing Center was intended to be used by teachers, and not the students, and it is not possible to set up a group of users with access to it, or to make the password different for The Writing Center.

If you use a different version of At Ease, password protection does not work, and anyone will be able to access The Writing Center.

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:15332

Tech Info Library

Power Macintosh: What Does Native Mean (5/94)

Revised: 5/11/94
Security: Everyone

Power Macintosh: What Does Native Mean (5/94)

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Article Created: 11 May 1994

TOPIC -----

This article describes what Native means when referring to Native Power Macintosh applications.

DISCUSSION -----

First for some definitions.

- Native application, is an application whose executable code is in the instruction set architecture of the CPU.

- PowerPC Native application, is an application that contains code only for a PowerPC microprocessor.

- 680x0 Native application, is an application that contains code only for a 680x0 microprocessor.

Since the Power Macintosh provides 68LC040 emulation for application compatibility, native or native application came to mean executable code, both system routines and third-party software, which runs on the hardware CPU, a PowerPC 601 microprocessor. It distinguishes between software running in emulation, and software running on the hardware.

Support Information Services

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Tech Info Library Article Number:15333

Tech Info Library

PowerBook: Not Enough Memory to Load Extensions (5/94)

Revised: 5/18/94
Security: Everyone

PowerBook: Not Enough Memory to Load Extensions (5/94)

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Article Created: 12 May 1994

TOPIC ----------

When trying several extensions on my PowerBook 520, I get a dialog message during the boot process stating "There is not enough memory to load all of your extensions." The only button is "OK" and after pressing that, the machine continues to boot, but the menus are drawn weird, and the screen doesn't update correctly.

Is there some kind of limit on how much RAM can be used with extensions? Or is there some minimum free RAM that you must have coming out of the boot process?

DISCUSSION ----------

The version of system software for the PowerBook 500 series and the PowerBook Duo 280 series is different from other versions of system software. It assures that 45% of RAM is free after the system boots, and will give that error when there are too many extensions in the System Folder to meet that requirement. To avoid this error you can limit the number of extensions in your System Folder, or to add more RAM to your PowerBook.

Detailed Explanation

The behavior the PowerBook 520 exhibits is the result of a new feature that is part of the common system source code developed for the PowerPC. This new feature, which sets the minimum amount of free RAM that you must have after booting has been included with the system on the 500 PowerBook series and 280 Duo series. The new addition to the system changes the behavior of a commonly used system routine called INIT 31.

System software has traditionally used the routine INIT 31 to load extensions (INITs) and system resources into memory. INIT 31 gets the size of each extension to be loaded and allocates memory for that extension and then repeats that process for all extensions that are loaded at system startup. This procedure calls another routine to set the memory address of the beginning of the application heap space. In previous versions of the system software, the

number of extensions that could be loaded was very much at the users discretion. Occasionally, a system could crash if the number of extensions loaded used up so much available RAM that there was not enough free RAM for the Finder to launch.

In system 7.1.1 (not System 7 Pro) on the PowerBook 500 series and Duo 280 series, the call made to INIT 31 loads the extensions and the size resources for those extensions as usual. However, a modification has been made to this routine which loads a value from a table which specifies how much free RAM (about 45% of RAM) must be available after the system boots. In the case of a 4MB PowerBook 520, this value is approximately 1600K. Once the available RAM reaches this value a dialog message "There is not enough memory to load all of your extensions" is displayed indicating that no more space is available for extensions. The "OK" button allows the user to continue booting the PowerBook without loading any additional extensions, and without having to restart.

The strange screen behavior is a result of available free RAM. Since the system has used so much of the RAM to load extensions there is not enough free RAM to allow the system to operate correctly. For example, the words in the menu bar disappear when selected. This is caused by insufficient space to copy the menu bar and display it with the highlighted selection. A blank (white) space is drawn causing the selected menu bar item to disappear. This can also affect the way items are displayed on the screen. Another factor is that the value in the table for the amount of free RAM after the system boots is too small.

Support Information Services

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Tech Info Library Article Number:15334

Tech Info Library

LaserWriter Pro 810: Specifications For Labels (5/94)

Revised: 5/13/94
Security: Everyone

LaserWriter Pro 810: Specifications For Labels (5/94)

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Article Created: 12 May 1994

TOPIC -----

What recommendations are there for printing labels on the LaserWriter Pro 810?

DISCUSSION -----

In order to minimize paper handling problems labels should be printed using the optional media feeder which attaches to the manual feed slot. The media feeder helps prevent skewing, and also provides a straight-through paper path for the labels as long as the face-up tray is also installed. Using the paper trays or choosing face-down printing increases the risk that a label might come unglued from the backing sheet and cause a paper jam.

The adhesives used in the labels should be able to withstand a temperature of approximately 410 degrees fahrenheit for 0.1 seconds. The fuser temperature during standby is 392 degrees fahrenheit (200 degrees Celsius) and rises to 410 degrees fahrenheit (210 degrees Celsius) when printing. These values are slightly higher than 8 ppm print engines because the fusing process must occur in a shorter period of time at 20 ppm. These are the default fusing temperature values as shipped from Apple, but they can be modified slightly by changing the parameters while in the service mode.

Label sheets that have missing labels, or that have any part of the backing sheet exposed should not be used. Labels that have areas of exposed adhesive should also not be used because the adhesive will adhere to the rollers and components in the paper path.

There are several manufacturers who are marketing special labels for the laser printer market. Apple suggests consulting with your local paper supplier or computer store for more specific information.

Support Information Services

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Tech Info Library Article Number:15335

Tech Info Library

LaserWriter Pro 810: No Limits on Downloading Fonts (5/94)

Revised: 5/13/94
Security: Everyone

LaserWriter Pro 810: No Limits on Downloading Fonts (5/94)

==========

Article Created: 12 May 1994

TOPIC ----------

The LaserWriter Pro 810 has a SCSI port for an external HD. Is there any network topology limitation to downloading fonts to that HD (can I download via Ethernet or LocalTalk)?

DISCUSSION ----------

There are no "topological" limitations on downloading fonts to a hard drive attached to a LaserWriter Pro 810. We have verified this by downloading TrueType and Type 1 PostScript fonts to the hard drive using Ethernet and LocalTalk from the LaserWriter Utility software.

We haven't tried downloading fonts to the printer in the Windows or Unix environment, but there shouldn't be any problems with this.

Support Information Services

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Tech Info Library Article Number:15336

Tech Info Library

Power Macintosh: Global Village Teleport Problem (1/95)

Revised: 1/10/95
Security: Everyone

Power Macintosh: Global Village Teleport Problem (1/95)

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Article Created: 12 May 1994
Article Reviewed/Updated: 10 January 1995

TOPIC ----------

When the Global Village Teleport Serial Control Panel is installed on a Power Macintosh the system hangs. Global Village is aware of the problem and will have a fix shortly. Global Village is telling customers that they also need a fix from Apple for the serial port. Is this true, and when will the fix be available?

DISCUSSION ----------

The fix that Global Village is referring to is included in the System Update 3.0 which was recently released. This software is currently available on AppleLink, as well as the Internet and other online services.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
10 Jan 1995 - Revised title, added info on where to find software updates.

Support Information Services

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Tech Info Library Article Number:15337

LaserWriter: Slow Job Cancellation Normal (5/94)

Revised: 5/16/94
Security: Everyone

LaserWriter: Slow Job Cancellation Normal (5/94)

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Article Created: 12 May 1994

TOPIC ----------

Every time we cancel a print job, it sends the LaserWriter IINT into a 10 minute cycle of blinking the ready light before it cancels the job. We are using a majority of Macintosh IIci computers running system 6.0.7 and LaserWriter 7.1.1.

DISCUSSION ----------

What you've encountered is normal. Here is what is happening.

When you send a print job to a printer, data is processed until one of two things occurs: and end-of-transmission (Control-D) character transmitted in the print job is reached (normal), or there is a timeout on the communications channel (typically abnormal). The Printer Access Protocol sets up, maintains, and closes connections between workstations, printers, and print spoolers.

When you cancel a print job using the print monitor, the PAP client on the workstation issues a PAPClose call and an ATP transaction request is sent to the other end with PAP function CloseConn. At the server/printer end, the receipt of the CloseConn causes the connection to be torn down--but the server/ printer may continue to process data for the ongoing job. When the PostScript interpreter is ready to receive more of the print job data from the client, it detects the PAP connection is closed and invokes the WaitTimeout timer, the default of which for Apple LaserWriters is 300 seconds (5 minutes). (This timer is also set to 300 seconds, for the current job, by the LaserWriter 7.x driver when it begins the print job). The LaserWriter simply waits until "timeout" and then assumes that the job is complete. At that point, it resets itself to the initial job state.

During some periods during the processing of a printing job, you may be able to cancel the print job almost immediately, but as you have found, other times when the printer is busy processing the job, it may take awhile before it even learns the connection was closed, and then another 5 minutes before it is willing to

accept another print job. A faster printer than the LaserWriter IINT may require less time to process a job; therefore, a faster printer will enter the WaitTimeout period faster.

There are two workarounds to this problem. You may either:

1) Cancel the print job sooner

or

2) Don't cancel the print job at all

Alternatively, by using a faster printer, your printer will free up more rapidly after a print job is canceled.

Support Information Services

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Tech Info Library Article Number:15338

Tech Info Library

StyleWriter: General Troubleshooting Procedures (5/95)

Revised: 5/19/95
Security: Everyone

StyleWriter: General Troubleshooting Procedures (5/95)

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Article Created: 11 May 1994
Article Reviewed/Updated: 18 May 1995

TOPIC

This article describes the steps for troubleshooting the StyleWriter and StyleWriter II printers. The steps for troubleshooting the printers are identical.

DISCUSSION

If you are having problems with your StyleWriter or StyleWriter II printer here are the steps to determine where the problem is.

Step 1

Shut down your Macintosh.

Step 2

Turn off your Macintosh and StyleWriter printer.

Step 3

Remove all paper from printer.

Step 4

Disconnect the serial cable printer cable from the computer and the printer.

Step 5

Disconnect the power cable.

Step 6

Wait approximately 15 seconds, then reconnect the power cable to the printer.

Step 7

Reload the paper in the printer gently. Do not force the paper into the printer.

Step 8

Generate a test page on the StyleWriter:

- StyleWriter: With the printer off, hold down the form feed button, then press the power button and release both buttons simultaneously.

- StyleWriter II: With the printer off, hold down the power button until it starts to generate the test page.

Step 9

If the test page prints improperly or does not print:

1) Remove the ink cartridge from the printer.
2) Verify that the tape used during shipping has been removed from the
. cartridge.
3) Manually clean the cartridge if necessary by covering the ink jets with a
. wet cloth or paper towel and sling the cartridge.
4) Reinsert the ink cartridge.
5) Generate another test page.
6) If the printer still does not properly print a test page, replace the
. ink cartridge.
7) Generate another test page.

Step 10

If the test page prints properly, reconnect the printer to the computer. You can connect to either the printer, or the modem port, but you must make sure that the same port is selected in the Chooser.

Step 11

Remove any spooled files in the PrintMonitor Documents folder in the System Folder. Here is how to do this:

Open the PrintMonitor Documents folder, if there is anything in the folder, throw the entire folder in the Trash, restart the computer, and empty the Trash. If there are documents in this folder waiting to be printed and you do not remove the folder immediately, it tries to print those documents. Corrupted PrintMonitor documents will cause error messages, so you want to remove all the spooled documents.

Step 12

Open the Chooser and select the correct printer driver. Make sure that you

select the proper driver for the printer. If you select a StyleWriter driver for a StyleWriter II, you will get error messages and will not be able to print.

Step 13

Select the proper serial port (modem or printer).

Step 14

Turn background printing off. This is not necessary for printing, but makes troubleshooting much easier

Step 15

Make sure AppleTalk is inactive.

Step 16

Print from the Finder. From the file menu choose Print Window, Print Desktop, or Print Directory depending on what you have on your desktop.

Step 17

If the printer prints from the Finder, but not from an application, the problem is with the application program and you need to contact the software vendor to troubleshoot the problem.

Step 18

If you cannot print from the Finder, restart with extensions off (hold down the shift key during the startup procedure). If this solves the problem, follow normal Extension troubleshooting procedures.

Step 19

If you still have problems, reinstall of the printer software :

1) Open the Extensions folder and throw away the PrintMonitor and StyleWriter
. and StyleWriter II files.
2) Restart the Macintosh with extensions off.
3) Reinstall the printer software.

Step 20

If you still have problems, do a clean reinstall of the system software and printer software.

If you complete all of the preceding steps and find that you still have problems, contact the Apple Assistance Center at (800) SOS-APPL (if you are in the United States) or your local Apple authorized service provider (if you are outside of the United States).

This article was published in the "Information Alley":
Volume II, Issue 2, Page 5

Article Change History:
18 May 1995 - Made several minor corrections; updated with Info Alley info.
23 Mar 1995 - Reformatted and added shipping tape information.

Support Information Services

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Tech Info Library Article Number:15340

Tech Info Library

StyleWriter: Common StyleWriter Problems (2/95)

Revised: 6/5/95
Security: Everyone

StyleWriter: Common StyleWriter Problems (2/95)

==========

Article Created: 11 May 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

This article contains some of the more common problems and solutions regarding the StyleWriter and StyleWriter II printers.

DISCUSSION ----------

Problem: Document Changes Font Halfway Down the Page. This is caused by low system memory available. This is a common situation when using products like Microsoft Word 5.0, which uses 2MB on a 4MB Macintosh.

Solution: Try printing with background printing off. A better solution is upgrading the amount of RAM in your Macintosh.

Problem: Cannot find the StyleWriter or StyleWriter II printer in the Chooser. Check in Extensions (System 7) or the System Folder (System 6) and make sure that the Stylewriter II and the Stylewriter driver are present.

Solution: If the drivers are not in the proper location, move them into the proper location. Otherwise, reinstall the printer software.

Problem: Any error message mentioning the ready button. This indicates that the wrong printer driver is selected or the wrong type of cable is being used.

Solution: Select the proper printer in the Chooser. Use a Macintosh serial cable, not a PhoneNet cable.

Problem: Error message states: Stylewriter is out of paper or paper in printer is different size than paper selected. This indicates that the wrong printer driver is selected, the wrong type of cable is being used, or there is a problem

with the printer cable.

Solution: Select the proper printer in the Chooser. If you have Global Village fax software installed, make sure that you do not have GlobalFax selected instead of the proper StyleWriter driver. Use a Macintosh serial cable, not a PhoneNet cable.

Problem: Text prints one line on top of the other, all in one column. This problem only occurs with certain versions of Microsoft Word 4.0 software. Microsoft has written a special TrueType INIT that has to be used with these versions of Microsoft Word.

Solution: Contact Microsoft for the INIT or upgrade to a later version of Microsoft Word.

Problem: Grayscale printing option is dimmed. Grayscale printing requires a Macintosh that has 32-bit color QuickDraw in ROM. The following Macintosh computers do not and thus cannot access grayscale printing:

- Macintosh Plus
- Macintosh SE
- Macintosh Classic
- Macintosh Portable

Solution: None

Problem: Background printing is dimmed. This only happens with System 6 when using Finder instead of MultiFinder.

Solution: Switch to MultiFinder and restart.

Problem: The StyleWriter II feeds all paper through the printer either all at once or one sheet after another. There is a Paper Feed Roller Assembly inside the printer. The roller consists of two 'D' shaped rollers that when activated, rotate one revolution to pick the top sheet of paper from the input tray and feed it into the platen roller further inside the printer. Attached to the end of this roller assembly is a cam that raises and lowers the lift plate that supports the stack of paper in the input tray. If the printer is bumped, or the Paper Feed Roller Assembly is moved out of position by inserting too much paper, the cam is moved sufficiently and allows the lift plate to rise, causing the feeder to be out of the home position, which results in paper feeding problems.

Solution: Remove all paper form the printer. Turn the printer off, then turn it back on. During the normal start up sequence, the Paper Feed Roller Assembly automatically rotate itself to the correct position (a flag located on the roller assembly shaft is sensed by and optical sensor on the main logic bard). This prevents the paper feeder trying to feed paper from an empty bin. When you are printing, reduce the paper stack to under 1/2 inch.

Problem: The mouse does not move smoothly on a Macintosh Plus or 68000 Macintosh with background printing. This is a problem with the 68000 Macintosh computers and background printing.

Solution: Turn off background printing.

Problem: Sometimes, when installing StyleWriter software on a System 6.0.7 machine, the installer hangs and simply doesn't work.

Solution: Drag-copy the StyleWriter driver, the System 6.x Chooser, and the TrueType init into the System Folder, then use Font/DA Mover to install the fonts.

Problem: Structured drawing programs and desktop publishing programs do not print out properly on the StyleWriter and StyleWriter II. Programs like Quark Xpress, PageMaker, Illustrator, and FreeHand do not properly handle several things like letter kerning, line spacing, rotated text looks like bitmaps, and out of place graphics. This is because these programs rely on PostScript code to handle many of these features. The StyleWriter and StyleWriter II are QuickDraw printers, not PostScript printers.

Solution: Use a PostScript printer.

Article Change History:
16 Feb 1995 - Revised format. Replaced solution for paper feed problems.
15 Dec 1994 - Add keyword and make minor technical updates.
15 Sep 1994 - New method of resetting the StyleWriter II.

Support Information Services

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Tech Info Library Article Number:15341

Tech Info Library

Macintosh Performa: Ferro-Resonant Transformer (5/94)

Revised: 5/12/94
Security: Everyone

Macintosh Performa: Ferro-Resonant Transformer (5/94)

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Article Created: 12 May 1994

TOPIC ----------

The user is attaching an uninterruptable power supply (UPS) to their Macintosh Performa and needs to know if the Performa uses a ferro-resonant transformer.

DISCUSSION ----------

The Macintosh Performa does not use a ferro-resonant transformer. This type of transformer (large) was used in conjunction with a larger capacitor to produce a constant output voltage [also known as “constant voltage transformer (CVT)”], resonating between 50 and 60 Hz. It is a very old design and the power supply was very heavy, and it is seldom used in the industry.

We recommend that the customer use a true sinewave uninterruptable power supply with all Apple’s platforms for best results.

Support Information Services

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Tech Info Library Article Number:15342

Tech Info Library

MacTCP 2.0.6: Error While Installing Update Patch (12/94)

Revised: 12/9/94
Security: Everyone

MacTCP 2.0.6: Error While Installing Update Patch (12/94)

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Article Created: 12 May 1994
Article Reviewed/Updated: 9 December 1994

TOPIC ----------

When installing the MacTCP 2.0.6 update patch, an error occurs indicating incompatible or unexpected driver resources. Is there a workaround?

DISCUSSION ----------

In order for the MacTCP 2.0.6 patch installer to run correctly, you must work with an original (unmodified and unopened) copy of the MacTCP 2.0.4 Control Panel. To resolve the problem follow these steps:

NOTE: All licensed copies of MacTCP 2.0.4 can be upgraded. For earlier MacTCP 2.x versions (2.0 and 2.0.2), you must first be updated to version 2.0.4 before updating to version 2.0.6.

From MacTCP 2.0.4 to 2.0.6
---

1) Make a backup of the MacTCP Prep file on a floppy or elsewhere on your hard disk.

2) Delete the existing MacTCP 2.0.4 Control Panel and MacTCP Prep file.

3) Drag a new copy of MacTCP 2.0.4 Control Panel from the original disk to the System Folder.

4) Restart your Macintosh.

5) Without opening the MacTCP 2.0.4 Control Panel, run the MacTCP 2.0.6 patch installer.

6) Replace the MacTCP Prep file with the backup you made, or open the MacTCP 2.0.6 Control Panel and enter the IP configuration settings.

The MacTCP DNR file should not affect this procedure.

NOTE: If you are using System 7.5, you need to use the installer for
System 7.5 in order to obtain a new MacTCP control panel.

From MacTCP 2.0.2 to 2.0.6

If you are using MacTCP 2.0.2, and you wish to update to MacTCP 2.0.6, follow these steps:

1) Make a backup of the MacTCP Prep file on a floppy or elsewhere on your hard disk.

2) Delete the existing MacTCP 2.0.2 Control Panel and MacTCP Prep file.

3) Drag a new copy of MacTCP 2.0.2 Control Panel from the original disk to the System Folder.

4) Restart your Macintosh.

5) Without opening the MacTCP 2.0.2 Control Panel, run the MacTCP 2.0.4 patch installer.

6) Restart your Macintosh.

7) Without opening the MacTCP 2.0.4 Control Panel, run the MacTCP 2.0.6 patch installer.

8) Replace the MacTCP Prep file with the backup you made, or open the MacTCP 2.0.6 Control Panel and enter the IP configuration settings.

The MacTCP DNR file should not affect this procedure.

Article Change History:
09 Dec 1994 - Added information on instaling MacTCP with System 7.5.
30 Nov 1994 - Updated article to MacTCP 2.0.6.

Support Information Services

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Tech Info Library Article Number:15343

Tech Info Library

AppleShare 4.0 or AIR 3.0, and MS Fox Pro 2.5 Problem (01/95)

Revised: 1/12/95
Security: Everyone

AppleShare 4.0 or AIR 3.0, and MS Fox Pro 2.5 Problem (01/95)

==========

Article Created: 12 May 1994
Article Reviewed/Updated: 12 January 1995

TOPIC ----------

This article describes a problem and solution when using Microsoft Fox Pro 2.5 with either AppleShare 4.0 or Apple Internet Router (AIR) 3.0.

DISCUSSION ----------

When you install Fox Pro 2.5 on a Macintosh computer, the Apple Shared Library Manager (ASLM) software is also installed. This causes a problem if you are running AppleShare 4.0 or Apple Internet Router (AIR) 3.0, which uses ASLM version 1.0. AppleShare File Server fails to initialize because of an incompatible version of Apple Shared Library Manager. The Router may fail to initialize for the same reason, only if the SNMP extensions are installed, as this is the only part of the Router that uses ASLM.

The solution is to upgrade to AppleShare 4.0.1 or AIR 3.0.1, which provides compatibility with ASLM version 1.1. Fox Pro, Internet Router, and AppleShare Server can then co-exist using a single version of ASLM.

Article Change History:
12 Jan 1995 - Added keyword; expanded and reworded article for clarification.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15344

Tech Info Library

LaserWriter 8.x: Problems Using Print Servers (5/94)

Revised: 5/16/94
Security: Everyone

LaserWriter 8.x: Problems Using Print Servers (5/94)

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Article Created: 13 May 1994

TOPIC ----------

We've experienced some oddities with the LaserWriter Pro 810, Print Server 3.0 and 4.0 and QuarkXpress 3.11 The spooler Queue and Log windows contain extraneous entries (four lines rather than one) and the Document name and User name appear in parenthesis. During the spooling process, the document name appears during the postscript prolog creation but then disappears while the document is printing. It's as if the prolog is a separately spooled document from the actual document.

We are using Laserwriter 8.1.1. The Pro 810 PPD file must be manually selected when going thru either 3.0 or 4.0 spooler, rather than using the generic PPD which is selected by Auto-Setup in order to get the Ledger page size pop-up in the Page Setup dialog box in QuarkXpress.

DISCUSSION ----------

What you report are characteristics of clients printing using the LaserWriter 8.x driver. The print servers don't entirely support the those drivers and the queries they make.

1. At the beginning of every 8.x print job, the driver first opens a separate query job to obtain information about the target device, including its features, fonts, and other characteristics. This query is listed first in brackets in the Spooler Queue. The second job listed in the Spooler Queue is your actual document to be printed (note the spooler will cite the number of pages in that print job). The Spooler Log lists the start and completion times of each of the above jobs, for a total of four entries.

2. The client is unable to obtain printer information via the print server resulting in the generic PPD being offered. You must manually select the printer's specific PPD if you wish to use its special features via the Print dialogs (as compared to downloading specific PostScript commands to control the printer and print job, which doesn't require the specific PPD).

..TIL15345-LaserWriter_8-x-Problems_Using_Print_Servers_5-94_(TA31698).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15345

Tech Info Library

Apple Color Printer: Ink Cartridge Refills Available (5/94)

Revised: 5/13/94
Security: Everyone

Apple Color Printer: Ink Cartridge Refills Available (5/94)

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Article Created: 13 May 1994

TOPIC -----

I am having trouble locating the Apple Color Printer ink cartridges. Is there a another source for finding these cartridges, or a source for finding refills?

DISCUSSION -----

The Apple Color Printer ink cartridges are on backorder, that is why they are hard to find. However, Aspen Imaging does offer refill kits for the Apple Color Printer.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15346

Tech Info Library

Personal LaserWriter 320: No Support from MS-DOS (5/94)

Revised: 5/24/95
Security: Everyone

Personal LaserWriter 320: No Support from MS-DOS (5/94)

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Article Created: 13 May 1994

TOPIC ----------

Is possible to connect a Personal LaserWriter 320 to a PC or PC Compatible computer?

DISCUSSION ----------

The Personal LaserWriter 320 was designed to meet the needs of home and small office customers, so cross-platform support was not included. Including this type of support would have added unnecessary complexity and cost to the printer. Customers who are looking for a printer to support both Macintosh and DOS/Windows computers need to look at our other printers that provide this type of support. Some of these printers include the LaserWriter Select 360, the LaserWriter Pro 630, and the LaserWriter Pro 810.

Since the Personal LaserWriter 320 does not have PCL4 capability or Diablo 630 ECS emulation, customers with PCs wishing to print to the Personal LaserWriter 320 need to use AppleTalk as the Protocol, and PostScript as the page description language. Products such as the Farallon Computing's Timbuktu for Windows provides the AppleTalk stack and Microsoft ships PostScript print drivers with their operating systems.

Support Information Services

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Tech Info Library Article Number:15348

Tech Info Library

Direct Dialup Mail Install Problem and Modem Tool 1.5 (5/94)

Revised: 5/13/94
Security: Everyone

Direct Dialup Mail Install Problem and Modem Tool 1.5 (5/94)

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Article Created: 9 May 1994

TOPIC ----------

Why will Direct Dialup Mail (DDM) not install if the Apple Modem Tool 1.5 is installed? Do you know if it will work if the Apple Modem Tool 1.5 is installed after the DDM installation?

DISCUSSION ----------

The reason you are having installation problems is the modem tool is in use, so the installer application can't replace it. If you move the modem tool out of the Extensions folder, the installer application will work properly. You can then put the Modem Tool 1.5 back in the Extensions folder and replacing the Modem Tool 1.1.1 that ships with DDM after you've finished the installation.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15349

Tech Info Library

PowerBook Duo 280 and 280c: FPU not integrated (5/94)

Revised: 5/13/94
Security: Everyone

PowerBook Duo 280 and 280c: FPU not integrated (5/94)

==========

Article Created: 13 May 1994

TOPIC ----------

I am using a PowerBook Duo 280c in a Duo Dock with a math coprocessor installed, but my software application insists that an FPU is not installed. Why is this happening?

DISCUSSION ----------

Macintosh PowerBook Duo 280 and 280c systems use a Motorola 68LC040 microprocessor which does not have an integrated math coprocessor, otherwise known as a floating point unit (FPU). Some software packages may require an FPU and therefore will not run on this series of computers.

In addition, the 68882 math coprocessor option for the Duo Dock and the built-in FPU of the Duo Dock II are not compatible with the 68LC040 used in the Duo 280 and 280c systems. These computers will still operate in the Duo Dock, but will ignore the installed 68882 math coprocessor.

Users with software packages that require an FPU should contact the software vendor for assistance.

Support Information Services

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Tech Info Library Article Number:15350

Tech Info Library

PowerBook 540/540c: Modem Support (6/96)

Revised: 6/5/96
Security: Everyone

PowerBook 540/540c: Modem Support (6/96)

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Article Created: 11 May 1994
Article Reviewed/Updated: 5 June 1996

TOPIC ----------

What modem ships with the PowerBook 540 and 540c?

DISCUSSION ----------

In the United States and Canada the PowerBook 540 and 540c computers will ship with the Global Village PowerPort Mercury as an internal modem option. If users purchase a configuration without the Global Village Modem, and then later decide they want it, they will have to purchase it from Global Village. There is no upgrade from Apple, and the modem must be installed by a Apple Authorized Service Provider.

Global Village PowerPort Mercury Features

- 19.2 kbps data speed
- 14.4 kbps fax speed
- GlobalFax Software
- ZTerm data communications software

NOTE: Global Village OCR software does not come bundled with the PowerBooks. To receive this software, contact Global Village for an upgrade.

The warranty on the Global Village modem as part of the bundle is 1 year through Apple. Global Village has its own warranty policy for modems purchased separately.

System Requirements

- Minimum of 6 MB RAM
- Minimum of 2 MB free space on the hard drive

International

Internationally we will ship the Express Modem II. This will have an RJ45 jack on the back for the specific Country Adapter which connects to the phone jack found in that country. Apple currently supports 21 country adapters.

The Express Modem II is considered a "World-Ready" Modem which means when you start one of the PowerBook 500 computers with an internal PowerBook Express Modem II, the modem interrogates the system software to see which language version of the operating system is currently running, and then configures itself accordingly.

For example, if your PowerBook 500 series computer is running the French version of System 7, the Express Modem II will configure itself to the France Telecom standards for modems. If the computer is using the German version of System 7, the modem will configure itself for the German telecom standards. This capability eliminates the need for an external country adapter.

Article Change History:
05 Jun 1996 - Corrected minor typographical errors.
31 Mar 1995 - Reviewed for technical accuracy.
13 May 1994 - Added more specific information on the Global Village modem.

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Tech Info Library Article Number:15351

Tech Info Library

PowerBook Duo Family: Power Adaptor (5/94)

Revised: 4/3/95
Security: Everyone

PowerBook Duo Family: Power Adaptor (5/94)

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Article Created: 13 May 1994
Article Reviewed/Updated: 03 April 1995

TOPIC ----------

This article describes the power adaptors used with Macintosh PowerBook Duo computers.

DISCUSSION ----------

PowerBook Duo 210, 230, 250, 270c, and 280 computers include a 25 W power adaptor. The PowerBook Duo 280c includes a new 36 W power adaptor which is fully backward compatible with all Duo computers.

The two power adaptors can be identified by the model number listed on its bottom label: M7783 - 25 W adaptor M2693 - 36 W adaptor.

Although the 36 W adaptor can be used with all Duo computers, it is not recommended to use the 25 W adaptor with the Duo 280c system. Use of the 25 W adaptor may cause the battery to drain while using the system in certain configurations and usage patterns.

Article Change History:
03 Apr 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15353

Tech Info Library

Workgroup Server 8150 and 9150: PDS Needs Terminator (6/95)

Revised: 6/22/95
Security: Everyone

Workgroup Server 8150 and 9150: PDS Needs Terminator (6/95)

==========

Article Created: 6 May 1994
Article Reviewed/Updated: 22 June 1995

TOPIC ----------

This article describes the need for a PDS bus terminator on the Apple Workgroup Servers (WS) 8150 and 9150.

DISCUSSION ----------

The PDS terminator was intended and marketed only with the Workgroup Servers 8150 and 9150. This card is used only to terminate the bus via resistors installed on it. Although it was not intended (nor tested) in the Macintosh 7100 series computers, it should work fine in these systems. The part, PDS Terminator Board, is service part number 922-0967.

Article Change History:
22 Jun 1995 - Reviewed for technical accuracy
21 Jun 1995 - Updated for clarification.
10 Jan 1995 - Revised title and discussion slightly.

Support Information Services

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Tech Info Library Article Number:15354

Tech Info Library

Aspen Imaging International (8/96)

Revised: 8/28/96
Security: Everyone

Aspen Imaging International (8/96)

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Article Created: 13 May 1994
Article Reviewed/Updated: 28 August 1996

Aspen Imaging International
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555 Aspen Ridge Drive
Lafayette, CO 80026

Phone: 800-955-5555

Company Profile: Aspen Imaging International provides refills for ink cartridges from various vendors including Hewlett-Packard, Apple Computer, and Canon.

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Tech Info Library Article Number:15355

Tech Info Library

Performa 575: Using LC 575 Communication Cards (5/94)

Revised: 5/13/94
Security: Everyone

Performa 575: Using LC 575 Communication Cards (5/94)

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Article Created: 13 May 1994

TOPIC -----

Is it possible to install the Macintosh Express Fax/Modem for the Macintosh LC 575 (M2480LL/A) in the Communications slot of the Performa 575? Also, does the Apple Ethernet CS Twisted Pair Card (M3065Z/A) and Apple Ethernet CS AAUI Card (M3066Z/A) work with the Performa 575?

Since all three products are for use with the LC 575, are they are supported with the Performa 575?

DISCUSSION -----

All options supported in the LC 575 are supported in the Performa 575. Both cpu’s are essentially the same except the Performa software, which has tested fine with all the communication slot options.

Support Information Services

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Tech Info Library Article Number:15356

A/UX and Time Synchronization With Other UNIX Hosts (5/94)

Revised: 5/16/94
Security: Everyone

A/UX and Time Synchronization With Other UNIX Hosts (5/94)

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Article Created: 13 May 1994

TOPIC ----------

I have a Quadra 800 running A/UX 3.0.1 on an Ethernet network with other UNIX systems (AIX, SCO, and SUN). I need to synchronize the time of the Macintosh with the other UNIX systems. Under UNIX standards, there is a "daemon" [timed (1M)] or [rdate (1M)] that will synchronize the time, but these don't appear to be present in A/UX. How can I resolve this?

DISCUSSION ----------

A/UX 3.1 and earlier versions do NOT support the Time Synchronization Protocol (TSP), which is a DARPA UPD protocol for clock synchronization services on computers in a local area network.

Fortunately, there was a new version of inetd which includes the TSP protocol (timed, timeserver) for A/UX. It is public domain shareware, and is available at jagubox.gsfc.nasa.gov (128.183.44.1) via anon-ftp.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15358

Tech Info Library

AppleShare Print Server 4.2.1 & LW 8.x Compatibility (10/96)

Revised: 10/15/96
Security: Everyone

AppleShare Print Server 4.2.1 & LW 8.x Compatibility (10/96)

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Article Created: 13 May 1994
Article Reviewed/Updated: 15 October 1996

TOPIC -----

What are the compatibility issues with AppleShare Print Server 4.0.2 and LaserWriter Print driver 8.1.1? Am I correct in assuming that client Macintosh computers can take full advantage of LaserWriter driver 8.x.x even though the AppleShare Print Server requires LaserWriter driver 7.x.x?

Does the LaserWriter driver 8.x.x fully support the FAX options of the LaserWriter Pro 810 and Select 360? Overall, what are the limitations of using LaserWriter driver 7.x.x on the AppleShare Print Server? Are there any features of a direct print from the LaserWriter driver 8.x.x that are lost when spooling to the LaserWriter driver 7.x.x?

DISCUSSION -----

There are only a couple of limitations in using LaserWriter driver 7.x on the AppleShare Print Server 4.2.1 if a client computer is using LaserWriter driver 8.x. If LaserWriter driver 8.x compatibility was added to the AppleShare Print Server, it could potentially resolve most of these limitations though the print server must be changed to utilize information from the driver's feature and font query capability. AppleShare Print Server 4.2.1 has no additional support for PostScript Level 2 drivers than previous versions the print spooler software. Here is the list of limitations:

- Cannot use the "Auto Setup" feature of LaserWriter 8.x when using the Chooser to select a spooled printer. Users must manually select the appropriate PPD file and manually configure the RAM and paper handling options.

- Unable to obtain printer information using the "Printer Info" button in the Setup dialog of LaserWriter 8.x.

- When going through a spooler, the LaserWriter and Apple Printer Utilities

only provide limited functionality, including the ability to send a PostScript file, print font samples, and restart the printer. To fully configure the printer via these utilities Choose the printer itself (note the AppleShare Print Server Bypass Printer option must be enabled to connect to the printer directly).

- When spooling LaserWriter 8.x print jobs two jobs will appear in the Spooler Queue window. (Only one job appears in the Spooler Queue window when printer a LaserWriter 7.x job.) The first job contains printer driver queries the driver may use to create the print job; the second job contains the PostScript data stream for the document itself.

Overall, the majority of features provided by LaserWriter driver 8.x are utilized regardless of LaserWriter driver 7.x being installed on the server. We have verified that the following features work:

- PostScript Level 2 code (just passed on to the printer by the server).

- PostScript FAX Support, including cover pages and captions.

- Selection of specific paper trays (correct PPD must be manually selected).

- Automatic Tray Switching.

- All print dialog "Options" (Printer Resolution, Color/grayscale, Tray switching, PostScript error reporting, FinePrint, Cover pages).

PostScript Level 2 support is being considered for future versions of the Print server software, however, there is no known date for this to happen.

Article Change History:
15 Oct 1996 - Updated to included AppleShare PS 4.2.1.
22 Aug 1995 - Updated article for AppleShare 4.1.
13 Jun 1994 - Added two print jobs to limitations.

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Tech Info Library Article Number:15359

Tech Info Library

LaserWriter Select 360: PageMaker 5.0 Margins Incorrect (5/94)

Revised: 5/18/94
Security: Everyone

LaserWriter Select 360: PageMaker 5.0 Margins Incorrect (5/94)

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Article Created: 17 May 1994

TOPIC ----------

The minimum margins on a LaserWriter Select 360 are .194-in, however when I print from PageMaker 5.0 I cannot print this close to the edge of the paper. I can print from other application programs and the desktop to these limits. Is this a problem with the PPD file?

DISCUSSION ----------

We looked into the LaserWriter Select 360 PPD and verified the imageable area values. They are correctly set to provide the approximate minimum margins shown in the Page Setup dialog box. These values are: .194-in. for top, left, right, and .167-in. for the bottom; the manual is incorrect in stating a minimum margin of .18-in. for all sides.

The reason why PageMaker does not allow for these minimum values, this is related to how PageMaker parses the PPD file. In the Print dialog box within PageMaker, we were able to see the correct PPD selected (LaserWriter Select 360), however, the "Print Area" displayed when the "Paper" option was selected was: 7.667 x 10.139. This allows for an approximate minimum margin of 3/8-in. -- about twice the minimum margin the printer can achieve. We printed a test document to verify this, and the margins came out to approximately 3/8-in.

We were able to verify the minimum .194-in. margins of the LaserWriter Select 360 with MacDraw Pro.

Given these results, the problem is application-related as the LaserWriter Select 360 PPD file is accurate. We would suggest that you contact Aldus and report this problem.

Support Information Services

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Tech Info Library Article Number:15360

Tech Info Library

PowerBook: Control Strip Software (11/95)

Revised: 11/10/95
Security: Everyone

PowerBook: Control Strip Software (11/95)

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Article Created: 16 May 1994
Article Reviewed/Updated: 9 November 1995

TOPIC ----------

This article describes the PowerBook Control Strip software.

For information on the Control Strip software on Power Macintosh 7500 and 8500 computers see the TIL article "System 7.5.2: Control Strip Software".

DISCUSSION ----------

The Control Strip was first included with System 7.1.1, and runs on all PowerBook models running System 7.1.1 or later. If the particular model does not support a component, then it just won't appear in the Control Strip. The System 7.5.1 Easy Install also places the Control Strip software on all PowerBooks. System 7.5.2, used only on the PowerBook 5300 and 190 series computers, also installs the Control Strip software.

Many customers have asked for a simple way to monitor power management features of PowerBook computers. With the PowerBook Control Strip, Apple has provided not only status but control on these features in a single strip with convenient click and select controls.

The Control Strip normally appears at the lower left portion of the PowerBook screen, but can be moved easily to fit your needs. To do this, hold down the option key while dragging the sizing tab.

The Control Strip appears in the bottom corner of a PowerBook screen, and in the bottom corner of a larger external monitor that is set to be the startup monitor. If the Control Strip is moved from the bottom of the PowerBook screen, it will not appear in the bottom corner of a larger external monitor connected as the startup monitor. Depending on monitor size, the Control Strip's position may appear from the middle to lower quarter of the screen.

This also occurs when a PowerBook 200 Series computer is inserted into a Duo

Dock with a larger monitor. Also when a PowerBook 200 Series computer is using a Duo Dock's hard drive as the startup disk, the Control Strip retains the position set for the Duo Dock's hard drive, so it may appear different when the computer is removed from the Duo Dock.

The location of each function (known as "modules") can be changed within the strip by option-click dragging the module you wish to move to a different position. The strip can be easily re-sized by dragging the sizing tab on the end of the strip.

Modules that appear within the Control Strip are stored in the Control Strip Modules folder of the System Folder. These modules cannot be modified but many developers have written modules that can be added to the Control Strip by placing the module in the Control Strip Module folder. It is important to note that all modules in this folder may not appear in the Control Strip depending on the features of the PowerBook you are using.

The following modules are included in the PowerBook Control Strip:

• AppleTalk Switch
Allows user to switch AppleTalk on or off without going to the Chooser and without restarting.

• Battery Monitor
Provides a visual indication (from right to left) of present battery charge levels, rate of battery consumption, and battery time remaining. It also displays whether one or two batteries are being used and includes icons which let the user know if the batteries are charged (power plug icon), charging (lightning bolt icon), or draining (battery icon).

NOTE: The values of these battery monitors will fluctuate depending on whether the battery has a full charge, if the unit is connected to the power adaptor, and the types of activities being performed.

• File Sharing
Allows user to switch file sharing on or off and change the sharing setup. A red "X" through the File Sharing folder icon usually means AppleTalk was not loaded during startup. To start AppleTalk, select "AppleTalk: Active on restart? in the Chooser and restart the computer.

NOTE: Changing file sharing settings on the Control Strip will only create a temporary change and therefore will return to its original setting once the PowerBook has been restarted. To make the setting permanent, it is necessary to make changes using the Sharing Setup control panel.

• Hard Disk (HD) Spin Down
Allows user to manually spin down the hard disk drive.

• PCMCIA Quick Eject
Included only on PowerBook 500 Series computers to allow easy ejection of PCMCIA cards.

• Power Settings

Users can set their PowerBook system to better conservation, better performance, or open the PowerBook control panel.

• Sleep Now
Allows user to put the PowerBook in sleep mode with a single click and select action.

• Sound Volume
Allows user to adjust the volume setting of the PowerBook.

• Video Mirroring
Allows user to switch the video mirroring feature on or off.

NOTE: This module only appears when the PowerBook is attached to an external display.

It is also possible to get a description of each module in the Control Strip through Balloon Help. To do this, pull down the Help Menu, choose Show Balloons, and point to the modules one at a time.

For more information on the PowerBook Control Strip, please refer to the "Getting Started" guide supplied with your Macintosh PowerBook computer.

Article Change History:
09 Nov 1995 - Added information about System 7.5.2.
03 Oct 1994 - Added information about moving the Control Strip and File Sharing.

Support Information Services

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Tech Info Library Article Number:15361

Tech Info Library

PowerBook 540: Identifying Global Village Modem Configs (5/94)

Revised: 5/16/94
Security: Everyone

PowerBook 540: Identifying Global Village Modem Configs (5/94)

==========

Article Created: 13 May 1994

TOPIC -----

This article describes how to identify whether a Global Village Modem was bundled from Apple with a PowerBook 540 Computer, or whether it was purchased separately.

DISCUSSION -----

Configuration with Modem Installed by Apple

PART NUMBER AND DESCRIPTION	LAST 3 DIGITS OF SERIAL NUMBER
M3120LL/A CPU PowerBook 540 12/240	2SZ
M3121LL/A CPU PowerBook 540c 12/320	2T0 (0=zero)

Configuration Without Modem

PART NUMBER AND DESCRIPTION	LAST 3 DIGITS OF SERIAL NUMBER
M2807LL/A CPU PowerBook 540 4/240	28Q
M2809LL/A CPU PowerBook 540c 4/320	28V
M1845LL/A CPU PowerBook 520 4/160	154
M2597LL/A CPU PowerBook 520c 4/160	1XN

How to distinguish a modem if it has been removed from the PowerBook:

A modem which was configured at the Apple factory will have a small Apple logo on the modem and the DAA.

A modem that was purchased retail will NOT have the Apple logo on the modem or the DAA.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15362

Tech Info Library

PowerBook with Modem: Machine Slow to Startup (5/94)

Revised: 5/16/94
Security: Everyone

PowerBook with Modem: Machine Slow to Startup (5/94)

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Article Created: 13 May 1994

TOPIC -----

My PowerBook is taking increasingly longer to startup lately. I've tried removing extensions and such, but the performance is just getting worse. What could be wrong?

DISCUSSION -----

If you are using Global Village modem, make sure in the configuration of your modem that you didn't set the feature "Save a Fax Copy.” This would normally be found in Fax Preferences. If you turned this on, and sent a lot of faxes, it can affect the performance of your machine upon startup. Look for the Global Village Files folder in your System folder, and clean out any saved fax documents.

Call Global Village Technical Support for further assistance.

Support Information Services

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Tech Info Library Article Number:15363

Tech Info Library

Macintosh: Cause of Programmer's Window (5/95)

Revised: 5/24/95
Security: Everyone

Macintosh: Cause of Programmer's Window (5/95)

==========

Article Created: 16 May 1994
Article Reviewed/Updated: 24 May 1995

TOPIC ----------

Shortly after starting up my Macintosh computer, a window appears on the screen with a ">" mark. What is causing this?

DISCUSSION ----------

If the Power Key on the keyboard is pressed and held down for more than approximately 1 second during startup of a Macintosh computer, the first time the Command key is pressed the computer initiates an interrupt and opens the Programmer's Window.

Macintosh Computers That Utilize The CUDA ADB

This problem MAY occur on any Macintosh system that utilizes the CUDA ADB processor, including the following computers:

Macintosh Color Classic
Macintosh LC 520
Macintosh LC 55X
Macintosh LC 57X
Macintosh LC 58X
Macintosh Quadra 630
Macintosh Quadra 840AV
Macintosh Quadra 660AV
Power Macintosh 6100
Power Macintosh 7100
Power Macintosh 8100
Power Macintosh 5200/75 LC

NOTE:
The symptom is most likely not reported in the Macintosh Quadra 660AV or the Power Macintosh 6100 since they do not have soft power and cannot utilize the

Power Key to startup.

The CUDA ADB processor contains an address register that includes information about the state of the Power Key. If the Power Key is held too long at startup, its status is locked as "on". Therefore the computer believes that the Power Key is down and the first time the Command key is pressed it opens the Programmer's Window. This condition can also occur after startup if a control panel or application initiates an ABD REINIT command and then the Power Key is pressed.

Solution

The solution to this problem is to tap (and quickly release) the Power Key at startup. Do not press and hold down the Power Key during startup.

Workaround

You do not have to restart if the Programmer’s window does appear. Follow these steps to get out of the Programmer's window:

Step 1
Type in the letter g.

Step 2
Press the RETURN key. The computer will resume normal operation (in other words, you will be back in the Finder).

Article Change History:
24 May 1995 - Added more computers to the list and how to get out of the Programmer's window.
08 Mar 1995 - Added Quadra 630 and reworded AV-specific text.

Support Information Services

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Tech Info Library Article Number:15364

Tech Info Library

Emergency Disks: How To Create A Usable Emergency Disk (5/94)

Revised: 5/16/94
Security: Everyone

Emergency Disks: How To Create A Usable Emergency Disk (5/94)

==========

Article Created: 16 May 1994

TOPIC -----

How do I build an emergency disk for my Performa computer?

DISCUSSION -----

Several third party companies produce utility type programs, some of these are:
• Norton Utilities
• Central Point Tools
• 5th Generation's 911

Most of these programs come with an emergency disk that allows you to startup your Macintosh computer from a floppy disk instead of the hard disk. In the fall of 1992, Apple started using System Enablers with all new Macintosh computers. The emergency disks provided by most utility type programs do not include the system enablers you need to use the emergency disks. You need to either install the proper System Enabler from your system folder on your hard disk to the emergency disk, or follow the instructions provided with the utility application program.

a currently list of enablers is available in the document titled "System Enablers: Current Versions & Change History"

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15365

Tech Info Library

APS Hard Disk: Only Part of Large Documents Viewable (5/94)

Revised: 5/16/94
Security: Everyone

APS Hard Disk: Only Part of Large Documents Viewable (5/94)

==========

Article Created: 16 May 1994

TOPIC -----

When I try opening a very large document (37 MB), from my APS Technologies hard disk, I can only get about 1/4th of the way through the document before the computer freezes up. Smaller documents work without any problems, it just seems to be the large documents. Why?

DISCUSSION -----

According to APS Technologies, the problem is using blind reading and writing to the hard disk. In the APS SCSI driver software V2.8, you need to disable automatic blind reads and writes. For additional information or software upgrades, contact APS Technologies.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Support Information Services

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Tech Info Library Article Number:15366

Tech Info Library

Macintosh: No Newton MessagePad Emulator Available (5/94)

Revised: 5/16/94
Security: Everyone

Macintosh: No Newton MessagePad Emulator Available (5/94)

==========

Article Created: 16 May 1994

TOPIC -----

Is there an application which allows me to run Newton MessagePad applications on my Macintosh computer?

DISCUSSION -----

No, there are no applications that allow you to run newton applications on your Macintosh. Apple's Newton Toolkit (NTK), the development system for creating Newton applications on the macintosh, will not actually run Newton programs. Code is written in NTK and then downloaded to an actual Newton. The Newton Toolkit does not have a built in emulator.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15371

Tech Info Library

Apple Printers: Printer Drivers & Cables (11/96)

Revised: 11/26/96
Security: Everyone

Apple Printers: Printer Drivers & Cables (11/96)

==========

Article Created: 17 May 1994
Article Reviewed/Updated: 24 October 1996

TOPIC -----

This articles provides a chart of Apple printers, their appropriate drivers, and the cables to use.

DISCUSSION -----

Begin_Table

Apple ImageWriter and StyleWriter Printers			
Printer Driver	Version	Cable	Notes
ImageWriter			
ImageWriter	7.0.1	Serial	
ImageWriter GX	1.1.1	Serial	(5)(7)
ImageWriter II			
ImageWriter	7.0.1	Serial	
ImageWriter GX	1.1.1	Serial	(5)(7)
AppleTalk ImageWriter	7.0.1	LocalTalk	(1)
ImageWriter LQ			
LQ ImageWriter	7.0.1	Serial	
ImageWriter LQ GX	1.1.1	Serial	(5)(7)

LQ AppleTalk ImageWriter	7.0.1	LocalTalk	(1)
StyleWriter			
StyleWriter 1500	2.2	Serial/Shareable	(2)(9)
StyleWriter GX	1.1.1	Serial	(5)(7)
StyleWriter II			
StyleWriter 1500	2.2	Serial/Shareable	(2)(9)
Color SW 1500 GX	1.0	Serial/Shareable	(5)
Printer Driver	**Version**	**Cable**	**Notes**
Portable StyleWriter			
Portable StyleWriter	1.0.1	Serial	
Color StyleWriter Pro			
Color SW Pro	1.5.2	Serial/Shareable	(2)
Color Stylewriter Pro GX	1.0	Serial/Shareable	(5)
StyleWriter 1200			
StyleWriter 1500	2.2	Serial/Shareable	(2)(9)
Color SW 1500 GX	1.0	Serial/Shareable	(5)
Color StyleWriter 1500			
Color StyleWriter 1500	2.2	Serial/Shareable	(2)
		EtherTalk	(10)
Color SW 1500 GX	1.0	Serial/Shareable	(5)
Printer Driver	**Version**	**Cable**	**Notes**
Color StyleWriter 2200			
Color StyleWriter 2500	2.2	Serial/Shareable	(2)
		EtherTalk	(10)
Color SW 2500 GX	1.0	Serial/Shareable	(5)
Color StyleWriter 2400			

Color StyleWriter 2500	2.2	Serial/Shareable	(2)
		LocalTalk	(3)
Color SW 2500 GX	1.0	Serial/Shareable	(5)
Color StyleWriter 2500			
Color StyleWriter 2500	2.2	Serial/Shareable	(2)
		LocalTalk	(10)
Color SW 2500 GX	1.0	Serial/Shareable	(5)
Color Printer			
Apple Color Printer	1.0	SCSI/Shareable	(2)

Apple LaserWriter Printers

Printer Driver	Version	Cable	Notes
Personal LaserWriter LS			
Personal LW LS	7.2	Serial	
LaserWriter 300	1.2	Serial/Shareable	(2)
LaserWriter 300 GX	1.1.1	Serial/Shareable	(5)(7)
Personal LaserWriter NT			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.4.1	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
Personal LaserWriter NTR			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.4.1	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
Personal LaserWriter SC			
Personal LW SC	7.0.1	SCSI	

LaserWriter IISC GX	1.0	SCSI	(5)
Personal LaserWriter 300			
LaserWriter 300	1.2	Serial/Shareable	(2)
LaserWriter 300 GX	1.1.1	Serial/Shareable	(5)(7)
Printer Driver	**Version**	**Cable**	**Notes**
Personal LaserWriter 320			
LaserWriter	8.4.1	LocalTalk	
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter			
LaserWriter	7.1.2	LocalTalk	(4)
LaserWriter	8.4.1	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter Plus			
LaserWriter	7.1.2	LocalTalk	(4)
LaserWriter	8.4.1	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter IISC			
Personal LW SC	7.0.1	SCSI	
LaserWriter IISC GX	1.1.1	SCSI	(5)(7)
Printer Driver	**Version**	**Cable**	**Notes**
LaserWriter IINT			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.4.1	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter IINTX			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.4.1	LocalTalk	(6)

LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter IIf			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.4.1	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter IIg			
LaserWriter	7.1.2	LocalTalk, Ethernet	
LaserWriter	8.4.1	LocalTalk, Ethernet	(6)
LaserWriter GX	1.1.2	LocalTalk, Ethernet	(5)(7)
LaserWriter Select 300			
LW Select 300	1.2	Serial/Shareable	(2)
LaserWriter 300	1.2	Serial/Shareable	(2)
LaserWriter 300 GX	1.1.1	Serial/Shareable	(5)(7)
Printer Driver	**Version**	**Cable**	**Notes**
LaserWriter Select 310			
LW Select 310	7.0.1	Serial	
LaserWriter GX	1.1.2	Serial	(5)(7)
LaserWriter Select 360			
LaserWriter	7.1.2	Serial, LocalTalk	
LaserWriter	8.4.1	Serial, LocalTalk	(6)(8)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter Pro 600			
LaserWriter	7.1.2	Serial, LocalTalk	

LaserWriter	8.4.1	Serial, LocalTalk	(6)
LaserWriter GX	1.1.2	Serial, LocalTalk	(5)(7)
LaserWriter Pro 630			
LaserWriter	7.1.2	Serial, LocalTalk, Ethernet	
LaserWriter	8.4.1	Serial, LocalTalk, Ethernet	(6)
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)
LaserWriter Pro 810			
LaserWriter	7.1.2	Serial, LocalTalk, Ethernet	
LaserWriter	8.4.1	Serial, LocalTalk, Ethernet	(6)(8)
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)

Printer Driver	Version	Cable	Notes
LaserWriter 4/600 PS			
LaserWriter	8.4.1	LocalTalk	
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter 16/600 PS			
LaserWriter	8.4.1	Serial, LocalTalk, Ethernet	(6)(8)
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)
LaserWriter 12/640 PS			

LaserWriter	8.4	Serial, LocalTalk, Ethernet,	
LaserWriter	8.4.1	Serial, LocalTalk, Ethernet,	(11)
Color LaserWriter 12/600 PS			
LaserWriter	8.4.1	Serial, LocalTalk, Ethernet	
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)
Color LaserWriter 12/660 PS			
LaserWriter	8.4.1	Serial, LocalTalk, Ethernet	
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)

Notes	
1	With LocalTalk Option card installed.
2	Uses GrayShare. Apple's GrayShare technology gives you the ability to print over 130 shades of gray and lets you connect your printer to a network through your Macintosh. Color StyleWriter printers uses ColorShare instead of GrayShare.
3	LocalTalk requires Color StyleWriter 2400 LocalTalk Module (M3458LL/A).
4	Some LaserWriters and LaserWriter Plus printers are not compatible with LaserWriter 7.1.2 and should use the LaserWriter 7.0 or 8.1.1 driver instead.
5	All GX printer drivers require System 7.5 (or greater) and QuickDraw GX. You cannot use these drivers without QuickDraw GX installed.
6	LaserWriter 8.4.1 driver update is posted online.

7	These drivers were updated from 1.0 when you install QuickDraw GX v1.1.2
8	For support of the optional PostScript Fax Card and use of the Fax Phone Book features, use LaserWriter 8.2.2f.
9	Use the StyleWriter 1200 driver to print from a Power Macintosh with System 7.5.2 to a StyleWriter I or II Printer.
10	LocalTalk requires LocalTalk Module (M4615ZM/A). EtherTalk requires EtherTalk Adapter (M4775LL/A).
11	The LaserWriter 8.3.4 driver can be helpful when troubleshooting the LaserWriter 12/640 PS printer. However, it is not recommended for daily use. When using the this driver, you must use the PPD supplied from the LaserWriter 8.4.1 software.

End_Table

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

This article was published in 10 April 1996 Information Alley.

Article Change History:
26 Nov 1996 - Corrected CSTW 2200.
24 Oct 1996 - Corrected CSTW 1500 EtherTalk. Added CLW 12/660 PS.
22 Oct 1996 - Updated to included latest drivers.

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Tech Info Library Article Number:15372

Tech Info Library

Apple Printers: Printer Drivers & Cables (2/97)

Revised: 2/27/97
Security: Everyone

Apple Printers: Printer Drivers & Cables (2/97)

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Article Created: 17 May 1994
Article Reviewed/Updated: 27 February 1997

TOPIC -----

This articles provides a chart of Apple printers, their appropriate drivers, and the cables to use.

DISCUSSION -----

Begin_Table

Apple ImageWriter and StyleWriter Printers			
Printer Driver	Version	Cable	Notes
ImageWriter			
ImageWriter	7.0.1	Serial	
ImageWriter GX	1.1.1	Serial	(5)(7)
ImageWriter II			
ImageWriter	7.0.1	Serial	
ImageWriter GX	1.1.1	Serial	(5)(7)
AppleTalk ImageWriter	7.0.1	LocalTalk	(1)
ImageWriter LQ			
LQ ImageWriter	7.0.1	Serial	
ImageWriter LQ GX	1.1.1	Serial	(5)(7)

LQ AppleTalk ImageWriter	7.0.1	LocalTalk	(1)
StyleWriter			
StyleWriter 1500	2.2	Serial/Shareable	(2)(9)
StyleWriter GX	1.1.1	Serial	(5)(7)
StyleWriter II			
StyleWriter 1500	2.2	Serial/Shareable	(2)(9)
Color SW 1500 GX	1.0	Serial/Shareable	(5)
Printer Driver	**Version**	**Cable**	**Notes**
Portable StyleWriter			
Portable StyleWriter	1.0.1	Serial	
Color StyleWriter Pro			
Color SW Pro	1.5.2	Serial/Shareable	(2)
Color Stylewriter Pro GX	1.0	Serial/Shareable	(5)
StyleWriter 1200			
StyleWriter 1500	2.2	Serial/Shareable	(2)(9)
Color SW 1500 GX	1.0	Serial/Shareable	(5)
Color StyleWriter 1500			
Color StyleWriter 1500	2.2	Serial/Shareable	(2)
		EtherTalk	(10)
Color SW 1500 GX	1.0	Serial/Shareable	(5)
Printer Driver	**Version**	**Cable**	**Notes**
Color StyleWriter 2200			
Color StyleWriter 2500	2.2	Serial/Shareable	(2)
		EtherTalk	(10)
Color SW 2500 GX	1.0	Serial/Shareable	(5)
Color StyleWriter 2400			

Color StyleWriter 2500	2.2	Serial/Shareable	(2)
		LocalTalk	(3)
Color SW 2500 GX	1.0	Serial/Shareable	(5)
Color StyleWriter 2500			
Color StyleWriter 2500	2.2	Serial/Shareable	(2)
		LocalTalk	(10)
Color SW 2500 GX	1.0	Serial/Shareable	(5)
Color Printer			
Apple Color Printer	1.0	SCSI/Shareable	(2)

Apple LaserWriter Printers

Printer Driver	Version	Cable	Notes
Personal LaserWriter LS			
Personal LW LS	7.2	Serial	
LaserWriter 300	1.2	Serial/Shareable	(2)
LaserWriter 300 GX	1.1.1	Serial/Shareable	(5)(7)
Personal LaserWriter NT			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.4.1	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
Personal LaserWriter NTR			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.4.1	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
Personal LaserWriter SC			
Personal LW SC	7.0.1	SCSI	

LaserWriter IISC GX	1.0	SCSI	(5)
Personal LaserWriter 300			
LaserWriter 300	1.2	Serial/Shareable	(2)
LaserWriter 300 GX	1.1.1	Serial/Shareable	(5)(7)

Printer Driver	Version	Cable	Notes
Personal LaserWriter 320			
LaserWriter	8.4.1	LocalTalk	
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter			
LaserWriter	7.1.2	LocalTalk	(4)
LaserWriter	8.4.1	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter Plus			
LaserWriter	7.1.2	LocalTalk	(4)
LaserWriter	8.4.1	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter IISC			
Personal LW SC	7.0.1	SCSI	
LaserWriter IISC GX	1.1.1	SCSI	(5)(7)

Printer Driver	Version	Cable	Notes
LaserWriter IINT			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.4.1	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter IINTX			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.4.1	LocalTalk	(6)

LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter IIf			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.4.1	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter IIg			
LaserWriter	7.1.2	LocalTalk, Ethernet	
LaserWriter	8.4.1	LocalTalk, Ethernet	(6)
LaserWriter GX	1.1.2	LocalTalk, Ethernet	(5)(7)
LaserWriter Select 300			
LW Select 300	1.2	Serial/Shareable	(2)
LaserWriter 300	1.2	Serial/Shareable	(2)
LaserWriter 300 GX	1.1.1	Serial/Shareable	(5)(7)
Printer Driver	**Version**	**Cable**	**Notes**
LaserWriter Select 310			
LW Select 310	7.0.1	Serial	
LaserWriter GX	1.1.2	Serial	(5)(7)
LaserWriter Select 360			
LaserWriter	7.1.2	Serial, LocalTalk	
LaserWriter	8.4.1	Serial, LocalTalk	(6)(8)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter Pro 600			
LaserWriter	7.1.2	Serial, LocalTalk	

LaserWriter	8.4.1	Serial, LocalTalk	(6)
LaserWriter GX	1.1.2	Serial, LocalTalk	(5)(7)
LaserWriter Pro 630			
LaserWriter	7.1.2	Serial, LocalTalk, Ethernet	
LaserWriter	8.4.1	Serial, LocalTalk, Ethernet	(6)
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)
LaserWriter Pro 810			
LaserWriter	7.1.2	Serial, LocalTalk, Ethernet	
LaserWriter	8.4.1	Serial, LocalTalk, Ethernet	(6)(8)
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)

Printer Driver	Version	Cable	Notes
LaserWriter 4/600 PS			
LaserWriter	8.4.1	LocalTalk	
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter 16/600 PS			
LaserWriter	8.4.1	Serial, LocalTalk, Ethernet	(6)(8)
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)
LaserWriter 12/640 PS			(12)

LaserWriter	8.4	Serial, LocalTalk, Ethernet,	
LaserWriter	8.4.1	Serial, LocalTalk, Ethernet,	(11)
Color LaserWriter 12/600 PS			
LaserWriter	8.4.1	Serial, LocalTalk, Ethernet	
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)
Color LaserWriter 12/660 PS			
LaserWriter	8.4.1	Serial, LocalTalk, Ethernet	
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)

Notes	
1	With LocalTalk Option card installed.
2	Uses GrayShare. Apple's GrayShare technology gives you the ability to print over 130 shades of gray and lets you connect your printer to a network through your Macintosh. Color StyleWriter printers uses ColorShare instead of GrayShare.
3	LocalTalk requires Color StyleWriter 2400 LocalTalk Module (M3458LL/A).
4	Some LaserWriters and LaserWriter Plus printers are not compatible with LaserWriter 7.1.2 and should use the LaserWriter 7.0 or 8.1.1 driver instead.
5	All GX printer drivers require System 7.5 (or greater) and QuickDraw GX. You cannot use these drivers without QuickDraw GX installed.
6	LaserWriter 8.4.1 driver update is posted online.

7	These drivers were updated from 1.0 when you install QuickDraw GX v1.1.2
8	For support of the optional PostScript Fax Card and use of the Fax Phone Book features, use LaserWriter 8.2.2f.
9	Use the StyleWriter 1200 driver to print from a Power Macintosh with System 7.5.2 to a StyleWriter I or II Printer.
10	LocalTalk requires LocalTalk Module (M4615ZM/A). EtherTalk requires EtherTalk Adapter (M4775LL/A).
11	The LaserWriter 8.3.4 driver can be helpful when troubleshooting the LaserWriter 12/640 PS printer. However, it is not recommended for daily use. When using the this driver, you must use the PPD supplied from the LaserWriter 8.4.1 software.
12	On the LaserWriter 12/640 PS in order to change the printer name or toggle the startup page, you need to use an Ethernet or LocalTalk connection. You cannot use a serial connection to perform these changes.

End_Table

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

This article was published in 10 April 1996 Information Alley.

Article Change History:
27 Feb 1997 - Added Note 12 to the article.
26 Nov 1996 - Corrected CSTW 2200.
24 Oct 1996 - Corrected CSTW 1500 EtherTalk. Added CLW 12/660 PS.

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Tech Info Library Article Number:15372

Tech Info Library

Apple Printers: Printer Drivers & Cables (7/96)

Revised: 7/3/96
Security: Everyone

Apple Printers: Printer Drivers & Cables (7/96)

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Article Created: 17 May 1994
Article Reviewed/Updated: 3 July 1996

TOPIC ----------

This articles provides a chart of Apple printers, their appropriate drivers, and the cables to use.

DISCUSSION ----------

Begin_Table

Apple ImageWriter and StyleWriter Printers			
Printer Driver	Version	Cable	Notes
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ImageWriter II			
ImageWriter	7.0.1	Serial	
ImageWriter GX	1.1.1	Serial	(5)(7)
AppleTalk ImageWriter	7.0.1	LocalTalk	(1)
ImageWriter LQ			
LQ ImageWriter	7.0.1	Serial	
ImageWriter LQ GX	1.1.1	Serial	(5)(7)

LQ AppleTalk ImageWriter	7.0.1	LocalTalk	(1)
StyleWriter			
StyleWriter	7.2.3	Serial	
StyleWriter II	1.2	Serial/Shareable	(2)(9)
StyleWriter GX	1.1.1	Serial	(5)(7)
StyleWriter II			
StyleWriter II	1.2	Serial/Shareable	(2)(9)
StyleWriter GX	1.1.1	Serial/Shareable	(5)(7)
Printer Driver	**Version**	**Cable**	**Notes**
Portable StyleWriter			
Portable StyleWriter	1.0.1	Serial	
Color StyleWriter Pro			
Color SW Pro	1.5.2	Serial/Shareable	(2)
Color Stylewriter Pro GX	1.0	Serial/Shareable	(5)
StyleWriter 1200			
StyleWriter 1200	2.0	Serial/Shareable	(2)(9)
StyleWriter GX	1.1.1	Serial	(5)(7)
Color StyleWriter 1500			
Color StyleWriter 1500	2.2	Serial/Shareable	(2)
		LocalTalk	(10)
Color SW 1500 GX	1.0	Serial/Shareable	(5)
Printer Driver	**Version**	**Cable**	**Notes**
Color StyleWriter 2200			
Color StyleWriter 2200	2.1	Serial/Shareable	(2)
Color SW 2200 GX	1.0.1	Serial/Shareable	(5)
Color StyleWriter 2400	2.1.1	Serial/Shareable	(2)

		LocalTalk	(3)
Color StyleWriter 2400			
Color StyleWriter 2400	2.1.1	Serial/Shareable	(2)
		LocalTalk	(3)
Color SW 2400 GX	1.0.1	Serial/Shareable	(5)(7)
Color StyleWriter 2500			
Color StyleWriter 2500	2.2	Serial/Shareable	(2)
		LocalTalk	(10)
Color SW 2500 GX	1.0	Serial/Shareable	(5)
Color Printer			
Apple Color Printer	1.0	SCSI/Shareable	(2)

Apple LaserWriter Printers

Printer Driver	Version	Cable	Notes
Personal LaserWriter LS			
Personal LW LS	7.2	Serial	
LaserWriter 300	1.2	Serial/Shareable	(2)
LaserWriter 300 GX	1.1.1	Serial/Shareable	(5)(7)
Personal LaserWriter NT			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.3.4	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
Personal LaserWriter NTR			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.3.4	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)

Personal LaserWriter SC			
Personal LW SC	7.0.1	SCSI	
LaserWriter IISC GX	1.0	SCSI	(5)
Personal LaserWriter 300			
LaserWriter 300	1.2	Serial/Shareable	(2)
LaserWriter 300 GX	1.1.1	Serial/Shareable	(5)(7)
Printer Driver	**Version**	**Cable**	**Notes**
Personal LaserWriter 320			
LaserWriter	8.3.4	LocalTalk	
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter			
LaserWriter	7.1.2	LocalTalk	(4)
LaserWriter	8.3.4	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter Plus			
LaserWriter	7.1.2	LocalTalk	(4)
LaserWriter	8.3.4	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter IISC			
Personal LW SC	7.0.1	SCSI	
LaserWriter IISC GX	1.1.1	SCSI	(5)(7)
Printer Driver	**Version**	**Cable**	**Notes**
LaserWriter IINT			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.3.4	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter IINTX			

Printer Driver	Version	Cable	Notes
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.3.4	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter IIf			
LaserWriter	7.1.2	LocalTalk	
LaserWriter	8.3.4	LocalTalk	(6)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter IIg			
LaserWriter	7.1.2	LocalTalk, Ethernet	
LaserWriter	8.3.4	LocalTalk, Ethernet	(6)
LaserWriter GX	1.1.2	LocalTalk, Ethernet	(5)(7)
LaserWriter Select 300			
LW Select 300	1.2	Serial/Shareable	(2)
LaserWriter 300	1.2	Serial/Shareable	(2)
LaserWriter 300 GX	1.1.1	Serial/Shareable	(5)(7)
LaserWriter Select 310			
LW Select 310	7.0.1	Serial	
LaserWriter GX	1.1.2	Serial	(5)(7)
LaserWriter Select 360			
LaserWriter	7.1.2	Serial, LocalTalk	
LaserWriter	8.3.4	Serial, LocalTalk	(6)(8)
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter Pro 600			

..TIL15372-Apple_Printers-Printer_Drivers_and_Cables_7-96.pdf

LaserWriter	7.1.2	Serial, LocalTalk	
LaserWriter	8.3.4	Serial, LocalTalk	(6)
LaserWriter GX	1.1.2	Serial, LocalTalk	(5)(7)
LaserWriter Pro 630			
LaserWriter	7.1.2	Serial, LocalTalk, Ethernet	
LaserWriter	8.3.4	Serial, LocalTalk, Ethernet	(6)
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)
LaserWriter Pro 810			
LaserWriter	7.1.2	Serial, LocalTalk, Ethernet	
LaserWriter	8.3.4	Serial, LocalTalk, Ethernet	(6)(8)
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)
Printer Driver	Version	Cable	Notes
LaserWriter 4/600 PS			
LaserWriter	8.3.4	LocalTalk	
LaserWriter GX	1.1.2	LocalTalk	(5)(7)
LaserWriter 16/600 PS			
LaserWriter	8.3.4	Serial, LocalTalk, Ethernet	(6)(8)
LaserWriter GX	1.1.2	Serial,	

		LocalTalk, Ethernet	(5)(7)
LaserWriter 12/640 PS			
LaserWriter	8.4	Serial, LocalTalk, Ethernet,	
LaserWriter	8.3.4	Serial, LocalTalk, Ethernet,	(11)
Color LaserWriter 12/600 PS			
LaserWriter	8.3.4	Serial, LocalTalk, Ethernet	
LaserWriter GX	1.1.2	Serial, LocalTalk, Ethernet	(5)(7)

	Notes
1	With LocalTalk Option card installed.
2	Uses GrayShare. Apple's GrayShare technology gives you the ability to print over 130 shades of gray and lets you connect your printer to a network through your Macintosh. Color StyleWriter printers uses ColorShare instead of GrayShare.
3	LocalTalk requires Color StyleWriter 2400 LocalTalk Module (M3458LL/A).
4	Some LaserWriters and LaserWriter Plus printers are not compatible with LaserWriter 7.1.2 and should use the LaserWriter 7.0 or 8.1.1 driver instead.
5	All GX printer drivers require System 7.5 (or greater) and QuickDraw GX. You cannot use these drivers without QuickDraw GX installed.
6	LaserWriter 8.3.4 driver update is posted online.
7	These drivers were updated from 1.0 when you install QuickDraw GX v1.1.2
8	For support of the optional PostScript Fax Card and use of the Fax Phone Book features, use LaserWriter 8.2.2f.

9	Use the StyleWriter 1200 driver to print from a Power Macintosh with System 7.5.2 to a StyleWriter I or II Printer.
10	LocalTalk requires LocalTalk Module (M4615ZM/A). EtherTalk requires EtherTalk Adapter (M4775LL/A).
11	The LaserWriter 8.3.4 driver can be helpful when troubleshooting the LaserWriter 12/640 PS printer. However, it is not recommended for daily use. When using the this driver, you must use the PPD supplied from the LaserWriter 8.4 software.

End_Table

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

This article was published in 10 April 1996 Information Alley.

Article Change History:
03 Jul 1996 - Updated Color StyleWriter Pro driver version.
28 Jun 1996 - Added the LaserWriter 12/640 PS printer.
10 Apr 1996 - Added information on CSW 1500 and CSW 2500.

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Tech Info Library Article Number:15372

Tech Info Library

TITLE

Other Printers: Print Drivers and Cable Matrix

Article ID: 15372
Created: 5/17/94
Modified: 1/11/00

TOPIC

This article provides a chart of the Apple ImageWriters and the Apple Color printer, their appropriate print drivers, and the cables to use.

Most print drivers are available for download from the Apple Software Updates Web site at **http://www.apple.com/swupdates**. Use the print driver name as the search query.

DISCUSSION

Apple ImageWriter Printers			
Printer Driver	Version	Cable	Notes
ImageWriter			
ImageWriter	7.0.1	Serial	-
ImageWriter GX	1.1.1	Serial	(3)(4)
ImageWriter II			
ImageWriter	7.0.1	Serial	-
ImageWriter GX	1.1.1	Serial	(3)(4)
AppleTalk ImageWriter	7.0.1	LocalTalk	(1)
ImageWriter LQ			
LQ ImageWriter	7.0.1	Serial	-
ImageWriter LQ GX	1.1.1	Serial	(3)(4)
LQ AppleTalk ImageWriter	7.0.1	LocalTalk	(1)

Apple Color Printer			
Printer Driver	Version	Cable	Notes
Color Printer			
Apple Color Printer	1.0	SCSI/Shareable	(2)(5)

Notes	
1	With LocalTalk Option card installed.
2	Uses GrayShare, Apple's GrayShare technology gives you the ability to print over 130 shades of gray and lets you connect your printer to a network through your Macintosh. Color StyleWriter printers uses ColorShare instead of GrayShare.
3	All GX printer drivers require System 7.5 (or greater) and QuickDraw GX. You cannot use these drivers without QuickDraw GX installed.
4	These drivers were updated from 1.0 when you install QuickDraw GX v1.1.2
5	Contact GDT Softworks for QuickDraw GX versions of these printer drivers.

Other Printer Driver and Cable Articles

For additional information on printer drivers and cables check the following TIL articles:

Article 30153: "**StyleWriter Printers": Print Drivers & Cable Matrix**"
Article 30154: "**LaserWriter Printers: Print Drivers & Cable Matrix**"

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

---

Document Information
Product Area: Printers
Category: ImageWriters
Sub Category: General Topics

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Tech Info Library

AWS 95: Retrospect Backup Error -24702, Name Too Long (6/94)

Revised: 6/9/94
Security: Everyone

AWS 95: Retrospect Backup Error -24702, Name Too Long (6/94)

==========

Article Created: 16 May 1994
Article Reviewed/Updated: 9 June 1994

TOPIC ----------

I just installed a new Apple Workgroup Server (AWS) 95 with AppleShare Pro 1.1. I'm now using Retrospect Remote to do backup, and I received the following error:

```
5/4/94 3:01:05 A.M. Copying /
While scanning volume "/",
File "/mac/sys/Startup System Folder/Pre3.01_Startup Folder/•fs_cache",
Unix scanning trouble, error -24702
File "mac/sys/System Folder/Pre3.0.1_System Folder/*fs_cache",
Unix scanning trouble, error -24702
Internal consistency check failed:
Assertion check at "elem.c-696"
5/4/94  7:38:38 Execution completed successfully

Quit at 5/4/94 7:38 A.M.
```

Can you tell me what this means? I had to reinstall the Unix and Apple/sahre because of a hard crash. The next backup completed without an error.

DISCUSSION ----------

The -24702 error occurs when Retrospect A/UX encounters a file or folder with a name longer than 31 characters (the Macintosh Operating System limit). Names longer than 31 characters will be truncated to 31 characters and a -24702 error will appear in the Retrospect log. NOTE: The files are backed up. Please read the "Special considerations for A/UX backups" (pages 30 and 31) section (3rd bullet) in Retrospect A/UX manual for more information.

The folders "/mac/sys/Startup System Folder/Pre3.01_Startup Folder" and "/mac/sys/System Folder/Pre3.0.1_System Folder/*fs_cache" were created when you reinstalled the AWS 95 software. These folders are not necessary for the proper

operation of the AWS 95. These folders were created by moving the contents of the System Folder present on the "/" volume before replacing them with the files on the Installation CD. This is done so files are not overwritten during a reinstall and therefore allow the user to recover parts of these two folders if necessary. If you have extracted all the files you need out of these two folders, we recommend removing them since they serve no other purpose, and they need not be present on your system. Dantz is aware of this limitation, and we are not aware of any plans to change the behavior of Retrospect in this situation.

Article Change History:
09 Jun 1994 - Change article title to be more descriptive.

Support Information Services

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Tech Info Library Article Number:15375

MAE: Application Compatibility List (6/96)

Revised: 6/25/96
Security: Everyone

MAE: Application Compatibility List (6/96)

==========

Article Created: 17 May 1994
Article Reviewed/Updated: 25 June 1996

TOPIC ----------

Apple has worked with a number of software vendors in order to optimize functionality and performance of their applications running under the Macintosh Applications environment (MAE), and to ensure that leading Macintosh compatible applications are also compatible with MAE. In order to verify that MAE supports major functionality of key Macintosh applications, Apple has used the following software titles with MAE version 1.0 and found them to operate normally. As testing continues, (either by Apple and/or ISVs) Apple expects to add many new titles to this list.

Many other applications may run, but those applications have either not been tested by Apple or reported tested by the ISV. In general, those applications which support Inside Macintosh specifications and run 32-bit clean should run on MAE.

For more information about the compatibility of a particular program please contact the software vendor.

Apple provides this list for information purposes only, and the list does not represent a product endorsement on the part of Apple.

DISCUSSION ----------

Company	Product
ACI	4th Dimension (To get the version of 4th Dimension, users should contact ACI directly to receive a 1.4 MB key disk for 4th Dimension)
	4D Client
	4D First
	Object Master

Aladdin Systems	Stuffit Expander 3.0.7
Aldus Corp.	Persuasion 2.12 PageMaker 5.0 Freehand 4.0 Fetch (Fetch 3.0 and higher will not work with MAE 2.0.2, use version 2.x.x.) SuperPaint 3.0 TouchBase Datebook 3.01
Adobe Systems	Adobe Photoshop 2.5 Adobe Illustrator 5.0 Adobe Type Manager
Advanced Software	Dow Comp II 1.0.6
Apple	DocViewer 1.1.1 TeachText 7.1
Attain Corp.	In Control 2.0.3
Berkeley Systems	After Dark 2.0.3
Broderbund Software	Mac Globe 1.3.0
Caravelle NetWorks	NetWORKS
CE Software	QuicKeys
Claris Corp.	ClarisWorks 2.1 FileMaker Pro 2.1v1 MacProject Pro 1.5v1 MacDraw Pro 1.5v2 MacWrite Pro 1.0v4 HyperCard Player 2.2 MacDraw II 1.1v2 MacPaint 2.0 Resolve 1.1v1 Impact 1.0v1
DeltaPoint	DeltaGraph Pro 3
Deneba Software	Canvas 3.5
Frame Technology	FrameMaker 4 4.0
Fractal Design Corp.	Designer Sketcher 1.0
Intuit	Quicken 4.0

Lotus Development	Lotus 123 1.1
MECA Software	Managing Your Money 4.0
Microsoft Corp.	Word 5.1a Excel 4.0 PowerPoint 3.0b Works Project
Nisus Software	Nisus 3.47
NOW Software	Now Utilities 4.0.2 Now Contact 1.0 Now Up to Date
ON Technology	MeetingMaker XP (Please contact On Technology directly to buy the appropriate version on Meeting Maker XP compatible with MAE)
Pastel Development	DayMaker Organizer 3.0
PeachTree Software	Accounting 2.0 Batch 04
Portfolio Software	DynoPage 2.0 Dynodex
Quark Inc.	QuarkXPress 3.2
ChipSoft	MacInTax
Symantec Corp.	More 3.1
WordPerfect Corp.	WordPerfect 3.0 WordPerfectWorks 1.2
Wolfram Research	Mathematica 2.1.0.2
Writing Tools	American Heritage Eng. Dict. (AHED) College Edition

Article Change History:
25 Jun 1996 - Updated Fetch information.
06 Jun 1994 - Updated list of applications.

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Tech Info Library Article Number:15380

Tech Info Library

Bracketed Entries In AppleShare Print Server Queue (5/94)

Revised: 5/18/94
Security: Everyone

Bracketed Entries In AppleShare Print Server Queue (5/94)

==========

Article Created: 16 May 1994

TOPIC -----

LaserWriter driver 8.x.x print server jobs show as bracketed entries in the queue while LaserWriter driver 7.x jobs do not, why?

DISCUSSION -----

We installed and compared AppleShare Print Server 3.0, 3.0.3b, as well as a 4.0.1 and noted they all log print jobs the same: LaserWriter driver 8.x.x print jobs are bracketed whereas 7.x are not. This is normal, and we believe is due to the drivers being PostScript Level II or Level I respectively, and the spoolers handle the print job queries from the 7.x and 8.x.x drivers differently.

Support Information Services

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Tech Info Library Article Number:15381

Tech Info Library

Wrkgrp Server 6150 & 8150: About This Macintosh Results (1/95)

Revised: 1/10/95
Security: Everyone

Wrkgrp Server 6150 & 8150: About This Macintosh Results (1/95)

==========

Article Created: 16 May 1994
Article Reviewed/Updated: 10 January 1995

TOPIC -----

With the appropriate enablers installed in the Workgroup Server 6150 and 8150, they appear as Power Macintosh 6100/60 and 8100/80 computers respectively under About This Macintosh.

Aren't there new enablers for the WS 6150 and 8150? Should I use the WS 9150 enabler?

DISCUSSION -----

New ROMs and enablers for the WS 6150 and 8150 were not introduced. They use the same as the Power Macintosh computers and "About This Macintosh" will report a Power Macintosh 6100/60 or 8100/80.

Only the WS 9150 has new ROMs and an enabler which only work in the WS 9150.

Article Change History:
10 Jan 1995 - Clarified topic and discusison fields.

Support Information Services

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Tech Info Library Article Number:15382

Tech Info Library

AppleShare: Disk is Unreadable (5/94)

Revised: 6/7/94
Security: Everyone

AppleShare: Disk is Unreadable (5/94)

==========

Article Created: 18 May 1994

TOPIC ----------

When I mount a volume through AppleShare, I get the message that the disk is unreadable. What is going on?

DISCUSSION ----------

It is very likely that there is an old version of DOS Mounter (prior to 3.0) in your System folder. Remove it, restart and try again. Contact Dayna for any updates to DOS Mounter.

Support Information Services

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Tech Info Library Article Number:15383

Tech Info Library

AppleShare: Extension vs Server & Drag Install (5/94)

Revised: 5/18/94
Security: Everyone

AppleShare: Extension vs Server & Drag Install (5/94)

==========

Article Created: 18 May 1994

TOPIC -----

What is the difference between AppleShare (the extension) and AppleShare Server software? Why can’t the AppleShare extension be drag installed?

DISCUSSION -----

The AppleShare extension enables a Macintosh to access network volumes and services through the Chooser. AppleShare Server software when installed on a Macintosh, allows network users to store, retrieve and share files and applications on a central, dedicated Macintosh server. The extension on an individual Macintosh allows the access the AppleShare Server running on a remote Macintosh.

The AppleShare extension cannot be drag installed because the Installer program must install System resources as well as the extension.

Support Information Services

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Tech Info Library Article Number:15384

Tech Info Library

Macintosh TV & Sound Manger 3.0 Problem (12/94)

Revised: 12/2/94
Security: Everyone

Macintosh TV & Sound Manger 3.0 Problem (12/94)

==========

Article Created: 18 May 1994
Article Reviewed/Updated: 2 December 1994

TOPIC ----------

The "Sound 8.0.1" control panel and the "Sound Manager 3.0" extension do not seem to work correctly on my Macintosh TV. After I installed these two files (replacing pre-installed Sound 7.1), monaural sounds came from the right channel ONLY through headphones and the Macintosh TV computer's internal stereo speakers, whereas with Sound 7.1 mono sounds were in both left and right channels. Audio CDs and stereo TV broadcasts were fine, however. When I removed Sound 8.0.1 and Sound Manager 3.0 and restored Sound 7.1, everything was fine. Installing Sound Manager 3.0 by itself produced the same result. This is a problem, because many new CD-ROMs now require Sound Manager 3.0. Is a fix-it 'patch' going to be made available?

DISCUSSION ----------

This problem has been corrected in System 7.5. The new Sound Manager extension functionality has been built into the System.

Article Change History:
02 Dec 1994 - Updated article to reflect System 7.5.

Support Information Services

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Tech Info Library Article Number:15386

Tech Info Library

LaserWriter Pro 810: New atprint Allows Printing From AUX (5/94)

Revised: 5/20/94
Security: Everyone

LaserWriter Pro 810: New atprint Allows Printing From AUX (5/94)

==========

Article Created: 19 May 1994

TOPIC -----

When I am using A/UX 3.1 and a LaserWriter Pro 810. When I try using the "atprint" command, I get an "idle status" returned from the printer.

DISCUSSION -----

The "atprint" uses the Printer Access Protocol (PAP) to send data to the LaserWriter Pro 810. There is a new version of the "atprint" that fixes a problem in PAP that prevented A/UX from making a connection to the LaserWriter Pro 810 with A/UX 3.0.[12] or 3.1.

To locate Apple software updates, search the Tech Info Library for the article "Where To Find Apple Software Updates".

Support Information Services

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Tech Info Library Article Number:15387

Tech Info Library

DOS Compatibility Card: How To Get Sound From Windows (5/94)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: How To Get Sound From Windows (5/94)

==========

Article Created: 19 May 1994

TOPIC -----

I have the DOS Compatibility Card, and want to use sounds when I am in Windows. Is there a way to do this?

DISCUSSION -----

Most of the sounds generated in Windows requires a sound card. Something not available on the DOS Compatibility Card and Quadra 610 DOS Compatible computers.

There is a way to use .WAV files and sounds without a sound card though. Microsoft has a driver for Windows that uses the PC Speaker instead of a sound card. The file is called SPEAK.EXE and is available on all of the online services that has a Microsoft support area. It is also available at some internet FTP sites.

Support Information Services

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Tech Info Library Article Number:15388

Tech Info Library

AppleShare 4.0.1: Cannot find the file: IWEm (5/94)

Revised: 5/19/94
Security: Everyone

AppleShare 4.0.1: "Cannot find the file: IWEm" (5/94)

==========

Article Created: 19 May 1994

TOPIC -----

There have been multiple reports of people that are having trouble installing AppleShare 4.0.1. The error they get during installation is "Cannot find the file: IWEm."

DISCUSSION -----

This is a file used by the AppleShare Print Server. You need to get the original AppleShare install disk and copy the file called "IWEm" from the AppleShare Print Server folder into the System Folder on the server's hard drive. The 4.0.1 upgrade will run correctly once this file is in place.

Support Information Services

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Tech Info Library Article Number:15390

Tech Info Library

PowerBook 500 & 280:PowerTalk Included on Some Configs (5/94)

Revised: 5/19/94
Security: Everyone

PowerBook 500 & 280:PowerTalk Included on Some Configs (5/94)

==========

Article Created: 19 May 1994

TOPIC -----

Does PowerTalk ship with the PowerBook Duo 280(c) and/or the PowerBook 500 series?

DISCUSSION -----

PowerTalk will only ship on the 12 MB configurations of the Macintosh Duo 280/280c and the Macintosh 520/520c/540/540c. It is not pre-installed, but there is an Installer folder located in the Applications folder of the hard drive.

Support Information Services

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Tech Info Library Article Number:15392

Tech Info Library

Power Macintosh Upgrade Card: PlainTalk not Supported (5/94)

Revised: 5/19/94
Security: Everyone

Power Macintosh Upgrade Card: PlainTalk not Supported (5/94)

==========

Article Created: 19 May 1994

TOPIC ----------

I successfully installed the Plaintalk software on my Quadra 700 equipped with a Power Macintosh Upgrade Card. Everything seems to work fine, except that the system doesn't seem to recognize any incoming sound. There aren't any "sound waves" appearing next to the "ear" to indicate the system is hearing me.

I have gotten the other features of the software to work fine. It will read text back to me, and I can change the configuration of the speech with no problems, but I don't have sound input.

Is this a supported configuration, and is there any way to get the software to recognize spoken commands?

DISCUSSION ----------

PlainTalk is not supported on machines with the Power Macintosh Upgrade Card installed. This is because these machines do not support the new Sound Control Panel that is required for Speech Recognition. The PlainTalk Microphone is not compatible with these machines, and the original round Apple microphone does not work with PlainTalk. Because it is not possible to select the "Options" feature of "Sound In" in the Sound Control Panel, it is not possible to select the microphone.

The Power Macintosh Upgrade Card data sheets are not very clear about this. It does, however, tell you what you get with the Power Macintosh Upgrade Card. It then continues and states: "In addition, even greater performance, as well as speech and telephony capabilities, can be yours if you choose the appropriate Power Macintosh Logic Board Upgrade for your Macintosh." Thus, PlainTalk is supported with the Power Macintosh Logic Board Upgrade, and not with the Power Macintosh Upgrade Card.

Support Information Services

..TIL15394-Power_Macintosh_Upgrade_Card-PlainTalk_not_Supported_5-94_(TA31732).pdf

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Tech Info Library Article Number:15394

Tech Info Library

LaserWriter 810: Virtual Printer Attributes (5/94)

Revised: 5/20/94
Security: Everyone

LaserWriter 810: Virtual Printer Attributes (5/94)

==========

Article Created: 20 May 1994

TOPIC ----------

We are trying to setup some LAT virtual printers with our LaserWriter Pro 810 and need a detailed list of the commands necessary to change different attributes (i.e. font, size, paper tray, etc.) of the virtual printer.

DISCUSSION ----------

Currently, you cannot permanently modify attributes such as paper trays, fonts, page orientation, etc. for virtual printers. You can, however, implement these features by encapsulating PostScript or HP PCL commands in the VAX's print queue mechanism. In other words, have the commands downloaded prior to each job. For font selection, page orientation, and tray selection, we have included the HP PCL commands to perform these functions. In terms of PostScript, the jobs themselves typically handle the font selection and page orientation.

PostScript Paper Tray Selection
==========

statusdict begin # setpapertray end

= refer to following values
---
0 - Upper tray
1 - Middle tray
2 - Lower tray
4 - Manual tray

Example: (to draw paper from middle tray)

statusdict begin 1 setpapertray end

HP PCL Paper Tray Selection

```
==========================

<esc>&l#h

<esc> = escape character
l = lowercase L
# = refer to following values
----------------------------
0 - source current (default)
1 - upper tray
2 - manual feed
4 - lower tray
5 - middle tray

Example: (to draw paper from lower tray)

<esc>&l4h


HP PCL Font Selection
=====================

<esc>(s#T    : typeface selection

# = refer to following values
----------------------------
0 - Line Printer
3 - Courier (only font supported by HP IIP)


HP PCL Page Orientation
=======================

<esc>&løo  = Portrait orientation
<esc>&l1o  = Landscape orientation

l = lowercase L
ø = zero
o = lowercase letter o

Support Information Services

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Tech Info Library Article Number:15396
```

Tech Info Library

Power Macintosh 6100 & Personal LaserWriter SC (5/94)

Revised: 5/20/94
Security: Everyone

Power Macintosh 6100 & Personal LaserWriter SC (5/94)

==========

Article Created: 20 May 1994

TOPIC -----

We have a Personal LaserWriter SC connected to a Power Macintosh 6100 and are unable to print in background mode. We have tried printer driver versions 1.0, 1.1, and 1.2. When we send a simple text document to the printer, the page starts to print and then PrintMonitor seems to take control of the computer until a dialog appears stating that a time-out error occurred.

DISCUSSION -----

You need to be using the Personal LaserWriter SC driver v7.0.1. It can be found with both System 7.0.1 or System 7.1, and is also posted on multiple on-line services.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates
- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

This is the only SCSI print driver compatible with the Power Macintosh, and should be used for both the Personal LaserWriter SC as well as the LaserWriter IISC. The Power Macintosh Read Me, as well as the manuals will be updated to reflect this.

Support Information Services

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Tech Info Library Article Number:15397

Tech Info Library

Macintosh Application Environment: Print Troubleshooting (5/94)

Revised: 5/20/94
Security: Everyone

Macintosh Application Environment: Print Troubleshooting (5/94)

==========

Article Created: 16 May 1994

TOPIC ----------

This article provides some ideas and helpful hints when troubleshooting printing problems with Macintosh Application Environment (MAE).

DISCUSSION ----------

Before you can print from MAE, UNIX printing must be correctly configured on the workstation. In addition, MAE only supports printing to Postscript printers, since Postscript is the only page description language commonly available on UNIX workstations. If there is no Postscript printer available, then you will not be able to print from MAE.

If you have never printed on your workstation, or are not sure of the types of printers available, see your system administrator, who should be able to help you solve problems with the UNIX print spooler configuration, based on the error messages displayed in the X window where you started MAE.

For flexibility with MAE, you can specify any UNIX command you choose for printing a generated PostScript file. The printing sub-system takes the user-specified command, and passes it to a UNIX shell, generating a command line similar to:

```
cat MAE.ps | USER_COMMAND
```

MAE.ps is the PostScript file generated by MAE, and USER_COMMAND is what you typed into the Setup dialog in the Chooser. Thus, the command that is used for printing reads its "standard input" to gather the PostScript file for printing. The command specified MUST be able to read the file to be printed from its standard input. Both lp and lpr (standard printing systems on UNIX workstations) have this functionality. We suggest testing a print command from the UNIX command line before entering it in a print command description in the Chooser. You should test the command by having it read its standard input, as above. If you are having problems getting a print command to work, you should

try to print from the UNIX command line.

Nothing comes out of the printer

- Have never printed from the UNIX workstation

  The underlying UNIX spooling system must be set up before printing from MAE. See your system administrator, or read the documentation that came with your workstation. The most common UNIX spoolers are lp and lpr.

- Have printed from the UNIX workstation

  1) Check the X window in which MAE was started. MAE displays any error or status messages in this window. The error messages can provide useful information about why printing isn't working. (For example, "lp: unknown printer <printer name>", or "lp: host NAME is refusing permission", or "lp: no space left on device"). Here are some common problems:

     - Remote machine is unavailable.
     - Permission has not been granted for the your machine (for remote printing via lpd).
     - There is no space left in the spooling directories (your home directory, /usr/spool).
     - The printer is not accepting requests (Type "lpstat -a" to see if this is the case. "Not accepting requests" or "disabled" means that the spooler won't use that printer.)

     A message similar to: "request id is Silence-0 (standard input)" is normal. This means that the UNIX spooler has accepted the print request. It also indicates which printer got the request.

  2) Have you ever printed from MAE? (You have to go into the Chooser and create a print command before printing in MAE.) If you've never been able to print, print a text file from UNIX, and after verifying that it worked, type the exact same command into the Chooser window without the file name. If this doesn't work, click the "File" radio button on the right, inside a dashed box labeled "destination". This causes LprWriter (just like LaserWriter 8) to save the output to a file instead of sending it to a printer. A standard file dialog pops up, asking where to put the file. After the file is saved, go to a UNIX window and try to print the file. This provides you with a print command that works, which you can enter in the chooser.

  3) If you have printed from MAE

     - If you don't explicitly specify a printer in the print command (the -d option to lp), you may be sending to the wrong printer. UNIX spoolers use an environment variable (LPDEST or PRINTER) to specify your default printer. If the environment variable isn't set, and a printer isn't specified on the command line, then the system default printer is used. The window where you started MAE should have messages saying which printer was used. You can find out the

system default printer with the command "lpstat -d". You can find the value of the environment variables by typing "printenv" in C shell, or "set" in the Bourne or Korn shells.

Note: We recommend having one print command per printer the user prints to, and explicitly specifying the printer, rather than modifying the print command each time.

- Check the UNIX spool print queue:

  "lpstat -oPRINTERNAME"

- Have you changed the print command recently?

- If you have more than one print command entered in the Chooser, do any of them work?

- Did you test printing under UNIX, using the exact same command as in the Chooser?

  Example: echo "test" | THEIR_CHOOSER_COMMAND

- Is the PPD file correct? If it's not, incorrect Postscript may be generated, such as not downloading a font that MAE thinks is resident in the printer, but really isn't. Try using the "generic" PPD (in the "Page Setup" dialog, click on the "Select PPD…" button, then the "use generic" button).

4) For some reason, the LprWriter driver may be generating incorrect Postscript. Check that Postscript is actually getting to the printer by doing the following:

   - In the "options" dialog of the print dialog (that is, click on the "options" button in the "Print" dialog) specify a cover page to be printed before the document (click on the "Before" radio button).

   - Choose "Postscript Errors - Print detailed report". If the generated Postscript actually makes it to the printer, and it contains a Postscript error, the Postscript error is printed. If nothing is printed, then something else is wrong because Postscript commands aren't getting to the printer.

5) If the desktop database (DDB) is bad, peculiar things can happen with printing. The most obvious being the driver not finding the PPD file; the driver stores an alias in the prefs file, and if the DDB is damaged, there's a chance the alias won't resolve. You can check if this is the cause by opening the Chooser, then opening the currently selected print command, and click on "Setup" or just press the <Return> key. If a damaged DDB is the problem, a message similar to what's below appears:

   "can't find prefs file"
   "can't use PPD file 'XXX', using Generic instead"

You need to re-select the PPD file for the printer.

Strange text comes out of the printer, starting with "%!PS-Adobe-3.0"

- It's not a Postscript printer.

- It's a Postscript printer, but the spooling system is interpreting the Postscript as text, instead of a Postscript program to be sent to the printer, and is printing the text of the program. This may be due to an option given to the print command (like the "-p" option with lpr), or it may be due to the spooling system being confused. See your system administrator for help in straightening out this spooling problem.

Can't cancel printing

Before the print status dialog disappears from the MAE window, you can cancel printing by holding down the <Command> and <period> keys at the same time until the "canceling printing" dialog appears. After the printing status dialog disappears from the MAE window, the print request has been given to the user-specified UNIX command for printing. At this point, you must use UNIX commands to cancel printing, for example lprm(1) or cancel(1). For information about using these commands to cancel print requests, see the appropriate man pages in the documentation that came with your workstation, or consult your administrator.

Only the first few pages of the document print

Check to see that the UNIX file systems that contain your MAE system folder (usually your home directory), and the spooling files (usually /usr/spool) aren't full using the df(1) command. If a file system is full, only a portion of your document prints because only a portion of your file was written to disk. You should see an error message in the window where you started MAE, such as: "no space on device", or "file system full", or "write error". Some files will have to be removed from the file system. See your administrator for help in resolving this problem. Note that some UNIX systems reserve a portion of a file system for the "super user" (up to 10%). The output of df(1) may not indicate that you can no longer add data to the file system.

Can't print from Aldus PageMaker

Aldus PageMaker uses its own, internal Postscript rastering driver instead of using the MAE printer driver. The Aldus driver expects the ability to talk directly to the printer to obtain information about the Postscript version and other parameters. Since MAE uses a user-specified UNIX command for printing, rather than talking to the printer directly, PageMaker cannot print using an Aldus driver. This problem is evidenced by an error message similar to:

"An error occurred while printing. Could not open the printer. Check that the printer connection is correctly set up in the Chooser."

You can print from Aldus PageMaker, but you must use the LprWriter print driver delivered as part of MAE. To do so, hold down the <OPTION> key when selecting

"Print" in PageMaker's "File" menu. This tells PageMaker that you want to use the currently selected, standard driver, rather than an Aldus driver.

Miscellaneous useful commands

To get a list of printers:

```
lpstat -a
```

To get the status for a particular printer:

```
lpstat -oPRINTER
lpq -PPRINTER
```

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15398

Tech Info Library

Apple Media Tool 1.1: Sound Conversion Issues (5/94)

Revised: 5/20/94
Security: Everyone

Apple Media Tool 1.1: Sound Conversion Issues (5/94)

==========

Article Created: 20 May 1994

TOPIC -----

This article describes issues with the "to Media Kit Sound" application included with the 1.1 release of the Apple Media Tool

DISCUSSION -----

The Apple Media Tool 1.1 includes a drag-and-drop application called "to Media Kit Sound." This application is included to convert AIFF and System 7 sound files into Media Kit format (.WAV) when creating a project that will be used on the Microsoft Windows platform.

There are two important issues with "to Media Kit Sound"

1) It converts only 8-bit sounds at a sample rate of 22kHz or 11kHz. Customers wishing to utilize 16-bit sound files and/or sounds at higher sample rates in a cross-platform Media Tool project should use a third-party utility to convert the sound to .WAV format. Users can also convert the sound into a QuickTime movie using Apple's "Movie Converter" application (included with the QuickTime Starter Kit).

2) It converts the original sound file dragged onto it, not a copy. Once "to Media Kit Sound" has completed conversion of a sound file to .WAV format, the original sound file is deleted. Customers should make a copy of the original sound file before converting it if they want to maintain the original.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15399

Tech Info Library

ImageWriter II: ClarisWorks Print not Centered (5/94)

Revised: 5/20/94
Security: Everyone

ImageWriter II: ClarisWorks Print not Centered (5/94)

==========

Article Created: 20 May 1994

TOPIC -----

When I print a ClarisWorks document to an ImageWriter II, the right margin is larger in print than it was on the screen.

DISCUSSION -----

According to Claris Technical Support, it is a known issue that centered text in ClarisWorks 2.x prints narrower than it should to an ImageWriter II. This makes the right margin appear to be larger than it is on the screen.

The fix is to 'fool' ClarisWorks by decreasing the right margin, so that centered text will print ‘centered,’ although it will not be centered on screen.

Support Information Services

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Tech Info Library Article Number:15400

Tech Info Library

Centris 610: Horizontal Line Flashes Across Monitor (5/94)

Revised: 5/20/94
Security: Everyone

Centris 610: Horizontal Line Flashes Across Monitor (5/94)

==========

Article Created: 20 May 1994

TOPIC -----

I have a Centris 610 and a Apple 14" Color Display (trinatron. screen). On start up there is a 1" horizontal line across the monitor, that flashes once very quickly. This happens right before receiving the "Welcome to Macintosh".

DISCUSSION -----

For a fraction of a second the monitor does display a thick horizontal white line at the lower third of the screen. This is not a sign that the monitor or the Centris 610 has or ever will have a problem. This is a simple anomaly that occurs as the video drivers are being initiated. This is not considered a problem.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15401

Tech Info Library

Newton MessagePad: Error -48204, -48205 on Mystery Capers (5/94)

Revised: 5/20/94
Security: Everyone

Newton MessagePad: Error -48204, -48205 on Mystery Capers (5/94)

==========

Article Created: 19 May 1994

TOPIC -----

When I launch Starcore's Columbo's Mystery Capers from the Extras drawer of my Newton MessagePad, I get an error message of -48204 or -48205 after the startup splash screen appears. Why?

DISCUSSION -----

This error occurs if the demo version of Columbo's Mystery Capers is installed, then the full version on the ROM card is installed. This error occurs even if the demo version is removed prior to installing the full version.

You must completely remove the preference entry from the Newton MessagePad to fix this problem. In order to remove the preference entry, you must use the application CapersFix.pkg. This application is available through online services and through the Apple Assistance Center at (800) SOS-APPL.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15402

Tech Info Library

Newton MessagePad: Phone Numbers Have # In Call Slip (5/94)

Revised: 5/20/94
Security: Everyone

Newton MessagePad: Phone Numbers Have # In Call Slip (5/94)

==========

Article Created: 19 May 1994

TOPIC -----

When dialing international telephone numbers with my Newton MessagePad, a pound sign "#" appears after the telephone number in the call slip. Why?

DISCUSSION -----

By adding the pound sign "#" at the end of a telephone number, it informs the phone system that the Newton MessagePad is finished dialing the number. Without the pound sign at the end of the number, phone systems must wait several seconds in order to determine that the all numbers have been entered. This feature was added to the Newton MessagePad 100 and 110. It was not available on the original MessagePad.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15404

Tech Info Library

Hard Disks: Locating SCSI ID Jumpers (5/94)

Revised: 5/20/94
Security: Everyone

Hard Disks: Locating SCSI ID Jumpers (5/94)

==========

Article Created: 19 May 1994

TOPIC ----------

I am looking for the SCSI ID jumpers used on hard disks. Is there a way to get them?

DISCUSSION ----------

The Molex part number for the small white jumper used to set the SCSI ID on a Quantum 250MB hard drive is 52778-0221. This part should be available at any electronics part store.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15405

Tech Info Library

Newton MessagePad 100: Missing Icons in Extras Drawer (5/94)

Revised: 5/20/94
Security: Everyone

Newton MessagePad 100: Missing Icons in Extras Drawer (5/94)

==========

Article Created: 20 May 1994

TOPIC -----

I'm missing the top row of icons in my Extras Drawer on my Newton MessagePad 100. How can I get all the icons back?

DISCUSSION -----

This symptom appears when more than 20 packages are installed either in the Newton MessagePad's internal memory, on an external PCMCIA storage card, or a combination of the two. The Newton MessagePad's Extra drawer can only handle a total of 30 icons. The Newton MessagePad 100 ships with 10 built-in icons.

On the original Newton MessagePad and the Newton MessagePad 110 all icons past the limit are not displayed and require a third-party utility to access them.

As additional packages over the limit are installed on the Newton MessagePad 100 their icons are displayed at the bottom of the Extras Drawer. As this happens, the icons in the top row of the Extras Drawer start moving off the screen.

Currently, the only work around for this symptom is to keep the total number of icons to 30 or fewer. This problem only affects the Newton MessagePad 100 devices with ROM version 1.3 (414059). This problem does not affect the original Newton MessagePad or the Newton MessagePad 110.

Support Information Services

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Tech Info Library Article Number:15406

Tech Info Library

Data Description Inc.

Revised: 5/23/94
Security: Everyone

Data Description Inc.

==========

Article Created: 23 May 1994

Data Description Inc.

PO Box 4555
Ithaca, NY 14852

Telephone: 607-257-1000

Fax: 607-257-4146

Company Profile: develops and markets data analysis software for Macintosh.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15408

Virtus Corporation

Revised: 5/23/94
Security: Everyone

Virtus Corporation

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Article Created 23 May 1994

Virtus Corporation
---
117 Edinburgh S, Ste. 204
Cary, NC 27511

919-467-9700

800-847-8871

919-460-4530 (fax)

Company Profile: develops and markets 3D rendering and display applications

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15410

Tech Info Library

About Software Corporation

Revised: 5/23/94
Security: Everyone

About Software Corporation

==========

Article Created: 23 May 1994

About Software Corporation

Telephone: 408-725-4242

Company Profile:
Develops and markets 3270 terminal applications for Macintosh

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15413

Tech Info Library

Newton MessagePad: Missing document creates Error -48807 (5/94)

Revised: 5/23/94
Security: Everyone

Newton MessagePad: Missing document creates Error -48807 (5/94)

==========

Article Created: 20 May 1994

TOPIC -----

Why do I get an error -48807 after selecting an item in the Newton MessagePad Outbox?

DISCUSSION -----

This problem occurs when the original file that was sent to the Outbox is no longer available. This typically happens in three situations:
1) The original file is on a PCMCIA card and the PCMCIA card is removed.
2) The original file is on a PCMCIA card and a PCMCIA fax modem is installed.
3) The original file has been deleted, and is no longer available.

In the first situation, you need to reinsert the PCMCIA card and reselect the file from the Outbox in order to send the file. The second situation requires a more detailed workaround.

1) Remove the PCMCIA fax modem and reinsert the PCMCIA card that contains the original document.
2) Go to the Extras Drawer and select the Outbox.
3) Selected the item waiting to be sent and tap the delete button.
4) Open the original document in the application that created it.
5) Use the Action menu to move the item from the card.
6) Use the Action menu to send the document again.
7) Remove the PCMCIA card and insert the PCMCIA Fax modem.

The document can now be faxed or mailed properly.

If the original document was deleted, there is no way to send the message again.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15414

Tech Info Library

Newton Print Pack: No Support For Canon BJ 200e Printer (8/96)

Revised: 8/27/96
Security: Everyone

Newton Print Pack: No Support For Canon BJ 200e Printer (8/96)

==========

Article Created: 20 May 1994
Article Reviewed/Updated: 27 August 1996

TOPIC ----------

I have the Newton Print Pack and a Canon BJ 200e printer. I cannot get the printer to print anything. The Newton MessagePad does not display any error messages and the document is removed from the Outbox. Why will my Newton MessagePad not print anything?

DISCUSSION ----------

The Newton Print Pack supports the Canon BJ 200, but it does not support the Canon BJ 200e.

Article Change History:
27 Aug 1996 - Corrected spelling.

Copyright 1994-96, Apple Computer, Inc

Tech Info Library Article Number:15415

Tech Info Library

Macintosh LC 575: Video Out Solution (5/94)

Revised: 5/23/94
Security: Everyone

Macintosh LC 575: Video Out Solution (5/94)

==========

Article Created: 23 May 1994

TOPIC -----

I am using a Macintosh LC 575 and wish to use it for presentations by connecting an external monitor. Is this possible?

DISCUSSION -----

Video output to external monitors or LCD panels can be achieved on Macintosh LC 575 systems through the use of Presenter 575 by Power R, Inc. The Presenter 520 (for the Macintosh LC 520/550 and Performa 550) is not compatible with the Macintosh LC 575.

For information contact:
Power R Inc.
1606 Dexter Ave. North
Seattle, WA 98109

800-729-6970

206-547-8000

206-285-0260 Fax

AppleLink: PowerR
AppleLink: D0513

Support Information Services

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Tech Info Library Article Number:15418

Tech Info Library

HyperCard: Printing reports using 'Dynamic Height' (1/95)

Revised: 1/19/95
Security: Everyone

HyperCard: Printing reports using 'Dynamic Height' (1/95)

==========

Article Created: 23 May 1994
Article Reviewed/Updated: 9 January 1995

TOPIC ----------

When using HyperCard 2.1 or 2.2 and printing reports while 'Dynamic height' is selected, individual records are split on the page. Part of the last record will be on one page and the rest of the record will appear on the next page. With 'Fixed height' specified this does not happen. I want to use the 'Dynamic height' feature to conserve paper. Is there a way to make this work?

DISCUSSION ----------
When using the 'Dynamic height' setting within HyperCard, records can become split between fields, sometimes making "illogical" breaks in the printing of the data. There are a couple of ways around this.

First, you could create a new report which compiles the same address information into a single report object. Alternately, you can create a list report format which places all report objects side-by-side. Because the objects aren't separated vertically, all record data should remain together.

Article Change History:
09 Jan 1995 - Minor formatting changes.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15419

Tech Info Library

HyperCard: Power Tools and Palette Maker (5/94)

Revised: 5/23/94
Security: Everyone

HyperCard: Power Tools and Palette Maker (5/94)

==========

Article Created: 23 May 1994

TOPIC --

I am using the Power Tools stack with HyperCard 2.2 to create a palette. I have added a background and some buttons, but when I use the palette, the buttons do not appear (they are covered by the background, which is a shape filled in). However, if I click on the spot where the button is supposed to be, it does what the button is supposed to do. How do I fix this?

DISCUSSION --

When using Palette Maker, ALL buttons will appear as transparent rectangles in the final palette. This is explained in the help card of Palette Maker.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15420

Tech Info Library

HyperCard: Printing with Fax Sender (5/94)

Revised: 5/23/94
Security: Everyone

HyperCard: Printing with Fax Sender (5/94)

==========

Article Created: 23 May 1994

TOPIC ----------

I am using HyperCard and attempting to fax cards using Fax Sender. I select 'Fax Sender' in the Chooser as the output device and select 'Print Card' or "Fax Field" from the File menu. I then receive the message 'No fax recipient has been selected- Printing has been canceled.'

Selecting 'FAX Report' or "FAX Stack' from the File menu displays the Fax Sender dialog box and faxes are transmitted successfully once a phone number is entered. How do I correct this problem?

DISCUSSION ----------

This is a symptom of a larger problem with HyperCard. When selecting 'Print Card' from the File menu, the normal dialog is not displayed. As a result, you will not be able to take advantage of any of the options in that dialog. This is the way the print card function in HyperCard has operated since its introduction.

The only work around available is to use the 'Print Stack' or 'Print Report' commands.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15421

Tech Info Library

DOS Compatibility Card: Cause of Diskette Error Message (5/94)

Revised: 5/23/94
Security: Everyone

DOS Compatibility Card: Cause of Diskette Error Message (5/94)

==========

Article Created: 23 May 1994

TOPIC ----------

I have a Quadra 610 DOS Compatible computer and when I try to switch to DOS, I get a message that reads "Diskette error - Correct the problem and press any key to retry". What is causing this to happen?

DISCUSSION ----------

This is caused when the PC Setup preference file or the drive container is removed from the hard disk. When either of these are thrown away, the DOS Compatibility Card doesn't know where to load the DOS Operating System from. To fix this error, go to the PC Setup control panel and reset your drive selections. If the drive container was thrown away, you need to create a new drive container for the DOS Compatibility Card.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15422

Tech Info Library

QuickTake 100: Use NiCad not Alkaline Batteries (5/96)

Revised: 5/8/96
Security: Everyone

QuickTake 100: Use NiCad not Alkaline Batteries (5/96)

==========

Article Created: 23 May 1994
Article Reviewed/Updated: 8 May 1996

TOPIC ----------

I am trying to use alakine batteries with my QuickTake 100 camera, but I have to frequently replace the batteries. If I leave the alkaline batteries in the QuickTake 100 for a week or so, then try to take pictures, I cannot even fill the camera twice. Is there a way to extend the life of alkaline batteries in my QuickTake 100 camera?

DISCUSSION ----------

Alkaline batteries exhibit an extremely short life when used with the QuickTake 100 camera, and should only be used when rechargable batteries (NiCads) are not available. Not matter what brand of alkaline batteries you use, you must remember that they will not last long in the QuickTake 100 camera. The best and preferred recommendation for lasting performance is to use lithium batteries. The second best choice is to use NiCads. The reasons for these recommendations are directly related to the current/voltage demands of the camera and the individual battery characteristics.

The QuickTake 100 and QuickTake 150 use AA Batteries.

Article Change History:
08 May 1996 - Added the battery size.

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Tech Info Library Article Number:15423

Tech Info Library

QuickTake 100: Maximum Image Size and DPI (5/94)

Revised: 5/23/94
Security: Everyone

QuickTake 100: Maximum Image Size and DPI (5/94)

==========

Article Created: 23 May 1994

TOPIC ----------

What is the maximum size of a QuickTake 100 image printed at 300 dpi and 150 lpi?

DISCUSSION ----------

The standard maximum size of the image that can be printed is 640 x 480 pixels or 2.133 inches by 1.6 inches at 144 dpi. You can upsample the resolution of the image to 300 dpi, with a program like Adobe PhotoShop, but the image remains the same dimensions. The other thing you can do is increase the dimensional size of the image to 6.75 x 9 inches and keep the resolution at 144 dpi or increase it to 300 dpi. The line screening is independant of the dots per inch. It can have 80-lines per inch or 150-line or 175-line screens, and it only matters if you are creating a CMYK separation to an image setter, instead of to a continuous tone color printer. The lines per inch you would choose would have to do with the type of paper you print on.

Support Information Services

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Tech Info Library Article Number:15424

QuickTake 100: Shutter Speed vs. Lens Aperture (5/94)

Revised: 5/23/94
Security: Everyone

QuickTake 100: Shutter Speed vs. Lens Aperture (5/94)

==========

Article Created: 23 May 1994

TOPIC -----

How does the QuickTake 100 decide on shutter speed and lens aperature when taking pictures? All good 35 mm cameras let the user select whether the shutter speed or lens aperture is the higher priority. Is this true of the QuickTake 100 camera?

DISCUSSION -----

The QuickTake 100 camera is not nearly as sophisticated as a 35mm camera when determining aperture opening and shutter speed. Based on an internal program QuickTake samples the ambient light level and makes a determination of its shutter speed and aperture opening. The program places more emphasis on the shutter speed rather than the aperture opening.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15425

Tech Info Library

Compatibility Checker & At Ease: Macintosh Won't Boot (8/95)

Revised: 8/9/95
Security: Everyone

Compatibility Checker & At Ease: Macintosh Won't Boot (8/95)

==========

Article Created: 23 May 1994
Article Reviewed/Updated: 9 August 1995

TOPIC ----------

I have At Ease on my Macintosh, and after running the Compatibility Checker for System 7 Pro, my machine will no longer startup.

DISCUSSION ----------

At Ease is not compatible with System 7 Pro, and therefore the Compatibility Checker will attempt to "move" At Ease out of the System Folder.

Compatibility Checker v7.1.1, which ships with System 7 Pro, attempts to move At Ease 2.0 (Work Group version) from the System Folder of the active startup disk, even if At Ease is turned on. It gives an error that there were problems moving At Ease, but doesn't explain how to fix it, and doesn't remove ANY other items from System Folder.

With At Ease 1.0, it DOES move At Ease Setup, along with all other incompatible items. The result is that the Macintosh cannot start up again, because At Ease is still the startup application designated in the boot blocks, but it is not present after the Compatibility Checker has moved it.

If At Ease 1.0 was removed from the System folder while it was 'ON' then startup with Disk Tools, drag Finder from within your System Folder (on your hard disk) to the root level of the hard disk, then drag Finder back to System Folder. This resets the boot blocks back to normal. The Macintosh should now startup to the Finder, but At Ease will not be active. If you intend to run System 7 Pro, then you cannot run At Ease.

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:15426

Tech Info Library

Power Macintosh: Apple Media Tool 1.1 Compatible (5/94)

Revised: 5/23/94
Security: Everyone

Power Macintosh: Apple Media Tool 1.1 Compatible (5/94)

==========

Article Created: 23 May 1994

TOPIC -----

I just purchased a Power Mac 7100 AV and the Apple Media Toolkit 1.0 to develop multimedia products and solutions. As soon as I launch Apple Media Tool I get the message "This application needs the 68030 processor!" and quits. Is the Apple Media Tool incompatible with the Power Macintosh?

DISCUSSION -----

Apple Media Tool 1.0 is incompatible with Power Macintosh.

Version 1.1 of Apple Media Tool works with all the Power Macintosh models.

APDA has been notified about the incompatibility of version 1.0 with Power Macintosh machines, and they will try and screen callers to make sure they order version 1.1 for Power Macintosh machines.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15427

Tech Info Library

HyperCard 2.2: Bad AppleScript Disks (5/94)

Revised: 5/23/94
Security: Everyone

HyperCard 2.2: "Bad AppleScript Disks" (5/94)

==========

Article Created: 23 May 1994

TOPIC --

When installing HyperCard 2.2, some users have reported problems with bad “AppleScript” disks

DISCUSSION --

This may be due to the fact that customers are installing HyperCard 2.2 onto Macintosh computers using System 6 systems. HyperCard 2.2 is compatible with System 6.0.5 or later, but to use the AppleScript programming language with HyperCard 2.2 a Macintosh computer must be configured with:

- System 7.0 or 7.0.1 and QuickTime 1.6 or later, OR
- System 7.1

Customers whose Macintosh computers are running System 6 will see an error during a custom installation of AppleScript which says that the disk is bad. This will not occur during an easy install.

Support Information Services

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Tech Info Library Article Number:15428

Tech Info Library

HyperCard 2.2: Pasting from Readymade Stack Doesn't Work 5/94

Revised: 5/23/94
Security: Everyone

HyperCard 2.2: Pasting from Readymade Stack Doesn't Work 5/94

==========

Article Created: 23 May 1994

TOPIC -----

I am trying to paste the card number field from "Display the card number" from Readymade Fields Stack into the Addresses stack in HyperCard 2.2. It doesn't work. It does, however, paste fine into a new blank field. Both stacks come on the HyperCard distribution disks. Any ideas on resolving this??

DISCUSSION -----

There is a problem with the script. Below is a portion of the original script.

```
on addStackScript fieldType
  get script of fieldType
  if "openCard" is in it then
    if (fieldType && "field id" && id of me) is not in it then
      put scriptBody(fieldType) & return after char ¬
      (offSet("openCard",it) + 8) of it
      set script of fieldType to it
    end if
  else
    if it ≠ empty then
      if last char of it = return then put return after it
      else put return & return after it
    end if
    -- write the full handler
    put "on openCard" & return & scriptBody(fieldType) & return & ¬
    "pass openCard" & return & "end openCard" after it
    set script of fieldType to it
  end if
end addStackScript
```

The first "if" statement (if "openCard" is in it then) should really test for "on openCard" instead of "openCard". Many stacks list handlers included in a script at the top of the script. This allows programmers to easily search a

script for a particular handler. The addresses stack does this. When this button is pasted into it, the "openCard" in the handler list makes the conditional true and the script to include the card number is pasted into the handler list (where it will never execute).

Change"openCard" to "on openCard" in two places (as below in line 3 and 6) and the script works as it should.

```
on addStackScript fieldType
  get script of fieldType
  if "on openCard" is in it then
    if (fieldType && "field id" && id of me) is not in it then
      put scriptBody(fieldType) & return after char ¬
      (offSet("on openCard",it) + 8) of it
      set script of fieldType to it
    end if
  else
    if it ≠ empty then
      if last char of it = return then put return after it
      else put return & return after it
    end if
    -- write the full handler
    put "on openCard" & return & scriptBody(fieldType) & return & ¬
    "pass openCard" & return & "end openCard" after it
    set script of fieldType to it
  end if
end addStackScript
```

Support Information Services

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Tech Info Library Article Number:15429

MAE 1.0: Technical Frequently Asked Questions (6/95)

Revised: 6/28/95
Security: Everyone

MAE 1.0: Technical Frequently Asked Questions (6/95)

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Article Created: 10 June 1994
Article Reviewed/Updated: 26 June 1995

TOPIC -----

This article is the MAE 1.0 Technical Frequently Asked Questions (FAQ) for users of Macintosh Application Environment (MAE).

DISCUSSION -----

What's New
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1. Various updates to reflect changes in the patch "a" release.

2. How to increased shared memory.

3. How to remove MAE from your system.

4. How to suspend MAE.

5. Ross HyperSparc incompatibility.

6. ISO 9660 CD incompatibility.

7. Removable volume compatibility.

8. Maximum number of environment variables.

9. How to use command line arguments.

10. How to use X Resources to configure MAE at startup.

11. Setting the DISPLAY environment variable (and related issues).

12. How to change the font size used for desktop filenames.

13. Description of the APPLEPATH environment variable.

MAE FAQ's

Question: What information is contained in each of the three FAQ documents?

Answer: The Product FAQ contains general information about the product and licensing. This FAQ answers questions about support, pricing and product specifications.

The Technical FAQ contains information of about product performance, tuning, workarounds and other technical tips.

The Trial FAQ contains information specific to the MAE Trial.

Installation and Startup

Question: After installing and running MAE for the first time, a window stating "Rebuilding the Desktop" appears. This can last for a very long time. What should I do?

Answer: Building a desktop over a large file system or one with NFS mount points generally taks a long time and can use up a fair amount of disk space. The directories that MAE scans, in order, are:

1. System Folder

2. appledir

3. Home directory ***NOTE: this scan removed in patch "a"***

4. directory specified by APPLEPATH environment variable

It is best to allow the rebuild of the System Folder and appledir directories (which should be short) but it is not necessary to rebuild the HOME or APPLEPATH directories, so you can go ahead and cancel those rebuilds at any time by clicking the "Stop" button.

Question: What is the APPLEPATH environment variable used for?

Answer: The APPLEPATH environment variable is used to force MAE to scan a particular directory during a desktop rebuild (which is done whenever a System Folder is created or when MAE is started with the "-rebuild" command line argument). This is useful when a number of Macintosh applications are located in a directory shared by several MAE users. Forcing MAE to scan this application directory causes the appropriate application to launch whenever one of its documents are double-clicked.

Question: Does MAE pose a limit on how many UNIX environment variables can be

defined at startup?

Answer: No. However, the total size of all defined environment variables should not exceed 35K (35,000 characters).

Question: MAE complains that it cannot connect to my X-Window display. What should I do?

Answer: If you are running MAE on the same workstation that you are running the X-Server, you can set your DISPLAY environment variable to be "local:0" and it should work. If you are running MAE on a different machine than the X-Server, you should set your DISPLAY environment variable to be the machine name the X-Server is running on with a ":0" appended, such as "my_machine:0". If MAE still does not open the display, run the program "xhost" on the X-Server machine. For example, if MAE is running on a workstation named "my_workstation", and the X-Server is on a machine named "my_terminal", then on my_terminal run the command "xhost +my_workstation", which lets MAE on my_workstation open a display on my_terminal.

Note that the command line argument "-display <dpy>" overrides the DISPLAY environment variable.

Question: When I first start up MAE 1.0 after installing, I get the splash screen, the 'Welcome to Macintosh' window, and then a system error. What's wrong?

Answer: There is an incompatibility between MAE 1.0 (commercial and trial versions) and the number of groups associated with a user under Solaris and HP-UX.

NOTE: This problem has been fixed in MAE patch "a" and MAE Trial version 1.0a.

The symptom of the problem is a Macintosh "bomb box" alert indicating that a bus error has occurred. This alert shows up just after the "Welcome to Macintosh" dialog displays. The restart button in the dialog is ineffective, and you must manually kill the MAE process to recover.

The cause of this problem is related to the supported number of groups that the user's login ID is affiliated with. Solaris 2.3 supports a maximum of 16 groups and HP-UX 9.x supports a maximum of 20 groups. MAE limits the number of groups to 8. Therefore whenever you attempt to run MAE with more than 8 groups you get the previously described "bomb box".

The workaround to this problem is to avoid running MAE when logged in as a user with more than 8 groups. This can be done by either deleting unneeded group associations from your normal user ID, or creating a new user ID with 8 or less group associations for the purpose of running MAE. A permanent fix for this problem will be available in an upcoming patch release.

You can determine the number of groups defined for a user by entering the command "groups". To change the supplemental group affiliations, edit the

/etc/group file (you must be super-user to do this). See your system administrator (or your system administration manuals) for more information about user IDs and group associations.

Performance

Question: Can MAE be run as an X Application over the network?

Answer: Yes. However, MAE was optimized to run as a local application and be displayed on the local workstation console. While MAE is certainly an X application and can be run remotely, it is graphics intensive and may run significantly slower over the network. MAE performance is highly dependent on the X server, X client, and network bandwidth/traffic.

Question: Can I increase the performance of MAE when using a remote X-Client over the network?

Answer: Yes. Changing the Monitors Control Panel to "Black and White" reduces the amount data sent over the network to the X-Client. This can make a significant difference when running remotely, especially with graphics intensive applications.

Question: Will my performance be affected if my HOME directory is located on a remote volume.

Answer: Absolutely. The "System Folder" which contains the Macintosh toolbox and operating system is built in your HOME directory when you start MAE for the first time. Performance is affected since the code in this folder must be executed to run MAE and it runs more slowly when the System Folder is located on a remote volume.

Question: Can I run MAE with my HOME directory physically located on a machine running SunOS 4.1.x and NFS mounted to a Solaris 2.3 workstation running MAE?

Answer: Yes, but be careful with your permissions. Performance may also be significantly affected.

Question: How many licensed users can run MAE from the same shared workstation?

Answer: As stated before, MAE is very graphics intensive and, depending on the applications, network, and X hardware/software used, your performance could be severely affected. For optimum performance, Apple recommends one MAE user per workstation with the console used for display.

Question: Opening a folder sometimes takes a long time. Why is that?

Answer: When MAE opens a folder it must build a list of all files in that

directory. In addition, the file type of each file must be identified ("stat'ed") in order for the proper icon to be displayed in the Finder window. This can take some time if there are hundreds of files in the directory.

A delay may also occur if you have automounter running and there are several mount points within the directory being opened. In this case, when MAE "stats" the mount point, the automounter attempts to mount the filesystem.

Customizing

Question: What are the command line arguments for MAE?

Answer: usage: apple/bin/mae [-argument ...]

Arguments include:

-display <dpy>	Name of the X server to display MAE
.	Example: -display my_xterm:0
-geometry <WxH+X+Y>	Size and location of window
.	Example: -geometry 600x800+200+200
-title <string>	Title for X window
.	Example: -title My_MAE_Window
-sysfol <path>	System Folder path
.	Example: -sysfol "/u/jim/System Folder"
-appledir <path>	Location of the 'apple' directory
.	Example: -appledir /usr/opt/apple
-memory <memorysize>	Macintosh memory size in megabytes
.	(m = megabytes, k = kilobytes)
.	Example: -memory 10m
-maxdepth <bitdepth>	Set maximum frame buffer bit depth
.	(1 bit == monochrome)
.	Example: -maxdepth 8
-installcmap	Force the installation of X colormap
.	(do not depend on window manager)
-iconic	Start MAE iconified
-iconsleep	Start MAE iconified (same as iconic)
-noextensions	Startup MAE with no Extensions/INITs
-rebuild	Rebuild MAE desktop database
-zappram	Clear VPRAM settings

```
-help                   Display command arguments Help screen

-version                Display MAE version number
```

Question: Is there a way to permanently set the MAE command line arguments?

Answer: X resources have been defined for several of the command line arguments (see below). Place the desired X resources and settings into a file named ".Xdefaults" in your HOME directory. When starting MAE, it looks into your .Xdefaults file and sets the options accordingly.

Argument		X Resource
-geometry	==	Mae.geometry
-title	==	Mae.title
-sysfol	==	Mae.systemFolder
-appledir	==	Mae.appleDirectory
-maxdepth	==	Mae.maximumDepth
-installcmap	==	Mae.installColormap
-iconic	==	Mae.iconic
-iconsleep	==	Mae.iconSleep

Sample .Xdefaults file

```
# X Resource          Sample settings
# ----------          ---------------
Mae.geometry:         1200x800
Mae.iconic:           True
Mae.title:            "My MAE Window"
Mae.systemFolder:     "/u/jim/System Folder"
Mae.appleDirectory:   /usr/opt/apple
Mae.maximumDepth:     1
Mae.installColormap:  False
```

Alternately, one could type "xrdb -merge file" where "file" contains the resource settings. The difference is that "xrdb" sets options for all users on the X server, while .Xdefaults only affects one user.

IMPORTANT: Command line arguments override xrdb, which override the equivalent resources in .Xdefaults. To override xrdb, you can either delete the resources from xrdb (in which case .Xdefaults is used) or use the command line equivalents.

Again, a resource in xrdb is used for every user that runs MAE on that X server. .Xdefaults settings are used whenever MAE is started by a particular user on an X server.

Question: How do I increase the usable RAM for MAE applications?

Answer: There are two ways in which to do this. The first is by using the memory control panel (which makes the change permanent) and the second is by specifying

a -memory option on the command line (which lasts until MAE is restarted). For example, the following command starts MAE with a RAM size equal to 10MB

```
$ ~/apple/bin/mae -memory 10
```

26 June 1995
Question: When I start MAE on my SparcStation I get a message saying, "Not enough shared memory, using malloc..." How do I fix this?

Answer: When MAE notices that it is running on your SparcStation's local display, it attempts to enhance graphics performance by communicating with the X server using the "X Shared Memory Extension". For MAE to succeed at this, your Solaris kernel must be configured to support several large shared memory segments. If MAE is unable to obtain the shared memory it requires (based on the size and color depth of the MAE window), it falls back to a less efficient communications scheme based on large malloc'd X image structures.

To ensure that sufficient Solaris kernel resources are available to support efficient execution of MAE, Apple suggests adjusting the file "/etc/system" to include the following:

```
set shmsys:shminfo_shmmax=16777216
set shmsys:shminfo_shmseg=8
```

These shmsys parameters should adequately cover most screen and color depth configurations and take affect after rebooting your system.

IMPORTANT: Talk with your system administrator first before making any changes to this file. While it is unlikely that adjusting these parameters will have adverse effects on other software, Apple Computer does not support or take responsibility for any problems you may encounter.

NOTE: The only reason to make this change to your /etc/system file is if you get the "Not enough shared memory, using malloc..." message mentioned above.

Question: Is there Virtual Memory and if so, how does it work with UNIX?

Answer: MAE "thinks" virtual memory is turned off, however, it is running in a large "malloc'ed" chunk of UNIX memory. So in fact, a 48 Meg session of MAE could be run on a machine with only 16 Meg of RAM and lots of swap space (but note that Apple highly discourages this).

Troubleshooting

Question: I've just installed MAE 1.0 from the CD. When started, MAE opens a window, displays a splash screen, then displays the "Welcome to Macintosh" screen and bombs. What do I do now?

Answer: Follow these steps to help you troubleshoot this and other MAE start problems:

Step 1
Install and run MAE under a user account on the console machine (the root account tries to build a System folder in the root directory -- which may not have enough free disk space). Your HOME directory should be local to the console machine (not via some NFS or other mount point).

Step 2
Make sure that you have plenty of available disk space in your HOME file system (the Installer checks free space for the package install but MAE builds a System Folder in your HOME directory and there should be at least 5 Meg available for it).

Step 3
Make sure there are no NFS (or other) mount points within your HOME directory or in any of its parent directories. The first time MAE starts up, it scans thorough all these directories up to the root, which can trigger the automounter or AFS cells if these mount points are in the path. This can cause long delays or "hanging" situations at startup. Stale NFS mount points also cause these problems.

Step 4
Check UNIX permissions on your HOME directory and the files and directories within the apple directory (this should not be a problem unless you installed or operated as root or some other privileged account). Note: You MUST be able to create the System Folder directory in your HOME directory.

Step 5
Check the workstation RAM and available swap space to ensure there is enough to run MAE (which runs in 16 Meg minimum).

Step 6
If a problem occurs after "Rebuilding the Desktop" begins or if rebuilding takes a long time, cancel the rebuild.

Once you get MAE to successfully run, work back until you discover what caused your problem.

Question: Everything works except I do not seem to be able to access the floppy drive on my Sun workstation. How can I fix this?

Answer: Be certain the permissions on the floppy device file symlinked to /dev/rdiskette are readable and writable by you.

In addition, software products that do not currently support the Solaris Volume Manager conflict with MAE, which uses the Volume Manager. Until software products that are incompatible with the Volume Manager are upgraded to support it, you can work around this conflict by turning the Volume Manager on when using floppies or CDs in MAE and off when using other software. This work-around is only necessary when accessing a Macintosh floppy or CD since MAE does not use the Volume Manager until you try to access a Macintosh disk. Beware, too, that some software disables Volume Manager control at the device level by changing your /etc/vold.conf file, rather than starting or stopping the Volume Manager's

vold process.

Printing

Question: When I cancel printing in MAE, is the job really canceled or is a partial job queued to UNIX?

Answer: If a "Printing Canceled" or some equivalent dialog comes up, then the entire print job is canceled and nothing gets printed. Note that the Command and period (.) keys may need to be held down for a few seconds to ensure this occurs. After the application has completed writing the print job, MAE queues the entire print job to UNIX where it is printed by the UNIX spooler.

Networking

Question: Does MAE 1.0 work with hard mounted NFS filesystems?

Answer: Yes, MAE works with hard mounted NFS filesystems. However, like any application, MAE can hang if an NFS server mounted with the hard mount option goes down. (This problem will be addressed in a future patch.)

Question: Does MAE 1.0 work with NFS automounters?

Answer: Yes, MAE works with NFS automounters. However, as with any application that scans the filesystem, MAE's behavior is dependent on your setup.

For example, if a directory contains a large number of direct mapped automount points, then whenever this directory is opened and scanned (such as when the MAE Finder opens a folder on the desktop to display its contents), the automounter is triggered to mount each of the NFS filesystems in that directory. This can produce a "mount storm" of activity with a corresponding delay dependent on the number of mount points and the time it takes to mount each of them. In addition, if any of the servers are down, then MAE can hang. On the other hand, directories of indirect mapped automount points do not have these problems since the mapped directories are not being specifically referenced.

A related MAE startup delay can occur if your site has configured the automounter to place NFS filesystems on direct mapped mount points within any directory on the path to your home directory (including "/"). The reason for this is that when MAE first runs, it opens and examines each directory along the path from the root to your home directory to gather information that is used to present the Macintosh desktop. For example, if your home is /nfs/sitename/users/joe, MAE tries to open and read "/", "/nfs", "/nfs/sitename", and so on. This behavior can cause MAE to trigger the automounter for all direct mapped automount points listed in any directory along the path to your home (which could take a long time). In addition, as with hard mounted NFS filesystems, MAE may hang if any of those NFS servers is down.

Question: Does MAE 1.0 work with Andrew Filesystems (AFS)?

Answer: AFS is not supported under MAE 1.0. However, MAE can be used on a workstation that is an AFS client if you start MAE 1.0 with $HOME referencing a filesystem that is not in your /afs hierarchy. As with the NFS automounter (see earlier question), when MAE traverses the path to your home directory on startup, any AFS cells found along this path may be contacted (which could produce a very long delay). In addition, MAE may hang if one of the cells in /afs is down.

Support

Question: What about updates of MAE? Since this is a new product, can we expect updates to bug reports to be free?

Answer: Apple is putting together a "free patch" mechanism of incremental fixes at no charge. This will be done on an as needed basis (determined by Apple). Patches will be made available via anonymous ftp on server ftp.support.apple.com and also through the ARCHIVE mechanism of the mail server (send mail to listproc@medraut.apple.com with body text of HELP for more information on obtaining archives).

Compatibility

Question: Does MAE run with the Ross HyperSparc processor upgrade?

Answer: No, this release of MAE does not support Ross HyperSparcs.

Question: Does MAE support the Chinese and Japanese language kits?

Answer: These kits are not supported under MAE release 1.0. But like many applications, however, they may work adequately for your needs.

Question: Is there any way of accessing a Macintosh-formatted hard disk from MAE if I connect it to the SCSI bus on my workstation?

Answer: No. Apple does NOT support HFS format hard disks (only CDs and floppies) in MAE. Further, you may potentially damage your workstation or Macintosh disk if you try this since most workstations use fast differential SCSI2, which is electrically different from single-ended SCSI2 or SCSI1 used by most Macintosh SCSI drives.

Question: What kinds of removable media are compatible with MAE?

Answer: The current release of MAE only supports Macintosh formatted CDs and Macintosh formatted 1.4 MB floppy disks.

Question: Are ISO 9660 formatted CDs compatible with MAE?

Answer: No. MAE cannot mount ISO 9660 format CDs. If these CDs are mounted under UNIX (Solaris 2.3 does this automatically), the mounted directory should be accessible to MAE. Do not add the "ISO 9660 File Access" extension (or any of the other Macintosh CD-ROM extensions) to your System Folder -- it does not work.

Miscellaneous

Question: What are the AppleSingle and AppleDouble file formats?

Answer: Apple provides two standards for representing files on foreign file systems. The goal is to preserve all attributes of the file's home file system on file systems that do not otherwise support the same attributes. MAE can read and write to both formats.

AppleSingle format keeps all contents and attributes of a file in a single file on the foreign file system. Both the data and resource forks of a Macintosh file, the Finder information and associated icons, and so on, are all arranged in a single file with a simple structure.

AppleDouble format is the same as AppleSingle format, except that the data fork is kept in a separate file from the resource fork and Finder information. The two can be distinguished by a "%" sign preceding the filename of the file containing the resource and Finder information.

Apple recommends that AppleSingle format should be used to transfer files to MAE whenever possible.

Question: Can MAE read MacBinary file formats?

Answer: No, MAE only reads AppleSingle and AppleDouble file formats.

Question: I notice that MAE uses CPU resources even when I am not doing anything. Is there way I can stop an idle MAE from eating these cycles?

Answer: There is no method within MAE to halt operation in this release. If this overhead is a problem, you can press Control-Z (or whatever stty suspend is set to) in the controlling window. Typing "fg" in the controlling window reawakens MAE. Note that the controlling window is the window where MAE was started. If MAE is started from a Window Manager menu, then you cannot use this trick. Also, if your shell does not support job control then it does not work either.

Question: How do I remove MAE from my system?

Answer: To remove MAE, delete the following:

```
~/apple           (and all its contents)
~/"System Folder" (and all its contents)
~/.mac            (and all its contents)
```

~/man1
~/docs

NOTE: you may have installed your "apple" directory in a place other than your HOME directory and you may also have chosen to create multiple "System Folders" (using the -sysfol argument or by running MAE with different user IDs).

Question: Is there any way to access the workstation serial ports through MAE?

Answer: No, this release of MAE does not support serial ports.

Question: What happens to applications that use sound?

Answer: MAE returns an error to the application when it requests sound support. If the application does not check for this error (refusing to believe the Macintosh does not have sound capability), the application may not behave correctly.

Question: What happens to file names that begin with the characters "//" ?

Answer: MAE looks in the root directory for these files. For example, if you save a file with name //foo, MAE attempts to write file "foo" into directory "/".

Question: How do I change the size of the desktop font used for filenames?

Answer: Use the Views control panel.

Question: How do I show ".*" files and directories in MAE Finder windows.

Answer: You can show/hide these files and directories by setting the appropriate check box in the Views control panel.

Question: The Views control panel check box for "Calculate folder sizes" does not seem to work and neither does the "Get Info" menu command. How can I find out the size of a folder from within MAE?

Answer: By setting the "Calculate folder sizes" check box in the Views control panel and viewing the contents of a folder "by size", the folder sizes within that directory are calculated and displayed.

WARNING: this can take a very long time depending on the depth of your directory.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple

Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
26 Jun 1995 - Changed title to MAE 1.0 and revised format.
12 Jan 1995 - Made minor updates to Trblshting, Compat., and Misc. areas.
16 Dec 1994 - Added keyword and made several minor technical updates.

Support Information Services

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Tech Info Library Article Number:15431

Tech Info Library

Multiple Scan 17 & 20 Display: How To Change Resolution (5/94)

Revised: 5/23/94
Security: Everyone

Multiple Scan 17 & 20 Display: How To Change Resolution (5/94)

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Article Created: 23 May 1994

TOPIC -----

This article explains how to change screen resolutions on the Apple Multiple Scan 17 Display and Apple Multiple Scan 20 Display.

DISCUSSION -----

You can change the resolution of your monitor to zoom in for detail work or to zoom out and see a whole page or more at a time. To change your screen resolution, follow these steps:

1) Choose Control Panels from the Apple menu.

2) Double-click the Monitors icon to open the Monitors control panel.

3) Make the following choices in the control panel:

   NOTE: The choices you see in this window depend on what hardware you have.

   1) If you have more that one monitor, click the Identify button to see how your monitors are numbered. (If you only have one monitor, you will only see one choice.)

   2) Click the icon of the monitor you want to change.

   3) Choose when you want the change to take place - after you close this window or when you restart your computer.

4) Click the Options button to see what resolutions you can choose.

5) Choose a resolution. Click the resolution you want. Click the arrows in the scroll section to see if there are more choices. If you don't see any options for changing resolutions, you may have selected the

wrong monitor in the control panel. (Not every monitor can change resolutions.) Click Cancel then try step 3 again.

6) Click OK to return to the main window of the Monitors control panel. Depending on which option you selected in the control panel, the new resolution will be displayed either as soon as you close the dialog box or when you restart the computer.

7) Close the Monitors control panel by clicking the close box in the upper-left corner.

IMPORTANT: Make sure you don't leave the Monitors control panel open or your monitors may not behave as you expect.

8) If the image is distorted, adjust the controls on the monitor itself.

Support Information Services

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Tech Info Library

AWS 95 Tuning: Monitor System Swapping Activity (6/94)

Revised: 6/3/94
Security: Everyone

AWS 95 Tuning: Monitor System Swapping Activity (6/94)

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Article Created: 23 May 1994
Article Reviewed/Updated: 3 June 1994

TOPIC ----------

This article describes the importance of obtaining information on "swapping" when tuning your Apple Workgroup Server (AWS) 95.

DISCUSSION ----------

One of the most important things to learn when tuning an AWS 95 is to see if the system is "swapping". Unfortunately, the swap(1m) command included in A/UX only provides the current swapping activity.

First determine if swapping is actually occurring.

There is a sysinfo structure in the kernel (defined in <sys/sysinfo.h>) which contains counters updated by various kernel subsystems. Typically, these counters continue to be incremented as long as the system is running and re-set to zero each time the system is booted.

The sysinfo structure has several fields regarding the swap subsystem.

Field	Use
swpque	Number of "swapped-out" processes "ready-to-run"
swpocc	Is the swap "queue" occupied?
bswapin	Number of pages actually swapped in (read off the swap device)
bswapout	Number of pages actually swapped out (written to the swap device)

If the value of these fields are all zero, no swapping has occurred on the system since it was last booted.

A quick way to look at the kernel's sysinfo structure is by using the adb(1)

command in the following manner:

```
# adb -k /unix /dev/kmem
```

To display a particular field in the structure, you can use an offset as in the following adb input string.

```
sysinfo+0x38/X
```

The offsets of the fields described above are as follows:

Field	Offset
swpque	0x70
swpocc	0x74
bswapin	0x40
bswapout	0x44

In a system where no swapping has occurred, a session using the adb command to check these counters will look like this:

```
# adb -k /unix /dev/kmem
a.out file = /unix (COFF format)
core file = /dev/kmem
ready
sysinfo+0x70/X
sysinfo+0x70:   0x0
sysinfo+0x74/X
sysinfo+0x74:   0x0
sysinfo+0x40/X
sysinfo+0x40:   0x0
sysinfo+0x44/X
sysinfo+0x44:   0x0
<Control-d>
#
```

Since these counters are cumulative (if they are non-zero) swapping activity has occurred in the system. If you want to gain insight into historical activity patterns, the sar(1) command can be used with the -q and -w options to gather this kind of information.

If swapping is occurring and you want to understand the swapping characteristics better, configure and analyze the data from the System Accounting package. This will give you information on several aspects of the activities taking place in the system.

To enable the Systems Accounting Package, you need to modify the file /usr/spool/cron/crontabs/adm by removing the leading comment sign (#) from all of the lines.

To have cron(1) read the changes made to this file and schedule the processes you want executed, do the following:

```
  # cd usr/spool/cron/crontabs

  # vi adm (make the changes mentioned above or use TextEditor)

  # su adm

  % crontab < adm  (If you do not do this and just type 'crontab', the
                    adm crontab file will be initialized, in other
                    words, gone)
```

After this, typing the command crontab -l, should return the active crontab for the adm user

```
  % crontab -l
  0 4 * * 1-6 /usr/lib/acct/runacct 2> /usr/adm/acct/nite/fd2log
  0 2 * * 4 /usr/lib/acct/dodisk
  5 * * * * /usr/lib/acct/ckpacct
  15 5 1 * * /usr/lib/acct/monacct
  0 * * * 0,6 /usr/lib/sa/sa1
  0 18-7 * * 1-5 /usr/lib/sa/sa1
  0 8-17 * * 1-5 /usr/lib/sa/sa1 1200 3
  # The following is an option to appear in the above directory
  0 20 * * 1-5 /usr/lib/sa/sa2 -s 8:00 -e 18:00 -i 3600 -uybd

  % exit
```

After this, you will get a report using the sar -w command that looks similar to this:

```
  # sar -w

  A/UX hostname 3.1 SVR2 mc68040    05/18/94

  00:00:00 swpin/s bswin/s swpot/s bswot/s pswch/s
  01:00:00    0.01     0.0    0.00     0.0      85
  02:00:01    0.01     0.1    0.00     0.1      85
  03:00:01    0.00     0.0    0.00     0.0      85
  04:00:00    0.00     0.0    0.00     0.0      85
  05:00:00    0.01     0.1    0.00     0.0      85
  06:00:00    0.01     0.0    0.00     0.0      85
  07:00:01    0.01     0.1    0.00     0.0      85
  08:00:01    0.01     0.1    0.00     0.0      85
  08:20:01    0.01     0.1    0.00     0.0      85
  08:40:01    0.00     0.0    0.00     0.0      85
  09:00:01    0.02     0.2    0.00     0.0      85
  09:20:01    0.02     0.2    0.00     0.0      85
  09:40:02    0.00     0.0    0.00     0.0      85
  10:00:00    0.02     0.2    0.00     0.0      85
  10:20:00    0.05     0.4    0.00     0.3      81

  Average     0.01     0.1    0.00     0.0      85
```

NOTE: With the default values in the /usr/spool/cron/crontab/adm file, the

report will get an entry every 20 minutes during the day and once an hour during the night and weekends.

We recommend reading the manual entry for sadc(1) and the "System Activity Package" section in the "A/UX Local System Administration" manual. You should also read the manual entry for acct(1).

Article Change History:
03 Jun 1994 - Included correcting information.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15435

Tech Info Library

LaserWriter: Cannot Download 2-byte Fonts on US Models (4/95)

Revised: 4/24/95
Security: Everyone

LaserWriter: Cannot Download 2-byte Fonts on US Models (4/95)

==========

Article Created: 26 May 1994
Article Reviewed/Updated: 24 April 1995

TOPIC ----------

I have a hard drive attached to my LaserWriter IIf and I want to download the Japanese Language Kit's TrueType fonts to improve the performance. Is this possible? I am trying to download Kanji fonts to the Printer's RAM with LaserWriter Uitility 7.6.1. I can see the font listed, but when I try to add it, I get a message saying that the file selected contains no downloadable fonts. I can download other fonts fine.

DISCUSSION ----------

2-byte TrueType fonts, like those contained in the Japanese Language Kit, cannot be downloaded to a printer since no utilities do so properly. The Apple Printer Utility and LaserWriter Printer Utility may appear to download the font, but it is not downloaded entirely if at all. At most, the TrueType font's header file appears in the hard drive or RAM font list. A 2-byte TrueType font consist of a header file and numerous (easily 40 or more) character tables that must all be mapped properly in a PostScript table.

Article Change History:
24 Apr 1995 - Replaced entire discussion.

Support Information Services

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Tech Info Library Article Number:15436

LAT Protocol Doesn't Pass Through A Router (5/94)

Revised: 5/24/94
Security: Everyone

LAT Protocol Doesn't Pass Through A Router (5/94)

==========

Article Created: 23 May 1994

TOPIC ----------

We are having problems using the DEC LAT protocol on our LAN. We use LAT because the database we use is on a VAX that requires it.

We have about 300 Macintosh computers on Ethernet and 100 on LocalTalk. We are using a DEC DEMPR as a hub for all the Ethernet computers and an Internet Router to go to LocalTalk. We have 18 10BaseT hubs that run back to the DEMPR. On the other side of the DEMPR we have thin Ethernet that is serving as the backbone for a small cluster of VAX computers.

We are using some of the Macintosh computers as VAX terminals through Ethernet utilizing the LAT tool. Because of the inability of the LAT tool to "pass through" routers, we have designed this entire network as one big Ethernet segment.

1) Is there any way to encapsulate LAT into either AppleTalk or IP in the cisco Router so we can segment the network?

2) Can we use PATHWORKS and ADSP on the VAX as a terminal server getting around the LAT and router limitation, and use AppleTalk all the way to the VAX?

3) What might be a better solution to this problem? (That is software or hardware which might work better.)

DISCUSSION ----------

According to Digital documentation on PATHWORKS (Client Admin Guide page 2-1) LAT architecture does not work over routers. DEC offers no technical explanation.

DEC has provided a work around for this problem. It's called The AppleTalk LAT Gateway. The following are instructions for installing and connecting to the Gateway. This solution is found starting on Chapter two, page one of PATHWORKS

Client Admin Guide.

The requirements are: A Macintosh connected to Ethernet. This "should" be a stand alone server computer. If the Macintosh is connected to LocalTalk it won't work.

To configure the LAT Gateway Server you should:

1) Drag the "AppleTalk LAT - Gateway" software to the server Macintosh.
2) Launch the AppleTalk LAT - Gateway application.
3) Provide a name for the server.
4) Click the configuration boxes as required by the installation.

To connect to the Gateway you should:

1) Launch the application (I will use MacTerminal for an example).
2) Pull down the settings menu and select connections.
3) Select "AppleTalk - LAT" and the connection method.
4) Choose gateway and then the correct zone and gateway name.
5) Click OK. Wait a few seconds for the Gateway Service to identify itself.
6) Then select the "service" option and the desired gateway.
7) Click OK.
8) Close the dialog box and select "open connection" under the session menu.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15437

Tech Info Library

LaserWriter Select 360: Correct Voltages (5/94)

Revised: 5/26/94
Security: Everyone

LaserWriter Select 360: Correct Voltages (5/94)

==========

Article Created: 26 May 1994

TOPIC -----

The LaserWriter Select 360 user's manual manual and all other documentation I have states that the electrical specifications are 115V-120V, 50-60 HZ. On the back of the printer it states 110V-120V, 60HZ. Which is correct?

DISCUSSION -----

There is a discrepancy between the product specification sheets, user's manual, and the product label.

The LaserWriter Select 360 supported input voltages are:

Voltage	Frequency
90 - 110 VAC	48-52 Hz, 58-62 Hz
103.5-126.5 VAC	58-62 Hz

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15439

Tech Info Library

Newton MessagePad: Correcting Error -48205 (5/94)

Revised: 5/24/94
Security: Everyone

Newton MessagePad: Correcting Error -48205 (5/94)

==========

Article Created: 24 May 1994

TOPIC -----

Why do I get a -48205 error on my Newton MessagePad when I am browsing in a new or empty Newton Personal Word List?

DISCUSSION -----

The -48205 error is explained as Index Out Of Bounds. In this instance, the error occurs because there are no entries in the Personal Word List to browse. Once you add words to the Personal Word List, the error does not occur.

The Newton Word List contains all the words added to the Newton's memory. You can access the Personal Word List by bringing up the Newton keyboard and tapping the book icon in the lower left corner. Scrolling in the Personal Word List is done by tapping the letter that starts each words entry or tapping the up and down arrows at the bottom of the Newton's screen.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15441

Tech Info Library

DOS Compatibility Card: Black & White Video In DOS Mode (5/94)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Black & White Video In DOS Mode (5/94)

==========

Article Created: 24 May 1994

TOPIC ----------

On the Quadra 610 DOS Compatible and the DOS Compatibility Card, isolated cases have been reported where the DOS screen will display in Black and White instead of Color.

DISCUSSION ----------

Some applications may not properly sense the type of monitor and video mode being used. Many applications have a command line switch that will force a particular video mode to be used.

For applications having this problem, check the program documentation or with the program vendor to see if a video switch is available to correct this problem.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15442

Tech Info Library

Fax Phone Book: Over 100 Entries Degrades Performance (5/94)

Revised: 5/26/94
Security: Everyone

Fax Phone Book: Over 100 Entries Degrades Performance (5/94)

==========

Article Created: 26 May 1994

TOPIC ----------

I have imported a list of approximately 500 names into the Fax Phone book and it now takes over 2 minutes to open the phone book after hitting the fax button in the print dialog box. I have assigned more memory to the fax utility and it doesn't appear to help.

How many names was the software designed to support? If it is less than 500, is there a way around this?

DISCUSSION----------

There are performance problems when over 100 addresses are added to the Fax Phone Book. The recommendation is to actually limit the number of addresses in the phone book to 100 or less. If as many as 1000 addresses are added to the phone book the system may crash or hang.

With regard to a workaround, the only one we know of is to rename the phonebooks. You could switch from phone book to phone book by renaming the current phone book to something else, and renaming the phone book that they want to use "Fax Phone Book". This is the only known work around.

Engineering is looking into improving the Fax Phone Book in future revisions of the software. There is no additional information on what the improvements will be at this time.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15443

Tech Info Library

Power Macintosh: FaxTerminal and SoftWindows Problem (7/94)

Revised: 7/21/94
Security: Everyone

Power Macintosh: FaxTerminal and SoftWindows Problem (7/94)

==========

Article Created: 26 May 1994

TOPIC -----

I have a Power Macintosh 8100/80, GeoPort Telecom Adapter with GeoPort for Power Macintosh 1.0. I performed clean system installation on the system, then installed SoftWindows 1.0 and GeoPort for Power Macintosh 1.0 and restarted. I turned on Auto-Answer in the FaxTerminal program. When I opened SoftWindows I got the message: 'Fax Reception has been deactivated because the modem is not available. Please make sure the modem is connected.'

DISCUSSION -----

When you select the Fax Terminal auto-answer mode it allocates the port that contains the Geoport device so that it can listen for an incoming call. Another software application can share the port in some instances, if correctly programmed. For example, ARA and Express Modem can share while waiting for incoming calls, but this is only because Apple engineers have programmed these applications to allow for this to happen.

In this case, once the auto-answer option is selected, SoftWindows cannot get to that port.

Work Around

SoftWindows is a DOS emulator. It must act as DOS acts. DOS does not share ports. So the problem that the customer is having is not considered a "bug" by Insignia. But they have provided an optional work around.

When SoftWindows starts up it wants to configure a com1: port. The default for this configuration is the modem port. In your scenario it can't allocate the port because our Geoport (Fax Terminal) device already has it. There is a work around, you should do the following to allow both programs to run at the same time:
1. Make sure Fax Terminal is not running.
2. Launch SoftWindows.

3. Select the "Setup" pull down menu.
4. Select the "PC Serial Ports" option.
5. Then make sure that com1 and com2 are not trying to access the same port as the FAX Terminal software. Setting both ports to "none" is also a valid option.
6. Launch FAX Terminal and select Auto-answer.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15444

Tech Info Library

Power Macintosh: Using With Authorware Software (5/94)

Revised: 5/25/94
Security: Everyone

Power Macintosh: Using With Authorware Software (5/94)

==========

Article Created: 25 May 1994

TOPIC -----

I am using a Power Macintosh and a Macintosh Quadra 700 with Authorware 2.0.1 software to create and run presentations. The portion of the presentation created on the Q700 wouldn't run on the Power Macintosh and vice versa. What is causing this problem?

DISCUSSION -----

The version of Authorware that works on the Power Macintosh is 2.0.1E instead of 2.0.1. The software vendor Macromedia indicates that if you recompile the project with the E version it will work across different Macintosh platforms.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15445

Tech Info Library

Macintosh AV: NTSC Underscan with Multiple Scan Display (6/95)

Revised: 6/26/95
Security: Everyone

Macintosh AV: NTSC Underscan with Multiple Scan Display (6/95)

==========

Article Created: 26 May 1994
Article Reviewed/Updated: 26 June 1995

TOPIC ----------

With the Macintosh Quadra AV series Quadra computers and the Apple Multiple Scan 17 or 20 Display, the Monitors control panel does not allow me to select a resolution of 512x384. This makes it difficult to switch to output to an NTSC device except in the 640x480 mode. Is there a way of doing this?

DISCUSSION ----------

The Multiple Scan Display software doesn't show the 512x384 (NTSC underscan) resolution in the Monitors control panel, because the Multiple Scan Displays do not directly support that resolution. The monitor's software patches the Macintosh AV video ROM routines to enable the computers to do the dynamic resolution switching.

Here are the steps required to get the NTSC underscan resolution of 512x384:

Macintosh Quadra AV Series
==========

Step 1

Open the Monitors control panel.

Step 2

If the Multiple Scan display is not set to 640x480:
- Click the "Options..." button.
- Change to the "Macintosh Hi-Res Display" resolution and click OK.

Step 3

Hold down the Option key on the keyboard and click the "Options..." button.

Step 4

Change to the 512x384 resolution and click OK.

Step 5

Click OK to confirm that the smaller image appeared.

Step 6

Change to "Display Video on Television" and click OK.

Step 7

Click the "Switch" button to display the image on the Television.

NOTE:
The additional resolution options are available when the extensions are off because the Multiple Scan Display software does not get loaded, so the video ROM is not patched.

Power Macintosh AV Series
=========================

Step 1

Open the Monitors control panel. Click "Options..." button.

Step 2

Choose "Display Video on Television" button and the "Upon Restart Display Video on Television" button. Click "OK".

Step 3

Click "Rearrange on Restart" radio button and close the Monitors control panel.

Step 4

Restart. Video will display on TV in 640x480 mode.

Step 5

Open the Monitors control panel. Click "Options...".

Step 6

Choose the "512x384" setting. Choose "Upon Restart Display Video on Television" button. Click "OK". Click the "Rearrange on close" button and close the Monitors control panel.

Article Change History:
09 Jun 1995 - Added Power Macintosh workaround.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15446

Tech Info Library

Power Macintosh: Internal Video vs AV Card Speed (5/94)

Revised: 5/25/94
Security: Everyone

Power Macintosh: Internal Video vs AV Card Speed (5/94)

==========

Article Created: 24 May 1994

TOPIC -----

Certain benchmark tests claim that the on-board video for the Power Macintosh AV configurations is faster than the AV display card (DB-15 connector output). Are these benchmarks valid?

DISCUSSION -----

The display speed of the internal video is faster than the AV card. This is because the AV card uses a 32-bit wide data path for video (as does the 840AV), while the DRAM-based video and standard Power Mac video cards use a 64-bit wide video path. This means that video is technically faster on the non-AV machines, although this is only a benchmark. In real applications, customers should not be able to notice the video speed differences between an AV and a non-AV system. The raw video speed is a trade-off of delivering video-in and video-out features, but you should not notice a difference in total system performance.

It is also recommended that if using a Power Macintosh AV with a single monitor, that you attach the monitor to the AV card's video out port (the DB 15 connector) as you will get better digitizing performance. This recommendation also stands for Apple AudioVision displays. You can connect the AudioVision to the DB 15 using the AudioVision HDI-45 to DB 15 display adapter.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15447

Tech Info Library

Power Macintosh: PowerPC Finder Update Message (5/94)

Revised: 5/25/94
Security: Everyone

Power Macintosh: "PowerPC Finder Update" Message (5/94)

==========

Article Created: 24 May 1994

TOPIC ----------

After reinstalling system software on a Power Macintosh, the following message is displayed:

"The system extension PowerPC Finder Update cannot be used."

There does not seem to be any problem as the computer will continue to boot up and operates properly. What does this message mean?

DISCUSSION ----------

This message is a result of some corruption in the Finder Preferences file. The solution is to delete the Finder preferences file and have the Macintosh create a new Finder preferences files. This can be achieved by following these steps:

- Open the System Folder
- Open the Preferences Folder
- Move the Finder Preferences file to the trash
- Choose 'restart' from the Special menu
- After restart, empty the trash throwing away the old Finder preferences file.

Upon reboot, the operating system will recreate a new default Finder Preferences file and the error should not longer occur. After this, it may be necessary to reset some of the Finder settings using the Views control panel.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15448

Tech Info Library

Power Macintosh: Error Launching FusionRecorder (5/94)

Revised: 5/25/94
Security: Everyone

Power Macintosh: Error Launching FusionRecorder (5/94)

==========

Article Created: 24 May 1994

TOPIC -----

When launching FusionRecorder, the Power Macintosh shows the message:

"An Internal Error occurred. Please call technical support with the following information below:

Assertion failed: FALSE
File: tprint.c
Line: 48
Click Continue to ignore the error (risky), Fail to abort the operation (better), or Quit to quit VideoFusion (best). Quitting VideoFusion will prompt for files that need to be saved. "

What is causing this error?

DISCUSSION -----

This message will appear if Fusion Recorder is being launched by opening the Fusion Recorder Preferences file in the Preferences folder. To prevent this from occurring, launch Fusion Recorder by opening the application itself or by opening one of its movie files from the Finder.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15450

Tech Info Library

PowerBook: Solar Powered Solutions (5/94)

Revised: 5/25/94
Security: Everyone

PowerBook: Solar Powered Solutions (5/94)

==========

Article Created: 25 May 1994

TOPIC ----------

My PowerBook keeps running out of power! The batteries just don't provide enough computing time for my needs and I have to lug around extra batteries. Is there any sort of longer-lasting battery?

DISCUSSION ----------

With nickel metal hydride, lithium, and intelligent batteries with their own microprocessors batteries are becoming longer-lasting. In addition, there are a few companies which offer solar cells to extend the battery charge.

Keep It Simple Software (KISS) has a two solar panel unit called SunPack PB, a soft-sided pack that looks and opens up like a briefcase. Connecting your PowerBook to the SunPack PB should provide it with enough power to continuously sustain the battery in most non-color models. Color PowerBooks can be used with the SunPack PB, however it will only help to extend the battery life.

Microtech International offers SolarPOWER, a photovoltaic (solar power) panel for the PowerBook family. Power gain from SolarPower is dependent on weather conditions and geographical location. Solar charging will enable a range of uses, from extending battery life in remote operation, or recharging installed batteries when the PowerBook is not in use, to expected complete power supply for the PowerBook in optimal conditions. A Graphical software aid is included to guide users in the correct positioning for maximum solar efficiency.

To locate a vendor's address and phone number, use the vendor name as a search string.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15451

Tech Info Library

Power Macintosh: Select Flicker Free Format (5/94)

Revised: 5/25/94
Security: Everyone

Power Macintosh: Select Flicker Free Format (5/94)

==========

Article Created: 24 May 1994

TOPIC -----

On a Power Macintosh AV system using NTSC/PAL output to a television, the Flicker Free option is disabled in the Monitors Control Panel. Why?

DISCUSSION -----

When using NTSC/PAL video output, you must be in 256 colors before you can use the Flicker Free option. Setting the output to "Thousands" or "Millions" of colors uses too much video RAM and will disable this option until more memory is available.

If your are digitizing movies or pictures, it is best to connect a computer monitor to the Power Macintosh's AV card, set the resolution to 640x480, and set the colors to "millions". This will produce the best results for digitizing. Use the NTSC/PAL output options for presentations or for recording.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15453

Tech Info Library

Power Macintosh: 1 MB and 2 MB SIMMs not supported (5/94)

Revised: 5/25/94
Security: Everyone

Power Macintosh: 1 MB and 2 MB SIMMs not supported (5/94)

==========

Article Created: 24 May 1994

TOPIC ----------

Does the Power Macintosh support 1 MB or 2 MB 72-pin non-composite SIMMs?

DISCUSSION ----------

Apple has not tested 1 MB or 2 MB SIMMS in Power Macintosh systems and therefore cannot support their use.

What this means is that there is no technical reason they should fail, however Apple cannot guarantee that you will not encounter problems in using these SIMM sizes.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15454

Tech Info Library

DOS Compatibility Card: Cut & Paste Freezes System (5/94)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Cut & Paste Freezes System (5/94)

==========

Article Created: 24 May 1994

TOPIC ----------

I have Quadra DOS Compatible computer I am having problems copying and pasting between Windows and the Macintosh. Every time I try this my system freezes on me. How can I correct this?

DISCUSSION ----------

The problem on the Quadra 610 DOS Compatible and DOS Compatibility Card is related to the size and type of information being copied.

To correct this problem:

- Turn Virtual Memory on
- Set the Virtual Memory to 12 MB or higher
- Turn 32-bit addressing on
- Restart your computer

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15455

Tech Info Library

DOS Compatibility Card: Cold Creates Checkerboard Pattern (5/94)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Cold Creates Checkerboard Pattern (5/94)

==========

Article Created: 24 May 1994

TOPIC ----------

In Isolated cases the Quadra 610 DOS Compatible and the DOS Compatibility Card have displayed a checkerboard pattern when the DOS screen is displayed.

DISCUSSION ----------

This symptom has only appeared in cases where the computer is in a very cold location, (close to freezing). This symptom corrects itself when the computer warms up.

Support Information Services

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Tech Info Library Article Number:15457

Tech Info Library

HyperCard 2.2:AddColor colorPict Effect Must=Stamp (5/94)

Revised: 5/25/94
Security: Everyone

HyperCard 2.2:AddColor colorPict Effect Must="Stamp" (5/94)

==========

Article Created: 23 May 1994

TOPIC --

In Hypercard 2.2, the Color Tools stack (XCMD documentation) states that the following command will allow you to paste a picture with visual effects:

Addcolor "colorPictFile", "cd"|"bg", <filename>, <point|rectangle>, "t"|"o" [,<effect>|<duration>]

However, this doesn't seem to work unless the "effect" is "stamp."

To duplicate:

Launch Hypercard
Open Address Stack (or any other stack)
Create a new stack in Hypercard
Create a new button
enter script of button:

```
on mouseUp
  AddColor "colorPictFile","cd","littlepict","0,0","o","stamp",60
end mouseUp
```

--where "littlepict" is the name of a pict file in same folder as new stack (you can take a screen shot and rename it).

Close button and test it, button works.
Change script so that effect is something else, like "dissolve", "irisOpen", whatever, and the pict doesn't appear. We also tried locking messages, redrawing screen, whatever else we could think of.

DISCUSSION --

The "AddColor colorPict..." command works but the "AddColor ColorPictFile..." command does not work with HyperCard 2.2.

The only work around is to not use this command. Make the PICT
a resource and use the "AddColor colorPict..." command instead.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15458

Tech Info Library

QuickTime: Custom Color Palette (5/94)

Revised: 5/25/94
Security: Everyone

QuickTime: Custom Color Palette (5/94)

==========

Article Created: 24 May 1994

TOPIC -----

I want to use images in QuickTime movies with 256 colors, non-compressed, with its own color palette (not System Palette), so that image will not appear dithered. My images are 8-bit PICT files converted from 24-bit video; I use the DeBabelizer to create the color palette that is optimal for my images and has no dithering. The QuickTime movie always reverts to System Palette, resulting in dithering of image. Any way around this?

DISCUSSION -----

Using an application such as PhotoShop, the following will use a custom color palette:
1) In PhotoShop - Choose Save As A PICT -Indexed Color - 8 Bit.
2) Go into Movie Converter and set the compression settings to video compression - high quality - 1 frame per second.
3) Convert the PICT into a Movie

You will have a movie that has the color palette you need. You can then paste that movie into any where else you want to use it.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15459

Tech Info Library

AppleShare: Chart of All Limitations (12/96)

Revised: 12/5/96
Security: Everyone

AppleShare: Chart of All Limitations (12/96)

==========

Article Created: 25 May 1994
Article Reviewed/Updated: 5 December 1996

TOPIC ----------

This article overviews AppleShare maximum limits.

DISCUSSION ----------

File Sharing Limitations

Begin_Table

AppleShare Version	Pro	4.2 & 4.2.1	4.0.2 & 4.1	3.0.x	2.0.1	File Sharing
Maximum # of Connected Users	200	250	150	120	50	10
Maximum # of Outstanding Requests	50	64	30	15	n/a	5
Maximum # of Open Files	5000	3000+	346	346	160	346
Maximum # of Volumes	50	50	50	50	16	10
Maximum # of Shared Items	50	100	50	50	n/a	10
Maximum # of Users in User and Groups(#)	8192	8192	8192	8192	2000	100
Maximum # of Groups in User and Groups	8192	8192	8192	8192	2000	100

Maximum # of Group Membership/User	42	42	42	42	16	41
Maximum # of Simultaneous File Launches	200	150*	150*	120	app specific	10
Maximum # of Files per Volume (HFS Limit)	65,536	65,536	65,536	65,536	65,536	65,536
Maximum Volume Size(@)	4 GB	4 GB	4 GB	4 GB	2 GB	4 GB
Maximum File Size	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB

End_Table

* Depends on application and connected users.

+ 3000 instances of 346 unique files.

2000 recommended.

@ Users running a Mac OS version before 7.5, the maximum volume size is 2 GB. Although System Software 7.5 and later support volume sizes in excess of 4 GB, the maximum size of the AppleShare volume is limited by AFP, therefore it is still 4 GB.

NOTE:
AppleShare Workstation (client) software older that version 3.5, the maximum volume size is a few hundred thousand bytes less that 2 GB. This was fixed with version 3.5.

Article Change History:
05 Dec 1996 - Added volume and file size, plus Workstation note.
17 Jun 1996 - Updated to Appleshare 4.2.1.
12 Dec 1995 - Updated to AppleShare 4.2, changed Active Users to Outstanding Requests.

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Tech Info Library Article Number:15460

HyperCard 2.2: Printing Disabled In Standalone App? (5/94)

Revised: 5/25/94
Security: Everyone

HyperCard 2.2: Printing Disabled In Standalone App? (5/94)

==========

Article Created: 23 May 1994

TOPIC ----------

Why are 'Print Field,' 'Print Stack,' and 'Print Report' disabled in stand alone applications? Is there anyway to get these menu choices available in stand alone applications?

DISCUSSION ----------

"Print Report" and "Print Stack" are options available under the "File" menu in HyperCard. In HyperCard Payer these items are still there but are grayed out because the XCDMs that perform these functions have been removed. Because of this, there is no way to access or modify a report template. Print Field is the only type of printing that the user can access directly.

Since standalones are basically stacks with the player engine embedded, they act the same way.

I have been able to print mail labels using
"open report printing with template..."
It works like a champ.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15462

MacTCP 2.0.4 Release Notes and Read Me (8/94)

Revised: 8/26/94
Security: Everyone

MacTCP 2.0.4 Release Notes and Read Me (8/94)

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Article Created: 25 May 1994
Article Reviewed/Updated: 26 August 1994

October 21, 1993

MacTCP version 2.0.4 is an update release.
MacTCP version 2.0.3 was released internal to Apple.
MacTCP 2.0.4 contains the following improvements over MacTCP 2.0.2 and earlier versions:

Performance:

• Earlier versions of MacTCP had several problems associated with setting lower bounds for retransmission times on TCP connections. This was particularly apparent when using MacTCP over serial lines which tend to have both long round trip times and a tendency to corrupt packets. The lower bounding for retransmission timeouts was frequently set to 20 seconds or more. MacTCP 2.0.4 corrects these problems, and sets the retransmission lower bound to 1 second regardless of link type. This allows MacTCP to correctly calculate the retransmission time as SRTT + 4(RTTV). Note that this may result in an increased number of retransmission on some connections, but the overall performance is much more acceptable.

• When set to large sizes, the disk cache included in System 7 and 7.1 does not work well with networking. Doing an FTP copy to a Mac with a 1 megabyte disk cache will result in cache flush delays of 30 seconds or longer, during which time the receive window will become full and no additional data can flow over the connection. We recommend that users of MacTCP set their disk cache size to 128k or less within the Memory control panel for optimal network performance. This should be fixed in a future release of the Mac OS.

NOTE: This problem has been fixed with System Software 7.5.

• Earlier versions of MacTCP incorrectly implemented TCP congestion avoidance by reopening the congestion window too quickly. MacTCP 2.0.4 corrects this

problem.

Configuration:

• BootP requests are (again) sent to the Ethernet broadcast address as they were in MacTCP 1.x. MacTCP 2.0 and 2.0.2 sent BootP requests to an Ethernet multicast address.

• If MacTCP is set up to run over Ethernet, and server configuration mode is chosen in the MacTCP control panel, MacTCP attempts to configure itself using BootP. If that fails, it will attempt configuration using RARP. Previous versions of MacTCP used RARP initially, and if that failed, attempted BootP.

Domain Name Resolver:

• If a domain name server cannot resolve a name but can provide references to more appropriate name servers, the MacTCP Domain Name Resolver (DNR) will recursively follow those references until it resolves the name, runs out of servers and references, or times out. Earlier versions of MacTCP did not recursively follow references.

• The DNR is now compliant with the domain name syntax portions of RFC 1123 with respect to decimal digits and hyphens. Previous versions of the DNR did not accept hyphens and assumed that names beginning with numbers were dot format internet addresses.

• In earlier versions of the DNR, the processing of MXInfo and HInfo replies leaked memory if more than one record was received in the answer section.

• Earlier versions of the DNR corrupted the higher order bits of MXInfo preferences greater than 255.

• When resolving an alias, the DNR will now follow up on any CNAMES which are returned.

• The DNR manages cached resource record (RR) memory more efficiently than previous versions.

Program Interfaces:

• Earlier versions of MacTCP ignored the ULP timeout parameter in the TCPClose call.

• Previous versions of MacTCP dynamically allocated TCP and UDP ports in the range between 256 and 65535, inclusive. For consistency with most UNIX hosts, MacTCP 2.0.4 has been changed to first attempt to allocate ports in the range between 1025 and 5000. This does not impact programs which request specific ports.

• In earlier versions of MacTCP, it was possible for the UDP Create call to allocate a UDP port number which was already in use if a UDP Multiport stream

existed.

• Previously, UDP did not call the application's completion routine if a driver error caused an IP Write call to fail.

• PBControl calls with csCode ipctlWrite now set the IOResult correctly.

• The UDP notify routine is called when an ICMP destination unreachable is received. In previous versions of MacTCP, the notify routine might not get called.

Odds & Ends:

• MacTCP 2.0.2 sometimes sent packets greater than 576 bytes long to hosts which were not on the same subnet. Earlier versions of MacTCP did not have this problem. It has been corrected in MacTCP 2.0.4.

• The TCP/IP protocol prohibits IP precedence level changes once a TCP connection is established. Some DEC Alphas running OSF/1 have been observed to do this when acting as FTP servers. MacTCP has always correctly sent a reset in response, but previous versions hung after doing so. Now MacTCP sends the reset but does not hang.

Article Change History:
26 Aug 1994 - Added note that the large disk cache sizes has been fixed
with System 7.5.

Support Information Services

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Tech Info Library Article Number:15463

Tech Info Library

Network Terminology and AppleTalk Limitations (5/94)

Revised: 5/25/94
Security: Everyone

Network Terminology and AppleTalk Limitations (5/94)

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Article Created: 25 May 1994

NETWORKING TERMINOLOGY
======================
Router: Connects 2 or more networks using the network layer.
Gateway: Manages communications between different protocol families.
Bridge: Connects 2 or more networks using the data link layer.
Hop: Used to describe a jump through a router to the next network.
AppleTalk:The network protocol for Apple Macintosh Systems.
LocalTalk:AppleTalk protocol on twisted pair cabling (ie, PhoneNet).
EtherTalk:AppleTalk protocol on EtherNet cable with interface card.
TokenTalk:AppleTalk protocol on TokenRing cabling with interface card.

AppleTalk Information:

• Phase I supports up to 254 nodes, by number.
• Phase II supports (theoretically) 16 million nodes by range or number.
• LocalTalk should only address up to 32 nodes.
• LocalTalk Network is identified by a single network number.
• Extended AppleTalk networks are identified by network range.
• Extended AppleTalk networks support zone lists.

OSI Model (applies to TCP/IP and other networking protocols):

Layer 7 - Application
Layer 6 - Presentation
Layer 5 - Session
Layer 4 - Transport
Layer 3 - Network
Layer 2 - Data link
Layer 1 - Physical

Topology:

Bus: All nodes connected in one line (daisy chain).
Star: All nodes connected to a central hub.

Ring: All nodes connected in a closed loop.

Support Information Services

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Tech Info Library Article Number:15464

Tech Info Library

SoftWindows: Novell Upgrade Problem (5/94)

Revised: 5/25/94
Security: Everyone

SoftWindows: Novell Upgrade Problem (5/94)

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Article Created: 25 May 1994

TOPIC -----

When I updated from Novell 3.11 to 4.01 everything seems to work OK, but now SoftWindows can't find Network Drive. Does SoftWindows need a new driver?

DISCUSSION -----

The solution is to remove the Novell driver and use the driver called EtherSPC from Insignia. Also check to make sure frame types are selected correctly. There is a net.cfg file in the driver directory for the SoftWindows software that configures SoftWindows' Ethernet driver. It specifies the actual Ethernet frame type the driver will use. The frame type selected must match the one used by the Netware server. Both Netware and SoftWindows allow selections of all the popular frame types, so WHICH one you select is less important than matching the selections between the server and the Macintosh.

Support Information Services

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Tech Info Library Article Number:15465

Tech Info Library

HyperCard: Stacks w/ Audio Don't Work on AV Machines (5/94)

Revised: 5/26/94
Security: Everyone

HyperCard: Stacks w/ Audio Don't Work on AV Machines (5/94)

==========

Article Created: 26 May 1994

TOPIC --------------------

The stacks "Addresses With Audio," "Appointments With Audio," and "Audio Help" from HyperCard 2.1 do not work on the Macintosh AV machines.

From what I can tell, the "Audio Help" stack included with HyperCard 2.2 does work on the AV machines. I presume that this means the Addresses and Appointments stacks included with HyperCard 2.2 also have audio capability and work on the AV's, is this true?

Is the incompatibility with Sound Manager 3.0 in the ROMs on the AVs and not with the AVs themselves? If so, this issue could affect any CPU with Sound Manager 3.0.

DISCUSSION --------------------

It is true that "Addresses with Audio" and "Appointments with Audio" don't work with the AV Macs. However, the Addresses and Appointments stacks that ship with HyperCard 2.2 do work with the Audio Recording capability in HyperCard.

The problem with the audio stacks is in hardware differences between the DSP chip in the AVs and the Apple Sound Chip in other machines. HyperCard 2.2 and the 2.1 audio stacks work OK with Sound Manager 3.0 on other machines that we have tested.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15468

Tech Info Library

HyperCard: Palette Maker: err: resource not found (5/96)

Revised: 5/21/96
Security: Everyone

HyperCard: Palette Maker: "err: resource not found" (5/96)

==========

Article Created: 26 May 1994
Article Reviewed/Updated: 21 May 1996

TOPIC ----------

I have found that when using Power Tools Palette Maker, and a palette is created and then deleted, I get the error: "err: resource not found.”
This specifically, happens if palette is deleted from the Power Tools stack first, however, it also happens if multiple instances of the palette is found in the stack from which it is to be deleted.

Here are the steps to duplicate:
- Open Power Tools Stack.
- Select "Palette Maker"
- Enter Palette Name
- Click on "Create Palette"
- Click on "Install palette" --select some stack, like "Appointments";
- palette gets installed.
- Click on "Install Palette" again to same stack --palette gets installed again.
- Click on "Delete Palette," get error "Error: Resource not found."

DISCUSSION ----------

HyperCard programming is an area of endeavor that is not to be taken lightly and creating multiple palettes with the same name is not something I would want to attempt. However if you do, you can delete multiple resources in a stack with the Resource Mover instead of the Delete Palette button in the Power Tools stack. You might want to check the scripts of the delete button and the card background to see what they are doing in that stack.

I have forwarded this situation to the HyperCard team and if they think a change is warranted, it will be changed in a future version of Power Tools.

Article Change History:
21 May 1996 - Corrected minor typographical errors.

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Tech Info Library Article Number:15469

Tech Info Library

HyperCard 2.x: Color Printing Doesn't Work (1/96)

Revised: 1/2/96
Security: Everyone

HyperCard 2.x: Color Printing Doesn't Work (1/96)

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Article Created: 26 May 1994
Article Reviewed/Updated: 2 January 1996

TOPIC ----------

Color HyperCard 2.x stacks will not print to my Hewlett-Packard 4m printer. It appears that colored objects and PICTs do not print to PostScript printers in general. If an object has been colorized, it will print, but without color information. Is this because the color is in another layer and not really attached to the object, so nothing in the color 'layer' gets printed?

DISCUSSION ----------

You are right. HyperCard 2.2 or HyperCard 2.3 does not print color, nor is it likely to in the near future, because as you mentioned - color is added in as an XCMD and not fully supported in the body of the application.

Color printing is not a trivial task and would require a great deal more development time to implement in HyperCard.

Article Change History:
02 Jan 1996 - Added HyperCard 2.3 information.

Support Information Services

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Tech Info Library Article Number:15470

Tech Info Library

Power Macintosh: No Sound With Audio CDs (5/95)

Revised: 5/2/95
Security: Everyone

Power Macintosh: No Sound With Audio CDs (5/95)

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Article Created: 26 May 1994
Article Reviewed/Updated: 2 May 1995

TOPIC -----

When I play an audio CD in the built-in CD ROM on my Power Macintosh I am unable to hear any sound. The CD mounts on the desktop, AppleCD Audio Player opens and the time counter moves when I press play, but there is no sound. What is causing this problem?

DISCUSSION -----

You need to enable the audio playthrough option in the Sound control panel.

Step 1
---
open the Sound control panel

Step 2

From the pull-down menu, select Sound In.

Step 3

Click the option button

Step 4

Click Internal CD, and Playthrough.

After selecting the internal CD and Playthrough options, you should be able to hear audio CDs on your Power Macintosh computer.

Additional Troubleshooting

If you still do not hear any sound after setting the CD options properly, open your Preferences folder (in your System folder) and throw away the AppleCD Audio Player prefs and Sound Prefs. After throwing these files away, follow the previous steps to reset your Sound control panel.

Article Change History:
02 May 1995 - Added additional troubleshooting information.

Support Information Services

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Tech Info Library Article Number:15472

Tech Info Library

Duo Dock II and Duo Dock Plus: Detailed Video Support (10/95)

Revised: 10/19/95
Security: Everyone

Duo Dock II and Duo Dock Plus: Detailed Video Support (10/95)

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Article Created: 19 May 1994
Article Reviewed/Updated: 18 October 1995

TOPIC ----------

This article overviews the monitors and bit depths supported by the Duo Dock II and the Duo Dock Plus. The following montiors and resolutions are supported by the Duo Dock II and the Duo Dock Plus WITHOUT an external video adaptor.

DISCUSSION ----------

Begin_Table

Monitor	Resolution	Bit Depth	# of Colors/Gray Scales
Apple 12 Inch Mono	640 x 480	16 bit	NA/256
Apple 12 Inch RGB	384 x 512	16 bit	32,000/256
AppleColor Hi-Res RGB	480 x 640	16 bit	32,000/256
Apple Portrait	640 x 870	16 bit	NA/256
Apple 16 Inch RGB	832 x 624	16 bit	32,000/256
Apple Multiple Scan 15	640 x 480	16 bit	32,000/256
Apple Multiple Scan 17	640 x 480	16 bit	32,000/256
	832 x 624	16 bit	32,000/256
	1024 x 768	8 bit	256/256
Apple Multiple Scan 20	640 x 480	16 bit	32,000/256
	832 x 624	16 bit	32,000/256
	1024 x 768	8 bit	256/256
	1152 x 870	8 bit	256/256

Apple 21 Inch RGB	1152 x 870	8 bit	256/256
VGA	640 x 480	16 bit	32,000/256
SVGA	800 x 600	16 bit	32,000/256

End_Table

Note: It is only possible to display 256 levels of gray, even if the bit density is greater than eight.

Article Change History:
18 Oct 1995 - Added Duo Dock Plus.
16 Nov 1994 - Added Multiple Scan 15 Display.

Support Information Services

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Tech Info Library Article Number:15473

Tech Info Library

AppleSearch WAIS Gateway: Description (5/94)

Revised: 6/10/94
Security: Everyone

AppleSearch WAIS Gateway: Description (5/94)

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Article Created: 26 May 1994

TOPIC ----------

This article describes the AppleSearch WAIS Gateway.

DISCUSSION ----------

AppleSearch is a client/server information retrieval system which allows users to search large text databases for topics of interest. The AppleSearch WAIS gateway expands the scope of AppleSearch beyond Local Area Networks (LAN) to the Internet, allowing AppleSearch Reporters (search agents) to navigate the Internet retrieving information for AppleSearch users.

WAIS, the Wide Area Information Servers system, is one of many services on the Internet. WAIS was developed jointly by Thinking Machines, Apple Computer, KPMG Peat Marwick, and Dow Jones and Company. It has became popular public domain client/server software, providing searchable databases on the Internet. Commercial implementations of WAIS are also now available. Because WAIS and AppleSearch use similar indexing methods (inverted index files) and both provide relevance ranking, AppleSearch and WAIS work very well together. There are approximately five hundred WAIS servers on the Internet throughout the world with content including Supreme Court opinions, regional economic reports, weather maps, and even recipes. By extending the reach of the AppleSearch Reporter, the AppleSearch WAIS gateway makes it possible for users to receive updates from any WAIS server. The AppleSearch WAIS gateway allows less Internet-savvy users to easily conduct research on the wealth of informational resources on the Internet.

AppleSearch WAIS Gateway Features

- Allows Macintosh clients on AppleTalk networks to search Internet WAIS servers without having to be on the internet themselves.
- Provides user-defined "agent" based tracking of developments on the Internet.
- Allows server administrators to select the specific WAIS servers and

restrict access to inappropriate servers.
- Enables unattended, non-prime time access to heavily used Internet information sources.
- Seamless integration of LAN and WAN based information sources.

AppleSearch Usage on the Internet

The AppleSearch WAIS gateway allows Educators and students, business people, and other professionals to share in all the benefits of the existing AppleSearch client/server architecture as well as accessing WAIS servers on the Internet. WAIS servers will appear in the AppleSearch sources window along with any AppleSearch sources on the user's LAN. Users can create AppleSearch Reporters to search and retrieve information on local servers from the following sources: documents stored in their native format on servers, CD-ROM-based information, information from online news feeds, in addition to sources out on the Internet. Queries may be sent out on the Internet in an interactive fashion for immediate feedback or scheduled to search the Internet during off-peak hours.

The AppleSearch WAIS gateway is a gateway from the AppleSearch server software out to the main WAIS directory server located and maintained by Thinking Machines Corporation at Think.com. The main Think.com directory server points to all the registered WAIS servers on the Internet. The administrator of the AppleSearch server connects to the gateway and then selects which WAIS servers will be made available to local area AppleSearch users. This allows the administrator to choose servers that are applicable and appropriate for the local users' needs. Because there are so many WAIS servers, the AppleSearch interface conveniently organizes them in a volume oriented fashion listing all available servers in alphabetically grouped folders.

The AppleSearch client user composes a query and selects an appropriate WAIS index from the AppleSearch Server software. The client passes the query to the Server over the AppleTalk network and the server connects to the WAIS Server over the TCP/IP Internet. The WAIS server returns a relevance ranked list of documents that match the search criteria to the AppleSearch server and on to the client user. The user can then select a document for viewing by double clicking on the list and the AppleSearch server will contact the WAIS Server and retrieve the document.

The AppleSearch Reporter agents can be used to periodically search designated WAIS servers for topics of interest selected by the user. Scheduled searches can be instructed to return their results to a predetermined folder or update document. The user simply schedules a Reporter to deliver updates to their Macintosh on a daily or weekly basis.

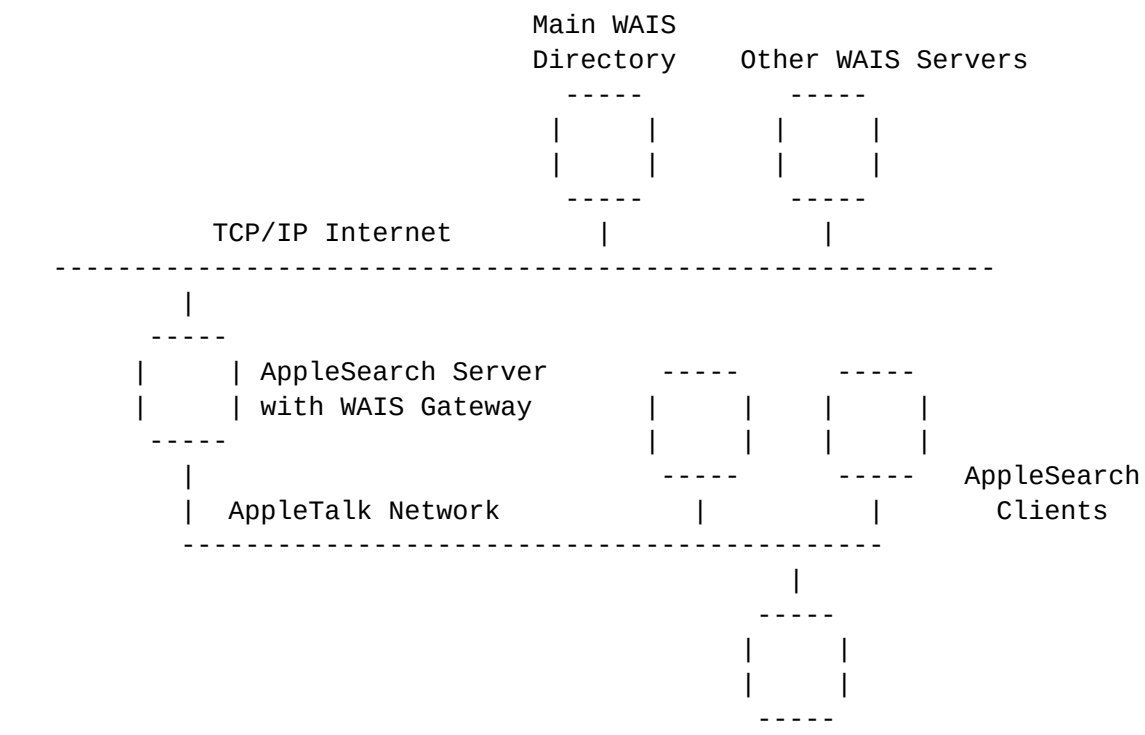
AppleSearch System Requirements

AppleSearch Server
- An Apple Workgroup Server (AWS) 60, 80, or 95 (file and print configuration), a Macintosh Quadra, or Centris 610 or 650.
- Macintosh system software version 7.x or A/UX 3.1.
- 8MB of RAM to run concurrently with AppleShare.
- AppleSearch Server and WAIS Gateway software.
- XTND translators for documents format support.

AppleSearch Client
• Macintosh computer with an internal hard disk and at least 4MB of RAM.
• Macintosh system software version 7.0 or later.
• AppleSearch Client software

Network Requirements
• AppleShare or the Macintosh file-sharing feature.
• AppleTalk software and an AppleTalk network connection (LocalTalk, EtherTalk, TokenTalk, or Apple Remote Access).
• Connection to the Internet

AppleSearch WAIS Gateway Architecture



Support Information Services

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Tech Info Library Article Number:15479

Tech Info Library

AppleSearch Bundle For The Internet: Internet Essentials (5/94)

Revised: 6/10/94
Security: Everyone

AppleSearch Bundle For The Internet: Internet Essentials (5/94)

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Article Created: 26 May 1994

TOPIC -----

This article describes some Internet elements users of the K-12 Internet Server need to know, when making decisions about Internet access.

DISCUSSION -----

Getting Connected

The Internet is a large world wide network of machines running the TCP/IP protocol. There are three ways to connect to the Internet.

1) A dedicated full connection. You can connect a Macintosh to the Internet by installing MacTCP and connecting directly to the Internet through a service provider who installs a high speed line at your site. With a dedicated connection you are a full fledged node on the Internet.

2) A non-dedicated partial connection. You can dial into a service provider and use the Point to Point protocols (PPP) or the Serial Line Interface Protocols (SLIP) over a modem line.

3) A terminal emulation connection. You can remotely log into a machine that is on the Internet through telephone lines and act as a terminal.

A full connection provides you the ability to obtain all the Internet services available, including providing services to other users of the Internet. A partial connection provides considerably less services but does allow you to "browse" the Internet by running "front end" programs.

If you are integrating the Internet into you curriculum you may prefer a full connection while new users to the Internet may experiment with a partial connection. The optimum Internet experience is obtained with a dedicated connection.

Dedicated connections offer three advantages over non-dedicated connections:

- You can set up a File Transfer Protocol (FTP) server which will allow any other user on the Internet to access a file when it is convenient for them.

- You don't have to connect to the network each time you want to use it, you are always connected and ready to go.

- File transfers are significantly faster.

Dedicated connections come at a cost. An estimate for dedicated K-12 connection may be $12,000 per year or more.

PPP and SLIP connections are much less expensive because you dial in to the network through a high speed modem only when you want to use it. The features these connections lack are:

- Because you are using a modem, file transfer is significantly slower. The connection isn't fast enough to service more than two or three concurrent users.

- Since the connection to the network is active only when you dial in, interaction with the rest of the Internet community is limited. This will reduce the level of electronic mail and other collaborative and interactive experiences you will have with other students and educators.

WIDELY USED INTERNET SERVICES

Telnet Remote Terminals

Using the Telnet remote terminal protocol users can log into and run programs on millions of computers all over the world. Telnet supports connections to UNIX hosts, DEC VAX, and IBM mainframes. Thousands of publicly accessible services are available via Telnet, including the national weather service, Library of Congress card catalogs, and National Science foundation super computers.

FTP Servers

The File Transfer Protocol is widely used on the Internet to provide a wide range of software file servers to the general public. Using an Anonymous login, users can transfer files from an FTP server to their computer very quickly. Most Public Domain software as well as a large number of demonstration programs are available via Anonymous FTP.

Users who are directly connected the net can set up FTP servers for other Internet users to access. Your students can make available their collections of files to millions of Internet users.

Electronic mail

E-mail is the principal collaborative feature of the Internet. Mail is

generally sent to the users of a machine that is directly connected to the Internet. Each user can then use a mail front end program that can download the mail to the users machine.

Shareware front ends such as Eudora can be used to download mail from an Internet node acting as a mail server to a LAN based mail package such as Quickmail, or Microsoft Mail. The First Class BBS system can also used as a front end system for Internet mail.

With Eudora each mail user must have an account on a computer that is directly connected to the Internet. This requires considerable management in a school setting. With a standard LAN mail package acting as a mail gateway, user management is typically easier and the entire user list can receive Internet mail through one Internet address. Handling Internet mail by passing messages off to a LAN based package allows the user to receive mail at any point on the LAN by launching the mail client software and entering their password.

Newgroups

The USENET Network Newsgroups can be thought of as a worldwide collection of automatically updated electronic bulletin boards or discussion areas. They are of particular interest because they bring a wide ranging spectrum of opinions and knowledge on many educationally relevant and interesting topics. However, these newsgroups may contain highly objectionable material that would be inappropriate in a school setting. The issue of students exposure to objectionable material is very hot in school districts investigating connection to the Internet.

Network news is transmitted on the USENET, a sub-network on the Internet of about 3 million people. Your Internet provider will generally provide you with a connection to a server which stores the last few days of messages from a selected group of USENET Newsgroups. Users will then point their front end programs at this computer to check for new messages. Schools can also set up their own USENET server and select the newsgroups to which they want to subscribe. A UNIX server is required to implement a USENET server.

Gopher

The most popular and easy to navigate sub-spaces on the Internet are the Gopher servers. Gopher, and TurboGopher for Macintosh was written by a team of programmers at the University of Minnesota. Gopher puts a menu based interface on the resources residing on the more than 1,500 servers running Gopher server software.

Gopher is best for Internet browsing because it allows you to jump from one Gopher site to the next while the program automatically opens and shuts down each server connection that is made during the session. While Gopher space navigation is quite easy, it can become aimless, time consuming and non-productive for students doing research because Gopher space is very large and it is growing by the day.

WAIS

WAIS (Wide Area Information Server) servers are another large subset of the Internet that contains a vast amount of educationally relevant material. WAIS servers differ from Gopher servers by indexing the material on them. Each server contains its own index which previously allow for searching by UNIX based shareware.

World Wide Web

Another service on the Internet is the World Wide Web (WWW). By using a front end program like NCSA Mosaic users who are directly connected to the net can use a point and click interface to access thousands of servers all over the world. All of the other services (FTP, WAIS, Gopher, Newsgroups) except mail are available via Mosaic.

Users who are directly connected to the Internet can put up their own home pages using a WWW server software. Students and faculty can design colorful and exciting interfaces to their own collections of information.

Support Information Services

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Tech Info Library Article Number:15480

Tech Info Library

DOS Compatibility Card: Drive Container Not Recognized (5/94)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Drive Container Not Recognized (5/94)

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Article Created: 27 May 1994

TOPIC ----------

I have a Quadra 610 DOS Compatible computer and my drive container for the DOS Compatibility Card is not being recognized after I restart. I have tried zapping the PRAM and throwing away the PC Setup Prefs file, but neither of these have helped.

DISCUSSION ----------

Certain hard disk formatting application programs can cause the Quadra DOS Compatible and DOS Compatibility Card drive container not be recognized. Two formatting applications that are known to cause this problem are SCSI Director, and APS Power Tools; a version of SCSI Director bundled with drives from Alliance Peripheral Systems. Other hard disk formatting applications may produce similar symptoms.

To correct the problem, you need to make sure that Finder Eject is disabled. Finder Eject should only be used for removable media. Consult the software's User's Guide for specific information on disabling Finder Eject.

Once you disable Finder Eject, you need to restart your computer and select the drive container in the PC Setup control panel. You can now switch to MS-DOS. You should restart the computer and switch to MS-DOS again to confirm that the problem is resolved.

Support Information Services

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Tech Info Library Article Number:15481

Tech Info Library

Apple Media Tool 1.1: Demo Projects Can't be Opened (5/94)

Revised: 5/31/94
Security: Everyone

Apple Media Tool 1.1: Demo Projects Can't be Opened (5/94)

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Article Created: 31 May 1994

TOPIC -----

Customers with the Apple Media Tool Demo CD are getting a "Program error (1)" when attempting to open the Demo projects with the released version of Apple Media Tool 1.1. The projects cannot be opened with AMT 1.0 either. They can only be opened with AMT Demo 1.1.

- Is there a way to open the demo projects with AMT 1.1?
- Do users have any rights to use any of the stuff that is in the Demos?

DISCUSSION -----

This is a bug, that Apple Engineering is aware of, and they are looking into it.

As far as the content goes, it was given to us without restrictions by Arborescence in Paris. People can use whatever is on the disc, but they shouldn't sell the contents as part of another title. The source code provided by Art Technology Group (the first few lines of these files include the phrase “Copyright 1994 Art Technology Group”) is provided for free. Its use must be accompanied by a notice in the executable stating that portions of the program are under copyright of Art Technology Group. The source code can be redistributed and/or modified, so long as the original copyright notice (in the first lines of each file) is preserved and a dated notice of any changes is clearly given within the source code.

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Support Information Services

..TIL15482-Apple_Media_Tool_1-1Demo_Projects_Cant_be_Opened_5-94_(TA31801).pdf

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15482

Tech Info Library

ARA 2.0.x: Macintosh Portable Problem & Solution (5/94)

Revised: 6/3/94
Security: Everyone

ARA 2.0.x: Macintosh Portable Problem & Solution (5/94)

==========

Article Created: 26 May 1994
Article Reviewed/Updated: 3 June 1994

TOPIC ----------

I'm trying to use Apple Remote Access (ARA) Personal Server 2.0 with an original Macintosh Portable with an Apple 2400 internal modem. I get no response from the modem when trying to dial. I have tried all of the available 2400 baud scripts, including the Apple 2400 and Hayes 2400 scripts. I'm able to dial with other terminal programs.

DISCUSSION ----------

It turns out that there's a pretty simple solution. Use the Apple Modem 2400 CCL from ARA 1.0. It works fine, and we have verified it.

We tested both ARA Personal Server 2.0 and 2.0.1 with a Macintosh Portable and reproduced your problem. The solution above resolves this problem for both ARA PS 2.0 and 2.0.1. We have reported your problem, and we're awaiting resolution.

Article Change History:
03 Jun 1994 - Added information on ARA 2.0.1 to article.

Support Information Services

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Tech Info Library Article Number:15483

PowerBook Duo: Type III Battery Q & A (8/95)

Revised: 8/29/95
Security: Everyone

PowerBook Duo: Type III Battery Q & A (8/95)

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Article Created: 02 June 1994
Article Reviewed/Updated: 29 August 1995

TOPIC ----------

This article provides questions and answers on the PowerBook Duo Type III battery.

DISCUSSION ----------

Question: Does the Type III battery for the PowerBook Duo use the same battery charger as the older Type II battery?

Answer: Type I, II, and III Duo batteries can be recharged in the recharger model M1812 (Marketing number M4178LL/B). The Type I recharger, model M7778, can only be used to recharge Type I batteries. The model number of the recharger is printed on the bottom of the recharger. If you have recharger model M7778, you cannot use it with Type II or Type III batteries. Contact Apple or an Apple authorized reseller to obtain the correct model.

If a red light appears when you place a Type III battery into the recharger, the recharger is either the older model or the recharger needs to be updated.

If you have a recharger model M1812 and you need to update it, follow these steps:

1. Shut down the PowerBook Duo computer.

2. Plug the power adapter into an AC outlet using the power cord that came with the computer.

3. Snap the recharger onto the side of the power adapter.

4. Plug the power adapter cable into the power adapter port on the back of the Duo computer.

5. Turn on the PowerBook Duo.

Question: What software do you need to install to correctly use Type III batteries in older PowerBook Duo computers?

Answer: You need to use the Type III Battery Extension, which is provided on a diskette with the battery when you purchase it. The 2.0 Enabler requires System 7.1.1, which is not available for the older Duo computers.

System 7.5 has all the required code for Type III batteries incorporated into the system software so no additional extensions or software is necessary. However, due to an error in the System 7.5 Update 1.0 software, if you are running System 7.5.1, the Type III Battery extension is required to update the external Duo Battery Recharger.

Question: The PowerBook Duo 280c comes with a newer AC power adaptor. Can older AC power adaptors be used with the Duo 280c and the new battery recharger?

Answer: You can you use older AC power adapters with the Duo 280c. The Duo 280 uses AC adapter model M7783. The Duo 280c can use model M7783 however it is suggested that the new model M2693 AC power adapter be used. You can use the new version of the AC power adapter with the model M4178 Battery Recharger. As explained previously, the battery recharger model M4777 cannot be used with Type III batteries.

Question: Do you need the new battery recharger to use Type III batteries in older Powerbook and Duo computers?

Answer: A new charger is not required to take advantage of a Duo Type III battery. An update to the existing charger will provide compatibility. This update procedure is documented above.

Question: Will there be a new recharger and power adapter that is compatible with all battery types?

Answer: There are no plans for any additional chargers or power adapters as the current charger and AC Adapter are fully compatible if they have been updated.

Article Change History:
29 Aug 1995 - Added information about System 7.5.1.
20 Apr 1995 - Noted that System 7.5 has Type III software built in.
01 Feb 1995 - Removed all mention of the PowerBook 500 series from article.

Support Information Services

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Tech Info Library Article Number:15484

Tech Info Library

Quadra 700, 9X0:Clean Install Problem - 16 & 21 Monitor 5/94

Revised: 5/31/94
Security: Everyone

Quadra 700, 9X0:Clean Install Problem - 16" & 21" Monitor 5/94

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Article Created: 27 May 1994

TOPIC -----

When doing a clean install of the operating system on a Quadra 700, 900 or 950, if you disable the System folder by moving the Finder to another folder, the Macintosh will hang on startup with a frozen Macintosh rather than display the blinking question mark. This will occur only if the Quadra internal video is attached to an Apple 16” or 21” color monitor.

DISCUSSION -----

This problem occurs between the time the Quadra identifies a volume as bootable, and when it finds a legitimate system folder - which in a clean install scenario, doesn’t exist. The solution for this problem would require a hardware fix, and these particular machines, with the exception of the Quadra 950, are out of production. It is a very rare problem that most people will never encounter.

We recommend that while doing a clean install with one of the above mentioned configurations, that you insert the Install 1 disk before powering up the Quadra. Do not wait for the blinking question mark as with a normal clean install.

This issue does not occur if the Quadra is attached to an Apple 12” Monochrome, 12” RGB, 13” RGB, or 14” RGB. It has not been tested with the Apple 15” portrait, 21” Monochrome or the 17” or 20” Multi-Scan monitors.

Support Information Services

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Tech Info Library Article Number:15485

Chinese Language Kit: Frequently Asked Questions (5/96)

Revised: 6/5/96
Security: Everyone

Chinese Language Kit: Frequently Asked Questions (5/96)

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Article Created: 27 May 1994
Article Reviewed/Updated: 24 May 1996

TOPIC ----------

This is a list of Frequently Asked Questions (FAQ) on the Chinese Language Kit (CLK).

Questions in this FAQ:
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• What is the Chinese Language Kit?

• Will the CLK work with systems before System 7.1?

• How does the Chinese Language Kit work?

• What does the CLK offer publishers?

• How much space does CLK occupy on the hard drive?

• Why does the CLK take up so much hard disk space?

• Is the Chinese Language Kit compatible with System 7.5?

• I use both Japanese and Chinese Language Kits. I installed the Japanese Language Kit AFTER installing the Chinese Language Kit, and they do not seem to work properly.

• I installed CLK, but TeachText displays garbage when I enter Chinese.

• I typed some Traditional characters, and now I want to display them as Simplified. Is there a way to convert them?

• I typed some Traditional Chinese characters, then I tried to change the font

to Song, and the text turned to garbage characters.

• I have a Performa computer and CLK windows such as help and the input window disappear.

• I use the CLK on my Macintosh with Apple Express Modem software. There are two problems when I try to FAX:
a) The Fax Phone Book window refuses to scroll in the 'Fax Send' dialog box even though there are more addresses than can be displayed. I have to click on an addressee, then use the up and down arrow keys to navigate
b) The Cover Page is lost when I transmit a document (even though one is selected).

• I have a Performa computer and the Chinese Language Kit. Windows such as help and the input window do not show up when I try to enter Chinese text.

DISCUSSION ----------

Question: What is the Chinese Language Kit?

Answer: The Chinese Language Kit is system software that supports Traditional Chinese and Simplified Chinese language input on a non-Chinese operating system. In other words you can add the Chinese Language Kit to a Roman (European) operating system and input Chinese characters using a Chinese localized or WorldScript-savvy application.

Question: Will the CLK work with systems before System 7.1?

Answer: No, System 7.1 is required, because this is the first version of the operating system to incorporate WorldScript technology. WorldScript makes multi-lingual computing possible.

Question: How does the Chinese Language Kit work?

Answer: Once installed on a System 7.1 (or higher) Macintosh, the Chinese Language Kit adds Chinese as a secondary script to the Macintosh system. It adds extensions, Chinese character input methods, a control panel, language resources, fonts, dictionaries, and preference files and utilities that support the Chinese script. The language resources provide script-specific information for line direction, word boundaries, date, time and number formats.

Question: What does the CLK offer publishers?

Answer: For publishers, Language Kits provide an opportunity to expand their business by adding the capability to create Chinese language brochures, sign boards, posters, T shirt designs, restaurant menus, business cards, etc. Some publishers have been using ChineseTalk -- Apple's fully localized Chinese operating system -- but would prefer to use a system that provides an English Finder while allowing them to work with Chinese text.

Question: How much space does CLK occupy on the hard drive?

Answer: Approximately 17 MB if you install Traditional and Simplified Chinese; Approximately 10 MB if you install either Traditional or Simplified; Approximately 40 MB if you install both Traditional, Simplified & the 4 extra Chinese TrueType fonts on CD.

Question: Why does the CLK take up so much hard disk space?

Answer: Chinese fonts require 6 - 9 MB per typeface. Users who install both Traditional and Simplified characters will need 17 MB of hard disk space. However, many people will choose to install only one or the other, or choose not to install all TrueType fonts. This can be done easily through the custom install menu.

Question: Is the Chinese Language Kit compatible with System 7.5?

Answer: An updater has been released for customers who already own the CLK which will upgrade them to version 1.1.1. The following files are part of the updater disk:

Chinese Updater	1.0
Installer	4.0.3
Read Me	
Support Files	
- InputBackSupport	7.5
- Language Kit Extension	7.5
- SimpleText	1.1.1
- Simplified Chinese	CH1-7.1.1
- Simplified Chinese Input Method	CH1-1.0.3
- Traditional Chinese	TA1-7.1.1
- WorldScript™ II	7.5
- WorldScript™ Power Adapter	7.5.1

Question: Does the CLK support both Traditional and Simplified characters?

Answer: Yes. Customers told us that this would be very important, especially for academic users, but also for publishers. Also, people use a wide variety of methods to input Chinese characters using a keyboard. The CLK includes pinyin, zhuyin, cangjie, dayi, wubi xing, wubi hua and a variety of others.

Question: How many Language Kits are available from Apple?

Answer: The Japanese Language Kit was shipped in April, 1993. The Chinese Language Kit shipped in October 1993. Apple will be looking at customer demand to decide which languages will follow.

Question: What third parties are supporting this product?

Answer: The Chinese Language Kit is supported by two kinds of applications: Chinese localized applications, and WorldScript-savvy applications. Many popular applications -- including WordPerfect and Nisus -- take advantage of WorldScript™, Apple’s multi-lingual software technology. System 7.1 compatible applications that have been localized for Chinese can also be used with the Chinese Language Kit. The programs include Claris Works Chinese and TurboWriter from Transpac, among many others.

Question: I use both Japanese and Chinese Language Kits. I installed the Japanese Language Kit AFTER installing the Chinese Language Kit, and they do not seem to work properly. What's wrong?

Answer: The JLK installer placed an older version of the InputBackSupport extension that does not work with the CLK. You must deinstall both kits, then install the Japanese Language Kit first, and the Chinese Language Kit second (if using the Updater for System 7.5 compatibility install it third, it will provide compatibility for both kits).

Question: What does the CLK install into my computer?

Answer:
- WorldScript II extension
- Language Kit extension
- InputBackSupport extension
- Far East Addition extension
- Simplified Chinese Input Method extension
- Pinyin extension
- Dayi extension
- Parrot extension
- Zhuyin extension
- Cangjie extension
- Simplified and Traditional Chinese Support extensions
- Roman Support extension
- Text control panel
- Simplified and Traditional Chinese script resources (invisible once installed)
- Simplified and Traditional Chinese fbit/fdef fonts
- Simplified and Traditional Chinese Fonts patch files
- Hanzi bitmap fonts
- Hanzi TrueType fonts
- Main Dictionary
- User Dictionary
- Dictionary Tool (Cidian gongju)
- Simplified and Traditional Chinese Language Registers
- Simplified and Traditional Chinese TeachText
- Language Kit Preferences
- DTSysFile
- Input Method Preferences

- SWM Preferences
- User Preference File

Question: I installed CLK, but TeachText displays garbage when I enter Chinese. What's wrong?

Answer: You must use either 'TeachText Simplified Chinese' or 'TeachText Traditional Chinese' to enter Chinese text. They are not auto-installed and must be drag installed.

Here is where they are located:

Chinese Install Disk 1->Chinese TeachText->TeachText Simplified Chinese or TeachText Traditional Chinese

Question: What does the "Install Simplified Chinese" script install on my Macintosh?

Answer: The script will place Simplified Chinese language support and its input methods on your Macintosh. Input methods are included in a single file, and are installed together automatically.

Question: What does the "Install Traditional Chinese" script install?

Answer: The script will place Traditional Chinese language support one input method (Pin yin). Input methods are contained in individual files, and can be installed one at a time. If you have run "Easy Install," but still don't have the Traditional input method you want, run "Custom Install" (Traditional) and select the desired input methods, or select all of the Traditional input methods.

Question: I typed some Traditional characters, and now I want to display them as Simplified. Is there a way to convert them?

Answer: No, since Traditional and Simplified characters use different encoding standards, conversion between them is not easy. You must use a third party conversion solution.

Question: I typed some Traditional Chinese characters, then I tried to change the font to Song, and the text turned to garbage characters.

Answer: Song is a Simplified Chinese font, and will not display Traditional characters.

Question: Some keystroke sequences I use in QuicKeys do not work since I installed CLK.

Answer: The Chinese Language Kit uses the sequence Command-Spacebar to switch keyboard layouts. Other applications or utilities like QuicKeys may also attempt to use this key combination. The Language Kit will take precedence in all cases so the user will have to find an alternative keystroke sequence for the conflicting program.

Question: I have a Performa computer and CLK windows such as help and the input window disappear. What is wrong?

Answer: There is a conflict between CLK and the Launcher: If you have System 7.1P4 or later, open the Performa control panel and turn off Finder Hiding.

If you have System 7.1P3 or earlier, remove the Launcher from the Control Panels folder, and place it in the Startup Items folder. Finder-hiding will be deactivated this way.

Question: Is there a site license available?

Answer: Since the introduction of the JLK, an number of customers have requested this. Apple will make an announcement about this soon. This policy will vary by region.

Question: I use the CLK on my Macintosh with Apple Express Modem software. There are two problems when I try to FAX:

1) The Fax Phone Book window refuses to scroll in the 'Fax Send' dialog box even though there are more addresses than can be displayed. I have to click on an addressee, then use the up and down arrow keys to navigate.

2) The Cover Page is lost when I transmit a document (even though one is selected).

Answer:
1) This occurs with the scroll bars for the "Fax Phone Book" and "Send To" lists. This is a known issue between Express Modem and Apple Language Kit software. Apple is working on a solution.

2) Make page 1 of your document the cover page.

Question: I use the Chinese Language Kit on my Quadra 840AV with PC Exchange 1.0.3. When I try to format a floppy disk, the machine hangs or does not complete the formatting process.

Answer: There is a known conflict between PC Exchange 1.0.3 and the Chinese Language Kit. PC Exchange 1.0.5 corrects the problem permanently and is available free by calling the Apple Order Center.

The Tech Info Library article titled "Locating Vendor Information" can help you search for Apple Order Center's phone number.

Question: Is the Chinese Language Kit compatible with Power Macintosh Computers?

Answer: Yes, though version 1.1.1 of the Chinese Language Kit is required for Power Macintosh computers running System 7.5.

Question: I use the Chinese Language Kit and when I rename a folder in the Finder, the keyboard menu changes from U.S. System 7 (a blue diamond) to something in Chinese automatically. If I select U.S. System 7 in the keyboard menu, I can enter the name in English. Why does the keyboard layout switch occur?

Answer: Apple Language Kits provide Finder support for English and the language each kit installs. When you modify a file or folder name, the language kit defaults to its primary keyboard layout. Traditional Chinese defaults to Pinyin. Simplified Chinese defaults to Shuru Fangfa: Here is how that default is selected:

When 'Beijing' is selected as the Font for Views in the Views control panel, the keyboard menu displays 'Shuru Fangfa' and 'U.S. System 7', because 'Beijing' supports both Simplified Chinese and Roman character sets.

Similarly, selecting 'Taipei' displays Pinyin and 'U.S. System 7' layouts in the keyboard menu, because 'Taipei' supports both Traditional Chinese and Roman character sets.

Question: The "Phonetic Transcription Systems for Chinese" appendix in the Traditional Chinese Input Method Guide lists the Pinyin phoneme "ü" (u with an umlaut) among valid entries, but there is no way to enter it with the Pinyin input method. Depressing option-u and the letter u sounds an error beep.

Simplified Chinese will allow you to enter "ü" in Pinyin by depressing the letter "v". This is an undocumented shortcut in the "Simplified Chinese Input Method Guide" manual.

NOTE: This shortcut does NOT work with the Traditional Chinese Pinyin input method.

Answer: This is a limitation of the input method itself.

1) use Traditional Chinese pinyin and search for the correct Chinese character (Hanzi) in the selection window for words containing "ü"
2) use Zhuyin input method (also known as Bo Po Mo Fo)
3) use Simplified Chinese Pinyin input method with the letter "v" to denote the letter "ü"
4) use a third party input method product, like Sindex 2.0 for complete Chinese phrase input (available through Pacific Rim Connections, Inc.(415) 697-0911). This is compatible with Apple's Chinese Language Kit.

Question: I have a Performa computer and the Chinese Language Kit. Windows such as help and the input window do not show up when I try to enter Chinese text. What's wrong?

Answer: If you have System 7.1P4 or later, open the Performa control panel and turn off Finder Hiding. Then restart your computer to enter Chinese through the input window.

If you have System 7.1P3 or earlier, remove the Launcher from the Control Panels folder, and place it in the Startup Items folder. Restart your computer and 'Finder-hiding' will be deactivated in this way.

Question: How do customers get technical support for their Language Kits?

Answer: Apple provides Chinese Language Kit technical support through 1-800-SOS-APPL Monday - Friday, 6 am. to 6 pm. Pacific time.

Article Change History:
24 May 1996 - Updated for technical accuracy.
21 Jun 1995 - Changed article format to resemble a FAQ.
16 May 1995 - Fixed minor formatting errors and typos.

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Tech Info Library

Japanese Language Kit: Overview and FAQ (12/96)

Revised: 12/10/96
Security: Everyone

Japanese Language Kit: Overview and FAQ (12/96)

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Article Created: 27 May 1994
Article Reviewed/Updated: 10 December 1996

TOPIC ----------

This is a product overview and list of frequently asked questions (FAQ) on the Japanese Language Kit.

DISCUSSION ----------

OVERVIEW
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The Japanese Language Kit (JLK) is system software that supports Japanese language input on a non-Japanese operating system. In other words you can add the JLK to a Roman (European) operating system and input Japanese characters using a Japanese localized or WorldScript™-savvy word processor or other application. This lets users include Japanese text in letters, presentations, and reports. Users can also work with files created using KanjiTalk, Apple's Japanese version of the Macintosh Operating System.

The JLK works with System 7.1 or later. (System 7.1 is the first version of the operating system to incorporate WorldScript technology.) Japanese Language Kit 1.2 is compatible with System 7.1, System 7.5, and System 7.5.1. The Japanese Language Kit 1.2 Updater is available through the Apple Order Center (800-950-5382x940).

Almost every major software application has a version that has been localized for Japanese. All you need is to run them with the Japanese Language Kit. Non-localized programs, such as Nisus 3.4, WordPerfect 3.0, or WorldWrite, which takes advantage of Apple's WorldScript technology, can also be used. WorldScript, introduced with System 7.1, simplifies the way in which multiple languages can be supported by a single operating system.

Features

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- Fast, simple, one-button installation
- Enables users to easily create, edit, and print in Japanese
- Comes with a bilingual input method guide
- Comes with two Kanji TrueType fonts: HonMincho and MaruGothic
- Users can display, edit, and print files created using the Japanese version of the Macintosh operating system, KanjiTalk.

Software Compatibility
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Runs applications that have been localized for Japanese, including WordPerfect, Persuasion, FileMaker Pro, and Lotus 1-2-3.

If the application you are interested in is not in the following list, we recommend you contact the application developer directly. To locate an address and phone number, use the vendor name as a search string.

Compatible Japanese Localized Applications:

Acta 7 1.03J
Illustrator 3.2J
PhotoShop 2.01J
Premiere 1.01J
PageMaker 4.0J
Persuasion 2.0J
SuperPaint 3.0J
Canvas 3.0J
Eg Word 4.2J
FileMaker Pro J 1.0v2
GreatWorks J
HyperCard 2.1J
MacDraw Pro 1.5v1
MacWrite II 1.1v2J
MacWord 2.0T2J
Quark Xpress 2.04J
SoloWriter 1.3J
WordPerfect 2.2J
Lotus 1-2-3 1.1J

WorldScript Savvy Applications:

AllPage1.82
AllScript 1.81
Nisus 3.4
NisusWriter
WinText 2.7
WorldWrite
WordPerfect 3.0

Apple has tested only a limited number of applications; these lists are not intended to be comprehensive.

Printers Supported

QuickDraw Printers

QuickDraw printers, including the Apple StyleWriter line, the Apple Personal LaserWriter product line, and the ImageWriter product line.

PostScript-compatible Printers

PostScript-compatible printers, including Personal LaserWriter LS printers and Personal LaserWriter NTR printers. (Although PostScript printers can produce Japanese, performance may vary.)

System Requirements

- Apple Macintosh computer with at least 4MB of RAM, 5MB of RAM required for JLK 1.2
  (5MB highly recommended for multiple applications)
- Hard disk drive with at least 20MB available
- Apple SuperDrive floppy disk drive
- For Apple Macintosh System 7.1 use either:
  - JLK 1.0
  - JLK 1.1
  - JLK 1.2
- For Apple Macintosh System 7.5 use:
  - JLK 1.2
- A Japanese or WorldScript-savvy application

The Japanese Language Kit Includes:

- Japanese Language Kit on fourteen 1.4MB floppy disks
- WorldScript II system extension
- Japanese Language Kit Installation and User's Guide
- Macintosh Japanese Input Method Guide

Availability and Support

In the U.S., order number M1648LL/A
Outside the U.S., order number M1648Z/A

Customers can contact 1-800-SOS-APPL for support on this product.

HOW THE JLK WORKS

Once installed on a Macintosh, the Japanese Language Kit places Japanese as a secondary script into the computer. It adds extensions, a Japanese character

input method, language resources, fonts, a user dictionary, and TeachText Japanese. The language resources provide script-specific information for line direction, word boundaries, date, time, and number formats. The original operating system is used, so there is no need to keep an additional system on the hard drive.

JLK PRIMARY AUDIENCE

The most natural market segments include Japanese nationals working abroad, non-Japanese people providing Japanese language services or products, and education. The education segment includes both Japanese nationals studying abroad, as well as people studying Japanese.

For publishers, the JLK expands business opportunities into Japanese-speaking markets by making possible Japanese language brochures, sign boards, posters, T-shirt designs, business cards, and more. Many publishers have been using KanjiTalk™, but would prefer to use a system that provides an English finder while letting them use a Japanese application and work with Japanese files.

Perhaps the largest segment of the market is non-Japanese people with an occasional need to use Japanese in a business or personal setting. This group includes people who may speak fluent Japanese or only a little, but have a need to use it occasionally in documents, letters, and presentations. Many people in business or government, for example, travel frequently to Japan and speak some Japanese. They would like to be able to use kana script or Kanji occasionally in their correspondence and presentations to accurately describe Japanese concepts, place names, family names, and so on even though they are working primarily in English. This product is ideal for them because of its ease of use.

JLK INSTALLATION

The Japanese Language Kit requires 4 MB of RAM (5 MB recommended to run multiple applications) and about 20 MB of free disk space. Japanese fonts require 6-9 MB each in order to accommodate more than 40,000 Kanji characters. If you do not have sufficient disk space, you can choose to install only one Japanese TrueType font through the custom install menu.

Software Included in The Japanese Language Kit:

- WorldScript II extension
- Japanese Language Kit extension
- InputBackSupport extension
- Kotoeri™ extension
- Kotoeri Help extension
- Japanese Support extension
- Roman Support extension
- Text control panel
- Japanese Script Resource
- Kanji fbit/fdef fonts

- Kanji Fonts
- Kanji bitmap fonts (Osaka, MaruGothic, HonMincho, and SaiMincho and AruGothic (for LaserWriter IINTXJ users only)
- Kanji TrueType fonts (MaruGothic and HonMincho)
- Kotoeri main dictionary
- Kotoeri user dictionary
- Kotoeri Dictionary Tool
- Japanese Language Register
- TeachText Japanese
- Language Kit Preferences
- User Preference File

The Japanese Language Kit comes with two Kanji TrueType fonts (MaruGothic and HonMincho), which offer high-quality output from any Macintosh compatible printer. Documentation is provided in both Japanese and English. Users can type using either the Roman or kana keyboard layout.

FREQUENTLY ASKED QUESTIONS

1) Question: Why doesn't the Installer ask for diskette Font 12?

Answer: The SaiMincho and ChuGothic fonts found on Font Disk 12 are available only through a customized installation. These fonts are PostScript compatible bitmaps for use with the LaserWriter NTX-J

2) Question: If I install the Japanese Language Kit (with 24-bit addressing ON) the Installer crashes while merging the TrueType fonts. Why?

Answer: This ONLY happens when installing on Macintosh computers (Macintosh II, IIx, SE/30, IIcx) that also have the 32-bit System Enabler installed. Turn ON 32-bit addressing in the Memory Control Panel while installing the Japanese Language Kit with these types of Macintosh computers (Macintosh II, IIx, SE/30, IIcx).

3) Question: Does the JLK translate English into Japanese?

Answer: No. The Japanese Language Kit does not translate text. It allows users to input, edit, and print in Japanese.

4) Question: I get unreadable Japanese text on the screen. What's wrong?

Answer: If you see unreadable Japanese text, check the following basic points to make sure the Japanese fonts system is complete:

- The fbit/fdef Kanji bit-map fonts (the one with the Kanji character “kan” and the circle behind its icon) are located at the System Folder root level (not Fonts folder). At minimum, the Osaka font must be installed.
- The InputBackSupport extension is present in the Extensions folder.

5) Question: Can I change unreadable Japanese text back into something readable?

Answer: Following are situations where unreadable Japanese text can be made readable:

Filenames in Finder Windows:

Open the Views Control Panel and select a Japanese font (for example, Osaka).There is a side effect in choosing a Japanese font in the Views Control Panel. Characters using a symbol or diacritical mark (such as è and ü) are replaced by another character. This occurs because Japanese fonts replace the upper ASCII table with Japanese characters. Use a Roman font when you need a character that includes a symbol or diacritical mark.

Japanese Application's Menu Bars And Dialog Boxes:

The application has a resource that tells the system which language the application uses. The system uses the information to select the appropriate font. In some cases, this resource was not properly set and the system has assumed English as the application’s language. Use the Japanese Language Register application to register a Japanese-localized application.

NOTE:
Some applications hard-code the font to use, for example in a text entry window or font list. In this case, the Japanese Language Register does not correct this misused font.

Keyboard Menu

Problem: In the Keyboard menu (Diamond Menu) and/or the Pencil menu the Japanese text is displayed as garbage.

Solution: This is normally caused by NOW Menus or some other menu management program. The menu program overrides the system menu font and forces the menu into a specific font. The menu font needs to be changed to the Osaka font in this menu program.

Japanese TeachText File Data

Problem: Double click on a Japanese TeachText file and the data appears as garbage.

Solution: The File Finder attributes are the same for a TeachText file whether it be Japanese or U.S. When you double click a TeachText file either version could be opened. The only work around is to open the version of TeachText you want, then open the file from within TeachText. Alternatively, you can use SimpleText, which is WorldScript-savvy.

Hiragana does not convert to Kanji

Problem: Text entered in Hiragana does not convert to Kanji.

Solution: The Main dictionary needs to be opened in the JLK preferences.

Question: When is it not possible to turn unreadable Japanese text into something readable?

A: Following are situations where Japanese text shows up as unreadable and there is no fix:

Unreadable Text In Menus And Dialog Boxes

Unreadable text occurs in the menus and dialog boxes. For example, the Applications Menu showing an application with a Japanese name. These areas of the system were not designed to support multiple scripts (writing systems). You see this with the Kotoeri alert messages. The alert dialog box routine uses the primary script to display the message.

6) Question: If I request Hiragana and see Katakana, what am I doing wrong?

Answer: Review the following. This is how the Kotoeri Input Method works:

"One-Touch Mode" Is Off In The Preferences:

- In Hiragana mode, when the Caps Lock is pressed, Kotoeri generates Katakana. (Katakana does not convert to Kanji.)
- In one of the Roman modes, Kotoeri generates capital characters when the Caps Lock key is pressed.
- In one of the Katakana modes, the Caps Lock doesn’t affect characters generated by Kotoeri.

"One-Touch Mode" Is On In The Preferences:

- The preceding default feature is disabled.
- In turn, you can choose a mode for each state of Caps Lock, such as Hiragana mode for caps off and Roman mode for caps on. This setting is recorded in the preferences.

7) Question: Some of my keyboard shortcuts don't work since I installed JLK. What's wrong?

A: System 7.1 or later uses the sequence Command-Option-Spacebar to switch keyboard layouts. Other applications or utilities like QuickKeys may also attempt to use this key combination. The System Software takes precedence in all cases so you have to find an alternative for the conflicting program.

8) Question: I use the JLK on my Macintosh with Apple Express Modem software. There are two problems when I try to FAX:

Fax Phone Book Window Will Not Scroll

The Fax Phone Book window refuses to scroll in the Fax Send dialog box even though there are more addresses than can be displayed. I have to click on an addressee, then use the up and down arrow keys to navigate.

Cover Page Is Not Included With Fax

The Cover Page is lost when I transmit a document (even though one is selected).

Answer:
The Fax Phone Book Problem:

This occurs with the scroll bars for the “Fax Phone Book” and “Send To” lists. This is a known issue between Express Modem and Apple Language Kit software. Apple is working on a solution.

Cover Page Problem:

Make page 1 of your document the cover page instead of using the Fax Cover application.

9) Question: Is the JLK compatible with Apple Power Macintosh computers?

Answer: Yes, absolutely. The Power Macintosh runs the System 7.1 or later operating system, which the Apple Language Kits require. If your Power Macintosh comes with System 7.5 installed, then you have two options:
• As a temporary solution, Obtain the JLK 1.1 Updater available from online services.
• The permanent solution is to Update to JLK 1.2 mentioned at the beginning of this article.

10) Question: I use the JLK and when I rename a folder in the Finder, the keyboard menu changes from U.S. System 7 (a blue diamond) to Kotoeri (a red sun with an apple) automatically. If I select U.S. System 7 in the keyboard menu, I can enter the name in English. Why does the keyboard layout switch occur?

Answer: Apple Language Kits provide Finder support for English and the language each installs. When you modify a file or folder name, the language kit defaults to its primary keyboard layout. Japanese defaults to Kotoeri. Here is how that default is selected:

The JLK displays keyboard layouts based on the “Font for views” selected in the Views Control Panel. When Osaka is selected, the keyboard menu displays “U.S. System 7” and Kotoeri, because Osaka supports both Japanese and Roman character sets. Selecting a Roman-only font like Palatino or Helvetica only displays “U.S. System 7” in the keyboard menu.

11) Question: I have a Performa computer and the JLK. Windows such as help and

the input window do not show up when I try to enter Japanese text. What's wrong?

Answer: If you have System 7.1P4 or later, open the Performa Control Panel and turn off Finder Hiding. Then restart your computer to enter Japanese through the input window. If you have System 7.1P3 or earlier, remove the Launcher from the Control Panels folder, and place it in the Startup Items folder. Restart your computer; Finder Hiding is deactivated.

12) Question: Does the JLK let all my applications process Japanese text after installation?

Answer: No, the JLK places Japanese resources into your System Folder, but still requires a WorldScript-savvy or Japanese localized application for professional results. WorldScript-savvy applications let you use any installed language scripts your system is using, like Japanese.

If you are unsure, contact the manufacturer to see if your favorite application is WorldScript-savvy. Here is a partial list of WorldScript savvy software covering a variety of categories:

Application	Company/Vendor
AllPage 1.82	MicroMacro
AllScript 1.81	MicroMacro
FreeHand 3.1 Asian	Aldus
HyperCard 2.2	Apple Computer
Imprint 3.5	Ivy Systems
In Control 2.0	Attain
Nisus 3.482	Nisus
Persuasian 2.1 Asian	Aldus
Sindex 2.0	WinSoft
StatView 4.01	Abacus Concepts
WinFile 1.7	WinSoft
WinText 2.7.1	WinSoft
WinView 1.7	WinSoft
WordPerfect 3.0	WordPerfect

NOTE: Apple does not recommend the use of programs that are not WorldScript-savvy or localized into Japanese. They may cause loss of Japanese text over time.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

13) Question: How do customers get technical support for their Language Kits?

Answer: Apple provides Japanese Language Kit technical support through 1-800-SOS-APPL Monday - Friday, 6 am. To 6 pm. Pacific time.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
12 Dec 1996 - Removed pricing information.
26 Jul 1996 - Added 5MB RAM required for JLK 1.2.
26 Jan 1996 - Added new number to order JLK Updater.

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Tech Info Library Article Number:15487

Tech Info Library

LaserWriter Postscript FAX Card: Phonebook Format (10/95)

Revised: 10/6/95
Security: Everyone

LaserWriter Postscript FAX Card: Phonebook Format (10/95)

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Article Created: 27 May 1994
Article Reviewed/Updated: 6 October 1995

TOPIC ----------

I am confused by the instructions in the LaserWriter Select 360 PostScript Fax Card User's Guide for importing text files into fax phonebook. What is the proper format for both the Macintosh and MS-DOS text files?

DISCUSSION ----------

MS-DOS Text File Format

The proper format for importing text files into the fax phonebook is:

"NAME", "COMPANY", "NUMBER", "RESOLUTION", "FAXPASSWORD"
"Naomi Heldman", "Apple Computer", "123-555-1212", "F", ""

The first line has the field names. This is required, as is the quotation marks as indicated above. There is a space after every comma, both in the field name line and in the actual data line. Empty fields should have open and close quotation marks, with no spaces between them.

The valid entries for "RESOLUTION" are "S" for STANDARD, "F" for FINE, and "P" for POSTSCRIPT.

Macintosh Text File Format

The proper format for importing text files into the fax phonebook is:

NAME<TAB>COMPANY<TAB>NUMBER<TAB>RESOLUTION<TAB>FAXPASSWORD

Example: Naomi Heldman<TAB>Apple Computer<TAB>123-555-1212<TAB>N<TAB>
Note: The tab character is Decimal 09 (Hex $09)

There is no field name line, and that the field data is separated by TABS.

Also, there are no quotation marks and any blank fields should simply be a tab.

The valid entries for "RESOLUTION" are "N" for NORMAL, and "P" for POSTSCRIPT.

Important: The FAX Phone Book does not allow curly quote marks. For example:
O’Brien is not accepted, O'Brien is.
Also, if there are a few duplicate entries in the phone book, they should be eliminated. The more records there are, the slower the FAX phone book operates.

Support Information Services

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Tech Info Library Article Number:15488

AWS 95: Diagnosing Problems Using Upgrade.report (5/94)

Revised: 5/31/94
Security: Everyone

AWS 95: Diagnosing Problems Using Upgrade.report (5/94)

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Article Created: 31 May 1994

TOPIC

This article describes how to diagnose problems which may occur during the installation of the Apple WorkGroup Server 95 (AWS 95) upgrade, using Upgrade.report file.

DISCUSSION

The Upgrade.report file is created by the UNIX portion of the AWS 95 SW Upgrade Installer and can be useful in diagnosing problems which may occur during installation. The UNIX shell script is launched by the Macintosh Installer and unpacks the cpio archive placed in /tmp by the Mac Installer (along with the UNIX installation script), rebuilds the UNIX kernel and performs other configuration tasks. The Upgrade.report file contains the standard output and error output from the installation script.

The following is a description of the Upgrade.report file contents. For a complete understanding of the installer's actions, you need to examine the installer shell script itself. As you read the description below, you may find it helpful to have a copy of a successful upgrade report to follow along with.

The Upgrade.report file is re-created each time an installation is performed. Any previous Upgrade.report files are lost.

- First, the installation script version number is displayed along with the current date & time and the machine configuration as reported by uname(1).

- The current kernel configuration parameters, see kconfig(1m). The installer attempts to preserve these configuration parameters (see below), paying special attention to the NBUF parameter.

- A list of files from the cpio archive, reported by cpio as they are installed. You may see error reports regarding missing directories if

the server does not have the development tools packages installed; this is ok.

- The modification time of /etc/init is reset; it represents the volume creation date for the virtual UNIX volume, '/'.
- Next you may see reports of kernel configuration files being re-linked.
- The output of the autoconfig(1m) command showing which modules are installed in the kernel.
- Depending on the server configuration, the text files /etc/inittab and /usr/lib/sendmail.cf may be modified. The installer script displays the changes in diff(1) format and leaves the original file in "filename".orig.
- Any custom values of the kernel configuration are restored and output.
- Finally, the script displays the contents of the Macintosh Installer's temporary directory and removes the directory and its contents.

Support Information Services

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Tech Info Library Article Number:15490

Tech Info Library

Apple Media Tool: Windows Media-Name on Macintosh First (5/94)

Revised: 5/31/94
Security: Everyone

Apple Media Tool: Windows Media-Name on Macintosh First (5/94)

==========

Article Created: 31 May 1994

TOPIC -----

My Windows runtime does not work. What could be wrong?

DISCUSSION -----

Although it is difficult to determine, the most common reason for this problem is that the media files are not in the right format. Media files must be converted using the converters supplied with the Apple Media Tool. Sounds must be converted into the WAV format (not 'snd ' or AIFF). Movies saved in the PICT format (not Photoshop's native format). Quicktime movies must be 'cross-platform' and 'flat'. The second most common reason for problems like this is a failure for media files to conform to DOS naming conventions. You must change the file names (if necessary) and use the "Replace Media" menu command in the Apple Media Tool BEFORE doing the Save As Text command in the Apple Media Tool. If you change the names afterward (or the file names change when converted to your DOS machine), the runtime will be looking for the WRONG file name. It cannot know what name to look for on the Windows platform because there is not a 1:1 correspondence between Macintosh file names and DOS file names. We recommend that you convert the file formats and the file names during development and test the Macintosh version of your runtime thoroughly. When you move your project to your Windows machine, you should test ALL your movies to verify they work properly with Quicktime for Windows.

Support Information Services

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Tech Info Library Article Number:15493

Tech Info Library

Apple Media Tool & QuickTime Licensing/Royalty Q&A (3/95)

Revised: 3/1/95
Security: Everyone

Apple Media Tool & QuickTime Licensing/Royalty Q&A (3/95)

==========

Article Created: 31 May 1994
Article Reviewed/Updated: 1 March 1995

TOPIC ----------

The following is a Q&A regarding software distribution and licensing.

DISCUSSION ----------

Question: Who needs to sign an Apple Media Kit, QuickTime, and QuickTime for Windows Software Distribution Agreement?

Answer: Any developer or publisher who wishes to license and distribute a multimedia product developed using the Apple Media Kit consisting of the Apple Media Tool and/or the Apple Media Tool Programming Environment needs to sign the Apple Media Kit Software Distribution Agreement.

Question: I want to distribute QuickTime and QuickTime for Windows with my multimedia product. How do I license QuickTime?

Answer: The Apple Media Kit Software Distribution Agreement also includes a license to distribute certain QuickTime and QuickTime for Windows files with your multimedia product. Please refer to the agreement for the specific file listings.

Question: What if I want to distribute an international version of QuickTime or other QuickTime files with my multimedia product?

Answer: International versions of QuickTime and other QuickTime files are available for licensing on a separate Software Distribution Agreement. Please contact the Apple Software Licensing Department for the appropriate agreement. For most multimedia projects, the international versions of QuickTime will not be necessary.

Question: What about the QuickTime logo? Can I use it on my multimedia products?

Answer: As a QuickTime licensee you are required to display the QuickTime logo on your licensed multimedia product. Details concerning this requirement can be found in paragraph 7 of the Apple Media Kit, QuickTime, and QuickTime for Windows Software Distribution Agreement.

Question: What is the term of the Apple Media Kit, QuickTime, and QuickTime for Windows Software Distribution Agreement?

Answer: The term of this agreement is three years. After the initial three year term, you will be required to sign a new agreement and pay additional licensing fees for the right to continue distributing your multimedia product. You will also be required to pay additional licensing fees if you release a new version of your licensed product.

Question: I develop multimedia titles that I license to a publisher. Do I have to sign the license agreement and pay licensing fees.

Answer: You must sign the Software Distribution Agreement if you plan to distribute your multimedia product and your licensee (publisher) must also sign the Software Distribution Agreement.

Question: What are the licensing fees associated with the Apple Media Kit Software Distribution Agreement?

Answer: The licensing fees depend on the type of distribution of your product. There are four (4) types of distribution defined in the Agreement: Commercial, Non-Commercial, Enterprise, and Education.

Please refer to Section 1 of the Agreement for the definitions of each type of distribution and Exhibit B for the associated licensing fees.

Question: I create and publish multimedia shareware. Do I have to pay a licensing fee?

Answer: Apple considers multimedia shareware distribution as Commercial Distribution. You will be required to pay $500 for each multimedia product.

Question: I work in an organization that plans to use the products we developed with the Apple Media Kit for internal use only. We do not plan to distribute our products outside our organization. Do I have to pay a licensing fee?

Answer: Apple defines internal use of your product as Enterprise Distribution. You will be required to pay Apple a license fee of $500 for each multimedia product developed with the Apple Media Kit.

Question: I work for an educational institution. Do we have to pay a licensing fee?

Answer: If your educational institution distributes a product developed with the Apple Media Kit for internal use only to faculty, administration, and students, you will not be required to pay a licensing fee. If your educational institution distributes a product developed with the Apple Media Kit outside your institution, you will be subject to the Commercial Distribution licensing fees as specified in the Agreement.

Question: I work for a private, non-profit organization. Do we have to pay a licensing fee?

Answer: If you work for a private, non-profit organization as defined in Section 501(c)(3) of the Internal Revenue Code and distribute a product developed with the Apple Media Kit for no charge or for a nominal charge to cover costs and handling, you will not be required to pay a licensing fee. However, if your organization is distributing a product for commercial purposes, you will be subject to the Commercial Distribution licensing fees as specified in the Agreement.

Question: What if I have additional questions about the Apple Media Kit, QuickTime, and QuickTime for Windows Software Distribution Agreement?

Answer: Contact the Apple Software Licensing Department at 408-974-4667.

Article Change History:
01 Mar 1995 - Changed title to reflect new product name.
07 Jun 1994 - Updated article with new info, and reformatted.
Included QuickTime info.

Support Information Services

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Tech Info Library Article Number:15494

Tech Info Library

Apple Media Tool: Lower Your Project Memory Requirements (5/94)

Revised: 5/31/94
Security: Everyone

Apple Media Tool: Lower Your Project Memory Requirements (5/94)

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Article Created: 31 May 1994

TOPIC ----------

My title seems to require 10 megs of memory but I was hoping that it would run in 5 megs of memory . How can I reduce the memory requirements for my project?

DISCUSSION ----------

Your AMK project could take an immense amount of memory if you incorrectly optimize your project. For instance, if you want a good transition, you might want a short looping sound covering up a slow screen transition. You might want that sound pre-loaded (it is loaded into memory when your title starts) but you do not want to pre-load your 100 MB movie because that will require 100 MB of memory in order to run your project. To turn pre-load on or off, select the media file in the media window so that it is highlighted. Then select the "Pre-load" menu item from the Media menu in the Apple Media Tool. From the AMT Programming Environment, ensure that your SUPPLIER/HANDLER classes do not have "preload is true" lines in your MEDIA.k files. If you want to change the memory allocation of your Macintosh runtime, after building the runtime, select the file in the Finder, select "Get Info" from the File menu and increase the "Minimum Size" number which represents the Kbytes of memory allocated to the runtime. Here are some tips on reducing memory requirements for your title:

1) Never use the pre-load feature for your media. That takes up the full size of the media file for the entire time your title is running.
2) Use pictures with smaller dimensions.
3) Use 3rd-party sound editing tools (like SoundEdit Pro) to reduce the frequency of your sounds (for instance, converting 22K sounds to 11K sounds). Sounds are loaded entirely into memory while they are running.
4) Turn long background sounds into small "looping" sounds. That will reduce the memory required on that screen.
4) For highly complex screens where many large pictures "hide" and "show" themselves, try turning the screen into multiple similar screens which emulate the same behavior. All pictures are loaded in memory for a whole scren and they will not be 'garbage collected' before you change screens

(i.e. until the next link)

Support Information Services

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Tech Info Library Article Number:15495

Tech Info Library

Apple Media Tool 1.0 & Sound Manager 3.0 Problems (3/95)

Revised: 3/1/95
Security: Everyone

Apple Media Tool 1.0 & Sound Manager 3.0 Problems (3/95)

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Article Created: 31 May 1994
Article Reviewed/Updated: 1 March 1995

TOPIC ----------

I hear a sound like a screech or white noise from my Apple Media Kit runtime. It should be just playing my sound. I am pretty sure that the sound is not 'broken'. It seems to be an incompatibility with Sound Manager 3.0. What is wrong?

DISCUSSION ----------

There is a known problem with the Apple Media Kit 1.0 which creates a problem for some users using Sound Manager 3.0. Sound Manager 3.0 is sometimes an optional Extension but it is in the ROMs for the AV-series Macintoshes.

Workaround

For AMT & Runtime Maker 1.0 users: Download the Runtime Maker 1.0.1 from and on-lone bulletin board such as AppleLink and build your project with that version. This should fix this problem.

Version 1.1 of the Apple Media Kit will not have this problem. If you do not have access to an on-line bulletin board, and you are not producing a Windows runtime, you can convert sounds to Quicktime sounds (i.e. a movie without a video track) as a temporary fix, that would prevent the problem from occurring.

AMT Programming Environment 1.0 fix: If you have the AMTPE and you cannot wait for version 1.1, add an HLock call after the keyCheck call in the SoundHandlerLoad routine in SOUNDHANDLER.c:

```
keyCheck(aHandle != NULL);
HLock(aHandle);        // add this line
```

Article Change History:
01 Mar 1995 - Changed title to reflect new product name.

Support Information Services

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Tech Info Library Article Number:15496

Tech Info Library

Apple Media Tool 1.0 “Transparency Problems” with Windows (3/95)

Revised: 3/1/95
Security: Everyone

Apple Media Tool 1.0 “Transparency Problems” with Windows (3/95)

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Article Created: 31 May 1994
Article Reviewed/Updated: 1 March 1995

TOPIC ----------

When I run the runtime on my PC, it quits after saying that transparency does not work on my Windows machine. I have even tried several video cards. What is wrong?

DISCUSSION ----------

If you used the Runtime Maker 1.0 to build your project, then you should download the Runtime Maker version 1.0.1 from an on-line bulletin board such as AppleLink. Be sure to follow the instructions enclosed with it regarding copying the .INI file in the Runtime Maker folder to your PC runtime folder.

If you used the AMT Programming Environment, be sure to include the lines:

```
[video]
transparency=bitmap
```

in your PROGRAM.INI file. If you have renamed your PC runtime MYPROJ.EXE, then you must change the name of your .INI file to MYPROJ.INI file and put it in the same directory.

Regrettably, the terminology behind checking for transparency is not well understood in the PC world. On the Macintosh, transparency effects are supported via Color QuickDraw transfer modes. Windows relies on video drivers to do most of the work for this type of pixel information and transparency support is not required by Microsoft. Routines to check for transparency support, similar to the Macintosh Gestalt command set, is required for Windows video drivers but they often are not implemented, let alone correct. If you use "driver-mode" transparency for your objects on the Windows versions, you must verify that transparency will be supported by the target machines. As of now, Apple does not have a reliable list of driver/board PC combos which support transparency. However, you should be able to get the effect by forcing software-based

transparency effects. The AMT Runtime Maker version 1.0 does not correctly check for this user option and so you should download the AMT Runtime Maker 1.0.1. In the AMT Runtime Maker 1.0, the default was driver-based transparency. Apple has determined that since so few boards support it, the default in version 1.1 will be software-based transparency and developers who want the faster driver-based transparency must have the line "transparency=driver" in their AMT.INI file. Users of version 1.1 will note that the .INI file will be next to the PC's QTW.INI file instead of using a PROGRAM.INI file. That means that overriding default settings must be done on a PC-by-PC basis without relying on a .INI file on your CD-ROM. The font mapping for Windows in AMK 1.0 is done in the .INI file but the font mapping for Windows in AMK 1.1 will be embedded in the new Apple Media Kit Text 1.1 media format. AMT.INI (only for AMK 1.1) is only useful when it contains:

```
[video]
transparency=driver
```

and when you are sure your video card and driver (for instance V7VGA.DRV support transparency.

Article Change History:
01 Mar 1995 - Changed title to reflect new product name.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15497

Tech Info Library

MAE and Apple Common Lisp (MCL) Incompatible (6/94)

Revised: 6/2/94
Security: Everyone

MAE and Apple Common Lisp (MCL) Incompatible (6/94)

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Article Created: 23 May 1994
Article Reviewed/Updated: 2 June 1994

TOPIC ----------

We have the Macintosh Application Environment (MAE) Trial CD and we're trying to run Apple's Macintosh Common Lisp (MCL) environment with it. We're getting an Error 3 illegal instruction error. Can this be tested for verification, and if you find a work around to get it running, could you let us know?

DISCUSSION ----------

The Apple MCL environment has been found to be incompatible with MAE version 1.0, primarily due to the absence of Floating Point Unit support.

Article Change History:
02 Jun 1994 - Changed some terminology for clarity.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15498

Tech Info Library

MAE & ftp: Transfer Macintosh Applications To UNIX Host (6/96)

Revised: 6/25/96
Security: Everyone

MAE & ftp: Transfer Macintosh Applications To UNIX Host (6/96)

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Article Created: 23 May 1994
Article Reviewed/Updated: 25 June 1996

TOPIC ----------

This article provides information about using ftp to transfer Macintosh application and document files from Macintosh computers to UNIX workstations running Macintosh Application Environment (MAE).

DISCUSSION ----------

Under MAE 2.0 or later, you can transfer applications with AFP services because MAE has AppleTalk & AppleShare capabilities. If you chooses to use ftp, or not to load the AppleTalk Kernel modules, this article explains the process to use.

There are many third-party file transfer protocol (ftp) utilities that let you transfer Macintosh files (applications or documents) from a Macintosh to any UNIX workstation (Sun, HP, or A/UX) running the MAE. This article describes these useful utilities:

- fetch 2.1.2* (freeware)
- ftpd (shareware)
- VersaTerm PRO (commercial)
- NCSA Telnet 2.6 (public domain)

NOTE: Use the correct format type when doing transfers so either the data, or resource forks are preserved while transferring files between a Macintosh and UNIX workstation.

* Fetch 3.0 and higher will not work with MAE 2.0.2, use version 2.x.x.

Fetch
=====

The fetch 2.1.2 utility is very straight forward; it acts as an ftp client on a

Macintosh with MacTCP installed. It supports these file format types:

- AppleSingle
- MacBinary I
- MacBinary II
- BinHex4
- Stuffit Archives
- MacHost

The ftpd Utility

The ftpd utility acts as an ftp server on a Macintosh with MacTCP. You can ftp from a UNIX workstation (as an ftp client) to a Macintosh.

For transferring Macintosh applications, you should use the AppleSingle format if your ftp utility supports it. If the ftp utility does not support AppleSingle format, you could use other utilities like BinHex, MacBinary, and so on. First convert the files to be transferred into BinHex or MacBinary file format, then use the binary transfer form in ftp. After transferring to the remote UNIX workstation, you may use the same utility in MAE to convert them into their original file format.

For people who do not have a floppy drive on their MAE machine, getting the fetch and binhex utilities mentioned here can be a problem. The solution is to log into ftp.abs.apple.com/pub/mae/utilites and download the tar archives of fetch, stuffit, and binhex. The following read me is included in this directory:

README for /pub/mae/utilities

Tools for Making Macintosh Binaries Available to MAE

The utilities in this directory are helpful if you need to transfer files between Macintosh computers and UNIX Workstations running MAE 1.0. This README explains how to get and use these tools.

How to Download

There are 4 files in the utilities directory on the ftp server called ftp.support.apple.com:

/pub/mae/utilities/README

This file includes the text you are reading.

/pub/mae/utilities/fetch.tar - (630K)

This is a tar archive of Fetch and Fetch Help:

• Fetch 2.1.2 - (500K)

This is an ftp program that runs on any Macintosh computer with MacTCP installed.

• Fetch Help - (126K)

This is an optional file that includes the complete manual on the Fetch program. To use it, run Fetch with this file in the same directory, and pull down the Windows menu and select Fetch Help.

/pub/mae/utilities/stuffit_exp.tar - (83K)

This is a tar archive of Stuffit Expander - Stuffit Expander 3.0.7 (81K). This is a program that can unpack Macintosh files in several formats.

/pub/mae/utilities/binhex4.tar - (10K)

This is a tar archive of BinHex4 - BinHex 4.0 (8K). This is a program that can encode and decode Macintosh files in BINHEX (.hqx) format.

Enter the following UNIX commands to uncompress the downloaded archives:

```
tar -xvf fetch.tar
tar -xvf stuffit_exp.tar
tar -xvf binhex4.tar
```

Example

NOTE: User input is shown in quotes, but you do not actually type the quotes:

```
% Ftp
ftp> "open ftp.support.apple.com"
Name (ftp.support.apple.com:xxxxx): "anonymous"
Password: "<your email address>"
ftp> "cd /pub/mae/utilities"
ftp> "ls"
-- directory list displayed --
ftp> "binary"
ftp> "get fetch.tar"
ftp> "get stuffit_exp.tar"
ftp> "get binhex4.tar"
ftp> "close"
ftp> "quit"
%
%
% "tar -xvf fetch.tar"
% "tar -xvf stuffit_exp.tar"
% "tar -xvf binhex4.tar"
```

Using Fetch

Run Fetch on a Macintosh computer that is on the same network as your workstation (that you use to run MAE). When "get"ing a file, always select binary transfer mode. When "put"ing a file, on the final dialog select AppleSingle as the file format. For more complete instructions on using Fetch, read the online Fetch Help.

NOTE: Any "put" file format besides APPLESINGLE does not work.

There is an incompatibility that occurs when running Fetch under MAE. After an ftp transfer (get, put or directory listing) has completed, Fetch does not recognize the completion event and waits (the dog cursor keeps running). To manually correct this, just press the Cancel button or press Command-. (period) after the ftp transfer has completed. Note that the Fetch Transcript window (invoked from the Window menu) displays a message when the transfer has completed.

Fetch is Copyright (c) 1994, Trustees of Dartmouth College and is licensed free of charge for use in educational and non-profit organizations. Users in government and commercial enterprises may obtain an individual license for $25. Please see the Fetch Help file for more information.

Using Stuffit Expander

Stuffit Expander is a freeware Macintosh application that can decompress and decode a number of different formats including Stuffit, Compact Pro, AppleLink, and BinHex. This program is also invoked automatically by Fetch after the transfer process to decompress archive files (Fetch can decode BinHex files itself).

To use Stuffit Expander, drag the archive or encoded file on top of the Stuffit Expander icon or open the file from within Stuffit Expander.

Stuffit Expander is free for non commercial purposes and copyright 1992-1993 by Alladin Systems, Inc. and Raymond Lau.

Using BinHex4

BinHex 4.0 is a freeware Macintosh application that can encode and decode files in BINHEX format. This is the most common form of ASCII encoding and transfer used for Macintosh files.

To use BinHex 4.0, launch BinHex 4.0 and choose Application --> Upload from the File menu. Select the file you want to encode from the standard file dialog and save it (always make the suffix .hqx to show it is a BINHEX file). To decode a .hqx file, choose Upload --> Application from the File menu and select the file to decode from the standard file dialog and save it.

BinHex 4.0 is free for non-commercial purposes and copyright by Mainstay.

Special ftp Note

.hqx files are the only files that can be downloaded in ASCII mode; all others must be downloaded in BINARY mode for the file to decompress properly. Otherwise you get errors like "unreadable file" or "file is corrupt" when you try to decompress them.

Legal Statement
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Article Change History:
25 Jun 1996 - Updated Fetch information.
09 Jan 1996 - Updated for MAE 2.0 and later.
21 Feb 1995 - Added keyword and made several technical updates.

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Tech Info Library Article Number:15499

Tech Info Library

MAE: Using Fetch To Transfer Macintosh Files (7/94)

Revised: 7/28/94
Security: Everyone

MAE: Using Fetch To Transfer Macintosh Files (7/94)

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Article Created: 26 May 1994
Article Reviewed/Updated: 28 July 1994

TOPIC

This article describes the steps to follow when transferring files from a Macintosh to a UNIX workstation running Macintosh Application Environment (MAE).

DISCUSSION

There is some confusion about using Fetch to transfer applications from a Macintosh to a UNIX workstation, so MAE can then launch those applications. The Macintosh must have MacTCP running and be able to communicate to the UNIX host via TCP/IP. Follow these steps:

1) Launch Fetch on the Macintosh.

2) Open a connection to your UNIX workstation.

3) Click the "Put File" button in Fetch.

4) Fetch will put up a file dialog, you then navigate to the file you want to send.

5) Highlight the filename, and select "Open".

6) Another dialog will open. Fetch will allow you to set the name of the file as it will be saved on your UNIX workstation. Also here you must change the transfer type to "AppleSingle". Fetch will generally default to MacBinary, so you need to change the transfer type.

7) Click Send.

8) You're done. Now launch MAE and run your application.

Article Change History:
28 Jul 1994 - Added MacTCP on Macintosh, and communicate through TCP/IP.

Support Information Services

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Tech Info Library Article Number:15500

Tech Info Library

MAE Colormap Flashing: There Are Two Options (5/94)

Revised: 5/31/94
Security: Everyone

MAE Colormap Flashing: There Are Two Options (5/94)

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Article Created: 31 May 1994

TOPIC ----------

This article describes colormap flashing in Macintosh Application Environment (MAE) and the two option settings.

DISCUSSION ----------

Colormap flashing is a phenomenon that typically happens when a number of different X applications try to allocate colors in the colormap. As a result, the colors displayed in the windows may change abruptly as you move the pointer among the different X windows.

MAE offers two options for dealing with colormap flashing, available in the Options dialog box (click the Options button in the Monitors control panel). The default option, "Reduce colormap flashing" reduces, but does not eliminate, the likelihood of colormap flashing, sometimes at the expense of performance. The other option, "Use standard Macintosh colors (colormap may flash)" increases the likelihood that the colormap will flash, in exchange for somewhat better MAE performance.

Refer to Appendix C "Reducing colormap flashing" in the MAE User's Guide for more details.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15501

Tech Info Library

Apple LaserWriter: Setting PCL Print Resolution (10/95)

Revised: 10/10/95
Security: Everyone

Apple LaserWriter: Setting PCL Print Resolution (10/95)

==========

Article Created: 2 June 1994
Article Reviewed/Updated: 10 October 1995

TOPIC ----------

Which resolution does the PCL emulator use by default on the LaserWriter Select 360, 300 dpi or 600 dpi? Is there any method of setting it to 600x600 dpi?

Can the LaserWriter 16/600 PS print PCL at 600 dpi, and if it can, what is needed to do this? Also which LaserWriters support PCL at 600 dpi and what is needed to get this capability?

DISCUSSION ----------

The PCL emulator in the LaserWriter Select 360 uses the current dpi (dot per inch) setting in the printer. Therefore, if the LaserWriter Select 360 is currently set for 300 dpi, then all PostScript and PCL jobs will be printed at 300 dpi. In other words, when printing in PCL, the dpi mode currently set on the printer will be used for PCL as well. This also holds true for the LaserWriter 16/600 PS, however, since the 16/600 cannot be set at anything other than 600 dpi, all PCL jobs by default will be printed at 600 dpi.

The easiest way to change the dpi on the printer is to use the Apple Printer Utility or the LaserWriter Utility from a Macintosh on the network. There is an "Imaging Options" item under the "Utilities" menu which allows you to change dpi, and enable FinePrint at the 300 dpi setting.

As to which LaserWriters support PCL at 600dpi. If the printer supports 600 dpi and PCL, then PCL jobs will print at 600 dpi as long as the printer is already in that mode.

PostScript Code to Change Resolution and FinePrint

If you do not have a Macintosh on the network, you can download the PostScript commands below to the printer to change dpi.

NOTE:
This PostScript code is being provided if you do not have access to a Macintosh in order to run the Apple Printer Utility or LaserWriter Utility. This code DOES NOT have to be downloaded to the printer if it is already in the mode desired.

NOTE:
Most LaserWriter printers are limited in the number of NVRAM writes that can be performed, so it is a good idea to check the resolution settings before downloading the PostScript code.

Caution:

If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

For 300 dpi mode:

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
1 dict dup /HWResolution [300 300] put setpagedevice
%
% end PostScript Code
%=========================================================
```

For 600 dpi mode:

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
1 dict dup /HWResolution [600 600] put setpagedevice
%
% end PostScript Code
%=========================================================
```

Enable FinePrint:

```
%=========================================================
% Begin PostScript Code
%
currentpagedevice /PostRenderingEnhance get
  { (FinePrint is already enabled on this LaserWriter.) = }
  { serverdict begin 0 exitserver }
  ifelse
  vmstatus pop pop 0 eq
  { (Enabling FinePrint.) =
    <</PostRenderingEnhance true>> setpagedevice
```

```
  } if
%
% end PostScript Code
%============================================================
```

Turn Off FinePrint:

```
%============================================================
% Begin PostScript Code
%
currentpagedevice /PostRenderingEnhance get not
  { (FinePrint is already disabled on this LaserWriter.) = }
  { serverdict begin 0 exitserver }
  ifelse
  vmstatus pop pop 0 eq
  { (Disabling FinePrint.) =
    <</PostRenderingEnhance false>> setpagedevice
  } if
%
% end PostScript Code
%============================================================
```

Article Change History:
10 Oct 1995 - Added LaserWriter 16/600 PS information.
23 Feb 1995 - Rewrite of discussion.

Support Information Services

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Tech Info Library Article Number:15503

Tech Info Library

Power Macintosh: Video Displays Require Adjustment (5/95)

Revised: 5/8/95
Security: Everyone

Power Macintosh: Video Displays Require Adjustment (5/95)

==========

Article Created: 01 June 1994
Article Reviewed/Updated: 8 May 1995

TOPIC ----------

I am using a Power Macintosh 6100/60 with an Apple Color Plus display or an Apple 16-inch display connected through the HDI-45 video port and a DB-15 adapter cable. On either display, the raster size has about an inch of black border and the raster appears small and shifted to the right. Why is this happening?

DISCUSSION ----------

When using the Power Macintosh with these displays there will be a significant change in the width of the raster. This is due to hardware differences between the respective video circuits. This identical phenomena occurred when these monitors were moved from an LC to a Macintosh II CPU. This is known to occur with Apple 14-in. displays, however the overall width of the 16-in. RGB monitor does not change, it only shifts slightly.

The only solution is to make adjustments to the monitor's horizontal width control for the video port to which it is connected. In the case of the 16-in. display, you must adjust the monitor's horizontal centering control.

Support Information Services

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Tech Info Library Article Number:15504

Tech Info Library

Power Macintosh: Network Extension Error (6/94)

Revised: 6/8/94
Security: Everyone

Power Macintosh: Network Extension Error (6/94)

==========

Article Created: 01 June 1994
Article Reviewed/Updated: 8 June 1994

TOPIC ----------

I have just started up my new Power Macintosh system and I received the following error:

"The System Extension 'Network Extension' cannot be used."

When I click Ok, I then receive the message "An unexpected error occurred." After clicking Ok again, nothing happens. I have also received the message "The Network Control Panel cannot be loaded"

How does one correct this problem?

DISCUSSION ----------

These error messages are due to corruption of the Finder Preferences file. It is possible to correct this problem by starting up from the Power Macintosh CD or Disk Tools disk and throw away the Finder Preferences file from the Preferences folder on the hard drive. You can also delete the Finder Preferences file using the following steps:

- Go to the Finder
- Open the System Folder
- Open the Preferences Folder
- Move the file called "Finder Preferences" to the Trash. DO NOT EMPTY THE TRASH.
- Choose Restart from the "Special Menu"
- After restarting you can empty the trash. A new Finder Preferences file is created during the restart process.

You may have to reset any custom settings in the Views Control Panel after deleting this file.

Support Information Services

Article Change History:
8 June 1994 - Combined simular article to include its information

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Tech Info Library Article Number:15505

Tech Info Library

Performa: System and Peripheral Part Numbers (8/95)

Revised: 10/16/95
Security: Everyone

Performa: System and Peripheral Part Numbers (8/95)

==========

Article Created: 1 June 1994
Article Reviewed/Updated: 17 August 1995

TOPIC -----

What are the part numbers for the various Performa systems and peripherals?

DISCUSSION -----

SYSTEMS

Performa 400	- M1886LL/A	Includes Greatworks
Performa 400	- M1885LL/A	Includes Clarisworks 1.0
Performa 405	- M1742LL/A	Includes Workperfect Works
Performa 405	- M1719LL/A	Includes Clarisworks for the Performa
Performa 410	- M1985LL/A	Includes Clarisworks 2.0
Performa 430	- M1721LL/A	Includes Clarisworks for the Performa
Performa 450	- M1698LL/A	Includes Clarisworks for the Performa
Performa 450	- M1744LL/A	Includes Workperfect Works
Performa 460	- M2156LL/A	Includes Clarisworks 2.0
Performa 466	- M1982LL/A	Includes Clarisworks 2.0
Performa 467	- M1981LL/A	Includes Clarisworks 2.0, Apple Font Pack and MacLink Plus Translators
Performa 475	- M1904LL/A	Includes Clarisworks 2.0
Performa 476	- M2154LL/A	Includes Clarisworks 2.0
Performa 476	- M2155LL/A	Includes Clarisworks 2.0, Apple Font Pack and MacLink Plus Translators
Performa 550	- M2147LL/B	Includes Clarisworks 2.1
Performa 575	- M3119LL/A	Includes Clarisworks 2.1
Performa 577	- M3201LL/A	Includes Clarisworks 2.1
Performa 578	- M3202LL/A	Includes Clarisworks 2.1
Performa 600	- K0119LL/A	Includes Clarisworks 1.0, 4MB RAM
Performa 600	- K0121LL/A	Includes Greatworks, 5MB RAM
Performa 600CD	- K0144LL/A	Includes Clarisworks 1.0, 8 CD titles
Performa 600CD	- K0145LL/A	Includes Greatworks, 10 CD titles
Performa 630CD	- M3424LL/A	Includes ClarisWorks 2.1, American Heritage Dictionary 3rd Edition, Quicken

4, MacLink Translators, Mac Gallery Clip Art, Click Art Performa Collection, KidWorks 2, Thinkin’ Things, The Writing Center, Spectre Challenger, Spin Doctor Lite, TelePort Fax Send, At Ease 2.0, PC Exchange, and eWorld.

PERIPHERALS

Performa Plus Display	- M9102LL/B
Powerbook 145B Plus Pack	- K0246LL/A
Apple Color StyleWriter Pro	- M1936LL/A
AppleDesign Keyboard	- M2891LL/A
Stylewriter II	- M2075LL/A
Personal LaserWriter 300	- M2047LL/A
AppleDesign Powered Speakers II	- M2668LL/A
Home Multimedia Upgrade Kit for Macintosh	- M3153LL/A
AppleCD 300e Plus-External CD-ROM Drive	- M2918LL/A

Article Change History:
17 Aug 1995 - Reviewed.
21 Jul 1994 - Performa 630 added.
22 Jun 1994 - Additional peripherals listed.

Support Information Services

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Tech Info Library Article Number:15507

Power Macintosh: Display Manager Software (6/94)

Revised: 3/16/95
Security: Everyone

Power Macintosh: Display Manager Software (6/94)

==========

Article Created: 01 June 1994
Article Reviewed/Updated: 29 June 1994

TOPIC -----

This article describes the new Display Manager software included with the Apple Multiple Scan 17 and 20 Displays and Power Macintosh systems.

DISCUSSION -----

The Apple Multiple Scan 17 and 20 Displays include software which is installed on the Macintosh to allow "on the fly" resolution switching. This software installs a new version of the Display Manager. The Display Manager software is installed using two components:

- Display Enabler
- Monitors Control Panel (v7.3.3)

With the Power Macintosh, the new Display Manager is already present within the ROMs. Installing the Display Enabler will not cause any problems on the Power Macintosh, but results in a decrease in performance. This is because the Display Enabler "patches" some native Quickdraw routines (RISC CODE) with 68000 code.

The Monitors Control Panel v7.3.3 may be installed on the Power Macintosh since it is a newer version. The Monitors Control Panel which is included with the Power Macintosh (v7.1.3) should work fine with the Multiple Scan Displays since it also supports the new Display Manager.

Article Change History:
29 June 1994 - Corrected the size of the Multiple Scan Displays.

Support Information Services

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Tech Info Library Article Number:15509

Tech Info Library

LaserWriter Pro 810: Turning on the Configuration Page (5/94)

Revised: 6/2/94
Security: Everyone

LaserWriter Pro 810: Turning on the Configuration Page (5/94)

==========

Article Created: 2 June 1994

TOPIC ----------

I am having trouble printing the configuration page on LaserWriter Pro 810 with the optional fax card installed. Using LaserWriter Utility 7.6.1. When I try to print the configuration page I get the error "A PostScript error has occurred in the LaserWriter. Restart the printer and try again". After restarting the printer I get the same error.

I have tried running the LaserWriter Utility from several different Macintosh computers on a network and all of them have the same problem. I tried printing from both Localtalk and ethernet, and removing the fax card, but the postscript error occurs every time.

I tried running LW Utility 7.6.2 and the option for print configuration page is always dim.

What can I do to resolve this issue?

DISCUSSION ----------

The LaserWriter Utility wasn't designed to print out the configuration page on a LaserWriter Pro 810 from the utility itself. You need to turn on that feature by using the utilities, then restart the printer. Although LaserWriter Utility 7.6.1 was revised and intended to be used with the LaserWriter Pro 810, the problem you describe occurs when you have a fax option card installed in the printer, resulting in the PostScript error message. LaserWriter Utility 7.6.2 fixes this problem.

More specifically, the LaserWriter Pro 810f printer is not listed in the table of printers supported by the LaserWriter Utility v7.6.1; after the utility launches and checks the characteristics of the target printer, it detects the fax option card, assumes incorrectly the type of printer being queried, then enables the wrong menu options to be displayed. When the Print Configuration Page is chosen, you'll get the error mentioned. When the LaserWriter Pro 810 has

the Fax card installed, the following menu items are available in the LaserWriter Utility 7.6.1 "Utilities" menu:

Name Printer...
Set Startup Page...
Get Page Count...
Print Configuration Page...
Download PostScript File...
Restart Printer...

The following is the list of menu items that should be displayed:

Name Printer...
Set Startup Page...
Get Page Count...
Imaging Options...
Download PostScript File...
Restart Printer...
Change Zone...
Paper Handling...

Along with the fixing the menu items listed, the LaserWriter Utility 7.6.2 software also added support for the LaserWriter Select 360-J (the Japanese version of the LaserWriter Select 360).

Support Information Services

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Tech Info Library Article Number:15510

Tech Info Library

LaserWriter Select 360: Comm Problems With Incoming Faxes (5/94)

Revised: 6/2/94
Security: Everyone

LaserWriter Select 360: Comm Problems With Incoming Faxes (5/94)

==========

Article Created: 2 June 1994

TOPIC ----------

I have a LaserWriter Select 360f and are receiving complaints from our customers that they get "communication" errors when they try to fax to our printer's fax card. Outbound faxing is no problem.

DISCUSSION ----------

We have not received any reports, nor have encountered any "Comm error" problems with our fax cards on the LaserWriter Select 360f or LaserWriter Pro 810f. Possible problems are:

- Use of a "sharing device" which automatically routes voice/data/fax on one phone line. These devices are typically problematic.

- Failure to connect at any baud rate due to impairments ("noise") on the telephone line. The phone line can be checked by the their local telephone company.

- Source fax machines which are able to communicate at 14.4 K baud sometimes have trouble dropping down to 9600 baud. The LaserWriter Select 360f fax card follows the CCITT Group III transmission standard of up to 9600 bps.

Support Information Services

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Tech Info Library Article Number:15511

Tech Info Library

Allegiant Technologies, Inc.

Revised: 6/2/94
Security: Everyone

Allegiant Technologies, Inc.

==========

Article Created: 2 June 1994

Allegiant Technologies, Inc.

6496 Weathers Place, Suite 100
San Diego, CA 92121

Telephone: 619-587-0500

Fax: 619-587-1314

Company Profile:
Develops and markets software, including SuperCard.

Support Information Services

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Tech Info Library Article Number:15512

Tech Info Library

Newton MessagePad: Space requirements for StarCore Titles (5/94)

Revised: 6/2/94
Security: Everyone

Newton MessagePad: Space requirements for StarCore Titles (5/94)

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Article Created: 2 June 1994

TOPIC

This article gives the title of some Newton application software and the amount of free space needed to install the package on the Newton MessagePad or storage card.

DISCUSSION

Software Title	Space Requrired	Notes
Checkbook	43 K	
Cogito	862 K	
Data Restorer	15 K	
Dell Crosswords	91 K	
Puzzles	50 K ea.	1, 2
DNP Restore	11 K	
DrawPad	199 K	
Dyno NotePad	140 K	
Economist	465 K	
soupMaker	696 K	1, 3
Expense Plus	238 K	
FilePad	324 K	
Utils	199 K	1, 4
Link	41 K	1, 4
Financial Assistant	886 K	
FingerTip for Golf	1,001 K	
Course Install	50 K	1, 5
Geo Assist	476 K	
GoFigure	400 K	
Jig	94 K	
MobileCalc	356 K	
Money Magazine Business Forms	267 K	
NotePak	95 K	

Notion	184 K	
Page Express	98 K	
Personal Time & Billing	302 K	
Time Tracker	33 K	1, 6
PocketCall	169 K	
PocketCall Services	69 K	1, 7
PresenterPad	276 K	
Silicon Casino	540 K	
Tax Pro	152 K	
Zagut	2,997 K	

Notes
-----
1 - Free space requirements are in addition to main program.
2 - Additional software package requires Dell Crosswords software.
3 - Additional software package requires Economist software.
4 - Additional software package requires FilePad.
5 - Additional software package requires FingerTip for Golf.
6 - Additional software package requires Personal Time & Billing software.
7 - Additional software package requires PocketCall software.

Support Information Services

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Tech Info Library Article Number:15515

Tech Info Library

Newton Connection Kit for Windows: COM Port not Configured 5/94

Revised: 5/24/95
Security: Everyone

Newton Connection Kit for Windows: COM Port not Configured 5/94

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Article Created: 2 June 1994
Article Reviewed/Updated: 7 June 1994

TOPIC ----------

When I try to run The Newton Connection Kit for Windows, an error message appears on my Newton MessagePad. The error displayed is "The connection was stopped because there was no reponse".

DISCUSSION ----------

This error message can be caused by several things, one of which is a COM port address problem. When the Newton Connection Kit for Windows 1.0 is installed, it does not automatically configure itself to reflect the computer's COM port setting. The Newton Connection Kit for Windows instead fills in the port addresses with addresses that are commonly used by many IBM-compatible computers. If the computer COM port address is different from the Windows Connection Kit's setting for that COM port, the port will not work with the Newton Connection Kit. If this happens, an error message is displayed on the Newton MessagePad.

To correct this problem, the port address in the Port Setup area needs to be changed to the proper address.

The default settings for the Newton Connection Kit for Windows are:
- COM1=03F8
- COM2=02F8
- COM3=03E8
- COM4=02E8

To determine the port addresses that the hardware is configured to, run MSD at the MS-DOS prompt. MSD is a diagnostic program from Microsoft, that is part of the MS-DOS Operating System. Among other things, MSD shows the actual port address. Once you have the proper COM port address for your computer, you can change the Newton Connection Kit for Windows preferences to match the address values displayed by MSD.

Article Change History:
7 June 1994 - Gave additional details on the problem

Support Information Services

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Tech Info Library Article Number:15516

Tech Info Library

Power Macintosh: Apple Software Compatibility (10/96)

Revised: 10/24/96
Security: Everyone

Power Macintosh: Apple Software Compatibility (10/96)

==========

Article Created: 3 June 1994
Article Reviewed/Updated: 24 October 1996

TOPIC ----------

The table below provides compatibility information for Apple software on Power Macintosh systems and provides for each:

* Version — The current version number.
* Compatible w/ Pmac? — Yes or No (Whether software is known to be compatible) and NATive (ported to Power Macintosh) or EMUlated (not ported)
* Notes — Additional information on the product

Additional articles in the Tech Info Library, Apple's technical and support database, describe many of the products listed below.

This article does not cover any announced Apple products not currently shipping.

DISCUSSION ----------

Begin_Table

Product	Version	Compatible w/ PMac?	Notes
3270 API Developer's Kit	2.0	Yes, NAT	
8*24 GC (Extension)	7.0.1	No	
A/UX	3.1	No	
A/UX	3.1	No	
A/ROSE	1.2.1	Yes, EMU	On NSI 1.4.3
Apple Backup	1.1	n/a	Part of Performa OS only
Apple Color Printer	1.0	Yes, EMU	Printer System Extension
Apple DocViewer	1.1.1	Yes, EMU	Apple Extras folder of Power Macintosh computers
Apple Event Manager	1.0.3	Yes, EMU	Part of AppleScript 1.1

Apple File Exchange	7.0	No	
Apple Font Pack	1.0	Yes, EMU	See separate article in Tech Info Library for contents
Apple IIe Card Software	2.2.1	No	
Apple Internet Router	3.0.1	Yes	Is not compatible with Open Transport 1.1 or earlier
AppleLink	6.1	Yes, EMU	AOS: 408/974-3309
Apple Media Tool	2.0	Yes, NAT	
Apple Modem Tool	1.5	Yes, EMU	
Apple Personal Diagnostics	1.1.3	Yes	Posted online
Apple Phone	1.0.1	No	Application, bundled with 68K AV Macintosh models
Apple Restore	1.1	No	Performa OS only, restores Apple Backup items
AppleScript	1.1	Yes, EMU	APDA or reseller
AppleSearch Client	1.5	Yes, EMU	Not Open Transport compatible
AppleSearch Server	1.5	Yes, EMU	Not Open Transport compatible
AppleShare File Server	3.0.3	No	For any 68k Macintosh, patch
AppleShare Print Server	3.0.2	No	For any 68k Macintosh, patch
AppleShare File Server	4.0.2	No, EMU	For any 68k Macintosh, patch
AppleShare Print Server	4.0.2	No, EMU	For any 68k Macintosh, patch
AppleShare File Server	4.1	Yes, EMU	For non-PCI-based Power Macintosh
AppleShare Print Server	4.1	Yes, EMU	For non-PCI-based Power Macintosh
AppleShare File Server	4.2	Yes, NAT	For NuBus Power Macintosh systems
AppleShare Print Server	4.2	Yes, NAT	For NuBus Power Macintosh systems
AppleShare File Server	4.2.1	Yes, NAT	For PCI Power Macintosh systems
AppleShare Print Server	4.2.1	Yes, NAT	For PCI Power Macintosh systems
AppleShare Pro (File Svr)	1.1	n/a	Workgroup Server 95 only
AppleShare Pro (print)	1.1	n/a	Workgroup Server 95 only
Apple Shared Library Mgr	1.1	Yes, EMU	1.0 ships with SSW 7.1.2.
AppleTalk	58.1.5	Yes, EMU	Network SW Installer 1.4.4
Apple Remote Access	2.0.1	Yes, EMU	Client, Personal Server & Multiport Server versions
AppleTalk-DECnet Tool	1.1	Yes, EMU	
AppleTalk-LAT Gateway	1.0	Yes, EMU	
AppleTalk-LAT Tool	1.0	Yes, EMU	
Arabic Language Kit	1.0	Yes, EMU	
Assistant Tidbit 1	1.0	n/a	Part of PowerBook File Assistant 1.0
Assistant Tidbit 2	1.0	n/a	Part of PowerBook File Assistant 1.0
Assistant Toolbox	1.0	n/a	Part of PowerBook File Assistant 1.0
At Ease	2.0	Yes, EMU	
At Ease for Workgroups	2.0.1	Yes, EMU	

At Ease	3.0	Yes, EMU	
At Ease for Workgroups	3.0.1	Yes, EMU	
AudioVision (extension)	1.0.2	Yes, EMU	System extension for AudioVision 14 Monitor
AutoRemounter	1.2	n/a	PowerBook control panel
AV Serial Extension	1.0	n/a	
AW Server 95	1.1	n/a	Part of AWS 95 Update 1.1
AWS 95 Tune-Up	1.0	n/a	System update disks (2) for Apple Workgroup Server 95
Basic Color Monitor	1.0	n/a	Part of System 7.1.2
Basic Connectivity Set	1.1.1	Yes, EMU	
Battery Patch	1.0	n/a	For PowerBook Duo 210, 230, 250
Battery Recondition	1.0	n/a	
CD-ROM Setup	5.1.1	Yes, EMU	
Chinese Language Kit	1.1.1	Yes, EMU	Includes WorldScript II 7.5
Chooser	7.5	Yes, EMU	Part of System 7.5
CloseView	7.2	Yes, EMU	Part of System 7.5
Color Picker	2.0.1	Yes	
Color Stylewriter 2400	2.1.1	Yes, NAT	
ColorSync	1.0.4	Yes, EMU	Color Imaging Extension
Compatibility Checker	7.1.1	n/a	SSW 7.1
Compatibility Software	1.0	n/a	Quadra 610 DOS Compatible
CPU Energy Saver	1.0.1	Yes, EMU	
Curare	1.0	Yes, EMU	APDA Product
Cyrillic Language Kit	1.0	Yes, EMU	
DAL Client Kit	1.4	Yes, EMU	Now from ITI
DAL Server for VAX/VMS	1.3.6	Yes, EMU	Now from ITI
DAL Server for VM/CMS	1.3.5	Yes, EMU	Now from ITI
DAL Server for MVS/TSO	1.3.5	Yes, EMU	Now from ITI
DAL Server for MVS/VTAM	1.3.5	Yes, EMU	Now from ITI
DAL Server for AS/400	1.3.7	Yes, EMU	Now from ITI
DAL Terminal	1.1	Yes, EMU	Now from ITI
DART	1.5.3	Yes, EMU	May generate an error, click OK.
Disk Copy	4.2	Yes, EMU	
Disk First Aid	7.2.2	Yes, EMU	
Display Enabler	1.0	n/a	Built into ROMs of PMac
Earth Explorer	n/a	Yes, EMU	CD ROM, not a stand-alone app
Energy Saver	1.0	Yes, EMU	
EtherTalk	2.5.6	Yes, EMU	Network SW Installer 1.4.3
Express Modem	1.5.2	Yes, EMU	Control panel for Express Modem,GeoPort
Express Modem Tool	1.5.2	Yes, EMU	CTB Extension for Express Modem, GeoPort
Express Modem 14400	N/A	Yes, EMU	AppleTalk Remote Access CCL file
Express Modem CCL	N/A	Yes, EMU	AppleLink CCL file
Extension Manager	2.0.1	Yes, EMU	NOT APPLE SOFTWARE use at own risk
Fax Extension	1.5	Yes, EMU	Express Modem, GeoPort
Fax Sender	1.5	Yes, EMU	Express Modem, GeoPort

Fax Terminal	1.5	Yes, EMU	Express Modem, GeoPort
Fax Viewer	1.5	Yes, EMU	Express Modem, GeoPort
Fax Cover	1.5	Yes, EMU	Express Modem, GeoPort
Font/DA Mover	4.1	n/a	Built into System 7.x Finder
Hardware System Update	2.0.1	n/a	Part of System 7.1.2
HD SC Setup	7.2.2	Yes, EMU	
HD SC Setup	7.3	Yes, NAT	For Power Macintosh only
Hebrew Language Kit	1.0	Yes, EMU	
HyperCard	2.3.3	Yes, EMU	
HyperCard Player	2.3	Yes, EMU	Bundled with Power Macintosh
HyperScan	2.0	Yes, EMU	OneScanner
Installer	3.4.3	Yes, EMU	
Inter*Poll	1.0.1	Yes, EMU	
ISDN	1.0	Yes, EMU	APDA
Japanese Language Kit	1.2	Yes, EMU	Includes WorldScript II 7.5
LaserWriter	8.1.1	Yes, EMU	For LaserWriter Pro family
LaserWriter Pro Windows	1.0.1	n/a	
LaserWriter Utility	7.6.1	Yes, EMU	For LaserWriter Pro family
LAT	1.1	Yes, EMU	APDA
LaserWriter Select 300	1.2	Yes, EMU	Shipped with LaserWriter Select 300
LaserWriter Select 310	1.0.1	Yes, EMU	Shipped with LaserWriter Select 310
LaserWriter Select 360	1.1	Yes, EMU	Shipped with LaserWriter Select 360
LaserWriter Select 360 Fax	1.1	Yes, EMU	Shipped with LaserWriter Select 360
Likewise	1.0.1	Yes, EMU	Discontinued 12/93
LW Select 310 for Windows	1.0	n/a	
MacApp	3.0.1	Yes, EMU	APDA
MacCheck	1.0.5	No	Even if it runs, it gives unreliable information
Macintosh Basics	5.0	Yes, EMU	Tour, bundled with Macintosh
Macintosh Common Lisp	3.0	Yes, EMU	Patch, by anonymous ftp from ftp.digitool.com
Macintosh Common Lisp	3.9	Yes, NAT	
Macintosh Easy Open	1.1.1	Yes, EMU	APDA
Macintosh Hardware System Update	2.0.1	n/a	Part of System 7.1.2
Macintosh Networking Basics	1.0	Yes, EMU	"Tour" disk
Macintosh PC Exchange	2.0.3	Yes, EMU	Update for Power Macintosh
Macintosh Quadra Extra	1.0	n/a	Q950 only- rolled in SSW 7.1
Macintosh Visca Driver	1.2	Yes, EMU	ADPA
MacODA	1.0	Yes, EMU	
MacOSI Transport	1.0	Yes, EMU	
MacsBug	6.2.2	No	APDA
MacSNMP Admin	1.0.2	Yes, EMU	
MacSNMP Client	1.0.2	Yes, EMU	
MacTCP	2.0.4	Yes, EMU	
MacTCP Admin	2.0.4	Yes, EMU	
MacTCP Developer's Kit	n/a	Yes, EMU	APDA Product
MacTCP Token Ring Ext.	2.0.2	Yes, EMU	System extension

MacTerminal	3.0	Yes, EMU	
MacX	1.2	Yes, EMU	
MacX.400	1.0	Yes, EMU	
MacX25	1.2	Yes, EMU	Patch from v1.1
Monitor Energy Saver	1.0	Yes, EMU	Control Panel
MountImage	1.2	Yes, EMU	NOT APPLE SOFTWARE use at own risk
Mouse Basics	4.5	Yes, EMU	"Tour" disk
MPW	3.3.1	Yes, EMU	APDA
MPW 411	n/a	No	APDA
MPW C++	3.3.1	Yes, EMU	APDA
NetTrax	1.2	Yes, EMU	APDA
Network Launch Fix	1.0.2	Yes, EMU	Rolled into System Update 3.0
Network Software Installer	1.5.1	Yes, EMU	See ReadMe in the TIL
Newton Connection	2.0	Yes, EMU	For Macintosh
Ofoto	2.0.1	Yes, EMU	Color OneScanner Support
OfotoColor	1.0	Yes, EMU	System Extension
Personal LaserWriter 300	1.2	Yes, EMU	Printer Extension
Personal LaserWriter 320	1.0.1	Yes, EMU	Printer Extension
Personal LaserWriter NTR	2.0	Yes, EMU	Printer Extension
PhotoFlash	1.0	Yes, EMU	
PhotoFlash Browser	1.0	Yes, EMU	Bundled with PhotoFlash
PlainTalk	1.4.1	Yes, NAT	Available online
PowerBook Display	1.0.4	n/a	Control panel for PowerBook video output control.
PowerBook File Assistant	1.0	n/a	
PowerCD Setup	1.0.1	Yes, EMU	
PowerShare Collaboration Server	1.0	No	
PowerShare for PowerMac	1.0.1	Yes, EMU	Requires PowerShare Coll. Svr 1.0
PowerTalk	1.0	No	Part of System 7 Pro (v7.1.1)
PowerTalk for PowerMac	1.0.2	Yes	Requires System 7 Pro Kit
Portable StyleWriter	1.0.1	Yes	
PrinterShare	1.1	Yes, EMU	System extension, part of GrayShare
Quadra 950 Color Addition	1.0	n/a	For Quadra 950 only
QuickTime	2.1	Yes, NAT	Available online
QuickTime for Windows SDK	1.1	n/a	Apple SW Licensing
QuickTime Starter Kit	1.0	Yes, EMU	
Rename Rescue	1.0	Yes, EMU	Apple's UNLOCKFOLDER
ResEdit	2.1.1	Yes, EMU	APDA
Responder	1.1.1	n/a	Not required, built into System 7.x
SADE	1.3.2	Yes, EMU	APDA
Scanner (extension)	2.0	Yes, EMU	Apple Scanner,OneScanner Support
Scanner (extension)	3.0	Yes, EMU	Color OneScanner Support
Screen	1.0	n/a	Color Classic control panel
Script Editor	1.0	Yes, EMU	AppleScript Developer's Kit
Scriptable Text Editor	1.0	Yes, EMU	AppleScript Developer's Kit
SCSI Manager	4.3.1	Yes	Shipped with System 7.5 Update

1.0			
Serial Switch	1.1	n/a	For Macintosh IIfx only
Serial Tool	1.0.2	Yes, EMU	Basic Connectivity Set 1.1.1
SimpleText	1.1	Yes, NAT	Ships with Power Macintosh
SNA*ps APPC Developer's	n/a	Yes	APDA Kit
SNA*ps Gateway/10	2.0	Yes	10-3270, 5250, APPC users
SNA*ps Gateway/35	2.0	Yes	35-3270, 5250, APPC users
SNA*ps Gateway/70	2.0	Yes	70-3270, 5250, APPC users
SNA*ps 3270	1.1.2	Yes	For direct connection
SNA*ps 3270 GC	1.1.2	Yes	Gateway Client
SNA*ps 5250	1.0	Yes	For direct connection
SNA*ps 5250 GC	1.0	Yes	Gateway Client
Sound Effects	1.0	n/a	System Extension, bundled with AV Macintosh models.
Sound Manager	3.0	n/a	Part of System 7.1.2
Speech Manager	1.1.1	Yes, EMU	System Extension, bundled with AV Macintosh models.
StyleWriter II	1.2	Yes, EMU	Printer Extension
System 7.1	7.1	n/a	
System 7.1.2	7.1.2	n/a	For Power Macintosh ONLY
System 7 Tune-Up	1.1.1	n/a	Built into System 7.1 & higher.
System Picker	1.0	No	NOT APPLE SOFTWARE use at own risk
System Update	3.0	Yes, EMU	SSW Updates for ALL Macintosh Computers.
TeachText	7.2	Yes, EMU	New version for AV Macintoshes & Text to Speech
Telephone Manager	1.1.1	Yes, EMU	APDA
Thread Manager	1.0.2	Yes, EMU	Comes with PowerTalk
Token Ring	1.0.1	Yes, EMU	Control Panel, Use NSI 1.4.4
TokenTalk	2.5.6	Yes, EMU	Network SW installer 1.4.4
TV Setup (control panel)	1.0.2	n/a	Control Panel for Macintosh TV
Video (control panel)	1.0.2	Yes, EMU	Control panel for AudioVision 14 Monitor
Video Monitor	1.0.1	Yes, EMU	Bundled w/ AVs and Power Macs
VideoSync	1.0	Yes, EMU	APDA
Virtual Monitor Switch	1.0	n/a	
Virtual User	2.0.1	Yes	APDA
WiggleWorks	1.0	Yes, EMU	CD-ROM, not a stand-alone app
WorldScript II	7.1.2	Yes, EMU	
Xmodem Tool	1.1	Yes, EMU	Basic Connectivity Set 1.1.1

End_Table

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
24 Oct 1996 - Updated AppleShare.
19 Sep 1996 - Removed keyword.
15 Jul 1996 - Updated Macintosh Common Lisp information.

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Tech Info Library Article Number:15517

Tech Info Library

Power Macintosh: At Ease 2.0 Compatible (8/95)

Revised: 8/9/95
Security: Everyone

Power Macintosh: At Ease 2.0 Compatible (8/95)

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Article Created: 1 Jun 1994
Article Reviewed/Updated: 9 August 1995

TOPIC -----

Is At Ease compatible with the Power Macintosh computers? If it is which version?

DISCUSSION -----

At Ease 2.0 or later is compatible with the Power Macintosh computers. Users should use At Ease 2.0 Basic or At Ease 2.0.1 for Workgroups or later versions of At Ease.

Article Change History:
09 Aug 1995 - Added keyword and reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:15518

Tech Info Library

QuickTime: Movies Lose Sound at Startup (8/94)

Revised: 9/29/94
Security: Everyone

QuickTime: Movies Lose Sound at Startup (8/94)

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Article Created: 1 June 1994
Article Reviewed/Updated: 29 September 1994

TOPIC ----------

Sometimes after putting a QuickTime movie in the system folder and naming it "Startup Movie" so that it will play automatically at system startup, the audio portion of the movie does not play. Why?

DISCUSSION ----------

During the startup process, sometimes there is not enough system memory available to play both the video and sound. When memory is low, Quicktime drops the audio portion of the movie.

QuickTime version 2.0 fixes this problem. If you are experiencing this problem you should upgrade to version 2.0 to correct it.

If you have any version of QuickTime prior to 2.0 and you cannot get version 2.0 right away, an intermediate workaround would be to place a startup screen file in the system folder in addition to the QuickTime movie in the Startup Items folder. This will cause the system to allocate more memory at startup time and allow QuickTime to play both the video and audio portions of the movie.

Article Change History:
29 Sep 1994 - Clarified the name of the movie in the Startup Items folder.
03 Aug 1994 - Added information about QuickTime 2.0.

Support Information Services

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Tech Info Library Article Number:15519

Tech Info Library

Workgroup Server 9150 Logic Board Upgrade (12/94)

Revised: 12/13/94
Security: Everyone

Workgroup Server 9150 Logic Board Upgrade (12/94)

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Article Created: 3 June 1994
Article Reviewed/Updated: 13 December 1994

TOPIC -----

This article describes the Apple Workgroup Server 9150 logic board upgrade.

DISCUSSION -----

Workgroup Server 9150 Logic Board Upgrade

Order No. M3262LL/A

- Upgrades a Macintosh Quadra 900 or 950 to a Workgroup Server 9150.

- Includes 8MB of RAM, and Retrospect Remote Software Upgrade. AppleShare software must be purchased separately. Additional RAM is required.

NOTE: This upgrade was not planned for use with the AWS (Apple Workgroup Server) 95. However, this logic board upgrade will fit in the AWS 95 chassis. If this upgrade is made, A/UX will no longer be the operating system, and AppleShare 4.0.2 or later must be purchased to replace AppleShare Pro.

Article Change History:
13 Dec 1994 - Changed Note section.

Support Information Services

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Tech Info Library Article Number:15521

Macintosh Basics: Which Version To Use? (6/96)

Revised: 6/28/96
Security: Everyone

Macintosh Basics: Which Version To Use? (6/96)

==========

Article Created: 6 June 1994
Article Reviewed/Updated: 28 June 1996

TOPIC ----------

What version of Macintosh Basics should I use with my Macintosh?

DISCUSSION ----------

Version 4.1.1 will run on any Macintosh with 1 MB of DRAM and is set for Black and White mode. This version is recommended for use with compact Macintosh systems (Plus, SE, and Classic), black-and-white PowerBooks, and any other Macintosh with 4 MB of RAM or less. Macintosh Basics 4.1.1 should work with any version of System 6, but version 6.0.8 was the only one tested. Version 4.1.1 should be used with System 6.0.8 or later.

Version 4.3 is a color version and requires at least 4 MB of DRAM or more as well as a color monitor. It is recommended for use with any Macintosh that supports color and has 4 MB or more of DRAM.

Macintosh Basics version 5.0.3 is the latest version and is the only version currently available on the online services. It adds support for the trackpad on PowerBook computers. It also includes additional minor fixes to previous versions.

However, Macintosh Basics has been replaced with Macintosh Tutorial. Any Macintosh using System 7.5 should use Macintosh Tutorial rather than Macintosh Basics. Macintosh Tutorial is also available on the online services.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" - Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" - Lists 800 numbers and online services for software updates, Apple support information, and a subset of the

Apple Tech Info Library.

Article Change History:
28 Jun 1996 - Added info about latest version and Macintosh Tutorial.

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Tech Info Library Article Number:15522

Tech Info Library

MAE 1.0 Trial: Read Me Files (4/97)

Revised: 4/2/97
Security: Everyone

MAE 1.0 Trial: Read Me Files (4/97)

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Article Created: 6 June 1994
Article Reviewed/Updated: 02 April 1997

TOPIC --------------------

This article contains:

- MAE 1.0 Trial CD ReadMe file
- MAE 1.0 Trial On-Line ReadMe file

for Macintosh Application Environment (MAE) Trial Version. These files are similar, but are different in layout.

DISCUSSION --------------------

MAE 1.0 Trial CD Read Me
==========

Macintosh Application Environment Trial Version

This document provides important information about the MAE Trial product. The Trial product allows you to evaluate MAE for 8 total hours on your workstation. After the 8 hours, the Trial product will shut down and can be removed from your workstation. Printing is also disabled in the MAE Trial.

For instructions about installing and starting the MAE Trial product on your workstation, see the back of the Trial CD envelope.

Ordering Information

To order the Macintosh Application Environment, call the Apple Order Center.

Macintosh Application Environment (MAE)

This document provides important information about MAE. This information is not included in the "Macintosh Application Environment User's Guide." You may want

to print this document and keep it with the User's guide.

Most of the sections in this document are relevant to Sun and Hewlett-Packard workstations; some are relevant to Sun workstations only; and some are relevant to HP workstations only. The section titles indicate which kind(s) of workstations are covered in the sections. (The information in this document applies only to Solaris 2.3 and later, and HP-UX 9.01 and later.)

General Information

- MAE 1.0 Does Not Support AppleTalk, MacTCP, QuickTime, Serial Devices, Sound, or 800K Floppy Disks (Sun and HP).

- Text File Line Separators May Not Be Saved Correctly (Sun and HP). When you use some Macintosh applications to save a file in text format (file type "TEXT"), the file may have a Macintosh line separator (ASCII Character octal 15) instead of a UNIX line separator (ASCII Character octal 12). For example, if you save a file as Text using Microsoft Word, the resulting file will appear as one continuous line of text when opened from either MAE or a UNIX program. To restore the file, use the UNIX utility "tr" to translate the Macintosh line separator character to the UNIX line separator and save the result in a different file. The suggested "tr" command is:

```
tr "\015" "\012" < file1 > file2
```

where file1 is the file which contains the Macintosh line separator, and file2 is the restored file.

- Aliases Can Behave Differently in MAE Than on the Macintosh (Sun and HP). When you drag an item to the MAE desktop, MAE automatically creates an alias to the item and places the alias on the desktop. MAE lets you know that it created an alias by appending the word "alias" to the name of the item and putting the name in italics. If you move an item for which you have an alias from one UNIX file system to another, you will have to re-create the alias to the item. Otherwise, MAE will be unable to locate the original item when you double-click its alias. For more information about aliases, see "Creating an Alias" in Appendix A in the on-line version of the "MAE User's Guide."

- Must Be Root User (Superuser) to Change Settings in Some Control Panels and Desk Accessories (Sun and HP). You must be root user (superuser) to change the date and time settings in the General Controls or Date & Time control panels or to change the settings in the Alarm Clock desk accessory.

- Use Absolute Pathnames in Dialog Boxes and Control Panels That Require You to Type a UNIX Command (Sun and HP). For example, use absolute pathnames in the MAE File Launching control panel, the X Client Setup control panel, and the command-launch dialog box (which appears when you press the Control key and double-click a UNIX file).

- MAE Does Not Provide Remote Floppy Support (Sun and HP). You can only use floppy disks that are inserted in a floppy drive attached to the workstation on which you are running MAE. (You cannot use the floppy drive attached to a remote workstation on which you are displaying MAE.)

• Do Not Use the MAE Keyboard Control Panel to Map the "Alt" or "Mode Switch" Modifier Key Functions to the Right Diamond Key ("Meta Right") (Sun).

• Must Run the Solaris Volume Manager In Order to Use Floppy Disks (Sun). If you want to use a floppy disk on MAE running on your Sun workstation, you must be running the Solaris Volume Manager. For more information, see the Solaris documentation or your system administrator.

• Older HP CD-ROM Drives May Be Incompatible With HP 712 Workstations (HP). If you try to mount a CD-ROM disc on an older CD-ROM drive attached to an HP 712 workstation, MAE may display an alert message, asking if you want to initialize the disc. (Click Cancel to dismiss the alert box.) For information, see your system administrator or contact technical support at Hewlett-Packard.

• Using MAE with AFS (Andrew File System) (Sun and HP). Some UNIX systems and utilities may have problems using AFS, such as determining file system space and finding information about files and directories on an AFS disk. The same problems can occur in MAE. If your UNIX system has problems with AFS, then install MAE and use it with non-AFS file systems. Avoid using MAE with UNIX systems that have a large AFS file system mounted at the root level.

• Make Sure You Correctly Mount NFS File Systems (Sun and HP). To use Macintosh applications or documents located on an NFS server, you must mount the NFS file system the same way that it was exported. For example, if the file system was exported as "read-only," mount it as "read-only." See your system administrator if you need help.

• Do Not Run twm With the NoTitleFocus Option (Sun and HP).

• How to Maximize Performance on Solaris (Sun). You may want to increase the "shmsys:shminfo_shmmax" and "shmsys:shminfo_shmseg" parameters to increase the performance of MAE running on Solaris. See the documentation that came with your workstation for more information.

• How to Install Macintosh Applications That Need to Create a Folder in the / Directory (Sun and HP). Some Macintosh installer documents (also called scripts) expect to be able to access their application files during the installation process in a folder in the / directory. Due to a lack of free disk space or other issues, you may not be able to nor want to install the application files in the / directory. This method allows you to install the application files in the directory of your choosing by using the Apple Installer 4.0, while allowing the application's installer document to locate its files as necessary. The following instructions tell you how to create a symbolic link between the / directory and the directory in which you install the application files (usually your home directory or $HOME):

1) Make sure you have "read" and "write" access permissions for /. (See your system administrator for information.)

2) As a regular user, create a directory in $HOME and give it the same name that the application uses when it creates a folder during installation. (See "Important" below.)

For example, perform these steps: Enter the command: cd $HOME
Then enter the command: mkdir "ClarisWorks 2.0"

IMPORTANT: You must create a directory with EXACTLY the same name as the name that the application uses. If necessary, you can determine the correct name by looking for the directory that the application created in the $HOME directory after the first application disk has been ejected.

3) Create a symbolic link to this new directory. For example, enter this command:

```
ln -s $HOME/"ClarisWorks 2.0" /"ClarisWorks 2.0"
```

4) Follow the directions presented in the section "Using the Apple Installer 4.0" in Chapter 3 of the "MAE User's Guide" to install the application.

5) After completing the installation, delete the symbolic link from /. For example, enter this command: rm /"ClarisWorks 2.0"

6) Restore the original access permissions for /. (See your system administrator.)

Troubleshooting

• If You Cannot Access the Files on an MAE CD Mounted Remotely on a Sun Workstation (Sun). You may have a problem accessing the files on a remotely-mounted MAE CD-ROM disc if the disc was mounted on a Sun workstation by using the Solaris Volume Manager. There are two possible solutions to the problem: you can quit the Solaris Volume Manager and explicitly mount the MAE CD-ROM disc by using a command such as mount(1). You should then be able to access the files on the CD-ROM disc in order to perform a remote installation. Or you can copy the MAE files from the CD-ROM disc to a directory on the Sun workstation and then access the files by remotely mounting the directory. For more information about remotely installing MAE, see Chapter 1 in the "MAE User's Guide."

• If You Have Problems Installing Aldus Persuasion From Floppy Disks (Sun and HP). You may need to increase the memory size of the Aldus Installer to 1024K (kilobytes) by following these steps:

1) Unlock the floppy disk that contains the Aldus Installer.

2) In MAE, insert and mount the disk (click the Mount Floppy/CD button in the Toolbar).

3) Select the Apple Installer icon and choose Get Info from the File menu.

4) Type 1024 in the Minimum Memory Size and Preferred Memory Size text boxes and press Return.

5) Close the Get Info window.

6) Eject disk and re-lock it.

Note: for information about locking and unlocking floppy disks, see "Working With Floppy Disks" in Appendix A in the on-line version of the "MAE User's Guide."

• If the Message "Can't locate engine" Appears When You Try to Start MAE (Sun and HP). When you start MAE, it tries to find a directory ("lib/engine") that contains the MAE files necessary for startup. (If you installed MAE according to the instructions in the "MAE User's Guide," the "lib/engine" directory is located in the "apple" directory.) If you have moved the directory or renamed it after you installed MAE, MAE displays this error message. You can use the -appledir command-line option when you start MAE, or you can edit your X Resources file in order to tell MAE where the directory is located. For more information, see the MAE manual page.

• If the Keys You Press on Your Keyboard Don't Produce the Correct Characters in MAE (Sun and HP). Open the MAE Keyboard control panel and check whether the preset keymap is "generic." If it is, choose a new keymap (from the Keymap pop-up menu) that is appropriate for your keyboard and workstation. If the Keymap pop-up menu does not contain an appropriate keymap, contact Apple technical support. See "Choosing a New Preset Keymap" in Appendix C in the on-line version of the "MAE User's Guide."

• If Colors Are Not Displayed Accurately in Certain Applications (Sun and HP). In certain applications that use color (for example, Adobe Photoshop), colors used in the document may not be displayed correctly. To fix this problem, select "Use standard Mac colors" in the Options dialog box in the Monitors control panel. For more information, see "Reducing Colormap Flashing" in Appendix C in the on-line version of the "MAE User's Guide."

• If You Have Problems Using MS-DOS (Including Windows) or Solaris File System Disks on MAE (Sun). If you insert a floppy disk formatted for MS-DOS or Solaris into a Sun workstation and try to mount it in MAE by clicking the Mount Floppy/CD button, MAE displays an alert box. To use MS-DOS files on MAE running on Solaris, use the capabilities provided by Solaris. (For example, do not use Macintosh PC Exchange or other Macintosh applications that read MS-DOS disks.)

Follow these steps:

1) Insert the disk that contains the MS-DOS files that you want to use.

2) In a Solaris window, type "volcheck floppy". The files on the disk will appear in the /floppy/<floppyname> directory on your UNIX file system.

3) To use the files on the MAE desktop, double click /, then double-click the folder called "floppy," and then double-click the folder called "<floppyname>."

• If the Message "fd0: read failed" Appears (Sun). When you try to mount a floppy disk on MAE, you may see the message "fd0: read failed" on your Sun console. This message alerts you that Solaris is unable to read certain sectors on the floppy disk. Try another floppy disk or try the same disk on a different workstation. (If the disk does not contain data that you need, you may want to reformat the disk on a workstation and then try mounting it again on MAE.)

• If Solaris Displays the "Unlabeled Floppy" Dialog Box on Your Console (Sun). When you insert and try to mount a Macintosh floppy disk on MAE, Solaris displays the "Unlabeled Floppy" dialog box if you didn't install the Solaris Volume Manager Extensions when you installed MAE. Click Cancel in the dialog box (do NOT click Cancel & Eject). The floppy disk icon should appear on your MAE desktop. To prevent this situation from occurring again, you should run the MAE Installer as root and install the Solaris Volume Manager Extensions package according to the instructions in Chapter 1 of the "MAE User's Guide."

• If MAE Hangs When a Mounted Floppy Disk Has Been Ejected (Sun). If a Macintosh disk is somehow ejected without MAE being notified (for example, by typing "eject floppy" in a Solaris shell window or by clicking Cancel & Eject in the "Unlabeled Floppy" dialog box described earlier), MAE may hang until it is able to use the disk again. Reinsert the disk and type "volcheck" in a Solaris shell window. This step should allow MAE to continue to use the floppy disk. To avoid this problem, you should eject disks that have been mounted on the MAE desktop by using MAE capabilities ONLY. For example, drag the disk icon to the Trash or select the disk and choose Eject Disk from the Special menu.

• If You Have Problems Quitting MAE (Sun and HP). If you cannot quit MAE by using the Shut Down command in the Special menu (on the MAE desktop) or by using the capabilities provided by your X window manager, you can press Shift-Control-E.

Additional Information

There are two mailing lists for MAE users. To talk with other users, compare notes, and share information on MAE issues, send e-mail to "mae-users@medraut.apple.com." To send information about MAE to Apple Computer, send e-mail to "mae-bugs@medraut.apple.com." To join the mae-users list, send e-mail to "mae-users-request@medraut.apple.com."

For MAE technical notes, patches, and other technical information, see "ftp.support.apple.com" in the directory "mae". You can use ftp to log on to the server as "anonymous" and use your e-mail address as the password.

IMPORTANT: The MAE mailing lists are unofficial sources of information. Apple Computer does not guarantee responses or bug fixes.

Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. Apple assumes no responsibility with regard to the performance of these products.

MAE Trial On-line Read Me

README.TRIAL (last updated on 7/4/94)

TRIAL VERSION OF APPLE'S MAE 1.0 PRODUCT

The files in this directory allow you to install the Apple MAE Trial product for either Sun SPARC workstations running Solaris 2.3 and later, or HP workstations running HP-UX 9.01 and later. The Trial product allows you to evaluate MAE for 8 total hours on your workstation. After the 8 hours, the Trial product will shut down and can be removed from your workstation. Printing is also disabled in the MAE Trial.

Note: The minimum MAE Trial ftp package is about 13 megabytes. This can take a while to download across some slower internet connections.

SYSTEM REQUIREMENTS

- HP 9000 Series 700 workstation running HP-UX 9.01 or later

- Sun SPARC workstation running Solaris 2.3 or later

- X Window System, Version 11, release 4 or later

- Window manager such as Motif, HP VUE, or OPEN LOOK

- At least 16 MB of RAM; 32 MB recommended

- At least 16 MB of free hard disk space; 22 MB recommended

PURCHASING THE MAE 1.0 PRODUCT FROM APPLE

If you would like to purchase Apple Computer's MAE 1.0 Product, in the U.S., call the Apple Order Center. You can order by mail by writing to:

MAE
Apple Computer, Inc.
1 Infinite Loop
Mail Stop 35-ST
Cupertino, CA 95014

HOW TO DOWNLOAD

There are 3 files in the "trial" directory on the ftp server called "ftp.support.apple.com":

/pub/mae/trial/README.TRIAL - This file.

/pub/mae/trial/MAE_HPUX.tar.Z - (13 MB) This is the Trial version for HP Series 700 workstations. It includes the MAE Trial version,

online documentation, a man page, and two trial applications (Claris Works 2.0 and MacProject Pro).

/pub/mae/trial/MAE_SOLARIS.tar.Z - (13 MB) Same as MAE_HPUX.tar.Z, except for Sun SPARC workstations running Solaris 2.3 or later.

Download the correct file for your workstation.

INSTALLING AND STARTING

The MAE Trial is designed to be installed once for each user, and each user has 8 hours of use. In order for multiple users to evaluate the Trial, each user must run the installer (INSTALL.SH) and install a local copy for his or her own use.

Make a directory anywhere you have a free 16 MB of hard disk space (22 MB recommended). Place the MAE_HPUX.tar.Z or MAE_SOLARIS.tar.Z file in that directory. Uncompress it and untar it with the following command:

On HP Workstations: zcat MAE_HPUX.tar.Z | tar -xvf -
On Sun Workstations: zcat MAE_SOLARIS.tar.Z | tar -xvf -

Note: The latest MAE Trial information is located in the READ.ME file located in this directory.

Now run the installer, which is called INSTALL.SH, using the command:

./INSTALL.SH

Follow the on-screen instructions. After installing MAE, type the pathname for mae and press Return. MAE is usually installed and run as a regular user (not root), and therefore mae is probably in $HOME/apple/bin/mae.

The Tech Info Library article titled "Locating Vendor Information" can help you search for the Apple Order Center's phone number.

LEGAL STATEMENT

This Trial Software product is being provided to you "as is." Apple assumes no responsibility with regard to use of this Trial Software product. Apple does not offer any warranties, assumed or implied, regarding the usability and reliability of this Trial Software. Apple is not responsible for any liability, direct or indirect, that may arise from the use of this Trial Software product.

Article Change History:

02 Apr 1997 - Removed outdated eMail address.
26 May 1996 - Updated for technical accuracy.
14 May 1996 - Combined MAE Trial Read Me files.

..TIL15523-MAE_1-0_Trial-Read_Me_Files_4-97_(TA31840).pdf

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Tech Info Library Article Number:15523

Tech Info Library

HD SC Setup: Change History v7.1 Through 7.3.1 (2/95)

Revised: 2/20/95
Security: Everyone

HD SC Setup: Change History v7.1 Through 7.3.1 (2/95)

==========

Article Created: 6 Jun 1994
Article Reviewed/Updated: 20 February 1995

TOPIC ----------

This article describes the change history of certain HD SC Setup versions.

DISCUSSION ----------

HD SC Setup

Version 7.1

Cannot format an Apple 500 MB or 1GB hard drive due to a maximum format time of 14 minutes. There was an Engineering change in firmware of these 2 drives to return "already formatted" so HD SC Setup will only initialize.

Version 7.1.1

The format time was changed to well over 30 minutes. This software now can format both Apple and third party drives over 500MB (including the Seagate 500 MB/1 GB). HD SC Setup, however, will not be able to format 500 MB/1 GB Apple drive whose firmware returns "already formatted."

Somewhere between HD SC Setup version 7.1.1 and HD SC Setup version 7.2, the Apple 500 MB and 1GB firmware was changed to remove the "already formatted" message, hence, allowing 500 MB/1 GB drives to be formatted with 7.1.1. (Drive Rev. 8514). Prior revisions of the Apple 500 MB and 1 GB drives will not format no matter what software is used due to the drives firmware command.

Version 7.2

Add asynchronous SCSI and fixed the 120 MB "dirty bit bug." However, a bug in the "bad block handling routine" was discovered. In some circumstances the driver will get stuck in an infinite loop trying to re-allocate a block that doesn't exist on the disk. This only happens if a bad block or other error

condition occurs with the drive - and then not in all cases.

Version 7.2.2

Golden Master 9/13/93 with the fix for the "bad block handling routine bug" above.

Version 7.3.1

Fixes a crash problem version 7.3 has when run on Macintosh models that do not support virtual memory.

Article Change History:
20 Feb 1995 - Revised format.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15524

Tech Info Library

File Sharing: RAM Doubler Problems (6/94)

Revised: 6/8/94
Security: Everyone

File Sharing: RAM Doubler Problems (6/94)

==========

Article Created: 3 Jun 1994

TOPIC -----

It has been reported that when a machine that is NOT running RAM Doubler attempts to mount a machine that is file sharing, AND running RAM Doubler that both machines can lock up.

The crash is severe enough that force quiting, and Programmer’s Switches are of no use.

DISCUSSION -----

The resolution for this problem is to install Network Software Installer 1.4.4 on both machines. Connectix is aware of the problem, and this is their recommendation.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15525

Tech Info Library

GeoPort vs Modem Port-Difference Explained (6/94)

Revised: 6/6/94
Security: Everyone

GeoPort vs Modem Port-Difference Explained (6/94)

==========

Article Created: 3 Jun 1994

TOPIC -----

What is the difference between the modem port on a Macintosh and the GeoPort?

DISCUSSION -----

There are several differences:

1) The standard modem port has connectors (pins) for signals in and out, timing, and handshaking. The GeoPort adds a ninth pin for power to an external device.

2) The GeoPort also takes advantage of the power of the processor (either the DSP processor in the Macintosh AV computers, or the PowerPC Chip itself) to do telephony- either data, or fax, or even voice. A modem is just a line interface to the telephone wire, a DSP to create the tones used, and software to run it. If we have a DSP on the motherboard, we can build an inexpensive line interface (like a GeoPod Telephone Adapter) and use computer software to run the modem.

   That makes it inexpensive to add a modem to a machine, and makes it easy to enhance the modem through software to increase performance, or accommodate a new standard when it becomes available. It also makes it more flexible and adaptable.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15526

Tech Info Library

Macintosh PC Exchange 2.0: Description (10/94)

Revised: 10/13/94
Security: Everyone

Macintosh PC Exchange 2.0: Description (10/94)

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Article Created: 3 Jun 1994
Article Reviewed/Updated: 13 October 1994

TOPIC ----------

This article describes the feature set of PC Exchange version 2.0.1

DISCUSSION ----------

In addition to formatting, reading and writing DOS, and OS/2 disks, PC Exchange 2.0.1 can format and use DOS format SCSI hard disks and removable media, such as Bernoulli and SyQuest cartridges and floptical drives. It can also format Apple II ProDOS floppy disks and removable media. PC Exchange 2.0.1 is for anyone who needs to work with MS-DOS, Windows, OS/2 or Apple II ProDOS data files on a Macintosh.

Features

- Now reads DOS-format SCSI hard disks and removable media, such as Bernoulli and SyQuest cartridges.
- Works with DOS-format hard disk drive container files created with the Macintosh Quadra 610 DOS Compatible system.
- Reduced memory footprint when not in use.
- Performance improvements with reading and writing to DOS-format disks.
- On/Off switch in control panel.

Compatibility

- 720K or 1.44MB 3.5 inch DOS Disks
- 360K or 1.2MB 5.25 inch DOS Disks (requires a 5.25 inch drive)
- 400K, 800K, or 1.4MB 3.5 inch Apple II ProDOS disks
- PC•compatible SCSI hard disks and removable media drives

Requirements

- Macintosh computer with at least 3MB RAM

- System 7
- Hard disk drive
- Apple SuperDrive

Article Change History:
13 Oct 1994 - Reviewed for technical accuracy; minor updates.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15528

Tech Info Library

ARA MultiPort Server & System 7 File Share: Incompatible (9/95)

Revised: 9/18/95
Security: Everyone

ARA MultiPort Server & System 7 File Share: Incompatible (9/95)

==========

Article Created: 6 June 1994
Article Reviewed/Updated: 18 September 1995

TOPIC ----------

This article describes an incompatibility between Apple Remote Access (ARA) MultiPort Server and Macintosh Personal file sharing.

DISCUSSION ----------

You cannot use the ARA MultiPort Server software concurrently with System 7 Macintosh file sharing. When you start the Remote Access Manager program, you will be asked to convert the Users & Groups Data File. After it is converted, only Remote Access Manager and AppleShare 3.0.x, or AppleShare 4.0.1 or later can use the Users & Groups Data File.

If you have either an ARA 1.0, or 2.0.x Personal Server, and you have entered several user names through the User & Groups control panel; you can import these user names to the new MultiPort server by following the steps below:

Step 1

Throw the Users & Groups Data File found in the Preferences folder of the new MultiPort Server in the Trash.

Step 2

Place the Users & Groups Data File from the older ARA 1.0 or 2.0.x Personal Server into the Preferences folder of the MultiPort server

Step 3

Restart the MultiPort Server.

Step 4

Launch the Remote Access Manager software.

Step 5

When asked, convert the U&G DF file.

Step 6

The user names and passwords are imported.

Article Change History:
18 Sep 1995 - Updated for import of ARA 1.0 and 2.0.x Personal Server.

Support Information Services

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Tech Info Library Article Number:15530

Tech Info Library

Macintosh LC 520: Serial Speeds Can Exceed 9600 Baud (6/94)

Revised: 6/6/94
Security: Everyone

Macintosh LC 520: Serial Speeds Can Exceed 9600 Baud (6/94)

==========

Article Created: 6 June 1994

TOPIC ----------

In "Getting Started" manual of my Macintosh LC 520, there is a section discussing problems when using modems faster than 9600 baud. I have a 14400 baud modem, should I be concerned about data loss at speeds over 9600 baud?

DISCUSSION ----------

The statement in the "Getting Started" Manual of the Macintosh LC 520 and LC 550 computers can be confusing. It is meant to imply that at high speed transmissions (baud rates of over 9600), there are many factors to consider, and you may or may not be aware of these. The "Getting Started" manual discusses these factors. Although the LC 520 was not officially tested at 14.4 K baud when it was introduced, it does function properly with a 14.4 K baud modem.

There are some performance problems with all Macintosh computers using high speed modems and LocalTalk concurrently. This is covered in the Tech Info Library article titled "Macintosh Serial Port: Maximum Speed"

Support Information Services

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Tech Info Library Article Number:15531

Tech Info Library

MAE: Can't Open Display Error Message (6/94)

Revised: 6/6/94
Security: Everyone

MAE: Can't Open Display Error Message (6/94)

==========

Article Created: 6 June 1994

TOPIC ----------

I want to run Macintosh Application Environment (MAE), but when I try to launch MAE I get the following message, "Error: can't open display". What's wrong?

DISCUSSION ----------

You will get this message when trying to launch MAE on a stand alone machine without IP networking enabled. The solution is to launch MAE with the -display option, setting the display to the loopback address as follows:

<path name>/mae -display 127.0.0.1:0.0

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15532

Tech Info Library

AudioVision 14 Display: Use Monitor To Connect Keyboards (6/94)

Revised: 6/6/94
Security: Everyone

AudioVision 14 Display: Use Monitor To Connect Keyboards (6/94)

==========

Article Created: 6 June 1994

TOPIC ----------

The manual that came with my Apple AudioVision 14 Display, states the Apple Adjustable Keyboard must be run through the monitor ADB port. Since I don't own an Apple Adjustable Keyboard, do I use the ADB port on the monitor, or the computer?

DISCUSSION ----------

On all keyboards, you should use the ADB port on the monitor. If the keyboard is not connected to the ADB port on the monitor, you may experience problems with the function keys not operating properly, or Video Control Panel loading with an "X" through it. When the control panel doesn't load properly and then you try to open the Video Control Panel the error message "...cannot open, no video panels loaded..." appears.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15533

Tech Info Library

Apple Equipment: Locating Screws Used in Apple Equipment (6/94)

Revised: 6/6/94
Security: Everyone

Apple Equipment: Locating Screws Used in Apple Equipment (6/94)

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Article Created: 6 June 1994

TOPIC ----------

I need to locate a special screw for some older Apple products. The local hardware stores near me don't have much that matche the screws in my Apple equipment. Some screws are missing, and I would like others with tamper-proof heads. Where can I get these types of screws?

DISCUSSION ----------

Apple equipment uses screws available from most fastener suppliers. Some local hardware stores may not carry the metric sizes widely used in Apple equipment since the introduction of the original Macintosh in 1984. If your local hardware store does not carry the fasteners used in Apple equipment, you may want to contact specialty fastener suppliers in your area. Generally, a local fastener supplier will have the fastest shipping, or may offer will call (pick up of an order).

Two locations that carry many types of fasteners, both standard heads and specialty heads such as Tamper-proof, Countersunk, Richardson, and others are:

- Mr. Metric - Only carries metric fasteners.
- Olander Company - Metric and many other fasteners.

To locate a vendor's address and phone numbers, use the vendor name as the search string in the Tech Info Library.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15534

Tech Info Library

Mr. Metric

Revised: 6/6/94
Security: Everyone

Mr. Metric

==========

Article Created: 6 June 1994

Mr. Metric

1080 North 11th St.
San Jose, CA 95112

Phone: (408) 286-8816

Company Profile: Carries metric screws and fasteners, included those used in Apple Equipment.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15535

Olander Company

Revised: 6/6/94
Security: Everyone

Olander Company

==========

Article Created: 6 June 1994

Olander Company
---
144 Commercial St.
Sunnyvale, CA 94086

Phone: (408) 735-1850

Company Profile: The Olander Company specializes in fasteners of all types.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15536

Tech Info Library

Apple File Exchange and Apple Multiple Scan Displays (8/94)

Revised: 8/15/94
Security: Everyone

Apple File Exchange and Apple Multiple Scan Displays (8/94)

==========

Article Created: 6 June 1994
Article Reviewed/Updated: 15 August 1994

TOPIC ----------

After quitting Apple File Exchange (AFE) 7.0, my Multiple scan 17 Display fades to black and the monitor powers off. Relaunching Apple File Exchange causes monitor to power on again.

My Configuration:
Quadra 650 & Quadra 800
System Software 7.1
Display Software 1.0,
Apple File Exchange 7.0.

DISCUSSION ----------

There is a problem with the Display Enabler and AFE, and it is a known issue that is being addressed. The newer version of the Display Enabler v1.1 unfortunately does not work with AFE either.

This problem occurs with any Macintosh that requires the Display Enabler to use the Multiple Scan Displays. Every Macintosh except the Power Macintosh computers require the Display enabler.

Note: The Power Macintosh Computers will not run Apple File Exchange.

By doing a force-quit of Apple File Exchange via the COMMAND-OPTION-ESCAPE key sequence, the problem does not manifest. Be sure to unmount all servers or diskettes prior to invoking this procedure.

The only alternative at this time is to use PC Exchange or some other third party utility that reads MS-DOS or ProDOS disks.

Article Change History:
15 Aug 1994 - Added Command-Option-Escape workaround.

25 Jul 1994 - Included information on what computers have this problem.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15537

How To Install MAE Man Page (6/94)

Revised: 6/6/94
Security: Everyone

How To Install MAE Man Page (6/94)

==========

Article Created: 6 June 1994

TOPIC ----------

This article describes how to install Macintosh Application Environment (MAE) man pages in SOLARIS and HP-UX systems.

DISCUSSION ----------

The only real difference between the SOLARIS and HP-UX install of the MAE man page is the default directory for the man pages:

- SOLARIS is /usr/share/man or /usr/man
- HP-UX is /usr/man

It is possible that the man pages are actually in another directory, but there should be an environmental variable to lead you to the right location, in HP-UX this variable is MANPATH.

For SOLARIS Systems

To install/access the man page included with MAE, you need to "cp" or "mv" the apple/man1/mae.1 file to the /usr/share/man/man1 directory, and then run the "catman 1" command to rebuild only the man1 section of the man pages.

For example, we have installed the MAE man page in /export/home/apple the commands would look like:

```
cp /export/home/apple/man1/mae.1 /usr/share/man/man1
catman 1
```

Then "man mae" will give them the mae man info.

For HP-UX Systems

To install/access the man page included with MAE, you need to "cp" or "mv" the

apple/man1/mae.1 file to the /usr/man/man1 directory, and then run the "catman 1" command to rebuild only the man1 section of the man pages.

For example, we have installed MAE man page in /usr/apple the commands would look like:

```
cp /usr/apple/man1/mae.1   /usr/man/man1
catman 1
```

Then "man mae" will give them the mae man info.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15539

Tech Info Library

LaserWriter Pro 630: Printing 600 dpi From Windows (6/94)

Revised: 6/9/94
Security: Everyone

LaserWriter Pro 630: Printing 600 dpi From Windows (6/94)

==========

Article Created: 7 June 1994

TOPIC ----------

Is it possible to print 600 dpi to a LaserWriter Pro 630 w/8Mb RAM from a Windows machine? I can only get 300dpi. If it is possible, how do you do it? Is it a setting in the print dialog box in Windows?

DISCUSSION ----------

In Chapter 4 of the LaserWriter Pro User's Guide, "Using Your Printer with an IBM PC", discusses installing the printer-driver file (WPD) for Windows 3.1. Different WPDs for the LaserWriter 630 are selected using the Printer dialog box in the Control Panel window. These different printer drivers give you the ability to choose a different printer resolution.

What may be confusing is there are separate WPDs for both 4MB and 8MB LaserWriter Pro 600 configurations (300 dpi with printers having 4MB of RAM, 300 or 600 dpi with 8MB printers). Since the LaserWriter Pro 630s ship with a minimum of 8MB of memory, WPDs are required for either 300 or 600 dpi.

If you don't have a 600 dpi option, reinstall the printer-driver file, as described in the manual. You should also use the LaserWriter Pro 600/630 for Windows (1.0.1) disk. This version fixes a problem associated with selecting paper trays.

The Notepad and Cardfile applications that come with Windows 3.1 do not print properly when the printer resolution is set to 600 dpi. To print using these applications, select the 300 dpi printer driver. Notepad and Cardfile should not be used for testing this functionality.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15540

Tech Info Library

PowerBook 500 Series: Priority of Dual Battery Charging (4/95)

Revised: 4/24/95
Security: Everyone

PowerBook 500 Series: Priority of Dual Battery Charging (4/95)

==========

Article Created: 8 June 1994
Article Reviewed/Updated: 24 April 1995

TOPIC ----------

What is the use/charging priority of the two batteries used in the PowerBook 500 series computer?

DISCUSSION ----------

The PowerBook 500 series computer has 2 battery bays that are each capable of holding a single PowerBook Intelligent Battery. The PowerBook will charge the battery in the left bay completely before charging the battery in the right bay. Once a battery is completely charged, the charging circuit for that battery goes into a maintenance stage. This maintenance stage will ensure that the battery's charge stays 'topped off' thus preventing any self-discharging that may occur.

If the computer has 2 batteries installed (one in the left bay and one in the right bay), the unit will draw power from the battery in the left bay first.

Article Change History:
24 Apr 1995 - Complete update of article.
17 Feb 1995 - Minor spelling correction.

Support Information Services

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Tech Info Library Article Number:15541

Tech Info Library

MultiMedia Starter Kit: Viewing on a 13 Monitor (6/94)

Revised: 6/8/94
Security: Everyone

MultiMedia Starter Kit: Viewing on a 13" Monitor (6/94)

==========

Article Created: 8 Jun 1994

TOPIC ----------

I am using the MultiMedia Starter kit on a 13" monitor, and I cannot see window edges so that I can move the frame around. There was nothing on the kit to indicate it will not work on 13" monitors. Was the window set only for larger monitors?

DISCUSSION ----------

The size of the Macromedia Player application is set to 640 by 480 and doesn't have a window bar to drag the window around. It is meant to fill the entire screen of a 13" monitor. If the application is played back on a larger monitor, it will appear centered on the screen, but will also have no window bar to move it around.

In other words, this window cannot be moved around on the screen regardless of how big the screen is. This is the way most CD-ROMs created with Macromedia Director work.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15545

Tech Info Library

LaserWriter Driver 8.x: Defaults to Level 1 w/Spooler (6/94)

Revised: 6/8/94
Security: Everyone

LaserWriter Driver 8.x: Defaults to Level 1 w/Spooler (6/94)

==========

Article Created: 8 Jun 1994

TOPIC ----------

Is it possible to set the default for the LaserWriter 8 to Level 2 Postscript? We are printing to a variety of Apple and Non-Apple printers via a Novell spooler. Even though you can manually select the correct PPD, the info for the device cannot be updated and the driver uses Level 1 rather than Level 2 binary Postscript. This is causing a problem in increased print time and network traffic.

DISCUSSION ----------

We believe the most significant reason for the print job taking so long to spool and print is due to the fonts being downloaded with every LaserWriter 8.x print job, and to a lesser extent the additional Postscript Level 1 and 2 procedures being sent to the spooler and printer, explained below.

At the beginning of each printing job, the LaserWriter 8.x driver opens a connection with the target device and sends a query job to determine among other things what language level of Postscript the device supports (Postscript Level 1 or 2), what file format to use (binary, ASCII), the fonts available on the device, etc. Netware 3.x print spoolers do not support Postscript Level 2 queries which results in all of the fonts used in the document being downloaded with every print job. Since the print server cannot return the specific Postscript version level of the printer, both the procedure set for Level 1 and 2 of Postscript, along with the Postscript code to test the language level is sent in the print job.

Netware 4.x supports Postscript Level 2 queries which results in a significant increase in print spooling performance.

To improve print times, you can do the following:
1) Minimize the number of fonts used in the document you spool to a Netware 3.x print server.
2) Use a Postscript Level 1 driver, such as the LaserWriter 7.2 driver.

3) Print directly to the printer.
4) Upgrade your print server to Netware 4.x or greater.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15547

Tech Info Library

LaserWriter Fax Tune-up: Fixes Pagination Problem (3/96)

Revised: 3/1/96
Security: Everyone

LaserWriter Fax Tune-up: Fixes Pagination Problem (3/96)

==========

Article Created: 8 June 1994
Article Reviewed/Updated: 1 March 1996

TOPIC ----------

I'm having a problem where the 8f driver sends an additional page after the cover page (an extra, blank page is being printed), listing the USER (with my name) filled in, the application, date, time. How can I turn this off?

DISCUSSION ----------

The page printed after the cover page is not really a second page, but a continuation of the cover page. The listing of User, application, and date is the "caption" and can be disabled in the "Fax Destination" dialog.

The caption should really be printed at the bottom of the cover page, but there is a problem in the driver that miscalculates the page length and produces the second page. This problem can be fixed with the LaserWriter Fax Tune-up. You can get the LaserWriter Fax Tune-up from online services Apple publishes software updates on.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
01 Mar 1996 - Added the words blank and extra for searchability.
09 Feb 1995 - Added where to get LaserWriter Fax Tune-up.

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..TIL15548-LaserWriter_Fax_Tune-up-Fixes_Pagination_Problem_3-96_(TA31861).pdf

Tech Info Library Article Number:15548

Tech Info Library

Power Macintosh: ROM Size Reported By Utilities (10/94)

Revised: 10/13/94
Security: Everyone

Power Macintosh: ROM Size Reported By Utilities (10/94)

==========

Article Created: 7 June 1994
Article Reviewed/Updated: 13 October 1994

TOPIC ----------

I have been using several third party utilities to find out information about a Power Macintosh 8100 and was surprised at some of the replies. Using Snooper, MacEkG, MacBench 1.1, etc., I noticed the ROM size reported as 3MB instead of the 4MB noted in the product specification sheets and technical information.

Is the ROM in all Power Macintosh systems actually 4MB in size?

DISCUSSION ----------

The ROM is actually 4MB in size. The unusual reporting is a feature of the Gestalt call values and the Power Macintosh ROMs. The Gestalt selector is behaving normally by returning the ROM size minus the 68K emulator portion, which uses about 1MB of space. Even MacTest Pro returns 3MB as the ROM size.

At this time, software developers will need to hard code the full physical size of the ROM in order to have it return 4MB.

Article Change History:
13 Oct 1994 - Added keyword; made minor technical changes.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15550

Power Macintosh: VRAM Expansion Options (7/94)

Revised: 7/1/94
Security: Everyone

Power Macintosh: VRAM Expansion Options (7/94)

==========

Article Created: 7 June 1994
Article Reviewed/Updated: 1 July 1994

TOPIC ----------

This article describes the VRAM expansion options between the different Power Macintosh models.

DISCUSSION ----------

There is no VRAM or VRAM slots on the logic board of the Power Macintosh 6100, 7100, or 8100. To provide different levels of VRAM based video, one of three video cards is used:

AV Video Card	2MB of VRAM	no expansion
2 MB Video Card	1MB of VRAM	with 4 slots for 1MB additional VRAM
4 MB Video Card	2MB of VRAM	with 4 slots for 2MBs of additional VRAM

Below is the standard color depth supported based on available VRAM:

Monitor	Resolution	1 MB VRAM	2 MB VRAM
12-inch Color	512 by 384	millions	millions
12-inch Monochrome	640 by 480	256	256
13-inch or 14-inch Color or VGA	640 by 480	thousands	millions
15-inch Portrait Monochrome	640 by 870	256	256
16-inch Color	832 by 624	thousands	millions
19-inch Color	1024 by 768	256	thousands
21-inch Color	1152 by 870	256	thousands
SuperVGA	800 by 600	thousands	millions
NTSC	640 by 480	thousands	millions
NTSC flicker-free	640 by 480	256	256
NTSC	512 by 384	thousands	millions
NTSC flicker-free	512 by 384	256	256
PAL	768 by 576	thousands	millions
PAL flicker-free	768 by 576	256	256

PAL	640 by 480	thousands	millions
PAL flicker-free	640 by 480	256	256

NOTE - NTSC and PAL display modes supported only on AV configurations.

The VRAM expansion card does NOT support resolutions below 8–bit (256 colors). In order to get 2, 4, or 16 colors, you must use the HDI-45 connector.

Currently all Power Macintosh AV configuration include the AV card. The 8100 (non-AV) uses the 4MB VRAM card and the 7100 (non-AV) uses the 2MB card. Only the 2MB VRAM or 4MB VRAM cards provide VRAM expansion slots. Note: These configurations are subject to change in the future.

No VRAM card is provided with the 6100 (non-AV) system. Using on-board video via the built in HDI-45 video connector on each machine shares the DRAM with the system. The built-in video port requires 640K of DRAM if connected to a monitor, otherwise it does not use any DRAM.

Article Change History:
1 July 1994 - Added minimum bit depth with VRAM card.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15551

Tech Info Library

Apple ftp Sites Frequently Asked Questions (4/97)

Revised: 4/28/97
Security: Everyone

Apple ftp Sites Frequently Asked Questions (4/97)

==========

Article Created: 7 June 94
Article Reviewed/Updated: 9 April 1997

TOPIC -----

This article provides an overview of ftp sites in general, a description of the ftp sites maintained by Apple, and answers to common problems.

DISCUSSION -----

What are ftp Sites?

An ftp site is a server which has an Internet connection and uses the File Transfer Protocol (an agreed upon standard for transferring files using the TCP/IP protocol) to let you log on and download files.

Servers can be Macintosh computers, MS-DOS machines, or UNIX based PCs or workstations. Limits, such as the number of users logged on, can be placed on an ftp site. Obviously, the more memory and processor speed a machine running as an ftp site has, the better able it is to handle more users, more file transfers, and so on.

Apple's ftp Sites

There are currently a number of ftp sites maintained at Apple, most of which are located in Austin, TX or Cupertino, CA. We are constantly adding additional ftp servers:

ftp.info.apple.com (Austin, TX)
ftp.apple.com (Cupertino, CA)
ftp.info.euro.apple.com (Zeist, the Netherlands)

- The following web page (http://support.info.apple.com/ftp/mirrors.html) lists

all ftp sites Apple has around the world. The ftp.info.apple.com site(s) has a current capacity of over 2,000 concurrent ftp sessions, with several thousand more coming this winter and spring - all served by 3 T-1s and a T-3 connection. (ftp.apple.com has capacity for approx. 1,000)

Apple Computer Gopher Server
---
gopher://gopher.info.apple.com/

Contains both the complete collection of Apple Software Updates and the Apple Tech Info Library.

How the Software is Posted
==========

All files are compressed using Stuffit Deluxe into self extracting archive files (usually identified by the .sea suffix appended to the end of the file name). They are then converted to the BINHEX format uploaded using Fetch (see the next section for an explanation of software). We then download and check each file we upload.

Many files start out as Disk Images. Customers downloading disk image files need to download and use Apple’s Disk Copy application to create floppy disk copies of each disk image. There is a Quick Reference Guide (QRG) on how to use Disk Copy available from the Apple Fax Info system, as well as document "Dealing with Disk Images" posted on info.hed.apple.com in the Apple Support Area.

The Software That is Available
==========

The Apple software updates collection is very large and is broken into two major categories: US and Worldwide. Inside the worldwide directory, is a large of localized software - that is, software that has been translated into other languages for use with localized MacOS systems.

Inside both the US and Worldwide folders is the following directories, many of which contain subdirectories:

Apple II
DOS-Windows
Macintosh
Newton
UNIX (on some servers)

What software You Should Use
==========

In general, Apple recommends that you obtain the latest version of an application that uses the ftp protocol to transfer files.

The following are the most common applications, many of which are included in

the Apple Internet Connection Kit, now available in the USA.

Fetch 2.1.2 or 3.0

An application developed at Dartmouth College; the most popular ftp client for Macintosh users. It automatically downloads and converts the binhexed files to the .sea file format.

Anarchie 140

Anarchie is an ftp and Archie client. It lets you browse ftp sites, download files, or find them using an Archie server. It requires System 7 and MacTCP 1.1 or later. Anarchie lets you view any directory as a folder, making it a very Macintosh-like application.

Turbogopher 1.0.8b4

An Internet surfing application developed by the University of Minnesota, capable of downloading and converting binhexed files to the .sea file format.

Netscape Navigator

A web client from the NetScape Communications Corp.

Microsoft Internet Explorer

A web client from Microsoft Corp.

Common Problems

The following common problems may be encountered by customers on Apple's ftp servers.

ftp server: cannot log on

You cannot log on due to the maximum concurrent user limit. You should try again later or another Apple ftp server.

Apple Computer gopher server: cannot download files successfully, ftp client reports "end of file error" or "EOF error"

We do verify each file we upload, but occasionally files do get corrupted and we replace them.

However, most of the time, you cannot download a file due to one of following problems:

- Not using most current version of ftp client, such as Fetch 2.1.2 or Fetch 3.0.

- The server connection "times out" or disconnects. Try logging on again, either early in the morning or late at night.

• You cannot establish a consistent connection with any ftp site. Make sure TCP/IP software is the most current version.

Other Commercial Online Services Apple Supports

Currently Apple publishes to America Online and CompuServe in addition to the Internet.

Article Change History:
06 Feb 1996 - Updated urls.
09 Jan 1996 - Updated article, removing and updated online and Internet references.

Copyright 1994-97, Apple Computer, Inc.

Tech Info Library Article Number:15553

Tech Info Library

Information Alley: Where to Find Online (4/97)

Revised: 4/3/97
Security: Everyone

Information Alley: Where to Find Online (4/97)

==========

Article Created: 1 May 1994
Article Reviewed/Updated: 02 April 1997

TOPIC --

The following is a breif description of the Information Alley and a list of the locations where you can find the Information Alley - listed by online service.

DISCUSSION ---

What is the Info Alley?
==========

The "Information Alley" is a publication of Apple Computer, Inc., Service and Support Engineering. It is available to all Apple customers and Apple computer users through electronic mail (e-mail).

The goal of the "Information Alley" is to help Apple computer users get full use of their Apple computers, peripherals, and software. You are welcome to distribute the "Information Alley" to anyone.

Subscribing and unsubscribing
to/from the Information Alley mailing list
==========

To subscribe:

Send message to: listproc@listproc.info.apple.com
Message: subscribe infoalley (Your Real Name)

You'll receive an automated reply letting you know you've been added to the list.

To unsubscribe:

Send message to:listproc@listproc.info.apple.com

message: unsubscribe infoalley

You'll receive an automated reply letting you know you've been removed from the list.

Information Alley Contents

The contents of Information Alley come from Apple's Technical Information Library (TIL). This library consists of over 12,000 articles related to Apple products and technologies. The TIL is available through various online sources including: America Online, CompuServe, the Internet: (gopher) or World Wide Web.

Where to Find the Information Alley

CompuServe

- Posted in the Apple Support Forum in Library 3: Info Alley Newsltr. The GO word (shortcut) to get to the Apple Support Forum is: APLSUP.

- Posted in Ziffnet/Mac area in the "Download Software & Tech Supt Forum," Library 7: Reference. GO words (shortcuts) are: ZMC:DOWNTECH and ZMC:DOWNLOAD.

- Path: MAUG forums -> Mac Community Forum -> Library 8 - Magazines/Reviews

Internet - Worldwide Web

- Apple Computer - World Wide Web (WWW) Server
  Enter this Universal Resource Locator (URL) to your WWW browser: http://www.info.apple.com/info.alley/info.alley.html

- Scott D. Sauer has posted the "Information Alley" in full HTML format. The
  Enter this URL for Scott D. Sauer's Information Alley homepage: http://www.uccnet.com.au/~czar/InfoAlley/infohome.html.
  For more information contact Scott D. Sauer: czar@wittenberg.edu.

Article Change History:
02 Apr 1997 - Deleted specific online references.
16 Sep 1996 - Updated to include only areas that keep current text versions.
01 Jul 1996 - Added Fax Doc Word

Copyright 1994-97, Apple Computer, Inc.

Tech Info Library Article Number:15554

Tech Info Library

GeoPort Adapter: Version Differences (6/94)

Revised: 6/7/94
Security: Everyone

GeoPort Adapter: Version Differences (6/94)

==========

Article Created: 7 June 1994

TOPIC -----

This article describes the differences in GeoPort adapter models and which versions to use outside the United States.

DISCUSSION -----

There are 3 versions of the GeoPort adapter, two of these can be used internationally, one can only be used within the United States.

Model	Computers	International
M1694LL/A	Quadra 660 and 840	No
M1694LL/B	Quadra 660 and 840	Yes
M3127LL/A	Quadra and Power Macintosh	Yes

Model M1694LL/A can only be used with Quadra computers. This model has a problem with very old telephone equipment, which will not allow the GeoPort to break the dialtone. It can only be used within the United States.

Model 1694LL/B corrects the problem where the Tip and Ring line are transposed. The software included with this model does not support the Power Macintosh computers. However, with the proper software, this model could be used with the Power Macintosh. It can also be used both inside and outside the United States.

Model M3127LL/A is essentially Model 1694LL/B, but it contains software that can be used in both Power Macintosh and Quadra computers. This model can also be used internationally.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15555

Tech Info Library

Power Macintosh: Video Capture With AV System (6/94)

Revised: 3/23/95
Security: Everyone

Power Macintosh: Video Capture With AV System (6/94)

==========

Article Created: 7 June 1994

TOPIC -----

I am using a Power Macintosh AV system and I want to hook up a video camera to the AV board, have the camera play a video, see the video on the AudioVision monitor in the Video Monitor window, and then capture a frame as a PICT file.

I connected a video camera with RCA jacks to the S-video/RCA adapter and plugged the adapter into the S-video IN port. I then ran the Video Monitor application and it came up with a message "cannot digitize video with current number of colors". I tried setting the number of colors down from 256 to 16, 4, and 1 but I could not get it to work.

I was told that connecting an AudioVision display to the HDI-45 port was NOT an alternative if I want to display video on it. How do I make this work?

DISCUSSION -----

Use of the HDI-45 connector on any of the Power Mac AV systems without a monitor attached to the AV card is not recommended. The Monitor control panel will automatically assume that a device is attached to the video out on the AV card and the result is what has commonly been described as a "ghost" monitor.

There are several problems associated with this anomaly which you may encounter:

• Moving the menu bar inadvertently to the "ghost" monitor in the Monitors control panel. Once this has been done you will need to connect a monitor into the AV Card in order to restore normal video. This is an issue for anyone using the AudioVision monitor which does not have an adapter cable.

• Viewing full-screen "video in" when using the Video Monitor application causes the computer to move the image to the "ghost" monitor. Returning to a half or quarter-screen window will not restore it back to normal. Quitting and restarting the machine will not restore the Video Monitor window either. This

will prevent you from being able to view the video you wish to capture.

• Windows, files, or folders may be inadvertently moved to the "ghost" monitor. Once moved to the "ghost" monitor they are difficult to recover without attaching a monitor into the AV card.

Note that all of these issues are associated with the Power Mac 6100/60/AV, 7100/66/AV, and 8100/80/AV systems. It is recommended to acquire a AudioVision display adapter cable and attach the monitor to the AV card directly.

WORKAROUND

Attempting to capture a frame of video and save it as a PICT file while running off of the HDI-45 connector is possible, but difficult and not recommended. The built-in digitizer will not work if the "ghost" monitor is set to millions of colors. Do the following to change the bit depth:

1) Open the Monitors control panel. You will notice that there appears to be two monitors displayed side by side even though you only have one monitor attached to the HDI-45 connector.

2) Click on the 2nd monitor (the one labeled "2" without the menu bar) so that it is highlighted.

3) Change the bit depth of the "ghost" monitor to something less than millions.

4) Open the Preference folder within the System Folder and throw the Video Monitor Preferences file into the trash.

5) Launch the Video Monitor application and you should be able to capture a frame of video and save it as a PICT file using the 'Copy' command.

   NOTE: You will only be able to capture a 'Half' or 'Quarter' size frame of video. Setting the frame size to 'Full' will cause the Video Monitor window to move to the "ghost" monitor and you will not be able to see the video. Switching back to 'Half' or 'Quarter' screen will not restore the window to its proper place. The only way to restore the video window to its proper location is to throw away the Video Monitor Preferences file.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15556

Tech Info Library

AppleSearch 1.0: Reporters and Restoring Volume (6/94)

Revised: 6/7/94
Security: Everyone

AppleSearch 1.0: Reporters and Restoring Volume (6/94)

==========

Article Created: 7 June 1994

TOPIC -----

I had to replace an external hard drive that had crashed, the data was restored from a backup tape, and indexed on the new hard disk. Now the reporters have lost their connection to that information source. The workstation reporters no longer appear in the reporter list on the server. There appears to be no way to "reconnect" them to the server short of re-saving them from each client. The AppleSearch admin guide does say on page 9, "if you relocate an information source to another disk, AppleSearch reporters will only look for it in the old location". It does not describe a way to "reconnect" these reporters to their information source without having to recreate them from scratch.

DISCUSSION -----

Unfortunately, AppleSearch uses the file ID's of the information sources for reference. When a backup is restored, the file ID's change, which causes the Reporters to lose contact with the information sources. There is no way to reconnect the old Reporters to the 'new' information sources in the current release of AppleSearch. You need to open each Reporter and reselect the necessary Information Sources.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15557

Tech Info Library

Power Macintosh: LocalTalk Performance With GeoPort (6/96)

Revised: 6/27/96
Security: Everyone

Power Macintosh: LocalTalk Performance With GeoPort (6/96)

==========

Article Created: 7 June 1994
Article Reviewed/Updated: 27 June 1996

TOPIC ----------

This article describes performance problems with LocalTalk on Power Macintosh computers when using GeoPort software.

DISCUSSION ----------

Power Macintosh 6100, 7100, and 8100 issue

Power Macintosh 6100, 7100, and 8100 users may notice a slow down in performance when printing to LocalTalk printers or accessing other LocalTalk network services while using the GeoPort software for Power Macintosh.

The GeoPort 2.0 upgrade will remedy this problem. We advise you to upgrade your GeoPort software.

If you do not have access to GeoPort 2.0, the solution is to turn off the receive Fax capability in the Fax Terminal application while using LocalTalk services. To do this:

1) Open the Fax Terminal application.

2) Deselect the Auto-Receive checkbox in the Fax menu.

Also, make sure other modem applications such as Apple Remote Access (ARA), or communications software is not set to auto-answer. When GeoPort software is set for auto-answer for either Fax, or data, LocalTalk performance can be affected.

This behavior does not effect Ethernet network connections.

Power Macintosh 7200, 7500, 7600, 8500, and 9500 issue

For Power Macintosh 7200, 7500, 7600, 8500, and 9500 series computers, the

software necessary to use the GeoPort Telecom Adapter is Apple Telecom software version 2.1 or later. If you are using a GeoPort Telecom Adapter on these Power Macintosh models, you must either disable LocalTalk, or use Ethernet any time the GeoPort Telecom Adapter is active because the computer may either crash, lock-up, or return a Type 11 error.

Article Change History:
27 Jun 1996 - Added 7600.
20 May 1996 - Removed keyword.
06 Oct 1995 - Added Power Macintosh 7200, 7500, 8500, and 9500 section.

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Tech Info Library Article Number:15559

Tech Info Library

MAE on Solaris Will Not Mount Macintosh Floppy Disk (1/96)

Revised: 1/30/96
Security: Everyone

MAE on Solaris Will Not Mount Macintosh Floppy Disk (1/96)

==========

Article Created: 7 June 1994
Article Reviewed/Updated: 30 January 1996

TOPIC ----------

I'm running Macintosh Application Environment (MAE) on Solaris. When I put a Macintosh floppy into the drive and press the "Mount Macintosh Disk" button in MAE, nothing happens.

DISCUSSION ----------

There are a couple of things that need to be checked. First, look at the macdisks.Solaris file located in the System Folder in the Preferences folder. This file can be edited with TeachText or vi.

You need to enable the floppy drive by entering whether the drive is read-only or read-write, and provide the path name. Since most Suns have one floppy disk drive, only the floppy0 entry has to be enabled. If your Sun has two floppy drives there is also an entry for floppy1. The entry for the floppy drives usually looks like this:

```
floppy0:rw:/dev/rdiskette
floppy1:ignore
```

It is possible to have the floppy drive at floppy1. If so, set floppy0:ignore and enable floppy1. (If the Sun workstation does not have any floppy drives, set both line entries to :ignore.)

Next, make sure you installed the "Volume Manager Extensions" when installing MAE. The "Volume Manager Extensions" must be installed as root. MAE Volume Manager is software that is used on Sun workstations to make it easier to use removable media devices. MAE runs a UNIX process on the workstation called "vold". To see if the Volume Manager is running, do the following:

1) From the UNIX workstation console type:

```
   ps -ef

2) Look for a UNIX process called "vold". That is the Volume Manager
   process.

To see if the Volume Manager Extensions have been installed, do the following:

1) Type: cat /etc/rmmount.conf

   During the MAE installation this file will be edited.

2) Look for these lines within the remmount.conf file. If they are there,
   then the MAE Volume Manager extensions have been installed:

   ident macfs ident_macfs.so floppy
   action floppy action_macfs.so

In addition, software products that do not currently support the Solaris Volume
Manager will conflict with MAE, which does use the Volume Manager. Until
software products that are incompatible with the Volume Manager are upgraded to
support it, you can work around this conflict by turning the Volume Manager on
when using floppies or CDs in MAE and off when using other software. This
work-around is only necessary when accessing a Macintosh floppy or CD since MAE
doesn't use the Volume Manager until you try to access a Macintosh disk.

Also be aware that some software disables Volume Manager control at the device
level by changing your /etc/vold.conf file, rather than starting or stopping the
Volume Manager's vold process.

NOTE: If you are using Solaris 2.4, be sure you have applied the most current
version of the Volume Manager patch -- as of January 1996, this version is
101907-05. To determine if this patch is installed, perform the following
command:

showrev -p

If 101907-XX is not listed, you need to contact your support channel for this
patch.


Article Change History:
30 Jan 1996 - Updated with the NOTE section on Solaris 2.4.
11 Oct 1994 - Corrected error.
28 Sep 1994 - Added more information.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15560
```

Tech Info Library

MacX: Mapping The Delete Key On An AIX System (6/94)

Revised: 6/7/94
Security: Everyone

MacX: Mapping The Delete Key On An AIX System (6/94)

==========

Article Created: 7 June 1994

TOPIC ----------

What is the command to properly map the Delete key on an AIX system for MacX? I'm connecting to an IBM 340 running AIX 3.2.5.

DISCUSSION ----------

First some information about keyboard manipulation within MacX. When the MacX server is initiated, every key on the keyboard is associated with a key code and a correspondent key symbol. For example, the delete key has the keycode value 59, a keysym value 0xffff, and a keysym name "Delete". The keyboard and its keysys table can be modified in MacX with an X client called "xmodmap", which is available in most X hosts.

The "xmodmap" client lets you display and modify the X keyboard map and keysym table on the display server. You can find out what the key is mapped to with the command:

```
xmodmap -pk
```

You may for example, find the "Delete" key in MacX has the keycode value 59 and a keysym value 0xffff.

You can modify what the key is mapped to with the command:

```
xmodmap -e "keycode 59 = BackSpace"
```

In this example the keycode number 59 now maps to BackSpace instead of the Delete key. Please refer to the xmodmap(1X) manual in any X client host for more information and examples. Also, the "xev" client (which displays the content of X events) is useful to display these keycodes, and keysym values and names when any key is pressed interactively.

With this, you can virtually remap any key within MacX as long as you know their

keycode and associated keysym values. You didn't specify which key the Delete key was to be mapped to in MacX, so we used the above example to show you how it is done.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15561

Tech Info Library

MacX: Maximum Number Of Fonts (6/94)

Revised: 6/7/94
Security: Everyone

MacX: Maximum Number Of Fonts (6/94)

==========

Article Created: 7 June 1994

TOPIC ----------

I received some new compiled fonts for MacX 1.2 and after installing them the MacX Fonts window was corrupted. I increased the memory allocated for MacX up to 20 MB, but the problem did not go away.

The way I installed the compiled fonts was by dragging them into MacX Fonts folder. Once installed, I clicked on Update MacX Font Directory to add these fonts to the list.

Deleting the Font Directory file did not make a difference.

I think the fonts are good and there's a font limit in MacX because if I add half of the fonts to the font directory, they show up correctly in the MacX Fonts window. If I remove that half and add the other half, the fonts are still not corrupted in the MacX Fonts window. If I add all the fonts, the corruption occurs. Is there a maximum number of fonts that can be used in MacX?

DISCUSSION ----------

We were able to reproduce the problem with the 287 fonts you sent. The number of fonts installed in the MacX Fonts folder does matter.

We tested to find out how many fonts can be in the MacX Fonts folder, and 541 fonts seems to be the maximum number of fonts allowed by Font Directory for everything to work properly. Beyond that the font name manipulation and sample font display will be corrupted. The fonts themselves however, seem to be intact and usable.

We suggest you limit the number of fonts to 541 to avoid font name and sample font display corruption. We are also reporting this for resolution.

Note: Do not put any uncompiled fonts in the MacX Fonts folder, we found one uncompiled font in the group you sent. You must compile it first with the Font

Director in MacX.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15562

AppleShare Print Server: Reprioritizing Print Jobs (6/94)

Revised: 6/8/94
Security: Everyone

AppleShare Print Server: Reprioritizing Print Jobs (6/94)

==========

Article Created: 7 June 1994

TOPIC ----------

I need to know how I can rearrange jobs in the AppleShare Print Spooler queue.

DISCUSSION ----------

AppleShare Print Server (2.x, 3.x, 4.x, and AppleShare Pro) don't provide the option to automatically reprioritize print jobs. That is, you cannot configure the spooler to automatically give some clients' print jobs a higher priority than other clients'. You can select any print job appearing in the print queue and request it print next, and you can cancel print jobs higher in the queue while that job is being received or sent by the spooler. After the spooler has shipped the print job off to the printer it no longer appears in the spooler queue and cannot be canceled.

You may wish to investigate other high-end spoolers such as Print Central by Compumation Inc. and Novell Netware which enable you to reprioritize print jobs. To locate a vendor's address and phone number, use the vendor name as a search string.

Below for your convenience is the Redgate reference on Print Central:

Print Central

Print Central is an easy-to-use print server for the processing of high volumes of print jobs to PostScript output equipment. It offers the advantage of a "multiple device" print server so a user's computer is released instantly while Print Central handles the downloading of jobs to the printer(s). This multiple printer queue capability provides the simultaneous spooling of jobs to many print devices over a network. Print Central gives users a greater level of productivity by reducing the amount of waiting time that is often associated with the printing of large or complex files. A network administrator can perform management functions, such as reprioritizing, removing or putting jobs on hold remotely from their workstation. Print Central provides up-to-the-minute error

and activity reports, giving an administrator complete information about the status of jobs and the amount of traffic on the system.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15563

Tech Info Library

LaserWriter Select 310: Determining Configuration (10/96)

Revised: 10/8/96
Security: Everyone

LaserWriter Select 310: Determining Configuration (10/96)

==========

Article Created: 8 June 1994
Article Reviewed/Updated: 8 October 1996

TOPIC ----------

The LaserWriter Utility does not support the LaserWriter Select 310. How can I find out how much RAM is installed in the printer and the PostScript version?

DISCUSSION ----------

There is currently no Apple support for downloading fonts or PostScript programs to the LaserWriter Select 310. There is a shareware utility called "Showpages" that allows downloading of PostScript files to the LaserWriter Select 310. It can be found on some of the Info Mac sites such as:

ftp://mirror.apple.com/mirrors/Info-Mac.Archive/prn/show-pages-141.hqx

By downloading a PostScript program such as the one below the amount of installed memory, available virtual memory, PostScript version, and the ROM revision can be checked. Cut and paste the following PostScript program into a text file and then use PSTool or some other equivalent program to download the file to the printer. This same programs with other PostScript laser printers.

POSTSCRIPT CODE

```
% PostScript tool to print total RAM, VM, and PS version info.
% Use PSTool or other PostScript downloader program to download
% this program to a PostScript device.

serverdict begin 0 exitserver
/Times-Roman findfont
15 scalefont
setfont
72 700 moveto
```

```
/str 20 string def
/str1 20 string def
(Printer RAM:  ) show
statusdict begin ramsize str cvs show
( bytes) show
72 670 moveto
/str2 20 string def
/str3 20 string def
(Available Virtual Memory: ) show
vmstatus exch sub 10 string cvs show
( bytes) show
72 640 moveto
/str4 20 string def
/str5 20 string def
(PostScript Version:  ) show
statusdict begin version str4 cvs show
72 610 moveto
(ROM Revision Level:  ) show
statusdict begin revision str5 cvs show
showpage
```

Article Change History:
08 Oct 1996 - Added information on Showpages

Copyright 1994-96, Apple Computer, Inc.

Tech Info Library Article Number:15568

Tech Info Library

QuickTake 100: Travel Case dimensions (6/94)

Revised: 6/9/94
Security: Everyone

QuickTake 100: Travel Case dimensions (6/94)

==========

Article Created: 8 June 1994

TOPIC -----

What are the physical dimensions for the QuickTake 100 Travel Case?

DISCUSSION -----

The dimensions for the Quicktake 100 travel bag (M2848G/A) are:

Height 6.0 inches (152.3mm)
Width 6.5 inches (165.1mm)
Depth 3.5 inches (88.6mm)

The bag contains sufficient room for the Quicktake 100 camera and the accesories that come with the bag such as the strap, wristband, and slip case.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15569

Tech Info Library

Compumation Inc. (6/94)

Revised: 6/8/94
Security: Everyone

Compumation Inc. (6/94)

==========

Article Created: 8 June 1994

Compumation Inc.
---

100 N. Patterson St.
State College, PA 16801

814-238-2120

814-238-2246 FAX

Company Profile:
Compumation provides business and professional software including Utilities/, Print Central, and Print server for Macintosh SE/30 or larger; 4 MB of RAM; hard disk drive; System 7.0 or later.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15570

Tech Info Library

AppleScript: What Apple Event ManagerDoes (1/95)

Revised: 1/12/95
Security: Everyone

AppleScript: What Apple Event ManagerDoes (1/95)

==========

Article Created: 9 Jun 1994
Article Reviewed/Updated: 12 January 1995

TOPIC ----------

What does the Apple Event Manager actually do?

DISCUSSION ----------

The Apple Event Manager allows applications to send and respond to Apple Events. An application that exchanges data with another application will probably use the Apple Event Manager. For example, in a client/server type environment, a client application might send an Apple Event requesting information from a server application. The Apple Event Manager handles addressing and sending the event.

You may see a file called "Apple Event Manager" and wonder what it's for. With AppleScript 1.0, there was a separate extension called "Apple Event Manager 1.0," which fixed some problems with the Apple Event Manager built into System 7. With the latest version of AppleScript (version 1.1) the improved version of Apple Event Manager is part of the AppleScript extension.

For additional information about Apple Events and the Apple Event Manager, see the book "Inside Macintosh: InterApplication Communication."

Article Change History:
12 Jan 1995 - Reviewed for technical accuracy, revised title.

Support Information Services

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Tech Info Library Article Number:15571

Tech Info Library

Power Macintosh: Problems with non-native cc:Mail (10/94)

Revised: 10/12/94
Security: Everyone

Power Macintosh: Problems with non-native cc:Mail (10/94)

==========

Article Created: 9 June 1994
Article Reviewed/Updated: 12 October 1994

TOPIC ----------

Power Macintosh owners who use the non-native version of cc:Mail from Lotus may see some incompatibilities. This article describes some problems that may occur. The native version of cc:Mail does not exhibit these problems.

DISCUSSION ----------

Some problems with the non-native versions of cc:Mail:

1) If you keep the application cc:Mail open, when it goes out to update your mailbox it bombs. If you start the application, get your mail and quit, the problem doesn't occur.

2) Some Power Macintosh customers are reporting a random problem where they pull down and release a menu, and a colored patch of dots remains on the screen where the menu rectangle was previously. Soon after this, the Macintosh freezes.

Upgrading cc:Mail to version 2.1.1 or later corrects these problems though it has been found that CC mail 2.1.1 is not compatible with 7.5 and QuickDraw GX.

cc:Mail 2.1.1 does have another problem with System 7.5. Actually, this problem first appeared with System Update 3.0 and only occurs when trying to open attachments when the application for the attachment is already running in the background.

When an attachment is double-clicked in cc:Mail, it is copied to the temporary items folder. The temporary items folder is an invisible folder at the root level of the startup disk. After copying the attachment, cc:Mail brings the target application to the front and forces it to display the open dialog box.

Normally, the directory in the open dialog is temporary items. System Update

3.0 and System 7.5 have a new version of the Standard File Package that will not display the temporary items folder. If an application sets the default directory to temporary items, Standard File sets the default to the desktop and displays the files, folders and volumes on the desktop. In this situation the user cannot get to the temporary items folder to open the attachment. If the target application is not running, attachments open without any problem.

The work around was to quit the target application and double-click the attachment again.

The next version of cc:Mail should fix both the problem printing with QuickDraw GX and the problem working with attachments. Lotus knows about both of them and they are working on fixing them in a future version of cc:Mail. Contact Lotus for further information.

Article Change History:
12 Oct 1994 - Additional issues and workaround documented.
27 Sep 1994 - Noted compatibility issues with System 7.5 and QuickDraw GX.
25 Aug 1994 - Combined two articles and reformatted text.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15572

Tech Info Library

Power Macintosh: PowerTalk & Direct Dialup Compatible (6/94)

Revised: 6/9/94
Security: Everyone

Power Macintosh: PowerTalk & Direct Dialup Compatible (6/94)

==========

Article Created: 9 Jun 1994

TOPIC -----

1) Is PowerTalk Direct Dial compatible with Power Macintosh computers?
2) Will the PowerTalk Direct Dialup Installer then install on top of a correctly installed PowerTalk system?
3)If not, are there any other disks needed to use PowerTalk Direct Dial on a Power Macintosh?
4) Is the GeoPort for Power Macintosh software compatible?

DISCUSSION -----

There is nothing tricky about installing PowerTalk Direct Dialup on a Power Macintosh.

1. Yes, Direct Dialup is compatible with the Power Macintosh.
2. Direct Dialup installs normally over a correctly installed PowerTalk for Power Macintosh.
3. No. No other disks are needed.
4. I presume you mean is the GeoPort for Power Macintosh compatible with Direct Dialup. Yes, it is.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15573

Tech Info Library

LaserWriter Pro 630: Printing Times New Roman Font (6/94)

Revised: 6/9/94
Security: Everyone

LaserWriter Pro 630: Printing Times New Roman Font (6/94)

==========

Article Created: 9 June 1994

TOPIC ----------

I am having trouble printing files with Times New Roman II fonts in them. This occurs from several different Macintosh computers printing to a LaserWriter Pro 630. A PostScript error occurs when printing this font and the printer drops off the network 3 out of 4 times. Is there a compatibility problem with this font and printer?

DISCUSSION ----------

From the details you provide we cannot be sure you have encountered this incompatibility, we have previously received reports of a problem printing documents containing the Times New Roman font on a LaserWriter Pro 630 when using the LaserWriter 7.2 driver. This problem is resolved by using either the LaserWriter 7.1.2 or LaserWriter 8.1.1 drivers; therefore, we recommend you use either of these drivers, but preferably LaserWriter 8.1.1 since it is a PostScript Level 2 driver and provides greater use of the LaserWriter Pro 630's features, such as paper trays.

If you continue to have problems when using LaserWriter 8.1.1, please:

1. Throw away the LaserWriter 8 prefs file in the Preferences folder inside the System Folder.
2. Reboot your Macintosh with Extensions OFF.
3. Select the LaserWriter 8.1.1 driver then try printing.

If the problems persist after following these steps, then:

1. Perform a clean install of system software 7.1
2. Install the LaserWriter 8.1.1 driver using its installer.
3. Install the Times New Roman font.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15574

Tech Info Library

Power Macintosh: Issue Using GPIB Interface Card (6/94)

Revised: 6/9/94
Security: Everyone

Power Macintosh: Issue Using GPIB Interface Card (6/94)

==========

Article Created: 9 June 1994

TOPIC ----------

I have a Power Macintosh 6100 with the NuBus adapter and I want to connect a JX-450 Professional Color Scanner from Sharp. This scanner needs to be attached to a NuBus card and it uses the NB-Handler 4.4 software. However when I use PhotoShop software I receive the error message "GPIB device 7 not found". This has been configured in the NB-Handler software.

Can you provide the NuBus slot number in the Power Macintosh 6100 when the NuBus adapter is connected? Is it possible to connect this scanner to this Power Macintosh model?

DISCUSSION ----------

The NuBus slot number of the 6100 is $E.

National Instruments (800-433-3488) in Austin, Texas is the manufacturer of the GPIB Interface for the Sharp Scanner. There is a known compatibility issue involving the use of this board with Power Macintosh systems. National Instruments has a fix for their Nubus card for Power Macintosh and can be contacted directly to upgrade the card.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15575

Tech Info Library

PowerBook 160/180: Problems Using an External Monitor (1/96)

Revised: 1/15/96
Security: Everyone

PowerBook 160/180: Problems Using an External Monitor (1/96)

==========

Article Created: 9 June 1994
Article Reviewed/Updated: 15 January 1996

TOPIC ----------

I have problems when my startup screen and menu bar are located on an external monitor connected to my PowerBook 160 or 180 computer with System 7.1. When I try to shutdown, the computer will display either a "Finder - Illegal F-line instruction" or "Finder - error type 41" error. The System Updates (2.0.1 and 3.0) do not seem to help this problem. Can you help?

DISCUSSION ----------

You will get this error on a PowerBook 160 or 180 with System 7.1.x when you connect an external monitor, multiple ADB devices, and both the menu bar and the startup screen are moved to the external monitor.

The problem will only occur if:
1) multiple ADB devices (the Apple Adjustable Keyboard acts like multiple devices) are attached
-AND-
2) both the menu bar and the startup screen are placed on the external monitor.

The problem does not occur with the PowerBook 165c or PowerBook 180c. It also does not occur with the PowerBook 500 Series computers.

Two temporary workarounds are to either:
• not use multiple ADB devices
-or-
• not put both the menu bar and the startup screen on the external monitor.

The permanent fix is to update to System 7.5.x.

Article Change History:
15 Jan 1996 - Added system 7.5.x fix information.

Support Information Services

Copyright 1994-96, Apple Computer, Inc.

Tech Info Library Article Number:15576

Tech Info Library

LaserWriter 8f Driver: Wrong TO: Field with Group fax (6/94)

Revised: 6/9/94
Security: Everyone

LaserWriter 8f Driver: Wrong TO: Field with Group fax (6/94)

==========

Article Created: 9 June 1994

TOPIC ----------

This article gives a workaround, so that the correct information is placed into the TO: field when sending a group fax.

DISCUSSION ----------

When sending a standard Group 3 bitmap group fax using a LaserWriter Select 360 or LaserWriter Pro 810 having the fax option car and the LaserWriter 8f driver, the Page Caption on each printed page reads "To:0" instead to the Name of the destination. The Name does prints correctly when sending a fax to just one destination, and the Fax Cover Sheet always lists the proper name.

One possible workaround to this cosmetic problem is to not use the Page Caption option but merely rely upon the "Recipient" address printed on the Fax Cover Sheet.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15577

Tech Info Library

Launcher: Limit to Items Displayed in the Launcher (6/94)

Revised: 6/9/94
Security: Everyone

Launcher: Limit to Items Displayed in the Launcher (6/94)

==========

Article Created: 9 Jun 1994

TOPIC -----

How many applications can the Launcher handle?

DISCUSSION -----

In the System Folder there is a folder called 'Launcher Items', and within that folder there are up to 8 folders with bullets in the name. The folders with bullets represent a button on the Launcher. You can have up to 30 items (aliases to folders, files or applications) within each.

Therefore the Launcher can handle up to 240 items distributed throughout 8 buttons.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15578

Tech Info Library

Express Modem: DAA Converters To RJ-11 (6/94)

Revised: 6/9/94
Security: Everyone

Express Modem: DAA Converters To RJ-11 (6/94)

==========

Article Created: 8 June 1994

TOPIC -----

I'm travelling from England to other places in the world (including the U.S.), and I'm having problems finding the correct adapter to connect the Express Modem's port and DAA (Data Access Arrangement) on my PowerBook 180c to the U.S. telephone systems RJ-11. Is there a good place to look for this adapter?

DISCUSSION -----

Yes, there's a company based in England with a U.S. office that specializes in these adapters. The company is TeleAdapt which provides worldwide connectivity for travelling portable computer users. Ideally you brought your DAA cable (which has a 8-pin minicircular connector on the PowerBook end and the telephone plug on the other end) to use with the adapters available from TeleAdapt. To locate a vendor's address and phone number, use the vendor name as a search string.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15579

TeleAdapt (8/95)

Revised: 8/8/95
Security: Everyone

TeleAdapt (8/95)

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Article Created: 9 June 1994
Article Reviewed/Updated: 8 August 1995

TeleAdapt

United States & Canada

TeleAdapt Inc.
Heritage Village
51 East Campbell Ave.
Campbell, CA 95008

Voice: 408-370-5105

Fax: 408-370-5110

e-mail: 72603.706@compuserve.com

Europe

TeleAdapt, Ltd.
Leeway House
Leeway Close
Hatch End, Middlesex
HA5 4SE, UK

Voice: +44 (0) 81 421 4444

Fax: +44 (0) 81 421 5308

Australia & Pacific Rim

TeleAdapt Pty Ltd

..TIL15580-TeleAdapt_8-95.pdf

Level 6
90 Mount Street
North Sydney NSW 2060
Australia

Voice: +61 (0) 2 966 1744
Fax: +61 (0) 2 966 1077

Company Profile:
Provider of telephone, modem, and power adapter solutions for computer users who need to connect to phone and power systems in foreign countries. They also provide step by step documentation for configuring the most common software telecommunications software for particular countries and phone systems.

Article Change History:
08 Aug 1995 - Added information on Europe, and Australia and Pacific Rim.
06 Jul 1995 - Added keyword.

Support Information Services

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Tech Info Library Article Number:15580

Tech Info Library

Power Macintosh: NEC Multisync Requires Adapter (6/94)

Revised: 6/9/94
Security: Everyone

Power Macintosh: NEC Multisync Requires Adapter (6/94)

==========

Article Created: 9 June 1994

TOPIC ----------

I have a NEC MultiSync 4FG monitor and the monitors control panel, on my Power Macintosh, only gives me a resolution of 640x480. Is there a way to get a higher resolution?

DISCUSSION ----------

NEC has a special adapter for the Power Macintosh computer called the "Power Macintosh Adapter". This allows Power Macintosh owners to change resolutions using the monitors control panel. These adapters are available directly from NEC.

You don't need adapters to use NEC's "dpi on the fly" software with the Macintosh Centris, Quadra, or LC computers. The "dpi on the fly" software is not comptatible with the Power Macintosh.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15581

Tech Info Library

Macintosh: System Software Version History (8/96)

Revised: 8/2/96
Security: Everyone

Macintosh: System Software Version History (8/96)

==========

Article Created: 6 Jun 1994
Article Reviewed/Updated: 2 August 1996

TOPIC ----------

This article contains a history of all the Macintosh System Software versions.

DISCUSSION ----------

Listed below is a table containing all of the version numbers for all Macintosh System Software releases. Beneath the table is a brief description of the changes that were made with each successive release of the System Software.

Begin_Table

System Software Release	System Version	Finder Version	MultiFinder Version	LaserWriter Version
Mac System Software	1.0	1.0	N/A	N/A
Mac System Software (0.1)	2.0	1.1g	N/A	N/A
Mac System Software (0.3 & 0.5)	2.0	4.1	N/A	N/A
Mac System Software (0.7)	3.0	5.1	N/A	N/A
System Software 1.0	3.1	5.2	N/A	1.1
System Software 1.1	3.2	5.3	N/A	3.1
System Software 2.0	3.3	5.4	N/A	3.1
System Software 2.0.1	4.0	5.4	N/A	3.3
System Software 2.0.1	4.1	5.5	N/A	4.0
System Software 5.0	4.2	6.0	1.0	5.0
System Software 5.1	4.3	6.0	1.0	5.1
System Software 6.0	6.0	6.1	6.0	5.2
System Software 6.0.1	6.0.1	6.1.1	6.0.1	5.2
System Software 6.0.2	6.0.2	6.1	6.0.1	5.2
System Software 6.0.3	6.0.3	6.1	6.0.3	5.2
System Software 6.0.4	6.0.4	6.1.4	6.0.4	5.2
System Software 6.0.5	6.0.5	6.1.5	6.0.5	5.2
System Software 6.0.6	6.0.6	6.1.6	6.0.6	5.2
System Software 6.0.7	6.0.7	6.1.7	6.0.7	5.2

System Software 6.0.8	6.0.8	6.1.8	6.0.8	7.0
System Software 7.0	7.0	7.0	Built-In*	7.0
System Software 7.0.1	7.0.1	7.0.1	Built-In*	7.0
System Software 7.0.1P	7.0.1P	7.0.1P	Built-In*	7.0
System Software 7.1	7.1	7.1	Built-In*	7.1.2
System Software 7.1P**	7.1P	7.1P	Built-In*	7.1.2
System Software 7.1.1 (Pro)	7.1.1	7.1.3	Built-In*	7.1.2
System Software 7.1.1	7.1.1	7.1.3	Built-In*	7.1.2
System Software 7.1.2	7.1.2	7.1.4	Built-In*	7.1.2
System Software 7.1.2P	7.1.2	7.1.4	Built-In*	7.1.2
System Software 7.5	7.5	7.1.4	Built-In*	7.2 & 8.1.1
System Software 7.5.1	7.5	7.5.1	Built-In*	8.2
System Software 7.5.2	7.5.2	7.5.3	Built-In*	8.2.2
System Software 7.5.3	7.5.3	7.5.5	Built-In*	8.3.3 & 8.3.4

End_Table

* Beginning with System 7.0, MultiFinder was no longer a separate piece of software.
** Peforma versions also include (System 7.1P2 - 7.1P6)

System Software History: Brief Description of Changes Between Versions
==========

Begin_Table

System Software Release	CPU Release Information
Mac System Software	Released for Macintosh 128K (1984)
Mac System Software (0.1)	Maintenance Release, Added Mountain scene, About box, Clean Up Command (1984)
Mac System Software (0.3 & 0.5)	Finder Update (1984)
Mac System Software (0.7)	Release for Macintosh 512K (1984)
System Software 1.0	Release for Macintosh 512Ke (1985)
System Software 1.1	Release for Macintosh Plus (1986)
System Software 2.0	Release for Macintosh II & SE (1987)
System System Software 2.0.1	Update to System Software to include AppleShare Client Features
System Software 2.0.1	Maintenance Release of System Software. Updated LaserWriter Driver
System Software 5.0	Added Updated LaserWriter Driver, Easy Access, Color CDEV, etc.
System Software 5.1	Updated LaserWriter Driver. Also added new version of Apple HD SC Setup
System Software 6.0	Update to System Software to include: Updated Multifinder, SuperDrive Support.
System Software 6.0.1	Release for Macintosh IIx (1988)
System Software 6.0.2	Maintenance Release of System Software
System Software 6.0.3	Release for Macintosh IIcx (1989)

System Software 6.0.4	Release for Macintosh Portable and IIci (1989)
System Software 6.0.5	Release for Macintosh IIfx (1990)
System Software 6.0.6	Not ever officially released. Intended for Macintosh LC, IIsi and Classic (1990)
System Software 6.0.7	Official release for Macintosh LC, IIsi and Classic (1990)
System Software 6.0.8	Updated Printing software to match Printing software of System 7.0
System Software 6.0.8L	Limited maintanence release for Pacific customers.
System Software 7.0	Major Update to System Software to include TrueType, FileSharing and other Features
System Software 7.0.1	Release for Macintosh Quadra 700/900 & PowerBook 100/140/170 (1991)
System Software 7.0.1P	Released for Macintosh Performa Computers (1992)
System Software 7.1	Update to System Software to include Fonts Folder, System Enablers, WorldScript and other Features
System Software 7.1P**	Version of 7.1 for Performa Computers
System Software 7.1.1 (Pro)	Update to System Software to include AppleScript, PowerTalk and updated Quicktime
System Software 7.1.1	Subset of System 7 Pro for PowerBook 250, 270c, 280, 520, 520c 540 and 540c
System Software 7.1.2	Release for Power Macintosh 6100/7100/8100 (1994)
System Software 7.1.2P	Release for Performa/LC/Quadra 630 (1994)
System Software 7.5	Major update to System Software to include QuickDraw GX and over 50 New Features
System Software 7.5.1	System 7.5 Update 1.0 released to fix several issues (1995)
System Software 7.5.2	New release specifically for the new Power Macintosh 7200/7500/8500/9500 computers, includes first version of Open Transport (1995)
System Software 7.5.3	System 7.5 Update 2.0, System 7.5.3 Revision 2, System 7.5 Version 7.5.3. Fix of several issues (1996)

End_Table

Article Change History:
02 Aug 1996 - Added System 7.5.3.
05 Apr 1996 - Changed description of changes for 7.1.
29 Aug 1995 - Added System 6.0.8L information.

..TIL15582-Macintosh-System_Software_Version_History_8-96_(TA31885).pdf

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Tech Info Library Article Number:15582

Tech Info Library

Apple Media Tool 1.1: Palette Switch Workaround (6/94)

Revised: 6/9/94
Security: Everyone

Apple Media Tool 1.1: Palette Switch Workaround (6/94)

==========

Article Created: 9 Jun 1994

TOPIC ----------

I would like to create and install an Apple Media Tool (AMT) palette that will better support the colors that exist in an AMT project. That is, I would like to use a different color palette other than the System palette.

DISCUSSION ----------

This is not supported by AMT 1.1, but there is an unsupported workaround found on a MultiMedia bulletin board (posted by Don Leatham):

Tools needed: ResEdit 2.1.1, AMT 1.1, DeBabelizer

Step 1 - Use the Runtime Maker to create your Mac application.
Step 2 - Use DeBabelizer to create and save a Super Palette for your artwork. When you make the SuperPalette in Debabelizer, make it for 254 colors instead of the normal 256. When you paste your Debabelizer 'CLUT' resource into your program's 'pltt' resource you won't loose any colors.
Step 3 - Start ResEdit.
Step 4 - Using ResEdit, open both your Mac application (from step 1) and your "DeBabelizer Prefs" file (inside your System:Preferences folder) You will see in the prefs file a resource type "CLUT"
Step 5 - Open the "CLUT" icon in the prefs file.
Step 6 - Open the Supper Palette that you created (in step 2)
Step 7 - From the Edit menu do a "Select All" and a "Copy"
Step 8 - Open the "pltt" resource in your Mac application
Step 9 - From the Edit menu do a "Paste" command. Click "OK" to the warning.
Step 10 - Close and save your Mac application.

WARNING: The "pltt" resource maintains its first two entries as black and white. When your Super Palette (which is actually a "CLUT" and doesn't have this restriction) is pasted in to the "pltt" you can get some pixels switched in

some images this may be a problem.

ANOTHER WARNING: The Runtime Maker has a bug in that it creates applications that do not reset the palette back to the System Palette when they quit. Therefore, if you use this workaround, your super palette will be applied to the Finder after you quit. This could possibly cause some end-user support problems.

Support Information Services

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Tech Info Library Article Number:15583

Tech Info Library

Power Macintosh & CD-ROM: Want to Initialize Dialog (2/95)

Revised: 2/27/95
Security: Everyone

Power Macintosh & CD-ROM: Want to Initialize Dialog (2/95)

==========

Article Created: 9 Jun 1994
Article Reviewed/Updated: 27 February 1995

TOPIC ----------

I am using a Power Macintosh with Audio CDs and when the CD is inserted, a dialog is displayed asking if I want to initialize the CD.

DISCUSSION ----------

Check for control panel/extension conflicts by restarting with only the CD extensions and control panels installed. The Extension Manager can exclude all but the base System 7.5 extensions.

Usually this behavior can be attributed to conflicts with software that extends the functionality of the Macintosh file system and its ability to read foriegn file formats. Make sure you have the Foreign File Access and Audio CD Access files in your Extensions folder.

One known control panel that causes this behavior is DOS Mounter from Insignia Solutions. It is similiar to PC Exchange in that it allows the Macintosh to read DOS disks and CDs. If both PC Exchange and DOS Mounter are installed, the Macintosh will have this trouble with audio CD's. Remove either PC Exchange or DOS Mounter.

Article Change History:
27 Feb 1995 - Clarified possible causes of problem.

Support Information Services

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Tech Info Library Article Number:15584

Tech Info Library

QuickTime for Windows 1.1.1: Readme (4/97)

Revised: 4/2/97
Security: Everyone

QuickTime for Windows 1.1.1: Readme (4/97)

==========

Article Created: 09 June 1994
Article Reviewed/Updated: 02 April 1997

TOPIC ----------

QuickTime for Windows, release 1.1.1 Read Me 12/08/93

DISCUSSION ----------

NOTE: QuickTime for Windows 1.1.1 must be licensed for distribution. If you have received QuickTime for Windows as part of an Apple or 3rd party product, you are licensed to install and use QuickTime for Windows on your computer. You MAY NOT redistribute QuickTime for Windows in any form without a distribution license from Apple Computer. See TO LICENSE FOR DISTRIBUTION in this document for more information.

IMPORTANT INFORMATION To play on Windows, a QuickTime Movie created on a Macintosh must be saved as Self-contained and Playable on non-Apple platforms. See MAKING MOVIES PLAYABLE ON BOTH MACINTOSH AND WINDOWS for more information.

Sound and video card compatibility is listed under PC VIDEO CARD COMPATIBILITY and PC AUDIO CARD COMPATIBILITY

Not all OLE client applications are supported by QuickTime for Windows 1.1.1 See OLE 1.0 SUPPORT for more information.

Intel Indeo decompressor is bundled. Support for the Indeo codec is provided by Intel Customer Support at 1-800-468-3548. See INTEL INDEO DECOMPRESSOR IS BUNDLED for more information.

WHAT'S IN THIS DOCUMENT
New features in 1.1.1
New features in 1.1
Making movies playable on both Macintosh and Windows
Product submissions encouraged
OLE 1.0 support

Intel Indeo decompressor is bundled
Macintosh features that are not currently supported
Minimum PC configuration
Components of QuickTime for Windows 1.1.1
To license for distribution
Where to get QuickTime for Windows today
Recommended for development
PC Audio card compatibility
PC Video card compatibility
Modifying QTW.INI for compatibility

NEW FEATURES IN 1.1.1

- Support for P9000 Graphics accelerator.
- Support for the Cirus Logic CL-GD54xx GUI accelerator.
- Support for the WD 90C33 Graphics accelerator.

NEW FEATURES IN 1.1

- Cinepak (formerly named Compact Video) playback
- OLE 1.0 (Object Linking & Embedding). The Movie Player is an OLE server, enabling QuickTime movies to be placed and played in Microsoft Excel 4.0, Word for Windows 2.0, Write, and Word Perfect 5.2 using QuickTime's human interface
- MCI (Media Control Interface) provides media integration in applications like Windows Media Player, AimTech Icon Author, and Asymetrix Multimedia Toolbook.
- Visual Basic 2.0 is supported with a .VBX file for integration of QuickTime Movies into multimedia applications created with Visual Basic 2.0.
- QuickTime for Windows 1.1 and 1.1 supports custom add-in decompressors, such as Intel's Indeo.
- Support for more audio and video card configurations. See PC VIDEO CARD COMPATIBILITY and PC AUDIO CARD COMPATIBILITY for a listing of the audio and video cards which have been tested with QuickTime for Window 1.1 and 1.1.1.

MAKING MOVIES PLAYABLE ON BOTH MACINTOSH AND WINDOWS

To make a movie playable on a PC, on a Macintosh open a movie file using the Movie Converter utility (part of the QuickTime Starter Kit 1.0) and choose Save As (File menu). In the resulting dialog box, click the radio button labeled 'Make movie self-contained' which tells the utility to sever any links to other movies after incorporating the relevant video into this movie. Also select the checkbox labeled 'Playable on non-Apple computers'. This causes the movie to be saved as a single forked movie. The resulting movie is cross-platform and is still in the QuickTime file format.

Once you save the movie, it will be playable on both Macs and PCs without further translation or file conversion. Before you transfer the movie to a PC, remember to give it a filename that is no longer than 8 characters, plus the extension .MOV for example, MYMOVIE.MOV.

PRODUCT SUBMISSIONS ENCOURAGED

Apple Computer encourages developers of current and intended commercial products which use QuickTime for Windows to send us evaluation copies. For example, products such as CD-ROM titles, Movie clip libraries, applications and utilities are often considered for future co-marketing opportunities. Two copies are requested, one for marketing evaluation and one for technical evaluation. Please submit with appropriate product and company information to:

QuickTime for Windows Product Submission
Apple Computer, Inc.
2 Infinite Loop, MS: 302-3KS
Cupertino, CA 95014

OLE 1.0 SUPPORT

The QuickTime for Windows 1.1.1 Movie Player is an OLE 1.0 Server. Due to a lack of standards in OLE 1.0 implementation, it is difficult to guarantee support of QuickTime for Windows with all OLE-supporting Client applications. The following products have been tested and compatibility verified. Support for other OLE Client applications cannot be guaranteed.

- Microsoft Windows 3.1 Write
- WordPerfect 5.2
- Microsoft Word for Windows 2.0
- Microsoft Excel 4.0
- Microsoft Multimedia Works for Windows

INTEL INDEO DECOMPRESSOR IS BUNDLED

Intel's first release of its Indeo decompressor is bundled with this product. Please contact Intel for support and for future updated releases of Indeo. Intel Customer Support is at 1-800-468-3548.

MACINTOSH FEATURES THAT ARE NOT CURRENTLY SUPPORTED

- Capture
- Compression
- Editing
- Photo CD
- Text track

Note: When producing QuickTime Movies, you are encouraged to use advanced features on the Macintosh release of QuickTime such as a text track. It is likely that features currently unique to the Macintosh will be supported in subsequent releases of QuickTime for Windows.

MINIMUM PC CONFIGURATION

- 386SX at 20 Mhz
- 4 Mb RAM
- 80 Mb hard disk
- VGA or better display card

QuickTime provides best quality and performance on cards displaying 32,768 color or more. See the end of this document for a list of tested compatible audio and video cards.
- A Sound card for playback of Movies with sound
- Windows 3.1 or later
- DOS 5.0. MS-DOS 6.0 and 6.2 with and without double space is supported.

COMPONENTS OF QUICKTIME FOR WINDOWS 1.1.1

- DLLs
- Movie Player application and OLE 1.0 server
- Picture Viewer application
- On-line help

TO LICENSE FOR DISTRIBUTION

Contact:
Apple Software Licensing
20525 Mariani
MS: 38-I
Cupertino, CA   95014
408-974-4667
fax: 408-862-5106
eMail: SW.LICENSE@apple.com

Please provide the following information to receive a license agreement:
contact person
mailing address
phone number
fax

Provide a proposal that includes a complete description of the product, how QuickTime for Windows is used in the product, and the distribution plans for the product. You will receive a QuickTime for Windows License Kit containing the Apple License Agreement and license information.

WHERE TO GET QUICKTIME FOR WINDOWS TODAY

QuickTime for Windows is bundled with various 3rd party products that support QuickTime for Windows such as Movie clip libraries, software applications and CD-ROM titles. Look for the QuickTime for Windows logo on the packaging of products such as these:

Adobe Premiere 1.0 for Windows
Macromedia Action 2.5 for Windows
Macromedia Authorware Pro 2.0 for Windows

The QuickTime for Windows Development Kit (APDA, #R0453LL/B), provides you with an ISO format CD-ROM that contains the DLLs, sample applications and source code, movie files, on-line documentation, help files and the QuickTime for Windows programmers manual. Six (6) DOS-based disks containing a subset of CD-ROM contents are also available for those without a CD-ROM drive.

Look for other QuickTime for Windows retail products in 1994.

RECOMMENDED FOR DEVELOPMENT

In addition to the QuickTime for Windows Development Kit, the following is useful in the development of cross-platform QuickTime support.

QuickTime for Macintosh Development Kit (APDA)

QuickTime Movie Exchange Toolkit (APDA #R0190LL/A)
Convert multimedia data created on other workstation platforms to QuickTime Movies playable on a Macintosh.

For development kits contact:
APDA
Apple Computer, Inc.
P.O. Box 319
Buffalo, NY 14207-0319
USA (800) 282-2732
Canada (800) 637-0029
Intl (716) 871-6555
eMail: APDA@apple.com
Compuserve: 76666,2405
America OnLine: APDA
Internet: APDA@.apple.com

QuickTime for Windows 1.1.1
Hardware Compatibility List
November 30, 1993

This document is meant to be an aid to developers who are working with, and distributing QuickTime for Windows per their license agreement. The list is by no means comprehensive but has grown substantially over the past year. The Video and Audio Hardware adapters are divided into three basic classifications Supported, Compatible and In-Compatible.

- Supported hardware/driver combinations are those that have been tested as part of the QTW development plan and are considered benchmarks to the product.

- Compatible hardware/drivers are those combinations that have been tested but not as thoroughly as Supported items but appear to function adequately.

- In-Compatible hardware/driver combinations are those recognized as having significant problems in appearance or behavior with QTW.

Another category that we've added to our report is Optimized.

Optimized video hardware/driver combination allows QTW to write directly to the video memory speeding up video performance significantly.

When ever possible the Name of the manufacturer, product name, driver date or version (when known), and depth in the case of video drivers is listed.

Begin_Table

Supported Video

Adapter	Driver	Depth	Resolution	Optimized?
Standard VGA	Windows VGA	4	640x350	No
Standard EGA	Windows EGA	4	640x480	No
IBM 8514	Windows	8	1024x768	No
IBM XGA	07/27/92	4	640x480	No
IBM XGA	07/27/92	16	1024x768	No
Only XGA20 supports 16-bit color. Do NOT use the drivers supplied with Windows 3.1. Instead, use the drivers supplied by IBM				
ATI VGA XL	04/09/92	4	800x600	Yes
ATI VGA XL	04/10/92	8	1024x768	Yes
ATI VGA XL	04/20/92	16	800x600	Yes
ATI ULTRA	04/22/92	8	1024x768	No
ATI ULTRA	OEM	16	640x480	No
ATI Mach 32	01/05/93	8	640x480	Yes
ATI Mach 32	01/05/93	16	1024x768	Yes
Orchid IIs	03/01/92	8	800x600	Yes
Orchid IIs	03/01/92	16	800x600	Yes
Video 7 VRAM2 ERGO	03/10/92	8	800x600	Yes
Orchid Fahrenheit VA	02/19/93	8	640x480	Yes
Orchid Fahrenheit 1280	08/10/92	8	640x480	Yes
Orchid Fahrenheit 1280	08/10/92	16	800x600	Yes
Diamond Stealth	09/25/92	8	640x480	Yes
Diamond Stealth	09/25/92	16	640x480	Yes
Diamond SpeedStar 24x	04/28/92	8	1024x768	Yes
Diamond SpeedStar 24x	04/28/92	16	800x600	Yes
Diamond SpeedStar 24x	04/28/92	24	640x480	Yes

Supported Audio

Adapter	Driver	date
Creative Labs SoundBlaster Pro	SBPSND.DRV	05/15/92

This driver has a know bug that effects
all Windows applications that use sound
where at times a portion of the sound will
be repeated several times.

Creative Labs SoundBlaster Pro	SBPSND.DRV	02/05/92

This driver some times 'sticks' on a
sound.

Creative Labs SoundBlaster Pro 16	SB16SND.DRV	04/14/93
Creative Labs ThunderBoard	SNDBLST2.DRV	03/10/92
Creative Labs ThunderBoard	SNDBLST2.DRV	05/13/92
Media Vision ProAudio Spectrum	MVPROAUD.DRV	02/03/93 1.3
Media Vision ProAudio Spectrum Plus	MVPROAUD.DRV	02/03/93 1.3

Make the following modifications to the
QTW.INI file:
[Sound]
RequestedRate=22095
ActualRate=22536

Media Vision ProAudio Spectrum 16	MVPROAUD.DRV	02/03/92
Media Vision Audio Port	MVAPORT.DRV	04/14/92

Does not support sound sampled at
above 11khz. Make the following
modifications to the QTW.INI file:
[Sound]
RequestedRate=11025
ActualRate=11025

Microsoft Sound System	SNDSYS.DRV	09/21/92 1.0
Cardinal Technologies Sound Studio	TAPIGSS1.DRV	12/28/92
Orchid Sound Producer Pro.	PRODUCER.DRV	01/13/93
Orchid Sound Producer Pro.	PRODUCER.DRV	10/01/92
Turtle Beach MultiSound	MULTISND.DRV	08/27/92 1.1
ATI Stereo F/X	SFX.DRV	05/04/92

Compatible Video

Adapter	Driver	Depth	Resolution	Optimized?
Actix Graphics Engine Ultra Plus	03/25/93	16	1024x768	No
Actix Graphics Engine Ultra Plus	03/25/93	8	1024x768	No
Actix Graphics Engine Ultra Plus	03/25/93	16	800x600	No
Actix Graphics Engine Ultra Plus	03/25/93	8	800x600	No

Actix Graphics Engine Ultra Plus	03/26/93		24	640x480	No
Actix Graphics Engine Ultra Plus	03/25/93		16	640x480	No
Actix Graphics Engine Ultra Plus	03/25/93		8	640x480	No
ATI VGA XL	08/14/92	1.42	16	640x480	No
ATI VGA XL	04/20/92		8	800x600	Yes
ATI VGA XL	04/10/92		16	640x480	Yes
ATI VGA XL	04/20/92		8	640x480	Yes
ATI VGA XL	06/25/92		8	1024x768	Yes
ATI VGA XL	06/25/92		8	800x600	Yes
ATI VGA XL	07/28/92		16	640x480	Yes
ATI VGA XL	06/25/92		8	640x480	Yes
ATI VGAWONDER XL24	06/25/92		8	1024x768	Yes
ATI VGAWONDER XL24	07/28/92		16	800x600	Yes
ATI VGAWONDER XL24	06/25/92		8	800x600	Yes
ATI VGAWONDER XL24	07/28/92		16	640x480	Yes
ATI VGAWONDER XL24	06/25/92		8	640x480	Yes
ATI Graphics Ultra	08/14/92		4	800x600	No
ATI Graphics Ultra	08/14/92		4	640x480	No
ATI Graphics Ultra	06/25/92		8	640x480	No
ATI Graphics Ultra Pro	03/10/92		8	8514/a	No
ATI Graphics Ultra Pro	03/13/93		8	1280x1024	Yes
ATI Graphics Ultra Pro	03/13/93		16	1024x768	Yes
ATI Graphics Ultra Pro	03/13/93		8	1024x768	Yes
ATI Graphics Ultra Pro	03/13/93		24	800x600	No
ATI Graphics Ultra Pro	03/13/93		16	800x600	No
ATI Graphics Ultra Pro	03/13/93		8	800x600	Yes
ATI Graphics Ultra Pro	03/13/93		16	640x480	No
ATI Graphics Ultra Pro	03/19/93		24	640x480	No
ATI Graphics Ultra Pro	03/19/93		16	640x480	No
ATI Graphics Ultra Pro	03/19/93		8	640x480	Yes
ATI Graphics/Pro	11/27/92		8	1024x768	No
ATI Graphics/Pro	11/27/92		16	640x480	No
Dell 466/M S3	09/04/92(1.2)		4	1280x102	Yes
Dell 466/M S3	09/04/92(1.2)		8	1024x768	Yes
Dell 466/M S3	09/04/92(1.2)		8	800x600	Yes
Dell 466/M S3	09/04/92(1.2)		4	800x600	Yes
Dell 466/M S3	09/04/92(1.2)		15	640x480	Yes
Dell 466/M S3	09/04/92(1.2)		8	640x480	Yes
Diamond Stealth Pro	12/07/92		8	1280x968	No
Diamond Stealth Pro	12/07/92		8	1280x1024	No
Diamond Stealth Pro	12/16/92		16	1024x768	No
Diamond Stealth Pro	01/06/93		8	1024x768	No
Diamond Stealth Pro	12/18/92		16	800x600	No
Diamond Stealth Pro	01/06/93		8	800x600	No
Diamond Stealth Pro	02/23/93		24	640x480	No
Diamond Stealth Pro	01/06/93		16	640x480	No
Diamond Stealth Pro	01/06/93		8	640x480	No
Diamond SpeedStar 24	04/14/92		8	1024x768	Yes
Diamond SpeedStar 24	04/14/92		15	800x600	No

```
Diamond SpeedStar 24              04/14/92       8    800x600  Yes
Diamond SpeedStar 24              04/14/92      15    640x480  No
Diamond SpeedStar 24              04/14/92       8    640x480  Yes

Diamond Viper VLB                 04/27/93       8   1152x900  Yes
Diamond Viper VLB                 04/27/93      16   1024x768  Yes
Diamond Viper VLB                 04/27/93       8   1024x768  Yes
Diamond Viper VLB                 04/27/93      24    800x600  No
Diamond Viper VLB                 04/27/93      16    800x600  Yes
Diamond Viper VLB                 04/27/93       8    800x600  Yes
Diamond Viper VLB                 04/27/93      24    640x480  No
Diamond Viper VLB                 04/27/93      16    640x480  Yes
Diamond Viper VLB                 04/27/93       8    640x480  Yes
Support for the P9000 was added
in QTW 1.1.1.

Genoa Windows VGA 8500             02/16/93        8   1024x768 Yes
Genoa Windows VGA 8500            10/23/92(turbo) 16    800x600 Yes
Genoa Windows VGA 8500             08/24/92       16    800x600 Yes
Genoa Windows VGA 8500             10/28/92        8    800x600 Yes
Genoa Windows VGA 8500            12/01/92(turbo) 24    640x480 No
Genoa Windows VGA 8500             10/14/92       24    640x480 No
Genoa Windows VGA 8500            11/11/92(turbo) 16    640x480 Yes
Genoa Windows VGA 8500            08/24/92        16    640x480 Yes
Genoa Windows VGA 8500            10/28/92         8    640x480 Yes
Support for the Cirus Logic
CL-GD5426 GUI was added in
QTW 1.1.1.

IBM XGA2                           07/27/92        8    640x480 No
IBM XGA2                           07/27/92       16    640x480 No
IBM XGA2                           07/27/92        8    800x600 No
IBM XGA2                           07/27/92       16    800x600 No
QTW supports IBM XGA2 starting
with version 1.1.

Orchid Fahrenheit VA              02/19/93 10:00 16   1024x768 Yes
Orchid Fahrenheit VA              02/19/93 10:00 24    640x480 Yes
Orchird VLB (Local Bus)           02/19/93       16    800x600 Yes
Orchird VLB (Local Bus)           02/19/93       15    800x600 Yes
Orchird VLB (Local Bus)           02/19/93        8    800x600 Yes
Orchird VLB (Local Bus)           02/19/93       24    640x480 No
Movies shifted to the left,
a few pixels in 24 bit mode.
Rebooting fixes the problem.
Orchird VLB (Local Bus)           02/19/93       16    640x480 Yes
Orchird VLB (Local Bus)           02/19/93       15    640x480 Yes
Orchird VLB (Local Bus)           02/19/93        8    640x480 Yes

Orchid Fahrenheit 1280            08/10/92 10:00 15    800x600 No
Orchid Fahrenheit 1280            08/10/92 10:00  8    800x600 Yes
Orchid Fahrenheit 1280            08/10/92 10:00 16    640x480 No
Orchid Fahrenheit 1280            08/10/92 10:00 15    640x480 No
```

Orchid Pro designer IIs/D 1.1	04/7/92	15	800x600	No
Orchid Pro designer IIs/D 1.1	04/7/92	8	800x600	Yes
Orchid Pro designer IIs/D 1.1	04/7/92	8	640x480	Yes
Orchid Pro II	03/01/92	8	1024x768	Yes
Orchid Pro II	03/01/92	15	800x600	No
Orchid Pro II	03/01/92	8	800x600	Yes
Orchid Pro II	03/01/92	15	640x480	No
Orchid Pro II	03/01/92	8	1024x768	Yes
Sigma Legend GX	04/01/92(1.13)	8	1024/768	No
Sigma Legend GX	04/01/92(1.13)	8	800x600	No
Sigma Legend GX	03/31/92(1.13)	8	640x480	No
Sigma Legend GX	04/01/92(1.13)	8	640x480	No
Sigma Legend 24X	11/13/92	8	1024x768	No
Sigma Legend 24X	11/13/92	16	800x600	No
Sigma Legend 24X	11/13/92	8	800x600	No
Sigma Legend 24X	11/14/92	24	640x480	No
Sigma Legend 24X	11/13/92	16	640x480	No
Sigma Legend 24X	11/13/92	8	640x480	No
Matrox 1024	08/21/92 2.07	24	1024x768	No
MiroCrystal 8S	04/13/93	8	1024x768	No
MiroCrystal 8S	04/13/93	16	800x600	No
MiroCrystal 8S	04/13/93	8	800x600	Yes
MiroCrystal 8S	04/15/93	16	640x480	No
MiroCrystal 8S	04/13/93	8	640x480	Yes

Compatible Audio

Adapter		Driver	Date
Creative Labs	ThunderBoard	SNDBLST2.DRV	03/10/92
Creative Labs	ThunderBoard	SNDBLST2.DRV	05/13/92
Creative Labs	Sound Blaster	2.0	02/16/93

Sound 'Sticks' with this driver.

Digispeech	PortAble Sound Plus	PRTSND.DRV	04/14/93
IBM	M/Audio	ACPA.DRV	10/29/92 11:38

Adjusting the volume from the
Movie Controller may cause the
volume to be muted. To restore
the volume, stop and restart the movie.
Sound may skip when resizing window.
Sound is played at 44khz by doubling
the samples.

IBM M/Audio ACPA.DRV 8/28/92
Limited volume control from
keyboard.

MediaVision Thunder and Lightning TLWAVE.DRV 08/25/92
Make the following modifications
to the QTW.INI file:
[Sound]
RequestedRate=22222

In-Compatible Video

Adapter	Driver	Depth	Resolution	Optimized?
ATI VGAWONDER XL24	07/29/92	24	640x480	Yes

In the 24 bit mode (16 Million Colors) Reds and Blues seem to be reversed

ATG CatsEye/X
Field reports of systems hanging when movies are played with this board.

Compaq Q-Vision
We have field reports that QTW does not work with is card.

Diamond SpeedStar 24 *	04/14/92	24	640x480	Yes

Movies render as a thin line at the top of the screen in 24 bit mode. All other functions are normal.

End_Table

MediaVision
We have a field report that QTW does not work with the original MediaVision video display adapter. The report indicates that the movies sound is played but the movie can not be seen. Problem persists when Optimize is set to driver

OmiCorp Texan
We have field reports of sound but no movie (video) with this card.

PackardBell
We have several field reports dealing with a PackardBell. Reports of a "shutters" type effect on local bus systems have been noted. The shutters effect is where a few lines of movie can be seen, then a few lines of background, then a few lines of movie, and so on. The reports also state that the image is also shifted down and to the right about 10 pels.

Further reports tell of a lack of Movie image when running on Local Bus Packard Bell Machines.

Begin_Table

Sigma WindStorm	08/21/92	8	1024x768	No
Sigma WindStorm	08/21/92	16	800x600	No

```
Sigma WindStorm                                  08/21/92    8   800x600 No
Sigma WindStorm                                  08/21/92    24  640x480 No
Sigma WindStorm                                  08/21/92    16  640x480 No
Sigma WindStorm                                  08/21/92    8   640x480 No
QTW has very poor performance
with is adapter.

End_Table
```

Video 7 SPEA 7 OEM
We have field reports that the Optimize = Driver must added to the QTW.INI before the movie will appear in the movie window frame. Audio and all other actions seems to be OK with out the change

In-Compatible Audio

Media Vision Thunder and Lighting *
QTW has very poor through-put with this card.

Media Vision CDPC *
QTW does not work well with is system with movies over 10 seconds in length.

Media Vision CDPC II
QTW does not work well with is system with movies over 10 seconds in length.

Sigma Design   WinStorm   8/21/92
Very poor QTW performance when running audio and video together.

Tandy 'Gold Card'
Only one unconfirmed report on this line of cards. A developer states that he has a Tandy "Gold Card" and QTW crashed when ever he trys to play a movie. Removing the card seems to fix the problem.

MODIFYING QTW.INI FOR COMPATIBILITY

NOTE: Modification of the QTW.INI file should be done at your own risk. Typically one does not need to make any modifications to this file. For some compatibility issues, modifying the file will make video or audio cards work properly, but with reduced performance. Be sure to make a backup of the QTW.INI file before modifying it.

The most common modification to the QTW.INI is to change the [Video] setting to Optimize = Driver. This may resolve severe compatibility problems with a specific video card but will also reduce the performance of Movie playback.

Once, again modify at your own risk.

[Video] (in order of priority)
Optimize =   Hardware (default)
          Driver
          BMP
          RAW
          DIB

[Video Optimize]
This is not used

[Override] // group
DREF = no or yes {NO forces QTW to use the file as self referencing, useful for QT 1.0 files}

[Data Handler] CDROM Xfer Rate* = [integer] ranges from 100 to 600, where number is in K, default is 328.
CDROM Seek TIme* [integer from 0 to X] where x is 100 to 350 in ms for average seek, default is 200.
CDROM Block Size = [integer, expressed in K] default is 8, range is 1 to 64.

Max Open Files =[integer] default is 64.
Max Consumers = [integer] usually same as Max Open Files. You can have multiple consumers per file.
Max Cache Size = [integer] expressed in K, default is 128, ranges from 64 to 512.

Disk Xfer Rate = [integer] same as CDROM Xfer Rate, default is 300.
Disk Seek TIme [integer] expressed in milliseconds per average seek, default is 35.
Disk Block Size = [integer, expressed in K] default is 16, range is 1 to 64.

Network Xfer Rate = [integer] same as CDROM Xfer Rate, default is 250
Network Seek TIme [integer] expressed in millisecon s per average seek, default is 40.
Network Block Size = [integer, expressed in K] default is 16, range is 1 to 64.

Floppy Xfer Rate = [integer] same as CDROM Xfer Rate, default is 18.
Floppy Seek TIme [integer] expressed in millisecon s per average seek, default is 100.
Floppy Block Size = [integer, expressed in K] default is 2, range is 1 to 64.

[Sound]
Requested Rate = [integer] ranging from 5000 to 44000 (has to be exact rate for MPC cards)
Actual Rate = same possible rates as requested

* Set dynamically by QuickTime for Windows, based on what it senses as the CD-ROM speed.

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The following files used by the QuickTime installer are Copyright © Microsoft Corporation:
SETUP.EXE, _MSTEST.EXE, MSCOMSTF.DLL,
MSDETSTF.DLL, MSINSSTF.DLL, MSUILSTF.DLL, MSSHLSTF.DLL,
SETUPAPI.INC, MSDETECT.INC, MSSHARED.INC.

END OF QUICKTIME FOR WINDOWS 1.1 1 READ ME

Article Change History:
02 Apr 1997 - Updated eMail addresses
11 Aug 1995 - Reformatted to make more readible on the World Wide Web.
01 Aug 1995 - Reviewed for formatting errors.

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Tech Info Library Article Number:15585

Tech Info Library

QuickTime for Windows 1.1.1: Description (6/94)

Revised: 5/7/96
Security: Everyone

QuickTime for Windows 1.1.1: Description (6/94)

==========

Article Created: 9 Jun 1994

TOPIC -----

This article describes QuickTime for Windows.

DISCUSSION -----

NEW FEATURES IN 1.1.1

- Support for P9000 Graphics accelerator.
- Support for the Cirus Logic CL-GD54xx GUI accelerator.
- Support for the WD 90C33 Graphcs accelerator.

NEW FEATURES IN 1.1

- Cinepak (formerly named Compact Video) playback
- OLE 1.0 (Object Linking & Embedding). The Movie Player is an OLE server, enabling QuickTime movies to be placed and played in Microsoft Excel 4.0, Word for Windows 2.0, Write, and Word Perfect 5.2 using QuickTime's human interface
- MCI (Media Control Interface) provides media integration in applications like Windows Media Player, AimTech Icon Author, and Asymetrix Multimedia Toolbook.
- Visual Basic 2.0 is supported with a .VBX file for integration of QuickTime Movies into multimedia applications created with Visual Basic 2.0.
- QuickTime for Windows 1.1 and 1.1 supports custom add-in decompressors, such as Intel's Indeo.
- Support for more audio and video card configurations. See PC VIDEO CARD COMPATIBILITY and PC AUDIO CARD COMPATIBILITY for a listing of the audio and video cards which have been tested with QuickTime for Window 1.1 and 1.1.1.

MACINTOSH FEATURES THAT ARE NOT CURRENTLY SUPPORTED

- Capture
- Compression
- Editing
- Photo CD
- Text track

Note: When producing QuickTime Movies, you are encouraged to use advanced features on the Macintosh release of QuickTime such as a text track. It is likely that features currently unique to the Macintosh will be supported in subsequent releases of QuickTime for Windows.

MINIMUM PC CONFIGURATION

- 386SX at 20 Mhz
- 4 Mb RAM
- 80 Mb hard disk
- VGA or better display card
  QuickTime provides best quality and performance on cards displaying 32,768 color or more. See the end of this document for a list of tested compatible audio and video cards.
- A Sound card for playback of Movies with sound
- Windows 3.1 or later
- DOS 5.0. MS-DOS 6.0 and 6.2 with and without double space is supported.

COMPONENTS OF QUICKTIME FOR WINDOWS 1.1.1

- DLLs
- Movie Player application and OLE 1.0 server
- Picture Viewer application
- On-line help

MAKING MOVIES PLAYABLE ON BOTH MACINTOSH AND WINDOWS

To make a movie playable on a PC, on a Macintosh open a movie file using the Movie Converter utility (part of the QuickTime Starter Kit 1.0) and choose Save As (File menu). In the resulting dialog box, click the radio button labeled 'Make movie self-contained' which tells the utility to sever any links to other movies after incorporating the relevant video into this movie. Also select the checkbox labeled 'Playable on non-Apple computers'. This causes the movie to be saved as a single forked movie. The resulting movie is cross-platform and is still in the QuickTime file format.

Once you save the movie, it will be playable on both Macs and PCs without further translation or file conversion. Before you transfer the movie to a PC, remember to give it a filename that is no longer than 8 characters, plus the extension .MOV for example, MYMOVIE.MOV.

WHERE TO GET QUICKTIME FOR WINDOWS TODAY

QuickTime for Windows is bundled with various 3rd party products that support QuickTime for Windows such as Movie clip libraries, software applications and CD-ROM titles. Look for the QuickTime for Windows logo on the packaging of products such as these:

Adobe Premiere 1.0 for Windows
Macromedia Action 2.5 for Windows
Macromedia Authorware Pro 2.0 for Windows

The QuickTime for Windows Development Kit (APDA, #R0453LL/B), provides you with an ISO format CD-ROM that contains the DLLs, sample applications and source code, movie files, on-line documentation, help files and the QuickTime for Windows programmers manual. Six (6) DOS-based disks containing a subset of CD-ROM contents are also available for those without a CD-ROM drive.

Support Information Services

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Tech Info Library Article Number:15586

Tech Info Library

Retrospect Internal Consistency Check Failed Error (6/94)

Revised: 6/9/94
Security: Everyone

Retrospect "Internal Consistency Check Failed" Error (6/94)

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Article Created: 9 June 1994

TOPIC ----------

I've recently used the "Software Update Installer CD-ROM" to upgrade my Apple Workgroup Server (AWS) 95 to A/UX 3.1, and Retrospect Version 2.0Ci. When I try to back up my data, I now get an, "Internal Consistency Check Failed: Assertion Check at elem.c -696", error. What is this, and how can I fix it?

DISCUSSION ----------

If you get this error check the Retrospect error log for a more specific error. If nothing specific is present the problem may be that Retrospect 2.0Ci thinks, the existing tape catalog is damaged. To fix this, use the utility in Retrospect to rebuild the tape catalog. This should fix your error.

Support Information Services

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Tech Info Library Article Number:15587

Tech Info Library

AWS 95: Retrospect Memory Error -108, Application Memory (6/95)

Revised: 6/22/95
Security: Everyone

AWS 95: Retrospect Memory Error -108, Application Memory (6/95)

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Article Created: 9 June 1994
Article Reviewed/Updated: 22 June 1995

TOPIC ----------

I'm using Retrospect on the Apple Workgroup Server (AWS) 95, and when I try to back up my data, I get an error from Retrospect of "-108". What is this error, and how can I fix it?

DISCUSSION ----------

From page 153 in the Retrospect Users manual, -108 is an "Out of application memory" error. This can be fixed, but you need to know more about the environment of Retrospect first.

Retrospect asks for 4,000 KB (4 MB) of finder application memory by default. This allows Retrospect to back up about 10,000 files and folders. We suggest setting this finder application memory request value to 8,000 KB (8 MB). This allows for the backup of 32,000 files and folders which is close to the upper limit for Retrospect's back up capability.

Make sure that you have configured your "Memory After Logout" value, in the Virtual Memory section of the Memory control panel, to match the memory tuning required for the amount of physical memory that is installed in your server. If you have only 16 MB of RAM physically in your server and you have your AppleShare Pro cache set to consume a large amount of RAM, then you will get a -108 error from Retrospect.

Adding memory to the AWS 95 platform is the key to improved performance. We have found that the absolute minimum memory that customers have installed, and are functional is 24 MB of RAM. We suggest somewhere between 36 MB and 48 MB would be a more reasonable amount of RAM. Anything over 48 MB (depending on tuning and intended function of the server) should be tuned to be allocated to the A/UX I/O Cache and will improve performance of the server noticeably.

Article Change History:
22 Jun 1995 - Updated for clarity.

Support Information Services

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Tech Info Library Article Number:15588

Tech Info Library

Portable StyleWriter: Printing to PowerBook 500 Series (6/94)

Revised: 6/10/94
Security: Everyone

Portable StyleWriter: Printing to PowerBook 500 Series (6/94)

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Article Created: 10 Jun 1994

TOPIC -----

Why doesn't the PowerPrint software that comes with the Portable StyleWriter work with a PowerBook 520?

DISCUSSION -----

It works when you select in the Chooser that the Portable StyleWriter is connected to the Modem port. It does not work (the PowerBook 5x0 just beeps) when you attempt to print when the printer is connected to the Printer port. On some occasions, you may receive errors -96 and -98, but again, are resolved by selecting the Modem port.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15590

Tech Info Library

PostScript Fax: Setting Send and Receive Options (6/94)

Revised: 6/15/94
Security: Everyone

PostScript Fax: Setting Send and Receive Options (6/94)

==========

Article Created: 9 June 1994

TOPIC ----------

How do you set the LaserWriter's Fax option card to merely send Faxes and not receive them? Is there a parameter which needs to be set?

DISCUSSION ----------

There is a PostScript command that will accomplish this. This "parameter" (technically called a key in PostScript parlance) acts as the master on-off control for Fax send and receive functionality. The parameter takes an integer value with these meanings:

Code	Meaning
0	Fax completely disabled
1	Send only enabled
2	Receive only enabled
3	Both send and receive enabled

The default value is 3. If receive is not enabled, then the ringing phone will not be answered. If send is not enabled, the routine that attempts to establish the call will fail and an I/O error is recorded.

Sending the following PostScript code to the Fax printer will enable "Send Only Mode."

```
(%Fax%) <</ServiceEnable 1>> setdevparams
```

To reinstate the default, send:

```
(%Fax%) <</ServiceEnable 3>> setdevparams
```

Send this code to the printer via the LaserWriter Utility or other PostScript download utilities.

You can also set, with the Fax Utility, the of number rings before the Fax card will answer the phone. The valid range is 1 to 30; increasing the number of rings gives you or your data modem more time to answer the phone prior to the Fax option card in the printer picking up and receiving the call.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15591

Tech Info Library

GeoPort 1.0, 2.0 and High Speed Fax, V.17 (6/95)

Revised: 6/28/95
Security: Everyone

GeoPort 1.0, 2.0 and High Speed Fax, V.17 (6/95)

==========

Article Created: 13 June 1994
Article Reviewed/Updated: 20 June 1995

TOPIC ----------

I need to disable the high speed Fax feature to dial into an older Fax that will not accept my documents. Page 35 of the "Express Fax/Modem User's Guide" shows a screen shot of the Fax Terminal preferences dialog box. The manual displays an option to turn off "high speed Fax feature". I don't have this option on my screen. I'm using Fax Terminal 1.5.1, Power Macintosh 6100/60AV, GeoPort Adapter, GeoPort for Power Macintosh 1.0.

Does the "high speed Fax feature" disabled on the fly, or is there a manual switch to enable and disable high speed Faxing?

DISCUSSION ----------

Geoport 1.0
The Geoport for Power Macintosh version 1.0 only supports Fax transmission speeds up to 9600 bps (CCITT V.29).

The user's guide for the Express Modem software that ships with the Power Macintosh references high speed Fax capabilities. The option for high speed Fax will not appear in Fax Terminal's preferences window.

The high speed Fax option is only available when Express Modem software is being used with an Apple Express Modem on a PowerBook or Macintosh with an Express Modem installed.

Geoport 2.0
Apple Telecom Software version 2.0 will support high speed faxing (V.17) on a Power Macintosh. The Quadra, and Centris AV Family of computers will not support v.17 speeds.

V.17 fax speed is disabled by launching the Fax Terminal software under the

Apple Menu. Under the "Fax" menu, drag down to "Preferences", unselect the box next to "Allow v.17 faxing".

Article Change History:
20 Jun 1995 - Updated with GeoPort 2.0 fax speed information.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15592

Tech Info Library

Power Macintosh: Compatible Third Party Network Solutions (6/94)

Revised: 6/10/94
Security: Everyone

Power Macintosh: Compatible Third Party Network Solutions (6/94)

==========

Article Created: 10 Jun 1994

TOPIC -----

I would like to access both a LanMan server and then ultimately a Windows NT server. I have looked around for information, but was unsuccessful at finding anything. We'll be using Power Macintosh computers with MicroSoft Mail.

DISCUSSION -----

There are many network solutions for Power Macintosh Computers:

- Microsoft Lan Manager is based on OS/2 v1.3, and it has a module called "Lan Manager Services for Macintosh" which can supports AppleTalk as well as Power Macintosh.

- Windows NT Advanced Server is the new 32-bit pre-emptive multi-tasking operating system from Microsoft, it has AppleTalk support built into its system kernel, and is compatible with the Power Macintosh.

In your particular situation, we would recommend an upgrade from Microsoft Lan Manager to the Windows NT Advanced Server because NT provide much better system services, and is very easy to manage-particularly on an AppleTalk network. Please proceed with caution during the upgrade process, there are "how-to" books on this topic in the computer stores.

The Microsoft Mail Macintosh client can be run on the Power Macintosh, and has the mail post office reside on either on the NT Advanced Server or Lan Manager Server.

Additionally, the Power Macintosh supports both ethernet and token ring topologies, and network transport protocols IPX/SPX, SNA/APPC, ApplTalk, TCP/IP, etc. can run on those topologies,

The Power Macintosh also supports access to the following:

- Novell Netware 3.x and 4.x.
- Banyan Vines v5.5.x
- Windows NT Adv. Server
- Lan Manager 2.x and later
- Lan Server 3.x and later
- all flavors of Unix: HP, Sun, IBM RS/6000, etc.
- client to IBM mainframes and AS/400
- client for Dec Vax, via Pathworks

Support Information Services

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Tech Info Library Article Number:15593

Utilities Unlimited International, Inc.

Revised: 4/7/97
Security: Everyone

Utilities Unlimited International, Inc.

==========

Article Created: 10 June 1994

Utilities Unlimited International, Inc.

Lake Havasu City, AZ

Company Profile:
Software: Develops and markets a Windows software emulator for Macintosh, expected to ship in August 1994.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15594

Tech Info Library

AppleSearch Bundle For Internet: Installation Checklist (6/94)

Revised: 6/10/94
Security: Everyone

AppleSearch Bundle For Internet: Installation Checklist (6/94)

==========

Article Created: 10 June 1994

TOPIC ----------

This checklist contains information required for the successful installation of the AppleSearch Bundle for the Internet. This product will require that an Internet connection be in place prior to the installation of the AppleSearch server. It should also be noted that this product utilizes the A/UX operating system which will require an understanding of the UNIX environment for support and troubleshooting.

DISCUSSION ----------

What is AppleSearch and how does it relate to the Internet? AppleSearch software is a client/server product that enables members of an AppleShare workgroup to conduct personalized information searches on a server, at the same time -- effectively turning the file server into an information server. Users can quickly and easily search for information on a selected topic, or they can let AppleSearch Reporters act as personal agents, periodically providing them with updated information on specified subjects. With the AppleSearch WAIS gateway feature, users can sort through local information stored in a variety of formats and drawn from numerous sources, they also have access to WAIS Internet information sources. There are hundreds of WAIS servers available on the Internet covering topics ranging from daily events to air and space to religion and philosophy.

How do I connect to the Internet? There are a variety of ways to connect your Apple workgroup server to the Internet. In most states there are currently projects underway to provide connections through a state agency or local university. Suggested contacts include your state universities, state office of public instruction or county office of education. A number of commercial providers offer connections on both a regional and nation wide basis. Some commercial providers include PSI at (703) 620-6651, Sprint International at (703) 904-2156, or AlterNet at (800) 488- 6383. We strongly suggest you utilize a dedicated connection when arranging for service from the provider of your choice. This will provide increased speed, reliability, and the ability to

service more simultaneous users than a dial up connection.

The AppleSearch Bundle for the Internet includes

- Apple Workgroup Server 95+.
- A/UX version 3.1 Operating System.
- AppleShare Pro server software.
- AppleSearch server and client software with gateway service to Internet WAIS servers.
- Installation.
- Getting started primer for WAIS curriculum usage in K-12.

Suggested Reading

There are a number of books available to provide you with additional information regarding an Internet connection and on Internet services. Suggested titles include:

- "How The Internet Works" by Joshua Eddings, published by Ziff-Davis
- "The Whole Internet" by Ed Krol, published by O'Reilly & Associates, Inc.
- "Connecting to the Internet" by Susan Estrada, published by O'Reilly & Associates, Inc.
- "The Internet Connection" by John S. Quarterman, published by Addison Wesley

Connection Checklist

Prior to the installation of your AppleSearch Bundle for the Internet the following information must be completed:

- Has the Apple Workgroup Server 95+ hardware arrived at the installation site?
- Type of connection: Dedicated line or Dialup _____
- If Dialup are modem and telephone line installed?
- If dedicated connection are the WAN router, CSU/DSU and dedicated line installed?
- Is a drop from the LAN installed for the AppleSearch Server?
- What is the TCP/IP address for the AppleSearch server given to you by the Internet connection provider? _____

- What is the subnet mask address for the AppleSearch server given to you by the Internet connection provider? _____

- What is the TCP/IP address of the Internet provider Domain Name Server _____

- What is the Internet provider Domain Name Server Name? _____

- What is the TCP/IP address of the WAN router connecting the AppleSearch server to the Internet _____

Setup Information

Once you have completed the connection checklist please call Apple Computer, Inc. at 1-800-3APPLE3 to schedule the installation of your server. The installing engineer will then contact you directly to review the connection checklist. Upon successful completion of this review the engineer will be dispatched as scheduled to complete the installation.

Glossary

TCP/IP: Transmission Control Protocol/Internet Protocol. Roughly translated it is the common "language" used for different types of computers to pass messages and information.

TCP/IP Address: The address by which a device is known on a computer network. You might think of this as a very detailed phone number for computers to call each other.

Subnet mask: An extension to the TCP/IP address. A phone analogy for networking addresses might be: area code = Network ID; prefix = subnet mask; last 4 digits = hostid.

Router: A device that transfers data between two networks using the same protocols.

CSU/DSU: A device similar to a modem for a dedicated connection. It connects your router to the Internet provider channel (such as T1, Frame Relay, and so on).

DNS: Domain Name Server is the resource naming system used on the Internet. It is also used to translate names (such as apple.com) into numeric Internet addresses (like 155.55.55.5) and visa versa. The benefit for the user is the ability to use the Internet by name versus long address numbers.

WAIS: Wide-Area Information Servers; this is a system for looking up information in databases (libraries) across the Internet.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15595

Tech Info Library

QuickTime 2.0: Description (5/95)

Revised: 5/24/95
Security: Everyone

QuickTime 2.0: Description (5/95)

==========

Article Created: 10 Jun 1994
Article Reviewed/Updated: 24 May 1995

TOPIC ----------

This article describes the new features in QuickTime version 2.0, system requirements, availability and compatibility.

DISCUSSION ----------

QuickTime 2.0 is significant because it provides larger video at faster frame rates, support for music, and support for interactive television applications.

Larger, Faster, TV Like Video

Video on computers is often confined to small windows and played at less than 12 frames per second, making the video appear rough and jerky. QuickTime 2.0 provides greatly increased performance resulting in full-screen movies without the addition of any hardware. This closely resembles what viewers see on television today. For example, on a Macintosh LC 475, one of Apple's lowest-cost computers, 30 frames per second video is possible at a resolution of 320 x 240, or full-screen video (640 x 480) is possible at 15 frames per second.

Key components of the new video enhancements are new features that support professional-level video editing. QuickTime 2.0 includes support for time-code, 60 fields per second video and high data throughput greater than 3 MB per second. This represents a 300 percent increase over previous versions of QuickTime.

Interactive Television Support

QuickTime 2.0 creates an infrastructure for development and delivery of interactive television applications through MPEG support and network

enhancements. Now, with its new device protocols, QuickTime can address distributed networks and devices, such as video servers, on the information super highway.

QuickTime 2.0 supports MPEG, widely regarded as the industry-standard method of delivering video into the home for interactive television applications such as Video On Demand (VOD) and home shopping. However, MPEG, by itself, allows only playback. With QuickTime 2.0, users of MPEG-based devices will be able to edit, search for, interact with, as well as play back—video information.

Note:
QuickTime requires additional hardware for MPEG playback.

Music For The Masses

Building on Apple's industry renowned ease-of-use, QuickTime 2.0 makes it much easier for computer users to create, edit, playback and synchronize music with video—all without a technical understanding of MIDI technology. In the past, users of Macintosh computers and other personal computers have required an understanding of MIDI technology in order to create and playback music on computers.

In addition, QuickTime 2.0's music capabilities will save disk space for users, because QuickTime music tracks are much smaller than digital audio. For example, Beethoven's 5th Symphony could easily fill a 300 MB hard disk if stored as CD-quality audio, but when represented as a QuickTime music track it would fill just a single 800K floppy disk.

System Requirements

QuickTime 2.0 will run on any color-capable (68020 or later) Macintosh computer running System 7 or 6.0.7 with at least 2 MB of memory (3-4 MB preferred on a System 7 system).

Availability

Developers

QuickTime 2.0 and QuickTime for Windows 2.0.x are available to software developers on the QuickTime Software Developer Kit (SDK) through APDA, and include licensing agreements from Apple's Software Licensing division.

End Users

QuickTime 2.0 for Mac OS is available as part of System 7.5 or can be downloaded from CompuServe (GO QTIME) for a small fee.

QuickTime 2.0 for Windows is available from CompuServe for a small fee (GO

QTIME).

QuickTime 2.0 for both Mac OS and Windows can also be downloaded from the internet for a small fee. It is available from the WWW site:

http://quicktime.apple.com

All earlier versions of QuickTime are no longer available and have been removed from Apple SW Updates.

Most QuickTime products also include a copy of QuickTime.

Compatibility with Older Versions of QuickTime

Movies created with earlier versions of QuickTime will playback with QuickTime 2.0, and usually they will playback more smoothly.

Applications and tools which support early versions of QuickTime, Movie Player and Movie Converter for example, will playback QuickTime 2.0 movies.

Article Change History:
24 May 1995 - Added QuickTime availability information.
02 May 1995 - Corrected spelling of LC 475 product name.

Support Information Services

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Tech Info Library Article Number:15596

Tech Info Library

GS/OS 6.0.1: Desktop Icons Disappear (6/94)

Revised: 6/10/94
Security: Everyone

GS/OS 6.0.1: Desktop Icons Disappear (6/94)

==========

Article Created: 10 Jun 1994

TOPIC ----------

I have an Apple IIgs and have just upgraded my GS/OS from 6.0 to GS/OS 6.0.1. Before upgrading, I was able to place frequently used application icons on my desktop and keep them there. Now using GS/OS 6.0.1 when I place my application icons on the Desktop and restart, the icons are gone. How can I retain the application icon placement on the Desktop?

DISCUSSION ----------

When using GS/OS 6.0 or 6.0.1 in order to retain icon placement on the Desktop you must select Preferences from the Special menu and place an "x" in the save Finder information onto disk option.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15597

Tech Info Library

AWS 95: A/UX User Terminal Session Limit From 16 To 32 (6/94)

Revised: 6/16/94
Security: Everyone

AWS 95: A/UX User Terminal Session Limit From 16 To 32 (6/94)

==========

Article Created: 10 June 1994

TOPIC -----

I'm interested in allowing more than 16 logins to an Apple Workgroup Server (AWS) 95 running A/UX 3.0.1. I'm using A/UX for a class and want to allow all students the ability to login and on the 17th login attempt, a message to the terminal says there are no more logins allowed (I'm are using NCSA Telnet to login).

I understand that there is a product called, A/UX 32 User License Product. From what I can tell, this is only a license agreement from Apple giving the customer permission to allow 32 logins to one A/UX computer.

Exactly how do I go about increasing that 16-user limit to 32? Is there a disk or CD that alters the A/UX process that keeps track of the active terminal sessions? It is unclear how this change is accomplished within A/UX.

DISCUSSION -----

The 16 user limit applies only to users directly attached to the system. It does not apply to users connected via network services.

As of A/UX 3.1 and later, the system is capable of supporting more than 16 users after performing a change in the kernel and adding the additional devices needed.

Memory requirements of the system will be very different from the one the system has when being used as an AppleShare Pro file server. If you are planning on using the AWS 95 for both purposes, the system memory requirements might be big and memory usage parameters would need to be adjusted carefully. If this is not done, server performance will suffer greatly.

Also this only affects remote users accessing TCP/IP services such as telnet and rlogin. It does not limit the number of users accessing file systems remotely via NFS or AppleShare.

The kernel variable NPTY should be set to the number of users you want to let login. The default is 32.

You can increase this number based on specific needs. This can be used using the following kconfig command

```
kconfig -n /unix
NPTY=40
<Control-D>
```

For this change to take effect, the system needs to be restarted.

The devices to be added are the two parts of the pseudo terminal to be used. The master and slave part of this pair are necessary for the connection to work.

A/UX 3.1 includes 16 pairs of devices

```
/dev/ptyp[0-9a-f]
/dev/ttyp[0-9a-f]
```

For the next set of 16 devices to be available for connection, the devices need to be created. There are two ways of creating these devices. The long way is to use the command mknod(1) to create each of the devices in the range

```
/dev/ptyq[0-9a-f]
/dev/ttyq[0-9a-f]
```

The major device number for pty's is 20, the major device number for typ's is 21. The minor device numbers would go from 32 to 47. Based on this, the commands would look like

```
mknod /dev/ptyq0 c 20 32
mknod /dev/ttyq0 c 21 32
....
mknod /dev/ptyqf c 20 47
mknod /dev/ttyqf c 21 47
```

The easy way to do this is to modify and use the script

```
/etc/init.d/bnet
```

Edit the file /etc/init.d/bnet with vi or TextEditor.

Look for the line reading

```
        for ptyname in C p        # q r s
```

Change it to look like

```
        for ptyname in C p q      # q r s
```

Save the file.

Make sure there are no users connected to the system via telnet or rlogin.

Execute the modified shell script with the command:

sh /etc/init.d/bnet

This will create the devices:

/dev/ptyq[0-9a-f]
/dev/ttyq[0-9a-f]

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15599

Tech Info Library

LaserWriter Fax: Legal Paper Tray Selection (6/94)

Revised: 6/13/94
Security: Everyone

LaserWriter Fax: Legal Paper Tray Selection (6/94)

==========

Article Created: 13 June 1994

TOPIC ----------

We have a LaserWriter Select 360 equipped with a fax card and a letter cassette. When we receive a LEGAL size fax, it splits up the fax into two pages. If we were to install a LEGAL cassette, would the software have the intelligence to sense the legal cassette?

DISCUSSION ----------

The original implementation of PostScript fax on the LaserWriter Select 360 and LaserWriter Pro 810 printers did not have the "intelligence" to check/select the appropriate paper tray based on the incoming fax.

There is a "LaserWriter Fax Tune-up" that was just recently released to resolve a two-page fax problem where two pages are printed when only one page was faxed. This tune-up also adds the "intelligence" outlined above to route faxes to the appropriate tray based on the page size of the incoming fax. In other words, if a Legal-sized fax job comes in and there is a Legal paper tray installed, it will print to the Legal tray.

NOTE: The fax tuneup is downloaded into RAM so if the printer is power-cycled, the tuneup MUST be launched again to take effect.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates
- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Support Information Services

..TIL15601-LaserWriter_Fax-Legal_Paper_Tray_Selection_6-94_(TA31903).pdf

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15601

Tech Info Library

MacGlobe: Launching Problems - Nothing Happens (6/94)

Revised: 6/13/94
Security: Everyone

MacGlobe: Launching Problems - Nothing Happens (6/94)

==========

Article Created: 13 Jun 1994

TOPIC -----

When I double-click on MacGlobe I get a screen with a Broderbund logo that tells me to click to begin. I click to begin and then it drops me back where I started. It never actually opens.

DISCUSSION -----

MacGlobe does not automatically open up a window and the menus across the top of screen don’t change that much. After you have clicked to begin go up to the View menu and drag down to your selection (country, state, etc.).

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15603

Tech Info Library

QuickTake 100 for Windows: Description (6/94)

Revised: 5/24/95
Security: Everyone

QuickTake 100 for Windows: Description (6/94)

==========

Article Created: 13 Jun 1994

TOPIC ----------

This article describes the QuickTake for Windows product.

DISCUSSION ----------

The Windows version of the QuickTake 100 digital camera features:

- High-quality, 24-bit color images
- Two image sizes: 320x240 (standard-) or 640x480 pixels (high-resolution)
- Up to 32 standard, 8 high-resolution images or a combination of both in internal memory
- Automatic shutter speeds from 1/30 to 1/175 seconds
- Apertures from f 2.8 to f 16
- Focus range from 4 feet to infinity
- Built-in automatic flash with user setting for on, automatic, fill flash or off.
- Images can be stored in the camera for over a year
- Battery life: 120 images (assuming about half taken with flash)

Compatibility

- Standard RS-232C serial connection (up to 57,600 kbs)
- QuickTake application to download and manipulate images
- File formats: TIFF, BMP, PCX, JPEG, and QuickTake
- Standard photo tripod socket
- 3 Nicad batteries and recharger
- Can be connected to Macintosh computers with the Connection Kit for Macintosh

System Requirements

- MS-DOS 5.0 or later
- MS Windows 3.1 or later

- Intel 80386, 80486, or Pentium CPUs with a serial port
- 4 MB of RAM
- 10 MB of hard disk space recommended, 4 MB minimum
- 1.44mb 3.5” floppy disk drive

Bundled Items

- QuickTake 100
- QuickTake for Windows software
- Serial cable (din 8 to DB-9)
- 25 pin serial cable adapter (DB-9 to DB-25)
- Manual
- Three NiCad batteries
- Battery recharger
- Neck strap

Availability

Apple expects to ship this product in late June, 1994.

Service and Support

QuickTake 100 for Windows digital cameras are entitled to service under the Apple Assurance mail-in repair service (same as PowerBook) program and carry-in service through Apple Authorized Service Providers (AASPs).

QuickTake 100 for Windows digital cameras and bundled items are supported through 1-800-SOS-APPL.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15604

Tech Info Library

Power Macintosh: PowerKey May Cause Time Loss (6/94)

Revised: 6/13/94
Security: Everyone

Power Macintosh: PowerKey May Cause Time Loss (6/94)

==========

Article Created: 9 June 1994

TOPIC -----

This article describes an issue when using PowerKey from Sophisticated Circuits on Power Macintosh systems.

DISCUSSION -----

PowerKey allows users to specify when their Macintosh system turns on and off. Early versions of the control panel which is included with PowerKey may prevent the Macintosh from updating its system clock after shutdown. This will cause the internal clock to lose time.

Contact Sophisticated Circuits to obtain an update for this control panel.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15606

Tech Info Library

Power Macintosh: Error Tones With Upgrade Card (6/94)

Revised: 6/13/94
Security: Everyone

Power Macintosh: Error Tones With Upgrade Card (6/94)

==========

Article Created: 10 June 1994

TOPIC -----

After installation of the Power Macintosh Upgrade Card in the PDS slot of a Macintosh, the machine refuses to boot in either 68k or Power Macintosh modes. Instead, the Macintosh produces only error tones.

DISCUSSION -----

Receiving error tones after installing the Power Macintosh Upgrade card can indicate a problem with either the DRAM installed in the system or the card itself.

You may test this by removing the extra DRAM from the Macintosh. If the card now functions properly, the DRAM may not be within Apple specifications or could be installed incorrectly.

If the card continues to fail with DRAM removed, disconnect all devices attached to the SCSI port and test again. If the card continues to fail, try a replacement Power Macintosh Upgrade Card.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15607

Tech Info Library

Power Macintosh: No Video With AV Video Card (12/94)

Revised: 12/14/94
Security: Everyone

Power Macintosh: No Video With AV Video Card (12/94)

==========

Article Created: 10 June 1994
Article Reviewed/Updated: 14 December 1994

TOPIC -----

This article describes a problem with Power Macintosh AV configurations and the loss of video sync with monitors attached to the DB-15 port of the AV video card.

DISCUSSION -----

You may encounter the following symptoms when using a Power Macintosh AV system with a monitor attached to the DB-15 RGB port of the AV video card:

- No video or blank screen
- Wavy glittering lines with no video image
- Machine crashes and has no video on next reboot (restart)
- Machine loses video after a restart. If the machine is shutdown and restarted, the video image returns.

This problem can affect all Power Macintosh AV configurations with any type or size monitor attached to the AV video port.

This problem may occur because occasionally the video driver of a Power Macintosh AV can send out incorrect sync pulses to monitors that employ separate sync lines for the horizontal and vertical sync signals. Incorrect sync pulses may disable the monitor sweep circuits and the video signal fails to function.

To avoid this problem, install at least one of the following software fixes installed:

- PowerMac AV Update (in the extensions folder)
- PowerPC Enabler v1.01 or later (available in System Update 3.0)

These software fixes are incorporated in System 7.5. The presence of both files does not cause any problems in use of the Macintosh.

To install the enabler, you have to reestablish video. To do this, try zapping the parameter RAM (PRAM) or connect a monitor to DRAM-based video using an HDI-45 to DB15 adapter cable. The DRAM-based video port can support monitors up to 17-inches.

Article Change History:
14 Dec 1994 - Added keyword and 7.5 reference; made minor technical updates.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15608

Tech Info Library

Macintosh: System Loses Date, User Settings (6/94)

Revised: 6/13/94
Security: Everyone

Macintosh: System Loses Date, User Settings (6/94)

==========

Article Created: 10 June 1994

TOPIC ----------

Everytime I start-up my Macintosh after it has been powered off, it switches to black and white mode, changes the desktop pattern, forgets my printer settings, and the date reverts to 1956. This doesn't happen if I just restart. I have tried zapping the PRAM and it didn't help. Why is this occurring?

DISCUSSION ----------

The lithium battery on the logic board of the Macintosh may have reached the end of its lifespan and needs to be replaced. The battery provides power to the logic board to save the control panel settings when you turn the machine off or interrupt power to it. When the machine is restarted the power supply continues to run and control panel settings will not be lost.

Any authorized service provider should be able to replace the battery. Since the battery is located on the logic board of the Macintosh, we suggest that users not attempt to replace the battery themselves. The logic board can be easily damaged by static electricity or incorrect handling.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15609

Tech Info Library

PowerBook Mobility Bundle: What's In The Box? (3/95)

Revised: 3/13/95
Security: Everyone

PowerBook Mobility Bundle: What's In The Box? (3/95)

==========

Article Created: 10 June 1994
Article Reviewed/Updated: 13 March 1995

TOPIC ----------

This article provides a list of the software included with the PowerBook Mobility Bundle.

DISCUSSION ----------

The PowerBook Mobility Bundle contains the following software:

- PowerBook Control Strip v1.0.1
- Macintosh PC Exchange v1.0.3
- PowerBook File Assistant v1.0
- Apple Remote Access Client v2.0.1
- HyperCard Player v2.2
- MacCheck v1.0.5
- MacLink Plus MCP v7.50
- PowerPort and GlobalFax software when purchased with optional modem installed

Disks for PC Exchange, MacCheck, ARA Client, and MacLink Plus software are not included in the PowerBook accessory kit. The software is comes pre-installed on the hard drive. A manual is provided for Apple Remote Access only.

Article Change History:
13 Mar 1995 - Removed Calendar 1.5 as it no longer ships with bundle.

Support Information Services

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Tech Info Library Article Number:15610

Tech Info Library

PC Exchange: Error Opening Control Panel (6/94)

Revised: 6/13/94
Security: Everyone

PC Exchange: Error Opening Control Panel (6/94)

==========

Article Created: 13 Jun 1994

TOPIC -----

On a PowerBook 520c with no additional extensions when trying to open PC Exchange Control panel, the error "can't be opened because it isn't installed. Place in control panels folder and restart." comes up. Another symptom was a beep during the startup.

Some configuration settings had been changed on the PC Exchange control panel prior to getting the error.

DISCUSSION -----

This is not a known issue, but it is most likely a corrupted preferences file. In some situations, removing the PC Exchange preferences file from the Preferences folder within the System Folder, and restarting will eliminate the error.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15611

Tech Info Library

Power Macintosh: CompuServe Information Manager & GeoPort (6/94)

Revised: 6/13/94
Security: Everyone

Power Macintosh: CompuServe Information Manager & GeoPort (6/94)

==========

Article Created: 13 June 1994

TOPIC ----------

This article describes compatibility problems between the GeoPort for Power Macintosh and CompuServe Information Manager version 2.3.

DISCUSSION ----------

MacCIM 2.3 (CompuServe Information Manager) is compatible with Power Macintosh and GeoPort, but the automated sign up program is not compatible.

New members (who don't have ID numbers and passwords) trying to sign up can call CompuServe Customer Service at 800-848-8990. They will walk customers through setting up MacCIM.

This customer service number is also on the back of the CompuServe documentation and within the MacCIM program.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15612

Tech Info Library

Personal Catalog Icon Grayed Out In Apple Mail (6/94)

Revised: 6/13/94
Security: Everyone

Personal Catalog Icon Grayed Out In Apple Mail (6/94)

==========

Article Created: 13 June 1994

TOPIC -----

When in Apple Mail, I want to select the Personal Catalog Icon from "recipients" selections, the first icon (personal catalog) is grayed out so I cannot select it. What's the problem?

DISCUSSION -----

Use the "get info" command on the personal catalog you want, then select "set preferred". After this is done the first time, the personal catalog option should be available when addressing mail in any AOCE savvy application like Apple Mail.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15614

Tech Info Library

Performa 475: Using Serial Printers With Fax Modem (6/94)

Revised: 6/14/94
Security: Everyone

Performa 475: Using Serial Printers With Fax Modem (6/94)

==========

Article Created: 14 June 1994

TOPIC -----

I am using a Performa 475 running System 7.1P6 and I am having many problems printing to a LaserWriter Select 310:

- The computer doesn't retain the Setup information for the printer.
- Intermittantly an error code of -1401 appears when trying to print.
- Sometimes, the "Setup" button in the Chooser can't be accessed.

When I removed the fax/modem software, all of the problems disappeared.

DISCUSSION -----

Some fax/modem software will typically "capture" a port, and place it "in-use". If you are trying to print to a serial printer connected to that same port, you may encounter errors such as those listed above.

Other than disabling the software, you might try to configure the fax/modem software (or the printer) to use the other port.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15615

Tech Info Library

PhotoFlash 1.1: Description (6/94)

Revised: 6/14/94
Security: Everyone

PhotoFlash 1.1: Description (6/94)

==========

Article Created: 14 Jun 1994

TOPIC ----------

This article describes PhotoFlash version 1.1

DISCUSSION ----------

PhotoFlash enables users of Apple Macintosh computers to quickly and easily acquire photographic images, enhance them, and place them into documents. The new version is enhanced for the faster performance of the Power Macintosh personal computer. In addition, with this new version, Apple PhotoFlash users can directly control the Apple QuickTake 100 camera and automate the camera's functions from within the application.

PhotoFlash 1.1 Supports

- Apple Power Macintosh - acquiring and manipulating images on a Power Macintosh computer is as natural and fluid as working with text and line-art graphics.
- Apple QuickTake 100 camera - enables users of the camera to record a series of steps to automate routine tasks and customize how the camera is used with other applications.
- Built-in compatibility with two popular publishing applications — Aldus PageMaker and Quark XPress. Integration of Apple PhotoFlash with these page-layout applications allows users to initiate editing and placement of images from within the applications.
- AppleScript scripting technology, which is responsible for the automation and customization of camera functions and enables further customization for vertical solutions such as catalog production.
- Also works with a wide range of third-party image scanners, special-effects utilities and file formats. This compatibility is achieved through use of Apple PhotoFlash with the appropriate Adobe PhotoShop Plug-in application extensions.

System Requirements

- Power Macintosh computer (with at least 8MB of RAM)
- Apple Macintosh or PowerBook™ computer with a Motorola 68020, 68030 or 68040 processor (with at least 8MB of RAM).
- Any version of the System 7 operating system.

Availability and Pricing

Version 1.1 of Apple PhotoFlash is currently available through software resellers, Apple authorized resellers, and through Apple’s volume licensing program. In the United States, the suggested retail price is $279.00. Current U.S. users of Apple PhotoFlash can upgrade to Version 1.1 for a shipping and handling fee of U.S. $10.00. These customers should call 1-800-769-2775 x6549 to receive the order form for the Apple PhotoFlash Upgrade Program. Version 1.1 of Apple PhotoFlash will be available in the United Kingdom, Japan, France and Germany by July 31, 1994. Prices vary by country.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15617

Tech Info Library

Apple Scanner: Not Compatible With the IBM PC (6/94)

Revised: 6/15/94
Security: Everyone

Apple Scanner: Not Compatible With the IBM PC (6/94)

==========

Article Created: 15 June 1994

TOPIC ----------

I have a customer who wants to use an Apple Scanner with an IBM PC clone. This works with the OneScanner, but can it be done with the original Apple Scanner?

DISCUSSION ----------

There are no drivers that let the customer use the Apple Scanner on Windows. Ofoto from Light Source, Inc. does have a solution for the OneScanner and Windows but neither Apple, Light Source, nor anyone else has the Software for an Apple Scanner and Windows.

To locate a vendor's address and phone number, use the vendor name as a search string.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15618

Tech Info Library

A/UX 3.0.1: Remote Connection, and Default Text Editor (6/94)

Revised: 6/15/94
Security: Everyone

A/UX 3.0.1: Remote Connection, and Default Text Editor (6/94)

==========

Article Created: 14 June 1994

TOPIC ----------

I have three questions about A/UX 3.0.1 concerning remote connectivity, not using vi as the default text editor, and creating new UNIX directories remotely.

1) What is needed to connect and access a remote Macintosh computer to a generic UNIX, or A/UX server? NCSA telnet appears to be a logical solution.

2) Also vi is the default text editor in the Command Shell, can I replace vi with another application?

3) Finally, can a remote Macintosh user create new UNIX directories on an A/UX volume and then see a new folder on the desktop?

DISCUSSION ----------

1) A/UX generally (including version 3.0.1) provides many networking services (servers and/or clients) such as FTP, TELNET, NFS, and NIS with TCP/IP protocols, or Apple File Sharing with AppleTalk protocols. For remote Macintosh systems connecting to A/UX TCP/IP services, it requires MacTCP and Macintosh applications providing MacTCP support; the known applications are NCSA Telnet, NFS/Share (Mac acts as a NFS client), VersaTerm Pro (Telnet and ftp), and others. For remote Macintosh systems connecting to A/UX Apple Personal File Sharing service, use the same procedure as a regular Macintosh doing Apple Personal File Sharing.

2) Yes, under an A/UX Command Shell, "vi" is the most commonly used text editor, however you may use another application like 'emacs' for instance. Under the A/UX Finder, "TextEditor" is the default application for launching any text based Macintosh document. You may, however, change to your favor such as MacWrite or MS Word. To do this, change the default FINDER_EDITOR environment value to where your favor

Macintosh editor is located, that is put the following line in the .profile file (for Bourne or Korn Shell) in your home directory:

```
FINDER_EDITOR=/mac/bin/MacWrite
export FINDER_EDITOR
```

3) You can create new directories on an A/UX volume, but you CAN'T mount or see a new folder on the desktop under a non-Apple Workgroup Server (AWS) running A/UX 3.0.1. This is because when a volume is shared the entire volume is shared with the UNIX filesystem or HFS filesystem. With an AWS 95 which uses A/UX, this can be done with AppleShare Pro. AppleShare Pro was specifically designed for AWS 95 running A/UX 3.0.1 or later.

Support Information Services

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Tech Info Library Article Number:15619

Tech Info Library

DOS Compatibility Card: Won't Recognize Radius Monitor (1/95)

Revised: 1/19/95
Security: Everyone

DOS Compatibility Card: Won't Recognize Radius Monitor (1/95)

==========

Article Created: 15 June 1994
Article Reviewed/Updated: 9 January 1995

TOPIC ----------

My DOS Compatibility Card won't recognize my Radius monitor. When I switch to the DOS side, the Macintosh freezes and slightly fades. When I try to switch back to the Macintosh side, it stays frozen. I checked the cables and they are OK.

DISCUSSION ----------

The driver/support software for the Radius Precision Color Pivot Monitor (called "Pivot Software") is incompatible with the DOS Card support software. Apple Engineering is aware of the problem and is actively working on a solution. The only known workaround at this time is to install a standard Apple Monitor.

Article Change History:
09 Jan 1995 - Minor formatting changes.

Support Information Services

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Tech Info Library Article Number:15620

Tech Info Library

Fonts: Documents on Macintosh and Windows (6/94)

Revised: 6/16/94
Security: Everyone

Fonts: Documents on Macintosh and Windows (6/94)

==========

Article Created: 16 Jun 1994

TOPIC ----------

Does the Macintosh operating system, or a 3rd party offer auto font substitution of some form for Macintosh users?

If not, are Macintosh and Windows users forced to agree on a common set of fonts in order to exchange documents reliably?

DISCUSSION ----------

The cleanest way to exchange documents between Windows and the Mac OS is (as you suggest) to have users agree on a common set of fonts.

If it isn't possible to get the users to come to an agreement on Fonts Types, Styles and sizes, and the system substitution isn't acceptable, then it will be necessary for you to purchase a third party solution for document distribution. Most of these packages will also maintain the integrity of graphics as well as fonts. The following is a list of four popular packages for this purpose:

Company	Package
WordPerfect	Envoy
Adobe	Acrobat
No Hands	Common Ground
Farallon Computing	Replica

You would be best advised to call these companies and explain your requirements to make sure that this is the type of solution that they are looking for, or if you need more information on the products.

Support Information Services

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Tech Info Library Article Number:15621

Tech Info Library

MAE: hqx Formatted Files or Applications (6/94)

Revised: 6/15/94
Security: Everyone

MAE: hqx Formatted Files or Applications (6/94)

==========

Article Created: 14 June 1994

TOPIC ----------

We are evaluating MAE in an environment consisting of an HP 9000 with no floppy drives and Macintosh computers. We are transferring files and Macintosh applications from ftp servers in .bin.hqx format. These files may also be compressed as .sit.

How do we de-hqx and be-binhex these files and applications so they can be recognized and run from within MAE? Please recommend specific procedures and utilities to be used.

DISCUSSION ----------

Here is a way to transfer Macintosh files and applications, in *.bin.hqx format, from ftp servers to HP or Sun workstations to run in MAE, when no floppy drives and/or Macintosh computers are present. Follow these steps:

1) Get a copy of "Stuffit Expander", a Macintosh decompression and decoding program, from the ftp.support.apple.com server (under /pub/mae/utilities) to your HP or Sun workstation. The Stuffit Expander on the ftp server is in tar format. After downloading (use 'binary' transfer form) to your workstation, do the UNIX command:

   tar xvf stuffit_exp.tar

   The "Stuffit Expander 3.0.7" Macintosh application will be created in your working directory.

2) Under ftp, use the 'binary' form to transfer the Macintosh applications and files to your UNIX workstation. (From your question, you probably have already done this.)

3) From within MAE, go to the folder which contains your *.bin.hqx formatted files, and drag the *.bin.hqx file on top of the "Stuffit

Expander 3.0.7" icon which will launch the Stuffit Expander. The desired Macintosh application or file will be automatically decompressed and decoded. "Stuffit Expander" supports different formats including Stuffit, Compat Pro, AppleLink, and BinHex. See the README file under /pub/mae/utilities in ftp.support.apple.com for more information.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15622

Tech Info Library

Power Macintosh: Campus Software Kit and ArtWorks (6/94)

Revised: 11/29/94
Security: Everyone

Power Macintosh: Campus Software Kit and ArtWorks (6/94)

==========

Article Created: 15 June 1994

TOPIC -----

I am having problems with Deneba ArtWorks which camemy "Campus Software Kit". It does not run on the Power Macintosh without turning Modern Memory Manager off.

DISCUSSION -----

Deneba has now fixed the problem and you can call them to receive the free fix. Their phone number is (305) 596-5644 and they are located on the East Coast.

Article Change History:
28 November 1994 - Made article public.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15623

PowerBook 500 Series Memory Allocation (6/94)

Revised: 6/15/94
Security: Everyone

PowerBook 500 Series Memory Allocation (6/94)

==========

Article Created: 15 Jun 1994

TOPIC -----

When I choose "About This Macintosh..." the Macintosh gives incorrect reports about how much memory I have available.

We see in "About This Macintosh..." :
Total Memory: 4096K
Memory available: 1682K
System: 2029K

Memory available: 1682K + System: 2029K = 3711K but Total Memory is 4096K

We find than about 300K (385K) RAM is missing. We think that this amount of RAM is memory reserved for Built-in Video, and in order to reduce the amount of this memory, we hold down the Option key while clicking the Option button in the Memory control panel. This doesn't brings up the special dialog box where you can set the maximum number of colors or grays to 256,16, 4 or black and white. So, we don't know why this 300K is missing.

DISCUSSION -----

To get the correct amount of memory available for applications users should look at the "largest unused block" field on About This Macintosh (generally about 1.9 to 2 MB after boot on a 4 MB system). As you indicated, this number does not add up to the RAM configuration when totalled with the system size (you typically get a discrepancy of about 400K.) This space is not available to the user EVER as it is allocated by the ROM at boot time. Here's an explanation as to what that space is used for and why it is somewhat larger than that found on other 040 computers:

Less space is available on the PowerBook 500 Series due to the relatively larger amount of space allocated above the buff point at boot time (approximately 400K.) This space can be broken down thus:

- Modem/Sound buffers (64K)
- Boot Globals (327K)
  Physical space table
  MMU tables

The 327K allocated for the bulk of the space is larger than what is allocated on a Quadra 950 (209K) for example. This increase is due to the video architecture implementation found on 040 PowerBooks. Because we must support both internal and external video (versus a single video architecture on the Quadra), a larger space must be allocated at boot time. While there is a way to support both internal and external video and not take so much memory on the front end, such an approach is more complicated, would require more development time, and involves considerable risk. Apple took a very conservative approach -- which resulted in additional memory use and reduced the amount of RAM available to run applications. The same case holds true for the new PowerBook 200 Series (although the numbers are slightly smaller).

As a side note, the additional RAM allocation on the PowerBook 500 Series is also the reason why you must have at least 6 MB of RAM installed to set up a RAM disk, while on the PowerBook 180c, for example, you can set up a RAM disk with just 4 MB installed.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15624

Tech Info Library

Quadra Multiple Scan Display: Distorted Image (6/95)

Revised: 6/28/95
Security: Everyone

Quadra Multiple Scan Display: Distorted Image (6/95)

==========

Article Created: 15 Jun 1994
Article Reviewed/Updated: 28 June 1995

TOPIC ----------

Some customers are reporting gray and distorted images on their Apple Multiple Scan Displays on a Quadra after restart.

DISCUSSION ----------

This problem has to do with the Display Enabler version the customer has on their machine.

To correct this problem, customers need to use Display Enabler 1.2.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" - Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" - Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
28 Jun 1995 - Changed multiscan to multiple scan.
22 Dec 1994 - Added Information on Display Enabler 1.2

Support Information Services

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Tech Info Library Article Number:15626

Tech Info Library

MAE: Performance Guidelines (6/94)

Revised: 6/15/94
Security: Everyone

MAE: Performance Guidelines (6/94)

==========

Article Created: 15 June 1994

TOPIC -----

This article contains some guidelines for expected MAE performance, given memory configuration and benchmark information.

DISCUSSION -----

Guidelines

Specints	Cache	Memory	Equivalent 680x0
25	Max Available	32 MB	68020/16Mhz
50	Max Available	32 MB	68030/20Mhz
90	Max Available	64 MB	68040/25Mhz

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15627

Express Modem 1.5.2: Read Me File (1/95)

Revised: 1/10/95
Security: Everyone

Express Modem 1.5.2: Read Me File (1/95)

==========

Article Created: 15 June 1994
Article Updated: 10 January 1995

TOPIC ----------

This is the Express Modem 1.5.2 Read Me file.

DISCUSSION ----------

ReadMe for Express Modem

This Express Modem software can be run on the following machines with their respective modem cards:

- PowerBook 160, 165, 165c, 180, 180c using an internal Apple PowerBook 14.4 Modem Card.
- PowerBook Duo 210, 230, 250, 270c, 280, 280c using an internal Apple PowerBook Duo 14.4 Modem.
- PowerBook 520, 520c, 540, 540c using an internal Apple PowerBook Express Modem II Card.
- LC 575 using an internal Macintosh Express Fax/Modem.
- Quadra 660 AV, 840 AV using an external Geoport Telecom Adapter. For these machines you need the supplemental software (GeoPort rev 1.2.1 or greater) provided with your Geoport Disk.
- Power Macintosh 6100/60, 7100/66, 8100/80 using an external Geoport Telecom Adapter. For these machines you need the supplemental software (GeoPort for Power Macintosh rev 1.0 or greater) provided with your Geoport Disk.
- The Express Fax software also lets you send faxes with PowerBook models 100, 140, 145 and 170 when used with the Apple PowerBook Fax/Data

Modem.

WARNINGS: Preferred CCL scripts for AppleTalk Remote Access: ARA 1.0: "Express Modem 14400" ARA 2.0: "Express Modem ARA 2.0" (in "Modem Documents" folder in installer disk)

- Fax V.17 (High Speed) reception: Some fax machines may not work well with the high-speed (V.17) fax capabilities of Express Modem. If you find you are having problems sending or receiving a fax, try turning off the V.17 option in the Fax Terminal Preferences dialog.

NOTE THE FOLLOWING CORRECTIONS TO THE EXPRESS MODEM 1.5.2 READ ME

- The Express Modem II Card is only available outside of the U.S. on PowerBook 500 Series computers.

- Macintosh 660AV, and 840AV computers using an external GeoPort Telecom Adapter, should use GeoPort 1.2 software, not GeoPort 1.2.1, or Express Modem For PowerBook 1.5.2.

- Power Macintosh computers using an external GeoPort Telecom Adapter should use GeoPort For Power Macintosh 1.0 software, not Express Modem For PowerBook 1.5.2.

Article Change History:
10 Jan 1995 - Added keyword; made minor technical updates

Support Information Services

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Tech Info Library Article Number:15628

Tech Info Library

Power Macintosh: Compatibility Issue with COPYright (6/94)

Revised: 6/21/94
Security: Everyone

Power Macintosh: Compatibility Issue with COPYright (6/94)

==========

Article Created: 16 June 1994

TOPIC ----------

This article provides a workaround for the problem of COPYright not working with a Power Macintosh or a Power Macintosh Card.

DISCUSSION ----------

Here's how to make COPYright work with Power Macintosh:

- Start with COPYright Control version 1.0.4 or 1.0.5
- Open COPYright Control with ResEdit.
- Open "fVER" resources
- Duplicate fVER ID -4039
- Select the new resource and Choose "Get Resource Info" from the Resource Menu
- Renumber the resource to -4038
- Rename the resource to "7.1.4f0" (change the 3 to a 4)
- Save and close
- Reboot.

This information is provided by Management Science Associates, Inc. CSG Technologies Division. Revised versions of COPYright or COPYright PRO will also resolve this problem. Contact the vendor for more information.

To locate a vendor's address and phone number, use the vendor name as a search string.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15629

Tech Info Library

Performa Basics: Can't Use on a Performa 200 (6/94)

Revised: 6/16/94
Security: Everyone

Performa Basics: Can't Use on a Performa 200 (6/94)

==========

Article Created: 16 Jun 1994

TOPIC -----

When launching Performa Basics on the Performa 200, a message appears stating that the Performa 200 cannot be set to 16 colors, so the application will NOT run. It seems that Performa Basics requires a color monitor.

DISCUSSION -----

This is true. Performa Basics would not be useful for a Performa 200 user. Basic operation of the computer is thoroughly outlined in the User's Guide.

Support Information Services

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Tech Info Library Article Number:15630

Tech Info Library

Turning Off Printer Configuration Pages Upon Startup (2/96)

Revised: 2/26/96
Security: Everyone

Turning Off Printer Configuration Pages Upon Startup (2/96)

==========

Article Created: 16 Jun 1994
Article Reviewed/Updated: 26 February 1996

TOPIC ----------

Why does my printer still produce a configuration page even though I have turned it off using LaserWriter Utility?

DISCUSSION ----------

If your LaserWriter Pro 600, Pro 630, LaserWriter Select 360, or Personal LaserWriter NTR has the communication switch set to number 4, it will print a configuration page on power-up. The configuration page is different than the start-up page that the LaserWriter Utility allows you to turn off. The configuration page provides information about many parameters that the start-up page does not mention.

To disable the printing of the configuration page, you must change the communication switch setting on the printer to any number other than 4.

Article Change History:
26 Feb 1996 - Added LaserWriter Select 360 to discussion.

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Tech Info Library Article Number:15631

Tech Info Library

Quadra 605: How Much Space Does Productivity Bundle Use? (6/94)

Revised: 6/16/94
Security: Everyone

Quadra 605: How Much Space Does Productivity Bundle Use? (6/94)

==========

Article Created: 16 June 1994

TOPIC ----------

How much hard drive space does the preinstalled software and the system folder occupy on the Quadra 605 productivity bundle?

DISCUSSION ----------

The bundle, including system folder, uses 51 MB of hard drive storage space. The system folder uses 9.5 MB, the Applications folder uses 37 MB, and the remainder is used by other items such as Mac Basics, Hypercard Player, TeachText, and utilities.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15632

Tech Info Library

Power Macintosh: 21-Inch Mono Display Compatibility (10/95)

Revised: 10/19/95
Security: Everyone

Power Macintosh: 21-Inch Mono Display Compatibility (10/95)

==========

Article Created: 16 June 1994
Article Reviewed/Updated: 19 October 1995

TOPIC ----------

Can the Apple 21-Inch Monochrome Display be used with Power Macintosh systems?

DISCUSSION ----------

The Apple 21-inch (2-page) monochrome display (model # M0402 or M1025 -- M0402 is revision A of the 21-inch monochrome display, M1025 is revision B) can be used on Power Macintosh 6100AV, 7100, 7100AV, 8100, and 8100AV series computers with either the HP Video Card (standard video card on the 7100 and 8100) or with the AV Video Card. It is not compatible with the built-in HDI-45 video ports used on these Power Macintosh computers.

The Apple 21-inch monochrome display also works with the Power Macintosh 7200, 7500, 8500, and 9500 series computers.

A DB-15 to DB-25 adapter cable (590-0615) is required with either model. The number of shades of gray that are supported are black and white, 4, 16, and 256.

Article Change History:
19 Oct 1995 - Added B version model number.
13 Sep 1995 - Added model number.
17 Aug 1995 - Made minor format corrections.

Support Information Services

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Tech Info Library Article Number:15633

Tech Info Library

Power Macintosh: Incorrect VRAM Causes 'Ghosted' Images (7/94)

Revised: 7/8/94
Security: Everyone

Power Macintosh: Incorrect VRAM Causes 'Ghosted' Images (7/94)

==========

Article Created: 16 June 1994
Article Reviewed/Updated: 08 July 1994

TOPIC ----------

I just upgraded the VRAM on the video cards in four Power Macintosh 8100/80 systems which are being used with Sony 20” multisync monitors. After the upgrade, the display is normal at thousands of colors, but in millions of colors, there are "ghosted" images of each horizontal pixel (ghost image to the left, and 2 ghost images to the right of the actual objects). The same problem occurs with the mouse pointer. What is causing this problem?

DISCUSSION ----------

It appears that you have installed two of the M5953LL/A VRAM upgrade kits on each video card. These are the incorrect VRAM kits. These kits contain two 256K SIMMs and can be used in the Power Macintosh 7100/66 and other CPUs which accept 256K VRAM SIMMs. The correct VRAM upgrade kit is M1311LL/A, which contains one 512K VRAM SIMM. The Power Macintosh 8100 video card requires four 512K VRAM SIMMs to upgrade from 2MB to 4MB VRAM.

The 2MB VRAM on the Power Macintosh AV cards is not expandable, therefore this issue should not arise with these cards. Reducing the monitor bit depth is typically a good method of testing whether a display problem is caused by a VRAM upgrade.

Article Change History:
08 Jul 1994 - Reviewed for technical accuracy, made article available for all readers.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15634

Tech Info Library

Management Science Associates, Inc.

Revised: 4/7/97
Security: Everyone

Management Science Associates, Inc.

==========

Article Created: 16 June 1994
Article Reviewed/Updated: 7 April 1997

Management Science Associates, Inc.

CSG Technologies Division
6565 Penn. Avenue at Fifth
Pittsburgh, PA 15209-4490

Telephone: 412-362-4000
(Sales: Extension: 598 or 460)
(Technical Support Extension: 599 or 461)

Telephone: 800-366-4622 (Technical Support)

Company Profile:
Macintosh software developers of business and professional software utilities.

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Tech Info Library Article Number:15635

Tech Info Library

MAE: Solaris File Manager Affected After Trial Install (6/94)

Revised: 6/16/94
Security: Everyone

MAE: Solaris File Manager Affected After Trial Install (6/94)

==========

Article Created: 15 June 1994

TOPIC ----------

My Solaris File manager won't work after I installed MAE. It won't check or format a floppy anymore. A check won't do anything, and a format will cause a core dump and Sigseg violation. After getting out of MAE, I deleted it entirely but the problem remained. I eventually found a line in a file that MAE had added:

/etc/rmmount.conf ... was changed.

action floppy action_macfs.so ... was added to the file.

This line was removed and the File manager was restarted. It now checks for floppies OK, but attempting to format a floppy still causes the same core dump.

This is critical for my operation as this system is used to generate floppies for my development's efforts. I have to get the Solaris File Manager back into its pre-MAE state.

DISCUSSION ----------

When MAE Trial installed support for the Solaris Volume Manager, it did the following:

- Added these lines to /etc/rmmount.conf:

    ident macfs ident macfs.so floppy
    action floppy action_macfs.so

- Created a subdirectory named 'macfs' within the existing directory /usr/lib/fs and tossed these files into it:

    ident_macfs.so.1
    mount

- Added this file to the existing /usr/lib/rmmount directory:

    action_macfs.so.1

- Restarted the Volume Manager Daemon via:

    kill -HUP <vold process id>

Remove all these files and changes then restart the vold process to get back to a before MAE state.

Be sure you are running Solaris 2.3 and not some other version because it's possible this could be the real problem.

Also make sure that the floppy there were trying to format will format on other Solaris 2.3 systems to be sure it's not a defective floppy.

Support Information Services

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Tech Info Library Article Number:15636

Tech Info Library

AudioVision 14 Display: How to Reset the Monitor (7/94)

Revised: 7/7/94
Security: Everyone

AudioVision 14" Display: How to Reset the Monitor (7/94)

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Article Created: 17 Jun 1994
Article Reviewed/Updated: 07 July 1994

TOPIC ----------

I seem to have either no raster, or a dim raster on the screen of my AudioVision 14" monitor, how do I reset it?

DISCUSSION ----------

Do the following:
1) Shut down the Macintosh.
2) Turn the power off on the monitor and CPU.
3) Disconnect AudioVision 14 Monitor power cable for 30 seconds.
4) Reconnect AudioVision 14 Monitor power cable.
5) Switch monitor back on WHILE holding down BRIGHTNESS UP and MICROPHONE buttons (these are the 2nd and 5th buttons from left, respectively).

NOTE: On a Macintosh CPU which turns on the monitor automatically at power up, you will instead have to hold down the above buttons while powering on the CPU.

Other situations when the monitor may have to be reset:
- Sound control panel does not display the ‘AudioVision’ option in the pull down menu.
- Unable to launch the ‘Video’ control panel, instead you get the message ‘The Video control panel can’t be opened because no video panels are installed.’
- When the ‘~AudioVision’ extension boots with an ‘X’ through it
- The Monitors control panel does not display any bit depth selections

In the four situations listed above, merely powering down the monitor and disconnecting the power cable from the monitor may be sufficient, but the 2-button reset procedure above will definitely work in all cases where the monitor needs resetting. This 2-button reset procedure resets the CPU inside the Sound Module in the AudioVision 14 Monitor.

In some cases, a sync problem between the monitor and computer may also necessitate resetting the monitor. The microprocessor in the sound module is responsible for processing the sense lines. If the video cable connector that plugs into the main monitor board is seated correctly and has no broken wires at the connector, resetting the monitor should be tried prior to replacing the sound module.

Article Change History:
07 Jul 1994 - Added sync problems as reason to reset monitor.

Support Information Services

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Tech Info Library Article Number:15638

Tech Info Library

Power Macintosh: System Update v 3.0 and Sound In (6/94)

Revised: 3/23/95
Security: Everyone

Power Macintosh: System Update v 3.0 and Sound In (6/94)

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Article Created: 17 Jun 1994

TOPIC -----

On Power Macintosh computers, the ‘Sound In’ option in the Sound Control Panel determines which sound input source the Macintosh is using. Prior to System Update 3.0, the setting would always revert back to ‘Microphone’ after a restart or shut down.

This is a particular problem for customers playing audio CDs, since the ‘Internal CD’ and ‘Playthrough’ settings would have to be re selected after each restart or shut down.

DISCUSSION -----

System Update 3.0 partially addresses this issue. The Sound control panel now retains the ‘Microphone’ or ‘Internal CD’ settings, but still does not retain the ‘AV Connector’ settings. If ‘AV Connector’ is selected as the ‘Sound In’ option, the setting will revert to ‘Microphone’ after a restart or shut down.

If the ‘Internal CD’ sound setting is not retained after the installation of System Update 3.0, then the Sound Preferences file is probably corrupted. This file can be found in the Preferences folder in the System Folder. Throw away the file and reset the Sound In settings again.

Support Information Services

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Tech Info Library Article Number:15640

Tech Info Library

MAE 2.0.x: Frequently Asked Questions (6/96)

Revised: 6/25/96
Security: Everyone

MAE 2.0.x: Frequently Asked Questions (6/96)

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Article Created: 10 June 1994
Article Reviewed/Updated: 25 June 1996

TOPIC ----------

This article is the MAE Product Frequently Asked Questions (FAQ), for users of Macintosh Application Environment (MAE) 2.0.

Table of Contents:

OS Versions Used to Validate MAE V2.0.2
File System
Networking
Floppy Disks and CD-ROMs
Performance
Keyboard and Display
Printers and PostScript
Other

DISCUSSION ----------

OS Versions Used To Validate MAE V2.0.2

Question: What versions and patch levels were used to validate MAE v2.0.2?

Answer: MAE was tested against the OS versions and patch levels as listed below for both environments (Solaris and HP-UX):

- Solaris v2.3 with the following patches:
  101306-10
  101318-75 (replaces recommended patch 101318-59)

- Solaris v2.4 with the following patches:
  101907-09 (replaces required patch 102077)

- HP-UX 9.0.3

HP-UX 9.0.5 with patch bundle PB_04_700_0905 ("HP-UX 9.05 release 04")
HP-UX 9.0.7

with the following patches:

PHKL_6050 (replaces required patch PHKL_4605)
PHNE_6227 (replaces required patch PHNE_3939)
PHSS_4341
PHSS_4485 (not required for HP-UX 9.0.7)

- HP-UX 10.01 with no additional patches.

  Please note that the STREAMS package is not required for MAE to function with HP-UX 10.01.

Included are the most recent versions (at the time of publication) of the patches required by MAE v2.0; please note that these patches may have been updated and/or superseded. Check with your vendor's support services for further information. You can also read the section titled "INSTALLING THE REQUIRED VENDOR PATCHES IN YOUR WORKSTATION SOFTWARE," found in the file README as part of the CD-ROM distribution for more information.

Installation of any other OS patches (beyond those required for MAE to function properly) is at the sole discretion of the customer. Apple Computer, Inc. makes no recommendations regarding the administration and maintenance of workstations on which the MAE product is installed.

File Systems

Question: How do I show files and directories whose names begin with "." in MAE Finder windows?

Answer: You can show/hide these files and directories by setting the appropriate check box in the Views control panel.

Question: How do I manipulate files and directories under UNIX whose names contain spaces (for example, 'System Folder')?

Answer: You can do this in either of two ways:

1) Use a backslash before each space. Example: if you want to list the contents of the System Folder, you can issue the command:

   ls -l System\ Folder

2) Enclose the entire name in quotes. Either single or double quotes can be used as long as they are consistent. Example, if you want to list the contents of the System Folder, you can issue the command:

   ls -l "System Folder"

Question: Why are file sizes different in MAE and UNIX?

Answer: Using MAE to copy files from a CD-ROM disc or from network-based volumes can result in source and destination files of different sizes, as viewed by the UNIX file system. This is due to MAE's default of storing files in AppleSingle format. Since Mac OS files have both resource and data forks, MAE handles these files differently on a UNIX File system, in a format called "AppleSingle". For more details, refer to "AppleSingle and AppleDouble File Formats" in MAE Tech Note #1.

Question: Why won't my UNIX applications recognize files from MAE applications?

Answer: This is related to the previous question. By default, UNIX files are written by MAE in AppleSingle format. Since UNIX and its applications know nothing about the Macintosh "resource headers" tacked onto the beginning of files in their AppleSingle representation, UNIX applications may see these files as corrupted. For more details, refer to "AppleSingle and AppleDouble File Formats" in MAE Tech Note #1.

This "corruption" can occur in a number of different ways. For example, under FileShare, if a UNIX file is dragged from a Macintosh to MAE, the file will be written by MAE in AppleSingle format, which may make it unusable. This occurs because the Macintosh doesn't know anything about UNIX files, so when it sends one to MAE, MAE thinks it's a Macintosh file and writes it to disk accordingly.

This situation does not occur between two MAE sessions that are sharing files, since MAE recognizes UNIX files for what they are and does not store "resource" information about them. When dragging a UNIX file between two MAE sessions, MAE correctly treats the file as a UNIX file.

Using ftp utilities such as Fetch from MAE can also be problematic. When "getting" a file, Fetch will pass the file to MAE to be written to disk. This works fine for Macintosh files since they will be written as AppleSingle files. However, when "getting" a UNIX file, MAE will likewise write this file as an AppleSingle file, which can make it unusable by UNIX applications.

Text files are handled differently by MAE. Text files are always written by MAE in AppleDouble format to facilitate reading and writing by both Macintosh and UNIX applications (newline characters are automatically translated by MAE; they are stored on disk as UNIX newlines). So in the examples above, when dragging a text file from a Macintosh to MAE or when Fetch gets a file using ftp "Text" mode (that is, ASCII mode), MAE will write the file in AppleDouble format.

As a rule of thumb, it's best to use UNIX to work with UNIX files and MAE to work with Macintosh files. If your environment requires the same (non-text) files to be regularly handled by both MAE and UNIX, then you're probably a candidate for running MAE in AppleDouble mode, by launching it with the -filedouble option.

NOTE: Fetch 3.0 and higher will not work with MAE 2.0.2, use version 2.x.x.

Question: Can I run UNIX commands located on Macintosh floppy disks?

Answer: MAE does not support execution of UNIX commands from Macintosh floppy disks.

Question: Why does the Finder report negative file sizes on volumes larger than 2GB? I have a large volume that I want to use for application installation.

Answer: The erroneous value is a known limitation of the File System for 7.1 (upon which MAE 2.0 is based). To circumvent this problem, you can either use volumes smaller than 2GB or use the TIV (Temporary Installer Volume) to perform the installation.

Question: Is it possible to rename the root directory disk ("/") that appears on the MAE Desktop?

Answer: While it is technically possible to change the name of the disk as it appears on the MAE Desktop, you cannot circumvent the UNIX convention of the root file system disk having the name "/". We suggest that you leave the name as is to minimize confusion.

Networking

Question: I like to have the Chooser open and available throughout my MAE session. Does this generate unnecessary network traffic?

Answer: The Chooser generates significant traffic only when it is the foreground application and a Chooser device (such as AppleShare) is selected. It generates minimal traffic when it is the foreground application and no Chooser devices are selected. It generates no traffic when it is in the background. Keeping the Chooser open when using other applications should not generate network traffic or impact network performance.

Question: I just launched MAE. I see the message "Unable to open the file '/dev/appletalk/lap/ethertalk0/control, please be sure the file exists'" in the UNIX window from which I launched MAE. What does this mean?

Answer: AppleTalk is not installed properly. AppleTalk installation must be done as root on each system on which you want to run MAE. You cannot simply copy your MAE binaries from machine to machine. The AppleTalk installation correctly configures your kernel and creates device files used by AppleTalk. In addition, you may see this error if you have just installed MAE but have not yet rebooted your workstation.

Question: Whenever I use Find File to search a folder exported via FileSharing from a workstation running MAE 2.0, both the client and the server appear to hang. Is this a bug?

Answer: This is a file system problem. FindFile uses PBCatSearch to search the entire volume anytime a search is done. For large volumes with nested mountpoints, PBCatSearch can take a very long time. It is best not to use FindFile to search remote volumes.

Question: I have two Ethernet cards installed on my workstation; can I select either card for my MacTCP interface?

Answer: No. The MacTCP driver will use the first interface detected by the ifconfig command. If more than one Ethernet card is installed, MacTCP will be configured for the first card.

Question: Which network interface cards can be used by MAE?

Answer: Beginning with v2.0.2, MAE can utilize Ethernet, FDDI, and Token Ring interface cards that provide DLPI support at the driver level. ATM is not supported. As with the previous question: if more than one interface card is installed, MacTCP will be configured for the first card detected by the 'ifconfig' command. With AppleTalk, you can select which interface to use with the Network Control Panel (this feature is new for MAE v2.0.2). In order to be eligible for use with AppleTalk, the interface must be marked 'UP' by 'ifconfig' prior to starting MAE.

Question: Can I use the MacTCP control panel to set my MacTCP IP address?

Answer: No. When you run MacTCP on MAE, it uses the host and IP configuration of the UNIX workstation on which you are running MAE. This control panel is for information only. As a user, you cannot reset your workstation's IP/host information using MacTCP.

Question: We use File Sharing to share files between Macintosh computers and workstations running MAE 2.0. We have experienced problems when accessing files exported from an MAE workstation while performing server maintenance chores on that workstation. In particular, changing access permissions or ownership seems to adversely affect clients accessing the file server. Is there any way we can prevent this?

Answer: It is best not to attempt to alter the sharing status of a folder while it is being used by a remote client. If you want to alter the status of a shared folder (by changing its access permissions, changing its owner, or unsharing it) you should check the "File Sharing Monitor" to see that no one is using the folder before changing its sharing status.

Floppy Disks and CD-ROM Discs

Question: I'm having difficulty mounting CD-ROM discs on Solaris 2.4.

Answer: MAE may be unable to mount CD-ROM discs under Solaris 2.4, even though the file macdisks.Solaris is unchanged from Solaris 2.3, where CD-ROM discs can be mounted without difficulty.

For mounting CD-ROM discs in MAE while running Solaris 2.4, follow these steps:

1) Verify that Volume Manager patch 101907-05 has been loaded.
   (/etc/showrev -p will list all installed patches.)

2) Under Solaris 2.4, modify the macdisks.Solaris file in this manner
   (scsi6 should be replaced with the correct SCSI ID# of the CD-ROM
   Drive):

   scsi6:removable:ro:/vol/dev/aliases/cdrom0

NOTE: After inserting the CD-ROM, wait 5 seconds before attempting to mount it in MAE. The Volume Manager first must create an entry in aliases for 'cdrom0' before MAE will be able to read the alias directory.

This will properly allow MAE to mount CD-ROMs without modifying the /etc/vold.conf directory, thereby allowing the user to mount UNIX CD-ROMs with the Volume Manager.

Question: Is there any way of accessing a Macintosh-formatted hard disk from MAE if I connect it to the SCSI bus on my workstation?

Answer: No. MAE does NOT support HFS format hard disks (only CD-ROM discs and floppies). You may potentially damage your workstation or Macintosh disk if you try to connect the two.

Question: What kinds of removable media are compatible with MAE?

Answer: The current release of MAE only supports Macintosh formatted CD-ROM discs and Macintosh formatted 1.4 MB floppy disks.

Question: Are ISO 9660 format CD-ROM discs compatible with MAE?

Answer: No. Do not add the "ISO 9660 File Access" extension (or any of the other Macintosh CD-ROM extensions) to your System Folder.

If ISO 9660 CD-ROM discs are mounted under UNIX (Solaris 2.3 does this automatically), the mounted directory should be accessible to MAE. (It does not appear as an icon on the desktop.)

Question: How do I use a SCSI floppy drive with MAE under HP-UX?

Answer: MAE can use a SCSI floppy drive with HP-UX as follows:

1) Verify that HP-UX utilizes the drive as SCSI floppy and not generic SCSI. You

can verify this with the 'ioscan -bf' command. Your output should look similar to:

```
disk  2.0.1.1.0  scsifloppy ok(0x800101)  ok  TEAC  FC-1   HF   00
```

The SCSI drive must scan as 'scsifloppy' for the SCSI address utilized by that drive. If it does not, verify that the scsifloppy driver has been installed into the kernel and that you have the required patches for your level of HP-UX. In addition, the chosen SCSI address cannot conflict with any other devices.

Also, ensure that you are using the proper device files with the drive. As an example, the following entries were created in /dev/floppy and /dev/rfloppy respectively using 'mknod':

```
brw-rw-rw-   1 root     sys       23 0x201100 Jun 27 18:03 c201d1s0
crw-rw-rw-   1 bin      bin      106 0x201100 Jun 28 10:28 c201d1s0
```

Note that read and write permission is granted to all users.

2) In the file 'macdisks.HPUX' (located in the Preferences folder for each user), add an entry similar to the following prior to starting MAE (or reboot after changing it if MAE is running):

```
floppy0:rw:/dev/rfloppy/c201d1s0
```

The exact entry will depend upon the SCSI address utilized by the drive. In all the examples above, SCSI address = 1 is shown. Do NOT put an entry into the SCSI section of this file -- it must be entered as a floppy drive. If you already have a floppy drive as 'floppy0', you can put the SCSI floppy as 'floppy1' instead.

Note: we tested with an ISA 1015S that required an upgrade from the vendor before it would be recognized by HP-UX as 'scsifloppy.' MAE will NOT be able to use the drive until HP-UX recognizes the unit as a SCSI floppy drive. We also discovered that our unit did not work if SCSI address = 0 was utilized.

Question: I'm having difficulty mounting disks using the 'default' convention in 'macdisks.HPUX' on my newly-upgraded HP-UX 10.01 system.

Answer: HP changed the names (and thus, the absolute paths) of the device files for HP-UX 10.01. Therefore, you will need to explicitly code the names in for each device that you wish to use with MAE. Usage of the 'default' convention will fail as it expects the files to be in the old (that is, HP-UX 9.x) locations.

Performance

Question: Can MAE be run as an X Application over the network?

Answer: Yes. However, MAE was optimized to run as a local application and be displayed on the local workstation console. While MAE is certainly an X

application and can be run remotely, it is graphics intensive and may run significantly slower over the network. MAE performance is highly dependent upon the X server, X client, and network bandwidth and traffic.

Question: Can I increase the performance of MAE when using a remote X-Client over the network?

Answer: Yes. Changing the Monitors Control Panel to "Black and White" will reduce the amount data sent over the network to the X-Client. This can make a significant difference when running remotely, especially with graphics intensive applications.

Question: Will performance be affected if my home directory is located on a remote volume?

Answer: Yes. The "System Folder", which contains the Mac OS system files, is built in your home directory when you start MAE for the first time. Performance will be affected since the code in this folder must be executed to run MAE and it will run more slowly when the System Folder is located on a remote volume.

Question: Can I run MAE with my home directory physically located on a machine running SunOS 4.1.x and NFS mounted to a Solaris 2.x workstation running MAE?

Answer: Yes, but be careful with your permissions. Performance may also be significantly affected.

Keyboard and Display

Question: Why does the cursor sometimes disappear from the screen, when I'm using MAE with a black and white monitor?

Answer: The MAE cursor can "disappear" when it enters an area of the MAE screen that is the same color as the cursor. This is most prevalent when running MAE in monochrome mode and you move an all black cursor (for example, the I-beam cursor) over an all black region of the screen. If your X Server supports color cursors, you can control the foreground and background colors of the MAE cursor by setting the TBFGCURSORCOLOR and TBBGCURSORCOLOR environment variables, as in the following c-shell example:

```
setenv TBFGCURSORCOLOR red
setenv TBBGCURSORCOLOR blue
```

Question: When I try to abort an MAE application by pressing Command-Option-Escape, MAE hangs. What's the problem?

Answer: This feature is not implemented in MAE 2.0. Avoid trying to abort applications with Command-Option-Escape on both Sun and HP workstations.

Question: How can I kill MAE without focusing on a separate X session and issuing a shell-level command?

Answer: Use Shift-Control-E to kill MAE (and its window) if other means of quitting MAE are not effective. This action should be performed only under unusual circumstances, as it does not permit MAE to perform its normal activities at shutdown (for example, you may need to remove the file '.SMlock' prior to starting MAE again).

Printers and PostScript

Question: I'm having trouble getting my PostScript printer to print reliably under MAE. What should I do?

Answer: While developing MAE, we could not test on all possible PostScript printers -- there are just too many. Also, many older PostScript printers have very little memory (for example, the original Apple LaserWriter only had 1 MB of RAM), making it difficult to print complicated documents on them. A Macintosh computer, by communicating directly with the printer, can circumvent this memory limitation by optimizing the feeding of PostScript to the printer. MAE's LprWriter, however, uses the underlying UNIX print spooler, and does not communicate directly with the printer. It is therefore possible for a printer to be unable to print a complex document from MAE that it can print successfully from a Macintosh computer.

Other tips:

1) The LprWriter driver generates Level 1 PostScript, which should print on any real PostScript printer that has enough memory. (Some companies did not license a PostScript interpreter from Adobe but wrote their own; these often have problems.)

2) Verify that there are no preset memory limitations with your print spooler or device description files.

3) It is very important to specify the correct PPD file for the printer. The PPD file contains information about resident fonts, memory size, page sizes, and so on. An incorrect PPD specification can create many problems.

4) If the PPD file for a printer is not shipped with MAE, you can try to get it directly from the printer manufacturer, or from Adobe. Adobe, the creator of PostScript, maintains archives of PPD files, and technical papers about PostScript. These are available on the Internet, at Adobe's FTP server, ftp.adobe.com (130.248.1.4). The login is "anonymous" (without the quotes), and you should use your email address as the password. PPD files are in the directory : /pub/adobe/PPDfiles/MAC

   NOTE: All spaces in PPD filenames have been replaced with tildes (~), to make it easier to retrieve the files. After downloading a PPD from

this directory, change all tildes in the filename to spaces.

You can also send mail to their email server:

ps-file-server@adobe.com

Send an email message with just the word "help" in the subject for instructions on how to use the email server.

Other

Question: Why will my Solaris 2.4 workstaton not successfully run MAE unless it is connected to a network? Without a network, MAE hangs after the "Welcome to Macintosh" screen, and I must kill MAE from a UNIX shell. If the same machine is added to a network, MAE starts up fine.

Answer: Solaris 2.4 workstations without a network connection require Sun's patch 101945-34 (or its equivalent). This "megapatch" is newer than the patches recommended in the MAE 2.0 README. This patch can be found found at sunsolve1.sun.com. After installing the patch, remove the file /tmp/at if it exists.

Question: Why will MAE 2.0 not produce sound on my my HP Workstation?

Answer: See ISSUES RELATED TO SOUND in the README file delivered with MAE 2.0.

Final check: be sure the AUDIO environment variable is set to the target audio server.

Question: Using Aldus Persuasion 3.0 with MAE, I can open documents but I cannot save them. What's the problem?

Answer: You will have to save your Persuasion 3.0 documents using a name different from the original name. This workaround is necessary because of an incompatibility between MAE and Persuasion 3.0 which causes Persuasion to think the original document is locked; it therefore opens a copy, with a generic 'untitled' name. Because Persuasion thinks the original document is locked, you cannot save the modifications under the original name.

Question: Can I use Apple's PC Exchange to read DOS disks in MAE?

Answer: PC Exchange is not supported. The current release of MAE supports only Macintoshformatted CD-ROM discs and 1.4 MB floppy disks.

Question: How do I install MAE on a diskless or dataless workstation?

Answer: In order to successfully install MAE for diskless or dataless workstations, write access to /usr, /kernel (Sun), /devices (Sun), and

/etc/devlink.tab (Sun) is required. If you are installing as root, this should not present a problem; if you are installing as other than root, you may need to temporarily have write access to the necessary filesystems and directories.

Question: My workstation went down while I was running MAE. Now, when I try to start MAE, I get a message about the file '.SMlock' in my System Folder. How should I proceed?

Answer: Each time MAE is launched, it looks for the file '.SMlock' in the System Folder. If the file exists, MAE refuses to start; if the file does not exist, MAE creates it. This prevents multiple instances of MAE from using the same System Folder concurrently. Normally, the file is deleted when MAE is stopped (via 'Shut Down' from the Finder). If you are sure that no other instance of MAE is using that System Folder, you may safely delete .SMlock. Once it is removed, MAE will start normally.

Question: Can you provide me with some general troubleshooting tips for MAE? I am not sure if the problem I am experiencing is MAE-specific or related to the Macintosh application(s) that I am using.

Answer: Many of the troubleshooting tips that apply to isolating issues in the native Macintosh environment can be used successfully with MAE as well. An example of this would be to start MAE with the '-noextensions' option. Actions that are MAE-specific would include creating a new System Folder (use '-sysfol' and create the new folder in /tmp), resetting the virtual PRAM settings (start MAE with '-zappram'), increase the amount of RAM given to MAE at startup ('-memory'), and removal of the file system cache entry (.fs_cache in the System Folder). For more information, please reference your MAE documents.

Question: I have updated my HP-UX system from 9.x to 10.01 and applied the patch for MAE v2.0.2. A co-worker who executes MAE on his 9.x workstation using my Apple directory (appledir) is now experiencing errors. What's wrong?

Answer: The binaries for HP-UX 9.x and 10.01 are not interchangeable. When the patch for MAE v2.0.2 is installed on a 10.x system, it modifies the contents of the appledir to support that version of HP-UX. These modifications are not compatible with workstations running 9.x of HP-UX. To correct the problem, reinstall MAE from the CD-ROM on the 9.x system and rerun the patch for MAE 2.0.2.

Question: I've just purchased MAE v2.0. How do I install the necessary updates to MAE (that is, MAE 2.0.1 and MAE 2.0.2)? How do I remove MAE from a particular workstation?

Answer: The following is true for all platforms EXCEPT HP-UX 10.01 and later:

- For a new installation of MAE, first install MAE v2.0 as distributed on the CD-ROM. Then proceed with installation of the patch for MAE v2.0.2.
- If you are upgrading from MAE v2.0 or v2.0.1, executing ./PATCH.SH as

distributed from MAE 2.0.2 will make the necessary changes. Note that as the patches are cumulative, you do not need to install MAE 2.0.1 prior to MAE 2.0.2.
- If you are upgrading from MAE v1.0 and would like to preserve the System Folder contents you added (Extensions, Fonts, Preferences, and so on), first install MAE v2.0 as distributed on the CD-ROM, then run it once to update each MAE v1.0 System Folder on your disk (note that the MAE 2.0.2 updater will only recognize MAE v2.0 and v2.0.1 System Folders). Then proceed with installation of MAE 2.0.2.
- To remove MAE, use the Remove feature of the installer supplied with the MAE v2.0 CD-ROM and/or the 2.0.2 patch distribution. Note that the 2.0.1 patch does not have any removal capabilities and that the 2.0.2 patch will ONLY remove previously-installed 2.0.2 components.

FOR HP-UX 10.01 USERS ONLY:

- For a new installation of MAE for HP-UX 10.01, first install MAE v2.0 as distributed on the CD-ROM but do not install AppleTalk (you can do this by performing a custom installation (as detailed in the 'MAE User's Guide')). After you have installed MAE 2.0 from the CD-ROM, you can apply the MAE 2.0.2 patch by executing ./PATCH.SH as distributed with the patch. Note that the STREAMS package is not required for HP-UX 10.01.
- HP-UX 10.01 was not supported in versions 2.0 and 2.0.1. As a result, upgrade instructions are not included here.
- If you are upgrading from MAE v1.0, first rename any existing MAE v1.0 (or MAE v1.0a) System Folders. Next, install MAE v2.0 as distributed on the CD-ROM but do not install AppleTalk (you can do this by performing a custom installation as detailed in the 'MAE User's Guide'). This will create a new System Folder to which you can manually drag/copy any resources (Extensions, Fonts, Preferences, and so on) from your old MAE v1.0 System Folder. You can now safely apply the MAE 2.0.2 patch by executing ./PATCH.SH as distributed with the patch.
- To remove MAE except for the AppleTalk components, use the Remove feature of the installer supplied with the MAE v2.0 CD-ROM and/or the 2.0.2 patch distribution. Note that the 2.0.1 patch does not have any removal capabilities and that the 2.0.2 patch will ONLY remove previously-installed 2.0.2 components. Then remove the AppleTalk components utilizing the Remove feature of MAE 2.0.2.

Question: Are there other sources of information that can help me to support usage of Macintosh applications under MAE?

Answer: Yes! The MAE Engineering Team has created a mailing list for just this purpose. 'mae-users' an unmoderated list that allows users to discuss the Macintosh Application Environment product in an informal atmosphere. 'mae-users' permits our customers to assist each other and distribute hints and other information about the product.

In addition, you can also reference the online documentation supplied with the MAE CD-ROM. There are two documents which utilize the Macintosh application 'DocViewer' (supplied): 'MAE System Admin Guide', and 'MAE User's Guide'. Both

of these documents contain helpful information on getting the most out of MAE.

Article Change History:
25 Jun 1996 - Updated Fetch information.
05 Feb 1996 - Updated for MAE 2.0.x.
05 Jul 1995 - Made correction for clarity.

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Tech Info Library Article Number:15641

MAE: Trial Frequently Asked Questions (10/94)

Revised: 6/5/96
Security: Everyone

MAE: Trial Frequently Asked Questions (10/94)

==========

Article Created: 10 June 1994
Article Reviewed/Updated: 24 October 1994

TOPIC ----------

This article is an MAE Trial Frequently Asked Questions (FAQ); for users of Macintosh Application Environment (MAE).

DISCUSSION ----------

What's New

Note: All new information in this FAQ is marked "###NEW###" and all changed information is marked "###UPDATED###".

1. MAE Trial version 1.0a has been made available via anonymous ftp at ftp.apple.com.

2. How to remove the MAE Trial from your system.

MAE FAQ's

Q) What information is contained in each of the three FAQ documents?
A) The Product FAQ contains general information about the product and licensing. This FAQ answers questions about support, pricing and product specifications.

The Technical FAQ contains information of about product performance, tuning, workarounds and other technical tips.

MAE Trial

###NEW###
Q) What is the MAE Trial?
A) Macintosh Application Environment (MAE), is a software implementation of Macintosh that runs on UNIX workstations from Sun Microsystems and

Hewlett-Packard. Through the use of 68LC040 emulation and native extensions, MAE provides the Macintosh System 7.1 environment in an X Window. This gives users the ability to run thousands of "shrink-wrap" Macintosh applications on their workstations. In addition MAE provides a high-level of integration between the Macintosh environment and UNIX thereby enabling users to manipulate UNIX files and execute UNIX applications from the Macintosh "desktop."

MAE runs on Solaris 2.3 or HP-UX 9.0.1 or later, and requires an X11 release 4 or later window display server. MAE is compatible with HP's Visual User Environment, as well as SunSoft's OpenWindows and OSF Motif.

The Trial product allows you to evaluate MAE for 8 total hours on your workstation. After the 8 hours, the Trial product will shut down and can be removed from your workstation. Printing is also disabled in the MAE Trial.

###NEW###
Q) What are the system requirements of the MAE Trial?
A) The system requirements are:
- HP 9000 Series 700 workstation running HP-UX 9.01 or later
- Sun SPARC workstation running Solaris 2.3 or later
- X Window System, Version 11, release 4 or later
- Window manager such as Motif, HP VUE, or OPEN LOOK
- At least 16 MB of RAM; 32 MB recommended
- At least 16 MB of free hard disk space; 22 MB recommended

###NEW###
Q) How do I get the MAE Trial?
A) The MAE Trial 1.0a is being distributed only via ftp at this time. You can download version 1.0a of the MAE Trial via anonymous ftp from server ftp.support.apple.com in directory /pub/mae/product-trial.

Note: The minimum MAE Trial ftp package is about 13 megabytes. This can take a while to download across some slower internet connections.

Q) After I install the MAE Trial, I can run MAE without problems. When another user tries to execute the same binaries, they get a Trial expired message. What gives?
A) The MAE Trial is designed to be installed for each user, and each user has 8 hours of use. The work around is to mount the CD so everyone can see it and run the installer over the net and install local copies for each user that wants to test out the product.

###NEW###
Q) How do I remove the MAE Trial from my system?
A) To remove the MAE Trial, delete the following:

```
~/apple                  (and all its contents)
~/"Trial System Folder"  (and all its contents)
~/.mac                   (and all its contents)
~/man1
~/docs
```

Note that you may have installed your "apple" directory in a place other than your HOME directory.

Q) What is Apple's Support policy on the MAE Trial.
A) The MAE Trial is provided on an as is basis. For your convenience, Apple has made an internet mailing list and ftp server available that contains information about MAE and the trial, answers to frequently asked questions, patches, support tips and other technical information. We highly encourage you to use these resources to obtain assistance.

Q) How do I subscribe to the MAE mailing lists?
A) There are two mailing lists in the MAE mailing list system:

```
mae-announce@medraut.apple.com
mae-users@medraut.apple.com
```

mae-announce is a moderated list that will be used to distribute announcements and information about MAE from Apple. It's aimed at people who want to keep informed on the product, but don't want to sift through all of the mail that is distributed through an open mailing list.

mae-users is an unmoderated list that allows users to discuss the product in an informal atmosphere. mae-users will allow users to assist each other and distribute hints and other information about the product.

To subscribe to a list, please send mail to listproc@medraut.apple.com.

Please put the following command in the body of the message (the subject line should NOT be a command. It can be blank or nonsense):

```
subscribe listname your name
```

EXAMPLE:

```
% mail listproc@medraut.apple.com
Subject: leave blank

subscribe mae-users Thurston P. Howell, III
```

Q) What is the name of the MAE ftp server and what does it contain?
A) The server name is "ftp.support.apple.com". MAE related material can be found in directory /pub/mae. The purpose of this server is to assist the distribution of information, patches and other related electronic material to users of Apple's Macintosh Application Environment (MAE).

The /pub/mae directory consists of the following subdirectories:

```
info          - general info, announcements, digests, FAQ, mailing list
                information
install-hints - installation tips for Third-Party software
patches       - tar files containing patches for MAE
```

```
   product-trial - a free time-limited trial of MAE (printing disabled)
   technotes     - technical info (for example tuning, compatibility,
                   troubleshooting, and so on.)
   utilities     - Macintosh, Solaris and HP/UX software utilities
   incoming      - writeable directory for (server related) user input and
                   requests
```

Article Change History:
24 Oct 1994 - Reviewed for consistency and updated format.
25 Aug 1994 - Updated with new MAE Trial FAQ.

Support Information Services

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Tech Info Library Article Number:15642

Tech Info Library

PowerBook 500s, Duo 280 & 280c:How to Restart After Freeze 5/95

Revised: 5/8/95
Security: Everyone

PowerBook 500s, Duo 280 & 280c:How to Restart After Freeze 5/95

==========

Article Created: 17 June 1994
Article Reviewed/Updated: 8 May 1995

TOPIC ----------

How do you restart a PowerBook 540, Duo 280, or Duo 280c when it freezes? I cannot find an off/on switch.

DISCUSSION ----------

Force Quit

When a Macintosh computer freezes the first thing you can do is try to determine whether the program you were using may have crashed. You can do this by trying to force quit the application. You may want to try to force quit the application before you turn the computer off so that you can save your work in the other running applications.

Note:
Force quitting an application will cause any work that has been done in that application since the last save to be lost.

Press Option, Command, and Escape (ESC) keys to see if force quit is possible from the application (some applications do not allow a force quit). If it does force quit, you should be able to save your work in any other applications that were running before you shut down or restart using the Special menu. You may want to troubleshoot your extensions or call the vendor of the application that crashed for more information.

Force Restart

If force quitting does not work, you may need to force reset/restart your computer. To perform a force reset on a Macintosh PowerBook 500 series computer or Duo 280(c), simultaneously press the Control, Command, and Power On keys (the Option key is not required). Similarly, if you want to bring up the programmer's dialog box, simultaneously press the Command and Power On keys.

Important Note:
If you do a force restart a PowerBook 500 series computer or Duo 280(c) some parts of PRAM (parameter RAM) may be reset. Some of your control panels may revert to their factory defaults, so you may have to reset them to your liking. For example, your Mouse and Keyboard Control panels may revert to their original settings.

Shutdown

In most cases this keyboard reset will work. However, if your PowerBook computer freezes in a state where it does not seem to respond to the reset command, you can try to shut down a PowerBook 500 series or Duo 280(c) computer by simultaneously pressing the Control, Option, Command, and Power On keys.

If it still will not turn off, you can shut it down by simply removing the battery (or both removable batteries on the 500 series) and disconnecting the AC power.

The key combinations (for restarting and shutting down) described in this article work for the Macintosh PowerBook Duo 280 and 280c computers. However, they do not work on the Macintosh PowerBook Duo 210, 230, 250 or 270c.

Article Change History:
08 May 1995 - Added information about force quitting and Duos.
30 Sep 1994 - Added the PRAM reset section.

Support Information Services

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Tech Info Library Article Number:15643

Tech Info Library

LW Select 360, & Personal LW 320 Power-On Self Test (5/96)

Revised: 5/20/96
Security: Everyone

LW Select 360, & Personal LW 320 Power-On Self Test (5/96)

==========

Article Created: 17 June 1994
Article Reviewed/Updated: 17 May 1996

TOPIC ----------

This article describes the LaserWriter Select 310 and 360, plus the Personal LaserWriter 320 Power-On Self Test.

DISCUSSION ----------

The LaserWriter Select 310 and 360, and the Personal LaserWriter 320 go through a self diagnostic each time you switch the printer on. This diagnostic is called the Power-On Self Test (POST). Observing how the LEDs extinguish from that point can help isolate certain failure areas.

NOTE: This test is not the same as the engine diagnostic. Unlike the engine diagnostic test, POST does not require the placement of any loopback cable.

NOTE: POST does not occur on the LaserWriter Select 300 or the Personal LaserWriter 300 printer.

1) When you switch on a functional printer, all LEDs will illuminate for a short time.

2) The Ready LED extinguishes when no errors are found on the I/O controller board.

3) Then the Paper-Out LED extinguishes when no errors are found on the RAM card.

4) Finally the Jam LED extinguishes when no errors are found in the engine.

NOTE: In a functional printer, control will be passed on to the PostScript interpreter at the end of this sequence.

Article Change History:
17 May 1996 - Added LaserWriter Select 310 back into article.
27 Apr 1996 - Removed references to LaserWriter Select 310.

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Tech Info Library Article Number:15644

Tech Info Library

Workgroup Server 6150: Read Me File (6/94)

Revised: 6/17/94
Security: Everyone

Workgroup Server 6150: Read Me File (6/94)

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Article Created: 17 June 1994

TOPIC -----

This article is the Workgroup Server 6150 ReadMe file.

DISCUSSION -----

Information About Your Workgroup Server 6150

Congratulations on purchasing a Workgroup Server! This document contains important additions to the information that appears in the manuals that came with your computer.

Installation And Startup

- Do Not Install the LaserWriter 8.1.1 Printer Driver DO NOT install the LaserWriter 8.1.1 driver. All necessary printer software is already correctly installed on your server.

- Installing Server Application Software
  You may be planning to install software such as AppleShare, AppleSearch, Apple Remote Access, or other server application programs. The order in which you install and start server application software is important, so be sure to review the documentation for all the server application programs you plan to use before installing and running them. Note that the order in which you install is dependent on whether you are using the server for file, print, or database applications.

- Choose the Correct Software
  Be sure to use these (or later) versions of software with your Workgroup Server:
  - AppleShare File and Print Server 4.0.2
  - AppleTalk Internet Router 3.0.1
  - Apple Remote Access 2.0.1
  - AppleSearch Server 1.0.1

- Use the Correct Software Installer
  Different server applications come with different versions of the installer. Be sure to use the installer that came with the particular piece of software you are installing. Always start up the installer that is located in the same folder as the software you are installing.

- Problems Starting Up?
  On occasion, particularly if there is heavy network traffic, the server may fail to start up correctly. Sometimes this problem is accompanied by a prolonged "beep" during the startup process. If startup problems occur, you may need to disconnect the Ethernet cable before startup, then reconnect it after the server successfully completes the startup process. After reconnecting, you must then reselect Ethernet using the Network control panel.

- If You Reinstall System Software
  If you reinstall Workgroup Server software from the CD-ROM disc, you may need to reinstall all or part of your server applications, such as AppleShare or AppleSearch. When reinstalling, be sure to check the information that comes with your server application software.

Memory And Peripherals

- Do NOT Turn On Virtual Memory
  DO NOT turn on virtual memory (in the Memory control panel). Virtual memory doesn't improve the performance of server applications. In addition, some server applications, such as the Internet Router, can't run with virtual memory enabled.

  As an alternative to turning on virtual memory, you can install additional random-access memory (RAM) in your computer. Installing additional RAM adds more memory to your computer, and expands its capabilities.

  The Technical Information booklet that came with your computer describes how much additional memory can be installed in your server.

- Installing Additional Memory
  To avoid damage to your computer, Apple Computer recommends that only an Apple-authorized dealer or service provider install additional memory. Memory for your computer is provided in packages called DRAM SIMMS. The SIMMS must be the correct type for your computer, added in same-size pairs, and installed in paired slots inside your computer. It is very important that the DRAM SIMMS be correctly installed in your Workgroup Server. Incorrect installation can result in errors, unpredictable results, and damage to your equipment and data.

  IMPORTANT Do not remove any factory-installed cards from inside your computer. Removing a factory-installed card at an angle can damage your equipment. Any NuBus™ expansion cards installed in your computer will not operate properly if the factory-installed card is removed. If a factory-installed card needs to be removed, see an Apple-authorized

service provider.

Performance

- In Case of System Problems While Running Non-Native Applications If you notice problems when running third-party applications in emulation mode, try turning off the Modem Memory Manager in the Memory control panel. Contact the manufacturer for information on the version designed especially for Power Macintosh computers.

- If Your Computer's Performance Decreases
  If you notice a decrease in your computer's speed and general performance after adding special software (a control panel, a system extension, or custom utility), it may be because your special software does not work well with Power Macintosh computers.

  To find out if your special software is the problem, hold down the Shift key while you restart the computer. This temporarily turns off certain kinds of software. If the computer performs better without the special software, then that software is likely to be the problem.

  Drag the software out of the System Folder or remove it permanently. (The software might be in the Control Panels or Extensions folders, which are inside the System Folder.) If the computer performs better when the software is removed, contact the software's manufacturer for information or an upgrade.

Who Should Install System Update 3.0?

System Update 3.0 provides the enhancements of System Update 2.0.1, Hardware System Update 2.0, and Hardware System Update 1.0. If you're encountering problems that you believe might be remedied by System Update 3.0, consult the service and support information that came with your server for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

Here is a list of the fixes and enhancements offered by System Update 3.0:

- Provides system-level improvements to increase overall system performance.

- Corrects a problem that allowed the system to become corrupted during a power failure or crash and prevent it from restarting.

- Fixes the About This Macintosh box so the memory usage line doesn't get drawn outside of its bounds.

- Provides a solution to prevent the file corruption that can happen when a file is being modified remotely (Remote Access or file server) and the connection is unexpectedly broken. Now, when the remote volume is lost, its icon will remain dimmed on the desktop.

- Provides increased reliability for remote file saving when the client is running System 7.1 or greater while the server is running a pre-7.0

system and using pre-3.0 AppleShare.

- Fixes a problem with throwing away folders which were on an AppleShare volume. Sometimes after attempting to empty the Trash the Finder would warn you that the folder contains items that are in use and could not be deleted. The Trash will now properly handle folders from AppleShare volumes.

- Updates the Standard File package to include many fixes and enhancements. The most significant fix allows more than 20 volumes to be mounted. The most significant enhancement is the use of color icons.

- Updates the PowerPC Enabler (version 1.0.1) to fix some video problems and communications problems.

- Provides system-level improvements to increase overall system reliability on most Macintosh models.

- More efficiently manages the way fonts use memory.

- Installs AutoRemounter 1.2. This release significantly reduces network traffic compared to version 1.0.

Support Information Services

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Tech Info Library Article Number:15645

Tech Info Library

PowerBook: Internal Modem & Serial Printer Configuration (4/96)

Revised: 4/26/96
Security: Everyone

PowerBook: Internal Modem & Serial Printer Configuration (4/96)

==========

Article Created: 20 June 1994
Article Reviewed/Updated: 26 April 1996

TOPIC ----------

The PowerBook 150, 200, 500, 2300 series computers have only one serial port. How do I set up a direct connect serial printer when I have an internal modem installed? Also, how can I communicate with an AppleTalk network?

DISCUSSION ----------

The PowerBook 200, 2300 (Duos), and 500 series computers have only one serial I/O port which is mapped as a modem port. Depending on the individual printer driver, the Chooser may show a combo port icon (such as the ImageWriter driver), or it may have two choices: printer and modem (such as the StyleWriter II). If given two choices, you should select modem port.

AppleTalk can run through this port if LocalTalk (built-in) is selected in the Network control panel and AppleTalk is Active in the Chooser. To successfully print to a direct-connect printer, you must make AppleTalk inactive through the Chooser.

You can redirect AppleTalk to a different port using the Network control panel if you are connected to an Ethernet network, or if you have Apple Remote Access Client software installed.

Since Apple Remote Access requires AppleTalk to be active, and a serial printer requires AppleTalk to be inactive, the Remote Only selection in the Network control panel allows you to set the internal modem port for AppleTalk. This enables the external serial port for use with non-AppleTalk devices.

Normal and Compatible Mode
==========

PowerBook Setup control panel

In the Normal mode, the modem is addressed via the System 7.x Communication Toolbox, and the external port is available for usage.

If your communication program is NOT compatible with the Communication Toolbox, set the PowerBook Setup control panel to Compatible. This mode prevents the external serial port from being addressed by other programs, as well as preventing communication with a serial printer.

Global Village PowerPort 500 or PowerPort Duo control panel

If you have installed version 2.5 of Global Village's GlobalFax 2.5 software, the setting for Compatible or Normal will no longer be in the PowerBook Setup control panel. It will be in either the Global Village PowerPort 500 control panel or Global Village PowerPort Duo control panel.

You will need to click on the "Configure Port" button in the appropriate control panel to make the selection of Compatible or Normal. The functionality of the Normal versus Compatible setting remains the same as described above in the PowerBook Setup control panel.

PowerBook 200 Series with Express Modem Software

On any PowerBook Duo 200 series computer (210, 230, 250, 270c, 280, or 280c) you need to open the Express Modem control panel and do the following:

Telecom Software

If using Telecom 2.3.2 or greater, be sure the box "Use internal modem instead of Modem Port" is NOT checked if you wish to print to a serial printer. If the box is checked, the serial port cannot be addressed by other programs, and the serial port cannot be used by the printer.

Express Modem Software

If you are using Express Modem 1.5 or 1.5.5, you need open the Express Modem control panel and change the radio button setting to “External”, not “Express Modem” in order to print to a serial printer. In this situation, "External" is equal to the "Normal" setting and "use Express Modem" is equal to the "Compatible" setting.

PowerBook 200 Series with Telecom Software

All PowerBook 2300c (Duo) computers must use Telecom 2.3.2 or greater software. If you have installed older software it must be removed.

PowerBook 500 Series with Express Modem software 1.5 or later installed*

On any PowerBook Duo 500 series computer (520, 520c, 540 or 540c) which has an Express Modem II* intstalled you need open the Express Modem control panel and change the radio button setting to “External”, not “Express Modem” in order to print to a serial printer. In this situation, "External" is equal to the "Normal" setting and "use Express Modem" is equal to the "Compatible" setting.

*The Express Modem II is only sold and supported in Europe. Apple does not support the use of the Express Modem II in any country outside of Europe.

Article Change History:
26 Apr 1996 - Updated with new info about Telecom software.
05 Oct 1995 - Clarified information about 200 series and Express Modem II.
31 Mar 1995 - Added mention of PowerBook 150.

Support Information Services

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Tech Info Library Article Number:15650

Tech Info Library

Power Macintosh: Printing Fax In Landscape Orientation (6/94)

Revised: 6/20/94
Security: Everyone

Power Macintosh: Printing Fax In Landscape Orientation (6/94)

==========

Article Created: 20 June 1994

TOPIC -----

I am using a Power Macintosh with a GeoPort Telecom Adapter and the Express Modem software. I can both send and receive faxes, but I am unable print a fax from Fax Viewer in landscape mode. I have tried printing to several different printers including a LaserWriter Pro 630 and LaserWriter 810. I have changed the page setup dialog to show landscape printing but the fax prints out rotated ninety degrees with the bottom cut-off.

DISCUSSION -----

In order to print a received fax from Fax Viewer in a landscape orientation you must perform the following steps:

1) Open the fax you wish to print with the Fax Viewer application.
2) Choose "Page Setup" in the File menu and select Landscape orientation.
3) Choose Rotate Right (Cmd-r) or Rotate Left (Cmd-l) from the Page menu.
   Note: If you have a multiple page fax then this must be done for each page you wish to print in landscape orientation.
4) Choose "Print" from the File menu to print the document.

Support Information Services

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Tech Info Library Article Number:15651

Tech Info Library

Apple LaserWriters: Screen Frequency and Gray Levels (9/95)

Revised: 9/26/95
Security: Everyone

Apple LaserWriters: Screen Frequency and Gray Levels (9/95)

==========

Article Created: 20 June 1994
Article Reviewed/Updated: 26 September 1995

TOPIC ----------

This article discusses customizing printer halftones, screen frequency, and gray levels for optimum output.

DISCUSSION ----------

Determining the optimal relationship between gray levels and screen frequency is quite simple once you understand a few basic concepts of laser printers. Like computers, laser printers understand only two values: on and off (black and white). They simulate grays by varying the amount of dots within a certain area, called a halftone grid. Halftones are made of grids, just like the paper used to graph functions in trigonometry. To create a halftone, laser printers place dots within each cell on the grid. The screen frequency (which is a misnomer these days, but we still use the term leading when talking about the space between lines of text) determines the size of each cell in the grid.

Most laser printers can produce only a given size dot, however Photograde is the exception. Because the dot size is fixed and increasing the line frequency decreases the size of each cell, the gray levels which can be produced are inversely proportional to the line frequency. Visualize a grid and keep in mind only so many dots can be placed on a region of paper. In a 600 dpi printer, such as a LaserWriter Select 360, the dpi does not vary, but you can vary the size of the grid. Because printers produce grays by varying the amount of dots within each halftone cell, making the cells smaller will allow fewer grays in your halftone. The following formula lets you easily determine how many grays you can get for a given resolution and screen frequency with an angle of 0 degrees.

(Output Resolution / Screen Frequency)^2 + 1 = Gray Levels

For example, consider the LaserWriter Select 360.

(600 dots per inch / 100 lines per inch)^2 + 1 = 61 Gray Levels

With a little juggling, you can also use this formula to determine what screen frequency yields a desired level of grays. For a bit easier calculation, simply divide the dots per inch by the square root of the grays levels to determine the screen frequency:

Dots Per Inch times / sqrt(Gray Levels) = Screen Frequency

Staying with the Select 360 example, if you want 100 gray levels:

600 / sqrt(100) = 60

Again, you can rearrange this formula to calculate different variables. Keep in mind Postscript is limited to 256 shades of gray, so your largest divisor in the preceding formula will be 16. Even for high-end work though, Postscript does an excellent job. Plug a 150 line screen into the formula and you will see you need a 2,400 dpi printer to produce 256 grays.

The discussion above holds true for fixed resolution printers, but Photograde changes the rules by varying the timing of the laser pulses to vary the size of the dots within each cell. The LaserWriter Pro 600/630, Select 300 and IIf/IIg use Photograde technology. Photograde is capable of producing 91 levels of grays using a 106 line screen at 300 dpi. This is sufficient for proofing photographs and low-quality newsletter output.

Also keep in mind 300 dpi and 600 dpi laser printers cannot replace imagesetters or traditional darkroom halftones. Some 1,200 dpi laser printers can produce acceptable halftones for reproducing on newsprint, but users will have to experiment with dot shape and line angle to determine what works best with their particular printer and press. The best solution is to output final copy directly to film on an imagesetter and use laser printers for proofing.

This article was published in the "Information Alley":
Volume II, Issue 8, Page 18

Article Change History:
26 Sep 1995 - Added Info Alley information; updated article.
11 Apr 1995 - Corrected the formula.

Support Information Services

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Tech Info Library Article Number:15652

Tech Info Library

ARA: The Correct Global Village TelePort/Bronze Script (6/94)

Revised: 6/20/94
Security: Everyone

ARA: The Correct Global Village TelePort/Bronze Script (6/94)

==========

Article Created: 20 June 1994

TOPIC -----

We can't connect using Apple Remote Access (ARA) with the TelePort/Bronze for Performa, TelePort ADB script. Is this the correct script?

DISCUSSION -----

You are using the WRONG script. You should use one of the following scripts:

- "Global Village Bronze" which comes with ARA 2.0.

- "Global Village TelePort" which comes with ARA 1.0.

These modem scripts are included with the respective ARA software and can be installed during installation. Do NOT use the "... ADB" script! The Performa modem draws power from the Apple Desktop Bus (ADB), but is not an ADB modem like the original TelePort ADB modem.

Support Information Services

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Tech Info Library Article Number:15653

Tech Info Library

TelePort/Bronze Modem: Chooser Shows Unidentified Fax (6/94)

Revised: 6/20/94
Security: Everyone

TelePort/Bronze Modem: Chooser Shows "Unidentified Fax" (6/94)

==========

Article Created: 17 June 1994

TOPIC ----------

I selected GlobalFax in the Chooser, and then in the right half of the Chooser, "Unidentified Fax", appears instead of the usual "T/P Bronze for Performa". What's wrong?

DISCUSSION ----------

If the Chooser shows "Unidentified Fax", and will not stay highlighted when chosen, the TelePort/Bronze Modem or Fax Modem control panel has NOT loaded properly at startup. You may have started with Extensions OFF, or the control panel may be damaged.

To test:

1) Restart the computer normally (Extensions ON).

2) From the Apple menu, select "Fax Center".

3) If the dot in the middle of the letter "O" in GlobalFax is RED, then the control panel is missing or corrupt. Re-install from an original disk. If the dot is black, it is normal.

NOTE: To help in troubleshooting holding down the option key while clicking on the dot in the letter "O" of GlobalFax. This action will bring up a window which maps the control panel devices, extensions, and so on in the System Folder. This can help in identifying known control panel devices or extensions which conflict with the TelePort/Bronze Modem control panel.

Support Information Services

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Tech Info Library Article Number:15655

Tech Info Library

American Heritage Dictionary 3.0:Compton & Font Conflicts (6/94)

Revised: 6/21/94
Security: Everyone

American Heritage Dictionary 3.0:Compton & Font Conflicts (6/94)

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Article Created: 21 Jun 1994

TOPIC -----

Some users are experiencing problems with fonts when using Compton's Multimedia Encyclopedia. Complaints of unreadable 'Old English' text in title fields while running Compton's Multimedia Encyclopedia.

-OR-

Complaints that Reader Rabbit text is all ‘garbled.’

DISCUSSION -----

Disable any font related to the American Heritage Dictionary by dragging them out of the Fonts folder in the System Folder (DO NOT throw them away). Restart.

Apparently, this font class can conflict with other applications accessing fonts.

Support Information Services

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Tech Info Library Article Number:15656

Tech Info Library

TelePort/Bronze Modem: Applications Slow Down (6/94)

Revised: 6/21/94
Security: Everyone

TelePort/Bronze Modem: Applications Slow Down (6/94)

==========

Article Created: 20 June 1994

TOPIC ----------

I'm having severe slowdowns in applications. Typing on the keyboard is followed by a three or four second delay before the screen catches up.

DISCUSSION ----------

Check for a large number of saved Faxes. The TelePort/Bronze (Fax Modem) control panel scans the Fax folders often to see if any status has changed and if a Fax needs to be re-sent. A large number of waiting or saved Faxes will require more drive access and slow down the computer.

For example, you're running ClarisWorks and it's responding slowly. In checking your Fax folders you find 9 Faxes waiting and 30 Faxes saved.

When possible, remove any unwanted Faxes from the Spooled Fax folder from within the GlobalFax Files folder in the System Folder. Either trash them and try Faxing later, or move them to a separate folder and try Faxing later.

Note: To improve Fax performance when sending a Fax with the GlobalFax driver turn Virtual Memory OFF and 32-bit Addressing ON.

Support Information Services

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Tech Info Library Article Number:15657

Tech Info Library

Power Macintosh: 8•24 GC Video Needs New Monitors CDEV (6/94)

Revised: 6/29/94
Security: Everyone

Power Macintosh: 8•24 GC Video Needs New Monitors CDEV (6/94)

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Article Created: 21 June 1994
Article Reviewed/Updated: 29 June 1994

TOPIC ----------

I have a Power Macintosh 8100/80 with an 8•24 GC card connected to an Apple Two–Page Mono Monitor, and internal video card connected to an Apple 16-in Color monitor. When I restart the monitor, the Two-Page Monitor defaults to black and white. Resetting PRAM and doing a clean installation of system software has not corrected the problem.

DISCUSSION ----------

The problem is caused by the version of the Monitors Control Panel. Installing v7.3.2 of the Monitors Control Panel corrects this problem. You can find the correct version of the Monitors Control Panel on the Apple Multiple Scan Display Software Disk.

You do not need to go through the entire installation process to correct this problem. Simply drag the Monitors Control Panel from the Apple Multiple Scan Display Software Disk to your System folder.

Article Change History:
29 June 1994 - Clarified the discussion section.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15658

Tech Info Library

AppleSearch: MacLinkPlus 7.02a XTND (1/95)

Revised: 1/27/95
Security: Everyone

AppleSearch: MacLinkPlus 7.02a XTND (1/95)

==========

Article Created: 17 June 1994
Article Reviewed/Updated: 27 January 1995

TOPIC -----

This article describes the new MacLinkPlus AppleSearch 7.02a XTND and MacLinkPlus AppleSearch Trans1 v. TR 7.02a.1, and where to obtain them.

DISCUSSION -----

The new MacLinkPlus AppleSearch 7.02a XTND, and MacLinkPlus AppleSearch Trans1 v. TR 7.02a.1 should be use to replace the one shipping with the AppleSearch Server 1.0 and 1.0.1. This software is included with AppleSearch 1.1 and higher.

This new XTND resolves a number of crashing problems with AppleSearch servers, especially with Microsoft Word files. It should be obsolete in the future, but if a customer is having problems with server crashes and they're using Microsoft Word (or even if they're not) they should install this XTND, delete their indexes, and re-index. We've found this new XTND resolves many server crashes.

Article Change History:
27 Jan 1995 - Corrected where to find software.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15659

Tech Info Library

Communications Bundle: Description (6/94)

Revised: 6/21/94
Security: Everyone

Communications Bundle: Description (6/94)

==========

Article Created: 21 June 1994

TOPIC ----------

This article describes the Communications Bundle for the Apple Education Series. The Apple Education Series -- which includes the Communications Bundle -- is a series of products specifically intended for the effective use of technology in education.

DISCUSSION ----------

All too often, the biggest communication gaps in school aren't just between teachers and students, but among teachers, students, administrators, and parents.

With this in mind, Apple developed the Communications Bundle, a complete package of hardware and software expressly designed to help your entire school communicate more freely, acquire information more quickly, and collaborate more productively.

Education has always been about just two things: the creation of information, and the sharing of information. That's why we created the Communications Bundle.

In one complete package, your school gets everything it needs to streamline communications between teachers, students, and administrators -- even those using Windows PCs*. Practically overnight, it can transform the way a school's staff members communicate with one another. Memos bulletins, schedules, questions, comments, agendas, and meeting notes pass immediately from one educator's computer to anothers. Or to the entire faculty.

One that makes it easy for students to collaborate on projects even when they're not in the same classroom. And, one that gives administrators a direct link to critical information such as: student records, curriculum guidelines, budgets, and staff information.

The heart of all this is a remarkable software program called FirstClass. It was designed with the needs of educators in mind: It's very easy to use, yet offers powerful features including the ability to access your computer with remote access**. Remote access can open up your school to the whole community. District administrators can use their computer and modem to send and receive messages, and join discussions.

Parents and students with computers can also access the system to pick up homework assignments, read school news, and exchange messages with the faculty.

And because this FirstClass software deserves to run on first class hardware, it's bundled with your choice of two Apple Workgroup Servers. Should you wish to expand your system, two of more servers can communicate with each other -- from different buildings or different cities.

We'll even send an Apple authorized technician to install your server and FirstClass software.

Before the information superhighway comes to town, you'll first need to connect your school's own network. With this bundle, you're paving the way.

FirstClass software

Designed for educators, it combines easy-to-use operation with powerful communications features. Best of all, it has the kind of easy-to-use design that Macintosh software is known for.

- Installation will include set up of your Workgroup Server, connection to your existing LocalTalk or Ethernet network, as well as installation of a sample education configuration of the FirstClass software developed in our Apple Classroom of Tomorrow research project.
- Documents, graphics, video clips, and audio messages can be "attached" to e-mail memos.
- Automatically sends, receives, and stores your e-mail in the background, until you're ready to read them (so your work goes on without interruption).
- Capable of handling a virtually unlimited number of mail boxes.
- Must be purchased with either a 100-client, or 250-client package.
- Built-in conference for on-line discussions with others in your school.
- Remote access lets staff, parents, and teachers (with a modem) access e-mail and on-line discussions from home or out of town.
- Passwords and guests permissions limit access on the server, so students, teachers, and parents only see what you want them to see.
- Can be used by both Macintosh and Windows computers*.

Apple Workgroup Server 60

Our most affordable server is ideal for schools or buildings that require the support of up to 50 teachers, students, and administrators at a time. High-speed Ethernet is built-in, for up to 10 times faster file access than with standard LocalTalk cabling. Can be upgraded to higher-performance Power Macintosh technology, if and when you wish.

- 50/25Mhz 68040 processor with built-in math coprocessor.
- Supports up to 50 people communicating at the same time.
- Support for optional DDS-DC tape backup system.
- 8 MB memory (expandable to 68 MB).
- 230 MB hard drive.
- Expansion bay for additional hard disk or CD-ROM drive.
- Expansion slot for processor-direct or 7 inch NuBus expansion card with adapter.
- High-performance SCSI interface.
- High-speed Ethernet networking.
- AppleShare 4.0 server software pre-installed.
- Ready for PowerPC processor upgrade.

Apple Workgroup Server 80

Allows up to 100 teachers, students, remote users, and administrators to connect at the same time to retrieve mail, send files, and collaborate through on-line conferencing. Built-in Ethernet networking and high-performance SCSI ports help prevent data bottlenecks. Built-in CD-ROM allows for access of additional resources such as on-line encyclopedias or reference materials. And a built-in tape backup enlarges the server's capacity and protects valuable data. Can be upgraded to higher-performance Power Macintosh technology.

- 66/33Mhz 68040 processor with built-in math coprocessor.
- Supports up to 100 people communicating at the same time.
- 16 MB memory (expandable to 256 MB).
- One-gigabyte hard drive.
- Built-in dual-speed CD-ROM drive.
- Built-in DAT tape backup system.
- Expansion bays for two additional hard disks.
- Three NuBus expansion slots.
- 68040 processor-direct slot.
- High-performance SCSI interface.
- High-speed Ethernet networking.
- AppleShare 4.0 server software pre-installed.
- Ready for PowerPC processor upgrade.

Ordering information

- Communications Bundle with Apple Workgroup Server 60; includes setup and connection to your existing network.

  B2094LL/A

- Communications Bundle with Apple Workgroup Server 80; includes setup and connection to your existing network.

  B2096LL/A

In addition to the purchase of a communications bundle, you will need to purchase user licenses to allow users to connect to your server. These licenses are available in 100 and 250-user configurations. Additional users can be added at anytime with the purchase of additional packs. For example, start with a

250-user pack and, when you need to add more users, you can purchase additional packs to increase the capacity of your system.

FirstClass user license:

- T1377LL/A: 100-user pack
- T1378LL/A: 250-user pack

* Windows connections will require purchase of a Windows Client Option.
** Remote access requires modems.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15662

Tech Info Library

Support For FirstClass Supplied by SoftArc, Inc. (6/94)

Revised: 6/21/94
Security: Everyone

Support For FirstClass Supplied by SoftArc, Inc. (6/94)

==========

Article Created: 21 June 1994

TOPIC -----

This article describes where to get support for FirstClass which is part of the Communications Bundle in the Apple Education Series.

DISCUSSION -----

If you want support for FirstClass which is part of the Communications Bundle in the Apple Education Series, contact SoftArc, Inc. the products developer. To locate a vendor's address and phone number, use the vendor name as a search string.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15663

Tech Info Library

PowerBook 500 Series AC Adapter Ratings (6/94)

Revised: 6/22/94
Security: Everyone

PowerBook 500 Series AC Adapter Ratings (6/94)

==========

Article Created: 22 June 1994

TOPIC ----------

I am looking for the voltage the AC adapter is supplying the PowerBook 500 series.

DISCUSSION ----------

The PowerBook 500 series AC power adapter is rated at 40 watts. The adapter is actually made up of two 20 watt supplies of power, Vbatt and Vmain.

If the PowerBook is shut down or in sleep mode, both Vbatt and Vmain are dedicated to charging the batteries simultaneously. As a result, the computer charges two fully depleted batteries in two hours. If the PowerBook is running, Vmain supplies power to the PowerBook while Vbatt charges first one battery then the other (four hours total, although one battery is fully charged after two hours).

Vbatt output supplies 16.6 volts DC at 1.0 Amps. Vmain output supplies 16.6 volts DC at 1.5 Amps.

The AC Adapter requires an AC input of 100 to 240 volts AC, 50 to 60 Hz

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15664

Tech Info Library

Chinese Language Kit: System Crash with ADDMotion II (6/94)

Revised: 6/22/94
Security: Everyone

Chinese Language Kit: System Crash with ADDMotion II (6/94)

==========

Article Created: 22 Jun 1994

TOPIC -----

On a system with the Chinese Language Kit (1.0 or 1.1) installed, you may experience problems when adding a HyperCard animation with ADDMotion II. Your system will hang, quit with Type 2 error, or drop into MacsBug when executing the instruction NewFilter.

DISCUSSION -----

Removing the WorldScript II extension (or disabling Extensions) works around this problem, but prevents you from using the Chinese Language Kit until you restart your system with the WorldScript II extension on.

This problem likely affects the Japanese Language Kit v1.1 also; however, the Japanese Language Kit v1.0 is compatible.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15665

Tech Info Library

Portable StyleWriter: Printing In Grayscale (6/94)

Revised: 6/22/94
Security: Everyone

Portable StyleWriter: Printing In Grayscale (6/94)

==========

Article Created: 22 June 1994

TOPIC --

I have a PowerBook 140 and a Portable StyleWriter. Everything I print from any graphics application prints in black and white, not grayscale. Can I create a grayscale image on a black & white Macintosh and print it to the Portable SW in grayscale? Why might the printer be printing in black and white?

DISCUSSION --

The Portable StyleWriter, which does not use GrayShare technology like the StyleWriter II, does NOT support grayscale printing and can only produce dithered images. Dithering is the effect of simulating grays or colors by using patterns of black and white dots.

Basically, what you see on the screen on a black & white Macintosh system is what you will get as output on the Portable StyleWriter. Since the Portable StyleWriter does not support grayscale printing, the output will be dithered similarly to the image on the screen.

If the application you are printing from does not support color/grayscale, then the output will not be dithered and will appear as on their Macintoshes screen - purely black and white blotches without dithering.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15666

Tech Info Library

Macintosh Locks Up After Sending A Fax (6/94)

Revised: 6/22/94
Security: Everyone

Macintosh Locks Up After Sending A Fax (6/94)

==========

Article Created: 20 June 1994

TOPIC -----

I'm having problems sending Faxes with my Quadra 660AV and GeoPort. When I send a Fax it is received at the other end, but my Macintosh freezes up after it's sent.

With Extensions Manager I've turned off all third-party extensions and this problem persists. I've thrown the Express Modem preferences file away, restarted, and this problem persists.

I even tried dragging the items in my Sent Fax Documents folder to another folder, and the problem went away. So I did some experimenting by duplicating several sent Faxes in the Sent Fax Folder until I had 206 files. I then sent a Fax to another GeoPort. The Fax was received successfully, but the sending Macintosh locked up. There are now 207 items in Sent Fax Folder.

I eventually reduced the items in Sent Fax folder to 197, and sent another Fax. It was received successfully, but this time the sending Macintosh didn't locked up. The items in Sent Fax Folder now number 198. I sent another Fax and the system locked up with the same issue this time.

I was able to reproduce this problem when there were 198 or more sent Fax files in the Sent Fax Folder. Is this the limit of items in the Sent Fax Documents folder?

DISCUSSION -----

We were also able to confirm your findings. There does seem to be a limit on the number of files the Fax Terminal can handle in the Received Fax Documents and Sent Fax Documents folders. This problem has been escalated.

The simple workaround is to move sent or received Faxes into other folders in order to decrease the number of files in the Received Fax Documents and Sent Fax Documents folders. The Fax Viewer can read the Faxes regardless of where they

reside. It had been suggested earlier that increasing the amount of memory for the Fax Terminal might alleviate the problem, however we found no evidence that it would help. Our recommendation is to manage the Fax folders manually until this limitation is addressed.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15668

Tech Info Library

Apple Remote Access X.25: Virtual Circuits (6/94)

Revised: 6/22/94
Security: Everyone

Apple Remote Access X.25: Virtual Circuits (6/94)

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Article Created: 21 June 1994

TOPIC ----------

We are testing the AppleTalk Remote Access X.25 solution, and have installed an X.25 service from Sprint with 22 virtual circuits. Based on initial test, the X.25 client software only allows 4 users to connect. Is there a way to utilize our client software and realize the virtual connections capability of the Sprint offering. There is an ultimate plan to allow up to 750 users to use this service.

DISCUSSION ----------

The only way to allow additional X.25 connections (virtual circuits) is to purchase one or more AppleTalk Remote Access 4 port upgrade(s). This of course gets you a card (which you may not need) but will provide you with the capability of supporting up to 8 virtual circuits per card.

The AppleTalk Remote Access X.25 configuration limits are:

- Up to 8 virtual circuits are support per card up to a maximum of 16 circuits per server.

- You cannot combine modem and X.25 communications links on the same card.

- 4 virtual circuits can be activated per AppleTalk Remote Access license with additional ports available by purchasing additional licenses up to a maximum of 16 ports per server.

The bottom line is, you can only support 16 simultaneous connections per server. With asynchronous based modem connections that would require 4 serial NuBus cards. With X.25 that would require 2 to 4 Serial NuBus cards (depending on how you configure the virtual circuits).

Support Information Services

..TIL15669-Apple_Remote_Access_X-25-Virtual_Circuits_6-94_(TA31964).pdf

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Tech Info Library Article Number:15669

Tech Info Library

Modified Dates On Folders and Parent Folders (6/94)

Revised: 6/22/94
Security: Everyone

Modified Dates On Folders and Parent Folders (6/94)

==========

Article Created: 21 June 1994

TOPIC -----

I want to be able to change a folder that is nested in several other folders and have the modified date for all the enclosing folders change. Sometimes the modified date changes for enclosing folders and sometimes it doesn't. Could you briefly explain the way a Macintosh updates the modification dates for folders?

DISCUSSION -----

Modification dates are not propagated up the directory tree. Modification dates are only changed when something in the folder actually changes and not something in its sub-folders. In other words, it is possible to have a folder that has a newer modification date than its parent. For example, the modification date on my hard drive is 6/20/94 8:33 AM but the modification date for the system folder is 6/20/94 11:37 AM.

Support Information Services

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Tech Info Library Article Number:15670

Tech Info Library

PowerBook 500 Series: Indicators Of A Blown Fuse (6/94)

Revised: 6/23/94
Security: Everyone

PowerBook 500 Series: Indicators Of A Blown Fuse (6/94)

==========

Article Created: 23 June 1994

TOPIC ----------

What symptoms would be generated should the replaceable fuse on the PowerBook 500 series computer fail?

DISCUSSION ----------

When the power on button is pressed the screen would flicker as if the unit was starting it's normal power on process the go blank again. No startup chime would be heard regardless of power source, battery or AC power.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15671

Tech Info Library

Assistant Toolbox: Problem Printing to LW Select 310 (5/96)

Revised: 5/15/96
Security: Everyone

Assistant Toolbox: Problem Printing to LW Select 310 (5/96)

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Article Created: 23 June 1994
Article Reviewed/Updated: 14 May 1996

TOPIC ----------

When I try to print from my PowerBook 520 to my LaserWriter Select 310, I cannot print my document. Why does this happen and how do I work around this problem?

DISCUSSION ----------

The PowerBook 500 series ships with the system extension Assistant Toolbox v1.1 installed. The Assistant Toolbox has a feature called Print Later that allows a user who normally prints to networked printer to spool documents for printing while not physically connected to the network. While the Assistant Toolbox is usually installed on PowerBook computers, any Macintosh with it installed can experience similar issues.

The above problem occurs when a user attempts to print to a LaserWriter Select 310. With the Assistant Toolbox extension loaded and AppleTalk active, when you try to print you get the following dialog box:

"This document can not be printed at the current time on the printer 'LaserWriter Select 310' because the printer is not available on the AppleTalk network."

If AppleTalk is inactive then a dialog box will read: "This document cannot be printed at the current time because AppleTalk is inactive. To activate AppleTalk, go to the Chooser."

There is no selection that will allow the user to print a document on the LaserWriter 310. Here are some workarounds:

Solution

Assistant Toolbox version 1.3 (which ships as part of System 7.5 Update 2.0) resolves this issue. Please update to this version.

NOTE:
Assistant Toolbox v1.2 which shipped with System 7.5 does not resolve this issue.

Article Change History:
14 May 1996 - Updated to add reference to Assistant Toolbox 1.3
23 Mar 1995 - Added information about unsupported fix.
09 Dec 1994 - Updated workarounds.

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Tech Info Library Article Number:15673

Tech Info Library

Color StyleWriter Pro: Ink cartridge shelf life (6/94)

Revised: 6/23/94
Security: Everyone

Color StyleWriter Pro: Ink cartridge shelf life (6/94)

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Article Created: 23 June 1994

TOPIC ----------

What is the shelf life of the Apple Color StyleWriter Pro ink cartridges?

DISCUSSION ----------

The shelf life for the Color StyleWriter Pro ink cartridges is 2 years after the date of production as long as the cartridges are stored in their original packaging and within the environmental conditions listed on the ink cartridge packaging materials. The conditions specify no sunlight and temperatures between -22 and 104 degrees Fahrenheit (-30 and 40 degrees Celsius). Once the cartridge has been opened and installed in a printer it has an expected shelf life of 6 months.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15676

Color StyleWriter Pro: Cartridge Shelf Life & Date Codes (2/95)

Revised: 2/6/95
Security: Everyone

Color StyleWriter Pro: Cartridge Shelf Life & Date Codes (2/95)

==========

Article Created: 23 June 1994
Article Reviewed/Updated: 06 February 1995

TOPIC ----------

What is the shelf life of the Apple Color StyleWriter Pro ink cartridges?

DISCUSSION ----------

The shelf life for the Color StyleWriter Pro ink cartridges is 2 years after the date of production as long as the cartridges are stored in their original packaging and within the environmental conditions listed on the ink cartridge packaging materials. The conditions specify no sunlight and temperatures between -22 and 104 degrees Fahrenheit (-30 and 40 degrees Celsius). Once the cartridge has been opened and installed in a printer it has an expected shelf life of 6 months.

The date codes are imprinted on each cartridge and consist of 5 alphanumeric characters. The second character indicates the last digit of the year, and the third character provides the month that the cartridge was produced. The month date codes are as follows:

A = January
B = February
C = March
D = April
E = May
F = June
G = July
H = August
I = September
J = October
K = November
L = December

Article Change History:
06 Feb 1995 - Changed access privileges of article.

Support Information Services

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Tech Info Library Article Number:15677

Tech Info Library

Apple Color Printer: Cartridge Shelf Life & Date Codes (2/95)

Revised: 2/6/95
Security: Everyone

Apple Color Printer: Cartridge Shelf Life & Date Codes (2/95)

==========

Article Created: 23 June 1994
Article Reviewed/Updated: 06 February 1995

TOPIC ----------

What is the shelf life of the Apple Color Printer ink cartridges?

DISCUSSION ----------
The shelf life for the Apple Color Printer ink cartridges is 2 years after the date of production as long as the cartridges are stored in their original packaging, exposure to no sunlight, and temperatures between -22 and 104 degrees Fahrenheit (-30 and 40 degrees Celsius). Once the cartridge has been opened and installed in a printer it has an expected shelf life of 6 months.

The date codes are imprinted on each cartridge and consist of 6 alphanumeric characters. The second character indicates the last digit of the year, and the third character provides the month that the cartridge was produced. The month date codes are as follows:

A = January
B = February
C = March
D = April
E = May
F = June
G = July
H = August
I = September
J = October
K = November
L = December

The sixth character provides information on the ink color. The four possible codes are:

C = Cyan

Y = Yellow
M = Magenta
K = Black

Article Change History:
06 Feb 1995 - Changed access privileges of article.

Support Information Services

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Tech Info Library Article Number:15679

Tech Info Library

StyleWriter: Ink Cartridge Compatibility (9/95)

Revised: 9/1/95
Security: Everyone

StyleWriter: Ink Cartridge Compatibility (9/95)

==========

Article Created: 23 June 1994
Article Reviewed/Updated: 01 September 1995

TOPIC ----------

This article will briefly explain the history, differences and compatibility between the StyleWriter and StyleWriter II ink cartridges.

DISCUSSION ----------

Previously, StyleWriter and StyleWriter II printers used separate ink cartridges that were labeled with their names to distinguish them. Current cartridges are labeled "Apple StyleWriter Ink Cartridge" (PN M8041G/C). These ink cartridges are compatible with the StyleWriter, StyleWriter II, StyleWriter 1200, and the Portable StyleWriter printers.

The StyleWriter II ink cartridge (M8041G/A) is NOT compatible with the original StyleWriter, which used the M8052G/A cartridge, although their ink cartridges look very similar. The StyleWriter II ink cartridge will print lighter text and images when used with an original StyleWriter.

The original StyleWriter ink cartridge (PN M8052G/A) is also not compatible with the StyleWriter II. It will print slower than normal when used with a StyleWriter II.

The visible difference between original cartridges and current ones are the colors on the label of the cartridge itself. The original label has a vertical blue stripe on the right side of the cartridge and a black Apple logo above the word "StyleWriter". There are two current versions of the black and white StyleWriter series ink cartridges.

Version 1

One of the new cartridges does not have the vertical blue stripe, however it has two arrows that point in the direction the cartridge should be installed. This cartridge has the Apple logo above the words Apple StyleWriter. The word Apple

and the Apple logo are red on this version of the cartridge.

Version 2

The other new cartridge retains the blue vertical stripe, but contains the printers it is compatible with on the cartridge itself. Below the words StyleWriter, StyleWriter II, and Portable StyleWriter it says Black Ink Cartridge.

If you wish to determine which cartridge you have, check the color on the cartridge to see if it is red or blue. If there is a vertical blue line, it will list the printers it is compatible with. Do not attempt to use the cartridge on any printer that is not listed on the blue striped cartridge. If there is the red Apple logo on the cartridge without a blue vertical stripe, it is compatible with all three StyleWriter printers.

Summary of Ink Cartridge Part Numbers

Original StyleWriter Ink Cartridge (M8052G/A)* (discontinued)
Original StyleWriter II Ink Cartridge (M8041G/A) (discontinued)
Old universal StyleWriter Ink Cartridge (StyleWriter, StyleWriter II, and Portable StyleWriter) (M8041G/B) (discontinued)
New universal StyleWriter Ink Cartridge (StyleWriter, StyleWriter II, StyleWriter 1200, and Portable StyleWriter) (M8041G/C)

* Note: This cartridge is also used by the Portable StyleWriter.

Article Change History:
01 Sep 1995 - Updated ink cartridge part numbers.
31 Mar 1995 - Added Ink cartridge part numbers.
24 Oct 1994 - Combined 3 articles into one.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15680

Tech Info Library

QuickTake 100: LCD Panel Showing ER (6/94)

Revised: 6/23/94
Security: Everyone

QuickTake 100: LCD Panel Showing "ER" (6/94)

==========

Article Created: 23 June 1994

TOPIC ----------

The Quicktake 100 camera I am using is showing the letters 'ER' on the LCD panel. What does this mean?

DISCUSSION ----------

This is an error state. Check that you are using the appropriate power adaptor and it is properly connected to the camera. Turn the camera off and back on. If the LCD still reads ER, have the camera serviced by an authorized Apple service provider.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15681

ABS Tech Note: AWS22 Retrospect Error Codes (3/95)

Revised: 3/31/95
Security: Everyone

ABS Tech Note: AWS22 Retrospect Error Codes (3/95)

==========

Article Created: 23 June 1994
Article Reviewed/Updated: 31 March 1995

TOPIC

This technical note discusses some error situations that can occur using Retrospect on the Apple Workgroup Server 95.

DISCUSSION

Under some circumstances, Retrospect may return an error in its log in the range of -27400. These errors are Unix system call errors being recognized by Retrospect. The general formula for the conversion is errno=retro_error-27400, so -27402 is the Unix error ENOENT, while -27404 is EINTR.

The -27402 will be seen when Retrospect comes across a file with a name longer than 31 characters, it logs it with an error number of -24702 and doesn't back up the file. While A/UX allows longer filenames, Mac OS doesn't, and Retrospect, being a Mac OS program, restricts itself to the Mac OS API.

The workaround, when you run into a filename like this, is to rename the file to a shorter name. At this time, there is no intention of changing Retrospect to relax this limitation.

Under some rare circumstances, Retrospect will log a -27404 error which is the equivalent of the Unix EINTR (interrupted system call) error. This is because there is a system call in Retrospect that isn't expecting this error code and doesn't recover from it cleanly. This failure is rare and intermittent, and may only be seen when Retrospect is backing up data on a non-root, UFS formatted filesystem. This bug is fixed in release 2.1 of Retrospect.

Article Change History:
31 Mar 1995 - Made minor changes.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15682

ABS Tech Note: AWS23 SHMAT Limitations (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AWS23 SHMAT Limitations (6/94)

==========

Article Created: 23 June 1994

TOPIC ----------

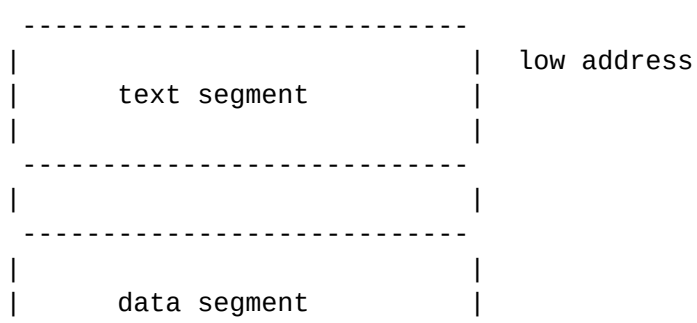
This technical note discusses a memory limitation that may be encountered by UNIX COFF (Common Object File Format) applications using shared memory on A/UX releases 3.1 and earlier versions and a programming technique that can be used to work-around this limitation.

DISCUSSION ----------

The memory limitation occurs if an application attempts to expand the size of its data segment (or heap space) by at least 256K bytes (cumulative) after it has allocated one or more shared memory segments which were attached at an address chosen by the system (i.e., in the invocation of the shmat(2) system call, the value of the shmaddr argument is zero).

In Figure 1, the address space of the application is depicted as it might appear immediately following the invocation of shmat(2). The arrow indicates the direction of future growth of the application's data segment.

This memory limitation is perceived by the application whether it attempts to expand its data segment directly using sbrk(2) or indirectly using malloc(3) or some interface supported by its run-time environment, e.g., an interpreted language. Malloc(3) and sbrk(2) will fail and set errno to ENOMEM (decimal 12).



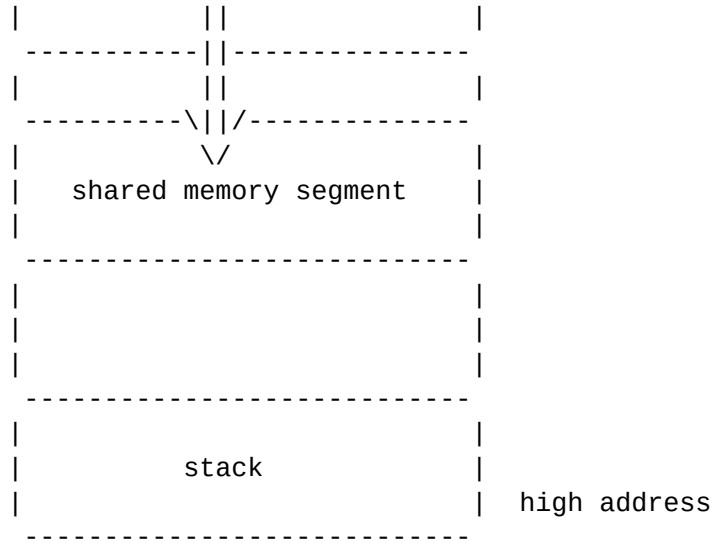


Figure 1. Application Address Space after Invocation of shmat(2)

The ENOMEM error indicates that the available address space is not large enough to fulfill the requested growth of the data segment. In Figure 2, the address space of the application is depicted as it might appear when the ENOMEM error occurs. In the scenario described above, the error occurs because the expanded data segment would overlap the shared memory segment(s), which would be a violation of the virtual memory protection scheme. Even though there is still additional "free space" in the applications address space, the system cannot fragment the data segment, since some applications expect it to be contiguous.

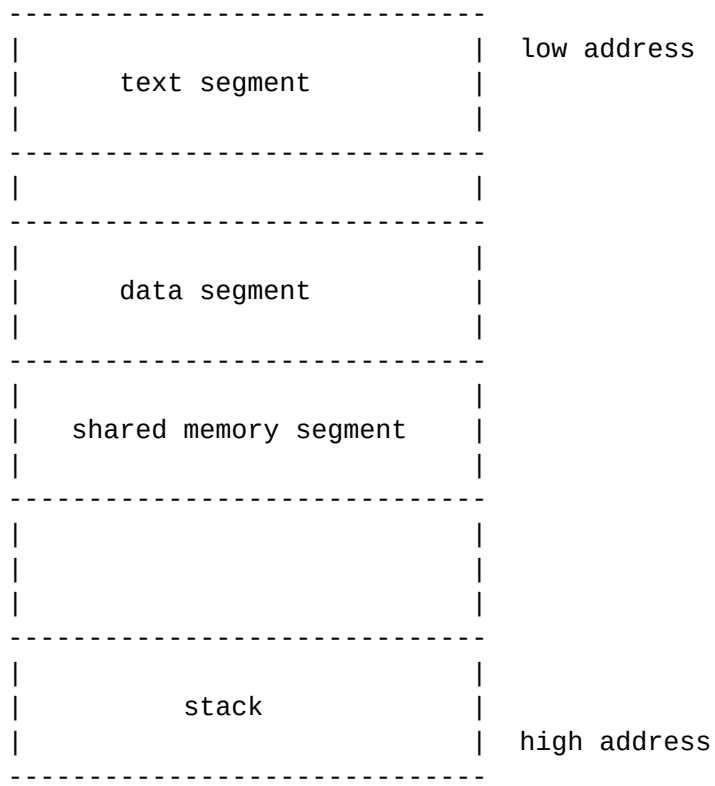


Figure 2. Application Address Space When ENOMEM Occurs

The work-around for this problem is for the application to request a specific address as the second argument to shmat(2). Given a prudent choice for the value of this address, the application can arrange for the shared memory segment to be placed high enough in memory to avoid conflict with the growing heap. The value of this address may be determined by obtaining the current size of the data segment and then adding the maximum future data requirements of the process.

In the following code fragment, the programmer has determined that the maximum future data requirements for this application is 0x100000 (5 MB); when sbrk(2) is called with an argument of zero, it returns the current end of the data segment. The shared memory segment will be attached at an address which is at least 5 MB beyond the end of the data segment.

```
if (shmat(shmid, sbrk(0) + 0x100000, SHM_RND) == -1)
{
     perror("shmat");
}
```

Support Information Services

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Tech Info Library Article Number:15683

Tech Info Library

PowerBook Duo: Where To Find Express Modem Controls (6/94)

Revised: 7/8/94
Security: Everyone

PowerBook Duo: Where To Find Express Modem Controls (6/94)

==========

Article Created: 24 June 1994

TOPIC ----------

This article describes how the PowerBook Express Modem is controlled depending upon what version of the Express Modem software and PowerBook Enabler is installed.

DISCUSSION ----------

We have listed the information you requested in a columnar format, and have also explained it in text.

Duo	SSW	Control Panel to select	Express Modem Release	Enabler
210/230	7.1	PowerBook	1.0 thru 1.1.2	System Enabler 201
		PowerBook Setup	1.0 thru 1.1.2	PowerBook Duo 1.0
		Express Modem	1.5 thru 1.5.2	System Enabler 201
		Express Modem	1.5 thru 1.5.2	PowerBook Duo 1.0
250/270c	7.1	PowerBook Setup	1.0 thru 1.1.2	PowerBook Duo 1.0
		Express Modem	1.5 thru 1.5.2	PowerBook Duo 1.0
280/280c	7.1.1	Express Modem	1.5 thru 1.5.2	PowerBook Duo 2.0

There are two factors which effect how the "modem choice" is presented to the PowerBook Duo user. One factor is the version of the Express Modem and the other is the version of the Enabler.

The Express Modem releases did not have any effect on this issue before release 1.5, which ships with the Duo 280/280c. With release 1.5 of the Express Modem, the choice for the modem now is contained in the "Express Modem" control panel rather than the "PowerBook" or "PowerBook Setup" control panel. Express Modem releases 1.0 through 1.1.2 did not contain the ability to choose the modem.

The following is a list of the Duos, and the Enabler that originally shipped with them:

- Duo 210/230 -- System Enabler 201
- Duo 250/270c -- PowerBook Duo Enabler 1.0
- Duo 280/280c -- PowerBook Duo Enabler 2.0

For a Duo with System Enabler 201 installed, the "PowerBook" control panel contains the ability to choose either the "Internal" or "External" Modem. This is true for the Express Modem releases from 1.0 through 1.1.2, and with the "PowerBook" control panel releases 7.1.1 through 7.1.3.

For a Duo with the PowerBook Duo Enabler 1.0 installed, the "PowerBook Setup" control panel contains the ability to switch the modem choice. The choices are "Compatible" or "Normal". Compatible refers to Internal, and Normal to External. These Duos usually shipped with Express Modem 1.1.2, and release 7.2 of the "PowerBook" and "PowerBook Setup" control panels.

For a Duo with the PowerBook Duo Enabler 2.0, the choice for the modem now is contained in the "Express Modem" control panel rather than the "PowerBook" or "PowerBook Setup" control panels. "Express Modem Settings" needs to be selected from the pop-up menu, and then "Use Express Modem" or "Use External Modem" can be chosen. Duos which come with this Enabler installed, also come with Express Modem 1.5. As shipped, the release of the PowerBook control panel is 7.3.1 and of the PowerBook Setup is 7.3.
Complicated as this is, it obviously gets more interesting when the user upgrades the Enabler via system software, the Express Modem software, or both. For the purposes of this answer, I will address only the changes that occur when the Express Modem software is upgraded while the Enabler/system software remains the same.

From a Duo with the System Enabler 201, when the Express Modem 1.5 (or 1.5.1 or 1.5.2) is installed, the way to choose the modem moves from the "PowerBook" control panel to the "Express Modem" control panel. In the Express Modem control panel, "Express Modem Settings" must be selected to actually allow selection of the "Use Express Modem" or "Use External Modem" option.

For a Duo with the PowerBook Duo Enabler 1.0 installed, upgrading the Express Modem software to 1.5 (or 1.5.1 or 1.5.2) changes the way to choose the modem from the "PowerBook Setup" control panel to the "Express Modem" control panel. And again, in the Express Modem control panel, "Express Modem Settings" must be selected to actually allow selection of the "Use Express Modem" or "Use External Modem" option.

In other words, as of release 1.5 of the Express Modem software, control of the selection of internal/external modem moved from the Duo's PowerBook/PowerBook Setup control panels to the Express Modem's control panel.

Support Information Services

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Tech Info Library Article Number:15684

ABS Tech Note: AWS24 Config Additional ATalk Printer lpr (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AWS24 Config Additional ATalk Printer lpr (6/94)

==========

Article Created: 23 June 1994

TOPIC ----------

This technical note is a quick guide to configuring multiple AppleTalk printers for use with lpr This procedure is only necessary when configuring a remote printer, that is, a printer somewhere on the network rather than one connected directly (through a serial connection) to the AWS 95.

DISCUSSION ----------

The following example adds an AppleTalk printer called NewPrinter to the lpr spooling system.

1) Edit /etc/printcap to include the following entry.

```
lp|NewPrinter|AppleTalk|postscript|PostScript:\
     :lp=/dev/null:\
     :if=/usr/spool/lpd/NewPrinter/ifilter:\
     :of=/usr/spool/pd/NewPrinter/ofilter:\
     :nf=/usr/spool/lpd/NewPrinter/nfilter:\
     :sd=/usr/spool/lpd/NewPrinter:
```

This entry sets NewPrinter as the default printer. The special name lp in the above entry is used to designate NewPrinter as the default printer. Please note that there can be only one default printer.

All the names in the first line of the above entry are synonyms for the printer you are configuring. Any of these names may be used when invoking lpr from CommandShell.

2) Set up a special spooling directory to hold print requests for the newly added printer.

```
cd /usr/spool/lpd
mkdir NewPrinter
```

Make sure to have the owner and group correctly set to daemon on the spooling directory, and also that permissions are set to 775.

3) Set up the filters.

```
cd /usr/spool/lpd/NewPrinter
cp ../AppleTalk/ifilter
```

Make sure to have 755 permissions on the file ifilter.

4) You need to specify the printer information that you would normally enter through the Chooser. You do this by editing the Printer variable in the file ifilter. For example:

```
Printer="NewPrinter:LaserWriter@De Anza 3/1st Floor"
```

Link ifilter to two other files as shown below.

```
ln ifilter ofilter
ln ifilter nfilter
```

5) Make sure that lpd daemon is running.

6) Enable and start the printer using the lpc command. For example, enter the following commands:

```
lpc enable NewPrinter
lpc start NewPrinter
```

Once the printer is enabled and the spooling daemon is started, enter either of the following commands from CommandShell.

```
lpr filename
```

or

```
lpr -PNewPrinter filename
```

For filename, type the name of the file you want to print. In both the above cases, the file will be printed to the printer NewPrinter, since it is the default printer.

You can use this procedure to configure additional printers to the spooling system and enable printing with lpr.

For more information on setting up the printer, see "Printing from CommandShell" in Server Administration With A/UX 3.0.1. For more information on troubleshooting techniques, see "Troubleshooting the LPR system" in Chapter 9 of Setting Up and Managing Your Server.

Support Information Services

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Tech Info Library Article Number:15685

Tech Info Library

Multiple Scan Displays: ColorSync Color Temperatures (2/96)

Revised: 2/29/96
Security: Everyone

Multiple Scan Displays: ColorSync Color Temperatures (2/96)

==========

Article Created: 24 June 1994
Article Reviewed/Updated: 29 February 1996

TOPIC ----------

This article provides a list of color temperatures used in the ColorSync control panel when Apple Multiple Scan Displays are selected.

DISCUSSION ----------

The image on the Apple Multiple Scan Display is a combination of red, green, and blue signals. The intensity, or color temperature, of signals can be changed to one of three settings:

- 9300 K (the default, which appears bluish)
- 6500 K (which is page white)
- 5000 K (which appears reddish)

At higher color temperature, white appears as slightly cooler white with more of a blue tint, while at lower color temperature, white appears as a slightly warmer white. You can change the color temperature according to your personal preference or what is suitable for your particular application.

Begin_Table

ColorSync Profile (System Profile)	Display Color Temperature
Apple Multiple Scan 17 - 9300	9300K (Macintosh default)
Apple Multiple Scan 17 - D65	6500K (page white)
Apple Multiple Scan 17 - D50	5000K (appears reddish/yellow)
20" MS-9300 (Multiple Scan 20)	9300K (Macintosh default)

20" MS-D50 (Multiple Scan 20)	5000K (appears reddish/yellow)
20" MS-D65 (Multiple Scan 20)	6500K (page white)

End_Table

Article Change History:
29 Feb 1996 - Added Multiple Scan 20 Display to this article.
16 May 1995 - Corrected minor mistakes and formatting.

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Tech Info Library Article Number:15686

ABS Tech Note: AWS25 Flushing the 68040 Cache From UNIX (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AWS25 Flushing the 68040 Cache From UNIX (6/94)

==========

Article Created: 23 June 1994

TOPIC ----------

This Technical Note describes an interface which can be used for flushing data and instruction caches from a UNIX process.

DISCUSSION ----------

The following interface ONLY works on 68040 platform and supported on A/UX 3.1 and earlier versions.

```
_sysm68k(command, vaddr, scope, caches, size)
command = 105
vaddr = beginning address of lines or pages to be flushed
     (if the address is not aligned on the appropriate
     boundary, the entire line or page that encompasses the
     address will be flushed).
scope = 1,2,3
     1 = flush 'count' lines
     2 = flush 'count' pages
     3 = flush all (count and vaddr not meaningful)
caches = 1,2,3
     1 = flush the data cache
     2 = flush the instruction cache
     3 = flush both caches
size = number of bytes to flush
```

In the following code fragment, the programmer is flushing both the data and instruction caches at the specified address with the specific length.

```
void cache_flush (addr, len)
caddr_t addr;
size_t len;
{
    _sysm68k(105,addr,3,3,len);
```

```
    }
```

Support Information Services

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Tech Info Library Article Number:15687

Tech Info Library

ABS Tech Note: AWS27 Configuration Changes In A/UX 3.1 (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AWS27 Configuration Changes In A/UX 3.1 (6/94)

==========

Article Created: 23 June 1994

TOPIC ----------

In A/UX 3.1, the following changes have been made to the File/Print and Database configurations. In general, these changes have been made to make the two configurations more similar -- hopefully decreasing customer confusion.

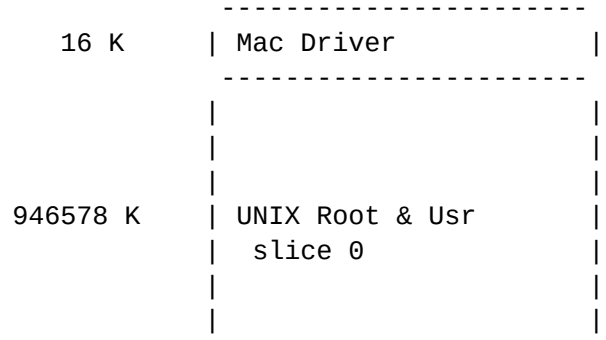
DISCUSSION ----------

Disk Partitions

- The size of the MacPartition (boot volume) on both configurations has been increased to 10 MB. This size will support a full install of System 7.1, if necessary.

- The size of the swap partition in the File/Print configuration has been increased to 51 MB, the same size as the Database configuration.

With these changes, the only difference between the disk partitions on the two configurations is that the Database configuration includes two 10 MB "raw" database partitions. Therefore, on an identical drive, the UNIX Root&Usr partition (slice 0) would be 20 MB smaller in the Database configuration. Figures 1 and 2 show the partition map of a 1 GB drive loaded with the default Database and File/Print configurations, respectively.



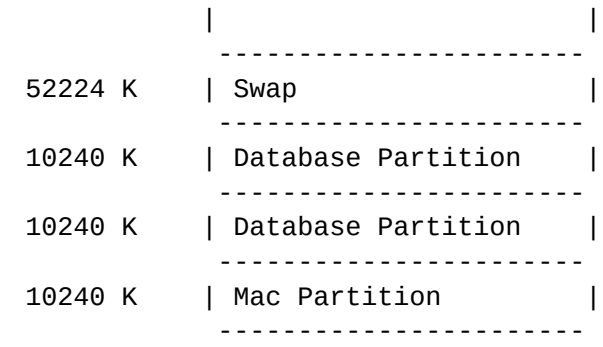


Figure 1. Database Partitions on 1 GB Drive

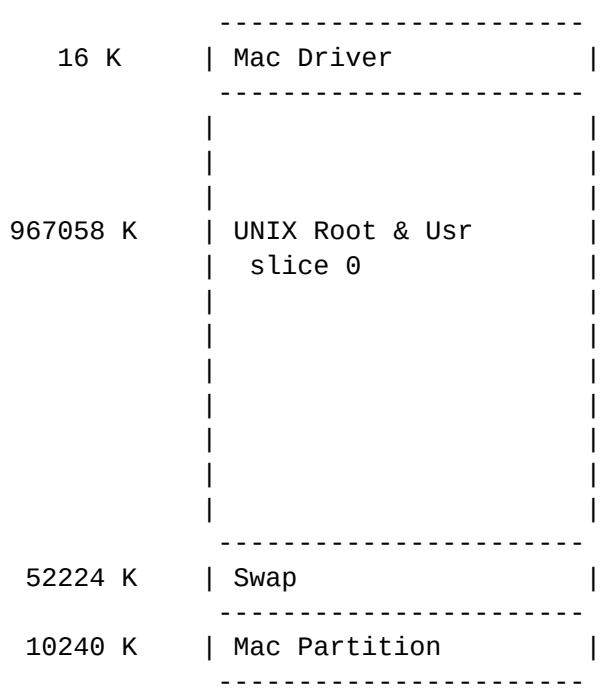


Figure 2. File/Print Partitions on 1 GB Drive

Installer Packages

The default set of packages is now identical for both configurations; they are listed in Table 1. These packages were selected based on customer feedback.

Package	Size
Core A/UX System	45 MB
Networking Capability	4 MB
Network Server Capability	1 MB
Manual Pages	4 MB
Basic C Programming	4 MB
Extended C Programming	2 MB
More UNIX Utilities	1 MB
UNIX Printing Utilities	1 MB

Debugging & Version Control 1 MB

Table 1. Default A/UX 3.1 Packages

Content of the Core Package

There are only two differences between the content of the packages in the two configurations. The user can switch between the two configurations using the shell script config_server, which is new in A/UX 3.1.

The values of a few of the kernel configuration parameters are different (These defaults have not changed since 3.0.1.). Table 2 details these settings; see kconfig(1) for more information.

Kernel Parameter	Database Configuration	File/Print Configuration
NBUF	0	-1
NCALL	150	500
NFILE	1024	7500
NINODE	1024	7500

Table 2 Default A/UX 3.1 Kernel Parameters

Finally, the File/Print configuration includes the Autologin file, which bypasses the Login screen; for more information, see Autologin(4).

Support Information Services

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Tech Info Library Article Number:15688

Tech Info Library

ABS Tech Note: AWS28 Disk Driver Changes In A/UX 3.1 (11/94)

Revised: 11/14/94
Security: Everyone

ABS Tech Note: AWS28 Disk Driver Changes In A/UX 3.1 (11/94)

==========

Article Created: 14 November 1994

TOPIC ----------

This document describes the A/UX 3.1 enhancements to the generic SCSI disk driver. A/UX uses this driver to support all SCSI direct–access devices. This information may be useful to SCSI peripheral vendors qualifying their peripherals for A/UX and to developers writing their own A/UX SCSI driver. For more information regarding the kernel portion of this driver, see Chapter 5 of the A/UX Device Drivers Kit.

The three areas of enhancements in A/UX 3.1 are as follows:

- Enhanced support for removal media in direct–access devices.
- Detection of write–protected (locked) media in direct–access devices which support the SCSI common command set (CCS).
- Limited support for CD-ROM drives which do not support 512-byte blocks.

DISCUSSION ----------

Removable Media

The header file <sys/gdkernel.h> has a new flag, CTF_REMOVABLE, for the controller state flags field, ctstate, in the controller data structure, gdctl. The SCSI driver sets this flag when a response to a SCSI inquiry command (0x12) indicates that the device is removable; see page 70 of the SCSI 1 specification (ANSI X3.131-1986) for more information. The inquiry command is sent to each device during the initialization phase of the SCSI driver state machine. A user–level application may issue an inquiry command directly using the GD_DRIVEINQUIRY ioctl.

For the (at most) seven devices on the virtual "Macintosh" bus, this information is also accessible through the removable field of the scsi_t type array defined in <sys/ss_scan.h> and returned by the UI_GETSCSIID ioctl of the user interface device, /dev/uinter0. The A/UX Macintosh Toolbox disk driver uses these values to determine if any of these devices should be checked for media; if media is

present, the driver generates a disk insert event. Subsequently, these volumes may be ejected from the Finder by dragging to the Trash icon.

The SCSI driver performs an eject on all removable media using the CCS stop unit command (0x1B). For devices other than CD-ROMs, the SCSI 2 load/eject flag is not set, since some devices do not support this capability. The user should be able to eject the media manually at this point (the Toolbox driver does issue prevent/allow media removable commands (0x1E)).

Note: The development team discovered that after a stop unit command, some removables require a start unit command before coming on-line – even after new media has been inserted. Since this is unusual behavior, the Toolbox driver contains a mechanism, based on the vendor and product strings returned in response to an inquiry command, to prevent eject commands from being issued. Contact DTS for more information.

Compatibility: Apple has done limited testing of removable media. We can't make specific recommendations on compatibility, but our testing has indicated that the Apple drive, Iomega Beta90 and Syquest models SQ5110 and SQ5110C all pass our preliminary compatibility looks. The Pinnacle drives model OHD-130 and OHD-650 both fail. All of these quick-look tests were as data disks only. We do not support or recommend ANY of these as a system disk or install target.

Write-Protected Media

The header file <sys/gdkernel.h> has a new flag, CTF_RDONLY, for the controller state flags field, ctstate, in the controller data structure, gdctl. The SCSI driver sets this flag when the response to a SCSI mode sense command (0x1A) indicates that the device is write-protected; see pages 108–110 of the SCSI 1 specification for more information. The mode sense command is sent to each device during the initialization phase of the SCSI driver state machine, if the device indicates that it supports the CCS during the inquiry command described above; for more information, see page 11 of the CCS specification (ANSI X3T9.2/85-52 Rev 4.B).

During the partition initialization phase of the generic disk driver, the CTF_RDONLY flag is used to set the PTF_RONLY flag in the partition flags field, ptflags, of the partition data structure, gdpart, of each partition on that device controller. The partition flags may be accessed directly using the GD_GETPARTFLAGS ioctl.

On HFS volumes, the A/UX Macintosh Toolbox disk driver uses this ioctl to set the locked bit in the flags field of the drive queue entry for that volume; see page 128 of Inside Macintosh Volume II for more information. If the Finder detects this bit, it displays the lock icon in the left-hand corner of its windows and refuses to copy files to the volume.

For write-protected media containing UNIX filesystems, the kernel will return an error and set errno to EROFS if an application attempts to mount the device for writing.

Support for Third-Party CD-ROM Drives

The A/UX SCSI driver and higher-level disk subsystem assume that all disks support 512–byte blocks. If a device reports that its default block size is greater than 512 bytes (in response to a read capacity command), the SCSI driver issues a mode select command to change the block size to 512 bytes. Previously, the driver assumed this command always succeeded.

This has been a problem, particularly for 3rd party CD-ROMs, since the "natural" block size for a CD-ROM is 2K and the mode select command is in the optional part of the SCSI CCS.

In A/UX 3.1, after the mode select command, the SCSI driver will detect that a device's block size is still greater than 512 bytes and handle read requests to that device specially, aligning requests on 2K boundaries and allocating temporary buffer space as necessary. Since only reads are allowed on CD-ROMs, there is no need to maintain consistency between this low-level buffer and the system's buffer cache.

Note: The performance impact of this data buffering is significant and is intended only for light data loads, such as system installation. Vendors should support the mode select command in new devices.

Support Information Services

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Tech Info Library Article Number:15689

Tech Info Library

ABS Tech Note: AWS29 Running An AWS 95 Without A Monitor (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AWS29 Running An AWS 95 Without A Monitor (6/94)

==========

Article Created: 23 June 1994

TOPIC

This article describes running an Apple Workgroup Server (AWS) 95 without a monitor.

DISCUSSION

If you want to run an AWS95 without a monitor, you need to convince the system there is a monitor attached. You can do this by building a custom cable which grounds one or more of the monitor ID signals.:

Pin	Signal	Description
1	RED.GND	Red Video Ground
2	RED.VID	Red Video
3	CYSNC~	Composite Sync
4	MON.ID1	Monitor ID, Bit 1 (also known as SENSE0)
5	GRN.VID	Green Video
6	GRN.GND	Green Video Ground
7	MON.ID2	Monitor ID, Bit 2 (also known as SENSE1)
8	nc	(no connection)
9	BLU.VID	Blue Video
10	MON.ID3	Monitor ID, Bit 3 (also known as SENSE2)
11	C&VSYNC.GND	CSYNC & VSYNC Ground
12	VSYNC~	Vertical Sync
13	BLU.GND	Blue Video Ground
14	HSYNC.GND	HSYNC Ground
15	HSYNC~	Horizontal Sync

The AWS95 supports any display, whether from Apple or from another vendor, that meets one of the following specifications: Standard Sense Codes:

	Sense pins			Hor-x-Vert	Dot	Vert	Horiz
Display	10	7	4	Pixels	Clock	Refrsh	Refrsh

Apple 21" Color	0	0	0	1152 x 870	100	75.00	68.70
Apple Portrait	0	0	1	640 x 870	57.2832	75.00	68.90
12" Apple RGB	0	1	0	512 x 384	15.6672	60.15	24.48
Apple 2-Page Monochrome	0	1	1	1152 x 870	100	75.00	68.70
NTSC - Underscan	1	0	0	512 x 384	12.2727	59.94	15.70
NTSC - Overscan	1	0	0	640 x 480	12.2727	59.94	15.70
12" Apple Monochrome	1	1	0	640 x 480	30.24	66.70	35.00
13" Apple RGB	1	1	0	640 x 480	30.24	66.70	35.00

Notes: A sense pin value of 0 means that the pin should be grounded to the C&VSYNC.GND signal; a value of 1 means do not connect the pin.

Sense pins 4, 7, and 10 are referred to as SENSE0, SENSE1, and SENSE2 in pinout tables for the video connectors.

To produce a color NTSC signal, an RGB-to-NTSC converter is required.

Support Information Services

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Tech Info Library Article Number:15690

Tech Info Library

LaserWriter Pro 810: Printing With Word Perfect on VAX (6/94)

Revised: 6/24/94
Security: Everyone

LaserWriter Pro 810: Printing With Word Perfect on VAX (6/94)

==========

Article Created: 24 June 1994

TOPIC ----------

I am unable to print properly to the LaserWriter Pro 810 with Word Perfect on the Vax.

DISCUSSION ----------

To print from Word Perfect you will need a special driver available from Word Perfect and you must also setup a generic print queue. The following steps must be performed to allow Word Perfect to print to the LaserWriter Pro 810:

• Contact Word Perfect to obtain the correct WP print driver. The driver name is LZR-1560.

• Execute the Apple supplied command procedure APPLE_QUE.COM and select the option called "generic queue". For more information on performing this step, refer to the LaserWriter Pro 810 installation and setup manual.

• Configure the new queue and driver into Word Perfect.

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Tech Info Library Article Number:15691

Tech Info Library

MediaPlayer: CD Audio Missing from ”Device” Menu (6/94)

Revised: 6/24/94
Security: Everyone

MediaPlayer: CD Audio Missing from ”Device” Menu (6/94)

==========

Article Created: 22 Jun 1994

TOPIC ----------

I have the PC Multimedia Upgrade Kit, and am having problems playing an audio CD. When trying to play an Audio CD from MediaPlayer the “CD Audio” option is not listed under the “Device” menu as it should be.

DISCUSSION ----------

Try the following:

1) Go to "Drivers" Control Panel (double click "Control Panels" in “Main,” double click "Drivers" in that window.
2) When "Drivers" is open, double click on "[mci]CDAudio"
3) You should get a message that says "One CD-ROM drive detected, CD Audio installed,” or something similar.
4) You will now be able to access "CD Audio" from Media Player.

If the above does NOT work, then try the following:

1) Exit Windows
2) From the "c:\" directory, type in:
   edit c:\windows\mplayer.ini<cr>
3) Find the line that reads "CDAudio=x" (where "x" is some number)
4) Change the x to "17"
5) Save changes and exit (in "edit" you would hit alt-f, then "x", then hit return or enter)
6) return to Windows and double click on Media Player. CD Audio should now be listed.

Support Information Services

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Tech Info Library Article Number:15692

Tech Info Library

ABS Tech Note: AS07 Guest Access Bug (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AS07 Guest Access Bug (6/94)

==========

Article Created: 23 June 1994

TOPIC ----------

This technical note describes a bug that may happen when using guest access with AppleSearch.

DISCUSSION ----------

When you set up access privileges on folders that are either AppleSearch information sources or subfolders of information source folders, AppleSearch guarantees that the access privileges would be honored. That is, if someone can not see a folder by mounting a volume on AppleShare, AppleSearch would neither show that folder as an information source, nor return any files contained in that folder as hits.

If you log in as Guest, sometimes this guarantee is violated. Guest users can occasionally see all the things superusers can see. At other times, Guest access works correctly.

Workaround

There are a couple of work-arounds:

- Disallow guest access to your AppleSearch Server.
- Set up accounts for all your users.
- Always log-in as an ordinary user immediately after launching the server, but never login as superuser.
- Set up a pseudo-guest account that users can use.

Note that this problem is pertinent only on the servers where administrators really use access privilege protections among information sources. If all your information is available to all your users, this problem does not arise.

This problem will be fixed in AppleSearch 1.4.

..TIL15695-ABS_Tech_Note-AS07_Guest_Access_Bug_6-94_(TA31987).pdf

Support Information Services

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Tech Info Library Article Number:15695

Tech Info Library

ABS Tech Note: AS08 AppleSearch and The Power Macintosh (5/96)

Revised: 5/24/96
Security: Everyone

ABS Tech Note: AS08 AppleSearch and The Power Macintosh (5/96)

==========

Article Created: 23 June 1994
Article Reviewed/Updated: 24 May 1996

TOPIC ----------

This technical note describes the AppleSearch 1.0.1 patch and where to get it.

DISCUSSION ----------

AppleSearch 1.0 as shipped does not run on the Power Macintosh. A patch is available that will update AppleSearch to 1.0.1. The only purpose of this patch is to add Power Macintosh compatibility.

This patch has been made available through AppleLink, on the Internet on the ftp.apple.com ftp server, the sumex-aim and University of Michigan software servers, and through the Apple Order Center for a shipping and handling fee.

The Tech Info Library article titled "Locating Vendor Information" can help you search for Apple Order Center's phone number.

Please note that users will likely see a performance reduction of up to 30% running AppleSearch servers on a Power Macintosh. This will be resolved when a native code version of AppleSearch is made available.

Article Change History:
24 May 1996 - Updated for technical accuracy.

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Tech Info Library Article Number:15696

Tech Info Library

LW Select 360 & Pro 810: Controlling Print Destination (6/94)

Revised: 6/24/94
Security: Everyone

LW Select 360 & Pro 810: Controlling Print Destination (6/94)

==========

Article Created: 24 June 1994

TOPIC --

I am using a LaserWriter Select 360 with the fax option card and using the application 4th Dimension. As a programmer with 4D, I can select whether or not I want the printer dialogs to appear when the print command has been issued.

I re-programmed our application to display the printer dialogs for the specific purpose of faxing or printing items. Even with the printer dialogs displayed, I still encountered a problem of whether or not the item got printed or faxed. I simply could not control it.

DISCUSSION ---

In our investigations into issues simular to this, we have found that some applications do not make the required calls to certain Print Manager routines when they bypass the Print dialog.

We found this to be the case with programs such as Applelink and its ability to print files downloaded during its "Repeating connection" feature. When using that feature a print dialog is not displayed, however, regardless of the destination selected in the previous print job (i.e. Print, File, or Fax), the downloaded files were being faxed. We took a look at this problem and determined that the application was not making the Print Manager call to PrintDefault which provides the default values for the printing record. PrintDefault MUST be called if the Page Setup or Print dialogs are not displayed.

With regard to 4D, we assume that it is also not making the necessary call to PrintDefault.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15697

Tech Info Library

Palatino Fonts: Spacing Different on 7.1 When Upgraded (6/94)

Revised: 6/24/94
Security: Everyone

Palatino Fonts: Spacing Different on 7.1 When Upgraded (6/94)

==========

Article Created: 24 Jun 1994

TOPIC -----

I just upgraded from System 7.0.1 to System 7.1. My Microsoft Word 5 documents that use Palatino TrueType fonts no longer have correct spacing either on the screen, or when printed on a Postscript printer. For government regulation reasons, our documents require exactly the same spacing as when printed with System 7.0.1.

DISCUSSION -----

Since there were no Palatino TrueType fonts included with System 7.0.1, documents do not generate the same display and print images with System 7.0.1 as they do with System 7.1. System 7.0.1 shipped with bit map versions of Palatino (Palatino 10, 12, 14, 18, 24), whereas System 7.1 shipped with those, in addition to TrueType Palatino, TrueType Palatino Bold, Bold/Italic and Italic.

Therefore, to assure that the documents print exactly as they had with System 7.0.1, you must remove only the Palatino TrueType fonts from the System 7.1 Palatino suitcase found in the Fonts folder.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15698

Tech Info Library

Macintosh: PlainTalk Audio Port Microphone Support (8/95)

Revised: 8/30/95
Security: Everyone

Macintosh: PlainTalk Audio Port Microphone Support (8/95)

==========

Article Created: 24 June 1994
Article Reviewed/Updated: 30 August 1995

TOPIC ----------

Can I plug in a standard line level 3.5mm connector microphone into my Macintosh AV or Power Macintosh? I noticed that the PlainTalk microphone connector is slightly longer and have not been able to find a comparable third party microphone.

DISCUSSION ----------

Standard 3.5mm connector microphones which have a line level output will work on any Macintosh computer which utilizes the PlainTalk type microphone. The PlainTalk microphone requires +5Vdc power to function, thus the extra length on the connector. The original round Omni-Directional Apple Microphone will not work with PlainTalk equipped computers however.

The microphone port on all Macintosh Computers that use the PlainTalk microphone (such as the Macintosh AV computers, Power Macintosh computers, Macintosh Quadra 605, Macintosh 630 family, and Macintosh LC 575) is a standard stereo 3.5mm stereo plug. The Plaintalk microphone has an extra 1/4 inch on the tip to get +5 volt power from the logic board. It is also a mono plug, so the rubber rings on it do not match a stereo plug. The microphone plug has 2 separators. The one near the end is used to isolate the power at the tip. This can be confusing to those who think that our port is longer and has non-standard spacing for the left and right channels.

To connect an RCA equipped line level device such as a VCR or home audio equipment to your Macintosh, a standard RCA to 3.5mm stereo adapter cable can be used. An example of this is a 6 foot stereo mini to RCA cable available from most electronic suppliers.

The PlainTalk sound input mini-jack is a standard 3.5 mm in diameter. Using microphones (that supply a line level signal) or adapters with 1/8 inch plugs may work, but they are not recommended. The 1/8 inch plugs have a diameter

.014inches smaller than the 3.5 mm plugs. When a 1/8-in. plug is used, it is prone to cutting out and having excessive noise on the audio line.

Be aware that non-Apple microphones must supply the line level voltage in order to work properly when connected to the PlainTalk audio port.

Article Change History:
30 Aug 1995 - Changed microphone port measurement to 3.5mm.
16 Feb 1995 - Noted that old Apple microphone will not work with PlainTalk.
28 Jun 1994 - Added more detail to explanation. Changed title to include date.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15699

..TIL15700-ABS_Tech_Note-AShare00_About_AppleShare_Tech_Notes_6-94_(TA31992).pdf

Tech Info Library

ABS Tech Note: AShare00 About AppleShare Tech Notes (6/94)

Revised: 6/24/94
Security: Everyone

ABS Tech Note: AShare00 About AppleShare Tech Notes (6/94)

==========

Article Created: 23 June 1994

TOPIC ----------

This document accompanies each release of Apple Business Systems Technical Notes.

DISCUSSION ----------

We want Technical Notes to be distributed as widely as possible, so they are sent to all Partners and Associates at no charge; they are also posted on AppleLink in the Developer Services Bulletin Board.

We place no restriction on copying Technical Notes, with the exception that you cannot resell them, so read, enjoy and share. We hope Apple Business Systems Technical Notes will provide you with lots of valuable information.

Technical notes are a 'living' complement to product documentation, be it Inside Macintosh or other documentation. This means that they are updated on a regular basis, so as to be accurate and up to date. New Notes are added as required.

This technical note is an index of all technical notes related to the AppleShare and related products. It also documents all changes to the technical notes since the previous release.

Note: We are also including for your convenience technical documentation for converting a Novell DataClub file environment to an AppleShare Server. These documents were not written by Apple or tested for accuracy, but are included because we feel you might find them useful.

Index

Technical Note	Subject	Last Revision
AShare00	About AppleShare Tech Notes	Mar, 1994

Changes since last release:

New: Ashare00, Third Party/Dataclub to AppleShare Conversion

Support Information Services

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Tech Info Library Article Number:15700

Tech Info Library

Novell-Apple Tech Note: From DataClub To AppleShare (6/94)

Revised: 6/24/94
Security: Everyone

Novell-Apple Tech Note: From DataClub To AppleShare (6/94)

==========

Article Created: 23 June 1994

TOPIC -----

This document was not written by Apple or tested for accuracy, but it's included because we feel you might find it useful for converting a Novell DataClub file sharing environment to an AppleShare server.

DISCUSSION -----

This document describes some methods for converting a Novell DataClub file sharing environment into an AppleShare server. It also presents some instructions for removing the DataClub software from a Macintosh, after the data, users, and security information have been successfully converted to the new file-sharing environment.

Backup and Restoration Methods

We suggest three methods for converting data stored on a DataClub file server volume into an AppleShare volume. Each method has its own benefits, but all have the same drawback: none of these methods preserves the security information established by the DataClub software. Therefore, we strongly recommend that you use the DataClub Admin utility to obtain a thorough summary of all information about users, groups, and the security of shared files and folders before destroying any DataClub volume(s). You must then explicitly recreate all the user names and security assignments for files and folders that you previously established using DataClub on the new AppleShare server; this is essential in order to minimize difficulties for end users during and after the conversion process.

1) You can back up the DataClub volume, whether it is a dedicated server volume or a distributed or "virtual" volume, by using a number of tape drive utilities. Retrospect, from Dantz Software, is one example of a DataClub-compatible tape back-up system.

   When using a tape back-up system, be particularly aware of any

restrictions on how you can restore the data to a different volume. Each tape back-up vendor's solution may incorporate differing rules concerning existing volume names, new volume names, or incremental restorations. So be sure to verify that you can successfully restore all the data to the new volume before destroying the old DataClub volume.

2) You can copy the data on a DataClub volume directly to the new AppleShare volume. To do this, mount both the DataClub and the AppleShare volumes on the desktop of the client Macintosh. Then, simply drag-copy the data—and directory structure, if you want—from one volume to the other.

   This method may be slower than others, but it allows you to verify the data's integrity on the new volume at arbitrary times during the process. If a problem occurs, you can halt the process and troubleshoot the problem at that time.

3) You can move the data on the DataClub volume to some other intermediate storage, such as a workstation user's local hard disk or some removable storage such as a writeable magneto-optical drive. You can even copy all the DataClub data to 1.44 MB floppy disks. After moving the data to intermediate storage, you can easily copy the data to the new AppleShare volume.

   This method is probably the most labor-intensive of the three. However, if you do not have a tape back-up utility and want to install the AppleShare server software on the same machine as the current DataClub DSM (Dedicated Server Module) software, this method may offer the most desirable solution. In this case you can verify the data's integrity on the intermediate media at arbitrary times during the copying process. Then, during the software conversion from DataClub to AppleShare, you can retain the media in a safe place. Finally, after you install the new AppleShare file server, you can recopy the data to the new volume.

Removing DataClub from the Macintosh

It is important that you not remove the DataClub software or the hidden volume before successfully restoring the data on a new volume where you can verify the data's integrity.

We suggest two methods for removing the DataClub software from a Macintosh volume. Both of them require a resource editor program like ResEdit from Apple Computer or Norton Utilities from Symantec.

1) Use your favorite resource editor on each Macintosh where DataClub is installed. First, turn DataClub off in its Control Panel and restart the Macintosh. Then use the resource editor to find the hidden DataClub folder. (The folder name may include five non-printing boxes.) After you find the folder, use the resource editor to make the folder visible so that you or the workstation user can move the folder to the Trash, as with any other folder on the local volume. The time required to empty the Trash depends on how much data the folder contains. This method may be the faster of the two, but it requires a person familiar with

resource editors to perform the operation on every Macintosh where DataClub is installed.

2) If DataClub is installed on every Macintosh, and each Macintosh has made its hard disk available for use by DataClub, you can remove the DataClub software from each Macintosh in a step-wise fashion. We recommend that you remove DataClub software from Macintosh workstations in order, based on the amount of available disk space on each Macintosh:

   (1) first, remove DataClub from the Macintosh with the least available disk space.

   (2) proceed to the Macintosh with the second least available disk space, and continue in this order;

   (3) finally, remove DataClub from the Macintosh with the most available disk space.

   Starting with the first Macintosh, open its DataClub Control Panel and uncheck the checked disks in "Use these disks" list. This will cause DataClub to move any shared data residing on the first Macintosh to other Macintosh clients on the DataClub network. After DataClub has moved the data, turn off DataClub by clicking the OFF radio button in the DataClub Control Panel. If at any point during the automatic data migration a problem arises, use a resource editor (as described in the first method, above) to remove DataClub from the volume. After restarting the Macintosh and verifying that DataClub does not load, move the DataClub Control Panel into the Trash. If any DataClub applications like the Admin utility reside on the Macintosh, throw them away also because they are not useful without the DataClub software.

   Repeat the steps in this method on every other Macintosh client until all the data (files and folders) reside on the last Macintosh on the network. On this workstation, turn DataClub off in the Control Panel, and restart the machine. Use a resource editor to find the hidden DataClub folder on the root of the volume and make it visible. After quitting the resource editor, simply move the entire DataClub folder into the Trash. The time required to empty the Trash depends on how many files are in the folder.

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Tech Info Library Article Number:15701

Tech Info Library

PowerBook 500 Series: Battery Not Immediately Recognized (2/95)

Revised: 2/17/95
Security: Everyone

PowerBook 500 Series: Battery Not Immediately Recognized (2/95)

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Article Created: 27 June 1994
Article Reviewed/Updated: 17 February 1995

TOPIC ----------

Upon inserting a fresh battery into my PowerBook 500 series computer, the battery is not immediately recognized. Is this normal?

DISCUSSION ----------

When a new battery is inserted into a PowerBook 500 series computer, it could take up to 30 minutes (or longer in rare cases) for the battery to be recognized and start to charge. The delay is a result of communication that occurs between the battery and PowerBook. The power circuitry is set up to poll the battery at specified intervals, rather than to communicate immediately after a battery has been inserted.

This problem has been resolved with the Intelligent Battery Recognition software. This software consists of a system extension and an application which updates the software that is contained on a chip inside the PowerBook 500 series battery. A separate article in the Tech Info Library documents this software, its title is "PB 500 Series: Intelligent Battery Recondition Software (2/95)"

These articles can help you locate the software mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
17 Feb 1995 - Updated resolution to problem.

04 Nov 1994 - Added information about AC Power Adapter.
24 Aug 1994 - New workaround information added.

Support Information Services

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Tech Info Library Article Number:15704

Tech Info Library

LaserWriter PostScript Fax Card: Q&A (5/94)

Revised: 6/27/94
Security: Everyone

LaserWriter PostScript Fax Card: Q&A (5/94)

==========

Article Created: 27 June 1994

TOPIC ----------

This article contains questions and answers about the PostScript Fax Card for the LaserWriter Select 360 and LaserWriter Pro 810.

DISCUSSION ----------

Q: Can I receive a fax to my hard drive for later printing and/or re-sending?
A: You can delay a fax transmissions up to 24 hours. For example, a fax transmission could be delayed until the evening hours to reduce the cost of transmission. However, you cannot delay when you print a fax job that was received. After the fax is received by the printer and printed, it is flushed from memory and cannot be retransmitted.

Q: What happens to incoming faxes if I am in the middle of a large printing job?
A: If the printer is busy printing a document, the printer will save away incoming faxes in memory, and then print them when it's done with the current job.

Q: What happens if the printer runs out of paper when the printer is left unattended? Does it place the incoming fax into a memory buffer?
A: The default job timeout is set to zero (no timeout); therefore, if the printer runs out of paper, the printer buffers the queued fax print jobs until you add paper. The printer continues to accept incoming faxes until its buffer is full, at which point it no longer accept calls.

Q: How big is the buffer?
A: The amount of RAM allocated for fax operations is product dependent, and is set by the PostScript parameter MaxFaxBuffer. MaxFaxBuffer sets an upper bound on the number of bytes of printer RAM which may be used for incoming and outgoing fax data. For the LaserWriter Select 360, the value is 1,572,864 bytes, whereas the LaserWriter Pro 810 is 2,600,000

bytes. This amount of RAM is constant across printer models, and doesn't increase if you add more RAM to the printer. The fax buffer is not dedicated to solely fax operations, but can be used by other jobs. However, when large fax jobs are processed, the amount of RAM that may be used to process those fax jobs is the MaxFaxBuffer amount. In our tests we received and buffered more than 20 pages of PostScript fax data on a LaserWriter Select 360f with no difficulties. We have not tested the upper limit, because "your mileage will vary" because of certain variables: is it the fax job a PostScript fax file, are fonts downloaded, faxing in Group 3 standard mode (200 dpi by 100 dpi), G3 fine mode (200 dpi by 200 dpi)?

Faxes sent in the PostScript file format are generally more compact than traditional faxes, reducing the transmission time and cost. If the file contains complex graphics or images then the size of the PostScript file can exceed the size of raster fax. File size is reduced because PostScript Fax uses the built-in LZW compression and decompression capability of PostScript Level 2.

The memory required to handle fonts only becomes an issue when the recipient's fax device is another PostScript Fax printer, and a PostScript file fax is being sent. In this case, if the document being sent requires fonts beyond the standard 35 fonts, the PostScript Fax printer automatically sends the additional fonts along with the PostScript file to the recipient's fax printer. PostScript fonts are generally about 35 K in size and require approximately 35 seconds of additional transmission time for each font transmitted.

It is possible the sender or receiver may have insufficient storage to hold all of a transmitted fax data. Raster faxes can be transmitted in multiple calls.

The transmission of a PostScript language file to a single destination is always made in a single call. This decision to break up a PostScript fax file transmission takes place only after the entire file is in storage of the transmitting printer. If the file will not all fit in storage, the job fails.

If the receiving fax printer runs out of memory during the processing and printing of an incoming fax, it terminates the call. The sending fax printer then terminates the transmission attempt and print a confirmation page noting the transmission failure.

Support Information Services

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Tech Info Library Article Number:15706

Tech Info Library

MAE: Installing Quark XPress 3.3 (6/94)

Revised: 6/27/94
Security: Everyone

MAE: Installing Quark XPress 3.3 (6/94)

==========

Article Created: 24 June 1994

TOPIC ----------

I'm trying to load Quark XPress version 3.3 in the Macintosh Application Environment (MAE), and I'm having a problems. I get an error message telling me there is more than one process running and I need to stop them before I continue installing Quark. The only thing running is the finder.

The exact error message is: "Installation of QuarkXPress cannot take place while other applications are running. Click O.K....."

How do I install Quark XPress?

DISCUSSION ----------

You are probably running into the problem Quark has when the MAE Helper application is running. You can work around this problem by disabling MAE Helper using the following procedure (Note that while MAE Helper is disabled, X<->Mac cut & paste won't work):

1) Move MAE Helper out of the Extensions Folder

2) Restart MAE

3) Install Quark XPress

4) Move MAE Helper back into the Extensions Folder. Note that you have to put it directly into Extensions by hand. Dragging the icon over the System Folder won't put it in the right place because it's actually an application rather than an "INIT".

5) Restart MAE and run Quark XPress

Support Information Services

..TIL15707-MAE-Installing_Quark_XPress_3-3_6-94_(TA31998).pdf

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Tech Info Library Article Number:15707

Tech Info Library

MAE V1.0: Patch Release a (5/96)

Revised: 5/13/96
Security: Everyone

MAE V1.0: Patch Release "a" (5/96)

==========

Article Created: 24 June 1994
Article Reviewed/Updated: 13 May 1996

TOPIC ----------

This article is the announcement of patch release "a" for Macintosh Application Environment (MAE) V1.0.

DISCUSSION ----------

As a result of your input and questions, we have created and are distributing patch release "a" for MAE V1.0. This patch release will alleviate several problems that you have identified in your communications to us.

The patch can be obtained over the internet from the /pub/mae/patches directory on the server ftp.support.apple.com. There is a read-me file in that location with complete details on what is contained in the patch release as well as how to download and install the patch. In addition, please be aware that the patch is covered by a license agreement. You MUST read and agree to the license agreement before downloading and/or using the patch software. Note: This patch cannot be used with the MAE V1.0 trial.

Our intention is to release patches on an as-needed basis. Each patch release will contain the previous patches as well as the new ones. If you have any questions and are a licensed MAE user call 1-800-SOS-APPL. Otherwise, send mail to mae-users@medraut.apple.com.

Article Change History:
13 May 1996 - Changed title.

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Tech Info Library Article Number:15708

Tech Info Library

MAE Trial: Install Check Sum Error (6/94)

Revised: 6/27/94
Security: Everyone

MAE Trial: Install Check Sum Error (6/94)

==========

Article Created: 24 June 1994

TOPIC ----------

I ordered the trial CD, and have tried (unsuccessfully) to install it on my SPARC 2 (16 MB RAM) running Solaris 2.3. When I install, it successfully writes files to my hard drive, but during the verification phase, I'm given an error: The verification of the [insert package name here] Package cannot continue. The Installer detected a check sum error in the file shown below. [insert file name here]. What does this error mean, and is there a workaround?

DISCUSSION ----------

This error might occur if you've changed your "sum" file. The installer runs a check sum using /bin/sum -r. If "sum" returns something the Installer doesn't expect, then you would get the error you're seeing.

Support Information Services

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Tech Info Library Article Number:15709

Tech Info Library

MAE Trial: Installer Can't Find Installation Packages (6/94)

Revised: 6/27/94
Security: Everyone

MAE Trial: Installer Can't Find Installation Packages (6/94)

==========

Article Created: 24 June 1994

TOPIC ----------

I grabbed the trial version of MAE from your ftp server, and am having problems trying to install the package. I have no problem uncompressing and untarring the file, but when I try to run the INSTALL.SH I get the following error message: The Installer cannot find the installation packages.

I do get an information screen displayed before I get this message. Is there an obvious workaround for this? When I enter the following command:

```
zcat MAE_SOLARIS.tar.Z|sum
```

I get a checksum of 4704 42700, in case it is a transfer problem.

DISCUSSION ----------

This error might occur if your current directory is not the same as the one containing INSTALL.SH. In addition, the variable INSTALL_SRC should not be set (the Installer uses this variable to select a non-standard installer script -- for testing purposes).

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15710

Tech Info Library

MAE: CAP and PacerShare Problem (11/94)

Revised: 10/11/94
Security: Everyone

MAE: CAP and PacerShare Problem (11/94)

==========

Article Created: 24 June 1994
Article Reviewed/Updated: 11 October 1994

TOPIC ----------

I'm testing the Macintosh Application Environment (MAE) at my site. I have a file server set up on a UNIX host using CAP. CAP (Columbia AppleTalk Package) for UNIX is a library of routines which enable a UNIX host to communicate using AppleTalk Protocols. It is public-domain software.

The file server is mounted on the UNIX machine via NFS, and when using Liken, the Macintosh applications stored on the file server can be launched by double-clicking on their Icons.

However, through MAE, the files appear to be UNIX binary files and can not double-clicked. I don't know what file format the files are stored in on the file server, but within MAE, they appear as two separate folders (folders, not files) for each application.

Does MAE support CAP, or as an alternative does MAE support PacerShare?

DISCUSSION ----------

CAP is not supported under MAE. The problem is CAP uses an unacceptable means to store Macintosh files. MAE understands only AppleSingle and AppleDouble file formats which CAP doesn't use.

PacerShare from Pacer Software is a product similar to CAP, in allowing a UNIX host to act as an AppleShare server. Apparently, it doesn't use AppleSingle or AppleDouble file formats either, and cannot be used to transfer files to MAE.

We have reported this for tracking and follow up if there is any.

Article Change History:
11 Oct 1994 - Added PacerShare to article.

..TIL15711-MAE-CAP_and_PacerShare_Problem_11-94_(TA32003).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15711

Tech Info Library

LaserWriter IIg: PostScript Code For Changing Zones (6/94)

Revised: 6/28/94
Security: Everyone

LaserWriter IIg: PostScript Code For Changing Zones (6/94)

==========

Article Created: 28 June 1994

TOPIC --

I am aware of the problem with the LaserWriter IIg and zone problem that was resolved by a ROM upgrade. Is there a way to fix this problem using PostScript code instead of replacing the ROM?

DISCUSSION --

The following PostScript code changes the zone the LaserWriter IIg is located in.

For 1.0 ROMs:

```
currentfile statusdict begin product (LaserWriter IIg) eq
version (2010.113) eq and end not
{save exch 291 string readstring pop pop restore} if
/ASCIIHexDecode filter /SystemPatch statusdict /emulate get exec
85f6ba98b8147bdb3c41fc154e390200521caba043febd65f48e008d42590001cd0f62e4c9
2b841c6c1c85660f30002ba262234d72494f203c119951000000376b481858e01bff2db172
f2ecfe000446e2f3ddca7b1fb2d27814e1c22e000598f64cae7bb9897afb760a5d81ac0106>
serverdict begin 0 exitserver
(%EtherTalk%) <</EtherTalkZone (YourZoneGoesHere)>> setdevparams
```

For 2.0 ROMs:

```
serverdict begin 0 exitserver
(%EtherTalk%) <</EtherTalkZone (YourZoneGoesHere)>> setdevparams
```

An alternative to sending the printer one of the above PostScript programs is to use the LaserWriter Utility, version 7.3 or later.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15712

Tech Info Library

Macintosh Color Classic: Ohm Rating For Internal Speaker (6/94)

Revised: 6/28/94
Security: Everyone

Macintosh Color Classic: Ohm Rating For Internal Speaker (6/94)

==========

Article Created: 28 June 1994

TOPIC ----------

What is the resistance rating in ohms for the internal speaker of the Macintosh Color Classic?

DISCUSSION ----------

The Macintosh Color Classic uses a rectangular 16 ohm speaker enclosed in a plastic housing.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15713

Tech Info Library

PlainTalk Microphone: Which Macintosh Models Support It (6/95)

Revised: 6/5/95
Security: Everyone

PlainTalk Microphone: Which Macintosh Models Support It (6/95)

==========

Article Created: 28 June 1994
Article Reviewed/Updated: 5 June 1995

TOPIC ----------

This article describes which Macintosh computers support the PlainTalk microphone.

DISCUSSION ----------

All new desktop Macintosh computers designed since the fall of 1993 support the PlainTalk microphone.

Macintosh computers that use the PlainTalk microphone include:

- Macintosh Color Classic
- Macintosh LC and Performa 500 series computers
- Quadra 605/LC 475/Performa 475/476
- Quadra 660AV
- Quadra 840AV
- All Power Macintosh computers
- Macintosh 630 family computers
- Power Performa 6100 series computers

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

The following computers are in the Macintosh Performa 6100 series: Performa 6110, Performa 6112, Performa 6115, Performa 6117, and Performa 6118.

All other Macintosh computers that support sound input utilize the standard Apple Microphone.

Article Change History:
05 Jun 1995 - Added Macintosh Color Classic to list.

10 Feb 1995 - Added technical updates; added 6100 series note.
26 Oct 1994 - Added Macintosh LC 500 series, description of 630 family.

Support Information Services

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Tech Info Library Article Number:15714

Tech Info Library

PowerBook 1xx Series: Alternative Battery Sources (4/95)

Revised: 4/25/95
Security: Everyone

PowerBook 1xx Series: Alternative Battery Sources (4/95)

==========

Article Created: 28 June 1994
Article Reviewed/Updated: 25 April 1995

TOPIC ----------

Are there any alternative sources for PowerBook batteries?

DISCUSSION ----------

The following third party companies have PowerBook 100 and other 100 Series PowerBook batteries.

1. Battery Technology, Inc.
   5700 Bandini Blvd.
   Commerce, CA 90040

   213-728-7874
   800-982-8284
   213-728-7996 (fax)

2. Dynamic Engineering

   408-336-8891
   408-336-3840 (fax)

3. Lind Electronic Design Inc.
   6414 Cambridge St.
   Minneapolis, MN 55426

   800-659-5956
   612-927-7740 (fax)

4. VST ThinPack by
   VST Power Systems, Inc.
   1620 Sudbury Road, Suite 3

Concord, MA 01742

508-287-4600
508-287-4068 (fax)

Article Change History:
25 Apr 1995 - Updated list of vendors.

Support Information Services

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Tech Info Library Article Number:15715

Tech Info Library

AWS 95 and Launching Native X11 (6/94)

Revised: 6/28/94
Security: Everyone

AWS 95 and Launching Native X11 (6/94)

==========

Article Created: 27 June 1994

TOPIC ----------

I have a question about XWindows running on an Apple Workgroup Server (AWS) 95.
I have tried launching X11, but I encountered the following errors:

```
applei2u.root # X11
can't ioctl(): Invalid argument
You don't have an X11 startup script (//.x11start).
Using default X11 startup script (/usr/lib/X11/.x11start).

Proceeding with X startup ...
can't ioctl(): Invalid argument
You don't have an X11 startup script (//.x11start).
Using default X11 startup script (/usr/lib/X11/.x11start).

Fatal server bug!
ioctl I_STR VIDEO_MAP_SLOT failed
XIO:  fatal IO error 32 (Broken pipe) on X server "P"
after 0 requests (0 known processed) with 0 events remaining.
The connection was probably broken by a server shutdown or KillClient.
Failed to ioctl I_STR VIDEO_MAC.
applei2u.root #
applei2u.root #
applei2u.root #
applei2u.root #
applei2u.root # /usr/lib/X11/.x11start

xstdcmap: cannot open display "applei2u:0.0".
xset:  unable to open display "applei2u:0.0"
twm:  unable to open display "applei2u:0.0"
applei2u.root # Error: Can't Open display
Error: Can't Open display
Error: Can't Open display
Error: Can't Open display
```

Error: Can't Open display

applei2u.root #

How can I launch X11 under A/UX?

DISCUSSION ----------

You can launch X11 from either of the following two methods:

- An X11 session in "Change Session Type.." from the Options menu in the A/UX Login Dialog window.

- From a Console Emulator session, then type the command: X11

Launching X11 from within an A/UX Finder (32bit or 24bit) CommandShell is unsupported.

Since the release of A/UX 2.0 and later, you can't launch a native X11 server in A/UX within the A/UX Finder environment. You can, however, launch MacX from within the A/UX Finder environment.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15716

Tech Info Library

Workgroup Server 8150 & 9150: SCSI Information (10/94)

Revised: 10/11/94
Security: Everyone

Workgroup Server 8150 & 9150: SCSI Information (10/94)

==========

Article Created: 27 June 1994
Article Reviewed/Updated: 11 October 1994

TOPIC ----------

We need more detailed information on the SCSI architecture of the Workgroup Server (WS) 8150 and 9150. There is confusion regarding the internal bus vs. the external bus, and the features SCSI Manager 4.3 provides on the servers.

DISCUSSION ----------

The SCSI bus implementations in the WS 8150 (the same logic board as the Power Macintosh 8100) and the WS 9150 are basically identical.

These systems have two internal SCSI bus sub-systems with an external SCSI bus that is a physical extension of one of the internal SCSI bus sub-systems.

The "internal only" SCSI bus is implemented using an 53CF96 SCSI controller.

The "internal/external" SCSI bus is based on the 53C94 controller and is built-in to an ASIC on the logic board.

Both SCSI controllers, as implemented, support at a maximum transfer rate of 5 MB/second. In practice, we typically see transfer rates in the 3.0 MB/second to 4.0 MB/second range for both SCSI sub-systems. These numbers will vary depending on drive performance, SCSI bus dynamics (for example cable length and termination), and how software reads or writes to the hard drive. A standard SCSI drive is all that is needed. A SCSI-2 or SCSI FAST drive can only be utilized as a standard SCSI drive.

Hard drives with drivers that do not support SCSI Manager 4.3 may operate at speeds similar to the same drive with a driver that does support SCSI Manager 4.3. However, it is just as likely there will be a performance degradation. The only time there should be a compatibility problem is when there are drives on both SCSI buses with the same SCSI ID. If either drive does not support SCSI Manager 4.3, one of the drives will not show up on the desktop.

Please note that we strongly recommend that any drive used on these systems have a driver that supports SCSI Manager 4.3.

Article Change History:
11 Oct 1994 - Changed visibility to Everyone.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15719

Tech Info Library

PowerBook Duo: Loose Battery Symptoms & Cures (4/95)

Revised: 6/5/96
Security: Everyone

PowerBook Duo: Loose Battery Symptoms & Cures (4/95)

==========

Article Created: 29 June 1994
Article Reviewed/Updated: 03 April 1995

TOPIC ----------

This article describes some common battery related problems with the PowerBook Duo and how to alleviate them.

DISCUSSION ----------

Most of the problems you will experience with the Duo’s batteries will result in the Duo:

- shutting down intermittently when running on the battery alone;

- displaying a warning message saying the battery isn’t charging;

or

- not starting from the battery alone but running fine using the power adapter.

Correctly Seating the Battery

In most cases, one or more of these symptoms is caused by a loose Duo battery. To correctly seat the battery:

1)
Choose Sleep or Shut Down from the Special menu.

2)
Close the display.

3)

Open the battery door by pressing the small button and sliding the door aside. The battery is physically attached to the door.

4)
Hold the battery so you can read the printing on the battery right side up.

5)
Pull the battery door to the left until you hear a DISTINCT click and it locks into place. It may take some effort the first few times, but it will loosen up in time. This aligns the door correctly so that when you insert the battery it will seat properly.

6)
Tilt the Duo up onto its back edge so the battery compartment is on top.

7)
Slide the battery most of the way in into the compartment, then drop it the last half-inch.

8)
Plug in the power adapter in case the battery is not fully charged.

If you have a Type 1 battery (model # M7782) and the battery door won't CLICK as indicated in step 5 or feels very loose, the battery may come loose frequently. The battery door can be replaced by ordering part number 616-0004 from your local Apple authorized service provider.

Should the problem persist, it is possible that the battery contacts are mis-aligned. They can be realigned at an Apple authorized service center who has access to the battery contact alignment tool.

Article Change History:
03 Apr 1995 - Added note about battery alignment tool.
01 Dec 1994 - Added replacement info for battery door.
28 Sep 1994 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15721

A/UX 3.1 Update CD and Macintosh Partition Problem (6/94)

Revised: 6/29/94
Security: Everyone

A/UX 3.1 Update CD and Macintosh Partition Problem (6/94)

==========

Article Created: 29 June 1994

TOPIC ----------

I tried to update my A/UX computer to version 3.1, and I get a message telling me the installation was not successful, and that the original system was restored. Why is this happening?

DISCUSSION ----------

If your Macintosh Partition has insufficient space to have its software updated, the installer may inform you that installation was not successful and your original system software has been restored, but will not tell you why. You may have added files to your Macintosh Partition which is taking up the space needed.

If you have this problem with your Macintosh Partition when using the A/UX 3.1 update CD, try one of the following:

- Remove unnecessary files from your Macintosh Partition and try updating again.

- The default Macintosh Partition is 4 MB to maximize the space available to A/UX. Other partition options are available as custom selections within HD SC Setup. If you need to use additional software in your Macintosh Partition beyond what is necessary to boot and maintain A/UX, the default 4 MB Macintosh Partition size may be insufficient for your needs. If this is so, you may need to re-partition the drive using either one of the pre-set custom partition maps, or one you create so that your Macintosh Partition will be large enough to accommodate your needs.

  IMPORTANT: Using HD SC Setup to change the size of ANY partition will require that you re-initialize your entire hard drive. Because of this, you MUST re-install all of A/UX and your server's applications as well, so it is VITAL that you backup

your data, and restore it after re-installation is complete.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15722

Tech Info Library

Remote Access MultiPort Server:Quadra 840av Needs 2.0.1 (5/96)

Revised: 5/24/96
Security: Everyone

Remote Access MultiPort Server:Quadra 840av Needs 2.0.1 (5/96)

==========

Article Created: 29 Jun 1994
Article Reviewed/Updated: 24 May 1996

TOPIC ----------

I have installed the Apple Remote Access MultiPort Server on my Macintosh Quadra 840av, and am getting Type 1 errors and system crashes.

I am running System 7.1 with no voice recognition software installed, System Enabler 088 v1.1 installed.

DISCUSSION ----------

This problem should be resolved by upgrading to ARA MultiPort Server 2.0.1. If an upgrade is not possible or practical, then installing Apple Shared Library Manager 1.1.1 will reduce the occurrence of this problem. The preferred solution is to upgrade to ARA MS 2.0.1.

Also note, ARA MultiPort Server 2.0.1 officially supports only one Serial NuBus Card in a Macintosh Quadra 840av.

UPDATES

Owners of the Apple Remote Access MultiPort Server 2.0 may request an order form to update to version 2.0.1 by calling the Apple Order Center.

The Tech Info Library article titled "Locating Vendor Information" can help you search for Apple Order Center's phone number.

Article Change History:
24 May 1996 - Updated for technical accuracy.

Copyright 1994-96, Apple Computer, Inc

Tech Info Library Article Number:15724

NuBus '90: Macintosh Computers That Support It (6/94)

Revised: 6/30/94
Security: Everyone

NuBus '90: Macintosh Computers That Support It (6/94)

==========

Article Created: 30 June 1994

TOPIC -----

This article describes the 1990 proposal revision to the IEEE NuBus standard (IEEE Std. R1196-R-1990) commonly referred to as NuBus '90, what Macintosh computers support it, and facts surrounding the use of older cards in NuBus '90 equipped systems.

DISCUSSION -----

The NuBus implementation in the Quadra family and the Power Macintosh family is based on the NuBus '90 proposal. This proposal includes the following new signals:

• Support for block transfers at double the standard rate. The Macintosh Quadra family of computers allow double rate block transfers between NuBus cards but do not support double rate transfers to or from the main memory.

• A serial bus on the formerly reserved pins A2 and C2. The serial bus signals are bused and terminated, but the main circuit board does not drive them.

• Support for a cache-coherency protocol. Pins on the NuBus connector are assigned to those signals, but the Macintosh Quadra system doesn't support them.

In addition, the NuBus slots in the Quadra 900/950, and Power Macintosh computers also provide the following feature:

• Low current at +5V is available on the new STDBYPWR pin when main power is off and the AC cord is plugged in.

The eight lines that were previously connected to the -5.2V supply have been replaced by the above new features. Many older NuBus cards connect those lines together, the presence of such a card in Macintosh computers implementing the features of NuBus '90 will disable the new features. All other features of both

the old and new cards will operate normally.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15725

Tech Info Library

Apple Restore: Disk or Disk Drive error (6/94)

Revised: 6/30/94
Security: Everyone

Apple Restore: Disk or Disk Drive error (6/94)

==========

Article Created: 30 Jun 1994

TOPIC -----

During the Apple Restore procedure, I am prompted with the message that certain files cannot be copied because of '... a disk or disk drive error ...'. What is wrong?

DISCUSSION -----

Apple Restore is operating exactly as designed, you can actually restore just fine.

You are getting this message because three files are LOCKED on the hard disk:
- At Ease Preferences
- Setups
- Users

During the Apple Restore procedure, the customer will be prompted that these files cannot be copied because of '... a disk or disk drive error ...'

If you click CONTINUE, the restoration procedure will continue normally. At the end, you will be told that some files were not copied. This is OK. Restart your Macintosh.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15727

Tech Info Library

PowerBook 500 Series Battery: No Deep Discharge (6/95)

Revised: 6/6/95
Security: Everyone

PowerBook 500 Series Battery: No Deep Discharge (6/95)

==========

Article Created: 30 June 1994
Article Reviewed/Updated: 6 June 1995

TOPIC ----------

Do the PowerBook 500 series batteries do a deep discharge before they recharge from AC? Is this type of battery susceptible to the "memory effect" from partial charges?

DISCUSSION ----------

The 500 series PowerBooks do not automatically perform a deep discharge of the batteries before recharging them, nor is a deep discharge recommended. To do a deep discharge, you would need to use an external device to drain the battery below recommended voltage levels.

The recommended procedure is to use the PowerBook on battery power until you see the battery level warning dialog box displayed, be sure to save any files that you are working on. Continue to use the PowerBook until the unit goes to sleep automatically, then connect the AC adapter and fully charge the batteries. It is recommended that this procedure be performed every 90 days.

The nickel-metal-hydride batteries (NiHy) can develop a "memory effect" but they are much less susceptible to it then other battery technologies are. Following the procedure above as well as the other battery care tips listed in your PowerBook users manual will prevent the batteries from developing any "memory effect".

You may also want to read the Tech Info Library article, "PowerBook Ni-Cad Batteries: Memory Effect".

Article Change History:
06 Jun 1995 - Reviewed for technical accuracy.

Support Information Services

..TIL15728-PowerBook_500_Series_Battery-No_Deep_Discharge_6-95_(TA32021).pdf

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15728

Tech Info Library

PowerBook: Differences Between 14x and 150 models (4/95)

Revised: 4/3/95
Security: Everyone

PowerBook: Differences Between 14x and 150 models (4/95)

==========

Article Created: 30 June 1994
Article Reviewed/Updated: 03 April 1995

TOPIC ----------

This article discusses the differences between the PowerBook 140/145/145B and the PowerBook 150.

DISCUSSION ----------

The PowerBook 150 differs from the 140/145/145B in a number of areas as follows:

Display

The PowerBook 150 uses a VGA 640 X 480 FSTN display measuring 9.5" diagonal capable of displaying up to 4 shades of grey.

External Ports

The PowerBook 150 has one serial port (modem or printer/LocalTalk), SCSI port, and a power connector on the back of the unit. There is no door covering the rear ports, care should be taken to avoid damaging the ports during use or transportation. With an optional modem installed, an RJ-11 jack will also be available.

Internal Hard Drive

The 150 uses an IDE (Integrated Drive Electronics) type hard drive rather than SCSI. A unique version of Apple HD Setup is supplied to properly initialize the drive. Replacement of the IDE drive with a SCSI drive is not supported by the logic board.

The IDE drive installed in the PowerBook 150 has numerous benefits for the system including a fast seek time: <17ms average, fast spin-up from standby, and light weight.

Memory

Utilizing a small adaptor, the PowerBook 150 uses 70ns memory similar to that used with the PowerBook Duo computers. Maximum memory capacity is 40MB.

Power On/Off

At the rear of the PowerBook 150 are two switches which affect the power on and power off sequencing of the computer. The small recessed switch (inside the plastic case) is a true On/Off switch. If the computer is in shutdown mode, upon pressing and releasing this switch, the PowerBook will initiate the boot-up process. A paper clip or other thin instrument is required to activate this switch.

As this is a true reset switch, it is possible that personal set up information could be lost when activated. Be sure to use it as a last resort only.

If the computer is on, upon releasing the switch, it will turn off.

The other switch is a Power ON switch only - which means the unit can be awakened either from sleep or shutdown by pressing it.

Article Change History:
03 Apr 1995 - Clarified info on PowerBook 150 Reset switch.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15730

Tech Info Library

PowerBook 150: Description (7/94)

Revised: 7/28/94
Security: Everyone

PowerBook 150: Description (7/94)

==========

Article Created: 30 June 1994

TOPIC ----------

This article describes the Macintosh PowerBook 150 notebook computer. Note that the PowerBook 150 is functionally equivalent to the PowerBook 145B.

DISCUSSION ----------

Overview

The Macintosh PowerBook 150 is the most affordable PowerBook computer. It's ergonomically designed with an integrated trackball and palm rest to work with easily on your lap. The display is infinitely adjustable for optimum viewing angle while the PowerBook itself has a two position tilt adjustment.

With the PowerBook 150's built-in floppy disk drive, Macintosh, MS-DOS, OS/2, and ProDOS diskettes can be formatted, read, and written to.

ClarisWorks and Apple Remote Access Client come pre-installed on the hard drive.

Power and Speed

• 33 MHz 68030 microprocessor.

Memory

• 4MB RAM, expandable to 40MB.

Display

• Backlit 9.5" Passive Matrix LCD, 640 by 480 pixels.

Expansion

- Two external ports (SCSI and printer/modem) to connect the PowerBook 150 directly into high-capacity hard disks, printers, modems, and AppleTalk networks. Internal expansion slots for modem and RAM.

System software

- System Software 7.1, with multitasking, File Sharing, Balloon Help, and TrueType fonts.

Networking

- Built-in AppleTalk networking provides networking capability that gives access to all the resources on an AppleTalk network.

Compatibility

- Ability to read, write, and format Macintosh, MS-DOS, OS/2, and ProDOS floppy disks.

What's in the box:

- PowerBook 150 computer
- Apple low power AC adapter
- Battery case
- Utilities diskette
- PowerBook 150 Getting Started, Macintosh Reference, Apple Remote Access Client, and ClarisWorks user manuals
- Apple Resource Guide
- Product registration card for PowerBook 150
- Product registration card for ClarisWorks

Configurations and Ordering Information:

PowerBook 150 4/120 configuration
Order No. M2794LL/A

PowerBook Duo 4MB Memory Expansion Kit
Order No. M4814LL/A*

PowerBook Duo 8MB Memory Expansion Kit
Order No. M4815LL/A*

* Dealer installation recommended.

PowerBook 150 Memory Adapter Kit**
Order No. M3179LL/A

** Required for installation of Memory Expansion Kits

PowerBook Rechargeable Battery
Order No. M5545LL/C

PowerBook AC Adapter

Order No. M4662LL/A

PowerBook Battery Recharger
Order No. M1027LL/A

Apple HDI-30 SCSI System Cable
Order No. M2538LL/A

Support Information Services

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Tech Info Library Article Number:15731

Tech Info Library

PowerBook 150 IDE Hard Drive: Description (7/94)

Revised: 7/18/94
Security: Everyone

PowerBook 150 IDE Hard Drive: Description (7/94)

==========

Article Created: 27 June 1994

TOPIC ----------

This article describes the IDE (Integrated Drive Electronics) hard drive installed in the PowerBook 150.

DISCUSSION ----------

The 120mb hard drive installed in the PowerBook 150 is unique from other drives previously used in Macintosh computers. Rather than being a SCSI drive, it is an IDE drive. The PowerBook 150 does still support connecting EXTERNAL SCSI devices however.

The drive is rated at <17ms average access time.

Due to the sensitive nature of IDE devices, removal and replacement of the drive for another is not recommended with the exception of service exchange by trained service personnel.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15732

Tech Info Library

PowerBook 150: Specifications (9/95)

Revised: 9/1/95
Security: Everyone

PowerBook 150: Specifications (9/95)

==========

Article Created: 30 June 1994
Article Reviewed/Updated: 1 September 1995

TOPIC ----------

This article gives the technical specifications for the PowerBook 150 notebook computer.

DISCUSSION ----------

Microprocessor

• Motorola 33MHz 68030

Memory

• 4 MB of low power, self-refresh DRAM.
• Expandable up to 40MB of memory*

*Note: The PowerBook 150 uses the same memory expansion cards as the PowerBook 200 series (Duo) computers.

Disk Drives

• One internal 120MB IDE hard disk
• One built-in 1.44MB drive that uses high-density floppy disks; it reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.

Video Display

• 9.5 inch diagonal
• Backlit Supertwist (FSTN) liquid crystal display
• 640 by 480 pixels
• 2 bit (4 shades of grey) capability

Batteries

- Nickel-cadmium battery provides two to four hours of use before recharge.
- EverWatch battery-saver technology
- Backup rechargeable lithium battery maintains RAM in sleep modem while main battery is removed for up to three minutes.

Interfaces

- One RS-422 serial port for LocalTalk networking, printers, modems, and other devices
- One HDI-30 SCSI port for hard disks, scanners, CD-ROM drives, and other SCSI devices
- One power adapter port

Modem

- Internal modem slot for adding optional internal serial modems (up to 14.4 kbps data send/receive and 9600 kbps send/receive FAX). Compatible with modems for PowerBook 140, 145, 145B, and 170.
- Also note, the PowerBook 150 DOES NOT support Express Modems like in the PowerBook 165 and 180 series.

Networking

- Serial/LocalTalk

Sound

- Built-in speaker (mono)

Keyboard

- Built-in keyboard with standard Macintosh layout
- Two-level tilt adjustment

Trackball

- Dual button trackball, 30 mm diameter

Clock/Calendar

- CMOS custom chip with Ni-Cad backup battery

Disability Access

- CloseView, Easy Access, and visible beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disability.

Electrical Requirements

- Line voltage: 110 to 220 volts
- Frequency: 50 to 60 Hz

Size and Weight

- Height: 2.3 in. (5.8 cm)
- Width: 11.3 in. (28.7 cm)
- Depth:9.3 in. (23.6 cm)
- Weight: 5.8 lb (2.6 kg)

Operating Environment

- Operating temperature: 50 to 95 degrees F (10 to 35 degrees C)
- Storage temperature: -13 to 140 degrees F (-25 to 60 degrees C)
- Relative humidity: 20% to 80% noncondensing
- Operating altitude: 0 to 10,000 ft. (0 to 3,048 m)
- Maximum storage altitude: 15,000 ft. (4722 m)

System Software Requirements

System 7.1

Ordering Information

PowerBook 150

- Order No. M2794LL/A
- PowerBook 150 computer with 4MB of RAM, built-in 1.4MB Apple SuperDrive, and Internal 120MB hard disk drive
- Battery and AC Adapter
- System 7
- Complete setup, learning, and reference documentation
- ClarisWorks 2.1 software and documentation
- PowerBook Mobility Bundle software
- Limited Warranty
- Training Software

PowerBook Duo 4MB Memory Expansion Kit*
Order No. M4184LL/A

PowerBook Duo 8MB Memory Expansion Kit*
Order No. M4185LL/A

*Note: The PowerBook 150 uses the same memory expansion cards as the PowerBook 200 series (Duo) computers.

PowerBook 150 Memory Adapter Kit
Order No. M3179LL/A

PowerBook Rechargable Battery
Order No. M5545LL/A

PowerBook AC Adapter
Order No. M4662LL/A

PowerBook Battery Recharger
Order No. M1027LL/A

Apple HDI-30 SCSI System Cable
Order No. M2538LL/A

Article Change History:
01 Sep 1995 - Corrected memory adapter kit order number information.
02 Aug 1995 - Updated article with additional information.
04 Apr 1995 - Corrected backup battery info.

Support Information Services

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Tech Info Library Article Number:15733

American Heritage Dictionary: Error Type -250 (3/97)

Revised: 3/7/97
Security: Everyone

American Heritage Dictionary: Error Type -250 (3/97)

==========

Article Created: 1 Jul 1994
Article Reviewed/Updated: 7 March 1997

TOPIC ----------

When launching American Heritage Dictionary 3.0.1 I get an error of type -250.

DISCUSSION ----------

This can occur intermittently in version 3.0.1 of the American Heritage Dictionary program. In the Memory control panel, if Virtual Memory is set to more than 20 MB, an error of type -250 will result. As a temporary workaround, you may reduce the amount of virtual memory to something less than 20 MB

Version 3.6.1 (and later) fixes this. The updated software can be obtained from the publisher, The Learning Company.

RAM Doubler
==========
NOTE: RAM Doubler reports to the operating system that Virtual Memory is ON (it's actually Extended Memory, but the Operating System flag is still the same). If physical RAM is greater than 10 MB, and RAM Doubler is installed, the same error message occurs. Solution: Disable the RAM Doubler extension or contact Connectix for other solutions specific to RAM Doubler.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
07 Mar 1997 - Added new version info, vendor info; corrected error number.

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Tech Info Library Article Number:15734

Tech Info Library

At Ease: Eject Disk Doesn't Work-Can't Make Floppy Disks (8/95)

Revised: 8/14/95
Security: Everyone

At Ease: Eject Disk Doesn't Work-Can't Make Floppy Disks (8/95)

==========

Article Created: 1 July 1994
Article Reviewed/Updated: 14 August 1995

TOPIC -----

I am trying to make copies of a floppy disk, but it's not working. I have At Ease turned ON, but have gone to the Finder to make the disk.

DISCUSSION -----

While in At Ease, you cannot see diskette icons. If switched to Finder, you cannot create ghost icons with the 'Eject Disk' command in the Special menu.

Solution

Turn At Ease OFF and restart. You may then create disk copies using the ghost icon method (drop icon of destination disk on top of ghost icon of source disk).

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword; reviewed and reformatted article.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15735

Tech Info Library

At Ease 2.0: Disk Copies NOT Bootable (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0: Disk Copies NOT Bootable (8/95)

==========

Article Created: 1 Jul 1994
Article Reviewed/Updated: 08 August 1995

TOPIC ----------

I'm finding that the copy I made of the Utilities disk does not restart the computer (but the original Utilities disk does).

DISCUSSION ----------

A common way of making a copy of the Utilities disk in the Finder is to drag the icon of the floppy disk to the hard drive, which copies its contents into a folder named Utilities, then drag these contents onto an empty floppy disk, re-labeling it ‘Utilities.’

Unfortunately, when the you start up with At Ease ON, go to the Finder, and then do the above procedure, the result is a disk that is NOT bootable.

Turn At Ease OFF and restart before attempting to create a new Utilities disk. (This issue arises when trying to make a Utilities disk equipped with PC Exchange).

Article Change History:
08 Aug 1995 - Added keyword; reviewed and reformatted article.

Support Information Services

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Tech Info Library Article Number:15736

X11: Launching on a Workgroup Server 95 (7/94)

Revised: 8/19/94
Security: Everyone

X11: Launching on a Workgroup Server 95 (7/94)

==========

Article Created: 1 Jul 1994
Article Reviewed/Updated: 19 August 1994

TOPIC ----------

I am trying to launch X11, and am having some difficulty. I have an Apple Workgroup Server 95 (AWS 95) with A/UX 3.1 configured as FileServer. In this situation I don't have the "Change Session Type.." from the Options menu in the A/UX Login Dialog window.

I have only two possibilities:

1) Start the AWS 95 and stop to MacPartition, but in the MacPartition CommandShell I can write Unix commands but NOT launch X11.
2) Boot A/UX, but automatically have the system launch "Macgetty", so after launching A/UX, I'm in A/UX Finder environment.

IF I Want to launch X11, I must exit from the A/UX Finder environment, is that Correct? If so, how do I do this?

I have tried with the 'Logout" command from the menu "special" under A/UX Finder environment, but the system appears to exit and then return to A/UX Finder environment.

DISCUSSION ----------

Yes, it is correct that you MUST exit from A/UX Finder environment to launch X11.

One flexible way to do this is as follows:

1) Change Session Type to "Console Emulator"

2) Within Console Emulator window, you may execute the command below to get into A/UX Finder environment:

```
# mac32; screenrestore
```

3) When you want to execute X11, you choose "Logout" from the "Special" menu. It will bring you to the Console Emulator mode.

4) Within the Console Emulator mode, you may type "X11" to get into the X11 Window Systems environment. To get out of the X11 Window environment, type "exit" from the X Console window. This brings you back to the Console Emulator.

Article Change History:
19 Aug 1994 - Changed date in title.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15737

Tech Info Library

PowerBook 500 series: Video Adapter Cable Pinouts (9/95)

Revised: 9/25/95
Security: Everyone

PowerBook 500 series: Video Adapter Cable Pinouts (9/95)

==========

Article Created: 05 July 1994
Article Reviewed/Updated: 25 September 1995

TOPIC ----------

I would like the pinouts for the external video cable used with the PowerBook 500 series computer.

DISCUSSION ----------

The PowerBook 520 and 540 computers have the same type VID-14 video output connector as earlier PowerBook models.

An adapter cable was included with some earlier models of the PowerBook that allows you to use a standard Apple video cable. If you didn't get the cable, it can be purchased separately. It is available as part number M3927LL/A.

Begin_Table

Pin VID-14	Pin DB-15	Signal Name	Description
1	2	RED.VID	Red video signal
2	1	RED.GND	Red video ground
3	4	SENSE0	Monitor sense signal 0
4	12	/VSYNC	Vertical synchronization signal
5	3	/CSYNC	Composite synchronization signal
6	11	GND	CSYNC and VSYNC ground
7	6	GRN.GND	Green video ground
8	5	GRN.VID	Green video signal
9	7	SENSE1	Monitor sense signal 1
10	14	HSYNC.GND	HSYNC ground
11	10	SENSE2	Monitor sense signal 2
12	15	/HSYNC	Horizontal synchronization signal
13	9	BLU.VID	Blue video signal
14	13	BLU.GND	Blue video ground
—	8	N.C.	Not connected

Shell	Shell	SGND	Shield ground

End_Table

Article Change History:
25 Sep 1995 - Added that cable didn't come with all models.

Support Information Services

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Tech Info Library Article Number:15741

Tech Info Library

LaserWriter Pro 630: No difference in ROM revisions (7/94)

Revised: 7/5/94
Security: Everyone

LaserWriter Pro 630: No difference in ROM revisions (7/94)

==========

Article Created: 5 July 1994

TOPIC ----------

I had my LaserWriter Pro 630 repaired and the motherboard was replaced. The new motherboard has v2.0 ROMs, whereas my original had v1.0 ROMs. I think the new ROMs have changed the serial settings at switch positions 0 and 2. Does this new set of ROMs change the settings?

DISCUSSION ----------

At switch position 0 and 2, both sets of ROMs configure the serial port as documented in the manual:

Switch Position 0	1.0 ROMs	2.0 ROMs
	PostScript	PostScript
	RS-232	RS-232
	9600 Baud	9600 Baud

Switch Position 2	1.0 ROMs	2.0 ROMs
	PostScript	PostScript
	RS-232	RS-232
	19200 Baud	19200 Baud

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15743

Tech Info Library

LaserWriter Pro 630: How To Customize Switch Settings (7/94)

Revised: 7/5/94
Security: Everyone

LaserWriter Pro 630: How To Customize Switch Settings (7/94)

==========

Article Created: 5 July 1994

TOPIC ----------

How can I customize the switch settings on my LaserWriter Pro 630, and what does this actually do?

DISCUSSION ----------

The LaserWriter Utility allows you to customize switch positions 6 thru 9; thereafter, whenever you change the physical switch positions located on the printer itself to 6 thru 9, the printer's communication ports incorporate whatever communication parameters you gave them with the utility. What may be confusing is the LaserWriter Utility doesn't allow you to override the physical switch settings on the printer, only configure 6 thru 9.

If the Current Printer Switch Settings returned by the LaserWriter Utility (Utilities menu: Configure Communications) is different then the actual physical switch position you've set on the printer, then you may have a hardware problem.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15744

Tech Info Library

Apple Scanners: Determining Scan Resolution (7/94)

Revised: 7/5/94
Security: Everyone

Apple Scanners: Determining Scan Resolution (7/94)

==========

Article Created: 5 July 1994

TOPIC ----------

What is the formula to scan images and get the best resolution while keeping the size of the file from getting extremely large?

I am scanning images for printing in a Linotronic at 2400 dpi. When I scan them at 600 dpi, the images are huge. I am trying to minimize the moire patterns.

DISCUSSION ----------

The moiré pattern is caused by a conflict between the dots that make up the printed picture and the dots that the scanner uses to create the image. This is why the moiré pattern shows up most often when scanning a printed picture from a newspaper or magazine. The Ofoto Software that is bundled with Apple's OneScanner and Color OneScanner is designed to minimize moiré patterns. Scanning directly from a photograph, however, will circumvent the problem entirely.

The following information should help get the best possible results:

Be sure the scanner is set for the device on which you'll be printing or displaying the final version of your scan. The Ofoto scanner software sets the scanning resolution appropriate to that device. Many people think that the highest resolution is always the best, but this is not the case. If, for example, you are printing on a laser printer, and you set the scanner to the high resolution appropriate to a Linotronic printing press, your files will be large, your printing time will be slow, and your scan will be no better than if you had selected the lower resolution. What's important is that the scanning resolution be appropriate for the output device's resolution and image-processing abilities.

Output Device	Appropriate Scanning Resoultion
Monitor	72 dpi

300 dpi laser printer with standard PostScript processing (53 line screen)	100 dpi
600 dpi laser printer with standard Postscript processing (85 line screen)	150 dpi
300 dpi or 600 dpi laser printer with standard PhotoGrade processing (106 line screen)	150 dpi
Separations at 125 line screen	200 dpi
Separations at 175 line screen	300 dpi

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15745

Tech Info Library

Color StyleWriter Pro: Shipping Guidelines (7/94)

Revised: 7/5/94
Security: Everyone

Color StyleWriter Pro: Shipping Guidelines (7/94)

==========

Article Created: 5 July 1994

TOPIC --------------------

What is the proper method for shipping the Color StyleWriter Pro to prevent ink from spilling inside the printer?

DISCUSSION --------------------

The Color StyleWriter Pro ink cartridges easily become dislodged from the carriage mechanism if they are left in place during shipping. The ink from the dislodged cartridges leaks inside of the printer creating not only a mess, but due to the conductivity of the ink could cause damage to the printer if the ink makes contact with the circuit boards.

Appendix C of the Color StyleWriter Pro user’s manual provides instructions for packing and moving the printer. The instructions state that the cartridges should be removed prior to shipping, wrapped in plastic, and then stored in a plastic bag. In order to prevent the printhead from becoming clogged with the residual ink it should be cleaned using the Super Clean option available through the utilities button in the print dialog box. An error message indicating that no ink cartridges are installed will appear. Press return to cancel the error and continue the cleaning process.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15746

Tech Info Library

Apple IIe Card: Booting Directly Into ProDOS (7/94)

Revised: 7/5/94
Security: Everyone

Apple IIe Card: Booting Directly Into ProDOS (7/94)

==========

Article Created: 05 July 1994

TOPIC ----------

With an Apple IIe Card installed in my LC, how do I boot directly into ProDOS in Apple IIe mode?

DISCUSSION ----------

If you install the IIe Card software and properly configure everything, then click on IIe Startup icon, it will go to IIe mode and then check the boot devices for a suitable startup device.

In order to boot to ProDOS in the IIe mode, double-click the BASIC.SYSTEM icon, unless you have a ProDOS or DOS 3.3 disk you want to boot to. This will launch you directly into ProDOS.

Support Information Services

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Tech Info Library Article Number:15747

Tech Info Library

HyperCard 2.2: Problem Using Mirroring Mode (7/94)

Revised: 7/5/94
Security: Everyone

HyperCard 2.2: Problem Using Mirroring Mode (7/94)

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Article Created: 5 July 1994

TOPIC ----------

I am having a problem using the mirroring visual effect in HyperCard 2.2 with a PowerBook Duo 280c. The visual effects work without a problem if mirroring is not used.

DISCUSSION ----------

This is a known anomaly of HyperCard 2.2, and it will probably not be changed. The only work-around is to not use the mirroring mode with HyperCard 2.2.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15749

Tech Info Library

DOS Compatibility Card: Printing to a QuickDraw Printer (5/96)

Revised: 5/20/96
Security: Everyone

DOS Compatibility Card: Printing to a QuickDraw Printer (5/96)

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Article Created: 5 July 1994
Article Reviewed/Updated: 17 May 1996

TOPIC ----------

This article describes how to set up printing with the DOS Compatibility Card to a QuickDraw printer like Apple's ImageWriter or StyleWriter family of printers, or Hewlett Packard's (HP) DeskWriter family of printers.

DISCUSSION ----------

Here are the steps to set up a QuickDraw printer for printing from Microsoft Windows to your printer:

1) Open the Printers icon in the Windows Control Panel and select the Epson LQ-2500 driver.

2) In the Macintosh Chooser, select the corresponding printer extension for your type of printer.

3) Turn off Background Printing in the Macintosh Chooser.

If you have the DOS Compatibility Card for the Power Macintosh computer, then you need to perform steps 4 through 6 also.

4) In the Macintosh Extensions folder, launch the PC Print Spooler by double-clicking its icon in the Extensions folder.

5) From the File menu, select Preferences.

6) Click on the Epson option for "Interpret non-PostScript As" to enable the Epson emulator.

In order to print to a QuickDraw printer from the DOS Compatibility Card, you must use the Epson LQ-2500 printer driver in Windows. If you are printing from a DOS application that uses printer drivers, follow the instructions for the

application to install a driver for the Epson LQ-2500.

The Epson emulator works by first translating the DOS text to a similar Macintosh font, then interpreting that text into a series of QuickDraw commands. Some characters in the original DOS character set may not have exact translations to a Macintosh font. The use of a PostScript font is recommended in these cases, since use of the PostScript standard requires no translation.

Using PC Setup 1.0.7 and earlier, the Epson emulator does not support color or grayscale. When printing from the PC to a color or grayscale printer, make sure to select the Black and White option from the Print dialog.

PC Setup 1.5 provides color printing to color QuickDraw printers. PC Setup 1.5 is available in the Apple Software Updates as DOS Compatibility 1.5.

NOTES:
When printing to the LaserWriter Select 300, you must turn off background printing, or "Not enough memory to print this document" error message appears.

When printing to the LaserWriter Select 310, you must turn ON background printing, or "Job may exceed the printer's capacity. Try reducing the number of fonts" error message appears.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" - Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" - Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
17 May 1996 - Added information on Color QuickDraw support.
02 Oct 1995 - Update article to be more generic.
17 Jan 1995 - Replaced discussion with updated information.

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Tech Info Library Article Number:15750

Newton Connection Kit 2.0: Read Me File (7/94)

Revised: 5/21/96
Security: Everyone

Newton Connection Kit 2.0: Read Me File (7/94)

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Article Created: 6 July 1994

TOPIC -----

This article contains the Newton Connection Kit 2.0 Read Me document created on February 22, 1994.

DISCUSSION -----

Newton Connection Kit 2.0 Read Me

This Read Me contains important late breaking information for your Newton Connection Kit 2.0 for Macintosh. The information covers the following areas:

- IMPORTANT: Switching from Newton Connection 1.0 to 2.0
- DataViz import/export translators
- How to use the template import/export format
- When to use Newton Connection import/export format
- Things to watch out for
- Miscellaneous suggestions

IMPORTANT: Switching from Newton Connection 1.0 to 2.0

Synchronized files created with Newton Connection 1.0 are incompatible with Newton Connection 2.0 and vice-versa. This means you cannot use Newton Connection 2.0 to synchronize or restore from a Newton Connection 1.0 file. Therefore, BEFORE using Newton Connection 2.0, perform the following steps:

1. Launch Newton Connection 1.0.
2. Synchronize. This makes sure your Newton (and PCMCIA card if applicable) contains all the information you may have added to the 1.0 synchronize file since the last synchronization.
3. Quit Newton Connection 1.0 and delete or rename (**see note) the 1.0

synchronization file. This ensures that Newton Connection 2.0 will not try to use the 1.0 file when synchronizing.
4. If you have not already done so, install Newton Connection 2.0.
5. Launch Newton Connection 2.0 and synchronize. This creates a new 2.0 synchronization file with the data currently in your Newton.

** Once you are comfortable using the new version, we suggest you delete the old 1.0 files. If you do decide to keep any 1.0 files around, please keep a copy of Newton Connection 1.0 around. IF you accidentally, restore a 1.0 file using Newton Connection 2.0, you will see a -48025 error when you try to synchronize. Please perform the following steps to correct this problem:

1. Quit Newton Connection 2.0.
2. Launch Newton Connection 1.0.
3. Using Newton Connection 1.0 restore the 1.0 synchronize file onto Newton.
4. Quit Newton Connection 1.0.
5. Delete the old 2.0 synchronize files.
6. Launch Newton Connection 2.0.
7. Synchronize using Newton Connection 2.0. Everything is now ready to go.

DataViz import/export translators

Newton Connection Kit contains portions of the MacLinkPlus file translation library, a product of DataViz Inc., 55 Corporate Drive, Trumbull, CT, USA (203)268-0030

You can use the following DataViz translators to import and export information between your MessagePad and supported applications on your Macintosh.

Newton	Mac
Date Book	DateBook Pro
	Excel 4.0
	Lotus 1-2-3
	Now Up-to-Date 2.1
	Works 3.0
Name File	ACT! 1.1 (*)
	Address Book Plus
	Dynodex 3.0
	Excel 4.0
	Lotus 1-2-3
	Works 3.0 (Spreadsheet)
	Works 3.0 (Database)
Notepad	MacWrite II
	MS Word 4.0 5.0 5.1
	Nisus 3.0
	Rich Text Format
	WordPerfect 2.x

Works 3.0 (Word Processor)
WriteNow 3.0

(*) This will import and export the Date Book and Notepad when done in conjuction with the Name File.

• If you are exporting from a Newton application that contains fields not present in the designated supported Macintosh application, the information in the fields not supported in the Macintosh application will not be exported. For example, in Newton Connection, name file entries have a field for the e-mail address. Dynodex 3.0 does not have a field for the e-mail address. Therefore, if you export a name entry to a Dynodex file, the e-mail address will not be exported.

Similarly, if you are importing information from a Macintosh application that contains fields not present in the corresponding Newton application, data from the unsupported fields will not be imported.

• Newton graphics and ink can be exported as PICT graphics from Newton Connection using the translators. However, PICT graphics in Macintosh applications can not be imported as Newton graphics and ink. Only the Newton Connection Format supports import of graphics into Newton Connection.

• Some translators will break repeating meetings and repeating day notes into individual meetings and day notes. For example, if you export one yearly repeating meeting from Newton Connection into ACT! 1.1, the Newton repeating meeting will be translated into 10 non-repeating meetings which occur once a year for 10 years.

How to use the template import/export format

• There are situations in which a file exported using a template and then re imported into a Newton Connection Kit file may lose information. The templates import and export files with text only. This means that any graphics in your Newton data will not be exported if you use a template. Furthermore, if your data contains tabs, returns or multiple paragraphs (**), some of it may be lost if you export with a template that uses Tab and Return as the field and record separators. To avoid this, click Options in the Template dialog and choose a character that does not appear in your data as the separator, or export in Newton Connection format. If you want to move all information from one Newton Connection Kit file to another, it is strongly recommended that you use the Newton Connection format to import and export the information.

(**) Multiple paragraphs are concatenated with Carriage Returns.

• To get data information from an unsupported Macintosh application into Newton Connection, you can use the template import/export feature of NCK 2.0. E.g., you may use the template we have provided to get information in and out of the HyperCard Addresses Stack or you may create one of your own.

• To import Newton data into the HyperCard Addresses Stack:

1) Export the data from Connection using the "HyperCard Addresses Template"
2) In HyperCard Addresses simply choose the Import menu item.
3) Import the file created by Connection

• To export HyperCard Addresses Stack data into Newton:
1) In HyperCard Addresses Stack simply choose the Export menu item.
2) In Connection import the HyperCard Addresses file using the "HyperCard Addresses Template"

When to use Newton Connection import/export format

• Use Newton Connection format to move information between two Newton Connection synchronize files, to distribute information to other people who have Newton Connection and to move data to another application that supports Newton Connection format.

Things to watch out for

• Repeating meeting information may be lost when exporting repeating meetings via templates. The meeting will still repeat but all special case information is lost. For example, if a repeating meeting repeats every Thursday for a month, and on the Newton you change week three's meeting from Thursday to Friday, the special case of having a Friday meeting for the third week will be lost.

• When printing Newton information from your Macintosh, we suggest that you turn off font substitution (using page setup) before printing on a LaserWriter; otherwise some of your print out may be cut off.

• If you ever get a corrupt file message, we suggest deleting the synchronize file immediately and use the backup file. There are times when Newton Connection will make a change to all the files in a folder (e.g., when updating folder names). If one of the files is bad, Newton Connection may crash. Deleting a bad file immediately will prevent the crash.

Miscellaneous suggestions

• If you have a Newton Messaging Card we recommend that you remove it before connecting to your Macintosh. If a message is received while a synchronization is occurring there is a chance that some of the message's text will be lost.

• If you have a Newton Getting Started card, we recommend that you remove it before connecting to your Macintosh. If you don't remove the card there is a possibility that you'll run out of memory on your Newton during the synchronization process (especially if you're using a serial connection).

Support Information Services

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Tech Info Library Article Number:15751

Tech Info Library

Newton Connection Kit 2.0: How to Switch from 1.0 (10/94)

Revised: 10/12/94
Security: Everyone

Newton Connection Kit 2.0: How to Switch from 1.0 (10/94)

==========

Article Created: 6 July 1994
Article Reviewed/Updated: 12 October 1994

TOPIC -----

This article explains how to switch from Newton Connection Kit 1.0 to version 2.0

DISCUSSION -----

Synchronized files created with Newton Connection 1.0 are incompatible with Newton Connection 2.0 and vice-versa. This means you cannot use Newton Connection 2.0 to synchronize or restore from a Newton Connection 1.0 file. Therefore, BEFORE using Newton Connection 2.0, perform the following steps:

1. Launch Newton Connection 1.0.

2. Synchronize. This makes sure your Newton (and PCMCIA card if applicable) contains all the information you may have added to the 1.0 synchronize file since the last synchronization.

3. Quit Newton Connection 1.0 and delete or rename (see NOTE) the 1.0 synchronization file. This ensures that Newton Connection 2.0 does not try to use the 1.0 file when synchronizing.

4. If you have not already done so, install Newton Connection 2.0.

5. Launch Newton Connection 2.0 and synchronize. This creates a new 2.0 synchronization file with the data currently in your Newton.

NOTE: Once you are comfortable using the new version, we suggest you delete the old 1.0 files. If you do decide to keep any 1.0 files around, please keep a copy of Newton Connection 1.0 around. If you accidentally restore a 1.0 file using Newton Connection 2.0, you will see a -48025 error when you try to synchronize.

Perform the following steps to correct this problem:

1. Quit Newton Connection 2.0.

2. Launch Newton Connection 1.0.

3. Using Newton Connection 1.0, restore the 1.0 synchronize file onto Newton.

4. Quit Newton Connection 1.0.

5. Delete the old 2.0 synchronize files.

6. Launch Newton Connection 2.0.

7. Synchronize using Newton Connection 2.0.

Everything is now ready to go.

Article Change History:
12 Oct 1994 - Added keyword and made minor formatting changes.

Support Information Services

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Tech Info Library Article Number:15752

Tech Info Library

PowerBook Express Modem: Problem Receiving Fax (7/94)

Revised: 7/8/94
Security: Everyone

PowerBook Express Modem: Problem Receiving Fax (7/94)

==========

Article Created: 5 July 1994

TOPIC ----------

When I receive a fax using my PowerBook Express Modem I get an error during transmission. Sometimes I will only receive part of the first page. Other times I receive the whole first page. Then the error will occur when I start receiving the second page. I have reinstalled my Express Modem Software and clean installed my system software.

DISCUSSION ----------

The transmission error is caused by Virtual Memory being turned on. Go to the Memory Control Panel and turn off Virtual Memory. This will correct the problem.

*NOTE: This same situation can occur with some third party modems as well (like the Global Village PowerPort).

Support Information Services

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Tech Info Library Article Number:15753

Apple Multiple Scan 15 Display: Specifications (2/96)

Revised: 2/8/96
Security: Everyone

Apple Multiple Scan 15 Display: Specifications (2/96)

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Article Created: 6 July 1994
Article Reviewed/Updated: 08 February 1996

TOPIC ----------

This article gives the technical specifications for the Apple Multiple Scan 15 Display.

DISCUSSION ----------

Picture Tube

15-inch diagonal Flat Square CRT
Multiple scan
Resolution range: 640x480 to 1024x768

Screen

.28 millimeter (mm) dot pitch
Antistatic, antiglare surface treatment (European only)

Input Signals

Red, green, and blue signals; separate sync.

Power Savings feature

Conforms to the Energy Star program of the United States Environmental Protection Agency

Power saving feature compatible with the Video Electronic Standard Association's (VESA) Display Power Management Standard (DPMS)

User Controls

- Power-on switch

- Automatic degauss at power-up; manual degauss by turning power switch off, then on (capable of full degauss after monitor is turned off for 20 minutes or more)

- Buttons and Controls: Reset, Zoom, Recall, Select, Brightness, Contrast

- Additional picture controls available using the Select button: horizontal and vertical shift, horizontal and vertical size

Active Video Image Area

Adjusted at the factory for the following standard modes:

Mode	Resolution	Vertical Refresh Rate (hertz)	Horizontal Scan Rate (kilohertz)
VGA	640x480	60.0	31.77
Macintosh	640x480	66.7	35.0
SVGA	800x600	72.0	48.1
SVGA	800x600	60.0	37.9
Macintosh	832x624	75.0	49.7
1024x768	1024x768	70.0	56.5

Input Electrical Requirements

Voltage: 90-132, 198-260 V
Frequency: 47-63 Hz
Power: 90 W maximum -- Less than 30 W in Energy-Saver mode

Weight

Approximately 31 pounds (14 kilograms)

Dimensions

Height: 375 mm +/- 5 mm, 14 3/4 inches
Width: 365 mm +/- 5 mm, 14 1/4 inches
Depth: 380 mm +/- 5mm, 15 inches

The above dimensions include the tilt/swivel base unit.

Interfaces

Headphone/Speaker: One input and one pass thru output port

Audio

Stereo speakers and front panel headphone jack

Operating Environment

==========

Temperature

Operating: 10 to 40 degrees C (50 to 104 degrees F)
Storage: 0 to 60 degrees C (32 to 140 degrees F)
Shipping: -40 to 65 degrees C (-40 to 151 degrees F)

Humidity (noncondensing)

Operating: 20% to 95%

Altitude (maximum)

Operating: 10,000 ft. (3000 m)
Shipping: 15,000 ft. (4500 m)

System Requirements
===================

- Power Macintosh, Macintosh Centris, Macintosh Quadra, Macintosh 630 series, Performa 600, or any NuBus compatible Macintosh with a Macintosh Display Card 24AC.

- Macintosh LC series, Performa 400 series, PowerBook, Duo and MiniDock, and the 8•24, 8•24GC, 4•8 video cards only provide a resolution of 640x480. Display adapters are available to change the video resolution on these computers. The Macintosh IIsi and IIci require a special display adapter in order to be compatible with the Multiple Scan 15 Display.

- System software version 7.1 or later

Monitor Cable Specifications
============================

15-pin miniature D-type connector

Monitor Signals
===============

Pin	Output Signal
1	Red video ground
2	Red video
3	Not used
4	ID 1
5	Green video
6	Green video ground
7	ID 2
8	Not used
9	Blue video
10	ID 3
11	V Sync return

12	V Sync
13	Blue video ground
14	H Sync return
15	H Sync
Shell	Shield ground

Article Change History:
08 Feb 1996 - Added new compatibility information on IIsi & IIci.
01 Sep 1995 - Corrected anti-glare treatment for European version only.
17 Aug 1995 - Added info on built-in stereo speakers.

Support Information Services

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Tech Info Library Article Number:15754

Tech Info Library

Apple Color Printer: No Support under Windows (7/94)

Revised: 7/6/94
Security: Everyone

Apple Color Printer: No Support under Windows (7/94)

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Article Created: 5 July 1994

TOPIC ----------

Does the Apple Color Printer work under Microsoft Windows?

DISCUSSION----------

Apple does not provide any support for using the Apple Color Printer in the Windows environment, however the printer is identical to the Canon BJC-800 color printer with the SCSI option installed. Canon provides software support for the Macintosh and Microsoft Windows, so the drivers from Canon could theoretically be used.

Support Information Services

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Tech Info Library Article Number:15755

Tech Info Library

Quadra 840AV: Large QuickTime Movies Freeze (7/94)

Revised: 7/6/94
Security: Everyone

Quadra 840AV: Large QuickTime Movies Freeze (7/94)

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Article Created: 5 July 1994

TOPIC -----

I am having problems playing large QuickTime movies on my Quadra 840AV. Within 30 seconds, the movie freezes. I can play the movie from an external drive the movie plays without any problem.

DISCUSSION -----

The internal hard disk driver needs to be updated. If you use HDSC Setup 7.3.1 which comes with System Update 3.0, you can correct this problem.

While you don't have to install System Update 3.0 to eliminate the problem, it is recommended that you install the update and update the hard disk driver.

Support Information Services

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Tech Info Library Article Number:15756

Tech Info Library

Discis Books: Showing Missing Menus (7/94)

Revised: 7/6/94
Security: Everyone

Discis Books: Showing Missing Menus (7/94)

==========

Article Created: 5 July 1994

TOPIC -----

I have lost the Customize and Recall menu in my Discis Book Programs that came as part of the Apple Early Language Connection. How do I get these menus back?

DISCUSSION -----

Throwing away the Customize Prefs works temporarily, but pressing the key combination Command–Delete gets the menus back. The Command–Delete key combination works like a toggle switch to turn these menus off and on.

Support Information Services

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Tech Info Library Article Number:15757

Tech Info Library

Mario Teaches Typing: Type 1 Errors Caused by Preferences (7/94)

Revised: 7/6/94
Security: Everyone

Mario Teaches Typing: Type 1 Errors Caused by Preferences (7/94)

==========

Article Created: 6 July 1994

TOPIC -----

I keep getting Type 1 error when I try to open Mario Teaches Typing that came on my Macintosh Performa computer. Is there something wrong with the program.

DISCUSSION -----

Type 1 errors can be caused by many things. In the case of Mario Teaches Typing, it is a sign of bad preferences file. Throw away the Mario Preferences file that resides in your Preferences folder, then restart.

Support Information Services

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Tech Info Library Article Number:15758

Tech Info Library

Apple IIe/IIgs: Slot Assignments (7/94)

Revised: 7/6/94
Security: Everyone

Apple IIe/IIgs: Slot Assignments (7/94)

==========

Article Created: 06 July 1994

TOPIC ----------

What are the slot assignments for the Apple IIe and Apple IIgs computers?

DISCUSSION ----------

Slot#	Item	Description
Slot 1:	Printer	Super Serial card/other printer card
Slot 2:	Modem	Super Serial card/Internal modem card
Slot 3:	Video/Extended memory	RAM upgrades, 80 col card. (reserved)
Slot 4:	Mouse	Mouse controller card
Slot 5:	Hard drive	SCSI card/Profile controller card
Slot 6:	5.25" drives	DISK II or other drive controller
Slot 7:	5.25" or 3.5" disk drive	DISK II or other drive controller

Note:
- The Apple //e will boot from the highest numbered slot with a bootable device attached.

- If an Apple //e has a hard drive with more than 2 partitions, the drive will show the 3rd and 4th partition as slot 2, drive 1 and slot 2, drive 2. This is regardless as to what is physically connected to slot 2.

Support Information Services

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Tech Info Library Article Number:15762

Tech Info Library

PowerShare: How to Move Catalogs and Mail Servers (7/94)

Revised: 7/8/94
Security: Everyone

PowerShare: How to Move Catalogs and Mail Servers (7/94)

==========

Article Created: 6 July 1994
Article Reviewed/Updated: 8 July 1994

TOPIC ----------

I have several hard drives in my PowerShare Server's SCSI chain. How can I move my PowerShare Catalog and Mail Servers from the current PowerShare hard drive to one of my other hard drives?

DISCUSSION ----------

The steps for doing this are as follows:
1) Move the PowerShare Catalog Data and the PowerShare Mail Data folders to the new hard drive.
2) Delete PowerShare Catalog Prefs and PowerShare Mail Prefs from the Preferences located in the System Folder of the Startup Disk.
3) Launch the PowerShare Catalog Server.
4) When you launch PowerShare Catalog Server you will get a dialog box that says, "PowerShare cannot locate some of its configuration files." Click the "Restart" button in this dialog box.
5) Next you will get a dialog box that says, "The PowerShare Catalog Server cannot find its data folder." Select the desired hard drive from the pop-up menu in the dialog box.
6) Repeat steps 3-5 for the PowerShare Mail Server.

Support Information Services

Article Change History:
08 Jul 1994 - Changed wording of steps 2 & 5.

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15763

Tech Info Library

System 7: Renaming System Enablers (7/94)

Revised: 7/8/94
Security: Everyone

System 7: Renaming System Enablers (7/94)

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Article Created: 6 July 1994
Article Reviewed/Updated: 8 July 1994

TOPIC ----------

Can I rename my System Enabler and still have my computer start up properly?

DISCUSSION ----------

Yes you can rename the System Enabler. It will not affect the performance of your computer if you give it a different name. However, you cannot just select the name of the system enabler by clicking on it and then type a new name because the system enabler's filename is locked.

NOTE: It is not recommended that you change the name of your system enabler because it can cause some confusion later if you need to know what the name of the original enabler was. If you do decide to change the name, it would be a good idea keep a copy of the original enabler outside of the System Folder.

Here are two ways you can rename your system enabler:

1) Make a duplicate of the system enabler and rename it.

- Open the System Folder, select the desired system enabler.
- Choose Duplicate from the File menu. This will make a copy of the enabler that does not have a locked filename therefore it can be renamed.
- Click once on the icon of the enabler copy, press Return, and type a new name.
- Remove the original enabler from the System Folder and restart the computer.

2) The enabler can also be renamed using a utility that is capable of changing and unlocking Finder flags (such as ResEdit or Norton Utilities).

- Apple's User Assistance Center does not support ResEdit. ResEdit is supported by APDA. Refer customers to APDA for information about ResEdit.

Refer customers to Symantec for information about Norton Utilities.

To locate a vendor's address and phone number, use the vendor name as a search string.

Support Information Services

Article Change History:
08 Jul 1994 - Added second way to change the name of a system enabler.

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15765

Tech Info Library

LaserWriter Select 360: False Paper Out Alert Message (4/97)

Revised: 4/14/97
Security: Everyone

LaserWriter Select 360: False Paper Out Alert Message (4/97)

==========

Article Created: 7 July 1994
Article Reviewed/Updated: 14 April 1997

TOPIC ----------

I have a LaserWriter Select 360 printer, that keeps presenting me with a paper out alert message even though the paper tray is full. This happens from applications and from the desktop.

DISCUSSION ----------

This issue could be related to either software or hardware. Since software is the easiest part to troubleshoot, you should start there. If you determine that software is not the problem, you need to have the printer looked at by your authorized-Apple service provider.

Software Troubleshooting
==========

Step 1

Make sure you are using the latest version of the LaserWriter 8 printer software and the latest LaserWriter Select 360 PPD file. At a minimum you should be using the LaserWriter 8.2.2 printer software. The current version of the LaserWriter 8 software, at this writing is 8.3.2.

Step 2

Prior to installing or reinstalling the LaserWriter 8 software, you need to delete the LaserWriter 8 Prefs file. The LaserWriter 8 Prefs file is located in the Preferences folder inside the System folder.

Step 3

Print a configuration page using the LaserWriter Utility or Printer Utility, and check the default paper tray. If someone changed the default paper tray through

PostScript to the Multipurpose tray, you could also get the alert message you are seeing.

You can find the value for the default paper tray in the lower left corner of the configuration page. A default paper tray value of "1" is for the Multipurpose tray, "0" is for the 250-sheet cassette.

Step 4

The last software troubleshooting step is to perform a clean installation of the System software. Their are several Tech Info Library articles describing how to perform this procedure depending on the version of System software you are using.

Changing Default Trays With PostScript
======================================

If the default paper tray value has been changed, you can download the PostScript code below to change it back to the 250-sheet cassette.

Caution:
If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

This is PostScript Level 1 code:

```
%=========================================================
% Begin PostScript code
%
serverdict begin 0 exitserver
statusdict begin 0 setdefaultpapertray end
%
% End PostScript code
%=========================================================
```

This is the equivalent PostScript Level 2 code:

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
1 dict dup /InputAttributes 1 dict dup /Priority [2 1 0] put put setpagedevice
%
% End PostScript Code
%=========================================================
```

This sets the paper tray priority to:
1st Priority - Cassette (500 Sheets) - designated by the "2" in the array above.
2nd Priority - Multipurpose Tray - designated by the "1" in the array above.
3rd Priority - Cassette (250 Sheets) - designated by the "0" in the array

above.

You can change the paper tray priority order by changing the values in "/Priority [2 1 0]".
For example, /Priority [0 1 2] makes the 250 sheet cassette first priority, then the Multipurpose tray next, then the 500 sheet cassette.

Hardware Issues

If the default paper tray is already set to the 250-sheet cassette, then there is most likely a problem with one of the printer's hardware components such as the paper sensor. An Apple-authorized service provider will be able to correct any hardware problems.

In some cases where the paper tray is set to the 250-sheet cassette, the cassette may be the problem. There is a white gear which should move as the blue paper guide is adjusted. If the gear doesn't move, line up the paper guide with the gear and press down on the paper guide to snap it into place. If the doesn't function normally, your printer needs to be serviced by an Authorized Apple Repair center.

Article Change History:
14 Apr 1997 - Added PostScript Level 2 code.
08 May 1996 - Added information on gear.
06 Feb 1996 - Rewrote entire discussion area.

Copyright 1994-97, Apple Computer, Inc.

Tech Info Library Article Number:15766

Tech Info Library

LaserWriter Pro 630: Using PCL in Non-Binary Mode (7/94)

Revised: 7/7/94
Security: Everyone

LaserWriter Pro 630: Using PCL in Non-Binary Mode (7/94)

==========

Article Created: 7 July 1994

TOPIC ----------

It appears that the LaserWriter Pro 630 does not fully emulate the HP LaserJet IIp when using XON/XOFF handshaking. Setting the LaserWriter Pro's serial port to XON/XOFF with HP PCL selected resets the protocol to binary. In binary mode, graphics fail to print so we need to use the RAW protocol.

DISCUSSION ----------

Software handshaking (XON/XOFF) is not supported when using the RAW protocol for HP PCL because there are some PCL commands that require all 8-bits of ASCII to represent the command. Thus, RAW mode allows for use of all 8-bits as data (no filtering of any flow control characters) and therefore hardware handshaking is required. This holds true for all printers, including HP printers, when in PCL RAW mode.

In terms of a resolution to the problem, you can try using switch position 2 on the LaserWriter Pro 630 which places it in PostScript mode, 19200 baud, with XON/XOFF. Then you can send the line of PostScript below when you want to place the printer into HP emulation (only takes effect for the current job). This setup should might meet your need of having software handshaking in non–binary PCL mode.

PostScript to switch to PCL emulation

```
currentfile /LaserJetIIP statusdict /emulate get exec
```

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15767

Tech Info Library

Power Macintosh: Using America OnLine Software (10/94)

Revised: 10/13/94
Security: Everyone

Power Macintosh: Using America OnLine Software (10/94)

==========

Article Created: 07 July 1994
Article Reviewed/Updated: 13 October 1994

TOPIC ----------

This article discusses using America Online software with the Power Macintosh.

DISCUSSION ----------

America Online (AOL) software version 2.1 (or later) works with Power Macintosh computers if you increase the suggested memory size for the America Online application to 2 megabytes. Also, make sure you have 2 megabytes of RAM available. If this fails to work, turn off the Modern Memory Manager in the Memory control panel.

Anyone with an earlier version of the AOL software needs to upgrade to version 2.1.

Article Change History:
13 Oct 1994 - Added keyword; made minor technical updates.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15768

Tech Info Library

Power Macintosh: Third Party Video Cards Revert To One Bit Video

Revised: 7/7/94
Security: Everyone

Power Macintosh: Third Party Video Cards Revert To One Bit Video

==========

Article Created: 07 July 1994

TOPIC -----

This article discusses solutions for customers using 3rd party video cards which don't retain the selected color depth setting in the Monitors control panel on restart.

DISCUSSION -----

An update to the Monitors control panel resolves an issue with some third party video cards which revert to the black and white setting upon restart. Upgrade to version 7.3.2 or later to resolve this problem. This version was first shipped as part of the Display Software 1.0 which shipped with the Apple Multiple Scan 17 and 20 displays.

System Software versions greater than 7.1.2 also includes a version of the Monitors control panel that resolves this problem.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15770

Macintosh PC Exchange 2.0.1: Read Me File (7/94)

Revised: 7/8/94
Security: Everyone

Macintosh PC Exchange 2.0.1: Read Me File (7/94)

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Article Created: 7 July 1994

TOPIC --------------------

The following is the Read Me file for Macintosh PC Exchange 2.0.1.

DISCUSSION --------------------

Read Me file for Macintosh PC Exchange 2.0.1

••••••••••
Important Information About Macintosh PC Exchange Version 2.0.1

This document contains important information about Macintosh PC Exchange version 2.0.1 that is not included in your user's guide.

IMPORTANT

Macintosh PC Exchange version 2.0.1 requires Macintosh system software version 7.0 or later.

What is Macintosh PC Exchange?

Macintosh PC Exchange is a System 7 compatibility utility that lets you use DOS-format disks on your Macintosh. It lets you transfer files back and forth between a Macintosh and a PC-compatible computer simply by copying the files between disks.

PC Exchange makes it easy to work with DOS data files on your Macintosh. However, PC Exchange does not allow you to work with MS-DOS or Windows application programs on your Macintosh.

New Features in Version 2.0.1

Macintosh PC Exchange version 2.0.1

- now works with DOS-format and Windows-format SCSI fixed and removable media storage devices (such as Iomega Bernoulli and SyQuest cartridge drives).
- now works with Apple II ProDOS-format floppy disks.
- lets you access DOS-format drive container files created by the DOS Compatibility Card for Macintosh.
- uses considerably less random-access memory (less than 5K) when not in use.
- includes an on/off switch in the control panel that allows you to turn off the PC Exchange disk-mounting capability temporarily.
- comes with built-in device drivers to support a wide variety of SCSI hard disk and removable media drives.
- works on Power Macintosh systems in Macintosh 68000 emulation mode.

Installation Information

If you have already installed another PC disk-mounting utility on your Macintosh, be sure to remove it before installing Macintosh PC Exchange.

You install Macintosh PC Exchange by dragging the PC Exchange icon into the Control Panels folder of your System Folder and restarting your Macintosh.

Strange Text Characters in a Document

In some cases your Macintosh application program may not be able to interpret the file format of a PC document. When this happens, the document's formatting is displayed incorrectly and you may see strange characters in the document. Try using a different application program or translate the document into a different file format using one of the file format translation utilities available for the Macintosh (such as MacLinkPlus/Easy Open Translators from DataViz).

Paint Programs

Some paint programs, such as MacPaint and SuperPaint, save documents on DOS-format floppy disks very slowly. To avoid this problem, always save paint documents on your computer's hard disk. If you like, you can then copy the documents to a DOS-format floppy disk.

Apple File Exchange and Macintosh PC Exchange

The Apple File Exchange software is not compatible with PC Exchange and should not be used while PC Exchange is installed. Version 2.0 of PC Exchange contains an easier and more intuitive method for accessing DOS and Apple II ProDOS disks on a Macintosh.

AutoDoubler

To use AutoDoubler with Macintosh PC Exchange, you must first open the AutoDoubler control panel and turn off the “Show DD on Compressed Files” option.

ClarisWorks (Version 1.0v2 or Earlier)

Some versions of ClarisWorks cannot read or write files on DOS-format floppy disks. To open a PC document in ClarisWorks, you must first copy the document to your computer’s hard disk. Always save ClarisWorks documents on your Macintosh hard disk. If you like, you can then copy the documents to a PC-format floppy disk. Contact Claris to obtain version 1.0v3 or later of ClarisWorks.

Directory Assistance II

Directory Assistance II should not be used while the Macintosh PC Exchange control panel is open. You can turn off Directory Assistance II from the PC Exchange control panel by holding down the Option key while you click the Add or Change button in the control panel window. Directory Assistance II will be turned off temporarily while you use the PC Exchange control panel and will be reactivated when you close the PC Exchange control panel.

Compressed PC Disks and Files

Macintosh PC Exchange does not work with DOS-format floppy disks or SCSI hard disks that have been compressed using Stacker or other MS-DOS or Windows disk-compression utilities. Before transferring compressed DOS files to a Macintosh, you must decompress the files and save them to a noncompressed DOS-format disk.

Working With PC-Format Disks Containing Multiple Partitions

If a SCSI hard disk or removable media cartridge has been formatted to contain multiple partitions, you can use PC Exchange to mount the Macintosh-, DOS-, or ProDOS-format partitions as individual logical drives on the Macintosh Desktop. If the disk contains both Macintosh and DOS-format partitions, PC Exchange will only recognize the Macintosh partition. In addition, PC Exchange will only recognize ProDOS-format partititions on SCSI hard disks that are less than 32 megabytes.

You can use PC Exchange to erase existing individual partitions on a SCSI hard disk or removable media cartridge to the same format. However, you cannot use PC Exchange to reformat and resize individual partitions contained on the disk. Nor can you format a Macintosh-format hard disk or removable media cartridge as a DOS-format disk. To resize or reformat multiple Macintosh, DOS, or ProDOS partitions, you need to use third-party software designed for partitioning hard disk and removable media cartridges.

Tips for Working with DOS-Format SCSI Removable Media Devices

In order for PC Exchange to recognize SCSI removable media devices, you must turn on the device and eject any cartridges before you turn on your Macintosh system.

Do not install the device driver software that came with your removable media device. Instead, open the PC Exchange control panel, click the Options button, select your SCSI device from the list, and then restart your Macintosh. PC Exchange will install it's own device driver for that SCSI device.

The Eject Disk command is unavailable when working with removable media devices. To unmount and eject a removable media cartridge, drag the device's icon to the Trash. Once the device has spun down and the red light goes out, you can manually eject the cartridge from the drive. To access a removable media cartridge that has been ejected, simply reinsert the cartridge in the drive.

When initializing and formatting Bernoulli and SyQuest cartridges on a PC-compatible computer, use the disk setup and partitioning software that came with the SCSI controller card installed in your PC or that came with your Bernoulli or SyQuest device. Do not use the MS-DOS Fdisk command to initialize a removable media cartridge. In addition, you should use the MS-DOS Format command to format the disk before you copy DOS files to a newly initialized removable media cartridge on a PC.

When you initialize a removable media cartridge on a PC-compatible computer, you must fully partition, initialize, and erase the cartridge using the software that came with your SCSI controller card or removable media device. If you do not, PC Exchange may not recognize the new DOS-format partitions on that cartridge.

Tips for Working with DOS-format SCSI Hard Disk Drives

In order for PC Exchange to recognize SCSI hard disk drives, you must turn on the drive before you turn on your Macintosh system.

Do not install the device driver software that came with your SCSI hard disk. Instead, open the PC Exchange control panel, click the Options button, select your SCSI device from the list, and then restart your Macintosh. PC Exchange will install it's own device driver for that SCSI device.

When initializing and formatting an external SCSI hard disk on a PC-compatible computer, use the MS-DOS Fdisk command or the disk setup and partitioning software that came with the SCSI controller card installed in your PC. In addition, you should use the MS-DOS Format command to format and erase the disk before you copy DOS files to a new SCSI hard disk on a PC.

Known Problems in Version 2.0.1 of Macintosh PC Exchange

- A "Sad Mac" error may occur on your Macintosh if a removable media cartridge is left in the drive during startup. To keep this problem from occurring, manually eject removable media cartridges from the drive before you turn on your Macintosh.

- PC Exchange cannot recognize SCSI hard disks, removable media devices, or

drive container files which contain more than one gigabyte of disk space.

SCSI Hard Disk and Removable Media Drives Not Supported

The following disk drives are not supported by version 2.0.1 of Macintosh PC Exchange:

- Apple 5.25-inch floppy disk drive
- Pinnacle Micro PMO-650 magneto optical drive

Additions to the User's Guide

If you change the volume name of a DOS-format disk to a name that is longer than 11 characters, the disk name will be shortened when you view it on a PC-compatible computer.

If Macintosh PC Exchange encounters a problem while formatting a floppy disk, an Updating Disk dialog box may appear. This dialog box shows the status of the updating process. To stop the disk from being updated, you can click the Cancel button. This cancels the initialization process and the disk is ejected from the disk drive.

You cannot create an assignment with a blank DOS suffix in the PC Exchange control panel.

Common MS-DOS File Suffixes

.BAK	Backup document (used by word processing programs)
.BAS	BASIC program (cannot be used on a Macintosh)
.BAT	Executable DOS program (cannot be used on a Macintosh)
.BMP	Windows Bitmap graphic
.CDR	CorelDraw graphic
.CGM	Computer Graphics Metafile graphic
.COM	Executable DOS file (cannot be used on a Macintosh)
.CWK	Clarisworks document
.DBF	dBASE database file
.DIF	Data Interchange Format (used by spreadsheet and database programs)
.DLL	Windows Dynamically Linked Library (cannot be used on a Macintosh)
.DOC	Microsoft Word document
.DOX	Multimate v4.0 document
.DWG	Autocad drawing
.DXF	Autocad drawing in exchange format
.EPS	Encapsulated PostScript file
.EXE	Executable DOS file (cannot be used on a Macintosh)
.INI	Windows preference file
.OBJ	Compiled object file (cannot be used on a Macintosh)
.PCC	PC Paintbrush graphics file
.PCX	PC Paintbrush graphics file
.PIC	Lotus 1-2-3 graphics file
.PM3	PageMaker 3.0 document
.PM5	PageMaker 5.0 document
.PM4	Pagemaker 4.0 document

.PRG	dBASE program file (cannot be used on a Macintosh)
.PRN	DOS 'Print' file
.RFT	DisplayWrite Revisable Form Text (DCA format)
.SAM	AmiPro document
.STY	Microsoft Word style sheet
.SYL	SYLK format (used by spreadsheet and database programs)
.SYS	DOS system file (cannot be used on a Macintosh)
.TIF	TIFF graphics file
.TXT	ASCII text file
.WDB	Microsoft Works database
.WKS	Lotus 1-2-3 spreadsheet, version 1
.WK1	Lotus 1-2-3 spreadsheet, version 2
.WK3	Lotus 1-2-3 spreadsheet, version 3
.WMF	Microsoft Windows Metafile
.WP	OfficeWriter or WordPerfect document
.WPF	WordPerfect document
.WPG	WordPerfect graphics file
.WPS	Microsoft Works word processing document
.WQ1	Quattro Pro spreadsheet
.WS	WordStar document
.XLA	Microsoft Excel add-in macro
.XLT	Microsoft Excel template
.XLC	Microsoft Excel chart
.XLM	Microsoft Excel macro
.XLS	Microsoft Excel spreadsheet
.XY	XyWrite document

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15771

Tech Info Library

Power Macintosh: AudioVision Display S-Video Unsupported (2/95)

Revised: 4/27/95
Security: Everyone

Power Macintosh: AudioVision Display S-Video Unsupported (2/95)

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Article Created: 07 July 1994
Article Updated/Reviewed: 10 February 1995

TOPIC ----------

When using the AudioVision 14” Display with my Power Macintosh AV, which S-Video port do I use to input video? The S-Video port on the monitor or the S-Video port on the Power Macintosh AV Display card?

DISCUSSION ----------

You should always use the S-Video ports that are on the AV card, since the S-Video port on the AudioVision 14” Display is currently not supported. Page 22 of the AudioVision Display owners guide incorrectly states that S-Video Pass Through is supported.

The same holds true when the AudioVision monitor is connected to a Quadra 660AV or the Quadra 840AV, S-Video is only supported through the card itself and not the monitor.

Article Change History:
10 Feb 1995 - Noted that S-Video is only supported on the card.
13 Oct 1994 - Added keyword; made minor technical updates.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15772

Tech Info Library

Power Macintosh: Using NEC Multisync Monitors (2/95)

Revised: 2/13/96
Security: Everyone

Power Macintosh: Using NEC Multisync Monitors (2/95)

==========

Article Created: 07 July 1994
Article Reviewed/Updated: 13 February 1996

TOPIC ----------

After starting up a Power Macintosh with an NEC multisync monitor, the only resolution available from the Monitors control panel is 640x480. Does the Power Macintosh support resolution switching with NEC monitors?

DISCUSSION ----------

The Power Macintosh supports "on the fly" resolution switching with many third-party multisync monitors (also called multiple scan displays). However, an adapter is required so the Macintosh can detect the proper multisync mode.

For NEC monitors, there is an adapter named "Power Macintosh Adapter" which lets you change resolutions through the Monitors control panel, like you would if you owned an Apple Multiple Scan Display. NEC adapters are available by calling NEC.

Macintosh Centris, Quadra, or LC Owners
==========

With a Centris, Quadra or LC, you can use NEC's "DPI on the fly" software which provides a similar ability to change resolutions.

The "DPI on the fly" software is not compatible with the Power Macintosh.

To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
13 Feb 1996 - Revised discussion.

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Tech Info Library Article Number:15773

Tech Info Library

AppleShare: Description Of Network Trash (7/94)

Revised: 7/7/94
Security: Everyone

AppleShare: Description Of Network Trash (7/94)

==========

Article Created: 07 July 1994

TOPIC ----------

I have seen references to the Network Trash on my AppleShare file server. What exactly is it and do I as an server administrator need to be concerned about it?

DISCUSSION ----------

When file sharing is turned on, or a file server is running, an invisible folder is created on the server called the Network Trash Folder. When a client logs into the server and deletes a file from the server, a folder is created inside the network trash folder (called Trash #1). Any subsequent user who deletes a file from the server, will cause a new file to be created (called Trash #2), and so on. There can be any amount of these folders depending on how many logged in users have items in the trash from the server.

When the user empties the trash on the client machine, the folder is deleted and those items will no longer remain on the server. In the AppleShare Admin program, the administrator has the option to empty the network trash. This option exists because any user who trashes something on the server, then crashes before trash is emptied, will cause those deleted items to be persistent in the network trash folder.

Once the session is terminated, that user has no control over any item that was left in the trash. The administrator can clear out any of these persistent trashed items by emptying the network trash. If a user has trashed a file from the server and logs off from the server gracefully, the finder will put up a dialog saying that all items in the network trash will be deleted.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15774

Tech Info Library

CompuServe: Apple Support Area Overview (7/94)

Revised: 7/7/94
Security: Everyone

CompuServe: Apple Support Area Overview (7/94)

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Article Created: 7 July 1994

TOPIC ----------

This article gives a general overview of the Apple Support Areas available on the CompuServe Information Service.

DISCUSSION ----------

1) Apple Support Forum (also called the Apple Users' Forum) (GO APLSUP) - The Apple Support Forum contains all current Apple software updates, issues of The Information Alley, the Apple Support biweekly electronic magazine on supporting Apple products and basic information on how to contact Apple, organized in a number of libraries by category.

2) Apple Feedback Forum (GO APLFBK) - The Apple Feedback Forum consists of a survey of 5 questions gauging the customers' opinion of the Apple services on CompuServe, as well as an area to make additional suggestions. Results are tabulated weekly by CompuServe and passed onto Apple. Customers with specific questions requiring an answer should e-mail the Apple Forum sysop at 74431,1472.

3) Apple New Updates (GO APLNEW) - The Apple New Software Updates Library allows a large number of CompuServe customers to download the latest and most popular Apple Software Updates released quickly and easily. Software updates are also posted to the appropirate library in the Apple Support Forum.

4) Apple Tech Info Library (GO APLTIL) - The Apple Tech Info Library, our official technical support database will be available July 11th on CompuServe. The Apple Tech Info Library contains over 4,000 articles on Apple products, past and present and is updated weekly. Topics covered in articles include:

- Technical product specifications
- Product compatibility information
- How to setup and interface products
- Answers to commonly asked questions

- Descriptions of known problems and, in many cases, workarounds

The Apple Support areas are updated daily and the Sysop checks incoming e-mail daily, Monday through Friday. While the sysop(s) cannot provide direct "one on one" technical support, they will give their "best effort" assistance in helping CompuServe customers find answers to their questions via Apple's online resources.

Apple areas can be easily accessed by CompuServe customers by typing in the GO words which appear next the names of each area above. Additionally, typing the GO words "APPLE" or "MACINTOSH" will present you with a menu which includes the item "Apple Computer, Inc" Choosing this item will display a list of the four Apple areas listed above.

Interested customers can subscribe to CompuServe by purchasing a CompuServe Starter Kit from a variety of computer resellers, mail order companies or call CompuServe customer service in the USA at 1-800-848-8990.

For more detailed information on Apple support areas on CompuServe, use "CompuServe" as a search string in the Apple Tech Info Library.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15775

Tech Info Library

SimpleText: Incorporating Graphics In Documents (1/97)

Revised: 1/15/97
Security: Everyone

SimpleText: Incorporating Graphics In Documents (1/97)

==========

Article Created: 7 July 1994
Article Reviewed/Updated: 15 January 1997

TOPIC ----------

Is it possible to incorporate graphics or stylized text into a SimpleText document? If so, how?

DISCUSSION ----------

WARNING:
The instructions in this article refer to using ResEdit to alter your system software. Apple Computer, Inc., is not liable for any damage done to your software through the use of ResEdit to alter the software. The User Assistance Center phone representatives (at 800-SOS-APPL) do not provide technical support for ResEdit. It is supported by APDA. For contact information on APDA, search the Tech Info Library under "APDA".

You can incorporate graphic elements such as boldface and centered text, graphs, or pictures into SimpleText 1.1 documents as PICT resources. Here's how:

1. Create your document, type two carriage returns, an Option-Spacebar key sequence, and two more carriage returns in the places where you want to place the graphics or specially-formatted text.

2. Create your specially-formatted text or graphics and paste them into the Scrapbook.

   NOTE: The text will need to be in "PICT" format. You can use MacDraw or other similar application to create a PICT file.

3. Using ResEdit, open your SimpleText document.

4. Open the Scrapbook. Copy and paste your formatted text or graphics from the Scrapbook into the document. ResEdit will create a new resource of

type "PICT" in your document.

6. When done, select Get Info from the Resource menu -- for ID type in "1000". Do the same for all the formatted text or graphics in the Scrapbook, remembering to increment the ID by 1 for each successive resource (1001, 1002, etc.).

7. Quit ResEdit, saving changes.

8. Open your SimpleText document. Insert or delete carriage returns to adjust the graphics and formatted text, which will be automatically centered.

Article Change History:
15 Jan 1997 - Added ResEdit warning notification.

Copyright 1994-97, Apple Computer, Inc

Tech Info Library Article Number:15776

Tech Info Library

Power Macintosh AV: Recovering Icons Moved Off Screen (2/95)

Revised: 2/2/95
Security: Everyone

Power Macintosh AV: Recovering Icons Moved Off Screen (2/95)

==========

Article Created: 08 July 1994
Article Reviewed/Updated: 02 February 1995

TOPIC ----------

If the icons such as the Trash can or other icons on your Power Macintosh are shifted off the screen, here is how to move them back to the active desktop.

DISCUSSION ----------

Start the Macintosh from the hard drive as normal and close all Finder windows. Next, select all desktop icons by the Command-A key sequence or choosing Select All from the Edit menu.

Hold down option key, then click on Special menu to choose Clean Up All. At this point, any icon that may have moved off screen will be visible on the active desktop.

One other method is to move the Finder Preferences file from your Preferences folder inside your System Folder to the desktop and restart your Macintosh. The preferences file will be recreated and you can then throw away the old file. This will force all desktop icons to return to the active display.

Additional information on this issue can be found in the Tech Info Library article titled "Power Macintosh AV: Monitors Ctrl Panel Shows Ghost Monitor."

Article Change History:
02 Feb 1995 - Additional troubleshooting step documented.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15780

Power Macintosh Graphing Calculator: No Spec Sheet Avail. (5/96)

Revised: 5/29/96
Security: Everyone

Power Macintosh Graphing Calculator: No Spec Sheet Avail. (5/96)

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Article Created: 08 July 1994
Article Reviewed/Updated: 29 May 1996

TOPIC ----------

I have a school customer who is very interested in the Power Macintosh graphic calculator for use in the science and math curriculum at her school.

Is there any literature or spec sheets available for the calculator and will it run on an 680x0 based Macintosh?

DISCUSSION ----------

The Graphing Calculator is only a demo application used to demonstrate the power of the Power Macintosh in performing complex mathematical calculations. Since this is only a demo application, there are no specification sheets or other literature available from Apple. As the Graphing Calculator installed on your Power Macintosh computer is a native application written specifically for the Power Macintosh, it will only run on the Power Macintosh.

The books, "Introducing Dynamic Algebra with NuCalc" and "Advanced Algebra Through Data Exploration: A Graphing Calculator Approach" are available from a third party company, Key Curriculum Press, The book give further documentation on how to use the Graphing Calculator in a classroom setting. Contact Key Curriculum Press to obtain a copy of the book.

There is a 680x0 version of the Graphing Calculator available from Key Curriculum Press. The publisher, Key Curriculum Press, does not provide technical support for the Graphing Calculator for 680x0 based computers.

The Tech Info Library article titled "Locating Vendor Information" can help you search for Key Curriculum Press' address and phone number.

Article Change History:

29 May 1996 - Updated with third party information.
27 Sep 1995 - Updated with third party information.

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Tech Info Library Article Number:15781

Tech Info Library

Macintosh: Altering Default View In The Finder (7/94)

Revised: 7/8/94
Security: Everyone

Macintosh: Altering Default View In The Finder (7/94)

==========

Article Created: 08 July 1994

TOPIC -----

Is there a way that I can have the Macintosh operating system set the folder views for all my folders to "View by Name" without opening each one individually. Also, can "View by Name" be set as the default view?

I am using System 7 and 7.1.

DISCUSSION -----

Sadly, there is no Apple utility to allow you to globally change the views for all folders on the volume to any particular setting. However, you might check if there is such a shareware/freeware utility which might allow you to do it.

There is no way to alter the operating system to have View by Name as the default.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15782

Tech Info Library

PowerBook 500 series: Connector For Sound In Port (4/95)

Revised: 4/4/95
Security: Everyone

PowerBook 500 series: Connector For Sound In Port (4/95)

==========

Article Created: 08 July 1994
Article Reviewed/Updated: 04 April 1995

TOPIC ----------

What type of connector is needed for the sound in port on a PowerBook 500 series computer?

DISCUSSION ----------

The connector to use with the 500 series PowerBooks is a standard 3.5mm stereo plug.

A stereo plug has three sections on it, the tip, the ring and the sleeve. Each of these sections of the plug are separated by a black band, a stereo jack would have two black bands, a mono jack would have only one black band.

It is not necessary to use the RCA phono to 3.5mm jack adapter that were used by some previous Macintosh models. These adapters had built in attenuation that would drop the signal level for the sound input on certain Macintosh computers.

Article Change History:
04 Apr 1995 - Corrected size of phono plug.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15784

Tech Info Library

Information Alley: Volume 1 Issues Index (7/96)

Revised: 7/1/96
Security: Everyone

Information Alley: Volume 1 Issues Index (7/96)

==========

Article Created: 8 July 1994
Article Reviewed/Updated: 1 July 1996

TOPIC ----------

This article includes a complete index of the topics covered in past issues of Volume I of the "Information Alley", Apple's online technical newsmagazine. This article lists topics by Volume/Issue; the number to the right of each topic indicates the page number in the appropriate issue.

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Article Change History:
01 Jul 1996 - Added Fax Doc Word
13 Jun 1995 - Made multiple format corrections; fixed typo.
01 Jun 1995 - Updated to include all issues since 23 March 1995.

Support Information Services

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Tech Info Library Article Number:15785

Tech Info Library

CompuServe: Apple Support Forum Library Descriptions (10/96)

Revised: 11/4/96
Security: Everyone

CompuServe: Apple Support Forum Library Descriptions (10/96)

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Article Created: 8 July 1994
Article Reviewed/Updated: 03 October 1996

TOPIC ----------

The libraries of the CompuServe Apple Support Forum are updated regularly with the latest Apple software updates and information. Below is a list of all the libraries and what they hold.

NOTE: Apple software updates posted to the Apple Support Forum on CompuServe are the same set as those posted to Apple sites on the Internet and America On Line.

DISCUSSION ----------

The libraries of the Apple Support Forum are updated daily with the latest Apple software updates and information. Below is a list of all the libraries and what they hold.

• Apple Computer Info (1) - basic information about the services which Apple provides on CompuServe, how to use the Apple Support Forum, how to contact Apple, as well as ordering Apple products and where to obtain additional information.

• System 7.5.5 Update (2) - This library contains the latest version of System Software. It includes a three disk set or a Net Install for those who only want to download once. There is a FAQ (Frequently asked Questions) for those with questions regarding installation and updating.

• Information Alley (3) - Apple's Support oriented newsletter, The Information Alley, is filled with top technical questions and answers as compiled by the Apple Assistance Center in Austin, Texas, USA.

• Product Information (4) - Current Product information such as Apple shipping products list.

***Apple Software Updates - All freely distributed Apple software updates are posted to the Apple Support Forum and are divided into the following libraries:

• Press Releases (5) - This library contains Apple Press Releases.

• Net - Comm SW (Networking & Communications)(6) - contains update installers for Apple networking software, patches for MacTCP, MacX25 and more. Most of these files update your existing copy of Networking & Communications software.

• Display - Peripherals SW(7) - Software that allows you to use your Apple Scanner, CD-ROM drive, monitors, as well as other Apple peripherals.

• System SW(8) - containing free versions of System Software 6.0.7, and System Software 7.0.1, QuickDraw GX files.

• Other System SW(9) - This library contains the latest in System Updates, System patches, System Update 3.0, latest versions of all System Enabler files for those Macintosh computers that require them.

• Printing Software(10) - The latest printer driver software for Apple printers.

• Utilities SW(11) - Disk First Aid, HD SC Setup and all of the utilities that Apple publishes.

• Apple II(12) - Includes the latest Apple II software.

• DOS-Windows(13) - Updates for Apple DOS/Windows software, as well as the latest DOS/Windows printer software.

• Newton SW(14) - Includes the latest Newton system updates and demos of commercial Newton software.

• Apple Remote Access (15) - Incudes the latest ARA Client updater as well as 2.0 User Scripts and 1.0 Original Scripts

• LaserWriter Software (16) - Includes software to update your LaserWriter or your Color LaserWriter.

• Older System Software (17) - This library contains Operating System Software from 6.0.3 to 7.5.3 Revision 2. For your convenience, the latest system software is posted to a unique library (2) and the previous systems are moved to this library.

• Unsupported Software (18) - This library contains unsupported software. This includes Unsupported Beta release of Open Transport 1.1.1

• Under Construction (19)

• True Type SW (20) - This library is currently empty.

• System Enablers (21) - This library includes System Enablers for all systems including PowerBooks.

• QuickDraw GX (22) This library contains QuickDraw GX 1.1.3 updates as a Net install or a four disk set.

• Speech Software(19) - All software related to text to speech.

If you have questions or problems downloading items from the Apple Support Forum libraries, please contact the Sysop at 74431,1472.

Article Change History:
11 Nov 1996 - Update Library descriptions
03 Oct 1996 - Update Library descriptions

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Tech Info Library Article Number:15786

Tech Info Library

Falcon Microsystems, Inc.

Revised: 7/11/94
Security: Everyone

Falcon Microsystems, Inc.

==========

Article Created: 11 July 1994

Falcon Microsystems, Inc.

1100 Mercantile Lane
Landover, MD 20785-5337
USA

Telephone: 301-341-0100 (Main Number)

Telephone: 301-386-8500 (Technical Support)

Fax: 301-341-0187

Company Profile:
Apple authorized vendor for Macintosh systems and Apple products sales to the federal government.

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Tech Info Library Article Number:15788

Tech Info Library

System 7.5: Key Features (3/95)

Revised: 3/23/95
Security: Everyone

System 7.5: Key Features (3/95)

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Article Created: 11 July 1994
Article Reviewed/Updated: 23 March 1995

TOPIC ----------

Below is a discussion of the key features of Macintosh system software version 7.5.

DISCUSSION ----------

Active Assistance & Customization
==========

• Apple Guide: an innovative help system that interactively helps users accomplish specific tasks. It also works with third-party applications.

• AppleScript: facilitates the automation of routine tasks. AppleScript features a natural syntax designed specifically for ease of use.

• Macintosh Drag and Drop: expands on the cut and paste metaphor allowing users to select and drag any element from one document to another, or to a clippings file which can be saved on the desktop.

• New Productivity Features: include a hierarchical Apple Menu, Stickies to create on-screen reminder memos, WindowShade allows a user to hide a window, support for 4GB hard disk drives, and Find File which enables complex file searches.

Compatibility With Non-Apple Environments

• Macintosh PC Exchange 2.0: allows DOS/Windows, OS/2, and Apple II ProDOS disks and mass storage media to appear on the Macintosh desktop like regular Macintosh disks.

• Macintosh Easy Open with document translators allows data files to be opened without using the application that originally created them.

• MacTCP: TCP/IP (Transmission Control Protocol/Internet Protocol) implementation for Macintosh. Allows Macintosh computers to interact with other computers running TCP/IP such as UNIX workstations and mainframes. TCP/IP is the standard protocol for the Internet.

Advanced Graphics and Printing

• QuickDraw GX: the next step forward in graphics—with easier printing, color management, typography and document portability.

• QuickTime 2.0: allows multimedia capabilities without additional video hardware.

Collaborative Technologies

PowerTalk: Provides a set of collaborative services that allow users to send electronic mail, share files, and digitally "sign" and forward documents from within an application. System 7.5 also includes the Telephone Manager which allows Macintosh computers to integrate with telephone switching software.

Mobile Computing

A combination of communications, power management, information management, and DOS compatibility software.

Bundled Software

System 7.5 includes the following software versions:
• Macintosh System software version 7.5 and utilities
• AppleCD Audio Player 2.0
• AppleScript 1.1, including sample scripts
• Macintosh CD Setup 5.0.1
• Macintosh Easy Open 1.1
• Macintosh PC Exchange 2.0.1
• MacTCP software version 2.0.4
• PowerBook Control Strip 1.1
• PowerBook File Assistant 1.0
• PowerTalk 1.1, including AppleMail and DigiSign software
• QuickTime 2.0
• QuickDraw GX 1.0.1
• Sound Manager 3.0

Compatibility

System 7.5 is expected to be compatible with most applications that are compatible with System 7.1. However, in order to use some new features of System 7.5, application programs must be written to take advantage of its capabilities.

A Safe Install utility will be included in System 7.5 which can advise users if control panels and extensions are not compatible. The Safe Install utility does not give compatibility information about application programs but it does provide application program vendors' phone numbers.

Usage Requirements

- CPU: System 7.5 requires a Macintosh Plus or later. PowerTalk and QuickDraw GX require a Macintosh computer equipped with a 68020 microprocessor or better.

- DRAM: 4MB minimum for Macintosh, Performa, and PowerBook computers; 8MB minimum for Power Macintosh computers; 8MB to run PowerTalk and QuickDraw GX on Macintosh, Performa, and PowerBook computers; 16MB to run PowerTalk and QuickDraw GX on Power Macintosh.

- Hard disk is required, 25MB must be free for a complete installation.

Article Change History:
23 Mar 1995 - Changed one erroneous occurrence of QuickTime 1.6.2 to 2.0.
14 Feb 1995 - Added Sound Manager 3.0 and updated format.
28 Sep 1994 - Changed to show QuickTime 2.0 ships with System 7.5.

Support Information Services

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Tech Info Library Article Number:15789

QuickDraw GX: Discussion Of Key Features (7/96)

Revised: 7/1/96
Security: Everyone

QuickDraw GX: Discussion Of Key Features (7/96)

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Article Created: 11 July 1994
Article Reviewed/Updated: 01 July 1996

TOPIC ----------

This article discusses the key features of QuickDraw GX.

DISCUSSION ----------

QuickDraw GX is a Macintosh system software extension that provides printing features as well as advanced graphics, type, and color capabilities. QuickDraw GX works with existing Macintosh applications and fonts and provides enhanced printing functionality and document portability.

KEY FEATURES

PostScript integration

QuickDraw GX automates the typographic process determining proper kerning, justification, and ligature sets. It also provides a number of ways of working with PostScript™:

- Enhanced font management

  QuickDraw GX uses Adobe Type Manager GX (ATM GX) to provide complete support for Type 1 fonts. You can work directly with Multiple Master fonts, eliminating the need for multiple weights and instances.

- Smarter printing of type

  QuickDraw GX controls the downloading of all font formats, including TrueType, to PostScript printers. QuickDraw GX downloads only the characters needed from any font so that more fonts can exist in the printer RAM.

- Extended functionality of existing PostScript devices

QuickDraw GX provides real-time color interaction between objects (transfer modes), perspective transforms on graphics and type, and high-level type features on existing PostScript devices through ColorSync color management technology.

Customizable, Extensible Printing

QuickDraw GX lets you use a printing enhancer background application to customize your printing process to provide increased control, security, and feedback. Examples of this feature are print multiple document pages to a single sheet of paper, or printing grayed “Confidential” across every page of a document.

Capabilities of QuickDraw GX drivers may be expanded by adding QuickDraw GX Extensions to a user’s system folder.

Printing Interface

You can create a desktop icon of your printer then drag any document on top of the icon to have it printed. You can use the printer icon to reorder the print queue, postpone a print job, or transfer print jobs to other printers by dragging document icons to a new location or printer icon.

Printer Sharing

Using desktop printer icons, you can share any output device attached to an individual Macintosh across an entire network.

Password Protection

You can control access to output devices, such as film recorders, to control the use of costly consumables, such as color film, color toner, or expensive types of paper.

BUNDLED SOFTWARE

- Drivers
  - LaserWriter GX
  - ImageWriter GX
  - ImageWriter LQ GX
  - StyleWriter GX
  - LaserWriter 300 GX
  - LaserWriter IISC GX
  - Portable Digital Document Maker GX
- Fonts
  - Apple Chancery
  - Skia
  - Tekton Plus
  - Hoefler & Hoefler Ornaments
- Utilities
  - SimpleText 1.1.1
  - LaserWriter Utility 7.7

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    QuickDraw GX Helper 1.0
    Type 1 Enabler 1.1.9
    PaperType Editor 1.0
 - System Software
    QuickDraw GX 1.0.1
    ColorSync 1.0.5
    ATM GX 3.7
```

COMPATIBILITY

System 7.5 is compatible with most applications that are compatible with System 7.1. However, in order to use some new features of System 7.5, application programs must be written to take advantage of its capabilities.

QuickDraw GX is compatible with Type 1 and TrueType fonts.

The LaserWriter GX driver is compatible with many third party laser printers that use the standard LaserWriter driver.

The following devices may not be compatible with QuickDraw GX until their manufacturers write and distribute suitable drivers or software:

Non-Apple products:	Apple products:
fax modems	Express Modem (fax capabilities)
laser printers	LaserWriter PostScript Fax Cards
ink jet printers	Color StyleWriter Pro
color imagers	Apple Color Printer
plotters	Portable StyleWriter

Check with the appropriate third party vendor for additional information about specific products.

USAGE REQUIREMENTS

QuickDraw GX requires a Macintosh, Performa, or PowerBook computer with 8MB DRAM and a 68020 microprocessor or better. It runs on all Power Macintosh computers with 16MB of DRAM.

QuickDraw GX runs with System 7.1 or later.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
01 Jul 1996 - Added Fax Doc Word
22 Feb 1995 - Corrected typo in software utility name.
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

09 Dec 1994 - Added keywords and list of features; other minor corrections.

Support Information Services

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Tech Info Library Article Number:15792

Tech Info Library

Power Macintosh AV: No Sound Through Internal Speaker (7/94)

Revised: 7/11/94
Security: Everyone

Power Macintosh AV: No Sound Through Internal Speaker (7/94)

==========

Article Created: 11 July 1994

TOPIC -----

I have a Power Macintosh AV model and am not getting any sound generated through the internal speaker. There is nothing connected to either the microphone or sound out port on the AV. What could be causing the problem?

DISCUSSION -----

Before replacing the logic board or speaker, plug the microphone into the headphone port a couple of times, and then pull it back out.

The headphone port isn't designed for the longer connector used on the PlainTalk microphone. If the microphone connector is accidentally inserted into the headphone port by mistake, it's may jam the headphone port in a closed position. This may cause the system think there are headphones or external speakers connected and disable sound through the internal speaker.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15793

Tech Info Library

PowerBook 500 series: Dual Speed Explained (8/94)

Revised: 8/30/94
Security: Everyone

PowerBook 500 series: Dual Speed Explained (8/94)

==========

Article Created: 11 July 1994
Article Reviewed/Updated: 30 August 1994

TOPIC ----------

This article explains the Dual Speed rating for the processor used in the PowerBook 500 series computers.

DISCUSSION ----------

Traditionally, Apple has advertised the processor's bus clock speed as the speed of the CPU. In the case of the PowerBook 500 series, this is 33Mhz. On the other hand, the DOS world has advertised the processor clock speed, which is twice the bus clock speed, for certain processors. As this is more of an industry standard, we have begun to publicize the processor clock speed, in this case, 66Mhz.

Article Change History:
30 Aug 1994 - Corrected for technical accuracy.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15794

Tech Info Library

Adobe Illustrator 5.5: Install Problem, Destination Disk 12/95

Revised: 12/8/95
Security: Everyone

Adobe Illustrator 5.5: Install Problem, Destination Disk 12/95

==========

Article Created: 7 July 1994
Article Reviewed/Updated: 8 December 1995

TOPIC ----------

While installing Adobe Illustrator version 5.5, the installer produces the error "Was unable to load Adobe Illustrator 5.5 because there is a problem with the destination disk." Is there a problem with the destination disk (my hard drive)?

DISCUSSION ----------

There is no problem with the destination disk (your hard drive). Adobe is aware of problems installing Adobe Illustrator version 5.5. Adobe suggests the following workaround:

- Open the System Folder on your hard drive.
- Drag the Fonts folder from within your System folder onto the desktop.
- Run the Adobe Illustrator 5.5 installation program.
- Drag the contents of Fonts folder on the desktop onto the closed System Folder on your Hard Drive to reinstall the fonts.
- Drag the empty Fonts folder from the desktop to the Trash and empty the Trash.

NOTE This information is provided to inform you of a situation involving an error message that may falsely indicate a problem with your Apple Macintosh hardware. Apple Computer, Inc. does provide technical support for Adobe Illustrator. For further details and information on this problem and other questions about Adobe Illustrator version 5.5 you will need to contact Adobe.

Article Change History:

08 Dec 1995 - Removed keyword.

Support Information Services

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Tech Info Library Article Number:15795

Tech Info Library

PowerShare: How to Setup Administrator's Mail (7/94)

Revised: 7/13/94
Security: Everyone

PowerShare: How to Setup Administrator's Mail (7/94)

==========

Article Created: 11 July 1994

TOPIC ----------

When I attempt to send messages to my PowerShare Mail Server Administrator I get a message that says the mail was undeliverable. Why? How can I fix this problem?

DISCUSSION ----------

By default, the Administrator's mail account is not active in a PowerShare system. Users attempting to send messages to the Administrator's address may find that their mail is undeliverable.

To receive mail as Administrator you must:

- Open the Administrator's catalog record in PowerShare Admin.
- Change the Mail Account setting from "None" to the appropriate mail server.
- Now you may either set your keychain identity to "Administrator" or open a Guest MailBox for "Administrator" to receive mail for that account.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15796

Tech Info Library

MAE: MS Word File Cannot Be Opened By Word For Windows (4/96)

Revised: 4/9/96
Security: Everyone

MAE: MS Word File Cannot Be Opened By Word For Windows (4/96)

==========

Article Created: 11 July 1994
Article Reviewed/Updated: 9 April 1996

TOPIC ----------

I'm using Microsoft Word for Macintosh under MAE on an HP workstation with an NFS server, and after saving a document I cannot open it on a PC with Word for Windows. However, the same document can be opened by Word for Macintosh via NFS Share. What's the problem?

DISCUSSION ----------

MAE 2.0

The solution under MAE 2.0.x is to either start MAE with the -filedouble option, or download the "asdtool" tool from www.mae.apple.com. This tool will separate AppleSingle files into AppleDouble files, and vise versa.

MAE 1.0

As a workaround in MAE 1.0 use the environment variable, TBFILEFORMAT. Set it to 1 (one) BEFORE you launch MAE, this will change the default file format to AppleDouble instead of AppleSingle. Below are more details.

We installed PC/TCP software on a PC and configured it to have NFS client capability. We did a couple of tests regarding your problem with Microsoft Word documents created under MAE. Here was our test environment:

HP-UX 9.0.3 NFS server
MAE 1.0 Macintosh Word 5.1a

Power Macintosh 8100 NFS/Share 1.3.5
Macintosh Word 5.1a

Gateway2000 Pentium Windows 3.1
PC/TCP 2.3 for DOS/Windows with NFS client feature built-in

..TIL15798-MAE-MS_Word_File_Cannot_Be_Opened_By_Word_For_Windows_4-96_(TA32072)

Word for Windows 6.0

Here are the results, we did verify the symptom you encountered. The "FILE TYPE" used when the Word document is first saved after creation is very important. Under MAE if the file was saved as "Normal", it CANNOT be opened by Word for Windows 6.0 on a PC. The "Normal" FILE TYPE saved by Macintosh Word 5.1a under MAE is in AppleSingle file format and can't be recognized as a regular Word document by the Word for Windows application. This could be the problem you encountered. However, if a Word document under MAE is saved (with the FILE TYPE created) as "Text Only" or "Interchange Format (RTF)", it can be opened correctly by Word for Windows. Note that "Text Only" or "InterChange Format (RTF)" file types saved by Macintosh Word under MAE is in AppleDouble file format.

In summary, the problem is the MS Word document saved as the "Normal" file type under MAE is in AppleSingle file format, and Word for Windows cannot recognize AppleSingle file format. However, the Word document saved as a "Normal" file type in a NFS file system via Macintosh NFS/Share is an AppleDouble file format. This is why it can be opened by the Word for Windows application.

As a workaround set the environment variable, TBFILEFORMAT to 1 (one) BEFORE you launch MAE, this will change the default file format to AppleDouble instead of AppleSingle.

Article Change History:
09 Apr 1996 - Included MAE 2.0 workaround.
29 Jun 1995 - Corrected spelling.
20 Mar 1995 - Made minor corrections for clarity.

Copyright 1994-96, Apple Computer, Inc.

Tech Info Library Article Number:15798

Tech Info Library

GeoPort: Missing Station ID In Faxes Sent (5/95)

Revised: 5/11/95
Security: Everyone

GeoPort: Missing Station ID In Faxes Sent (5/95)

==========

Article Created: 12 July 1994
Article Reviewed/Updated: 11 May 1995

TOPIC ----------

When I'm using my GeoPort with the Express Fax software, Faxes received on other computers do not show the page number and station ID at the top of each received page. When sending to other Fax machines, this information is displayed at the top of the page.

Is there any way to transmit the Station ID at the top of each page? The manual says on page 26 "If your recipient's Fax device has the capability, Station ID is printed on the top of each page of the Fax document, along with the date and time." We tried every option we could find and nothing gave us Station ID on the document.

DISCUSSION ----------

The sending of the Station ID is a function of the sending Fax machine. With the Express Modem Fax software, the Station ID is transmitted to the receiving machine. Station ID is a 20-character header line identification of your choice. If your recipients's Fax device has the capability, Station ID is printed on the top of each page of the Fax document, along with the date and time.

Apple Telecom 2.0 software fixed a problem with the Express Fax software involving the proper transmission of the Station ID, where some receiving Fax machines failed to print the Station ID header on each page. Also, when using QuickDraw GX, the Station ID only needs to be placed on the cover page.

Article Change History:
11 May 1995 - Updated article with Apple Telecom 2.0.

Support Information Services

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..TIL15800-GeoPort-Missing_Station_ID_In_Faxes_Sent_5-95_(TA32076).pdf

Tech Info Library Article Number:15800

Tech Info Library

TelePort/Bronze: GlobalFax Receive Software Install Fails-7/94

Revised: 7/12/94
Security: Everyone

TelePort/Bronze: GlobalFax Receive Software Install Fails-7/94

==========

Article Created: 12 July 1994

TOPIC ----------

I'm running the Installer for the GlobalFax Receive software and I get the following message:

"The Installer needs more memory to perform an installation. Try quitting other applications and running the Installer again. You can also try removing system extensions (INITs) or lowering your RAM cache size and restarting to make more memory available."

DISCUSSION ----------

Unlocking the installation disk usually resolves this problem.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15801

Tech Info Library

PowerBook 500 Series: Floppy Drive Alignment Procedure (7/94)

Revised: 7/12/94
Security: Everyone

PowerBook 500 Series: Floppy Drive Alignment Procedure (7/94)

==========

Article Created: 12 July 1994

TOPIC ----------

Why would a PowerBook 500 series machine have problem accepting floppy disks after the floppy drive was replaced?

DISCUSSION ----------

The floppy drive in the PowerBook 500 must be aligned after being installed into the unit or it may not accept or eject diskettes properly.

To start the alignment process, start with the screw located closest to the display. With your free hand push from the rear of the drive towards the floppy disk insert slot located on the right hand side of the PowerBook.

While applying light pressure to the drive, tighten down the screw under the display then insert the remaining screws and tighten them down. The drive should be properly aligned in the PowerBook.

Support Information Services

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Tech Info Library Article Number:15802

Tech Info Library

DOS Compatibility Card: Can't Use Most DOS Backup Programs 7/95

Revised: 7/17/95
Security: Everyone

DOS Compatibility Card: Can't Use Most DOS Backup Programs 7/95

==========

Article Created: 13 July 1994
Article Reviewed/Updated: 17 July 1995

TOPIC ----------

We are trying to perform a backup to floppy of files from a Macintosh DOS Compatible computer.

When we tried to configure the backup or to do it using DOS backup, a message appears saying the estimated time is 1:24. More than an hour passes and nothing occurs, no copy to disk is made. From Windows, it hangs up and we have to reset the computer. From CPBACKUP, the program hangs up when the backup is attempted, the same program works fine in a 486DX equipped PC.

Reinstalling MS-DOS and Windows have not corrected problem.

DISCUSSION ----------

The problem you are experiencing is due to the program trying to write directly to the floppy drive hardware. Since we are only emulating a DOS compatible floppy drive, accessing the hardware directly fails. Backup programs in order to gain speed, typically use DMA to write to floppy drives. Since the backup programs are not using DOS BIOS calls, they fail when they don't find the actual hardware they're looking for. However, some applications, such as Norton Backup for Windows can perform backups to floppy disks.

Norton Backup for Windows has the same problem as other backup software when using the floppy drive but Norton Backup also has a work around for this. Norton Backup for Windows has a feature to backup files to any valid DOS path. By using "A:\" as the DOS path, Norton Backup for Windows will backup to floppy disks when used with the DOS Compatibility Card.

The DOS Compatibility Card is not a "true DOS machine", we are a "DOS compatible" machine. Because of current technology limitations, there is no way to "emulate" DMA access to an Intel x86 architectured device. Anything that tries to access hardware directly, do not work in the DOS compatible card

environment. When the PC was first designed, and in subsequent revisions of the PC hardware, BIOS was designed to handle the interface between the operating system and hardware. In order to ensure software compatibility, software programmers were urged to use BIOS calls as opposed to writing directly to hardware. With our DOS compatible card, any program that makes BIOS calls should work, and any program that writes directly to hardware will probably fail.

There are no plans to add support for floppy disk DMA access to the DOS Compatible Card. Current solutions to the problem are copying the complete drive file to a different storage device while in the Macintosh environment, or double-clicking the drive container file and copying individual files from it, also while in the Macintosh environment.

Article Change History:
17 Jul 1995 - Added third-party solution
07 Nov 1994 - Added additional information on why Backup programs fail.

Support Information Services

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Tech Info Library Article Number:15804

Tech Info Library

DOS Card: Video Modes Supported (7/94)

Revised: 7/13/94
Security: Everyone

DOS Card: Video Modes Supported (7/94)

==========

Article Created: 13 July 1994

TOPIC ----------

What video modes are supported by the DOS compatible card?

DISCUSSION ----------

Here is the table of video modes supported by the DOS compatible card:

Apple 13"/14" Monitor

Mode	Mode Type	Size/Chars	Char. Box	Colors
0	Text	40x25	8x8	16
00*	Text	40x25	8x14	16
00+	Text	40x25	9x16	16
1	Text	40x25	8x8	16
01*	Text	40x25	8x14	16
01+	Text	40x25	9x16	16
2	Text	80x25	8x8	16
02*	Text	80x25	8x14	16
02+	Text	80x25	9x16	16
3	Text	80x25	8x8	16
03*	Text	80x25	8x14	16
03+	Text	80x25	9x16	16
4	Graphics	320x200	N/A	4
5	Graphics	320x200	N/A	4
6	Graphics	640x200	N/A	2
7	Text	80x25	9x14	Mono
07+	Text	80x25	9x16	Mono
0D	Graphics	320x200	N/A	16
0E	Graphics	640x200	N/A	16
0F	Graphics	640x350	N/A	Mono
10	Graphics	640x350	N/A	16
11	Graphics	640x480	N/A	2

12	Graphics	640x480	N/A	16
13	Graphics	320x200	N/A	256
79	Graphics	640x480	N/A	256

Apple 16" Monitor

0	Text	40x25	8x8	16
00+	Text	40x25	9x16	16
1	Text	40x25	8x8	16
01+	Text	40x25	9x16	16
2	Text	80x25	8x8	16
02+	Text	80x25	9x16	16
3	Text	80x25	8x8	16
03+	Text	80x25	9x16	16
4	Graphics	320x200	N/A	4
5	Graphics	320x200	N/A	4
6	Graphics	640x200	N/A	2
07+	Text	80x25	9x16	Mono
0D	Graphics	320x200	N/A	16
0E	Graphics	640x200	N/A	16
11	Graphics	640x480	N/A	2
12	Graphics	640x480	N/A	16
13	Graphics	320x200	N/A	256
6A	Graphics	800x600	N/A	16
70	Graphics	800x600	N/A	16

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15805

..TIL15808-LaserWriter_Pro_630-Adjusting_Print_Density_7-94_(TA21613).pdf

LaserWriter Pro 630: Adjusting Print Density (7/94)

Revised: 7/13/94
Security: Everyone

LaserWriter Pro 630: Adjusting Print Density (7/94)

==========

Article Created: 13 July 1994

TOPIC ----------

The Users Guide for my LaserWriter Pro 630 states that I can change the print density via the LaserWriter Utility. When I attempt to change the density, I see no noticeable change in the density. Am I missing something?

DISCUSSION ----------

The LaserWriter Utility will allow you to make changes to the print density however the change in density is minimal and may not be visible under normal circumstances.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15808

Tech Info Library

LaserWriter Pro 630: Tray Addressing Under A/UX (2/95)

Revised: 2/8/95
Security: Everyone

LaserWriter Pro 630: Tray Addressing Under A/UX (2/95)

==========

Article Created: 12 July 1994
Article Reviewed/Updated: 8 February 1995

TOPIC ----------

I need to know how to address multiple paper trays on a LaserWriter Pro 630 directly from within the A/UX command shell. Do I need some Postscript code?

DISCUSSION ----------

Caution:
========
If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

We have used the following postscript functions code to select and print to different paper trays using the "lpr" command under the A/UX command shell. The below postscript code must be inserted in a Postscript (ready) file. For printing text files you can use the "enscript" program to convert text files to Postscript format:

```
enscript -pout.en out.txt
```

Basically, the following values passed to the /zselectmediasource function will select the desired tray:

```
0 zselectmediasource      % select the standard 250 sheet standard tray
1 zselectmediasource      % select the multipurpose tray
2 zselectmediasource      % select the optional 500 sheet tray
3 zselectmediasource      % select the optional envelope feeder
```

Also the following code segment (appended at the end of defined functions) will select the letter sized paper from the 500 sheet tray

```
  letter
  zsetmultipurposepagesize
  2 zselectmediasource

Lines started with "%" are comments in Postscript.


% Paper source selection code for the LW Pro.
% Copyright (c) ) Apple Computer, Inc. 1992-1993

/zbdf
{
   bind def
}bind def

/zxdf
{
   exch def
}zbdf

%----------------------------------------------------------------------
% zislwpro  -- boolean
% Returns true if product is LaserWriter Pro 600 or 630.

/zislwpro
{
   statusdict begin/product load end dup(LaserWriter Pro 630)eq
   exch(LaserWriter Pro 600)eq or
}zbdf

%----------------------------------------------------------------------
% zisntr  -- boolean
% Returns true if product is Personal LaserWriter NTR.

/zisntr
{
   statusdict begin/product load end(LaserWriter Personal NTR)eq
}zbdf

%----------------------------------------------------------------------
% zadjustpagedevice  dict --
% Similar to setpagedevice but attempts to preserve much of the graphics
% state across the call.  For level 2 PostScript ONLY.

/zadjustpagedevice
{
   /zpagedevicedict zxdf

   % Save everything.
   matrix currentmatrix

   currenttransfer currentgray
   systemdict/currentcolorscreen known
```

```
   {
   currentcolorscreen true
   }
   {
   currentscreen false
   }ifelse

   zpagedevicedict setpagedevice

   % Restore everything.
   {
   setcolorscreen
   }
   {
   setscreen
   }ifelse

   setgray settransfer setmatrix
}zbdf

%-------------------------------------------------------------------------
% zsetmultipurposepagesize  --
% Matches and thus sets the page size for the multipurpose tray.

/zsetmultipurposepagesize
{
   systemdict/setpagedevice known
   {
   % Check for LaserWriter NTR or LaserWriter Pro
   zisntr{0}{zislwpro{1}{-1}ifelse}ifelse

   % stack: -- 0, 1, or -1.
   % LW NTR multipurpose tray = 0, LW Pro multipurpose tray = 1
   dup 0 ge
   {
   1 dict dup begin/InputAttributes 1 dict dup 4 index
   1 dict dup/PageSize currentpagedevice/PageSize get put put def end
zadjustpagedevice
   }if pop
   }if
}zbdf

% zmanualfeedoff  --
% Turns manual feed off.
/zmanualfeedoff
{
   statusdict/manualfeed known
   {
   statusdict/manualfeed false put
   }if
}zbdf

%-------------------------------------------------------------------------
```

```
% zselectmediasource  source --
% Selects the given paper source (tray) for auto feed.  Should only be
% called on LW Pro.
% Source values are 0, 1, 2, 3 meaning respectively: 250 sheet standard
% cassette, multipurpose tray, 500 sheet optional cassette, optional
% envelope feeder.

/zselectmediasource
{
   % Save the source request into the priority array.
   1 array astore/zmediasourcepriority zxdf

   % Turn off manual feed.
   zmanualfeedoff

   % Check for presence of setpagedevice operator
   systemdict/setpagedevice known
   {
   % Verify tray presence.
   currentpagedevice/InputAttributes get zmediasourcepriority 0 get

   % stack: dict key --
   known
   {
   % Update the current page device (select the tray).
   % We also force the current page device to the PageSize of
   % the selected tray -- this will force the paper to be drawn from
   % the requested tray regardless of the paper size actually sensed
   % by the tray (i.e. this will override auto page size matching).
   4 dict begin/InputAttributes 1 dict dup/Priority zmediasourcepriority put
def
   /PageSize currentpagedevice/InputAttributes get zmediasourcepriority 0 get
get/PageSize get def
   /ManualFeed false def
   /Policies 1 dict dup/PageSize 1 put def currentdict end zadjustpagedevice
   }if
   }if
}zbdf
```

Article Change History:
08 Feb 1995 - Added PostScript caution message.

Support Information Services

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Tech Info Library Article Number:15809

Tech Info Library

Power Macintosh: PATHWORKS LAT Problem (7/94)

Revised: 7/13/94
Security: Everyone

Power Macintosh: PATHWORKS LAT Problem (7/94)

==========

Article Created: 12 July 1994

TOPIC ----------

The PATHWORKS LAT connection tool intermittently disconnects when running on any model of Power Macintosh.

DISCUSSION ----------

This problem is being worked on by both Apple Computer and Digital Equipment Corporation (DEC) engineers. The problem has not yet been identified so there is no estimated date for a fix. The disconnect only seems to happen when there are high collisions on the Ethernet where a Power Macintosh is connected.

Until a fix is available, the work around is to use the AppleTalk-LAT Gateway. The Gateway must be configured on a 680x0 processor based Macintosh. See the PATHWORKS installation manual for installation and set-up details.

Support Information Services

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Tech Info Library Article Number:15810

Tech Info Library

DOS Compatibility Card: Formatting SCSI Media (7/94)

Revised: 7/13/94
Security: Everyone

DOS Compatibility Card: Formatting SCSI Media (7/94)

==========

Article Created: 12 July 1994

TOPIC ----------

How do I use SyQuest or Bernoulli cartridge drives in DOS with the Quadra 610 DOS Compatible computer?

DISCUSSION ----------

To format a SCSI device as a DOS drive, the device must first have a low-level format. There are many Macintosh SCSI formatting utilities that can do this. It is important that the device not be partitioned, or have a driver installed. Most third party formatting programs allow just a low-level format without doing anything more to the drive.

Next, open PC Exchange 2.0, click the Options button, and then place a check by the SCSI drive that has just been formatted.

Finally, open the PC Setup control panel, select the D: menu, and select Drive Partition. You will see the SCSI device as being an available choice. After selecting this, restart the PC, and the SCSI device will now be available as drive D in DOS.

No DOS drivers are necessary, since the access to the device is being handled by PC Exchange and PC Setup.

Support Information Services

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Tech Info Library Article Number:15812

Tech Info Library

Power Macintosh: GeoPort and Jabra Earphone ARTA Error (7/94)

Revised: 7/13/94
Security: Everyone

Power Macintosh: GeoPort and Jabra Earphone ARTA Error (7/94)

==========

Article Created: 12 July 1994

TOPIC -----

When using the Jabra Earphone with the GeoPort on a Power Macintosh, I get the error message, "Requires Apple RealTime Architecture, and a GeoPort Pod..." What else needs to be installed?

DISCUSSION -----

If you are using a Quadra AV computer, make sure you have installed the application called "Dialer". If you are using a Power Macintosh, make sure you have installed the application called "Power Dialer". "Dialer" can not be used on a Power Macintosh and will cause this error message because it is not able to locate the GeoPort software in memory.

If your are using the correct application, contact Jabra at 619-622-0764.

Support Information Services

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Tech Info Library Article Number:15813

Tech Info Library

Ashlar, Inc.

Revised: 7/13/94
Security: Everyone

Ashlar, Inc.

==========

Article Created: 13 July 1994

Ashlar, Inc.

1290 Oakmead Pkwy., Ste. 218
Sunnyvale, CA 94086

Telephone: 408-746-1800

Telephone: 800-877-2745

Fax: 408-746-0749

Company Profile: Software. Develops and markets 2D and 3D modeling software.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15814

Tech Info Library

Apple IIGS: Supported AppleShare Versions (7/94)

Revised: 7/14/94
Security: Everyone

Apple IIGS: Supported AppleShare Versions (7/94)

==========

Article Created: 13 July 1994

TOPIC -----

I just upgraded my AppleShare server to AppleShare 3.x and now the Apple IIGS computers will not login in. Sometimes they get a prodos error message other times they just hang at startup with some weird numbers.

DISCUSSION -----

The supported configurations for AppleShare and the Apple IIGS are:

1) GSOS 5.0.4 and AppleShare 2.x
2) GSOS 6.x and AppleShare 3.x and 4.x

Note: AppleShare 4.x does not support network startup

Support Information Services

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Tech Info Library Article Number:15816

Tech Info Library

Apple IIGS: Keeps Dropping Off AppleShare Network (7/94)

Revised: 7/14/94
Security: Everyone

Apple IIGS: Keeps Dropping Off AppleShare Network (7/94)

==========

Article Created: 14 July 1994

TOPIC ----------

I have a AppleShare network, and sometimes after 3 to 5 minutes of idle time, the Apple IIGS computers drop off the network. The AppleShare server reflects that the computers are no longer connected.

DISCUSSION ----------

This problem occurs infrequently with GSOS 6.0 and AppleShare 3.x. Here are some possible solutions:

1) Reinstall AppleShare and GSOS
2) Set the GSOS system speed to fast

if neither of these fix the problem, the only known solution is to use AppleShare 2.x and GSOS 5.0.4

Support Information Services

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Tech Info Library Article Number:15817

Tech Info Library

Apple IIGS: Booting From an AppleShare Server (7/94)

Revised: 7/14/94
Security: Everyone

Apple IIGS: Booting From an AppleShare Server (7/94)

==========

Article Created: 14 July 1994

TOPIC -----

I have an Apple IIGS, and it does not boot properly from an AppleShare server. How can I boot the Apple IIGS from the server?

DISCUSSION -----

This problem only happens with Apple IIGS computers that have ROM 01. There are two solutions:

1) Upgrade to ROM 03. It doesn't have a problem booting from an AppleShare server.

2) Create an AppleShare boot disk and start the Apple IIGS from that disk.

This allows you to use the Auto Logon feature to set the boot disk to automatically log into the server and launch a program at startup.

Support Information Services

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Tech Info Library Article Number:15818

Tech Info Library

WriteNow: Document Icons Disappear or are Generic (7/94)

Revised: 7/14/94
Security: Everyone

WriteNow: Document Icons Disappear or are Generic (7/94)

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Article Created: 12 July 1994

TOPIC ----------

I have WriteNow from T/Maker and both the application program icon and document icons sometimes disappear or turn into a generic paper icon.

DISCUSSION ----------

T/Maker Graphics is distributing a patch to fix this problem. Contact T/Maker to receive the patch for this product.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Support Information Services

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Tech Info Library Article Number:15819

Apple QuickTake 100 For Windows: Specifications (9/96)

Revised: 9/18/96
Security: Everyone

Apple QuickTake 100 For Windows: Specifications (9/96)

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Article Created: 12 July 1994
Article Reviewed/Updated: 17 September 1996

TOPIC ----------

This article describes the specifications of the Apple QuickTake 100 Digital Camera for Microsoft Windows.

DISCUSSION ----------

QuickTake 100 for Windows Includes

- QuickTake 100 camera
- Battery charger
- Rechargeable NiCad batteries
- Serial Cable
- 9-to-25 adapter
- Neck Strap
- QuickTake 100 for Windows software disk

Image

- 24-bit color

Memory

- 1MB of FLASH EEPROM stores up to 32 standard-resolution images, 8 high-resolution images or a combination of high and standard-resolution images
- Storage time: up to one year

Resolution

- 320 by 240 pixels (standard resolution)
- 640 by 480 pixels (high resolution)

Optics

- Fixed-focus lens
- Focus range: 4 feet to infinity
- Field of view: equivalent to a 50-mm lens on a 35-mm camera
- Optical viewfinder
- Aperture from f2.8 to f16
- Lens field of view: 8 mm (equivalent to 50-mm lens on a 35-mm film camera)

Speed

- Shutter speed: from 1/30 to 1/175 of a second
- Cycle time: average 4 seconds
- Self-timer: 10 seconds

Built-in Flash

- Three modes: Automatic, On, or Off
- Range 4 to 9 feet
- Flash cycle time: 7 seconds

Power

- Includes three rechargeable AA NiCad batteries
- Supports three 1.5 V AA, R6P, LR-6, or SUM-3 NiCad or lithium batteries
- Battery recharger
- Optional AC adapter

Interface

- RS-232C serial connection for Windows

User Controls

- Shutter release, resolution, flash, self-timer, and Erase All Images

LCD Display

- Number of images that have been taken
- Number of images remaining
- Resolution, flash, and self-timer settings
- Erase All Images
- Battery level

QuickTake 1.0 Application

- Display thumbnails of images
- Select, process, and view images
- Rotate images by +/- 90 degrees
- Crop, scale, and zoom in on images
- Cut, copy, and pates images into other applications
- Erase images in camera

- Transform images to 16 bit, 8 bit, and 1 bit
- Save pictures in PICT QuickTake, TIFF, BMP, PCX, or JPEG file formats

Note:
If you are going to transfer images to a Macintosh system, you need to save the pictures in TIFF and PICT QuickTake format.

System Requirements

- An IBM or IBM Compatible personal computer with an 80386 or later processor.
- Windows 3.1 or later
- MS-DOS 3.3 or later
- 2 MB of available RAM
- a 3.5-inch, 1.44 MB floppy drive
- a hard drive with at least 10 MB available

Physical Specifications

Depth: 6.1 in. (155 mm)
Width: 5.3 in. (135 mm)
Height: 2.2 in (55 mm)
Weight: 1 lb. (0.5 kg)

Article Change History:
17 Sep 1996 - Minor typographical correction.

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Tech Info Library Article Number:15820

Tech Info Library

PowerBook 500 series: 16 Bit, 44KHz Sound Recording (7/94)

Revised: 7/14/94
Security: Everyone

PowerBook 500 series: 16 Bit, 44KHz Sound Recording (7/94)

==========

Article Created: 14 July 1994

TOPIC -----

The 500 series PowerBook have built-in stereo sound support. The specifications say it supports 16 bit sound, and there is an option for 44KHz sampling rate. Does it really support that rate, and how do I record stereo sound into the PowerBook?

DISCUSSION -----

The 500 series PowerBooks do support 16 bit 44 KHz sampling. The internal microphone is mono only, but the options in the Sound control panel do support switching to 44 KHz on that microphone. None of the current Apple external microphones support stereo input to the port on the back of the PowerBook 500, however, you can use "line-in" cables to get stereo in. These cables are standard stereo minijacks, and in fact, Apple provides one with 16" and 17" monitors. This cable is called "Cable, Sound In," and is part# 590-4513.

However, the software provided with the PowerBook 500 series (the Sound control panel) does not have the ability to record in stereo. You must use 3rd party applications that support stereo recording, such as the latest versions of SoundEdit Pro (Farallon), AudioShop (Opcode Systems), or something similar. The Sound cdev can record mono 16bit 44KHz but you are limited to a 10 second sound by that control panel.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15821

Tech Info Library

Busytown & Sound Manager 3.0 (5/95)

Revised: 5/23/95
Security: Everyone

Busytown & Sound Manager 3.0 (5/95)

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Article Created: 14 July 1994
Article Reviewed/Updated: 23 May 1995

TOPIC ----------

I have an interactive CD ROM game called Busytown. It used to work fine, but ever since I installed the System Update 3.0 I am experiencing intermittent freezes when I play the game. I get no error message, the system freezes, and I have to restart. What is wrong?

DISCUSSION ----------

Busytown by Paramount Interactive is incompatible with Apple's Sound Manager versions 3.0. Sound Manager 3.0 was installed on your computer when you installed System Update 3.0.

Paramount Interactive suggests the following fix:

- Open the System Folder on your hard drive.
- Open the Extensions folder inside the System Folder.
- Remove the Sound Manager.

NOTE: Busytown will not work at all on the Macintosh Quadra 660AV, 840AV, and all Power Macintosh Computers because Sound Manager 3.0 is built into the ROMs of these computers.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor, Paramount Interactive, for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
23 May 1995 - Updated keywords and reviewed for technical accuracy.

..TIL15823-Busytown_and_Sound_Manager_3-0_5-95_(TA32098).pdf

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15823

Tech Info Library

630 Family Computers: Not Compatible With Apple IIe Card (7/94)

Revised: 7/15/94
Security: Everyone

630 Family Computers: Not Compatible With Apple IIe Card (7/94)

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Article Created: 15 July 1994

TOPIC ----------

Is the Apple IIe Card for the Macintosh LC compatible with the 630 Family computers (Macintosh LC 630, Quadra 630, and Performa 630)?

DISCUSSION ----------

No. The 630 Family computers operate only in 32-bit addressing mode, so they do not support the Apple IIe card for the Macintosh LC.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15824

Tech Info Library

630 Family Computers: Comparisons (7/94)

Revised: 7/20/94
Security: Everyone

630 Family Computers: Comparisons (7/94)

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Article Created: 15 July 1994

TOPIC ----------

How do the 630 Family computers (Macintosh LC 630, Quadra 630, and Performa 630) compare with each other?

DISCUSSION ----------

The major differences between the 630 Family computers are:

	Macintosh LC 630	Macintosh Performa 630	Macintosh Quadra 630
Processor	68LC040 @ 66/33-MHz	68LC040 @ 66/33-MHz	68040 @ 66/33-MHz
DRAM	4 MB to 36 MB	4 MB to 36 MB	4 MB to 36 MB
Disk storage	250MB IDE hard disk Optional CD-ROM	250MB IDE hard disk CD-ROM w/ 630CD	250MB IDE hard disk Optional CD-ROM
Displays	Apple displays to 15 inch VGA and SVGA	Apple displays to 15 inch Performa Plus VGA and SVGA	Apple displays to 15 inch VGA and SVGA
Video RAM	1MB DRAM,independent from system DRAM	1MB DRAM,independent from system DRAM	1MB DRAM,independent from system DRAM
Color depth	16-bit on 640x480 8-bit on 800x600	16-bit on 640x480 8-bit on 800x600	16-bit on 640x480 8-bit on 800x600
Interfaces	SCSI interface port Expansion slot Communications slot Video-input	SCSI interface port Expansion slot Communications slot Video-input	SCSI interface port Expansion slot Communications slot Video-input

	TV tuner Video-out Serial Port	TV tuner Video-out Serial Port	TV tuner Video-out Serial Port
Sound	8 bits/channel Stereo in Mono record Stereo out	8 bits/channel Stereo in Mono record Stereo out	8 bits/channel Stereo in Mono record Stereo out

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15825

Tech Info Library

Macintosh Desktop & PowerBook Computers: IDE Hard Drive (10/95)

Revised: 3/19/97
Security: Everyone

Macintosh Desktop & PowerBook Computers: IDE Hard Drive (10/95)

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Article Created: 15 July 1994
Article Reviewed/Updated: 16 October 1995

TOPIC ----------

This article describes the IDE (integrated drive electronics) hard drive, the 40-pin IDE connector pinouts, and IDE signals currently used on the following computers:

Macintosh 630 Family computers*
Macintosh LC 580
Macintosh Performa 5200 series computers
Macintosh Performa 5300 series computers
Macintosh Performa 6200 series computers
Macintosh Performa 6300 series computers
Macintosh PowerBook 150 series computers
Macintosh PowerBook 190 series computers
Macintosh PowerBook 2300 series computers
Macintosh PowerBook 5300 series computers
Power Macintosh 5200/75 LC
Power Macintosh 5300/100 LC

*Note: The Macintosh 630 Family includes the following computers: Macintosh LC 630, Quadra 630, and Performa 630, Performa 635, Performa 636, Performa 637, and Performa 638.

DISCUSSION ----------

The computers mentioned above all have an internal hard disk using the IDE interface. This cost-effective interface, used on IBM AT–compatible computers, is also referred to as the ATA interface. The implementation of the ATA interface on the Macintosh LC 630 and Macintosh Quadra 630 computers is a subset of the ATA interface specification, ANSI proposal X3T9.2/90-143, Revision 3.1.

An IDE drive does not have any address conflicts, specific cabling, or termination issues normally found in a SCSI chain. Performance of an IDE hard

drive will be similar to a comparable SCSI hard drive.

Any hard drive utilities you may have for SCSI drives will likely have to be revised to function properly with an IDE drive. Check with the vendor of the utility for compatibility information.

Note: The internal hard disk in the Macintosh 630 Family computers is an IDE drive, not a SCSI drive. To avoid possible problems in formatting, be sure to use the supplied Internal HD Format software with the internal IDE drive.

Hard Disk Connectors

The internal hard disk has a standard 40-pin IDE connector and a separate 4-pin power connector. The 40-pin connector cable is part of the cable harness attached to the main logic board by the internal chassis connector. The power cable is attached directly to the power supply.

Pin Assignments

The Table below shows the pin assignments on the 40-pin IDE hard disk connector. A slash (/) at the beginning of a signal name indicates an active-low signal.

Begin_Table

Pin assignments on the IDE hard disk connector:

Pin number	Signal name	Pin number	Signal name
1	/RESET	2	GROUND
3	DD7	4	DD8
5	DD6	6	DD9
7	DD5	8	DD10
9	DD4	10	DD11
11	DD3	12	DD12
13	DD2	14	DD13
15	DD1	16	DD14
17	DD0	18	DD15
19	GROUND	20	KEY
21	Reserved	22	GROUND
23	DIOW	24	GROUND
25	DIOR	26	GROUND
27	/IORDY	28	Reserved
29	Reserved	30	GROUND
31	INTRQ	32	/IOCS16
33	DA1	34	/PDIAG
35	DA0	36	DA2
37	/CS0	38	/CS1
39	/DASP	40	GROUND

End_Table

Note: The IDE data bus is connected to the I/O bus through bidirectional bus

buffers. To match the big-endian format of the MC68030-compatible bus, the bytes are swapped. The lower byte of the IDE data bus, DD(0–7), is connected to the high byte of the upper word of the I/O bus, IOD(24–31). The higher byte of the IDE data bus, DD(8–15), is connected to the low byte of the upper word of the I/O bus, IOD(16–23).

IDE Signal Descriptions

The Table below describes the signals on the IDE hard disk connector.

Begin_Table

Signal name	Signal description
DA(0–2)	IDE device address; used by the computer to select one of the registers in the IDE drive. For more information, see the descriptions of the CS0 and CS1 signals.
DD(0–15)	IDE data bus; buffered from IOD(16–31) of the computer's I/O bus. DD(0–15) are used to transfer 16-bit data to and from the drive buffer. DD(8–15) are used to transfer data to and from the internal registers of the drive, with DD(0–7) driven high when writing.
CS0	IDE register select signal. It is asserted high to select the additional control and status registers on the IDE drive.
CS1	IDE register select signal. It is asserted high to select the main task file registers. The task file registers indicate the command, the sector address, and the sector count.
/IORDY	IDE I/O ready; when driven low by the drive, signals the CPU to insert wait states into the I/O read or write cycles.
/IOCS16	IDE I/O channel select; asserted low for an access to the data port. The computer uses this signal to indicate a 16-bit data transfer.
/DIOR	IDE I/O data read strobe.
/DIOW	IDE I/O data write strobe.
INTRQ	IDE interrupt request. This active high signal is used to inform the computer that a data transfer is requested or that a command has terminated.
/RESET	Hardware reset to the drive; an active low signal.
Key	This pin is the key for the connector.

End_Table

Article Change History:
16 Oct 1995 - Added new computers.
28 Sep 1995 - Reviewed for technical accuracy.
08 Sep 1995 - Added new computers.
04 Apr 1995 - Added Macintosh LC 580 and Power Macintosh 5200/75 LC.

Support Information Services

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Tech Info Library Article Number:15826

Tech Info Library

Macintosh 630 Family: Comparison With Quadra 605 (7/94)

Revised: 7/15/94
Security: Everyone

Macintosh 630 Family: Comparison With Quadra 605 (7/94)

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Article Created: 15 July 1994

TOPIC ----------

This article compares the Quadra 605 and the Macintosh 630 family of computers.

DISCUSSION ----------

Electrically, the Macintosh 630 family of computers are similar to the Macintosh Quadra 605. The table below compares the features of those computers.

Features	Macintosh Quadra 605	Macintosh LC/Quadra 630
Processor type	MC68LC040	MC68040 (in the Quadra 630) MC68LC040 (in the LC 630)
Processor speed	50/25 MHz	66/33 MHz
Amount of RAM	4 MB–36 MB	4 MB–36 MB
RAM expansion	1 SIMM	1 SIMM
Video RAM	512 KB–1 MB (VRAM	1 MB (DRAM)
Video input	none	optional module for video input, capture, and overlay
Sound capabilities	8 bits/channel; stereo in, mono record, stereo out	8 bits/channel; stereo in, mono record, stereo out
Remote control	none	built-in IR receiver
Floppy disk drive	1, internal	1, internal
ADB ports	1	1
Internal hard disk	1 (SCSI)	1 (IDE)
Internal CD-ROM	none	optional
External SCSI port	1	1
Communication slot	none	1, for optional modem or Ethernet interface
Expansion slot	1 I/O slot-accepts LC type PDS card	1 I/O slot-accepts LC type PDS card

Support Information Services

..TIL15827-Macintosh_630_Family-Comparison_With_Quadra_605_7-94.pdf

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Tech Info Library Article Number:15827

Tech Info Library

IDE Hard Drive: Computers and Disk Utilities (2/97)

Revised: 2/24/97
Security: Everyone

IDE Hard Drive: Computers and Disk Utilities (2/97)

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Article Created: 15 July 1994
Article Reviewed/Updated: 24 February 1997

TOPIC ----------

This article lists the Apple computers using an IDE hard disk and describes which hard disk utility program to use.

DISCUSSION ----------

The internal hard disk, in some of Apple's computers, is an IDE drive, not a SCSI drive. This could cause compatibility problems for hard disk utility programs.

When formatting the IDE internal hard disk, be sure to use either Internal HD Format or Drive Setup. Drive Setup has replaced Internal HD Format, but you may be able to use Internal HD Format if your computer included it originally. If Internal HD Format does not work, use Drive Setup instead. Drive Setup 1.0.5 is available on online services.

Use the search string 'drive setup and ide", to find related articles: "Internal HD Format: Cannot See IDE Drives", "Apple Internal HD Format: Version History", "Drive Setup: Compatible With Which Computers?".

The following computers use an IDE hard disk:

Macintosh LC 580
Macintosh LC 630
Macintosh Quadra 630
Macintosh Performa 630
Power Macintosh 4400 Series
Power Macintosh 5200/75 LC
Power Macintosh 5260/100
Power Macintosh 5300/100 LC
Power Macintosh 5400 Series
Power Macintosh 6400 Series

Power Macintosh 5500 Series
Power Macintosh 6500 Series
Macintosh Performa 5200 Series
Macintosh Performa 6200 Series
Macintosh Performa 5300 Series
Macintosh Performa 6300 Series
Macintosh Performa 6400 Series
PowerBook 190 Series
PowerBook 1400 Series
PowerBook Duo 2300 Series
PowerBook 5300 Series

Note:
Although the PowerBook 150 also has an IDE drive, you must use Internal HD Format, NOT Drive Setup, with this computer.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
24 Feb 1997 - Added additional computers.
18 Oct 1996 - Added PowerBook 1400.
15 Oct 1996 - Added 5200 series to list.

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Tech Info Library Article Number:15828

Tech Info Library

Macintosh 630 Family: External Pinouts (7/94)

Revised: 7/15/94
Security: Everyone

Macintosh 630 Family: External Pinouts (7/94)

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Article Created: 15 July 1994

TOPIC --

This article documents the external pinouts for the Macintosh 630 family of computers.

DISCUSSION --

Serial Port Pinouts

Pin number	Signal description
1	Handshake output
2	Handshake input
3	Transmit data –
4	Ground
5	Receive data –
6	Transmit data +
7	General-purpose input
8	Receive data +
9	+5 volts

ADB connector

Pin numbe	Name	Description
1	ADB	Bidirectional data bus used for input and output. It is an open-collector signal pulled up to +5 volts through a 470-ohm resistor on the main logic board
2	PSW	Power-on signal that generates reset and interrupt key combinations
3	+5V	+5 volts from the computer.

4	GND	Ground from the computer.

SCSI Connector

Pin number	Signal name	Signal description
8	/DB0	Bit 0 of SCSI data bus
21	/DB1	Bit 1 of SCSI data bus
22	/DB2	Bit 2 of SCSI data bus
10	/DB3	Bit 3 of SCSI data bus
23	/DB4	Bit 4 of SCSI data bus
11	/DB5	Bit 5 of SCSI data bus
12	/DB6	Bit 6 of SCSI data bus
13	/DB7	Bit 7 of SCSI data bus
20	/DBP	Parity bit of SCSI data bus
25	n.c.	Not connected
25	TPWR	+5 V terminator power
17	/ATN	Attention
6	/BSY	Bus busy
5	/ACK	Handshake acknowledge
4	/RST	Bus reset
2	/MSG	Message phase
19	/SEL	Select
15	/C/D	Control or data
1	/REQ	Handshake request
3	/I/O	Input or output
20, 22, 24, 28, 30, 34, and all odd pins except pin 25, 7, 9, 14, 16, 18, and 24	GND	

Video connector

Pin number	Signal name	Description
1	RED.GND	Red video ground
2	RED.VID	Red video signal
3	/CSYNC	Composite synchronization signal
4	SENSE0	Monitor sense signal 0
5	GRN.VID	Green video signal
6	GRN.GND	Green video ground
7	SENSE1	Monitor sense signal 1
8	n.c.	Not connected
9	BLU.VID	Blue video signal
10	SENSE2	Monitor sense signal 2
11	GND	CSYNC and VSYNC ground
12	/VSYNC	Vertical synchronization signal
13	BLU.GND	Blue video ground
14	HSYNC.GND	HSYNC ground
15	/HSYNC	Horizontal synchronization signal
Shell	SGND	Shield ground

..TIL15829-Macintosh_630_Family-External_Pinouts_7-94_(TA32102).pdf

Support Information Services

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Tech Info Library Article Number:15829

Tech Info Library

Macintosh 630 Family: PDS Compatibility (7/94)

Revised: 7/15/94
Security: Everyone

Macintosh 630 Family: PDS Compatibility (7/94)

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Article Created: 15 July 1994

TOPIC ----------

What type cards are incompatible with the PDS expansion slot in the Macintosh 630 family of computers?

DISCUSSION ----------

While the I/O expansion slot will accept PDS cards designed for the Macintosh LC II and LC III, some of those cards do not work. Cards that are incompatible with the PDS expansion slot include:

• Cards designed to work as coprocessors with an MC68020 or an MC68030 or as replacements for those microprocessors. Such cards include accelerators, 68882 FPU cards, and cache cards. That type of card won’t work because the microprocessor is different and because the slot signals are not connected directly to the microprocessor.

• Cards with drivers that include incompatible code. Some drivers that do not follow Apple Computer’s programming guidelines won’t work on machines that use the MC68040 microprocessor. For example, some of those drivers write directly to the cache control register in an MC68030. Such code won’t work on an MC68040.

• Cards with drivers that include code to check the gestaltMachineType value and refuse to run on a newer CPU. The idea is to protect users by refusing to run on a machine that the cards haven’t been tested on. Such cards have compatibility problems with all new Macintosh models.

Support Information Services

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Tech Info Library Article Number:15830

Macintosh 630 Family: Video and Communications Modules (2/95)

Revised: 2/17/95
Security: Everyone

Macintosh 630 Family: Video and Communications Modules (2/95)

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Article Created: 15 July 1994
Article Reviewed/Updated: 15 December 1994

TOPIC ----------

Several features of the Macintosh 630 family of computers are implemented as plug-in modules available either as a configuration option at the time of purchase or as a later upgrade. The modules are designed so that they can be installed by the user.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

DISCUSSION ----------

TV Tuner Module

The TV tuner module turns the computer into a television receiver, complete with remote control. The features of the TV tuner module are similar to those of the TV tuner in the earlier Macintosh TV computer, with two improvements: the TV picture is in its own window on the desktop, and the TV signal is carried in YUV format for improved picture clarity.

The features of the TV tuner module in the Macintosh 630 family computers are:

- Ability to tune 181 broadcast and cable channels (US version).
- Coaxial connector for TV antenna or cable input (F-type connector in US and Japanese versions; IEC-type connector in Europe).
- TV picture in a resizable and movable window.
- YUV format for improved clarity.
- Support for closed captioning and teletext.
- Software password protection.
- Automatic and manual channel programming.
- Single remote control for TV and for playback of audio CDs.

The TV tuner module is available in versions for NTSC, PAL, and SECAM television

systems. The TV picture appears in its own window. The default size of the window is 320 by 240 pixels. You can resize the TV window up to a maximum size of 640 by 480 pixels or down to a minimum size of 160 by 120 pixels. The resolution of the TV picture does not increase at the larger window sizes; instead, the image is enlarged by doubling the size of the pixels.

The TV tuner module works in conjunction with the video input module, which converts the video data into digital YUV format and stores it in the display buffer. The TV tuner comes with a remote control device similar to the one used with the Macintosh TV computer. You can switch channels either by using the remote control or by typing the channel numbers on the keyboard. You can toggle between the current and previous channel by pressing the Tab key on the keyboard. Each time the channel changes, the computer displays the channel name (assigned by you) on the picture in the video window.

You can customize the operation of the TV tuner by adding or removing TV channels that are unused or unwanted. The computer can program the channels automatically, scanning through all available channels and disabling those that do not have a valid signal. When you scan for the next channel by using the remote control or the Tab key on the keyboard, the tuner skips the disabled channels.

The software that supports the TV tuner module is an application called Apple Video Player. The application includes password protection for the disabled channels. Parents might use this feature to prevent children from watching undesirable channels. The software lets you capture or freeze a single frame of video or record a segment of video as a QuickTime Movie. The TV window cannot be resized while the computer is recording a movie.

Note: The TV Tuner Module is NOT available separately, it must be purchased along with the Video Input Module.

Video Input Module

The video input module accepts video from an external source and dispays it in a window on the computer's display. The features of the video input module are:

- Accepts video input in NTSC, PAL, or SECAM format
- Connectors for stereo sound, composite video, and S-video (Y/C)
- Video display in a 320-by-240-pixel window
- Pixel doubling for 640-by-480-pixel maximum display
- Video overlay capability
- YUV format for digital video input
- A digital video connector for adding a video processor on an expansion card

The video input module provides AV features similar to those of the Macintosh Quadra 660AV, with one key improvement. Whereas the Macintosh Quadra 660AV digitizes color video using a 16-bit RGB format, the video input module uses a digital YUV format. Because a standard television signal has more information in its chrominance channel than in its luminance channels, digitizing the video signal as YUV format results in a clearer picture.

The video input module can accept video input from either an external device such as a VCR or camcorder, or from the internal TV tuner module. The external device can be connected to the video input module either through the composite video connector or the S-video connector. The default window size is 320 by 240 pixels; the user can resize the window up to 640 by 480 pixels — the full screen on a 14-inch monitor. The large image uses pixel doubling of the 320 by 240 pixel image.

Note: The video input module does not work on video monitors with screens larger than 800x600 pixels. It works with 800x600-pixel displays that have a 60 Hz refresh rate, but not with that size display at a 72 Hz refresh rate.

The video input module plugs into a dedicated slot on the main logic board. The slot connector is a 60-pin microchannel connector. The module fits only its proper slot and only in the proper orientation so that you can safely install the video input module.

Video Output Module

The video output module is an external module that uses the 15-pin video output connector and provides a video signal for a separate television display. The video output can also be recorded on a VCR. A standard television monitor has overscan: to ensure that the entire screen is filled, the image is larger than the screen, causing the outer parts of the picture to be cut off by the edges of the screen. The video output module provides a video signal with a 640x480 pixel display inside the safe display area so that no information is lost.

The video output module supports video mirror mode: in this mode, the image on the television display is the same as that on the computer's primary video monitor. This mode of operation is appropriate, for example, for presentations, so that the audience and the presenter can see the same displays. Apple expects to provide separate video output modules for NTSC and PAL systems.

Communications Modules

The main logic board in the Macintosh 630 family computers has a communications slot that is compatible with the communications slot first introduced in the Macintosh LC 575 computer. The slot lets the computer support a communications module without occupying the expansion slot. A communications module can be installed by either the user or the dealer. The communications slot in the Macintosh 630 family computers supports all communications cards developed for the Macintosh LC 575, including the:

- 10BaseT, Ethernet CS Twisted-Pair Card - M3065
- 10Base2, Ethernet CS Thin Coax Card - M2708
- AAUI, Ethernet CS Apple Standard Card - M3066
- 14.4 Fax/Data Modem CS Card - M2480

Article Change History:
17 Feb 1995 - Slight revisions to format.
15 Dec 1994 - Added keyword and made minor technical updates.

29 Nov 1994 - Clarified the size of monitors that can be used.

Support Information Services

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Tech Info Library Article Number:15831

Tech Info Library

Macintosh 630 Family: Sound Input Specs (7/94)

Revised: 7/15/94
Security: Everyone

Macintosh 630 Family: Sound Input Specs (7/94)

==========

Article Created: 15 July 1994

TOPIC -----

This article documents the sound input specifications for the Macintosh 630 family of computers.

DISCUSSION -----

Sound Input Specifications

The sound input jack has the following electrical characteristics:

- Input impedance: 100k ohms
- Average line level: 100 mV RMS
- Average microphone level: 70 mV RMS
- Maximum input level: 1.8 V RMS

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15832

Tech Info Library

Macintosh LC 630: Description (10/95)

Revised: 10/5/95
Security: Everyone

Macintosh LC 630: Description (10/95)

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Article Created: 15 July 1994
Article Reviewed/Updated: 5 October 1995

TOPIC ----------

This article provides a description of the Macintosh LC 630 computer.

DISCUSSION ----------

Overview

The Apple Macintosh LC 630 computer is the most advanced CD-ROM–equipped Apple multimedia system. It is also upgradeable to take advantage of PowerPC technology, so it can bring you performance and multimedia opportunities for years to come.

Its advanced multimedia expansion options offer new ways to interact with information. You can connect to an external video source such as a VCR or camcorder to cut and paste video images. You can also add an option to connect your computer to a large-screen TV for displaying presentations. You can also add an internal TV tuner to view television channels in a window on your display.

Power and Speed

• 66/33-MHz 68LC040 microprocessor with 32-bit data bus

Memory

4MB of RAM standard, expandable to 36MB using one 72-pin SIMM (dealer installation recommended)

Display

• 1MB DRAM display support (independent from system DRAM) works with Apple displays of up to 15 inches

- Works with a wide range of third-party VGA and SVGA displays
- Standard 16-bit color for display of up to 32,768 colors on monitors of up to 14 inches and on 15-inch monitors at 640- by 480-pixel resolution
- Standard 8-bit color for display of 256 colors on 15-inch monitors at 800- by 600-pixel resolution

Audio System

- Stereo 8-bit sound capable of driving stereo headphones or other stereo equipment through the sound jacks
- Stereo 16-bit CD playback
- One sound-in port
- Front and rear headphone jacks

Expansion

- Can be upgraded to PowerPC
- Comes with built-in ports for hard drives, printers, scanners, and modems
- Supports most processor-direct cards compatible with Macintosh Quadra 605 and Macintosh LC series of computers via an internal expansion slot
- Includes a communications slot for an Ethernet connection or 14.4-baud fax/data modem
- Has video slot for NTSC, PAL, and SECAM video-input card
- Includes expansion bay for television tuner
- External drop box provides expansion for NTSC or PAL video output
- Includes bay for CD-ROM player

System software

- System software version 7.1 with multitasking, file sharing, QuickTime, Balloon Help, TrueType fonts, and more

Networking

- Interface port for AppleTalk networking

Compatibility

- Reads and writes Macintosh, MS-DOS, OS/2, and ProDOS disks

Configurations and Ordering Information:

Macintosh LC 630 4/250
Order No. M3305LL/A

- Macintosh LC 630 personal computer with 4MB of RAM, 1MB of video memory, a built-in 1.4MB Apple SuperDrive floppy disk drive, and an internal 250MB hard disk drive
- Mouse
- Complete setup, learning, and reference documentation
- System software version 7.1
- Limited warranty

Optional Macintosh LC 630 configuration

Order No. M3492LL/A
• Macintosh LC 630 personal computer with 8MB of RAM, 1MB of video memory, a built-in AppleCD 300i double-speed internal CD-ROM player, a 1.4MB Apple SuperDrive floppy disk drive, an internal 250MB hard disk drive, and built-in video-input capabilities (includes Apple Video System)

Apple Video System
Order No. M2894LL/C

Apple Video/TV System
Order No.M2896LL/C

Apple Presentation System
Order No. M2895LL/A

Apple Ethernet CS Twisted-Pair Card
Order No. M3065Z/A

Apple Ethernet CS Thin Coax Card
Order No. M2708Z/A

Apple Ethernet CS AAUI Card
Order No. M3066Z/A

Macintosh 14.4 Fax/Modem Kit
Order No. M2480LL/A

Article Change History:
05 Oct 1995 - Updated video option part numbers.
07 Sep 1995 - Updated Ethernet CS Card order information.

Support Information Services

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Tech Info Library Article Number:15833

Macintosh LC 630: Specifications (11/95)

Revised: 11/29/95
Security: Everyone

Macintosh LC 630: Specifications (11/95)

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Article Created: 15 July 1994
Article Reviewed/Updated: 29 November 1995

TOPIC

This article provides the technical specifications for the Macintosh LC 630 computer.

DISCUSSION

Microprocessor

- Motorola 68LC040 - 66 MHz internal processor clock speed, 33 MHz system bus clock; 32-bit data bus

Memory

- 4MB RAM soldered to logic board, one SIMM socket for expansion up to 36MB of memory. Utilizes 72 pin, 80ns memory.

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 250MB, 350MB or 500MB IDE type hard disk
- Optional internal CD-ROM drive

Video Display

- Supports Apple displays of up to 15 inches
- Works with a wide range of third-party VGA and SVGA displays
- 1MB DRAM display support, independent from system DRAM
- Standard 16-bit color for display of up to 32,768 colors on monitors of up to 14 inches and on 15-inch monitors at 640- by 480-pixel resolution
- Standard 8-bit color for display of 256 colors on 15-inch monitors at 800- by 600-pixel resolution

Interfaces

- One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other devices
- Two (RS-232/RS-422) serial ports
- SCSI interface port for connecting up to six external peripheral devices (five in configurations with internal CD-ROM player)
- Internal expansion slot compatible with most Macintosh Performa 400 and 500 series, Macintosh Quadra 605, Macintosh LC II, LC III, LC 475, LC 520, and LC 575 processor-direct cards
- Communications slot for future addition of either Ethernet card or 14.4-baud fax/modem card
- Video slot for NTSC, PAL, and SECAM video-input card
- Dedicated connector for internal TV tuner
- One standard monitor port also supports connection to external video-out (NTSC or PAL) drop box

Networking

- Built-in AppleTalk port

Keyboard and Mouse

- Several ADB keyboards with numeric key pads available
- Apple Desktop Bus Mouse II

Clock/Calendar

- Custom integrated circuit with long-life lithium battery

Disability Access

- CloseView, Easy Access, and the ability to substitute visual cue for beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

Electrical Requirements

100-240 volts AC, 50-60 Hz

ADB Power Requirements

500ma maximum draw

Size and Weight

- Height: 4.3 in. (10.95 cm)
- Width: 12.6 in. (32 cm)
- Depth: 16.5 in. (41.95 cm)
- Weight: 19 lb. (8.6 kg) with CD-ROM player

(varies based on internal devices installed)

Operating Environment

Operating temperature 50° F to 104° F (10° C to 40° C)
Storage temperature -40° F to 116.6° F (-40° C to 47° C)
Relative Humidity 5% to 95% noncondensing
Altitude Works below 10,000 feet (3048 m)

System Software Requirements

- System software version 7.1 with multitasking, file sharing, QuickTime, Balloon Help, TrueType fonts, and more

Article Change History:
29 Nov 1995 - Corrected minor typo.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15834

Tech Info Library

Macintosh Performa 630: Description (4/97)

Revised: 4/8/97
Security: Everyone

Macintosh Performa 630: Description (4/97)

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Article Created: 15 July 1994
Article Reviewed/Updated: 8 April 1997

TOPIC ----------

This article provides a description of the Macintosh Performa 630 computer.

DISCUSSION ----------

Overview

The Apple Macintosh Performa 630, and CD-ROM–equipped Performa 630CD computers are the most flexible Apple multimedia systems. Both are upgradeable to take advantage of PowerPC technology, so they can bring you multimedia opportunities for years to come.

Packed in one box are the computer, display, keyboard, mouse, and fax/modem, as well as operating system software. In addition, both computers include 15 useful home, education, and home-business soft-ware programs, and the Performa 630CD includes valuable CD-ROM reference titles. Like all Macintosh computers, they’re both very easy to learn about and use, and they run thousands of Macintosh education, business, and multimedia programs.

Both computers have advanced multimedia expansion options that offer new ways to interact with information. You can connect each to an external video source such as a VCR or camcorder to cut and paste video images. You can also add an option to connect your computer to a large-screen TV for displaying presentations. And you can add an internal TV tuner to view television channels in a window on your display.

Power and Speed

• 66/33-MHz Motorola 68LC040 with 32-bit data bus (66-MHz processor/33-MHz data bus)

Memory

4MB of RAM standard, expandable to 36MB using one 72-pin SIMM (dealer installation recommended)

Display

- 1MB DRAM display support (independent from system DRAM) works with Apple displays of up to 15 inches
- Works with a wide range of third-party VGA and SVGA displays
- Standard 16-bit color for display of up to 32,768 colors on monitors of up to 14 inches and on 15-inch monitors at 640- by 480-pixel resolution
- Standard 8-bit color for display of 256 colors on 15-inch monitors at 800- by 600-pixel resolution

Audio System

- Stereo 8-bit sound capable of driving stereo headphones or other stereo equipment through the sound jacks
- Stereo 16-bit CD playback
- One sound-in port
- Front and rear headphone jacks

Expansion

- Can be upgraded to PowerPC
- Comes with built-in ports for hard drives, printers, scanners, and modems
- Supports most processor-direct cards compatible with Macintosh Quadra 605 and Macintosh LC series of computers via an internal expansion slot
- Includes a communications slot for an Ethernet connection or 14.4-baud fax/data modem
- Has video slot for NTSC, PAL, and SECAM video-input card
- Includes expansion bay for television tuner
- External drop box provides expansion for NTSC or PAL video output
- Includes bay for CD-ROM player

System software

- System software version 7.1 with multitasking, file sharing, QuickTime, Balloon Help, TrueType fonts, and more

Networking

- Interface port for AppleTalk networking

Compatibility

- Reads and writes Macintosh, MS-DOS, OS/2, and ProDOS disks

Configurations and Ordering Information:

Macintosh Performa 630 4/250*
Order No. M3423LL/A
- Macintosh Performa 630 personal computer with 4MB of RAM, 1MB of video

memory, a built-in 1.4MB Apple SuperDrive, floppy disk drive, and an internal 250MB hard disk drive
- Apple Performa Plus Display
- Global Village external Performa fax/send communications modem
- AppleDesign Keyboard

Macintosh Performa 630CD 8/250*
Order No. M3424LL/A
- Macintosh Performa 630 personal computer with 8MB of RAM, 1MB of video memory, a built-in AppleCD 300i Plus internal CD-ROM player, a 1.4MB Apple SuperDrive, floppy disk drive, internal 250MB hard disk drive, and built-in video-input capabilities (includes Apple Multimedia Video System)
- Apple Performa Plus Display
- Global Village external Performa fax/send communications modem
- CD-ROM titles (see list on front)
- AppleDesign Keyboard

Apple Video System
Order No. M2894LL/C

Apple Video/TV System
Order No.M2896LL/C

Apple Presentation System
Order No. M2895LL/A

Macintosh 10BaseT Ethernet Port Kit
Order No. M3065LL/A

Macintosh 10Base2 Ethernet Port Kit
Order No. M2708LL/A

Macintosh AAUI Ethernet Port Kit
Order No. M3066LL/A

Macintosh 14.4 Fax/Modem Kit
Order No. M2480LL/A

Macintosh Processor Upgrade (discontinued)
Order No. M3397LL/A

Article Change History:
08 Apr 1997 - Updated with availability information.
05 Oct 1995 - Updated video option part numbers.
05 Jan 1995 - Added Processor Upgrade information.

Support Information Services

Copyright 1994-97, Apple Computer, Inc

Tech Info Library Article Number:15835

Tech Info Library

Macintosh Performa 630: Specifications (11/95)

Revised: 11/29/95
Security: Everyone

Macintosh Performa 630: Specifications (11/95)

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Article Created: 15 July 1994
Article Reviewed/Updated: 29 November 1995

TOPIC ----------

This article gives the technical specifications for the Macintosh Performa 630 computer.

DISCUSSION ----------

Microprocessor

- 66/33-MHz Motorola 68LC040 with 32-bit data bus (66-MHz processor/33-MHz data bus)

Memory

- 4MB RAM soldered to logic board, one SIMM socket for expansion up to 36MB of memory. Utilizes 72 pin, 80ns memory.

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 250MB IDE type hard disk
- Optional internal CD-ROM drive

Video Display

- Comes with Apple Performa Plus Display: 14-inch RGB Color Monitor color display, 640-pixel by 480-pixel resolution, 0.28-mm dot pitch, noninterlaced
- Supports Apple displays of up to 15 inches
- Works with a wide range of third-party VGA and SVGA displays
- 1MB DRAM display support, independent from system DRAM
- Standard 16-bit color for display of up to 32,768 colors on monitors of up to 14 inches and on 15-inch monitors at 640- by 480-pixel resolution
- Standard 8-bit color for display of 256 colors on 15-inch monitors at

800-pixel by 600-pixel resolution

Modem

- Comes with TelePort/Bronze for Macintosh Performa from Global Village Communications: 9,600-bps send-only fax and 2,400-bps send and receive data

Interfaces

- One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other devices
- Two (RS-232/RS-422) serial ports
- SCSI interface port for connecting up to six external peripheral devices (five in configurations with internal CD-ROM player)
- Internal expansion slot compatible with most Macintosh Performa 400 and 500 series, Macintosh Quadra 605, Macintosh LC II, LC III, LC 475, LC 520, and LC 575 processor-direct cards
- Communications slot for future addition of either Ethernet card or 14.4-baud fax/modem card
- Video slot for NTSC, PAL, and SECAM video-input card
- Dedicated connector for internal TV tuner
- One standard monitor port also supports connection to external video-out (NTSC or PAL) drop box

Audio capabilities

- 8-bit on-board Stereo sound output and mono sound in

Networking

- Built-in AppleTalk port

Keyboard and Mouse

- AppleDesign Keyboard
- Apple Desktop Bus Mouse II

Clock/Calendar

- Custom integrated circuit with long-life lithium battery

Disability Access

- CloseView, Easy Access, and the ability to substitute visual cue for beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

Electrical Requirements

100-240 volts AC, 50-60 Hz
Power: 45 W maximum, not including monitor

ADB Power Requirements

500ma maximum draw

Size and Weight

- Height: 4.3 in. (10.95 cm)
- Width: 12.6 in. (32 cm)
- Depth: 16.5 in. (41.95 cm)
- Weight: 19 lb. (8.6 kg) with CD-ROM player
  (varies based on internal devices installed)

Operating Environment

Operating temperature 50° F to 104° F (10° C to 40° C)
Storage temperature -40° F to 116.6° F (-40° C to 47° C)
Relative Humidity 5% to 95% noncondensing
Altitude Works below 10,000 feet (3048 m)

System Software Requirements

- System software version 7.1 with multitasking, file sharing, QuickTime,
  Balloon Help, TrueType fonts, and more

Article Change History:
29 Nov 1995 - Corrected minor typo.
04 Jan 1995 - Added audio capabilities.
20 Jul 1994 - Corrected processor specifications.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15836

Tech Info Library

Macintosh Quadra 630: Description (Discontinued)

Revised: 10/5/95
Security: Everyone

Macintosh Quadra 630: Description (Discontinued)

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Article Created: 15 July 1994
Article Reviewed/Updated: 5 October 1995

TOPIC ----------

This article provides a description of the Macintosh Quadra 630 computer.

DISCUSSION ----------

Overview

The Apple Macintosh Quadra 630 computer is the most advanced CD-ROM–equipped Apple multimedia system. It is also upgradeable to take advantage of PowerPC technology, so it can bring you performance and multimedia opportunities for years to come.

Its advanced multimedia expansion options offer new ways to interact with information. You can connect to an external video source such as a VCR or camcorder to cut and paste video images. You can also add an option to connect your computer to a large-screen TV for displaying presentations. And you can add an internal TV tuner to view television channels in a window on your display.

Power and Speed

- 66/33-MHz 68040 microprocessor with 32-bit data bus
- Integrated math coprocessor

Memory

4MB of RAM standard, expandable to 36MB using one 72-pin SIMM (dealer installation recommended)

Display

- 1MB DRAM display support (independent from system DRAM) works with Apple

displays of up to 15 inches
• Works with a wide range of third-party VGA and SVGA displays
• Standard 16-bit color for display of up to 32,768 colors on monitors of up to 14 inches and on 15-inch monitors at 640- by 480-pixel resolution
• Standard 8-bit color for display of 256 colors on 15-inch monitors at 800- by 600-pixel resolution

Audio System

• Stereo 8-bit sound capable of driving stereo headphones or other stereo equipment through the sound jacks
• Stereo 16-bit CD playback
• One sound-in port
• Front and rear headphone jacks

Expansion

• Can be upgraded to PowerPC
• Comes with built-in ports for hard drives, printers, scanners, and modems
• Supports most processor-direct cards compatible with Macintosh Quadra 605 and Macintosh LC series of computers via an internal expansion slot
• Includes a communications slot for an Ethernet connection or 14.4-baud fax/data modem
• Has video slot for NTSC, PAL, and SECAM video-input card
• Includes expansion bay for television tuner
• External drop box provides expansion for NTSC or PAL video output
• Includes bay for CD-ROM player

System software

• System software version 7.1 with multitasking, file sharing, QuickTime, Balloon Help, TrueType fonts, and more

Networking

• Interface port for AppleTalk networking

Compatibility

• Reads and writes Macintosh, MS-DOS, OS/2, and ProDOS disks

Configurations and Ordering Information:

Order No. M3491LL/A
• Macintosh Quadra 630 personal computer with 4MB of RAM, 1MB of video memory, a built-in 1.4MB Apple SuperDrive, floopy disk drive, and an internal 250MB hard disk drive
• Mouse
• Complete setup, learning, and reference documentation
• System software version 7.1
• Limited warranty

Apple Video System

Order No. M2894LL/C

Apple Video/TV System
Order No.M2896LL/C

Apple Presentation System
Order No. M2895LL/A

Macintosh 10BaseT Ethernet Port Kit
Order No. M3065LL/A

Macintosh 10Base2 Ethernet Port Kit
Order No. M2708LL/A

Macintosh AAUI Ethernet Port Kit
Order No. M3066LL/A

Macintosh 14.4 Fax/Modem Kit
Order No. M2480LL/A

Article Change History:
05 Oct 1995 - Updated video option part numbers.
13 Jun 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:15837

Tech Info Library

Macintosh Quadra 630: Specifications (11/95)

Revised: 11/29/95
Security: Everyone

Macintosh Quadra 630: Specifications (11/95)

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Article Created: 15 July 1994
Article Reviewed/Updated: 29 November 1995

TOPIC ----------

This article gives the technical specifications for the Macintosh Quadra 630 computer.

DISCUSSION ----------

Microprocessor

- Motorola 68040 with integrated FPU-66 MHz internal processor clock speed, 33 MHz system bus clock; 32-bit data bus

Memory

- 4MB RAM soldered to logic board, one SIMM socket for expansion up to 36MB of memory. Utilizes 72 pin, 80ns memory.

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive
- One internal 250MB, 350MB or 500MB IDE type hard disk
- Optional internal CD-ROM drive

Video Display

- Supports Apple displays of up to 15 inches
- Works with a wide range of third-party VGA and SVGA displays
- 1MB DRAM display support, independent from system DRAM
- Standard 16-bit color for display of up to 32,768 colors on monitors of up to 14 inches and on 15-inch monitors at 640- by 480-pixel resolution
- Standard 8-bit color for display of 256 colors on 15-inch monitors at 800- by 600-pixel resolution

Interfaces

- One Apple Desktop Bus (ADB) port supports a keyboard, mouse, and other devices
- Two (RS-232/RS-422) serial ports
- SCSI interface port for connecting up to six external peripheral devices (five in configurations with internal CD-ROM player)
- Internal expansion slot compatible with most Macintosh Performa 400 and 500 series, Macintosh Quadra 605, Macintosh LC II, LC III, LC 475, LC 520, and LC 575 processor-direct cards
- Communications slot for future addition of either Ethernet card or 14.4-baud fax/modem card
- Video slot for NTSC, PAL, and SECAM video-input card
- Dedicated connector for internal TV tuner
- One standard monitor port also supports connection to external video-out (NTSC or PAL) drop box

Networking

- Built-in AppleTalk port

Keyboard and Mouse

- Several ADB keyboards with numeric key pads available
- Apple Desktop Bus Mouse II

Clock/Calendar

- Custom integrated circuit with long-life lithium battery

Disability Access

- CloseView, Easy Access, and the ability to substitute visual cue for beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

Electrical Requirements

100-240 volts AC, 50-60 Hz

ADB Power Requirements

500ma maximum draw

Size and Weight

- Height: 4.3 in. (10.95 cm)
- Width: 12.6 in. (32 cm)
- Depth: 16.5 in. (41.95 cm)
- Weight: 19 lb. (8.6 kg) with CD-ROM player

(varies based on internal devices installed)

Operating Environment

Operating temperature 50° F to 104° F (10° C to 40° C)
Storage temperature -40° F to 116.6° F (-40° C to 47° C)
Relative Humidity 5% to 95% noncondensing
Altitude Works below 10,000 feet (3048 m)

System Software Requirements

- System software version 7.1 with multitasking, file sharing, QuickTime, Balloon Help, TrueType fonts, and more

Article Change History:
29 Nov 1995 - Corrected minor typo.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15838

Tech Info Library

Power Macintosh:Compatibility With Macintosh Common Lisp (6/96)

Revised: 6/7/96
Security: Everyone

Power Macintosh:Compatibility With Macintosh Common Lisp (6/96)

==========

Article Created: 14 July 1994
Article Reviewed/Updated: 7 June 1996

TOPIC ----------

Is Macintosh Common Lisp (MCL), now a product of Digitool, Inc., compatible with Power Macintosh computers?

DISCUSSION ----------

MCL 2.0.1 is partially compatible with Power Macintosh computers, provided a software patch is installed first and some environmental settings (such as Virtual Memory) are configured exactly.

MCL 3.0 is compatible with Power Macintosh computers but is again somewhat dependent on certain configurations, such as whether Virtual Memory is enabled or disabled.

MCL 3.9 is Power Macintosh native, and is not compatible with non-PPC systems. All versions of Macintosh Common Lisp prior to 3.9 are 680x0-based applications and will execute in emulation on a Power Macintosh.

Software patches, patch installation instructions, and further information can be found at Digitool's web site at http://www.digitool.com or via anonymous ftp at ftp.digitool.com.

Article Change History:
07 Jun 1996 - Updated article.
28 Feb 1995 - Changed ftp site, and added MCL is a product of DigiTool.

Copyright 1994-96, Apple Computer, Inc.

Tech Info Library Article Number:15839

Tech Info Library

MacTest Pro: False SCC Loopback Error On Power Macintosh (7/94)

Revised: 7/15/94
Security: Everyone

MacTest Pro: False SCC Loopback Error On Power Macintosh (7/94)

==========

Article Created: 15 July 1994

TOPIC ----------

When running MacTest Pro for the Power Macintosh, I am consistently getting "SCC loopback data count error" when running the serial loopback test. All other tests pass on the computer. Is this a known issue on the diagnostics?

DISCUSSION ----------

The diagnostic group was able to confirm that this is a bug in Comm Ports test v1.1 which will be fixed in version 1.2 of the test. Version 1.2 is expected to ship sometime in August assuming no delays.

If there are no other symptoms which would normally point to a serial port failure, this error can be ignored.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15840

Tech Info Library

Apple CD-ROMs:Multisession CD-R Discs Compatibility (8/96)

Revised: 8/19/96
Security: Everyone

Apple CD-ROMs:Multisession CD-R Discs Compatibility (8/96)

==========

Article Created: 15 July 1994
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

I am having trouble reading my CD-Recordable (CD-R) discs in my AppleCD 300i CD-ROM drive that came in Power Macintosh 7100. I can copy some files to the CD and everything works fine the first time I read it in my AppleCD 300i drive. However, if I copy additional information to the same CD later and try to read the CD again, I can only see the new information.

I am creating the CD-R discs on a Yamaha CDE100 CD-ROM Writer which is connected to a Macintosh 840AV. I am using an application "Gear" to copy the information to the CD-R disc.

When I talked to Yamaha about this, and they said my CD-ROM drive needs to be "Orange Book Part II compatible" in order to read a multisession disc. What is Orange Book? Are my AppleCD 300i and CD-ROM driver software Orange Book Part II compatible?

DISCUSSION ----------

"Orange Book" is supposed to be a standard software method for multisession CD-R writable discs which allows you to mount a separate volume for each session that you record.

Problem

The "Orange Book" CD-ROM specification is not yet an industry standard. This is due to the fact that many CD-ROM hardware and software driver manufacturers have been implementing their user interfaces to the "Orange Book" specification differently. Some CD-ROM drivers currently show only the first volume created, some drivers show only the last volume created.

If you are having difficulties reading multisession CD-R discs, there are many possible solutions:

1. Update your AppleCD software to the latest version. 5.1.1. Version 5.1.1 of CD-ROM Setup adds support for multisession CDs, CD Plus, and Enhanced CDs. It requires System 7.1 or later.

2. Use one of several third-party solutions available for the AppleCD 300. Companies such as FWB, MacPeak, Optical Media International, and ASTARTE GmbH offer software to mount multisession data CD-R media.

3. If you continue to have difficulty, contact an Apple-authorized service provider for additional assistance.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" - Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" - Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
19 Aug 1996 - Changed misspelling.
11 Jul 1995 - Added additional resolutions
04 Oct 1994 - Added how to fix the problem.

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Tech Info Library Article Number:15841

Tech Info Library

Sound Control Panel: Playthrough Option Missing (7/94)

Revised: 7/15/94
Security: Everyone

Sound Control Panel: Playthrough Option Missing (7/94)

==========

Article Created: 14 July 1994

TOPIC ----------

The Playthrough option is missing from the “Input Options” window in my Sound Control Panel. Also, the Sound Input window also looks different than the documentation that came with my Macintosh computer. Instead of a picture of a Macintosh with a small microphone next to it, there is a picture of a round microphone. Is the sound control panel damaged or has the Playthrough option been moved?

DISCUSSION ----------

The Playthrough option in the Sound Control Panel is used to set up how a Power Macintosh or Macintosh AV computer plays audio CD’s. This option is not available on any other Macintosh models.

Usually the symptom you mention is caused by and extension conflict. Extension conflicts are often caused by older, incompatible system extensions or control panels.

To determine whether this problem is an extension conflict, restart the Macintosh with extensions off by holding down the Shift key at startup right after the Startup tone until you see the message "Welcome to Macintosh. Extensions off."

If the Sound Control Panel looks normal now, you will need to determine by process of elimination which Control Panel or Extension was causing the conflict. (For example, some versions of Suitcase II from Fifth Generation Systems are known to cause this kind of behavior.) *For information on how to troubleshoot Control Panels and Extensions search on the string "init conflict."*

If the Sound Control Panel symptoms continue, remove the file “Sound Preferences” from the System Folder>Preferences folder and restart.

If the symptoms still persist, perform a clean install of the system software. *For information on how to perform a clean install search on the string "clean install."

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content pertaining to that product. Please contact the vendor for additional information.

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Support Information Services

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Tech Info Library Article Number:15842

DOS Compat Card: Color Printing Options (9/96)

Revised: 9/17/96
Security: Everyone

DOS Compat Card: Color Printing Options (9/96)

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Article Created: 15 July 1994
Article Reviewed/Updated: 17 September 1996

TOPIC ----------

I have a Color StyleWriter and a DOS Compatibility Card, I want to print in color from Windows, but cannot figure out how to do this. How can I print in color?

DISCUSSION ----------

Using PC Setup 1.0.7 and earlier, the Epson emulator does not support color or grayscale. When printing from the Windows environment to a color or grayscale printer, you need to select the Black and White option from the Print dialog.

PC Setup 1.5 or greater provides color printing to color QuickDraw printers. PC Setup 1.5 is available in the Apple Software Updates as DOS Compatibility 1.5.

PostScript Printing

As mentioned in the DOS Compatibility Card User's Guide, you can print in color from DOS or Windows with the correct printer driver. However, the Apple Color LaserWriter 12/600 PS printer does not allow you to print in color from DOS or Windows.

Additional Color Printing Solutions

Another option to print in color is to install software which allows color PostScript printing, such a software based Color Postscript emulator so that the Color StyleWriter would appear as a PostScript printer.

One product that provides this capability is StyleScript from GDT Softworks. StyleScript is a PostScript Level 2 emulator which allows you to print in color from Windows using PostScript.

This software is installed in the Macintosh operating environment not the Windows environment. When you install StyleScript it modifies the existing Color StyleWriter printer driver (only certain models, check with GDT for list of available models) and turns it into a PostScript driver. From then on, it is seen as a PostScript printer to all applications (Macintosh and Windows).

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
17 Sep 1996 - Changed title to better reflect contents.
21 May 1996 - New Information about PC Setup control panel.
15 May 1996 - Corrected spelling error

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Tech Info Library Article Number:15851

Tech Info Library

Virtual Memory: How It Differs On Power Macintosh (7/96)

Revised: 2/17/97
Security: Everyone

Virtual Memory: How It Differs On Power Macintosh (7/96)

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Article Created: 18 July 1994
Article Reviewed/Updated: 01 July 1996

TOPIC ----------

Why is the RAM requirement lower for a program when virtual memory (VM) is running? When you do a Get Info on an application on a Power Macintosh you get an additional message that gives a lower memory requirement if you have virtual memory turned on. Since this still looks like RAM to the application, why is there a lower RAM requirement?

This article answers these questions and describes how you can reduce the memory requirements for Power Macintosh native applications that require large amounts of RAM, such as Microsoft Excel or Word.

DISCUSSION ----------

Overview
========

With the introduction of Power Macintosh, virtual memory, the ability to assign part of a hard drive as if it were additional physical memory, gains advantages over previous systems. By enabling virtual memory, Power Macintosh computers are able to utilize a feature called file mapping, which can significantly reduce the amount of physical memory required to launch a native application. Enabling Virtual Memory reduces the overall memory requirements of large native Power Macintosh applications. After enabling Virtual Memory, the Application Partition is substantially smaller and the System Partition increases by a relatively small amount.

In a recent sampling of native Power Macintosh applications, we found the average RAM required to launch an application was almost 2 MB less when virtual memory was enabled.

In the past, the only reason to enable virtual memory was to simulate the addition of real memory to a system. With Power Macintosh, simply enabling

virtual memory without adding any virtual space has the desirable effect of reducing the application RAM footprint.

Excerpts from "Inside Macintosh: PowerPC System Software"

Without Virtual Memory

When virtual memory is not enabled, the application's Stack (temporary data storage), Heap (dynamically allocated storage), and all Code Fragments (Executable PowerPC code) must load into the Application Partition, resulting in increased launch times and RAM requirements for large applications.

With Virtual Memory

With Virtual Memory enabled, only the application's Stack and Heap load into the Application Partition, reducing the launch times and RAM requirements for native applications. The application's Code Fragments are then tracked by the Virtual Memory Manager, which only writes the Code Fragments to the System Partition when needed, resulting in fewer Code Fragments loaded into memory at one time.

As an additional benefit, the Operating System assumes the application's code section is always read-only, meaning that, when it’s time to remove some of the application's code from memory (to page in other code or data), the Virtual Memory Manager doesn’t need to write the code back to the hard disk. Instead, it simply purges the code from the System Partition and writes new code to the System Partition, reducing the time required to load applications code.

Virtual Memory Benefits

So, by enabling Virtual Memory you have these benefits:

- Reduce the RAM required for Application Partitions.
- Increase the System Partition. (But, to a lesser extent than the Application Partition)
- Reduce the start up time for applications.

How Virtual Memory on Works on 680x0 Macintosh

On a 680x0 Macintosh, the Segment Loader loads as much of the application as possible into memory, which is dictated by both the amount of available memory and the application's heap size (set using the Finder's Get Info dialog). If you want to increase an 8 MB system to 12 MB by using Virtual Memory, the system creates a 12 MB space on disk. When instructions or data are accessed by the system, and are not resident in memory, a "page fault" occurs. A page fault causes the system to write the least recently used "page" to disk and then satisfies the page fault by "swapping" in the page which contains the required data. This mechanism is designed to keep the most frequently used pages in physical memory ("working set") and the least frequently used ones on disk. The task of keeping all the locations straight is the job of virtual memory and the

Memory Management Unit (MMU).

How Power Macintosh VM Is Different

With native applications on Power Macintosh, there is no Segment Loader. When virtual memory is disabled, applications are loaded into memory as a contiguous block. The amount of space required for all of the code in a single application can be quite large. However, Power Macintosh applications are written to a strict new specification for the types of data that reside in the data and resource forks. In particular, the data fork contains read-only data for the application, whereas the resource fork contains information that can be modified. This is an important distinction because these rules, with virtual memory enabled, let the Code Fragment Manager (CFM) take advantage of file mapping.

With file mapping active, only some of the resource fork needs to be loaded into memory. Items in the data fork of the application can remain on disk and will be "mapped" into memory by the CFM as needed. This has the advantage of dramatically reducing the amount of data that has to immediately copied into memory at application launch time. Additionally, read-only items in the data fork can be trashed when a page fault occurs, rather than writing the old information out to disk. This reduces a write-read cycle, to a single read. This is why Power Macintosh virtual memory performance is improved over 680x0, even though the core code is unchanged.

The Modern Memory manager does not affect how the Virtual Memory Manager handles Code Fragments. So, enabling Virtual Memory and not enabling the Modern Memory has the same result.

Virtual Memory Diagram

The following diagram may be helpful in describing how Virtual Memory affects RAM requirements. The left column lists possible memory configuration for a Power Macintosh with three native applications with virtual memory enabled. The right column is for three native applications with virtual memory not enabled. The center column provides possible memory requirements.

Begin_Table

Power Macintosh with Virtual Memory Enabled	Physical RAM	Power Macintosh with Virtual Memory not Enabled
System Software	1MB	System Software
System Partition	***	System Partition
Application A, Code Section 1	2MB	Application A Partition
Application B, Code Section 1	***	Heap
Application C, Code Section 1	3MB	Stack
Application A Partition	***	Application A, Code Section 1
Heap	4MB	Application A, Code Section 2

Stack	***	Application A, Code Section 3
Application B Partition	5MB	Application A, Code Section 4
Heap	***	Application B Partition
Stack	6MB	Heap
Application C Partition	***	Stack
Heap	7MB	Application B, Code Section 1
Stack	***	Application B, Code Section 2
	8MB	Application B, Code Section 3
	***	Application B, Code Section 4
	9MB	Application C Partition
	***	Heap
	10MB	Stack
	***	Application C, Code Section 1
	11MB	Application C, Code Section 2
	***	Application C, Code Section 3
	12MB	Application C, Code Section 4

End_Table

Because of file-mapping and the Code Fragment Manager, most Power Macintosh users will want to activate virtual memory. For those wishing to take advantage of increased memory space, Apple recommends setting virtual memory on Power Macintosh computers to 50% more than the amount of physical memory.

Example: If you have 8MB of RAM, set the system to 12 MB in the Memory control panel.

Customers who want the highest performance possible, but still want the benefits of the reduced application footprint of file-mapping, can set virtual memory to the minimum amount of 1 MB more than physical RAM.

Example: If you have 8 MB of RAM, set the system to 9 MB in the Memory control panel.

Article Change History:
01 Jul 1996 - Added Fax Doc Word
21 Nov 1995 - Reviewed for technical accuracy.
14 Aug 1995 - Added Internet table formatting convention.
19 May 1995 - Made grammatical correction.

Support Information Services

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Tech Info Library Article Number:15854

PowerBook: Video Mirroring And MacroMedia Director Issue (7/94)

Revised: 7/18/94
Security: Everyone

PowerBook: Video Mirroring And MacroMedia Director Issue (7/94)

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Article Created: 18 July 1994

TOPIC ----------

When running presentations from MacroMedia Director 3.1.1 on a PowerBook with video mirroring activated, I have problems with screens not updating correctly.

This refresh problem occurs on different screens depending on which PowerBook I am using. The problems do not show up with mirroring disabled. The problem mostly seems to be related to transition effects, such as dissolve bits or pixels.

DISCUSSION ----------

MacroMedia confirmed this problem occurred on all secondary monitor configurations, and was a problem with the way that MacroMedia Director writes to the screen. Also, they stated that the problem was not fixed in version 4.0 of Director, and they had no immediate plans to implement a fix.

On the 100 series PowerBooks, the external monitor is considered the primary monitor when you are in mirroring mode, and the PowerBook's display is where you see the problems.

On the 500 series PowerBooks, the Monitors cdev determines which is the primary monitor. The menu bar placement indicates which is primary. The secondary monitor (either the external or the PowerBook's display) reflects the problem, but the primary looks fine. Therefore, when doing a presentation with a 500 series PowerBook, you must set the external monitor to be the primary with the Monitors cdev.

The 210/230/250/270c PowerBooks behave like the 100 series, but the 280 and 280c behave like the 500 series.

At this time, it is unclear whether this difference in behavior is due to the newer version of the Monitors cdev on the 500 series and 280/280c, so this

behavior is possibly subject to change in future versions of the system software.

Support Information Services

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Tech Info Library Article Number:15855

Tech Info Library

Power Macintosh: Upgrading Non-AV Model To AV Model (3/95)

Revised: 3/23/95
Security: Everyone

Power Macintosh: Upgrading Non-AV Model To AV Model (3/95)

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Article Created: 18 July 1994
Article Reviewed/Updated: 10 March 1995

TOPIC -----

My customer bought a Power Macintosh 8100 (non AV version), he now wants to upgrade to the AV version.

What additional software and hardware needs to be loaded into his original Power Macintosh 8100 in order to take advantage of the full AV feature set?

DISCUSSION -----

It is possible to upgrade a non-AV model to an AV model with the installation of the Power Macintosh AV card, the PlainTalk software, and the Audio/Visual utilities that come with the Power Macintosh CD version 2.0, which ships with all Power Macintosh models.

The PlainTalk microphone is available from finished goods or service. This provides the customer with an equivalent Power Macintosh AV configuration.

The AV configuration requires a significant amount of RAM. Apple recommends a minimum of 16MB of RAM for best overall performance.

The AV card is available from authorized Apple dealers, the part number is M3447LL/A.

Article Change History:
10 Mar 1995 - Corrected reference to PlainTalk.
04 Jan 1995 - Noted that AV card is available as a retail part.

Support Information Services

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Tech Info Library Article Number:15856

Tech Info Library

LaserWriter Pro 600/630: TrueType Init Not For System 7 (7/94)

Revised: 7/18/94
Security: Everyone

LaserWriter Pro 600/630: TrueType Init Not For System 7 (7/94)

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Article Created: 18 July 1994

TOPIC ----------

The LaserWriter Pro 600/630 owner's manual explains that the TrueType Init must be installed before completing the installation process. Is this correct?

DISCUSSION ----------

The manual is misleading. If you have System 7.x installed, then you don't need the TrueType Init. If you are using System 6.0.7 or 6.0.8, then you must use the TrueType Init. However if you use the Installer application, you do not have to drag install the TrueType Init from Font Disk 1 as explained in the owner's manual.

If you install the TrueType Init on a Macintosh using System 7.x, an error message appears at startup telling you that TrueType is already installed. If you get this error message, you need to remove the TrueType Init located in the Extensions folder, in the System folder.

Support Information Services

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Tech Info Library Article Number:15857

Tech Info Library

TrueType: TrueType Already Installed Error (7/94)

Revised: 7/18/94
Security: Everyone

TrueType: TrueType Already Installed Error (7/94)

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Article Created: 18 July 1994

TOPIC --------------------

When my computer starts up, it gives me an error that says, "TrueType is already installed skipping Installation". What causes this error?

DISCUSSION --------------------

There are two occasions when this error message appears during the startup process:

1) If you are using System 7.x and install the TrueType init in your System Folder or Extensions Folder.

   - System 7.x already has TrueType built into the operating system, so the TrueType Init is not required. Removing the TrueType Init from your System or Extensions folder corrects the problem.

2) If you are using System 6.0.7 or 6.0.8 and get the error message at startup, then you have two copies of the TrueType Init installed.

   - Removing the additional TrueType Init from the System folder, corrects the problem. Remove the oldest version of the TrueType Init if they are different versions.

Support Information Services

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Tech Info Library Article Number:15858

Tech Info Library

Workgroup Server 95: Files To Keep For Reconfiguration (7/94)

Revised: 7/25/94
Security: Everyone

Workgroup Server 95: Files To Keep For Reconfiguration (7/94)

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Article Created: 18 July 1994

TOPIC -----

Keep copies of the following files (or, if they're a text file, a hard copy of their contents) to facilitate reconfiguring the Workgroup Server (WS) 95, should you ever need to re-install the system software.

DISCUSSION -----

Important for all Workgroup Server 95 computers

- /etc/fstab

  This is the file system table, containing the list of the file systems to mount and their mount points.

- /mac/sys/System Folder/Preferences/Users & Groups Data file

  This file contains information about your AppleShare Users & Groups, and is essential for maintaining access privileges on the server. If you ever reinstall your software or create a new system folder, the Users & Groups Data File containing the data on your users should be placed in the Preferences folder of the new System Folder BEFORE launching the AppleShare Admin program. Otherwise, a new Users & Groups data file is created, and all access privileges of your users & groups will be lost.

  NOTE: The other file that is essential to preserving access privileges -- the AppleShare PDS file -- is invisible. However, Retrospect will retain access privilege information on your shared data if the File Server software is running and the folders are being shared during the backup process. See Appendix D, "Backing Up and Restoring Servers" of your Retrospect manual for details.

- /mac/sys/System Folder/Preferences/Retrospect/Retro.Configuration

This file contains your settings for Retrospect, including such things as scripts, remote names, activator codes, and location of storage sets. Back up this file whenever you make significant changes to your Retrospect settings.

If You've Modified The Mac32 Environment

- /mac/bin/mac32

  This file is a shell script which sets certain environment variables; if you have modified this file for any reason -- for example, to change the default file format from AppleSingle to AppleDouble -- create a backup of it.

If You've Set Up UNIX Users

- /etc/passwd

  This is the password database containing a list of all UNIX users and their encrypted passwords. (Note that these are UNIX users only, such as "root", not AppleShare registered users. AppleShare registered user and group data is contained in /mac/sys/System Folder/Preferences/Users & Groups Data File.)

- /etc/group

  This is a group database file

If You've Configured the WS 95 for TCP/IP

- /etc/NETADDRSS

  This file contains the IP address for your machine, created when you run newconfig bnet.

- /etc/hosts

  This file may contain a table of IP hosts to which you can connect. The /etc/hosts can be used to resolve IP domain names when a domain name server is unavailable.

- /etc/HOSTNAME

  This file contains the hostname and domain name for your machine, created when you run newconfig bnet.

- /etc/resolv.conf

  This file contains domain name server information

- /etc/rc

This file may contain information about your default gateway.

Article Change History:
25 Jul 1994 - Added a step if configured for TCP/IP.

Support Information Services

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Tech Info Library Article Number:15859

Tech Info Library

Select 310: How To Install Print Driver in SoftWindows (7/94)

Revised: 5/24/95
Security: Everyone

Select 310: How To Install Print Driver in SoftWindows (7/94)

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Article Created: 18 July 1994

TOPIC ----------

I have a Power Macintosh running SoftWindows, and a LaserWriter Select 310. I want to be able to print from the Windows 3.1 environment under SoftWindows, but Windows 3.1 doesn't have the driver for my printer preinstalled. What do I need to do to allow me to use my printer under Windows 3.1?

DISCUSSION ----------

These directions assume that you have already installed the LaserWriter Select 310 software in the Macintosh system, and have been able to print successfully from the Macintosh environment. It also assumes that you have selected "Postscript" from the "PC Printer Port" option under the Setup menu in SoftWindows. Follow the steps below to install the LaserWriter Select 310 drivers in SoftWindows:

1) Locate the LaserWriter Select 310 for Windows disk that came with the printer which contains the Windows versions of the Select 310 software.

2) Launch SoftWindows, and type "win" at the DOS prompt to launch Windows 3.1.

3) Once the Windows desktop comes up, double-click the Main icon located within Program Manager.

4) Then double-click the Control Panel icon.

5) Then double-click the Printers icon.

6) You will need to remove a printer driver from the list to the left side of the window which opened. Select a printer that you don't anticipate using (such as one of the Hewlett Packard or QMS printer drivers), and click Remove.

7) Then click Add to add a new printer driver to the list. The window will enlarge to include a list showing several different drivers that are available for installation. At the top of the list should be "Install Unlisted or Updated Printer" which you select. Click Install to the right of the window.

8) A new window will open asking you to insert a disk containing the printer driver you want to install into the "A:" drive. Insert the LaserWriter Select 310 for Windows disk, and click Browse at the right side.

9) A directory of the disk should be shown with three available folders, double-click "win31drv" to open it. Then click OK at the right to select it. The window should update to show "A:\WIN31DRV\".

10) Click OK to continue. A new window should come up showing "Apple LW Select 310", select it and click OK for installation.

11) Another window will appear asking you to insert Microsoft Windows 3.1 disk #6 so the system can install an updated PSCRIPT.DRV file into the system. To bypass this message click Browse which will bring up a directory of the "C:\windows" area, with a folder called "system" as the third item on the list. Click on the "system" folder to open it, and then click OK. This will take you back to the previous window, where you must click OK again in order to complete the installation.

12) Then double-click on "Apple LW Select 310" to make it the active printer, and click the Close.

Windows 3.1 should now be configured correctly for use with your LaserWriter Select 310.

Support Information Services

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Tech Info Library Article Number:15860

Tech Info Library

GeoPort Adapter: Ringer Equivalence Number & Frequency (8/94)

Revised: 8/23/94
Security: Everyone

GeoPort Adapter: Ringer Equivalence Number & Frequency (8/94)

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Article Created: 18 July 1994
Article Reviewed/Updated: 23 August 1994

TOPIC ----------

What is the ringer equivalence and ring signal frequency range of the GeoPort Adapter? I have multiple items connected to the same phone line, and some of them aren't working properly since I added my GeoPort adapter.

DISCUSSION ----------

The ringer equivalence number (REN) for the GeoPort Adapter is 0.7B. In most areas, the total of the REN's of all the devices connected shouldn't exceed five. Contact your local phone company to determine your local maximum. Exceeding the recommended maximum can cause unreliable operation of all devices on that line, in other words if a call comes in, all of the devices may not ring or detect the call.

The ring frequency range the GeoPort Adapter uses is between 14 Hz to 1200 Hz (much wider than required by FCC Part 68).

Article Change History:
23 Aug 1994 - Added information about ring signal frequency.

Support Information Services

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Tech Info Library Article Number:15861

Standard Resource Types: Reserved Resource Type Names (7/94)

Revised: 7/19/94
Security: Everyone

Standard Resource Types: Reserved Resource Type Names (7/94)

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Article Created: 19 July 1994

TOPIC --------------------

The following standard resource types have been defined (System file 4.1 or later). All-uppercase resource types are listed first followed by all-lowercase resource types.

Uppercase and lowercase letters are distinguished in resource types. You can use any four-character sequence, except those listed below, and those sequences consisting entirely of lowercase letters (reserved by Apple), for resource types specific to your application. There’s no need to register your resource types with Apple since they’ll only be used by your application.

DISCUSSION --------------------

Resource type	Meaning
'ALRT'	Alert template
'ADBS'	Apple Desktop Bus service routine
'BNDL'	Bundle
'CACH'	RAM cache code
'CDEF'	Control definition function
'CNTL'	Control template
'CODE'	Application code segment
'CURS'	Cursor
'DITL'	Item list in a dialog or alert
'DLOG'	Dialog template
'DRVR'	Desk accessory or other device driver
'DSAT'	System startup alert table
'FKEY'	Command-Shift-number routine
'FMTR'	3 1/2-inch disk formatting code
'FOND'	Font family record
'FONT'	Font
'FREF'	File reference
'FRSV'	IDs of fonts reserved for system use

'FWID'	Font widths
'ICN#'	Icon list
'ICON'	Icon
'INIT'	Initialization resource
'INTL'	International resource
'INT#'	List of integers owned by Find File
'KCAP'	Physical layout of keyboard (used by Key Caps DA)
'KCHR'	ASCII mapping (software)
'KMAP'	Keyboard mapping (hardware)
'KSWP'	Keyboard script table
'LDEF'	List definition procedure
'MBAR'	Menu bar
'MBDF'	Default menu definition procedure
'MDEF'	Menu definition procedure
'MENU'	Menu
'MMAP'	Mouse tracking code
'NBPC'	Appletalk bundle
'NFNT'	128K ROM font
'PACK'	Package
'PAT '	Pattern (The space is required.)
'PAT#'	Pattern list
'PDEF'	Printing code
'PICT'	Picture
'PREC'	Print record
'PRER'	Device type for Chooser
'PRES'	Device type for Chooser
'PTCH'	ROM patch code
'RDEV'	Device type for Chooser
'ROvr'	Code for overriding ROM resources
'ROv#'	List of ROM resources to override
'SERD'	RAM Serial Driver
'SICN'	Script symbol
'STR '	String (The space is required.)
'STR#'	String list
'WDEF'	Window definition function
'WIND'	Window template
'actb'	Alert color table
'atpl'	Internal AppleTalk resource
'bmap'	Bit maps used by the Control Panel
'boot'	Copy of boot blocks
'cctb'	Control color table
'cicn'	Color Macintosh icon
'clst'	Cached icon lists used by Chooser and Control Panel
'clut'	Color look-up table
'crsr'	Color cursor
'ctab'	Used by the Control Panel
'dctb'	Dialog color table
'fctb'	Font color table
'finf'	Font information
'gama'	Color correction table
'ictb'	Color table dialog item
'insc'	Installer script
'itl0'	Date and time formats

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  'itl1'    Names of days and months
  'itl2'    International Utilities Package sort hooks
  'itlb'    International Utilities Package script bundles
  'itlc'    International configuration for Script Manager
  'lmem'    Low memory globals
  'mcky'    Mouse tracking
  'mctb'    Menu color information table
  'mitq'    Internal memory requirements for MakeITable
  'mppc'    AppleTalk configuration code
  'nrct'    Rectangle positions
  'pltt'    Color palette
  'ppat'    Pixel pattern
  'snd '    Sound  (The space is required.)
  'snth'    Synthesizer
  'wctb'    Window color table
```

Support Information Services

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Tech Info Library Article Number:15862

Tech Info Library

PowerBook Assistant Toolbox: Printing a PostScript File (01/95)

Revised: 1/11/95
Security: Everyone

PowerBook Assistant Toolbox: Printing a PostScript File (01/95)

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Article Created: 19 July 1994
Article Reviewed/Updated: 11 January 1995

TOPIC ----------

A customer with a PowerBook 500 series computer wants to print to a PostScript file rather than to a printer. The customer chooses LaserWriter in the Chooser, but of course, cannot choose a specific printer. The customer activates the print dialog and selects the destination as a PostScript file, and then clicks the Save button.

The system displays the dialog message "This document cannot be printed at the current time on the printer 'LaserWriter' because a printer is not available to the AppleTalk network." and has two choices: "Exit the dialog - Don't Print", or "Print Later".

If the customer chooses Print Later, it spools the file to the PrintMonitor, and does not create the desired file. If the customer removes the Assistant Toolbox, and restarts, the dialog does not display, and the Postscript file is generated correctly.

What is the problem here, and what can the customer do about it?

DISCUSSION ----------

The PowerBook 500 series computers ship with version 1.1 of the Assistant Toolbox. It has a deferred printing feature that lets you save a spooled print file and then print it out later when you return to your printer.

This feature takes over control of the printing from PrintMonitor. Therefore, it interrupts printing to put up the preceding dialog before PrintMonitor figures out that a PostScript file was being requested. So, if your choose Print Later, it only makes the spool file, and doesn’t even try to print the file until you reconnect to the network. Once you do this, you get a dialog that asks if you are ready to print, and if so, it generates the PostScript file.

If you disable the Background Printing option in the Chooser, and go through the preceding steps, you still get the Print Later dialog. However, if you choose Print Later, it immediately generates the PostScript file since PrintMonitor is not active to make a spool file. This is a little confusing, but does produce the desired result.

The only other way to get this to work is to remove the Assistant Toolbox extension and then restart, which disables the whole Print Later option.

This issue only applies to version 1.1 of the Toolbox, and has been brought to Engineering to address in possible future releases.

Article Change History:
11 Jan 1995 - Added keyword and made several minor technical updates.

Support Information Services

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Tech Info Library Article Number:15863

Tech Info Library

PowerBook 150: DOES NOT Support The Express Modem (8/94)

Revised: 8/15/94
Security: Everyone

PowerBook 150: DOES NOT Support The Express Modem (8/94)

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Article Created: 18 July 1994
Article Reviewed/Updated: 15 August 1994

TOPIC ----------

Is the international Express Modem supported by the PowerBook 150?

DISCUSSION ----------

The PowerBook 150 will support the same kinds of modems that are supported by the PowerBook 140, 145, and 170. The Global Village PowerPort line will be supported in the near future after their software is updated.

The PowerBook 150 does not support the Express Modem.

Article Change History:
15 Aug 1994 - Updated to show that the Global Village software needs a revision.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15865

Tech Info Library

Global Village Modem and Two Line Telephone (7/94)

Revised: 7/19/94
Security: Everyone

Global Village Modem and Two Line Telephone (7/94)

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Article Created: 19 July 1994

TOPIC -----

I have a Performa 575 with a bundled Global Village TelePort Bronze Modem. I would like to know if a two line telephone would work with the Global Village modem?

DISCUSSION -----

There are two possibilities:

1) If your two line telephone uses a specialized ring, you will have the same problems as if you had call waiting enabled. The second line can interrupt your modems data and FAX transmissions.

2) If you have two actual lines, you should have little difficulty, as all four wires are passed through the modem connection.

Support Information Services

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Tech Info Library Article Number:15866

Tech Info Library

System 7: System Software Using Excessive RAM (7/94)

Revised: 7/19/94
Security: Everyone

System 7: System Software Using Excessive RAM (7/94)

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Article Created: 18 July 1994

TOPIC ----------

Sometimes my Macintosh shows an unusual amount of RAM (20mb or more) is being used by the system software in the "About this Macintosh" window.

I tried turning on 32 bit addressing in the Memory Control Panel, zapping the PRAM, troubleshooting incompatible extensions, removing all fonts, and even performing a clean install of System Software, but the problem remains. Could there be a problem with the Macintosh hardware?

DISCUSSION ----------

If the problem you stated persists even after a clean install, the next step would be to remove all internal or external devices that use non-Apple device drivers from your computer system. These items might include: internal or external hard drives formatted with 3rd party utilities, NuBus cards (for example, accelerator or video cards), or any other non-Apple hardware.

The reason that you should physically remove these items is that all device drivers are ALWAYS loaded at system startup regardless of the designated startup disk. In other words, booting from a Startup Diskette or CD (like Disk Tools) does not eliminate all third party software from the startup sequence if there are still non-Apple items in or attached to the computer. Those devices will continue to load their driver software at startup from any startup disk.

If the problem continues even with all third party devices removed, the next thing to try would be to remove any extra RAM that has been added to your Macintosh. If removing all extra RAM still doesn't resolve the problem, you may have a computer hardware problem that needs service.

For information about how to perform the "clean install" procedure search with the string, "clean install".

..TIL15867-System_7-System_Software_Using_Excessive_RAM_7-94_(TA32125).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15867

Tech Info Library

SoftWindows, ImageWriter II, Type 1 Errors When Printing (7/94)

Revised: 5/24/95
Security: Everyone

SoftWindows, ImageWriter II, Type 1 Errors When Printing (7/94)

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Article Created: 19 July 1994

TOPIC ----------

I have an ImageWriter II connected to my Power Macintosh modem port. I can print fine from the Macintosh environment, but whenever I try to print from within SoftWindows I get a type 1 errors part way through or at the end of the printing process, and SoftWindows quits. I have Epson LQ2500 emulation selected in the SoftWindows printer port selection under the Setup menu.

DISCUSSION ----------

SoftWindows defaults to assigning com1: to the modem port. This can cause errors when printing, and often causes a type 1 error to come up. The solution recommended by Insignia is to have both com1: and com2: serial ports set to "none" within the "PC serial port" selection under the Setup menu, this will prevent the conflicts from occurring.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15868

Tech Info Library

Apple Support Information: Internet, AOL and CompuServe (5/97)

Revised: 5/2/97
Security: Everyone

Apple Support Information: Internet, AOL and CompuServe (5/97)

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Article Created: 19 July 1994
Article Reviewed/Updated: 2 May 1997

TOPIC -----

Apple publishes support information, including Apple software updates and the Apple Tech Info Library to the following commerical online services and Internet sites.

DISCUSSION -----

1) America Online

The Apple Computer, Inc. area on AOL is located in the Computing channel. The America Online keyword is: applecomputer

2) CompuServe

These areas are maintained by Apple on CompuServe, each with a different "GO" word (shortcut) - You can also access the Apple area from GO MACPLANET or GO APPLE
- Apple Support Forum (GO APLSUP) - Apple Information and USA Apple software updates are posted here.
- Apple Tech Info Library (GP APLTIL) - Apple's official technical support database.
- Apple Support Forum (GP APLWW) - Apple Worldwide (localized) Apple software updates are posted here.

- Sysop Address: 74431,1617 (Internet: 74431.1617@compuserve.com)

2) The Internet

- http://www.apple.com - Apple Computer, Inc's main home page. Click on the Customer Support button in the upper left corner of the home page to visit the Customer Support area (http://www.info.apple.com

- http://www.info.apple.com - Apple Computer, Inc's Customer Support home page, known as: "Get Info: Apple Support Information"

- ftp.info.apple.com, ftp.apple.com and ftp.info.euro.apple.com - Apple ftp servers, serving the complete collection of Apple software Updates.

- http://club.apple.com - Apple Club, a fee-based "diamond-lane" server, providing priority access to Apple software updates.

Article Change History:
01 May 1997 - Removed out dated on line references.
07 Jan 1997 - Removed on line service info, revised Internet information
04 Nov 1996 - Updated CompuServe Sysop address and GO words.

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Tech Info Library Article Number:15870

Tech Info Library

Sound Manager: Digitizing, Down-Sampling, and Static (5/96)

Revised: 5/13/96
Security: Everyone

Sound Manager: Digitizing, Down-Sampling, and Static (5/96)

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Article Created: 20 July 1994
Article Reviewed/Updated: 13 May 1996

TOPIC ----------

I get static and distortion when I digitize sounds. This happens when I record at low sound levels (soft music) with any application that uses the Sound Manager, including Apple's Sound control panel. The resulting static is louder than the originally recorded signal. The static appears to superimpose itself over the whole recording.

The problem occurs on both a Macintosh 840AV and a Macintosh Performa computer. I've tried different input devices, such as: a PlainTalk microphone, third party microphones, audio CDs, and video sources. I've tried several software programs including: the Sound Control Panel, SoundEdit Pro 1.0.5, SoundEdit 16, Fusion Recorder, MoviePlayer, and Digitrax.

The only program that consistently works without static is called Digitrax. It records fine at any bit-depth and any sampling rate. I can record a clean sound with Digitrax, but as soon as I edit it with SoundEdit Pro, static is introduced into the sound.

I have replaced logic board, clean installed system software, run Disk First Aid, replaced PlainTalk microphone, reinitialized the drive, zapped PRAM and rebuilt the desktop. What is wrong?

DISCUSSION ----------

The original recording is clean. The static you're getting comes from what is done to the sound when you digitize (edit) it. There is a known problem with the method that you're using. Recording in 16-bit 44kHz stereo audio and then down-sampling the file to an 8-bit 22kHz mono file will result in a lot of anti-aliasing artifacts (static).

The workaround for this problem is to record the file in 8-bit mode from the beginning instead of downsampling. However, you must keep in mind that any

program which records in 8-bit mode such as Fusion Recorder, Sound Edit Pro, or the Sound Control Panel will introduce some noise with the signal. Other applications, such as Sound Sculptor, will allow you to record in either 8- or 16-bit mode, so the problem can be avoided. You may also want to make sure you are using the latest version of Apple's Sound Manager extension (v 3.1). It is no longer a separate extension in System 7.5 or later, but instead is built into the System file.

There is also a known problem when using QuickTime 1.6.1 and MoviePlayer to record 16-bit audio from an audio CD. The recording that results from this combination of software will have a lot of static. The combination of QuickTime 2.0 and MoviePlayer 2.0 fix this problem.

Article Change History:
13 May 1996 - Added info about 16-bit-capable application.

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Tech Info Library Article Number:15872

Tech Info Library

FAX with GeoPort and Power Macintosh In PageMaker 5.x (7/94)

Revised: 7/20/94
Security: Everyone

FAX with GeoPort and Power Macintosh In PageMaker 5.x (7/94)

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Article Created: 20 July 1994

TOPIC ----------

I cannot FAX documents from PageMaker 5.0 using my GeoPort and Power Macintosh. When I use the FAX shortcut (pressing Control and Shift keys while selecting FAX from the File Menu), the following message appears:

"Cannot build printer list. No valid PPD files were found. Check the 'Printer Descriptions' folder in the System Folder. Continue."

If I select "Fax Sender" in the Chooser, then try to FAX from the File Menu, the print dialog box appears and hangs when I press Print.

If I hold down the option key while selecting Print from the File Menu, the computer hangs.

DISCUSSION ----------

Use this workaround to FAX documents from PageMaker 5.0 with your GeoPort for Power Macintosh:

1) Open the Chooser, select Fax Sender.

2) Select Fax from the File Menu and click Setup in the print dialog box.

3) The Fax Sender Page Setup dialog box now appears. Make any changes necessary then click OK.

4) The Fax Sender dialog box now appears. Type in a phone number or choose one from the address book.

5) Click Send to transmit the document.

Support Information Services

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Tech Info Library Article Number:15873

Tech Info Library

Power Macintosh:How to Install LW Select 310 for Windows (7/94)

Revised: 7/20/94
Security: Everyone

Power Macintosh:How to Install LW Select 310 for Windows (7/94)

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Article Created: 20 July 1994

TOPIC -----

I have a Power Macintosh running SoftWindows, and a Laserwriter Select 310. I want to be able to print from the Windows 3.1 environment under SoftWindows, but Windows 3.1 doesn't have a driver for my printer preinstalled. What do I need to do to allow me to use my printer under Windows 3.1?

DISCUSSION -----

Before You Install the LaserWriter Select 310 printer driver for Windows you must have already done these two things:

- Installed the Select 310 software on the Macintosh side of the operating system and successfully printed from the Macintosh environment.
- Selected "Postscript" from the "PC Printer Port" option under the "Setup" menu in SoftWindows.

How to Install LW Select 310 for Windows:

1) First, locate the disk that came with the printer which contains the Windows versions of the Select 310 software.

2) Launch SoftWindows, and type "win" at the DOS prompt to launch Windows 3.1.

3) Once you come up to the desktop of Windows, open up the "Main" icon located in the Program Manager by double-clicking on it.

4) Once it comes up, double-click on the icon that says "Control Panel" to open it.

5) Once inside the Control Panel; open up the "Printers" icon by double-clicking on it.

6) At this point, Windows 3.1 doesn't have room to add any more printers,

so you will need to remove a printer from the list to the left.
- Select a printer that you don't anticipate using (such as one of the Hewlett Packard or QMS printer drivers).
- Click the "Remove" button to remove it.

7) Next, you will add the LaserWriter Select 310 printer to the list.
- Click on the "Add" button. The window will enlarge to include a list showing several different drivers that are available for installation.
- At the top of the list should be "Install Unlisted or Updated Printer"; select this, and click the "Install" button over to the right.

8) A window will come up asking you to insert a disk containing the printer driver you want to install into the "A:" drive. Insert the Select 310 DOS disk, and then click the "Browse" button over to the right.
- A directory of the disk should come up showing three folders;
- Double-click on the last one, "win31drv", to open it.
- Then click the "OK" button over to the right to select it.
- The window should now be updated to show "A:\WIN31DRV\"; click the "OK" button to continue.
- A window should come up showing "Apple LW Select 310"; click OK to select this driver for installation.

9) At this point, another window will appear asking you to insert Microsoft Windows 3.1 disk #6 so that the system can install an updated PSCRIPT.DRV file into the system. You don't need to do this. You should bypass this message.
- The way to bypass this message is to next click on the "Browse" button, which will bring up a directory of the "C:\windows" area, with a folder called "system" as the 3rd item on the list.
- Double click on the "system" folder to open it, and then click "OK". This will take you back to the previous window, where you must click "OK" again in order to complete the installation.

10) The final step is to double-click on "Apple LW Select 310" to make it the active printer, and then click the "Close" button; Windows 3.1 should now be configured correctly for use with the Select 310.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15874

Tech Info Library

AppleSearch 1.5: Description and Features (7/94)

Revised: 7/22/94
Security: Everyone

AppleSearch 1.5: Description and Features (7/94)

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Article Created: 22 July 1994

TOPIC ----------

This article provides a description and features of the AppleSearch 1.5.

DISCUSSION ----------

AppleSearch is a client-server application for AppleTalk LAN users to access information. This makes it easy for individual users to have access to their information on the network (both to the LAN and indirectly, the Internet) since the overhead of processing and maintaining the information is at the server.

The WAIS gateway, the primary new feature of AppleSearch 1.5, allows server administrators to both facilitate and control access to Internet-based information resources. Facilitation, because users don't have to have direct Internet access to make use of Internet resources; they can go through the server from either their desktop or portable computer without being directly connected to the Internet themselves. Control, because the gateway approach necessitates that the server administrator choose which WAIS sources are available to the LAN users, allowing their selection on the basis of what is appropriate or applicable to the users.

Features

Server
- Support of both free-WAIS and WAIS Inc. servers through a gateway.
- Get Information description for WAIS servers.
- Alphabetically sorted display of available WAIS servers.
- Gateway Menu to gather available WAIS server names from the directory server.
- Preferences setting for WAIS server directory reset.
- Update delivery from WAIS servers triggered by Reporter schedule.
- Status window to show number of connected users and the document and index size of WAIS sources.
- Balloon and on-line help.

Client
• Text viewer supports more than 32K of text and with cache mechanism.
• Copy Original and Matched Terms disabled for WAIS documents.
• Co-occurring words won't be returned from WAIS sources.
• Interface changes to reflect difference between local and WAIS sources.
• Balloon and on-line help.

Supported Platforms Summary

Server
• System Software 7.0.1, 7.1, 7 Pro, 7.1.2
• A/UX 3.1 on Workgroup Server (WS) 95+
• MacTCP 2.0.4 on Macintosh System Software, required for Internet connection
• MacTCP 1.1b1 on A/UX, , required for Internet connection
• AppleShare 3.0.3, 4.0.2, Pro
• Memory, at least 8 MB of RAM (for use with Macintosh system software version 7.0 or later, or with AppleShare 3 software); 12 MB of RAM (for use with AppleShare 4 software); or 16 MB of RAM (for use with AppleShare Pro software)
• Any 68040 Macintosh, Power Macintosh server, or Workgroup server (specifically: WS 95+, WS 60, 80, 6150, 8150, 9150; Centris 610, 650; Quadra 605, 610, 800, 950, 650, 900; LC IV; Power Macintosh 6100, 7100, 8100)
• AppleSearch 1.5 Server software.

Client
• System Software 7.0.1 or later
• Any Macintosh computer with an internal hard disk and at least 4MB of memory
• An Apple SuperDrive floppy disk drive
• A hard disk drive
• AppleSearch 1.5 Client software

The table below summarizes compatibility between releases of client and server:

	1.0 Server	1.0.1 Server	1.1 Server	1.5 Server
1.0 Client	yes	yes	no	no
1.1 Client	no	no	yes	yes
1.5 Client	no	no	yes	yes

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15875

Tech Info Library

Apple Restore:Doesn't Run Properly on Macintosh Performa (7/94)

Revised: 7/22/94
Security: Everyone

Apple Restore:Doesn't Run Properly on Macintosh Performa (7/94)

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Article Created: 22 July 1994

TOPIC ----------

I cannot run the Apple Restore program on my Macintosh Performa computer. I started up the computer from Utilities Disk. Then I launched Apple Restore from the disk. I got a message on the screen which asked me to click Continue. I clicked it. At this point the Utilities disk ejected, and a message came on the screen which said, "Please insert Utilities disk." After I inserted the Utilities disk, I got another message which said, "Please insert Hard Disk Copy 1", but the Utilities Disk is STILL IN THE DRIVE. What should I do now?

DISCUSSION ----------

This situation is known to occur with versions of Apple Restore prior to 7.1P3. This software came with the following Macintosh Performa models: 200, 400, 405, 430, 450, and 600/600CD.

With the Utilities Disk still in the drive and the message to insert , do the following:

1) Click Quit in the message area.
2) A message will appear stating that Apple Restore is finished. Select QUIT again.
3) Upon return to the Finder, select Shutdown from the Special menu.
4) Re-insert the Utilities disk.
5) Restart the computer and reset the Parameter RAM (PRAM). To reset the PRAM Hold down the Option, Command, P, and R keys on the keyboard immediately after you hear the startup chime. Keep holding down all four keys until you have heard the startup chime three or four times. Release all four keys and the machine will startup from the Utilities Disk.
6) Click twice on the Apple Restore program icon on the Utilities Disk to launch the program. After resetting the PRAM, Apple Restore should run correctly.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15876

Tech Info Library

PowerBook: Lock Up After Hard Drive Spins Down (1/95)

Revised: 1/31/95
Security: Everyone

PowerBook: Lock Up After Hard Drive Spins Down (1/95)

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Article Created: 22 July 1994
Article Reviewed/Updated: 27 January 1995

TOPIC ----------

When the hard disk on my PowerBook spins down and I try to access it, the drive refuses to spin back up and the PowerBook locks up. What could be the problem?

DISCUSSION ----------

The likely cause of the problem is Desktop file got corrupted when you did a Desktop rebuild with SuperATM (other extensions can cause it too) loaded.

The problem with the Desktop can be verified with Norton Utilities or MacTools but, they can only offer a temporary fix. The problem may go away for a while, but could reoccur.

The long term solution is to rebuild the desktop with the extensions off thus eliminating the possibility of any extension interfering with the rebuilding of the Desktop file.

Occasionally the situation you are experiencing could be related to a formatting corruption. So, in addition to rebuilding the desktop, you may also want to update the SCSI driver using Apple HDSC Setup while booted from your Disk Tools floppy disk. For more information about updating SCSI drivers see "Apple HD SC Setup: Updating SCSI Disk Drivers (1/95)."

If you have reformatted your hard drive with a third party utlity, you will need to follow the driver update instructions that came with that utility.

Article Change History:
27 Jan 1995 - Reviewed for technical accuracy and added info about updating SCSI driver.

Support Information Services

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Tech Info Library Article Number:15877

Tech Info Library

TITLE

Macintosh: Monitor and Video Chart (2 of 4)

Article ID: 15878
Created: 7/22/94
Modified: 10/6/99

TOPIC

This article provides a list of Apple Macintosh systems with the monitor and video options each can use.

Related Articles:

- **Macintosh: Monitors and Video Chart (1 of 4)**, article #11131
- **Macintosh: Monitors and Video Chart (3 of 4)**, article #15879
- **Macintosh: Monitors and Video Chart (4 of 4)**, article #15881

DISCUSSION

Monitor Specification Chart						
Specifications	**Performa**	**Performa Plus**	**13-in RGB ***	**14-in Color ***	**Audio-Vision 14-in**	**Multiple Scan * 14, 15, 17, 20, 1705, 1710, 1710 AV (640 x 480)**
Part Number	M9101LL/D	M9102LL/D	M0401LL/D	M1198LL/B	B1247LL	M3935LL (14) M3089LL (15) M2611LL (17) M2612LL (20) M4434LL (1705) M3322LL (1710) M3323LL (1710AV)
Resolution (pixels)	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480
Power Frequency (HZ)	57-63	57-63	47-63	50-60	50-60	47-63
Power Voltage (VAC)	98-132	98-132	100-240	100-240	100-240	90-132 198-260
Vertical Refresh	66.7 Hz	66.7 Hz	66.7 Hz	66.7 Hz	66.7 Hz	66.7 Hz
Horizontal Refresh	35 kHz	35 kHz	35 kHz	35 kHz	35 kHz	35 kHz
Dots Per Inch (DPI)	67	67	69	69	69	64
Dot Pitch	0.39 mm	0.28 mm	0.26 mm	0.26 mm	0.26 mm	0.26 mm
* All of these monitors display the same video depth at 640 x 480 resolution, so only one column is listed in the chart for all monitors.						

LC Family

LC	VRAM	Performa	Performa Plus	13/14-in Displays, Multiple Scan @ 640x480
LC, LC II (1)	256K 512K	16 C 256 C	16 C 256 C	16 C 256 C
LC III	512K 768K	256 C 32,768 C	256 C 32,768 C	256 C 32,768 C
LC 475	512K 1MB	256 C 32,768 C	256 C 32,768 C	256 C 32,768 C
LC 550 (2)	512K 1MB	N/A N/A	N/A N/A	256 C 32,768 C
LC 575 (2)	--	N/A	N/A	32,768 C
LC 630 (3)	--	32,768 C	32,768 C	32,768 C

C = Number of Colors

(1) Requires a display adapter with Multiple Scan 15 Display.

(2) This is a built-in Trinitron display.

(3) The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Performa Family

Performa	VRAM	Performa	Performa Plus	13/14-in Displays, Multiple Scan @ 640x480
400, 405, 410, 430 (1)	256K 512K	16 C 256 C	16 C 256 C	16 C 256 C
450, 460, 466, 467	512K 768K	256 C 32,768 C	256 C 32,768 C	256 C 32,768 C
475, 476	512K 1MB	256 C 32,768 C	256 C 32,768 C	256 C 32,768 C
550, 560, 575, 577, 578 (2)	--	N/A	N/A	32,768 C
600, 600CD (1)	512K 1MB	256 C 32,768 C	256 C 32,768 C	256 C 32,768 C
630 series (3)	--	32,768 C	32,768 C	32,768 C
6200	--	32,768 C	32,768 C	32,768 C
6300	--	32,768 C	32,768 C	32,768 C
6400	1 MB	32,768 C	32,768 C	32,768 C
Mac TV (2)	--	N/A	N/A	256 C

C = Number of Colors

(1) Requires a display adapter with Multiple Scan Displays.

(2) This is a built-in Trinitron display.

(3) The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Macintosh II Family

Macintosh	VRAM	Performa	Performa Plus	13/14-in Displays, Multiple Scan @ 640x480
IIsi (2)	--	256 C	256 C	256 C
IIci (2)	--	256 C	256 C	256 C

IIvi, IIvx (1)	512K 1MB	256 C 32,768 C	256 C 32,768 C	256 C 32,768 C
II, IIx, IIcx, IIfx (3)	--	N/A	N/A	See note

C = Number of Colors

(1) Requires a display adapter with Multiple Scan 15 Display.

(2) The Multiple Scan 14 and Multiple Scan 15 Display require a special third-party display adapter for use with the Macintosh IIsi and IIci computers.

(3) No built-in video and requires a video card.

Centris/Quadra Family

Centris/Quadra	VRAM	Performa	Performa Plus	13/14-in Displays, Multiple Scan @ 640x480
605, 610, 650	512K 1MB	256 C 32,768 C	256 C 32,768 C	256 C 32,768 C
630 Family (1)	--	32,768 C	32,768 C	32,768 C
660AV (2)	1MB	32,768 C	32,768 C	32,768 C
700	512K 1MB 2MB	256 C 256 C 16.7M C	256 C 256 C 16.7M C	256 C 256 C 16.7M C
800	512K 1MB	256 C 32,768 C	256 C 32,768 C	256 C 32,768 C
840AV (2)	1MB 2MB	32,768 C 16.7M C	32,768 C 16.7M C	32,768 C 16.7M C
900, 950	1MB 2MB	256 C 16.7M C	256 C 16.7M C	256 C 16.7M C

C = Number of Colors

(1) The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

(2) For the AV computers, pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

Power Macintosh Family

Power Macintosh	VRAM	Performa	Performa Plus	13/14-in Displays, Multiple Scan @ 640x480
4400 (1)	1MB 2MB 4MB	N/A N/A N/A	N/A N/A N/A	32,768 C 16.7M C 16.7M C
5400	1MB	N/A	N/A	32,768 C
6100 6100AV (2)	HDI45* 2MB	32,768 C 16.7M C	32,768 C 16.7M C	32,768 C 16.7M C
6500	2MB	N/A	N/A	16.7M C
7100 7100AV (2)	HDI45* 1MB 2MB 2MB	32,768 C 32,768 C 16.7M C 16.7M C	32,768 C 32,768 C 16.7M C 16.7M C	32,768 C 32,768 C 16.7M C 16.7M C
7200	1MB 2MB 4MB	32,768 C 16.7M C 16.7M C	32,768 C 16.7M C 16.7M C	32,768 C 16.7M C 16.7M C

7300	2MB 4MB	16.7M C 16.7M C	16.7M C 16.7M C	16.7M C 16.7M C
7500	2MB 4MB	16.7M C 16.7M C	16.7M C 16.7M C	16.7M C 16.7M C
7600	2MB 4MB	N/A N/A	N/A N/A	16.7M C 16.7M C
8100 8100AV (2)	HDI45* 2MB 4MB 2MB	32,768 C 16.7M C 16.7M C 16.7M C	32,768 C 16.7M C 16.7M C 16.7M C	32,768 C 16.7M C 16.7M C 16.7M C
8500	2MB 4MB	16.7M C 16.7M C	16.7M C 16.7M C	16.7M C 16.7M C
8600	2MB 4MB	N/A N/A	N/A N/A	16.7M C 16.7M C
9500/120	2MB 4MB	16.7M C 16.7M C	16.7M C 16.7M C	16.7M C 16.7M C
9600	4MB	N/A	N/A	16.7M C
G3 systems	See Tech Info Library article 30250, titled "**Power Macintosh G3 & G3 All-in-one: Video RAM Upgrade**"			

C = Number of Colors
* = HDI-45 port makes use of 640K of internal DRAM memory.

(1) 13" RGB not supported

(2) For the Power Macintosh AV computers, pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

PowerBook Family

PowerBook	VRAM	Performa	Performa Plus	13/14-in Displays, Multiple Scan @ 640x480
160,165,165c, 180,180c	--	256 C	256 C	256 C
190 Series	--	256 C	256 C	256 C
500 Series	--	256 C	256 C	256 C
5300 Series	--	256 C	256 C	256 C
1400 Series	--	256 C	256 C	256 C
3400 Series	--	--	--	32,768 C
G3	--	--	--	16.7M C
Duo Dock	512K 1MB	256 C 32,768 C	256 C 32,768 C	256 C 32,768 C
MiniDock	512K	256 C	256 C	256 C
Duo Dock II	--	32,768 C	32,768 C	32,768 C

C = Number of Colors

3400 Notes:
1) The computer does not provide a display with 2 bits per pixel.

2) An SVGA monitor's display resolution will be 640 by 480 pixels. The user can switch to a higher resolution by using the Monitors control panel or the control strip. The resolution set by the user will be used the next time the computer is started up.

3) If the external monitor can display 800 by 600 pixels at 60 Hz, the PowerBook 3400 computer can display simultaneously on both the external monitor and the flat panel display. This mode of display, called Simulscan, provides the same information on both displays.

Display Cards

Display Card	Performa	Performa Plus	13/14-in Displays	Multiple Scan @ 640x480

Macintosh II	N/A	N/A	16 C	N/A
2-Page Mono Card	N/A	N/A	N/A	N/A
Portrait	N/A	N/A	N/A	N/A
Mono	N/A	N/A	N/A	N/A
High-Res Card (1)	16 C	16 C	16 C	16 C
Ext High-Res Card	256 C	256 C	256 C	256 C
4*8 (2)	256 C	256 C	256 C	256 C
8*24	16.7M C	16.7M C	16.7M C	16.7M C
8*24GC	16.7M C	16.7M C	16.7M C	16.7M C
Display Card 24 AC	16.7M C	16.7M C	16.7M C	16.7M C

C = Number of Colors

(1) Can be upgraded with eight (8) Mac II Video Expansion RAM chips for 256 grays/colors.

(2) The 4*8 can be upgraded to a 8*24 by adding two (2) VRAM SIMMs.

Note: Display adapters are available from several third-pary companies such as Enhanced Cable Technology, Griffin Technology, and MacAdapt.

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Article 17159: "**Locating Vendor Information**"

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Document Information
Product Area: Monitors-Displays
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Tech Info Library

Macintosh Monitor and Video Chart (2 of 4) (11/96)

Revised: 11/27/96
Security: Everyone

Macintosh Monitor and Video Chart (2 of 4) (11/96)

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Article Created: 19 July 1994
Article Reviewed/Updated: 27 November 1996

TOPIC ----------

This article provides a list of Apple Macintosh systems and the monitor and video options each can use.

DISCUSSION ----------

Begin_Table

	Performa	Performa Plus	13-in RGB*	14-in Color*	Audio-Vision 14-in	MS 15* MS 17* MS 20* MS 14* 1710 AV* 1710* 1705* (640x480)
Part Number	M9101LL/D	M9102LL/D	M0401LL/D	M1198LL/B	B1247LL	M3089LL M2611LL M2612LL M3935LL M3323LL M3322LL M4434LL
Resolution (pixels)	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480	640 x 480
Power Frequency (Hz)	57-63	57-63	47-63	50-60	50-60	47-63

Power Voltage (VAC)	98-132	98-132	100-240	100-240	100-240	90-132 198-260
Vertical Refresh	66.7 Hz	66.7 Hz	66.7 Hz	66.7 Hz	66.7 Hz	66.7 Hz
Horizontal Refresh	35 kHz	35 kHz	35 kHz	35 kHz	35 kHz	35 kHz
Dots Per Inch (DPI)	67	67	69	69	69	64
Dot Pitch	0.39 mm	0.28 mm	0.26 mm	0.26 mm	0.26 mm	0.26 mm

* Note: All of these monitors display the same video depth at 640 x 480 resolution, so only one column is listed in the chart for all monitors.

LC Family	VRAM	Performa	Performa Plus	13/14-in Displays, Multiple Scan @ 640x480
LC/LC II	256K	16 C	16 C	16 C (1)
	512K	256 C	256 C	256 C (1)
LC III	512K	256 C	256 C	256 C
	768K	32,768 C	32,768 C	32,768 C
LC 475	512K	256 C	256 C	256 C
	1MB	32,768 C	32,768 C	32,768 C
LC 550	512K	N/A	N/A	256 C (2)
	1MB	N/A	N/A	32,768 C (2)
LC 575		N/A	N/A	32,768 C (2)
LC 630		32,768 C	32,768 C	32,768 C

C = Number of Colors

Notes: (1) Requires a display adapter with Multiple Scan 15 Display.
(2) This is a built-in Trinitron display.

Performa		Performa	13/14-in Displays,

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Family	VRAM	Performa	Plus	Multiple Scan @ 640x480
400/405 /410/430	256K	16 C	16 C	16 C (1)
	512K	256 C	256 C	256 C (1)
450	512K	256 C	256 C	256 C
	768K	32,768 C	32,768 C	32,768 C
460/466 /467	512K	256 C	256 C	256 C
	768K	32,768 C	32,768 C	32,768 C
475/476	512K	256 C	256 C	256 C
	1MB	32,768 C	32,768 C	32,768 C
550/560 /575/577 /578		N/A	N/A	32,768 C (2)
600/600CD	512K	256 C	256 C	256 C (1)
	1MB	32,768 C	32,768 C	32,768 C (1)
630 series		32,768 C	32,768 C	32,768 C
6200		32,768 C	32,768 C	32,768 C
6300		32,768 C	32,768 C	32,768 C
6400	1 MB	32,768 C	32,768 C	32,768 C
Mac TV		N/A	N/A	256 C (2)

C = Number of Colors

Notes: (1) Requires a display adapter with Multiple Scan Displays.
(2) This is a built-in Trinitron display.

Macintosh II Family	VRAM	Performa	Performa Plus	13/14-in Displays, Multiple Scan @ 640x480
IIsi		256 C	256 C	256 C (3)
IIci		256 C	256 C	256 C (3)
IIvi/IIvx	512K	256 C	256 C	256 C (1)
	1MB	32,768 C	32,768 C	32,768 C (1)
II/IIx/ /IIcx/IIfx		N/A	N/A	See note*

C = Number of Colors

* No built-in video and requires a video card.

Notes:

(1) Requires a display adapter with Multiple Scan 15 Display.

(3) The Multiple Scan 14 and Multiple Scan 15 Display require a special third-party display adapter for use with the Macintosh IIsi and IIci computers.

Centris Quadra Family	VRAM	Performa	Performa Plus	13/14-in Displays, Multiple Scan @ 640x480
605	512K	256 C	256 C	256 C
	1MB	32,768 C	32,768 C	32,768 C
610/650	512K	256 C	256 C	256 C
	1MB	32,768 C	32,768 C	32,768 C
660AV	1MB	32,768 C	32,768 C	32,768 C
630		32,768 C	32,768 C	32,768 C
700	512K	256 C	256 C	256 C
	1MB	256 C	256 C	256 C
	2MB	16.7M C	16.7M C	16.7M C
800	512K	256 C	256 C	256 C
	1MB	32,768 C	32,768 C	32,768 C
840AV	1MB	32,768 C	32,768 C	32,768 C
	2MB	16.7M C	16.7M C	16.7M C
900	1MB	256 C	256 C	256 C
	2MB	16.7M C	16.7M C	16.7M C
950	1MB	256 C	256 C	256 C
	2MB	16.7M C	16.7M C	16.7M C

C = Number of Colors

Notes: For the AV computers pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

The following computers are in the Macintosh 630 family: Performa

630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Power Macintosh Family	VRAM	Performa	Performa Plus	13/14-in Displays, Multiple Scan @ 640x480
5400	1MB	N/A	N/A	32,768 C
6100	HDI45*	32,768 C	32,768 C	32,768 C
6100AV	2MB	16.7M C	16.7M C	16.7M C
7100	HDI45*	32,768 C	32,768 C	32,768 C
	1MB	32,768 C	32,768 C	32,768 C
	2MB	16.7M C	16.7M C	16.7M C
7100AV	2MB	16.7M C	16.7M C	16.7M C
7200	1MB	32,768 C	32,768 C	32,768 C
	2MB	16.7M C	16.7M C	16.7M C
	4MB	16.7M C	16.7M C	16.7M C
7500	2MB	16.7M C	16.7M C	16.7M C
	4MB	16.7M C	16.7M C	16.7M C
7600	2MB	16.7M C	16.7M C	16.7M C
	4MB	16.7M C	16.7M C	16.7M C
8100	HDI45*	32,768 C	32,768 C	32,768 C
	2MB	16.7M C	16.7M C	16.7M C
	4MB	16.7M C	16.7M C	16.7M C
8100AV	2MB	16.7M C	16.7M C	16.7M C
8500	2MB	16.7M C	16.7M C	16.7M C
	4MB	16.7M C	16.7M C	16.7M C
9500/120	2MB	16.7M C	16.7M C	16.7M C
	4MB	16.7M C	16.7M C	16.7M C

* = HDI-45 port makes use of 640K of internal DRAM memory.
C = Number of Colors

Note: For the Power Macintosh AV computers pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

(8) - This is a built-in 15-in. Display

PowerBook Family	VRAM	Performa	Performa Plus	13/14-in Displays, Multiple Scan @ 640x480
PowerBook 160/165 /c/180/c		256 C	256 C	256 C
500 Series		256 C	256 C	256 C
5300 Series		256 C	256 C	256 C
190 Series		256 C	256 C	256 C
Duo Dock	512K	256 C	256 C	256 C (5)
	1MB	32,768 C	32,768 C	32,768 C (5)
MiniDock	512K	256 C	256 C	256 C
Duo Dock II		32,768 C	32,768 C	32,768 C

C = Number of Colors

Display Card	Performa	Performa Plus	13/14-in Displays	Multiple Scan @ 640x480
Macintosh II	N/A	N/A	16 C	N/A
2-Page Mono Card	N/A	N/A	N/A	N/A
Portrait	N/A	N/A	N/A	N/A
Mono	N/A	N/A	N/A	N/A
High-Res Card (6)	16 C	16 C	16 C	16 C
Ext High-Res Card	256 C	256 C	256 C	256 C
4•8 (7)	256 C	256 C	256 C	256 C
8•24	16.7M C	16.7M C	16.7M C	16.7M C
8•24GC	16.7M C	16.7M C	16.7M C	16.7M C
Display Card 24 AC	16.7M C	16.7M C	16.7M C	16.7M C

C = Number of Colors

Notes: (6) Can be upgraded with eight (8) Mac II Video Expansion RAM chips (Service PN: 334-002) for 256 grays/colors.

(7) The 4•8 can be upgraded to a 8•24 by adding two (2) VRAM SIMMs (Service PN: 661-0609).

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|                                                                      |
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End_Table

Display adapters are available from several third-pary companies such as Enhanced Cable Technology, Griffin Technology, and MacAdapt.

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Article Change History:
27 Nov 1996 - Added 6300 Series information.
18 Nov 1996 - Added 6400 information
15 Jul 1996 - Added adapter needed for Performa 600 with Multiple Scan displays.

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Tech Info Library Article Number:15878

TITLE

Macintosh: Monitor and Video Chart (3 of 4)

Article ID: 15879
Created: 7/22/94
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TOPIC

This article provides a list of Apple Macintosh systems and the monitor and video options each can use.

Related Articles:

- **Macintosh: Monitors and Video Chart (1 of 4)**, article #11131
- **Macintosh: Monitors and Video Chart (2 of 4)**, article #15878
- **Macintosh: Monitors and Video Chart (4 of 4)**, article #15881

DISCUSSION

Monitor Specification Chart

Specifications	16-in Color ***	Portrait Display	21-in Monochrome *	MS 14 *** MS 15 *** MS 17 *** MS 20 *** 1710AV *** 1710 *** 1705 *** 832 x 624	MS 17 ** MS 20 ** 1710AV ** 1710 ** 1705 ** 1024 x768
Part Number	M1044LL/A	M0404	M0402	M3935LL/B M3089LL M2611LL M2612LL M3323LL M3322LL M4434LL	M2611LL M2612LL M3323LL M3322LL M4434LL
Resolution (pixels)	832 x 624	640 x 870	1152 x 870	832 x 624	1024 x 768
Power Frequency (HZ)	47-63	47-63	47-63	47-63	47-63
Power Voltage (VAC)	90-270	90-270	85-270	90-132 198-260	90-132 198-260
Vertical Refresh	75 Hz	75 Hz	75 Hz	75 Hz	74.93 Hz
Horizontal Refresh	50 kHz	68.9 kHz	68.7 kHz	49.73 kHz	60.24 kHz
Dots Per Inch (DPI)	70	80	77	69-79	69-79
Dot Pitch	0.26 mm	N/A	N/A	0.31 mm	0.31 mm

* The 21-in. Monochrome display requires the DB-15 to DB-25 cable (590-0615) on all Macintosh computers with built-in video or with graphic cards using the standard DB-15 connector.

** All of these monitors display the same video depth at this resolution (1024 x 768), so only one column is listed in the chart for all monitors.

*** All of these monitors display the same video depth at this resolution (832 x 624), so only one column is listed in the chart for all monitors.

LC Family

LC	VRAM	16-in Color Multi-Scan 15, 17, 20 (832 x 624)	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 (1024 x 768)
LC, LC II	256K 512K	N/A N/A	N/A N/A	N/A N/A	N/A N/A
LC III	512K 768K	256 C (1) 256 C (1)	16 G 256 G	N/A N/A	N/A N/A
LC 475	512K 1MB	256 C 32,768 C	16 G 256 G	16 G 256 G	16 G 256 G
LC 630 (2, 3)	--	256 C	N/A	N/A	N/A

C = Number of Colors
G = Number of Grays

(1) Requires Display adapter to use Multiple Scan Displays at this resolution.

(2) The Macintosh 630 family computers can use larger monitors such as the Multiple Scan 17 and Multiple Scan 20 however the maximum resolution on these monitors is 832x624, and at this resolution, they cannot support the TV/Video System.

(3) The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Performa Family

Performa	VRAM	16-in Color Multi-Scan 15, 17, 20 (832 x 624)	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 (1024 x 768)
400, 405, 410, 430	256K 512K	N/A N/A	N/A N/A	N/A N/A	N/A N/A
450, 460, 466, 467	512K 768K	256 C (1) 256 C (1)	16 G 256 G	N/A N/A	N/A N/A
475, 476	512K 1MB	256 C 32,768 C	16 G 256 G	16 G 256 G	16 C 256 C
550, 560, 575, 577, 578	--	N/A	N/A	N/A	N/A
600, 600CD	512K 1MB	N/A N/A	N/A N/A	N/A N/A	N/A N/A
630 series (2, 3)	--	256 C	N/A	N/A	N/A
6200	--	256 C	N/A	N/A	N/A
6300	--	256 C	N/A	N/A	N/A
6400	1 MB	256 C	N/A	N/A	N/A
Mac TV	--	N/A	N/A	N/A	N/A

C = Number of Colors
G = Number of Grays

(1) Requires display adapter to use Multiple Scan Displays at this resolution.

(2) The Macintosh 630 family computers can use larger monitors such as the Multiple Scan 17 and Multiple Scan 20. However, the maximum resolution on these monitors is 832x624, and at this resolution, they cannot support the TV/Video System.

(3) The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Macintosh II Family

Macintosh	VRAM	16-in Color Multi-Scan 15, 17, 20 (832 x 624)	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 (1024 x 768)
IIsi	--	N/A	16 G	N/A	N/A
IIci	--	N/A	16 G	N/A	N/A
IIvi, IIvx	512K 1MB	N/A N/A	N/A N/A	N/A N/A	N/A N/A
II, IIx, IIcx, IIfx	--	No built-in video and requires a video card.			

G = Number of Grays

Centris/Quadra Family

Centris/Quadra	VRAM	16-in Color Multi-Scan 15, 17, 20 (832 x 624)	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 (1024 x 768)
605, 610, 650	512K 1MB	256 C 32,768 C	16 G 256 G	16 G 256 G	16 C 256 C
630 Family (1, 2)	--	256 C	N/A	N/A	N/A
660AV (3)	1MB	32,768 C	256 G	256 G	256 G
700	512K 1MB 2MB	256 C 256 C 16.7M C	16 G 256 G 256 G	16 G 256 G 256 G	N/A N/A N/A
800	512K 1MB	256 C 256 C	16 G 256 G	16 G 256 G	16 C 256 C
840AV (3)	1MB 2MB	32,768 C 16.7M C	256 G 256 G	256 G 256 G	256 C 32,768 C
900	1MB 2MB	256 C 16.7M C	256 G 256 G	256 G 256 G	N/A N/A
950	1MB 2MB	256 C 16.7M C	256 G 256 G	256 G 256 G	256 C 256 C

C = Number of Colors
G = Number of Grays

(1) The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

(2) The Macintosh 630 family computers can use larger monitors such as the Multiple Scan 17 and Multiple Scan 20 however the maximum resolution on these monitors is 832x624, and at this resolution, they cannot support the TV/Video System.

(3) For the AV computers, pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

Power Macintosh Family

Power Macintosh	VRAM	16-in Color Multi-Scan 15, 17, 20 (832 x 624)	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 (1024 x 768)
4400	1MB 2MB 4MB	256 C 32,768 C 16.7M C	N/A N/A N/A	N/A N/A N/A	256 C 32,768 C 16.7M C
5400 (2)	1MB	256 C	N/A	N/A	N/A
6100 6100AV (1)	HDI45* 2MB	256 C 16.7M C	256 G 256 G	N/A 256 G	N/A 32,768 C
6500 (3, 4)	2MB 2MB 2MB	16.7M C 32,768 C 16.7M C	N/A	N/A	32,768 C
7100 7100AV (1)	HDI45* 1MB 2MB 2MB	256 C 32,768 C 16.7M C 16.7M C	256 G 256 G 256 G 256 G	N/A 256 G 256 G 256 G	N/A 256 C 32,768 C 32,768 C
7200	1MB 2MB 4MB	32,768 C 16.7M C 16.7M C	256 G 256 G 256 G	256 G 256 G 256 G	256 C 32,768 C 16.7M C
7300	2MB 4MB	16.7M C 16.7M C	N/A N/A	256 G 256 G	32,768 C 16.7M C
7500	2MB 4MB	16.7M C 16.7M C	256 G 256 G	256 G 256 G	32,768 C 16.7M C
7600	2MB 4MB	16.7M C 16.7M C	256 G 256 G	256 G 256 G	32,768 C 16.7M C
8100 8100AV (1)	HDI45* 2MB 4MB 2MB	256 C 16.7M C 16.7M C 16.7M C	256 G 256 G 256 G 256 GC	N/A 256 G 256 G 256 G	N/A 32,768 C 16.7M C 32,768 C
8500	2MB 4MB	16.7M C 16.7M C	256 G 256 G	256 G 256 G	32,768 C 16.7M C
8600	2MB 4MB	16.7M C 16.7M C	256 G 256 G	256 G 256 G	32,768 C 16.7M C
9500/120	2MB 4MB	16.7M C 16.7M C	256 G 256 G	256 G 256 G	32,768 C 16.7M C
9600	4MB	16.7M C	256 G	256 G	16.7M C
G3 systems	See Tech Info Library article 30250, titled "**Power Macintosh G3 & G3 All-in-one: Video RAM Upgrade**"				

C = Number of Colors
G = Number of Grays
* = HDI-45 port makes use of 640K of internal DRAM memory.

(1) For the Power Macintosh AV computers, pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

(2) This is a built-in 15-in display.

(3) 16-bit only supported at 1024 x 768.

(4) 16" supported at 832 x 624 only.

PowerBook Family

PowerBook	VRAM	16-in Color Multi-Scan 15, 17, 20 (832 x 624)	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 (1024 x 768)
160, 165, 165c 180, 180c	--	256 C (1)	256 G	N/A	N/A

190 Series	--	256 C	256 G	N/A	N/A
500 Series	--	256 C	256 G	N/A	N/A
5300 Series	--	256 C	256 G	N/A	N/A
1400 Series	--	256 C	256 G	N/A	N/A
3400 Series	--	256 C	N/A	N/A	256 C
G3	--	16.7M C	N/A	N/A	32,768 C
Duo Dock	512K 1MB	256 C 32,768 C (2)	256 G 256 G	N/A N/A	N/A N/A
MiniDock	512K	256 C	16 G	N/A	N/A
Duo Dock II	--	32,768 C	256 G	256 G	256 C

C = Number of Colors
G = Number of Grays

(1) Requires display adapter to use Multiple Scan Displays at this resolution.

(2) The Duo Dock requires a video adapter to change resolutions unless System 7.5 is installed.

3400 Notes:
1) The computer does not provide a display with 2 bits per pixel.

2) An SVGA monitor's display resolution will be 640 by 480 pixels. The user can switch to a higher resolution by using the Monitors control panel or the control strip. The resolution set by the user will be used the next time the computer is started up.

3) If the external monitor can display 800 by 600 pixels at 60 Hz, the PowerBook 3400 computer can display simultaneously on both the external monitor and the flat panel display. This mode of display, called Simulscan, provides the same information on both displays.

Display Cards

Display Card	16-in Color Multi-Scan 15, 17, 20 (832 x 624)	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 (1024 x 768)
Macintosh II	N/A	N/A	N/A	N/A
2-Page Mono Card	N/A	N/A	4 G	N/A
Portrait	N/A	4 G	N/A	N/A
Mono	N/A	N/A	N/A	N/A
High-Res Card (2)	N/A	N/A	N/A	N/A
Ext High-Res Card	N/A	N/A	N/A	N/A
4*8 (3)	256 C (1, 4)	256 C	256 C	256 C
8*24	16.7M C (1, 5)	16.7M C	16.7M C	16.7M C
8*24GC	16.7M C (1, 5)	16.7M C	16.7M C	16.7M C
Display Card 24 AC	16.7M C	16.7M C	16.7M C	16.7M C

C = Number of Colors
G = Number of Grays

(1) Requires Display adapter to use Multiple Scan Displays at this resolution.

(2) Can be upgraded with eight (8) Mac II Video Expansion RAM chips for 256 grays/colors.

(3) The 4*8 can be upgraded to a 8*24 by adding two (2) VRAM SIMMs.

(4) Available with rev. B ROM.

(5) Available with rev. B card.

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Macintosh Monitor and Video Chart (3 of 4) (12/96)

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Macintosh Monitor and Video Chart (3 of 4) (12/96)

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Article Created: 19 July 1994
Article Reviewed/Updated: 6 December 1996

TOPIC ----------

This article provides a list of Apple Macintosh systems and the monitor and video options each can use.

DISCUSSION ----------

Begin_Table

				MS 14*	
				MS 15*	
			21-in	MS 17*	MS 17**
	16-in	Portrait	Mono-	MS 20*	MS 20**
	Color*	Display	chrome	1710AV*	1710AV**
				1710*	1710**
				1705*	1705**
				832 x 624	1024 x768
				M3935LL/B	
				M3089LL	
Part Number	M1044LL/A	M0404	M0402	M2611LL	M2611LL
				M2612LL	M2612LL
				M3323LL	M3323LL
				M3322LL	M3322LL
				M4434LL	M4434LL
Resolution (pixels)	832 x 624	640 x 870	1152 x 870	832 x 624	1024 x 768
Power Frequency (Hz)	47-63	47-63	47-63	47-63	47-63

Power Voltage (VAC)	90-270	90-270	85-270	90-132 198-260	90-132 198-260
Vertical Refresh	75 Hz	75 Hz	75 Hz	75 Hz	74.93 Hz
Horizontal Refresh	50 kHz	68.9 kHz	68.7 kHz	49.73 kHz	60.24 kHz
Dots Per Inch (DPI)	70	80	77	69-79	69-79
Dot Pitch	0.26 mm	N/A	N/A	0.31 mm	0.31 mm

* Note: All of these monitors display the same video depth at this resolution, so only one column is listed in the chart for all monitors.

** Note: All of these monitors display the same video depth at this resolution, so only one column is listed in the chart for all monitors.

Note: The 21-in. Monochrome display requires the DB-15 to DB-25 cable (590-0615) on all Macintosh computers with built-in video or with graphic cards using the standard DB-15 connector.

LC Family	VRAM	16-in Color Multi-Scan 15, 17, 20 @ 832x624	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 @ 1024x768
LC/LC II	256K	N/A	N/A	N/A	N/A
	512K	N/A	N/A	N/A	N/A
LC III	512K	256 C (1)	16 G	N/A	N/A
	768K	256 C (1)	256 G	N/A	N/A
LC 475	512K	256 C	16 G	16 G	16 C
	1MB	32,768 C	256 G	256 G	256 C
630 (2)		256 C	N/A	N/A	N/A

C = Number of Colors
G = Number of Grays

(1) Requires Display adapter to use Multiple Scan Displays at this resolution.

Performa Family	VRAM	16-in Color Multi-Scan 15, 17, 20 @ 832x624	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 @ 1024x768
400/405 /410/430	256K	N/A	N/A	N/A	N/A
	512K	N/A	N/A	N/A	N/A
450	512K	256 C (1)	16 G	N/A	N/A
	768K	256 C (1)	256 G	N/A	N/A
460/466 /467	512K	256 C (1)	16 G	N/A	N/A
	768K	256 C (1)	256 G	N/A	N/A
475/476	512K	256 C	16 G	16 G	16 C
	1MB	32,768 C	256 G	256 G	256 C
550/560 /575/577 /578		N/A	N/A	N/A	N/A
600/600CD	512K	N/A	N/A	N/A	N/A
	1MB	N/A	N/A	N/A	N/A
630 (2)		256 C	N/A	N/A	N/A
6200		256 C	N/A	N/A	N/A
6300		256 C	N/A	N/A	N/A
6400	1 MB	256 C	N/A	N/A	256 C
Mac TV		N/A	N/A	N/A	N/A

C = Number of Colors
G = Number of Grays

(1) Requires Display adapter to use Multiple Scan Displays at this resolution.

		16-in Color			

..TIL15879-Macintosh_Monitor_and_Video_Chart_3_of_4_12-96_(TA21615).pdf

Macintosh II Family	VRAM	Multi-Scan 15, 17, 20 @ 832x624	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 @ 1024x768
IIsi		N/A	16 G	N/A	N/A
IIci		N/A	16 G	N/A	N/A
IIvi/IIvx	512K	N/A	N/A	N/A	N/A
	1MB	N/A	N/A	N/A	N/A
II, IIx, IIcx, IIfx		<==========See note*==========>			

C = Number of Colors
G = Number of Grays

* No built-in video and requires a video card.

Centris /Quadra Family	VRAM	16-in Color Multi-Scan 15, 17, 20 @ 832x624	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 @ 1024x768
605	512K	256 C	16 G	16 G	16 C
	1MB	32,768 C	256 G	256 G	256 C
610/650	512K	256 C	16 G	16 G	16 C
	1MB	32,768 C	256 G	256 G	256 C
660AV	1MB	32,768 C	256 G	256 G	256 C
630 family (2)		256 C	N/A	N/A	N/A
700	512K	256 C	16 G	16 G	N/A
	1MB	256 C	256 G	256 G	N/A
	2MB	16.7M C	256 G	256 G	N/A
800	512K	256 C	16 G	16 G	16 C
	1MB	256 C	256 G	256 G	256 C
840AV	1MB	32,768 C	256 G	256 G	256 C
	2MB	16.7M C	256 G	256 G	32,768 C
900	1MB	256 C	256 G	256 G	N/A
	2MB	16.7M C	256 G	256 G	N/A

950	1MB	256 C	256 G	256 G	256 C	
	2MB	16.7M C	256 G	256 G	256 C	

C = Number of Colors
G = Number of Grays

(2) The Macintosh 630 family computers can use larger monitors such as the Multiple Scan 17 and Multiple Scan 20 however the maximum resolution on these monitors is 832x624, and at this resolution, they cannot support the TV/Video System.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Note:
For the Quadra/Centris AV computers, pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

Power Macintosh Family	VRAM	16-in Color Multi-Scan 15, 17, 20 @ 832x624	Portrait Display	21-in Monochrome (3)	Multi-Scan 17 and 20 @ 1024x768
5400	1MB	256 C (8)	N/A	N/A	N/A
6100	HDI45*	256 C	256 G	N/A	N/A
6100AV	2MB	16.7M C	256 G	256 G	32,768 C
7100	HDI45*	256 C	256 G	N/A	N/A
	1MB	32,768 C	256 G	256 G	256 C
	2MB	16.7M C	256 G	256 G	32,768 C
7100AV	2MB	16.7M C	256 G	256 G	32,768 C
7200	1MB	32,768 C	256 G	256 G	256 C
	2MB	16.7M C	256 G	256 G	32,768 C
	4MB	16.7M C	256 G	256 G	16.7M C
7500	2MB	16.7M C	256 G	256 G	32,768 C
	4MB	16.7M C	256 G	256 G	16.7M C
7600	2MB	16.7M C	256 G	256 G	32,768 C
	4MB	16.7M C	256 G	256 G	16.7M C
8100	HDI45*	256 C	256 G	N/A	N/A
	2MB	16.7M C	256 G	256 G	32,768 C
	4MB	16.7M C	256 G	256 G	16.7M C

8100AV	2MB	16.7M C	256 G	256 G	32,768 C
8500	2MB	16.7M C	256 G	256 G	32,768 C
	4MB	16.7M C	256 G	256 G	16.7M C
9500/120	2MB	16.7M C	256 G	256 G	32,768 C
	4MB	16.7M C	256 G	256 G	16.7M C

* = HDI-45 port makes use of 640K of internal DRAM memory.
C = Number of Colors
G = Number of Grays

Note: For the Power Macintosh AV computers pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

(8) - This is a built-in 15-in display.

PowerBook Family	VRAM	16-in Color Multi-Scan 15, 17, 20 @ 832x624	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 @ 1024x768
160/165 /c/180/c		256 C (1)	256 G	N/A	N/A
500 Series		256 C	256 G	N/A	N/A
5300 Series		256 C	256 G	N/A	N/A
190 Series		256 C	256 G	N/A	N/A
Duo Dock	512K	256 C	256 G	N/A	N/A
	1MB	32,768 C (3)	256 G	N/A	N/A
MiniDock	512K	256 C	16 G	N/A	N/A
Duo Dock II		32,768 C	256 G	256 G	256 C

C = Number of Colors
G = Number of Grays

(3) The Duo Dock requires a video adapter to change resolutions unless System 7.5 is installed.

Display Cards	16-in Color Multi-Scan 15, 17, 20 @ 832x624	Portrait Display	21-in Monochrome	Multi-Scan 17 and 20 @ 1024x768
Macintosh II	N/A	N/A	N/A	N/A
2-Page Mono Card	N/A	N/A	4 G	N/A
Portrait	N/A	4 G	N/A	N/A
Mono	N/A	N/A	N/A	N/A
High-Res Card (4)	N/A	N/A	N/A	N/A
Ext High-Res Card	N/A	N/A	N/A	N/A
4•8 (5)	256 C (1,6)	16 G	16 G	N/A
8•24	256 C (1,7)	256 G	256 G	N/A
8•24GC	32,768 C(1,7)	256 G	256 G	N/A
Display Card 24 AC	16.7M C	256 G	256 G	16.7M C

C = Number of Colors
G = Number of Grays

(1) Requires Display adapter to use Multiple Scan Displays at this resolution.
(4) Can be upgraded with eight (8) Mac II Video Expansion RAM chips (Service PN: 334-002) for 256 grays/colors.
(5) The 4•8 can be upgraded to a 8•24 by adding two (2) VRAM SIMMs (Service PN: 661-0609).
(6) Available with rev. B ROM.
(7) Available with rev. B card.

End_Table

Article Change History:
06 Dec 1996 - Corrected Portrait Display Info for Minidock.
27 Nov 1996 - Added 6300 Series information.
18 Nov 1996 - Added 6400 information.
19 Sep 1996 - Removed keyword.

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Tech Info Library Article Number:15879

Tech Info Library

PowerBook 500 Series: Video Mirroring Issue With ATM (7/94)

Revised: 7/22/94
Security: Everyone

PowerBook 500 Series: Video Mirroring Issue With ATM (7/94)

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Article Created: 22 July 1994

TOPIC -----

I'm using a 500 series PowerBook and have video mirroring activated. The external monitor is not displaying some of the characters that display fine on the PowerBook's display.

I have figured out that my Adobe Type Manager is involved in producing the characters I am having problems with, since they are large type sizes. If I boot with extensions off, the type looks “jaggy,” but the characters look the same on both displays.

Is this an Apple problem or an Adobe Type Manager problem? Is there a fix for this?

DISCUSSION -----

The problem described is fixed by a patch to Adobe Type Manager. This patch is available from Adobe Tech Support. Their phone number is 408-986-6500. Customers should call this number, describe the problem (mirroring monitor off of PowerBook 500 does not show characters being drawn with aid of ATM), and ask for the patch. Apparently, Adobe does not have a name for this patch, and I was unable to get any other reference from them.

This patch is free to registered users of Adobe Type Manager (the tech support line will ask for serial number of diskette).

Support Information Services

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Tech Info Library Article Number:15880

Tech Info Library

TITLE

Macintosh: Monitor and Video Chart (4 of 4)

Article ID: 15881
Created: 7/22/94
Modified: 1/11/00

TOPIC

This article provides a list of Macintosh computers and the monitor and video options each can use.

Related Articles:

- **Macintosh: Monitors and Video Chart (1 of 4)**, article #11131
- **Macintosh: Monitors and Video Chart (2 of 4)**, article #15878
- **Macintosh: Monitors and Video Chart (3 of 4)**, article #15879

DISCUSSION

Monitor Specification Chart (1 of 3)			
Specifications	**21-inch Color ***	**Multiple Scan 20 Display ***	**1710 1710AV**
Part Number	M5812LL/A	M2612LL/A M2612LL/B	M3322LL M3323LL
Resolution (pixels)	1152 x 870	1152 x 870	1280 x 1024
Power Frequency (Hz)	47-63	47-63	47-63
Power Voltage (VAC)	85-70	90-132 198-260	90-132 198-260
Vertical Refresh	75 Hz	75 Hz	75 Hz
Horizontal Refresh	68.7 kHz	68.7 kHz	80 kHz
Dots Per Inch (DPI)	79	79	--
Dot Pitch	0.26 mm	0.31 mm/A 0.26 mm/B	0.26 mm
* These monitors display the same video depth at this resolution, so only one column is listed in the chart for all monitors.			

Monitor Specification Chart (2 of 3)			
Specifications	**AppleVision 750/750AV and ColorSync 17**	**AppleVision 850/850AV and ColorSync 20**	**Apple Studio Display 15" LCD**
Part Number(s)	M2942 M2935	M3705 M3703	M6356LL/A
Resolution (pixels)	1280 x 1024	1600 x 1200	1024 x 768
Power Frequency (Hz)	47-63	47-63	50-60
Power Voltage (VAC)	90-132 198-264	90-132 198-260	100-120 AC 200-240 DC
Vertical Refresh	40 Hz-120 Hz	48Hz-120 Hz	--
Horizontal Refresh	30 kHz-82 kHz	30 kHz-94 kHz	--
Dots Per Inch (DPI)	--	--	--
Dot Pitch	0.26 mm	0.26 mm	--

Monitor Specification Chart (3 of 3)

Specifications	Multiple Scan 15AV	Multiple Scan 720
Part Number	M4614LL/A	M6151LL/A
Resolution (pixels)	1024 x 768	1280 x 1024
Power Frequency (Hz)	43-63	50-60
Power Voltage (VAC)	90-132 198-264	100-120 220-240
Vertical Refresh	56 Hz - 75 Hz	48 Hz - 160 Hz
Horizontal Refresh	30 Khz - 56.5 kHz	30 kHz - 69 kHz
Dots Per Inch (DPI)	--	--
Dot Pitch	0.28 mm	0.28 mm

LC Family

LC	VRAM	21-in Color, Multiple Scan 20 Display @ 1152 x 870	1710 1710AV @ 1280 x 1024
LC, LC II	256K 512K	N/A N/A	N/A N/A
LC III	512K 768K	N/A N/A	N/A N/A
LC 475	512K 1MB	256 G 256 G	N/A N/A
LC 520	512K 768K	N/A N/A	N/A N/A
LC 550	512K 1MB	N/A N/A	N/A N/A
LC 575	--	N/A N/A	N/A N/A
LC 630	--	256 G	N/A

C = Number of Colors

Performa Family

Performa	VRAM	21-in Color, Multiple Scan 20 Display @ 1152 x 870	1710 1710AV @ 1280 x 1024
400,405,410, 430	256K 512K	N/A N/A	N/A N/A
450	512K 768K	N/A N/A	N/A N/A
460,466,4671.85	512K 768K	N/A N/A	N/A N/A
475,476	512K 1MB	256 G 256 G	N/A N/A
550,560,575,577,578	--	N/A	N/A
600/600CD	512K 1MB	N/A N/A	N/A N/A
630	--	N/A	N/A
6200	--	N/A	N/A
6300	1 MB	N/A	N/A
6400	1 MB	N/A	N/A
Mac TV	--	N/A	N/A

C = Number of Colors

Macintosh II Family

Macintosh	VRAM	21-in Color, Multiple Scan 20 Display @ 1152 x 870	1710 1710AV @ 1280 x 1024
IIsi IIci	-- --	N/A N/A	N/A N/A
IIvi IIvx	512K 1MB	N/A N/A	N/A N/A
II, IIx, IIcx, IIfx	No built-in video, require a video card.		

Centris/Quadra Family

Centris/Quadra	VRAM	21-in Color, Multiple Scan 20 Display @ 1152 x 870	1710 1710AV @ 1280 x 1024
605	512K 1MB	16 C 256 C	N/A N/A
610, 650	512K 1MB	16 C 256 C	N/A N/A
660AV (1)	1MB	256 C	N/A
630 (2)	--	N/A	N/A
700	512K 1MB 2MB	16 C 256 C 256 C	N/A N/A N/A
800	512K 1MB	16 C 256 C	N/A N/A
840AV (1)	1MB 2MB	256 C 32,768 C	N/A N/A
900	1MB 2MB	256 C 256 C	N/A N/A
950	1MB 2MB	256 C 32,768 C	N/A N/A

C = Number of Colors

(1) For the AV computers, pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

(2) The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Power Macintosh Family

Power Macintosh	VRAM	21-in Color, Multiple Scan 20 Display @ 1152 x 870	1710 1710AV @ 1280 x 1024
4400	1MB 2MB 4MB	256 C 32,768 C 32,768 C	N/A 256 C 256 C
5400	1MB	N/A	N/A
6100 6100AV (1)	HDI45* 2MB	N/A 32,768 C	N/A N/A
6500	1MB	256 C	N/A

7100 7100AV (1)	HDI45* 1MB 2MB 2MB	N/A 256 C 32,768 C 32,768 C	N/A N/A N/A N/A
7200	1MB 2MB 4MB	256 C 32,768 C 32,768 C	N/A (2) N/A (2) N/A (2)
7300	2MB 4MB	32,768 C 16.7M C	32,768 C 32,768 C
7500	2MB 4MB	32,768 C 16.7M C	32,768 C 32,768 C
7600	2MB 4MB	32,768 C 16.7M C	256 C 32,768 C
8100 8100AV (1)	HDI45* 2MB 4MB 2MB	N/A 32,768 C 16.7M C 32,768 C	N/A N/A N/A N/A
8500	2MB 4MB	32,768 C 16.7M C	256 C 32,768 C
9500/120 (2)	2MB 4MB	32,768 C 16.7M C	N/A (2) N/A (2)
9600	4MB	16.7M C	32,768 C
G3 systems	See Tech Info Library article 30250, titled "**Power Macintosh G3 & G3 All-in-one: Video RAM Upgrade**"		

C = Number of Colors
* = HDI-45 port makes use of 640K of internal DRAM memory

(1) For the AV computers, pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

(2) When the ATI graphics card is used you can get 256 C with 2MB of VRAM on the card. You get 32,768 C with 4MB of VRAM on the ATI card.

PowerBook Family

PowerBook	**VRAM**	**21-in Color, Multiple Scan 20 Display @ 1152 x 870**	**1710 1710AV @ 1280 x 1024**
160,165,165c,180, 180c	--	N/A	N/A
500 Series	--	N/A	N/A
3400 Series	--	N/A	N/A
G3	--	N/A	N/A
Duo Dock	512K 1MB	N/A N/A	N/A N/A
Duo Dock II	--	N/A	N/A
MiniDock	512K	256 C	N/A

C = Number of Colors

3400 Notes:
1) The computer does not provide a display with 2 bits per pixel.

2) An SVGA monitor's display resolution will be 640 by 480 pixels. The user can switch to a higher resolution by using the Monitors control panel or the control strip. The resolution set by the user will be used the next time the computer is started up.

3) If the external monitor can display 800 by 600 pixels at 60 Hz, the PowerBook 3400 computer can display simultaneously on both the external monitor and the flat panel display. This mode of display, called Simulscan, provides the same information on both displays.

Macintosh Video Cards

Video Card	21-in Color, Multiple Scan 20 Display @ 1152 x 870	1710 1710AV @ 1280 x 1024
Macintosh II	N/A	N/A
2-Page Mono Card	N/A	N/A
Portrait	N/A	N/A
Mono	N/A	N/A
High-Res Card (2)	N/A	N/A
Ext High-Res Card	N/A	N/A
4*8 (3)	16 C (1)	N/A
8*24	256 C (2)	N/A
8*24GC	256 C (2)	N/A
Display Card 24 AC	16.7M C	N/A

C = Number of Colors

(1) Requires Display adapter to use Multiple Scan Displays at this resolution.

(2) Can be upgraded with eight (8) Mac II Video Expansion RAM chips for 256 grays/colors.

(3) The 4*8 can be upgraded to a 8*24 by adding two VRAM SIMMs.

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

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Document Information
Product Area: Monitors-Displays
Category: General Topics
Sub Category: General Topics

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Tech Info Library

Macintosh Monitor and Video Chart (4 of 4) (11/96)

Revised: 11/27/96
Security: Everyone

Macintosh Monitor and Video Chart (4 of 4) (11/96)

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Article Created: 19 July 1994
Article Reviewed/Updated: 18 November 1996

TOPIC ----------

This article provides a list of Apple Macintosh systems and the monitor and video options each can use.

DISCUSSION ----------

Begin_Table

	21-in Color*	Multiple Scan 20 Display*	1710AV 1710
Part Number	M5812LL/A	M2612LL/A M2612LL/B	M3323LL M3322LL
Resolution (pixels)	1152 x 870	1152 x 870	1280x1024
Power Frequency (Hz)	47-63	47-63	47-63
Power Voltage (VAC)	85-70	90-132, 198-260	90-132, 198-260
Vertical Refresh	75 Hz	75 Hz	75 Hz
Horizontal Refresh	68.7 kHz	68.7 kHz	80 kHz
Dots Per Inch (DPI)	79	79	
Dot Pitch	0.26 mm	0.31 mm /A 0.26 mm /B	0.26 mm

* These monitors display the same video depth at this resolution, so only one column is listed in the chart for all monitors.

LC Family	VRAM	21-in Color, Multi-Scan 20-in Display @ 1152 x 870	1710AV 1710 @1280 x 1024
LC/LC II	256K	N/A	N/A
	512K	N/A	N/A
LC III	512K	N/A	N/A
	768K	N/A	N/A
LC 475	512K	16 C	N/A
	1MB	256 C	N/A
LC 520	512K	N/A	N/A
	768K	N/A	N/A
LC 550	512K	N/A	N/A
	1MB	N/A	N/A
LC 575		N/A	N/A
LC 630		N/A	N/A

C = Number of Colors

Performa Family	VRAM	21-in Color, Multi-Scan 20-in Display @ 1152 x 870	1710AV 1710 @1280 x 1024
400/405 /410/430	256K	N/A	N/A
	512K	N/A	N/A
450	512K	N/A	N/A
	768K	N/A	N/A
460/466 /467	512K	N/A	N/A
	768K	N/A	N/A

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475/476	512K 1MB	16 C 256 C	N/A N/A
550/560 /575/577 /578		N/A	N/A
600/600CD	512K 1MB	N/A N/A	N/A N/A
630		N/A	N/A
6200		N/A	N/A
6300		N/A	N/A
6400	1 MB	N/A	N/A
Mac TV		N/A	N/A

C = Number of Colors

Macintosh II Family	VRAM	21-in Color, Multi-Scan 20-in Display @ 1152 x 870	1710AV 1710 @1280 x 1024
IIsi		N/A	N/A
IIci		N/A	N/A
IIvi/IIvx	512K 1MB	N/A N/A	N/A N/A
II, IIx, IIcx, IIfx		No built-in video, requires card.	Requires Video Card

Centris /Quadra Family	VRAM	21-in Color, Multi-Scan 20-in Display @ 1152 x 870	1710AV 1710 @1280 x 1024
605	512K 1MB	16 C 256 C	N/A N/A

610/650	512K	16 C	N/A
	1MB	256 C	N/A
660AV	1MB	256 C	N/A
630		N/A	N/A
700	512K	16 C	N/A
	1MB	256 C	N/A
	2MB	256 C	N/A
800	512K	16 C	N/A
	1MB	256 C	N/A
840AV	1MB	256 C	N/A
	2MB	32,768 C	N/A
900	1MB	256 C	N/A
	2MB	256 C	N/A
950	1MB	256 C	N/A
	2MB	32,768 C	N/A

C = Number of Colors

Note: For the Quadra/Centris AV computers pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Power Macintosh Family	VRAM	21-in Color, Multi-Scan 20-in Display @ 1152 x 870	1710AV 1710 @1280 x 1024
5400	1MB	N/A	N/A
6100	HDI45*	N/A	N/A
6100AV	2MB	32,768 C	N/A
7100	HDI45*	N/A	N/A
	1MB	256 C	N/A
	2MB	32,768 C	N/A

7100AV	2MB		32,768 C	N/A
7200	1MB		256 C	N/A**
	2MB		32,768 C	N/A**
	4MB		32,768 C	N/A**
7500	2MB		32,768 C	32,768 C
	4MB		16.7M C	32,768 C
7600	2MB		32,768 C	32,768 C
	4MB		16.7M C	32,768 C
8100	HDI45*		N/A	N/A
	2MB		32,768 C	N/A
	4MB		16.7M C	N/A
8100AV	2MB		32,768 C	N/A
8500	2MB		32,768 C	32,768 C
	4MB		16.7M C	32,768 C
9500/120	2MB		32,768 C	N/A**
	4MB		16.7M C	N/A**

* = HDI-45 port makes use of 640K of internal DRAM memory.

** = When the ATI graphics card is used you can get 256 C with 2MB of VRAM on the card. You get 32,768 C with 4MB of VRAM on the ATI card.

C = Number of Colors

Note: For the Power Macintosh AV computers pixel and viewable color numbers are for computer graphics only. When video is enabled, VRAM is split evenly between graphics and video.

PowerBook Family	VRAM	21-in Color, Multi-Scan 20-in Display @ 1152 x 870	1710AV 1710 @1280 x 1024
160/165 /c/180/c		N/A	N/A
500 Series		N/A	N/A
Duo Dock	512K	N/A	N/A
	1MB	N/A	N/A

MiniDock	512K	N/A	N/A
Duo Dock II		256 C	N/A

C = Number of Colors

Display Cards	21-in Color, Multi-Scan 20-in Display @ 1152 x 870	1710AV 1710 @1280 x 1024
Macintosh II	N/A	N/A
2-Page Mono Card	N/A	N/A
Portrait	N/A	N/A
Mono	N/A	N/A
High-Res Card (4)	N/A	N/A
Ext High-Res Card	N/A	N/A
4•8 (5)	16 C (1)	N/A
8•24	256 C (1)	N/A
8•24GC	256 C (1)	N/A
Display Card 24 AC	16.7M C	N/A

C = Number of Colors

(1) - Requires Display adapter to use Multiple Scan Displays at this resolution.

(2) - Can be upgraded with eight (8) Mac II Video Expansion RAM chips (Service PN: 334-002) for 256 grays/colors.

(3) - The 4•8 can be upgraded to a 8•24 by adding two (2) VRAM SIMMs (Service PN: 661-0609).

End_Table

Article Change History:
27 Nov 1996 - Added 6300 Series information.
18 Nov 1996 - Added 6400.
21 May 1996 - Corrected the 8500 and 7500 bit depth.

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Tech Info Library Article Number:15881

PlainTalk Microphone: Specifications (8/95)

Revised: 8/30/95
Security: Everyone

PlainTalk Microphone: Specifications (8/95)

==========

Article Created: 18 July 1994
Article Reviewed/Updated: 30 August 1995

TOPIC ----------

This article provides specifications of the PlainTalk Microphone (M9060Z/A). All specifications provided are for informational purposes only. Actual specifications may vary from those provided.

DISCUSSION ----------

Description

Apple PlainTalk Microphone - Unidirectional pickup pattern, electret microphone element.

Output

Typical voiced speech will develop 100 - 200 mVpp output. Peak could reach 1 - 2 Vpp.

Sensitivity

-9.5dbV + or - 5db at 1.0 KHz relative to 1.0 Volt/Pa

Directional Characteristics at 1 KHz
---
at 90 degrees - output diminished by at least 4db
at 180 degrees - output diminished by at least 10db

Distortion

Less than 1% THD from 200 to 7000 HZ

Signal to noise

56db (minimum)

Maximum Sound Input
---
110 dB SPL (1% Distortion @ 1 KHz)

Signal Level

There are different audio signal levels that microphones produce; mic level, line level, and professional line level. The PlainTalk Microphone produces a line level signal. Most microphones produce mic level output, including the Omni-Directional Microphone used in some Macintosh computers. Mic level is lower then line level, and line level is lower then a professional line level.

Prior to the introduction of the PlainTalk Microphone, the Omni-Directional Microphone that produced a mic level output was used with Macintosh computers. The Omni-Directional Microphone should not be used with Macintosh computers requiring the PlainTalk Microphone. If a microphone that outputs a mic level is used with a Macintosh that requires a PlainTalk Mic the signal produced from the microphone is too low and results in noise and distortion. However, a mic level microphone could be used if a microphone preamp is used. The microphone preamp boosts the mic level to a line level.

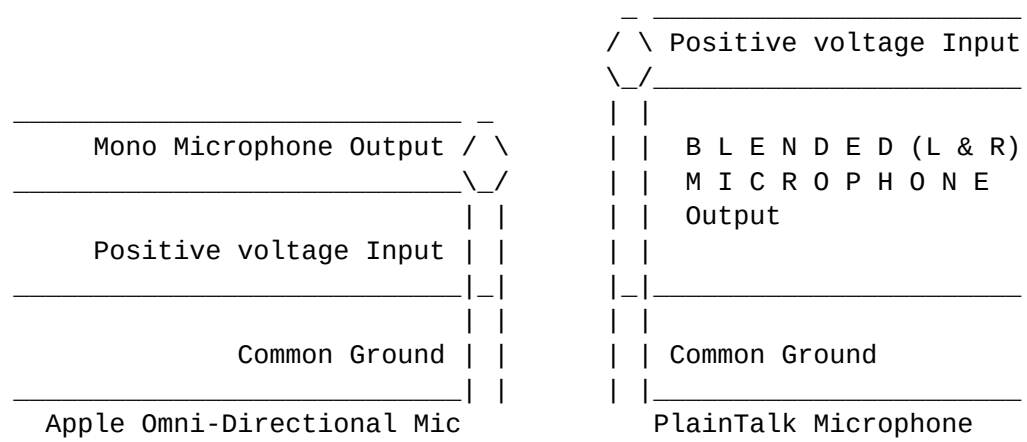
Microphone Connector Design

A standard 3.5 mm mini-plug may be used as the microphone/sound input plug.

The layout of how signals connect to the two different microphones are different. Both of these microphones require a voltage input to drive the electret microphone elements in them. However, the voltage is supplied at different connection points.

The PlainTalk microphone also outputs sound to both the left and right connectors internal to the Macintosh microphone jack.

When using a third party microphone a standard 3.5 mm mini-plug may be used as the input plug. The added length of the Apple PlainTalk Microphone jack connects the jack to a power source for the amplification.



Article Change History:
30 Aug 1995 - Corrected measurement of microphone port.
19 Jan 1995 - Made article public.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15884

Tech Info Library

Macintosh: Monitor AC Power Cord Part Numbers (6/95)

Revised: 6/6/95
Security: Everyone

Macintosh: Monitor AC Power Cord Part Numbers (6/95)

==========

Article Created: 25 July 1994
Article Reviewed/Updated: 6 June 1995

TOPIC ----------

This article provides service part numbers for AC power cords for Apple monitors.

DISCUSSION ----------

Part Number	Description
590-0370	AC Power Cable - Connects from monitor to the Macintosh
590-0373	AC Power Cable - Connects from monitor to wall outlet

NOTE:
There are several AC cords that connect the monitor to an AC wall outlet. They vary from monitor to monitor in terms of length and color. However, service part number 590-0373 works on all Apple monitors that have a detachable AC cord.

Article Change History:
6 June 1995 - Corrected part number for Macintosh to monitor cable.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15885

Tech Info Library

Quadra 605: Playback Of 44KHz Sound Files

Revised: 7/25/94
Security: Everyone

Quadra 605: Playback Of 44KHz Sound Files

==========

Article Created: 25 July 1994

TOPIC -----

Caller is using professional level audio applications and would like to know if sounds previously recorded as 16 bit 44khz samples on a Power Macintosh 6100 and a Quadra 660av will play back at the same resolution on a Quadra 605?

DISCUSSION -----

The Quadra 605 supports both recording and playback of sounds at 8-bit and sampling rates of 11 kHz or 22 kHz. There are several ways to playback 16-bit 44kHz files on a Quadra 605.

One solution is to install Sound Manager 3.0 on the Quadra 605. It will automatically convert 16-bit 44kHz files to 8 bit 22kHz files on the fly for playback. Another method is using QuickTime 2.0 to playback 16-bit 44kHz audio movie files. QuickTime 2.0 will automatically convert them to 8-bit playback on the Quadra 605.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15886

Tech Info Library

AppleCD 300i: Not Booting From Install CD (7/94)

Revised: 7/25/94
Security: Everyone

AppleCD 300i: Not Booting From Install CD (7/94)

==========

Article Created: 25 July 1994

TOPIC -----

I have a Macintosh 660AV and installed an AppleCD 300i Plus CD-ROM into it. Now I cannot boot the computer using the Install Me First CD v1.0. What is wrong?

DISCUSSION -----

The AppleCD 300i Plus requires Apple CD-ROM extension v5.0. The Install Me First CD v1.0 has Apple CD-ROM extension v4.0.2 and will not boot the machine. You must use Install Me First CD v1.2 which has Apple CD ROM extension v5.0.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15887

Tech Info Library

Techtronics

Revised: 7/26/94
Security: Everyone

Techtronics

==========

Article Created: 26 July 1994

Techtronics GPID

P.O. Box 1000
Wilsonville, OR 97070

Technical Support: (800) 835-6100

Company Profile: Techtronics Graphics Product and Imaging Division, provides high-end color printers that can be used with Macintosh computers.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15888

Tech Info Library

LaserWriter 8.x: Freezes Printing to Tektronic Printer (7/94)

Revised: 7/26/94
Security: Everyone

LaserWriter 8.x: Freezes Printing to Tektronic Printer (7/94)

==========

Article Created: 26 July 1994

TOPIC ----------

I can print to an Apple LaserWriter from a Power Macintosh 6100 with LaserWriter 8.1.1, but cannot print always successfully print to a Tektronix Phaser 300i using the Tektronix driver. Printing to the Tektronix printer causes the Macintosh to freeze frequently, particularly when using background printing.

DISCUSSION ----------

Tektronix Tech Support believe this problem is due to a bad Tektronix PPD and may occur when printing from any Macintosh when using earlier versions of the PPD. You need to update to PPD version 4.1 in order to avoid this problem.

For additional information on obtaining new versions of the PPD, contact Techtronics Tech Support.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15889

Tech Info Library

PowerBook: How To Recover From A System Hang (7/96)

Revised: 7/2/96
Security: Everyone

PowerBook: How To Recover From A System Hang (7/96)

==========

Article Created: 26 July 1994
Article Reviewed/Updated: 02 July 1996

TOPIC ----------

If your PowerBook refuses to respond to the keyboard, trackball, or trackpad input, you are experiencing what is known as a "freeze," "hang," or "crash." To recover from this condition with the least amount of data loss and the least amount of corruption of your system, you will have to reset your PowerBook. According to the model of PowerBook you are using, follow the resetting procedure explained below.

DISCUSSION ----------

Attempt to Quit or Cancel
==========

Try these steps in the order presented first. If the first step is not successful in cancelling the action, try the second step. If the second step does not make the application quit, try the last step. If this still does not work, move on to the Resetting section.

Step 1

Press Command-Period

Step 2

Press Command-Q

Step 3

Press Option-Command-Escape (Forced Quit)

Resetting

=========

PowerBook 100

The reset button is on the left side of the unit, marked by a triangle. Push the button to reset your PowerBook. Since the PowerBook 100 has no Power On button, this is the only way to escape a freeze.

Remaining Powerbook 100 Family (except the 190)

The reset button is on the back of the unit, inside a little hole next to the power button. The hole is marked with a triangle. Push the button using a straightened paper clip.

PowerBook (Duo) 200 Family & 2300 Series

Press the Control, Command and Power On keys simultaneously.

PowerBook 500, 190, & 5300 Series

Simultaneously press the Control, Command, and Power On keys.

Note: Do not turn the computer off with the power button when it is frozen. Doing so can damage or corrupt your system software.

Diagnosing System Hangs or Freezes
==================================

Most system hangs, freezes, and crashes are caused by software.

After you experience several repeated system hangs or freezes, try to power on your computer while holding down the Shift key. This will disable software extensions that could be the cause of the problems.

If, after you turn off the extensions, you no longer experience the freezes and crashes, you will need to narrow your search for the suspect extension.

To do this, first note when the freeze occurred. If you see a pattern, you may be able to identify which application or control panel is to blame.

For instance, if you continually crash when you're in a particular word-processing application, remove all of the extensions related to that application from your System folder and/or Extensions folder.

If you consistently crash when running a particular Control Panel, such as a clock or screen saver, remove that item from the Control Panels folder. If you recently loaded new items into your System folder, Control Panels folder, or Extensions folder, remove those items first.

Compatibility Issues
====================

If you identify or suspect that you have identified an extension that is causing your system to freeze, the application, extension, or control panel may be incompatible with the PowerBook. In these cases, contact the software vendor.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
02 Jul 1996 - Added Fax Doc word
17 Nov 1995 - Corrected minor typo.
02 Nov 1995 - Added PowerBook 190, 2300, & 5300 information and initial steps.
28 Sep 1994 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-96, Apple Computer, Inc.

Tech Info Library Article Number:15890

Tech Info Library

X on Launcher Control Panel at Startup (7.1p2 or Less) (3/95)

Revised: 3/16/95
Security: Everyone

X on Launcher Control Panel at Startup (7.1p2 or Less) (3/95)

==========

Article Created: 26 July 1994
Article Reviewed/Updated: 16 March 1995

TOPIC ----------

When I start up my Macintosh Performa computer a red 'X' crosses out one of the little pictures that comes across the bottom of the screen. When it finally gets to the desktop I have no Launcher. What happened?

DISCUSSION ----------

The picture that you see at the bottom of the screen with an 'X' through it is the Launcher Control Panel icon. The Launcher does not show up on the desktop because it has been disabled.

The red 'X' you're seeing is probably caused by one of the following situations:

- You have renamed the Applications folder.
- You have renamed the Documents folder.
- You have renamed BOTH the Applications folder and the Documents folder.
- There is a duplicate Launcher control panel in the System Folder.

To fix the problem do the following:

- Rename each folder to its original name or throw away the duplicate Launcher. Restart the computer. The red 'X' will go away and the Launcher will appear on the desktop.

MORE INFORMATION
==========
When your Macintosh Performa starts up, the Launcher searches for two folders on the hard drive: Applications and Documents. If it finds that either folder has been renamed, it places a red 'X' over its icon at startup to warn you of feature(s) you have disabled. (Note: This would be a black 'X' on Performa 200).

If either the Applications or the Documents folder is GONE from the hard drive (not renamed, but removed), then the Launcher icon will have no red 'X' at startup and will recreate the missing Applications/Documents folder(s) on the desktop.

Article Change History:
16 Mar 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15891

Tech Info Library

Express Modem: Fax Phone Book Corruption (7/94)

Revised: 7/27/94
Security: Everyone

Express Modem: Fax Phone Book Corruption (7/94)

==========

Article Created: 27 July 1994

TOPIC -----

I am trying to fax a document using the Express Modem software which came with my Macintosh computer. However, the Fax Phone Book in the Fax Sender dialog box has garbled characters instead of the entries I created. When I create new Fax Phone Book entries, those new entries are also garbled.

DISCUSSION -----

The Fax Addresses file has been corrupted. This file is located in the Preferences folder in the System Folder. Drag this file to the Trash, restart the computer, then re-access the Fax Sender dialog box to recreate the Fax Phone Book entries.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15892

Tech Info Library

PowerBook 500 series: Switching Between Ethernet And LocalTalk

Revised: 7/27/94
Security: Everyone

PowerBook 500 series: Switching Between Ethernet And LocalTalk

==========

Article Created: 27 July 1994

TOPIC --

A PowerBook 500 series computer is connected to an Ethernet network, shutdown, taken home and hooked to a PhoneNet network and restarted. The PowerBook does not see the network even though it changes to LocalTalk (Built-In) in the Network Control Panel. Switching back and forth in the Network Control Panel makes no difference. The PowerBook must be restarted again to see the net.

If the PowerBook is switched to LocalTalk before being shut down and moved, it sees the PhoneNet network fine when started later. Yet, going the other way (from LocalTalk to Ethernet), you simply change the network CDEV and the network shows up right away. Why?

DISCUSSION --

If you are going to be using Ethernet you should select the EtherTalk option in the Network Control Panel. Now, the desired behavior for the PowerBook 5xx is to use Ethernet when available, otherwise use LocalTalk. This should be accomplished without ever opening the Network Control Panel.

On two systems that I used for testing, I was able to use Ethernet but when I switched to a LocalTalk connection, I did not have access to network services. If I simply went back to an Ethernet connection I had access to the network again. If, while connected to LocalTalk, I opened the Network Control Panel, it indicated that LocalTalk was the selected option. There are two ways I could get LocalTalk to actually work;

1. Select EtherTalk and have that attempt fail since there was no Ethernet connection

or

2. Reboot the PowerBook.

The problem is that now, in order to use Ethernet, it is necessary to select the

EtherTalk option in the Network Control Panel the next time you connect to an Ethernet network.

A third system used in testing behaved as expected, switching from Ethernet to LocalTalk depending on the physical connection. Finally, after verifying that the software on all three systems was essentially the same, the PRAM on the two offending machines was reset using the old Command-Option-P-R method. Much to our pleasure the two systems worked as advertised.

Note: If you open the Network Control Panel while the PowerBook is using LocalTalk it will change the default network connection to LocalTalk. This happens even if you don't select anything in the Network Control Panel and just close it. The mere act of opening and closing the Network Control Panel is enough to change the default connection.

The bottom line is that if you are going to be switching frequently between Ethernet and LocalTalk, set it up for Ethernet once and leave the Network Control Panel alone.

In the course of testing we did observe that changing from LocalTalk to EtherTalk in the Network Control Panel often took very long, in some cases the PowerBook froze, requiring us to force it to reboot. This may be what is corrupting the PRAM. We will report this and continue investigation.

Support Information Services

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Tech Info Library Article Number:15893

Tech Info Library

MacLink Plus: Remove Drivers Prior To Clean Install (7/94)

Revised: 7/27/94
Security: Everyone

MacLink Plus: Remove Drivers Prior To Clean Install (7/94)

==========

Article Created: 27 July 1994

TOPIC ----------

I did a clean system software install without saving the DataViz translators or MacLink Plus. How do I replace them after performing a clean install?

DISCUSSION ----------

It is best to remove the DataViz translators and MacLink Plus prior to performing a clean install. Save the DataViz folder, MacLink Plus Setup control panel, and the MacLink Plus for EasyOpen extension. Those three items are necessary to retain the functionality of the DataViz software once the reinstallation has been performed.

If this is not possible, the customer must call DataViz and order a fulfillment kit to reinstall the drivers. DataViz will charge a shipping and handling fee for all fulfillment kits.

Support Information Services

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Tech Info Library Article Number:15894

Tech Info Library

QuickTake for Windows: Cable Pinouts (10/94)

Revised: 10/10/94
Security: Everyone

QuickTake for Windows: Cable Pinouts (10/94)

==========

Article Created: 27 July 1994
Article Reviewed/Updated: 10 October 1994

TOPIC ----------

This article provides pinout information on the cable used with the QuickTake for Windows.

DISCUSSION ----------

Here is the pinout for the QuickTake for Windows cable:

	Mac Din 8 (Male)	PC DB-9*	
DSR	2	4	DTR
TxD-	3	2	RxD
SG	4	5	SG
RxD-	5	3	TxD

Pin 7 on the Mac side is connected to Pin 2 on the Mac side
Pin 8 on the Mac side is connected to Pin 4 on the Mac side

Pins 6, 7, and 8 on the PC side are jumpered together.

* - Depending on the DB-9 port on the PC, the connector you use may be a male or female DB-9.

Article Change History:
10 Oct 1994 - Added type of connector needed.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15897

Tech Info Library

X on Performa Control Panel at Startup (7.1p3 or Greater) (3/95)

Revised: 3/16/95
Security: Everyone

X on Performa Control Panel at Startup (7.1p3 or Greater) (3/95)

==========

Article Created: 27 July 1994
Article Reviewed/Updated: 16 March 1995

TOPIC ----------

When I startup my Macintosh Performa a red 'X' appears through Performa control panel icon. What happened?

(Note the 'X' will be black on a Macintosh Performa 200.)

DISCUSSION ----------

There are several reasons why you might be getting a red 'X' through your Performa control panel icon at startup:

- You have renamed either the Applications folder or the Documents folder or both of these folders.
- You may have thrown away either the Documents or Applications folder.
- There may be a duplicate of the Performa control panel in the System Folder.
- There may be damage to the Performa Shutdown Check file or the Performa Preferences file.

To get rid of the 'X' do the following:

- Rename each folder to its original name.
- Throw away the duplicate Performa Control Panel from the System Folder.
- Open the Preferences Folder>System Folder and throw away the Performa Shutdown Check and Performa Preferences files.
- Restart the computer.

ADDITIONAL INFORMATION
==========
When the Macintosh Performa computer starts up, the Performa Control Panel searches for two folders on the hard drive: Applications and Documents. If it finds that either folder has been renamed, it places a red 'X' over its icon at

startup to warn you of feature(s) you have disabled.

If either the Applications or Documents folder is GONE from the hard drive (not renamed, but removed), then the Performa control panel icon will have a red 'X' at startup INITIALLY, and upon further restart, will recreate the missing Applications folder on the hard disk and the Documents folder on the desktop.

Article Change History:
16 Mar 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:15898

Tech Info Library

Akimbo Systems

Revised: 7/27/94
Security: Everyone

Akimbo Systems

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Article Created: 27 July 1994

Akimbo Systems
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11 Rose Street
Somerville, MA 02143

Telephone: 617-776-5500

Fax: 617-776-5512

Company Profile:

Develops and markets FullWrite, a Macintosh word processor.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15900

Tech Info Library

AWS 95: Create New System Folder For A/UX 3.0.1 or Later (1/95)

Revised: 1/18/95
Security: Everyone

AWS 95: Create New System Folder For A/UX 3.0.1 or Later (1/95)

==========

Article Created: 27 July 1994
Article Reviewed/Updated: 18 January 1995

TOPIC ----------

This article describes how to create a new system Folder under A/UX 3.0.1 or later on an Apple Workgroup Server (AWS) 95.

DISCUSSION ----------

It may sometimes be necessary to create a "clean" System Folder when troubleshooting problems under A/UX on the AWS 95. This procedure will deactivate the current default System Folder, create a new one, and recover the minimum number of files needed to get AppleShare Pro back up and running. Follow the steps below:

1) After signon on as Root, in CommandShell type the command "systemfolder" at a "localhost.root#" prompt. The system should echo that it is creating a new system folder for you. This will take about a minute.

2) Open "/", open the "mac" folder, then open the "sys" folder and rename the "System Folder" to "Old System Folder"

3) Drag the "System Folder" in "/" to the "sys" folder.

4) Drag the file called "File Server Extension" from the "Extensions" folder in the "Old System Folder" to the "Extensions" Folder in the "System Folder"

5) Open the "Preferences" Folder in the "System Folder" and move the "Users & Groups Data File" (if it exists) into a new folder on the desktop called "Old U&G Data."

6) Drag the file called "Users & Groups Data File" from the "Preferences" folder in the "Old System Folder" to the "Preferences" Folder in the

"System Folder."

7) Drag the Sharing Setup control panel from the "Old System Folder" to the "System Folder" to preserve the server's name.

8) Go to the "Special" Menu and Select "Logout"

9) When the computer comes back up: move the folder you created on the desktop called "Old U&G Data" to the trash and empty it.

10) Launch AppleShare Admin, and check the configuration.

Once troubleshooting is complete, you may want to copy other items from the "Old System Folder" into the new System Folder, particularly the "Retrospect" folder within Preferences, and the aliases within the Apple Menu Items folder.

Article Change History:
18 Jan 1995 - Added step number 7, and changed title for clarification.

Support Information Services

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Tech Info Library Article Number:15901

Tech Info Library

How To Remove Unnecessary INITs and CDEVs Under A/UX (5/95)

Revised: 5/3/95
Security: Everyone

How To Remove Unnecessary INITs and CDEVs Under A/UX (5/95)

==========

Article Created: 27 July 1994
Article Reviewed/Updated: 3 May 1995

TOPIC ----------

This article describes how to remove stray INITs (extensions) and CDEVs (control panel devices) under A/UX, these may cause a corrupted System Foler. Follow the steps below to remove unnecessary software from the System Folder.

DISCUSSION ----------

Step 1
Power On the Machine normally.

Step 2
Wait for the "Welcome to A/UX" or "Welcome to the Workgroup Server 95" Splash screen.

Step 3
Hit the "command" (or apple) and the "period" key at the same time.

Step 4
You should see a screen with several lines ending with a "startup #" prompt.

Step 5
Change directory to the system folder normally active when A/UX is running by doing the following (Press the "return" key after each line):

Please note that the quotation marks (") are required. Also note that UNIX is case sensitive.

cd /mac

```
cd sys
cd "System Folder"
cd "Extensions"
ls
```

Step 6
At this point (after typing "ls") the system will list all of the files in the directory down the left side of the screen. Look at the filenames and write down the ones that were added by accident.

Step 7
Remove the offending file by typing

```
rm "file name here"
```

Please note that the filenames that were written down in step six should be replaced above where it says "file name here" (the quotation marks are required). For example, rm "Audio CD Access".

Step 8
Execute the following commands to check out the Control Panels folder as well:

```
cd ..
cd "Control Panels"
ls
```

Step 9
Repeat steps 6 and 7.

Step 10
Check the System Folder itself for foreign items:

```
cd ..
ls
```

Step 11
Repeat steps 6 and 7.

Step 12
When you are done removing files that do not belong, perform the following commands to clean up the filesystem and re-launch A/UX, (this could take a few minutes):

```
fsck -y /dev/default
launch -v
```

Aside

If the computer will not boot after the above course of action was taken repeat the above steps. There could be some incompatible extensions left in the System Folder that do not belong. Check the listing that the "ls" command provides carefully for problem extensions and control panels.

Article Change History:
03 May 1995 - Included additional descriptive information in Topic section.

Support Information Services

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Tech Info Library Article Number:15902

Tech Info Library

Installing CD-ROM INITs On A/UX (7/94)

Revised: 7/28/94
Security: Everyone

Installing CD-ROM INITs On A/UX (7/94)

==========

Article Created: 27 July 1994

TOPIC -----

This article describes installing CD-ROM INITs on A/UX.

DISCUSSION -----

Drag the three files listed below into "/mac/sys/System Folder" from the CD installer disks. It is preferable to use version 4.0.2 or later.

Note: The CD installer disks should not be used to install these files under A/UX. Also the "Audio CD Access" file will not work in the base A/UX configuration, and requires an unsupported newer SCSI Manager to operate.

- Foreign File Access
- High Sierra File Access
- ISO 9660 File Access

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15903

Tech Info Library

MAE: Changing The Default Editor (7/94)

Revised: 7/28/94
Security: Everyone

MAE: Changing The Default Editor (7/94)

==========

Article Created: 27 July 1994

TOPIC ----------

How do I change the default editor in Macintosh Application Environment (MAE) to a Macintosh editor? The default is vi.

DISCUSSION ----------

In the X client Set Up control panel, you can change the default text editor by telling MAE the path to editor you prefer.

For example, on our test computer to set SimpleText as the default editor, follow the path: "/export/home/SimpleText $1", and to reset vi as the default editor, follow the path: "/bin/vi $1".

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15904

Tech Info Library

Apple Media Tool: Demo Files Won't Open (7/94)

Revised: 7/29/94
Security: Everyone

Apple Media Tool: Demo Files Won't Open (7/94)

==========

Article Created: 27 July 1994

TOPIC -----

I just got the Apple Media Kit which contains the Apple Media Tool version 1.1. I am trying to run the Apple Media Tool tutorial. I am following the instructions in the Apple Media Tool Handbook and using the Apple Media Kit Demo CD.

When I try to open the file travel.map from the CD the I get an error dialog box which says, "Error Type 1." Is this because it is write only, or do I possibly have incompatible versions?

DISCUSSION -----

You need to open the tutorial file, travel.map, using the DEMO version of the Apple Media Tool on the CD. Then choose "archive" under Preferences:General from the File menu and save it to your hard drive (check the backup media box). Then you can open it with the complete (not the demo) version of Apple Media Tool 1.1 on your hard drive.

The problem is that the demo version and the complete version are different programs so, projects created for the demo version need to be opened and saved as archive before you can open them with the complete version.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15906

Tech Info Library

Apple Media Tool: StyleEdit Won’t Open (3/95)

Revised: 3/1/95
Security: Everyone

Apple Media Tool: StyleEdit Won’t Open (3/95)

==========

Article Created: 27 July 1994
Article Reviewed/Updated: 1 March 1995

TOPIC ----------

I just got the Apple Media Tool Kit which contains the application StyleEdit. When I launch StyleEdit/Macintosh, the cursor continually switches from arrow to watch, making me wait long periods of time in between actually doing anything. I allocated a lot of RAM to the application, but that did not fix the problem. What is wrong?

DISCUSSION ----------

StyleEdit can be confusing when you first launch it because it opens to a text window with what looks like text that you can edit. The program appears to be dead until you can edit the text. You can edit the text, but you cannot just click on it to select it.

There are three ways you can edit the text:
1) Choose "Text" from the "Edit" menu.
2) Hold down the "Command" key and the "Y" key.
3) Double-click in the text window.

Doing one of these things will bring up a separate text window which you can edit. (The window looks like at text window you might see in a program like Adobe Photoshop.)

The reason two separate windows are necessary to edit text and view text is that the Apple Media Tool does not currently support "rich" styled text. In other words, you can't mix fonts, point sizes, etc. in the same text field. StyleEdit uses a text-entry window like Photoshop to force users to confine themselves to one style at a time. The reason why rich text is not supported that rich text does not work well in a cross-platform environment.

If you want to utilize rich text and do not care about cross-platform issues, then you can modify TEXTHANDLER to use TEStylHandles instead of TEHandles and

add some routines to change parts of the text to different styles.

Article Change History:
01 Mar 1995 - Changed title to reflect new product name.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15907

Tech Info Library

LaserWriter 8.x: Using Hewlett-Packard LaserJet 4si (3/95)

Revised: 3/3/95
Security: Everyone

LaserWriter 8.x: Using Hewlett-Packard LaserJet 4si (3/95)

==========

Article Created: 28 July 1994
Article Reviewed/Updated: 3 March 1995

TOPIC --

I have a Hewlett-Packard LaserJet 4si, and I unable to choose "Auto Select", or get the LaserJet 4si pull paper from another tray when the current one runs out of paper. How can I get these features to work?

DISCUSSION --

Without the HP LaserJet 4si PPD file, correct tray handling and usage is not possible.

We contacted HP and the "Auto Select" and "Trayswitch" features ARE available on the HP LaserJet 4si. In other words, the two problems:
1) having a paper source of "wherever there's paper" (Auto Select)
2) automatically feeding from another paper tray when the current one runs out (Trayswitching), are supported on the HP LaserJet 4si.

As long as the HP LaserJet 4si PPD is selected in LaserWriter 8.x driver, the Auto Select feature is available as a paper source option. In terms of the Trayswitching feature, this is already built-in to the LaserJet 4si. There is also a feature on the front panel of the printer that allows you to disable any tray so that it is not used in the trayswitching cycle. The default trayswitch setting for the printer is to use the top tray first, and then the lower trays from top to bottom.

You can obtain the HP LaserJet 4si PPD from HP's driver distribution center.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you

search for a particular vendor's address and phone number.

Article Change History:
03 Mar 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15908

QuickTake 100: Serial Driver Problems Using Windows 3.11 (7/94)

Revised: 8/10/94
Security: Everyone

QuickTake 100: Serial Driver Problems Using Windows 3.11 (7/94)

==========

Article Created: 28 July 1994
Article Reviewed/Updated: 10 August 1994

TOPIC ----------

I am trying to communicate with the QuickTake for Windows, however when I do, my computer freezes. I am using Windows 3.11 on my Pentium based computer. Is the QuickTake for Windows compatible with a Pentium based computer and Windows 3.11?

DISCUSSION ----------

There is a serial driver problem with some Pentium computer and Windows 3.11.

To fix this problem, you need to install an updated SERIAL.386 Driver for Windows for Workgroups available from Microsoft. The driver is located on Microsoft's TechNet CD-ROM, so if you have the TechNet CD-ROM, you will find it on disc #2. The name of the archive the driver is located inside of is "WG1001.EXE". If you do not subscribe to TechNet then you must log onto the Microsoft Download Service to get the updated driver. The phone number is 206-936-6735, at the Main Menu enter:

1) "1" for download file
2) Then "D" for download
3) Then type in WG1001.EXE press <RETURN>
4) Select the appropriate protocol

The file WG1001.EXE is also available at Microsoft's FTP site.

ftp.microsoft.com

The directory path for this file is d:/Softlib/MSLFILES

Article Change History:
10 Aug 1994 - Corrected Windows version number and added FTP site information.

Support Information Services

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Tech Info Library Article Number:15909

Tech Info Library

Compton's NewMedia, Inc.

Revised: 7/28/94
Security: Everyone

Compton's NewMedia, Inc.

==========

Article Created: 28 July 1994

Compton's NewMedia, Inc.

2320 Camino Vida Roble
Carlsbad, CA 92009

Telephone: 619-929-2500

Fax: 619-929-2511

Company Profile:
Develops and markets multimedia titles and reference works on CD-ROM for Macintosh and Windows computers.

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15910

Tech Info Library

MAE: Installing Applications (8/95)

Revised: 8/4/95
Security: Everyone

MAE: Installing Applications (8/95)

==========

Article Created: 27 July 1994
Article Reviewed/Updated: 4 August 1995

TOPIC ----------

This article describes installing applications that attempt to install to the root of a volume when running the Macintosh Application Environment (MAE).

DISCUSSION ----------

When installing applications in MAE there are several options available depending on the version of MAE, and if the installer tries to write to the root directory. Applications that are required to be installed at the root of a volume typically will fail, because most users do not have write access to the root of a UNIX file system.

MAE 2.0
=======

MAE 2.0 has an option to create a Temporary Installer Volume (TIV). This TIV appears to the installer as another volume, letting the installer write to the root of the TIV. Follow the steps below:

Step 1

Determine how much memory the installed application will need. In the MAE General control panel, select the size and the location where the TIV will be placed. The TIV uses a combination of RAM and disk space to mimick an additional volume, be sure the location of the TIV file (/tmp/tiv is the default) has write access for the user, and has enough disk space.

Step 2

After mounting the TIV, the user can launch the installer and select the TIV as the install destination.

Step 3

If an installer needs to add files to the System Folder, drag the System Folder from the user's home directory to the TIV. After the install is complete, rename the existing System Folder in the user's home directory to another name (for example, previous system folder), and drag the System Folder in the TIV back to the user's home directory. Restart MAE, and the new system folder will be in use.

Step 4

The TIV can then be unmounted by dragging it to the trash.

MAE 1.0
=======

MAE 1.0 Does not offer the TIV capability. However, it is still possible to install applications that will write to the root.

Step 1

Launch MAE as root, but with the -sysfol option pointing to a your system folder. This is done to prevent MAE from building a new system folder and desktop file for root. For example, you could launch MAE and point MAE to "George's" system folder with the following command:

/export/home/apple/bin/mae -sysfol /export/home/george/System\ Folder

Step 2

Put in the first ClarisWorks install disk, and mount it.

Step 3

Drag the install script from ClarisWorks disk on top of the Installer 4.0 application from within MAE.

Step 4

When the installer is finished, ClarisWorks will be installed at the root level. The translators will be in the specified System Folder.

Article Change History:
04 Aug 1995 - Added MAE 2.0 to article.

Support Information Services

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Tech Info Library Article Number:15911

Tech Info Library

MAE: Install From Tape (7/94)

Revised: 7/28/94
Security: Everyone

MAE: Install From Tape (7/94)

==========

Article Created: 27 July 1994

TOPIC ----------

Is it possible to copy the Macintosh Application Environment (MAE) Installer and software to tape and still have it work? We don't have many CD-ROM drives at our site, and we would like to convert the software to tape format for easier installation.

DISCUSSION ----------

No, you cannot copy MAE software to tape and then install it from tape directly. Here are two ways to install MAE when there are a few CD-ROM drives available:

• Copy the MAE Trial CD file system to a shared (NFS) directory, and then install it from there. Each user can install MAE to a local directory, and run it.

• Your other possibility would be to tar the whole CD to tape (about 40 to 60 MB), copy it back to each workstation you want to run it on, and then run the installer locally on each workstation.

Remember, you do not have to install multiple copies of the purchased MAE product, if you have multiple licenses. You can install MAE on an NFS server, and have users run it from those binaries. MAE will then build a system folder in each user's home directory. One problem with this solution is you will see some slow down using the binaries via NFS.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15912

Tech Info Library

MAE: Not enough shared memory... Message On Startup (7/94)

Revised: 7/28/94
Security: Everyone

MAE: "Not enough shared memory..." Message On Startup (7/94)

==========

Article Created: 28 July 1994

TOPIC ----------

When I start Macintosh Application Environment (MAE) on my SPARCStation, I get a message saying, "Not enough shared memory, using malloc..." How do I fix this?

DISCUSSION ----------

When MAE notices that it is running on your SPARCStation's local display, it attempts to enhance graphics performance by communicating with the X server using the "X Shared Memory Extension." For MAE to succeed at this, your Solaris kernel must be configured to support several large shared memory segments. If MAE is unable to obtain the shared memory it requires (based on the size and color depth of the MAE window), it falls back to a less efficient communications scheme based on large malloc'd X image structures.

To ensure that sufficient Solaris kernel resources are available to support efficient execution of MAE, Apple suggests adjusting the file "/etc/system" to include the following:

```
set shmsys:shminfo_shmmax=16777216
set shmsys:shminfo_shmseg=8
```

These shmsys parameters should adequately cover most screen and color depth configurations and will take affect after rebooting your system.

IMPORTANT: Talk with your system administrator first before making any changes to this file. While it is unlikely that adjusting these parameters will have adverse effects on other software, Apple Computer will not support or take responsibility for any problems you may encounter.

NOTE: The only reason to make this change to your /etc/system file is if you get the "Not enough shared memory, using malloc..." message

mentioned above.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15913

Tech Info Library

MAE: Using SCSI Devices On Solaris (7/94)

Revised: 7/28/94
Security: Everyone

MAE: Using SCSI Devices On Solaris (7/94)

==========

Article Created: 28 July 1994

TOPIC ----------

How do I properly modify the macdisks.Solaris file in order to use a SCSI device in Macintosh Application Environment (MAE)?

DISCUSSION ----------

The macdisks.OS files describe to MAE where your SCSI and floppy drives live, and how to access them. For the most part, setting these up is easy, as the documentation is included in the file. Generally, you should be able to set the line in macdisks corresponding to your SCSI device to default, as in the following:

```
scsi6:default
```

This would be for a SCSI device such as a CD-ROM at SCSI device 6. Unfortunately, MAE is not always able to determine the default setting. If this is the case, then you need to explicitly define the device. As the file states, the general format to describe a SCSI device to MAE is this:

```
scsiX:[fixed|removable]:[ro|rw]:</dev/path>
```

For example, the CD-ROM previously described would have the following entry:

```
scsi6:removable:ro:/dev/rdsk/c0t6
```

Note: Where c0t6 means controller 0 (logic board SCSI), target number 6 (SCSI device number 6).

A general trouble shooting procedure: Are you able to mount UNIX CD's to this device. If so, what is the device path used to mount CDs. Then us this information to set up your macdisks file. Also make sure you are, in fact, trying to mount a Macintosh Operating System formatted CD to MAE.

..TIL15914-MAE-Using_SCSI_Devices_On_Solaris_7-94_(TA32160).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15914

Tech Info Library

Network Software Installer Version 1.4.4 Read Me (7/94)

Revised: 7/28/94
Security: Everyone

Network Software Installer Version 1.4.4 Read Me (7/94)

==========

Article Created: 28 July 1994

TOPIC ----------

This article is the Network Software Installer (NSI) Version 1.4.4 Read Me file.

DISCUSSION ----------

You can use this Network Software Installer to install the following networking products:

- Update to AppleTalk version 58.1.3
- Network Control Panel version 3.0.2
- AppleTalk Internet Router 2.0 (requires router installation disk)

- EtherTalk version 2.5.6
- Ethernet driver version 1.1.1 for the Apple Ethernet NB Card
- Ethernet driver version 6.0.5 for the Apple EtherTalk NB Card
- Ethernet driver version 1.1.1 for the Apple Ethernet NB Twisted-Pair Card
- Ethernet driver version 1.1.1 for the Apple Ethernet LC Card
- Ethernet driver version 1.1.1 for the Macintosh Quadra 700/900/950/800, Centris 610/650, built-in Ethernet port.
- Ethernet driver version 1.0.1 for the Macintosh Quadra 840AV and Centris 660AV
- Ethernet driver version 1.1.1 for the Apple Ethernet LC Twisted-Pair Card
- Ethernet driver version 1.1.1 for the Apple Ethernet CS Twisted-Pair/Coaxial/AAUI Card

- TokenTalk version 2.5.6
- Token Ring Control Panel version 1.0.1
- Token Ring driver version 2.5.2 for the TokenTalk NB and Token Ring 4/16 Cards

In addition, this Installer installs the following related products:

• A/ROSE 1.2.1

This installer works on either System 6.0.5 or later, or System 7 Macintosh computers.

NOTE:
=====
On Macintosh computers with a 68040 microprocessor (Quadra, Centris, and Performa 470 series), some programs may quit unexpectedly or cause the computer to freeze when you attempt to open them over the network. This problem is fixed by using the Network Launch Fix available from AppleLink or the InterNet (ftp.apple.com).

Restrictions:
=============
This software should not be installed with AppleTalk Internet Router and AppleShare client on a Macintosh with only 1 Megabyte of memory.

If this release of the Network Software Installer is being used in conjunction with an Apple Internet Router v. 3.0 Installer, Router 3.0 _must_ be installed first. This will ensure that the Router installation does not overwrite the newer AppleTalk software contained on NSI 1.4.2.

Release notes for each item follows:

AppleTalk version v58.1.3
=========================
The ADSP probe timer won't be reset for every attention packet. This keeps the window sizes updated on each end.

SCC LocalTalk Driver v58.2.2
============================
A fix was made for a slowdown that occurred when using FileShare and ARA Personal server on 680x0 Macintosh computers while communicating with Power Macintosh computers.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15915

Tech Info Library

Network Software Installer Version ZM-1.4.5 Read Me (7/94)

Revised: 7/28/94
Security: Everyone

Network Software Installer Version ZM-1.4.5 Read Me (7/94)

==========

Article Created: 28 July 1994

TOPIC -----

This article is the Network Software Installer Version ZM-1.4.5 Read Me file.

DISCUSSION -----

You can use this Network Software Installer to install the following networking products:

- Update to AppleTalk version 58.1.4
- Network Control Panel version 3.0.2

- EtherTalk version 2.5.6
- Ethernet driver version 1.1.1 for the Apple Ethernet NB Card
- Ethernet driver version 6.0.5 for the Apple EtherTalk NB Card
- Ethernet driver version 1.1.1 for the Apple Ethernet NB Twisted-Pair Card
- Ethernet driver version 1.1.1 for the Apple Ethernet LC Card
- Ethernet driver version 1.1.1 for the Macintosh Quadra 700/900/950/800, Centris 610/650, built-in Ethernet port.
- Update to Ethernet driver version 1.1.1 for the Macintosh Quadra 610/650, built-in Ethernet port.
- Ethernet driver version 1.0.1 for the Macintosh Quadra 840AV and Centris 660AV
- Ethernet driver version 1.1.1 for the Apple Ethernet LC Twisted-Pair Card
- Ethernet driver version 1.1.1 for the Apple Ethernet CS Twisted-Pair/Thin Coax/AAUI Card

- TokenTalk version 2.5.6
- Token Ring Control Panel version 1.0.1
- Update to Token Ring driver version 2.5.2 for the TokenTalk NB Card
- Token Ring driver version 1.0 for the Token Ring 4/16 NB and Token Ring NB/c Card

In addition, this Installer installs the following related products:

• A/ROSE 1.2.1

This installer works on either System 6.0.5 or later, or System 7 Macintosh computers.

NOTE:
=====
On Macintosh computers with a 68040 microprocessor (Quadra, Centris, and Performa 470 series), some programs may quit unexpectedly or cause the computer to freeze when you attempt to open them over the network. This problem, as well as others, is fixed by installing the System Update 3.0 available from AppleLink or the Internet (ftp.apple.com).

Restrictions:
=============
You must use the Installer application (version 3.4.3) included on this floppy disk. Any other version of the Installer application will not perform a correct installation for this product.

Note that the "NSI International Files" folder is not empty; it contains invisible files necessary for the installation.

This software should not be installed with AppleTalk Internet Router and AppleShare client on a Macintosh with only 1 Megabyte of memory.

The new token ring driver is not compatible with MacIPX versions 1.1 and older. Contact Novell Technical Support to obtain an update to newer MacIPX software which will work with this token ring driver.

SoftWindows versions 1.0 and 1.0.1 using SMB (NetBEUI) protocols to access Lan Manager servers over Token Ring are not 100% compatible with the AppleTalk version included on this disk. Contact Insignia Solutions regarding availability of an update to the SoftWindows software which will work with this driver.

If this release of the Network Software Installer is being used in conjunction with an Apple Internet Router v. 3.0 Installer, Router 3.0 _must_ be installed first. This will ensure that the Router installation does not overwrite the newer AppleTalk software contained on NSI 1.4.5.

To use this release of the Network Software Installer with a SNA•PS gateway, a special custom install option is provided that installs a compatible token ring driver for the Token Ring 4/16 NB card. SNA•PS gateway is not currently supported on the TokenTalk NB or Token Ring NB/c cards. A future version of the SNA•PS gateway will not require the custom-installed driver.

Release notes for each item follows:

AppleTalk version 58.1.4
========================
The LAP Manager was fixed to avoid sending corrupted TEST and XID response packets in certain heavy traffic situations.

Apple Token Ring NB driver file version 1.0

This token ring driver file handles all Apple Token Ring cards for the NuBus - the TokenTalk NB, Token Ring 4/16 NB and Token Ring NB/c. The file is installed into the extensions folder. The new driver for the Token Ring 4/16 NB and Token Ring NB/c cards has significantly better performance and fewer problems in large source-routed environments than earlier drivers.

Built-in Ethernet driver for Quadra 610 and 650 version 1.1.1

An installation problem prevented an earlier fix for QuickTime performance from working on these machines. This installer correctly updates the driver on these machines to improve QuickTime performance over built-in Ethernet.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15916

Tech Info Library

Performa 550/560: Labeled As Macintosh LC 520 (7/94)

Revised: 7/29/94
Security: Everyone

Performa 550/560: Labeled As Macintosh LC 520 (7/94)

==========

Article Created: 29 July 1994

TOPIC ----------

When I opened up my Performa 550/560 and looked at the product label, I noticed that it is labeled as a Macintosh LC 520.

How can I tell if it is actually the Performa?

DISCUSSION ----------

To determine if your computer is a Performa, run MacCheck™ to verify whether the processor clock speed on the computer in question is 25 MHz (LC 520 speed) or 33 MHz (Performa 550/560 speed).

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15917

Performa 500 Series: Button Disabler isn't on Hard Drive (1/97)

Revised: 1/7/97
Security: Everyone

Performa 500 Series: Button Disabler isn't on Hard Drive (1/97)

==========

Article Created: 29 July 1994
Article Reviewed/Updated: 7 January 1997

TOPIC ----------

The "Getting Started With Your Performa 500 Series Computer" manual (on page 23) describes a control panel called Button Disabler. Button Disabler disables the buttons on the front of the Performa 550, making the volume and brightness controls inoperative.

I have been unable to locate Button Disabler on my hard drive.

DISCUSSION ----------

The Button Disabler control panel has not been pre-installed on any of the Performa computers. The Button Disabler was originally intended for the LC 520 sold to the education market where there was a need to prevent students from adjusting the buttons on the front of the computer.

Since the Performa 550 documentation was based on the LC 520 documentation, any mention of the Button Disabler appears as a mere artifact. The Performa 570 Series Getting Started manuals have been corrected, they omit any reference to the Button Disabler.

If you use the Custom installation of System 7.5, you can install the Button Disabler control panel. An easy installation of System 7.5 does not install the control panel.

The Button Disabler also works on the Performa or LC 5200, 5300, and 5260 series computers.

NOTE: The following computers are in the corresponding Macintosh families:

• Macintosh 5200CD family: Macintosh 5200/75 LC, Performa 5200, Performa 5210, Performa 5215, and Performa 5220.

- Macintosh 5300CD family: Macintosh 5300/100 LC, Performa 5300.

Article Change History:
07 Jan 1997 - Removed Performa 5400 references.
10 Sep 1996 - Added the 5200, 5300, 5260, and 5400 series computers.
08 Aug 1994 - Added Custom installation information for System 7.5

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Tech Info Library Article Number:15918

Tech Info Library

Dictation Applications For Macintosh & PC Computers (7/94)

Revised: 7/29/94
Security: Everyone

Dictation Applications For Macintosh & PC Computers (7/94)

==========

Article Created: 28 July 1994

TOPIC -----

As part of our workstation development, we are trying to demonstrate the ability to dictate progress notes to a workstation. The dictation would be stored as a sound file until a transcriptionist converts it to text. Also the sound files would need to be accessible from other workstations as sound in the interim.

Two questions:

- What products should we be looking at to assist us in providing this capability?

- Are there any products which are portable across Apple and Intel machines? The sound files would be stored on a network server, but they would need to be stored in a format that both platforms understand.

DISCUSSION -----

There is a dictation application called PowerSecretary from Articulate Systems, Inc. in Woburn, MASS. Articulate also makes a noise-canceling headset microphone, Voice Record and Voice Navigator software for the Macintosh.

There is another Macintosh application called SoundEdit 16 from MacroMedia that will save an AIFF sound file created with Voice Record as a Windows WAV file. It is then playable on an IBM PC class computer.

To locate a vendor's address and phone number, use the vendor name as a search string.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15921

Tech Info Library

LaserWriter Pro 810: Uses LaserWriter Utility 7.6.2 (7/94)

Revised: 7/29/94
Security: Everyone

LaserWriter Pro 810: Uses LaserWriter Utility 7.6.2 (7/94)

==========

Article Created: 29 July 1994

TOPIC --

I are having trouble accessing my LaserWriter Pro 810 using the LaserWriter Utility. When I try to use the LaserWriter Utility, it makes my Macintosh computer go into a busy cycle, and does not access the printer.

DISCUSSION --

We would suggest verifying that you are using LaserWriter Utility 7.6.1 or 7.6.2. These are the only supported versions of the LaserWriter Utility for the LaserWriter Pro 810. LaserWriter Utility 7.6.1 shipped with the printer, however, a bug was found with that version which affects LaserWriter Pro 810 printers with PostScript fax cards installed.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates
- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15922

Tech Info Library

Apple DocViewer 1.1.1: Read Me File (7/94)

Revised: 7/29/94
Security: Everyone

Apple DocViewer 1.1.1: Read Me File (7/94)

==========

Article Created: 29 July 1994

TOPIC -----

This article contains the read me file from Apple DocViewer. Apple DocViewer ships with several current Macintosh computers.

DISCUSSION -----

What is the Apple DocViewer?

Apple DocViewer is an on-line documentation application. It provides a standard way for Apple to distribute documentation to developers in an electronic form. Apple DocViewer provides a quick on-screen reference for browsing through multiple documents. It supports full Macintosh mixed-text and graphics, printing, interactive table of contents/catalog, book indexes, text search & retrieval, the ability to copy text and/or pictures for use in other applications, and provides the ability to set bookmarks to commonly used pages in documentation. With our new Collections feature, users can create their own "virtual books" from whole or parts of other books.

Version 1.1.1 Release Notes

Since the release of version 1.1, we received quite a bit of feedback from our users. The following list outlines the minor changes in Version 1.1.1:

- "The Preference is Yours" - We have restored the application preferences to allow you to specify a default view style and scaling when you open DocViewer documents.

- DocViewer Lookup Apple event support - Support has been added so that DocViewer can now be messaged via Apple events. Please see the DocViewer Tech Note "Apple Event Support in DocViewer 1.1.1" included with this version on the Developer CD series.

Enhancements and Minor Bug fixes (From version 1.1)

- Running UniFinder on System 6.0.5 on a Macintosh SE, the Apple DocViewer crashes when the Control Panel is accessed.
  - This problem has been resolved. If the memory situation is bad, you will not be able to access the Control Panel desk accessory.

- There is now support for 8-bit languages and character sets. Previous versions had trouble searching for high-ASCII characters.

- Garbage characters in the Query dialog with "Show Context" selected in low memory situations.
  - This problem has been resolved.

- Many annoying dialogs in low-memory situations.
  - This problem has been resolved.

- Problems clicking on the "Splash Screen" during launch caused a crash on some Macs.
  - This problem has been resolved.

- Problems with the use of the "Shift" key while selecting "Next Occurrence" have been resolved.

- Printing from the Finder is now supported! (Yeah!)

- Many other minor bugs were addressed and fixed.

- Preferences information - Previously, the DocViewer stored user preferences that determined user view, and zooming. This information is now stored in the document when possible.

There are some minor bugs and enhancements which are not addressed in Version 1.1. These and user tips are documented in later pages of this Read Me file. If you have comments or suggestions we would like to hear from you via AppleLink to DEV.CD. We will not be answering individual questions about this software, but this information will be forwarded to the engineering group.

Installation

Apple DocViewer runs on all models of the Macintosh computer from the Macintosh Plus onward. It runs under versions 6.0.5 and later of the Macintosh system software, including version 7.0, Release 7.1. Apple DocViewer requires at least 1024 Kb memory partition.

Apple DocViewer also requires both bitmap and TrueType fonts. In particular, many Apple DocViewer documents use Palatino, Helvetica, Courier, and Zapf Dingbats. We are providing these fonts in the Apple DocViewer Fonts folder.

The Apple DocViewer application can be run directly off a CD, or from a server, but we strongly recommend that you copy the application to your local hard drive.

Limitations

Apple DocViewer is NOT a word processor—it was designed to support quick conversion of existing technical documents to electronic form. Apple DocViewer focuses on being both a printing and display tool. Printing is limited by Apple DocViewer's display capabilities and displaying is limited by Apple DocViewer's print capabilities. In particular:

- Display spacing may appear uneven on some documents because the text is kerned for printing, not display.

- Output on non-postscript printers may be less satisfactory.

- Color/Gray Scale must be selected for printing color/shaded figures.

- Documents may be more difficult to read on systems which do not have a complete set of screen fonts or do not have TrueType installed.

This version of Apple DocViewer has a number of features that are incomplete, notably:

- The "Text Only" view is only partially implemented. Text still needs to continuously flow between page boundaries for true dynamic text reformatting capabilities.

Recommendations, Tips, and Techniques

- It is not required, but use both bitmap and TrueType fonts for the best display quality . If you are running under System 6, please use the TrueType INIT in the TrueType Fonts & Software folder.

- To improve display legibility on monitors larger than 13'' (that typically have a resolution greater then 72 dpi) set SCALING to 112% in the document window. We've found this to be a good compromise between window size and font size.

- Apple DocViewer has been optimized for displaying documents off of a CD-ROM. However, copying the document file you use most (and its associated index file) to your local hard disk can significantly improve performance.

- The "Query" command uses an efficient indexing technique with Apple DocViewer documents, however, it does not index every word. Words such as (and, but, or, because, etc.) and words less than 4 characters in length are not indexed. The "Find" command uses a search method that is much slower, but will find every word in a document. The "Table of Contents" window's "Filter" narrows the list of table of contents entries. The "Open Book Index" displays an index created by the authors of the document. Explore the difference between these four features and use the one most appropriate for your task.

- Apple DocViewer is optimized for printing on Postscript printers, such as the Apple LaserWriter. New Inside Macintosh documents take advantage of the "Larger Print Area" option available from the LaserWriter's Page Setup/Options dialogue. Printing with other printers will work, but there

may be clipped pages, or reduced print quality.

- Users in countries which use A4 paper may print Apple DocViewer documents by using the "Reduce or Enlarge" setting of the "Page Setup" dialog.

- Use Apple DocViewer's "Copy" command to get code samples and paste them into your source. This code can them be compiled or incorporated into your software. Remember, there is no copyright limitation on use of source code from Apple documentation.

- Technical writers developing in-house documentation can use Apple DocViewer's "Copy" capability to grab figures or text from Apple documentation for internal documentation or in-house training. Unlike source code, however, documentation or courses developed for sale to your customers MAY NOT incorporate figures or text from Apple documentation.

- We have tried to optimize the usability of Apple DocViewer on small screens. If you have a small screen, we recommend you use the "Text Only" view of Apple DocViewer, and adjust the window size to your liking. Then use the page up/down arrow icons to navigate individual pages in the document.

Known Problems

- Problem: When printing New Inside Macintosh documents, the top and bottom edges of the page can be cut off.
  Solution: Set the "Larger Print Area" option available from the LaserWriter's "Page Setup/Options" dialogue.

- Problem: When running the application from a server, if that server disconnects while DocViewer is running, the application will begin beeping incessantly.
  Solution: Do not run Apple DocViewer off of a server.

- Problem: The "From" and "To" fields in the "Print" dialog box do not accept the "Chapter-Page" form of page numbers (e.g., From 1-3 to 3-3).
  Solution: Use the physical page numbers displayed inside the parentheses in the "Page Indicator" area of the document window. Lower portion of the Print Dialog will display the actual page numbers displayed on the document.

- Problem: "Query 'Within n words of…'" does not count the number of words correctly, given an integer value for n.
  Solution: Add 2 to 3 for the value n.

- Problem: When you use "Query", Apple DocViewer displays the message "The index file for <<docname>> cannot be found."
  Solution: Be sure the Apple DocViewer document and its associated ".idx" file are in the same folder

- Problem: Some "Query" searches do not find text that includes punctuation or hyphens in either the search string or the text being

searched.

Solution: There is a bug in the "Query" command such that punctuation characters are not passed to the search engine. For example, the search string "get file" will not find the text "get, file"

– the fix (for now) is to search for "get x file". The "x" serves as a noise word that is ignored, but broadens the search. Searching "get x file" will find "get file", "get, file", "get on file", "get the file", etc.

Support Information Services

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Tech Info Library Article Number:15924

Tech Info Library

Direct Dialup 1.1 Included with System 7.5 (2/95)

Revised: 2/15/95
Security: Everyone

Direct Dialup 1.1 Included with System 7.5 (2/95)

==========

Article Created: 29 July 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

This article describes how Direct Dialup 1.1 will be distributed.

DISCUSSION ----------

Direct Dialup 1.1 is the version that will be included on the System 7.5 CD. This version incorporates the fixes made in 1.0.1 plus some additional fixes requested by international users. Version 1.1 will be a System 7.5 version only, it will not be supported on System 7 Pro (7.1.1) and will have a new marketing part number.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15925

Tech Info Library

System 7.5: Troubleshooting Extension Conflicts (7/96)

Revised: 7/3/96
Security: Everyone

System 7.5: Troubleshooting Extension Conflicts (7/96)

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Article Created: 02 August 1994
Article Reviewed/Updated: 02 July 1996

TOPIC ----------

Is there an easy way to troubleshoot possible extension conflicts on my Macintosh with System 7.5 installed?

DISCUSSION ----------

The Extensions Manager control panel installed with System 7.5 enables you to isolate and troubleshoot third party extensions from those installed with System 7.5.

There are two methods to access the Extensions Manager.

System 7.5 or System 7.5.1

Select Control Panels from the Apple menu. Open the Extensions Manager control panel and select System 7.5 Only from the Sets button. Upon restarting your Macintosh, only the extensions installed with System 7.5 will load.

System 7.5.2

Select Control Panels from the Apple menu. Open the Extensions Manager control panel and select System 7.5.2 from the Sets button. Upon restarting your Macintosh, only the extensions installed with System 7.5.2 will load.

If the problem persists, it is likely that one of the default 7.5 extensions or control panels is corrupted. At this point, it is best to remove all extensions and control panels from your system folder and reinstall them one at a time to locate the corrupted extension or control panel.

An alternative method of accessing the Extensions Manager is to hold down the spacebar when booting up your computer. The Extensions Manager will appear on screen. Follow the same procedure as above for troubleshooting.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
02 Jul 1996 - Added Fax Doc word
07 Dec 1995 - Updated information for System 7.5.2.
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
03 Feb 1995 - Made title more descriptive.

Support Information Services

Copyright 1994-96, Apple Computer, Inc

Tech Info Library Article Number:15926

Tech Info Library

Griffin Technology Corporation

Revised: 5/2/97
Security: Everyone

Griffin Technology Corporation

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Article Created: 29 July 1994
Article Reviewed/Updated: 2 May 1997

Griffin Technology Corporation
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820 Fesslers Parkway
Willow Trace, #315
Nashville, TN 37210

Phone: 615-255-0990
Fax: 615-255-8040

Worldwide Web Site: http://www.nashville.net/~griffin

Internet email: Griffin@telalink.net
America Online: GrifCom
CIS: 102412,3161

Company Profile:
Provides display adapters for the Macintosh family computers. These display adpaters are required on older Macintosh computers in order to send the proper sync signal to multiple scan displays.

Article Change History:
02 May 1997 - Updated address, phone, www, email information.

Copyright 1994-97, Apple Computer, Inc.

Tech Info Library Article Number:15927

Tech Info Library

Retrospect Backups, ABS Quick Start Card (10/94)

Revised: 6/5/96
Security: Everyone

Retrospect Backups, ABS Quick Start Card (10/94)

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Article Created: 29 July 1994
Article Reviewed/Updated: 24 October 1994

TOPIC ----------

This article is the Apple Business Systems' Quick Start Card for Retrospect Backups.

DISCUSSION ----------

INTRODUCTION

This Quick Start Card will help you to quickly perform a back up using Retrospect. While this card gets you started quickly, the manual contains important additional information. If you encounter a situation not covered here, refer to your manual for more complete descriptions of these processes.

WHAT YOU NEED

Before you start, check to see that your server meets the following hardware and software requirements.

Retrospect needs a minimum of 1.7 MB of RAM available. The more files you have, the more RAM you need. The following is a guide for how much memory Retrospect will need to back up large volumes:

- 1,700K for 3,500 files/folders (this is the default)
- 4,000K for 10,000 files/folders
- 6,000K for 20,000 files/folders
- 8,000K for 32,000 files/folders

IMPORTANT: You cannot run Retrospect on your Apple Workgroup Server when an electronic mail server or MeetingMaker server is running. You will need to quit these applications prior to running Retrospect.

PERFORMING AN IMMEDIATE BACKUP

The first time you back up the contents of your hard disk, Retrospect backs up all specified files from the source volume to a StorageSet—a StorageSet comprises the set of files stored on one or more volumes. In subsequent backups (unless you indicate otherwise), Retrospect backs up only those files that are new or that have changed since the last backup.

To start the immediate backup:

1) Double-click the application icon to start Retrospect.

2) Click Backup.

3) Drag through the list of volumes or Shift-click to select a range of volumes. Use Command-click to select non-contiguous volumes.

   NOTE: While Retrospect A/UX backs up and restores all A/UX and Macintosh files and directories, it cannot access raw device partitions to back up database information. See the documentation provided with your database server for specific information.

   IMPORTANT: When you add a hard disk to the server, it appears as a folder, known as a mount point, located on the main "/" volume. If you direct Retrospect A/UX to back up the "/" volume, it will ignore the contents of any folders that represent additional hard disks. To back up the contents of these disks, you need to specify each mount point as a subvolume and back it up as a separate source. Additional disk devices must also be restored as separate volumes.

4) Click OK to continue.

5) Click Create New….

6) Choose the type of storage media you want to use from the Storage type menu.

7) In the StorageSet Name field, type a descriptive name for the StorageSet.

   NOTE: Name StorageSets carefully—Tapes StorageSets and Disks StorageSets cannot be renamed. Macintosh File StorageSets, however, can be renamed in the Finder.

7a) If you want, add password protection or encryption by clicking Secure and choosing an option from the dialog box that appears, then click OK.

8) Click New….

   NOTE: Before continuing, make sure that the information displayed in the Immediate Backup window is correct. To change information, click the appropriate button.

9) If the information displayed is correct, click Backup.

10) Click OK to confirm the operation.

11) Choose the destination disk or tape and click Proceed.

12) When Retrospect informs you that the execution is complete, click the close box to return to the Retrospect Directory, where you can select another operation or quit the application.

PLANNING SUBSEQUENT BACKUPS

For subsequent backups, you can repeat the basic backup procedure as often as you want and even switch between multiple StorageSets to maintain extra backup copies of your volumes. By default, Retrospect only backs up those files that have changed since the previous backup to a StorageSet.

If you want to automate your backups so they can be performed while your Macintosh is unattended you can use Retrospect's scripting feature to set up and schedule backups. See Chapter 4, "Automating Backups With Scripts," in the Retrospect User's Guide for more information on creating, modifying, and scheduling scripts.

If you want to back up specific files or folders, you will probably want to use Selectors to mark files for backup. Retrospect Selectors can be retained between backups and used with scripts to fully automate your backups. See Chapter 7, "Using Selectors," in the Retrospect User's Guide for more information on creating and managing Selectors.

RESTORING FROM A BACKUP

To restore selected files from the most recent backup:

1) Click Immediate in the Retrospect Directory.

2) Click Restore.

3) Click OK.

   NOTE: If the Catalog for the StorageSet is lost or missing, you will need to rebuild the Catalog from the StorageSet before you can perform the restore. For more information, see "Recreating a Catalog," in the Retrospect Setup manual.

4) From the upper list box, select the StorageSet that contains the backup files.

5) From the lower list box, select the SnapShot of the volume from which you want to restore files. Then click OK.

6) Select the destination volume—the volume to which you are restoring files.

7) From the pop-up menu, select the setting that defines how you want files to be restored. Then click OK.

   NOTE: If you are restoring just a few files or folders, use the "Retrieve files & folders" option or the "Retrieve just files" option.

8) If you are only restoring a few files, click Files Chosen to display the Browser. Choose Select All from the Edit menu, click Unmark, then double-click on the files and folders you wish to restore. You may use Find under the Browser Menu to search for a specific file or folder.

9) If you want to change the retrieval options, click Options.

10) Make sure that the information displayed in the window is correct. If you want to change any of the settings, click the appropriate button to return to a previous window.

11) Click Restore to begin the restore. Retrospect performs the retrieval and returns to the Retrospect Directory when the operation is complete.

RESTORING AN ENTIRE VOLUME

The following information provides instructions for restoring an entire volume to the state it was in when it was last backed up. To restore a server volume, see Appendix D, "Backing Up and Restoring Servers," from the Retrospect Setup manual before you perform the restore. To restore a Remote volume, see the Retrospect Remote User's Guide.

There are two stages in restoring an entire volume:

- Preparing the volume for a restore
- Restoring files to the volume

Before You Reformat or Erase Your Hard Disk

Before erasing or reformatting a hard disk, make two separate backups with Verification enabled. If the hard drive you are erasing contains the StorageSet Catalog, copy it to another accessible volume before erasing the drive.

Before restoring a hard disk that failed due to a directory corruption, first re-initialize the disk by choosing the Erase Disk command from the Finder. If the hard disk failed due to media defects, you should entirely reformat the disk. Refer to the hard disk manufacturer's manual for detailed instructions on reformatting the hard disk. In order to maintain System 7 aliases after the restore, the volume must have the same name as the original volume.

Preparing the Volume for a Restore

Before you can restore the volume, you need to first start up the server to which it is attached. Ideally, you should restart the server from an extra hard disk attached to the SCSI port and designated as the Start-up disk. If you have an extra hard disk, use this disk to restart the volume.

If you don't have an extra hard disk, use the following steps to restart using the System software that came with your Apple Workgroup Server.

To install System software:

1) Install the System software on the hard disk to be restored.

   NOTE: To maintain System 7 aliases, you must name the hard disk the same as it was originally named.

2) Rename the newly installed System Folder "temp."

3) Insert the Retrospect application disk.

4) Create a new folder on the hard disk.

5) Drag the Retrospect application to the folder you just created.

6) Eject the Retrospect application disk. If you are using a tape drive, insert the Retrospect Extras disk. Otherwise, skip to Step 8.

7) Place the Retro.SCSI file in the Extensions folder.

8) Copy the Catalog for the StorageSet you wish to restore to the volume you are restoring.

9) Restart the Macintosh.

   NOTE: If the Catalog for the StorageSet is lost or missing, you will need to rebuild the Catalog from the StorageSet before you can perform the restore.

Restoring the Volume

After starting up the volume, follow these steps to restore the volume to the state it was in at the time of the most recent backup.

1) Launch Retrospect. Click Immediate in the Retrospect Directory.

2) Click Restore.

3) Click OK.

4) From the upper list box, select the StorageSet that contains the backup files. If the StorageSet does not appear in the list, click Open Other to display a standard directory dialog box and locate the StorageSet Catalog.

5) From the lower list box, select the SnapShot of the volume you want to restore. Then click OK.

6) Select the destination volume—the volume to which you are restoring

files.

7) From the pop-up menu, select "Restore entire disk." Click OK.

8) Click Replace to confirm your choice.

9) Click Restore to begin the restore.

10) Click OK if you want to continue the restore.

11) Click OK if you want to continue the restore and replace the contents of the destination volume.

    If you need to cancel a restore before it is completed, you can begin the restore again and Retrospect will perform an incremental restore. Any files you have added manually after canceling the first restore will be deleted when you continue the restore.

12) When the restore is complete, quit Retrospect. Then rebuild the desktop by holding down Command-Option until you receive a confirmation dialog box while you restart the Macintosh. Throw away the System folder named "temp" and empty the trash.

    NOTE: Retrospect does not restore Subvolume definitions. If you need to back up a restored Subvolume again, you must redefine the Subvolume. See "Specifying Subvolumes," in the Retrospect Setup manual for details. You will also have to edit any scripts that included the Subvolume.

WHERE TO GET MORE INFORMATION

Retrospect Remote User's Guide.
Retrospect Setup manual.
Retrospect User's Guide.

Article Change History:
24 Oct 1994 - Reviewed for consistency and updated format.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15928

Tech Info Library

System 7.5: 50 New Features - Brief Description (7/96)

Revised: 7/3/96
Security: Everyone

System 7.5: 50 New Features - Brief Description (7/96)

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Article Created: 02 August 1994
Article Reviewed/Updated: 01 July 1996

TOPIC ----------

This article provides a brief description of the 50 new features in the Macintosh operating system version 7.5.

DISCUSSION ----------

Active Assistance & Customization
==========

Apple Guide

A whole new kind of help system that features active assistance; it walks you through any task one step at a time from start to finish, so you learn by doing.

Macintosh Drag & Drop

Bypass the Cut and Paste commands. Now with drag-and-drop-savvy applications, including the Note Pad, SimpleText, Finder, Desktop Patterns, and Scrapbook, you can simply drag graphics, text, and sound within a document, between documents, between applications, or to the desktop as "clippings" files.

Scriptable Finder

Automate routine and repetitive system tasks with scripts that save you time and help you avoid mistakes.

Enhanced Apple Menus

The Apple Menu now features hierarchical sub-menus so you can quickly access your Control Panel items and your most recently used applications, documents,

and servers.

Faster Than System 7.1

Snappier than ever, 7.5 offers users improved performance when they copy files, launch and switch applications, and access menus.

WindowShade

Cut down on screen clutter -- a simple double click on any window's title bar and zip, the window shrinks to give you access to information behind it.

4 Gigabyte Volume Support

System 7.5 doubles the volume support size from 2 gigabytes to 4 gigabytes so you can store large data, documents, and files in one place. Large volume support is available for some third-party drives.

Finder Hiding

Use the Desktop Hiding feature to keep novice users from becoming confused when they click outside an application and find themselves on the desktop.

Launcher

Improve your productivity by keeping your frequently used applications, documents, and folders in a special floating window for quick access.

Recent Items Folders

Quickly access recently opened documents and applications through a hierarchical Apple menu.

Default Folder For Saving Files

Automatically save newly created documents to a central folder on the desktop so you can find them easily and spend less time looking for them later.

Electronic Notes

Easily make and post notes to your desktop in a variety of colors. Remind yourself of key meetings, phone calls, or important dates. Print or mail your memos with Macintosh Drag and Drop.

New Scrapbook

Now you can change the size and dimensions of the Scrapbook. And when working with drag-and-drop-savvy applications, simply drag items directly from the Scrapbook without cutting and pasting.

New Note Pad

A resizable Note Pad offers increased functions like printing, find file, and

support for Macintosh Drag and Drop. Make and store notes of up to 32K each.

Menu Bar Clock

Display date and day of week in the menu bar in a variety of fonts and colors. Toggle with a double-click between date and time.

System/Application Folder Locking

Lock your System and application folders to keep novice or young users from deleting files, making unwanted changes, or "storing" things in the Trash.

Improved Stability

A more stable system that means fewer bugs, bombs, and crashes for today's Apple computers.

More Colorful Desktop Patterns

Select from dozens of new and more colorful desktop patterns.

Automatic Power Management

Automatically power-off most systems at a specific time or after a predetermined period of idle time. Save time, energy, and hardware life.

Automatic Screen Dimming

Save power on your Energy Star compliant monitor or PowerBook display by having it reduce brightness levels after a pre-determined period of time.

New Audio CD player

New Apple menu item offers you easy access and full control for playing and programming audio CDs.

Sound Manager 3.0

Enjoy 16-bit stereo-quality sound for all your multimedia applications, CD-ROM packages, education software, and more.

Compatibility

Macintosh PC Exchange and Macintosh Easy Open

These powerful utilities are now built into System 7.5 to make it easier than ever for you to exchange information and work with DOS, Windows, OS/2, and Apple II ProDOS disks and data files.

MacTCP

Apple computers take another step to total connectivity with on-board support for TCP/IP, giving you simplified access to UNIX systems and Internet communications.

Advanced Graphics and Printing with QuickDraw GX

Desktop Printers
Work more efficiently with desktop printer icons for all your printers. Drag documents to any printer, check status of print queue, and cancel or move print requests -- all without the complexity of accessing the PrintMonitor or resetting the printer through the Chooser.

Improved Printer Selection
Bypass the Chooser for faster printing. Simply select a printer from a pop-up list in the GX-savvy application's print dialog box and print.

GX Print Enhancers -- Sample Tools
Save on paper and printing with printing extensions that let you, for example, produce thumbnails for previewing output. Additional extensions available from third party companies offer "watermark" printing, double-sided printing, pamphlet maker, and more.

GX Printer Sharing
Save time and money, increase user productivity, and eliminate the need for dedicated workstations for output devices such as plotters. Password protect high-end devices like color printers that use expensive printing materials.

GX Print and View Documents
View and print any document regardless of application type or fonts used and reduce the need for multiple copies of software throughout your organization. Distribute electronic documents for review without risk of the original document being changed.

Built-in ATM GX
Work smarter with all your Type 1 fonts; install QuickDraw GX for better WYSIWYG output every time you print.

What You See Is What You Get (WYSIWYG) Color with ColorSync
Get consistent color-matching between scanners, displays, and printers and eliminate fiddling with color settings and printing multiple drafts just to get the colors right.

European Language Support

Set keyboard, as well as date and time formats, for any one of 18 European languages.

Better Quality Typography

Get professional typography without expert sets and cumbersome search-and-replace routines. Automatically obtain ligatures, fractions, hanging punctuation, and optical alignment when using GX fonts and applications.

Multiple Page Formats

Create multiple formats -- horizontal, vertical, and varied paper sizes -- in a single document when working with GX-savvy applications. What once took several documents can now be done in one.

Font Embedding

Embed fonts in your GX-ready applications for consistent and predictable results when working with service bureaus. Workgroups can now edit design documents without having the document's fonts installed on every workstation.

Collaboration

Built-in AppleMail

Small businesses and workgroups can now obtain built-in peer-to-peer electronic mail without incurring added cost of e-mail software, mail server, or a system administrator.

Support for mail-capable applications -- Compose and send documents directly from within any PowerTalk ready application rather than using separate e-mail software.

Universal Desktop Mailbox

Use the universal mailbox and personal gateways to send, receive, and review all your electronic communications from a single mailbox on your desktop.

PowerTalk Catalogs

Make communicating electronically simple and easy by storing individual and group electronic addresses, phone and fax numbers, and personal notes all in one central location.

DigiSign Digital Signatures

Cut down paper flow and approve documents electronically with built-in DigiSign signature software.

PowerTalk Key Chain Security

Reduce hassles and save time when accessing your password-protected resources such as servers, online services, and e-mail.

With PowerTalk Key Chain, a single password does it all.

Built-in Telephone Manager

New system architecture enables developers to incorporate telephone technologies into applications so users can take advantage of new features as they are released.

PowerBook Enhancements

Intelligent Power Saving

Extend battery life and optimize performance with preset power supply profiles that minimize power consumption when running on battery and maximize performance when using an AC adapter.

File Synchronization

You will always be sure of working with your most recent version of a document. The PowerBook File Assistant utility automatically synchronizes files and folders between your PowerBook and another Macintosh.

Deferred Printing

Create documents for printing while you are on the go; when you reconnect to your selected printer, those documents can be printed.

Sleep Key

Put your PowerBook to sleep at the touch of a single key.

Automatic Server Remounting

Automatically remount servers after your PowerBook comes out of sleep mode without having to use the Chooser or an Alias.

PowerBook Control Strip

Save time with consolidated access to file sharing, AppleTalk, sound level, and other PowerBook features.

Improved Multiple Monitor Control

Save time with this convenient feature that lets you configure external or multiple monitors without restarting your system.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
02 Jul 1996 - Added Fax Doc word
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
27 Jan 1995 - Reviewed for accuracy and format change
07 Dec 1994 - Added keyword, made minor technical changes

Support Information Services

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Tech Info Library Article Number:15929

Tech Info Library

System 7.5: Energy Saving Features (10/96)

Revised: 10/1/96
Security: Everyone

System 7.5: Energy Saving Features (10/96)

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Article Created: 2 August 1994
Article Reviewed/Updated: 1 October 1996

TOPIC ----------

This article describes the Auto Power On/Off control panel installed on any desktop Macintosh computer and which computers are supported.

DISCUSSION ----------

The Auto Power On/Off Control Panel lets you set your Macintosh computer to power ON or OFF at a pre-determined time, on a daily basis or for one particular day. It also has a check box labeled "Automatically restart after power failure." If you check this box and the power goes off, the computer will automatically restart. This control panel first appeared with the Macintosh Quadra 840AV computer in July, 1993.

The Auto Power On/Off Control Panel supports Macintosh computers that use the soft power off (in other words, systems that do not require you to turn the switch off) and the Cuda Microcontroller chip.

Additionally, the Control Panel works with older soft-power capable Macintosh systems that have a version of the Motorola 68HC05 microcontroller chip. Examples of these systems include the Macintosh IIsi, IIvx/IIvi, and the Color Classic.

The following is a list of Macintosh systems that work with the Auto Power On/Off Control Panel that is included with System 7.5:

- Macintosh Color Classic
- Macintosh IIsi
- Macintosh IIvx/IIvi
- Macintosh LC 630
- Macintosh LC 520
- Macintosh LC 550
- Macintosh LC 575

- Macintosh LC 580
- Macintosh LC 630
- Macintosh Quadra 630
- Macintosh Quadra 840AV
- Macintosh Quadra 900/950
- Macintosh Performa 250, 275 (Japan Only)
- Macintosh Performa 520
- Macintosh Performa 550
- Macintosh Performa 560
- Macintosh Performa 570-series
- Macintosh Performa 580-series
- Macintosh Performa 600
- Macintosh Performa 630-series
- Macintosh Performa 640-series
- Macintosh Performa 5200-series
- Macintosh Performa 5300CD-series
- Macintosh Performa 6200-series
- Macintosh Performa 6300-series
- Power Macintosh 5200/75 LC
- Power Macintosh 5300/100 LC
- Power Macintosh 5260/100
- Power Macintosh 6200/75
- Power Macintosh 7100 series including the AV models
- Power Macintosh 8100 series including the AV models
- Workgroup Server 95
- Workgroup Server 8150
- Workgroup Server 9150

You can use the Auto Power On/Off feature in conjunction with other System 7.5 features. For example, you could set your system to power on during the night and run an Apple Script that re-indexes all of your database files or backs up your hard drive.

Article Change History:
01 Oct 1996 - Updated with current models.
22 Jul 1996 - Updated information.
28 Jun 1995 - Added information about restart after power failure.

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Tech Info Library Article Number:15930

Tech Info Library

System 7.5: Backward Compatibility of Modules (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Backward Compatibility of Modules (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC -----

Are any of the new control panels or extensions in System 7.5 compatible with previous versions of system software?

DISCUSSION -----

The additions to System 7.5 were, for the most part, designed to operate specifically under this environment. None of the modules were tested on earlier versions of system software and, though they may function, they are not supported and it is recommended that they only be used with System 7.5.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:15931

Tech Info Library

System 7.5: Overview of New Enhancements (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Overview of New Enhancements (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

This article provides an overview of the new features of System 7.5.

DISCUSSION ----------

The Macintosh System 7 operating system has established a tradition of delivering breakthrough functionality to Macintosh users. Through the regular release of system extensions and enhancements, System 7 has come to offer features such as built-in mail and messaging, multimedia capabilities, support for multiple languages, and the ability to automate routine tasks. It is also the only mainstream personal-computer operating system for RISC (Reduced Instruction Set Computing) based Macintosh computers, such as the Power Macintosh.

With the release of System 7.5, Apple offers even greater power to Macintosh users, providing technology that actively assists you, elegantly simplifies many tasks, offers built-in compatibility with MS-DOS and Windows data files and diskettes, and brings users advanced graphics capabilities. The result is greater productivity and a computing environment more closely tailored to your individual preferences.

System 7.5 offers several significant enhancements that enable greater efficiency and speed – letting you minimize the number of steps it takes to complete a given task. In addition, System 7.5 introduces QuickDraw GX, a sophisticated graphics and printing architecture that represents a major advance in ease-of-use for everyday printing as well as high-end graphics manipulation.

To make it easier to work with others, System 7.5 also builds in collaborative technologies such as electronic mail, catalogs, and electronic signatures via PowerTalk. It also supports industry standards such as DOS and Windows data files, and the TCP/IP protocol. By fitting into your larger computing environment in this way, System 7.5 provides you with a much broader range of

options. Having an open, connected environment is important for many Macintosh users --- as well as DOS and Windows users who are considering Macintosh. They are equally concerned about making choices that will give them the greatest range of future options.

System 7.5 enhancements fall into five major areas:

Active Assistance & Customization:
- Apple Guide
- Macintosh Drag and Drop
- Scriptable Finder
- New productivity features

Compatibility:
- Macintosh PC Exchange and Macintosh Easy Open
- MacTCP

Advanced Graphics and Printing:
- QuickDraw GX

Collaboration Technologies:
- PowerTalk
- Telephone Manager

Mobile Computing:
- PowerBook utilities and enhancements
- PowerTalk support for PowerBook computers

Individual articles have been created for each enhancement listed above. Use the enhancement as a search word in the Tech Info Library for more information.

Article change history:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
09 Dec 1994 - Added keyword and made minor technical updates

Support Information Services

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Tech Info Library Article Number:15932

Tech Info Library

System 7.5: RAM Requirements for 68K and Power Macintosh (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: RAM Requirements for 68K and Power Macintosh (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

What are the memory requirements for System 7.5?

DISCUSSION ----------

For 680x0-based Macintosh systems, System 7.5 without PowerTalk and QuickDraw GX requires a Macintosh Plus or later model with a minimum of 4 MB of RAM; if you’re going to run PowerTalk and QuickDraw GX as well, you’ll need a minimum of 8 MB of RAM and a 68020 processor.

On PowerPC processor–based Macintosh systems, System 7.5 requires a minimum of 8 MB of RAM; when adding PowerTalk and QuickDraw GX, a minimum of 16 MB is recommended.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15933

System 7.5: Overview Of Productivity Features (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Overview Of Productivity Features (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

This article provides an overview of the new productivity features included in System 7.5.

DISCUSSION ----------

System 7.5 includes a host of new features that help Macintosh users reduce complexity and work more efficiently. Some of the features give a glimpse into the future when Macintosh systems will become even smarter about users' preferences:

- Hierarchical Apple menus — enable faster and easier access to items that are kept in folders under the Apple menu. For instance, selecting Control Panels under the Apple menu causes a list of sub-menus to be displayed. A set of "recent items" selections also automatically tracks documents, applications, and servers that were recently used, letting the user quickly refer back to them and open them again.

- The Recent Applications selection shows the applications most recently used and lets them be quickly launched from this menu.

- Stickies — lets users create on-screen electronic notes.

- Finder hiding — lets the Finder be inactive while an application is running; if a user clicks outside a document window, the application still remains selected, thus preventing the novice user from getting "lost" by switching to the Finder or another application.

- Default document folder — automatically saves files to a folder named "Documents" on the desktop, rather than the application folder, making it easier for novice users to keep track of documents.

- System and application folder locking — prevents accidental deletion of important files.

- Updated Scrapbook and Notepad — includes built-in support for Macintosh Drag and Drop.

- Windowshade — lets the user click on a window title bar to hide the window from view, thereby reducing screen clutter caused by many windows being open at once.

- Support for larger hard disk volumes—up to 4 gigabytes.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:15934

Tech Info Library

System 7.5: Apple Guide Description (7/96)

Revised: 7/3/96
Security: Everyone

System 7.5: Apple Guide Description (7/96)

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Article Created: 02 August 1994
Article Reviewed/Updated: 02 July 1996
TOPIC ----------

This article discusses Apple Guide, the new help system integrated into System 7.5.

DISCUSSION ----------

Among the many advanced features of System 7.5 are those that actively help users accomplish specific tasks. Chief among these is Apple Guide, an electronic assistant that leaps beyond traditional help systems and guides you through specific procedures one step at a time, actually leading you through to the completion of the task.

Working with Apple Guide is not unlike working with a teacher or coach -- someone you can ask questions of and who points the way, but lets you take the way yourself. Apple Guide marks a leap from the passive assistance of typical help systems to on-line active assistance that lets you accomplish tasks as you learn how to do them.

With Apple Guide, you can learn how to accomplish new or complex tasks by following on-screen prompts. Apple Guide also provides on-screen “coachmarks” that provide visual clues by circling or highlighting items such as menu selections.

Rather than requiring the you to search an electronic manual that covers an entire application, Apple Guide decides which information to provide to you based on the current context (which window is in front, what item is selected, and so on) For example, Apple Guide automatically skips a step in a process if you have already completed that step, letting you accomplish the task more quickly. It also checks to make sure that you have completed the current step before moving on to the next one.

Apple Guide doesn’t simply offer a text description of various tasks; instead, it prompts you with meaningful queries about specific operations. For instance,

at the desktop level it offers queries that apply to Finder and system operations (How do I change the desktop pattern? How do I share a file? How do I empty the trash?) and then provides hands-on instruction for the selected task.

Apple Guide is also a standard for third-party applications and custom solutions. Since Apple Guide is built into the operating system, it will quickly become the standard way of providing help and access to advanced functionality in many application programs. Apple expects that the majority of software vendors will provide support for Apple Guide in their applications.

Applications that support Apple Guide lead users through the steps required to perform particular operations. This is especially important as applications add more and more features and functionality.

In a page layout application, for instance, a user might want to know how to change a block of text to a different font or import a word processing file into a column. With Apple Guide, the user can learn the steps to complete the operation while actually performing the task and getting work done – rather than leafing through a manual or browsing through on-line help for the relevant topic or working through a tutorial.

Businesses, schools, and other organizations can reduce training and support costs by creating their own Apple Guide databases to lead users through tasks that are unique to their company or organization. For example, a human resources department could use Apple Guide to assist employees in filling out forms electronically -- guiding the user through obtaining the correct form from a network server, filling it out, and sending it to the proper electronic mailbox.

Databases can be created with Guide Maker. Apple will deliver Guide Maker tool as part of the Apple Guide Authoring Kit which is expected to be available through APDA, Apple’s source for developer tools, when System 7.5 is available.

Compatibility

Apple Guide is compatible (can provide assistance) with System 7.5, PowerTalk, and QuickDraw GX. Application programs must be rewritten, and assistance files created in order to take advantage of Apple Guide’s active assistance technology.

Usage Requirements

Apple Guide requires System 7.5.
Apple expects that the majority of software vendors will provide support for Apple Guide in their applications.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
02 Jul 1996 - Added Fax Doc word
09 May 1995 - Added keyword.
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
13 Dec 1994 - Added keyword and new information; minor technical corrections.

Support Information Services

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Tech Info Library Article Number:15936

Tech Info Library

Desktop Patterns: Maximum Supported Image Size (2/95)

Revised: 2/15/95
Security: Everyone

Desktop Patterns: Maximum Supported Image Size (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC -----

What is the maximum image that can be pasted into the Desktop Patterns control panel?

DISCUSSION -----

The Desktop Patterns control panel supports a maximum image size of 64k.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15938

Tech Info Library

System 7.5: Drag and Drop Description (3/95)

Revised: 3/23/95
Security: Everyone

System 7.5: Drag and Drop Description (3/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 23 March 1995

TOPIC ----------

This article provides a description of the Drag and Drop feature of System 7.5.

DISCUSSION ----------

Macintosh Drag and Drop, an enhanced feature of System 7.5, is the Macintosh popularized "cut and paste" functionality -- selecting data in a particular document, cutting it, and then pasting it elsewhere in the document or in another open file. Macintosh Drag and Drop goes a major step beyond this now-standardized approach to create a more simple and intuitive method of manipulating data.

Using an application that supports Macintosh Drag and Drop, you select a block of data (such as text or graphics) from an open file or the desktop and drag it to another location. This eliminates the steps of opening an application, copying the selected data, switching to an open document, and pasting the data elsewhere -- instead, you drag the data where you want it.

Here is how it works with applications that support Drag and Drop: You use a drawing program to create a graphic that you want to add to a word processing document. You select the graphic and drag it into position in the document. The graphic now appears in both the drawing program and the word-processing document -- without copying and pasting.

Or you could drag the graphic onto you desktop, where it becomes a Clippings file that you can drag into other files later. For example, you could save your mailing address or company logo as a Clippings file and easily drop them into any document when you need it.

To provide data translation between different types of applications, System 7.5 also includes Macintosh Easy Open, which automatically translates data when it is moved between differing types of applications when the correct data

translators are present.

Article Change History:
23 Mar 1995 - Made minor technical updates.
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:15939

Tech Info Library

System 7.5: Extension Manager System 7.5 Only Set (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Extension Manager System 7.5 Only Set (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

What is the System 7.5 Only set for in the Extension Manager control panel?

DISCUSSION ----------

The System 7.5 Only extension manager set disables all extensions that are not installed as part of the System 7.5 installation. This helps in troubleshooting any possible extension conflict by letting you disable third party extensions while retaining base functionality of your computer during the troubleshooting process.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
09 Dec 1994 - Added keyword and made minor technical corrections.

Support Information Services

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Tech Info Library Article Number:15940

Tech Info Library

QuickDraw GX: Desktop Printing Overview (3/95)

Revised: 3/23/95
Security: Everyone

QuickDraw GX: Desktop Printing Overview (3/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 23 March 1995

TOPIC ----------

This article provides an overview of the Desktop Printing feature of QuickDraw GX.

DISCUSSION ----------

In QuickDraw GX, a desktop printer takes the form of an icon on the desktop to represent an available printer. When you select a printer with the Chooser, QuickDraw GX displays the desktop printer icon on the desktop. To print a document through a desktop printer, you can simply click a document and drag its icon on top of a desktop printer icon.

You can create multiple desktop printers, one of which represents the default output printer. The last desktop printer that you create automatically becomes the default output printer.

To distinguish the default desktop printer from the other desktop printers on the screen, the icon that represents the default desktop printer appears with a bold outline. When you double-click on a desktop printer, QuickDraw GX displays the desktop printer window.

A desktop printer window shows all print jobs queued for a particular printer. This includes other users' print jobs when the desktop printer is set up to be shared.

You can set up a desktop printer to be shared. For example, you may choose to share a printer, such as the Apple StyleWriter, which is otherwise a non-networkable printer. You can create a shareable desktop printer by choosing the Share Printer command from the Printer menu. QuickDraw GX adds the Printer menu item to the menu bar (to the right of the Special menu) when you click on a printer icon. You can also set up a desktop printer for sharing just like you set up a file for sharing -- by choosing the Sharing command from the File

menu.

You are notified of errors through desktop printers. For example, if a printer runs out of paper, its printer driver sends this status to the desktop printer. If the Finder is in the foreground, the desktop printer displays the Out of Paper alert box on your screen. If the Finder is in the background, the Notification Manager displays a blinking Finder icon over the Application menu. When you click on the Finder icon, QuickDraw GX displays the Out of Paper alert box on the screen.

Article Change History:
23 Mar 1995 - Made minor updates.
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15941

Tech Info Library

QuickDraw GX: X Through Dsktop Prntr In Save/Open Dialog (2/95)

Revised: 2/15/95
Security: Everyone

QuickDraw GX: X Through Dsktop Prntr In Save/Open Dialog (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC -----

I noticed my desktop printer icon has an X through it when viewed through the Save or Open dialog box. Is this normal? It looks fine on the Desktop.

DISCUSSION -----

The desktop printer icon is a container, similar to a folder, but it cannot be saved to. QuickDraw GX and the Finder work together to place an X through the icon in the Save or Open dialog box so that the user cannot open it or save anything to it.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:15942

Tech Info Library

QuickDraw GX: Workaround For Fax Capable Apple Printers (2/95)

Revised: 2/22/95
Security: Everyone

QuickDraw GX: Workaround For Fax Capable Apple Printers (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

Are there any workarounds to let me to use QuickDraw GX and the fax cards in my LaserWriter Select 360 and LaserWriter Pro 810?

DISCUSSION ----------

Currently, QuickDraw GX drivers do not support the fax cards in the LaserWriter Pro 810 and LaserWriter Select 360. There is a workaround to use these fax cards when working in non-GX savvy applications.

1. If you do not have the QuickDraw GX Helper extension, run the GX installer, select custom install, and install the GX Helper extension.

2. Remove any version 7 LaserWriter driver in your extensions folder.

3. If you have not already set up the LaserWriter 8 driver, disable GX, restart, and choose the LaserWriter driver to set up a printer description with a fax card. Re-enable QuickDraw GX and restart your machine.

4. Open an application that does not support QuickDraw GX, in the Apple Menu select "Turn Desktop Printing Off". With GX Helper installed, the LaserWriter GX driver selected in the Chooser passes through to the standard LaserWriter driver and the fax option is available to you.

Note: This workaround does not work with any application that supports QuickDraw GX.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:15943

System 7.5: QuickDraw GX Graphics Overview (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: QuickDraw GX Graphics Overview (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

This article provides an overview of how graphics are handled by QuickDraw GX.

DISCUSSION ----------

Introduction

The QuickDraw GX Graphics engine delivers powerful geometric resources to any Macintosh application. With QuickDraw GX as a building block, software developers can revise and enhance applications more quickly.

The built-in, system-level graphics resources provide applications with sophisticated easy-to-implement graphics and type functionality. Because much of the graphic manipulation overhead is handled by QuickDraw GX, many applications may eventually be significantly smaller in size (if they are targeted for markets where QuickDraw GX is assumed to be a part of the system).

Overview

QuickDraw GX is a geometric-based, resolution and device-independent graphics system. Images are described by geometric structures such as points, lines, and curves. These geometric structures are defined by a fixed-point coordinate system.

The coordinate system does not assume what metric (for example, inches or millimeters) defines the spacing in the system. Therefore, the images can be drawn to any resolution device, such as a monitor or printer, because the graphics system makes no assumptions about spacing.

An analogy to this situation is the difference between screen (bitmapped) and TrueType fonts. Both fonts contain information about how to draw characters on the screen. However, screen fonts are best shown at their predefined point size

on a 72-dot-per-inch (dpi) output device. Attempting to change the font size or draw to a different resolution device can result in rough-edged characters. This problem does not happen with TrueType fonts because they are based on curves.

QuickDraw GX was designed with various output devices in mind. It supports raster, PostScript™, and vector (for example, plotter) devices. There are also many built-in features, such as halftones and dithering, to produce the best image for an output device.

All data structures are private, so that the graphics, line layout, and printing software and hardware on which they run can evolve without disrupting existing applications. Thus, any changes to data structures within QuickDraw GX must be made through a procedural call.

These QuickDraw GX features resolve many of the limitations with QuickDraw. QuickDraw is a bit image, resolution-dependent graphic system. Since many applications write directly to the data structures, there have been numerous compatibility issues. In addition, support for PostScript was added on after QuickDraw was designed, and there is no built-in support for vector devices. Nor are there any special graphic functions such as dithering.

However, QuickDraw GX does not replace QuickDraw. They work side by side. Thus, even if you have QuickDraw GX installed, old QuickDraw applications still work. Graphic calls are routed to the correct part of the graphics system, and both QuickDraw and QuickDraw GX applications can run concurrently.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
09 Dec 1994 - Added keyword and made several minor technical updates.

Support Information Services

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Tech Info Library Article Number:15944

Tech Info Library

QuickDraw GX: Portable Digital Document Description (2/95)

Revised: 2/15/95
Security: Everyone

QuickDraw GX: Portable Digital Document Description (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

This article provides a brief description of the Portable Digital Document feature of QuickDraw GX.

DISCUSSION ----------

A Portable Digital Document (PDD) is a file that contains data to be printed. QuickDraw GX supports the Portable Digital Document (PDD) document file format, which lets you exchange documents with other GX users, who can read and print the documents without having the same application or fonts installed.

QuickDraw GX creates a Portable Digital Document when an application begins the printing process. The process of creating a portable digital document is also referred to as spooling. To create a PDD, select "Print" from the file menu and then select "PDD Maker GX" from the pop-up menu.

Any application can create a PDD, which retains all the font, graphic, and typographic information of the original document. A PDD document can be opened, viewed, and printed from any other Macintosh with QuickDraw GX installed, even if the other Macintosh has not installed the application originally used to create the document.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
09 Dec 1994 - Added keyword and made minor technical changes.

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Tech Info Library Article Number:15945

..TIL15946-QuickDraw_GX-Alteration_Of_Spooled_Printer_Print_Queue_2-95_(TA32192).pdf

QuickDraw GX: Alteration Of Spooled Printer Print Queue (2/95)

Revised: 2/15/95
Security: Everyone

QuickDraw GX: Alteration Of Spooled Printer Print Queue (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC -----

Can I change the order of or remove print jobs from the queue of a printer that I have shared?

DISCUSSION -----

Yes, if the printer has been shared through your computer, you have the ability to delete jobs from the queue. If, however, you are viewing the queue from another workstation, you cannot alter the order or delete jobs from the queue.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:15946

QuickDraw GX: Four Printing Phases Described (2/95)

Revised: 2/15/95
Security: Everyone

QuickDraw GX: Four Printing Phases Described (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

This article provides a description of each of the four printing phases within QuickDraw GX.

DISCUSSION ----------

Application Phase

During the application phase of printing, the application calls QuickDraw GX and interacts with you by displaying dialog boxes to establish printing parameters such as page orientation and paper types.

Spooling Phase

During the spooling phase of printing, the application spools the document pages to disk in preparation for printing. QuickDraw GX sends messages during this phase to notify you when each page is about to be spooled.

Imaging Phase

During the imaging phase of printing, each previously spooled page is rendered into a form that can be printed on the output device. This phase is composed of two processes: despooling and rendering. Despooling is the process by which each previously spooled page is read from the spool file. During rendering, each despooled page is converted into image data that can be printed by the output device. Some rendering messages, known as universal imaging messages, are sent for all imaging systems.

Device Communications Phase

During the device communications phase of printing, the data that represents the rendered form of each page is sent to the output device. Communication with the

printing device is only possible during this phase.

Note: The spooling, imaging, and device communications phases of printing can occur on different devices. For example, an application can spool a document to a printer server on a network, which might then image the document to a disk that is taken to a printing service and printed on a high-resolution printer.

The four printing phases need not occur in a sequential order, with one following the completion of the other. When the same computer is performing both formatting and output of a document, the application and spooling phases are interleaved and the imaging and device communication phases are interleaved. The application initiates the printing of each page and this output is written to a spool file. When the printer is ready, each page is despooled, rendered, and sent to the device.

Printing extensions and printer drivers can override any of the messages that QuickDraw GX sends during each of these phases, allowing a tremendous degree of flexibility in controlling printing on a specific device.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:15947

QuickDraw GX: How Printing Process Works (2/95)

Revised: 2/14/95
Security: Everyone

QuickDraw GX: How Printing Process Works (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

This article provides an overview of the printing process within QuickDraw GX.

DISCUSSION ----------

QuickDraw GX Printing and Messages

Printing with QuickDraw GX is based on a message-passing architecture. QuickDraw GX sends printing messages when certain printing-related tasks need to be accomplished or when certain printing-related conditions arise. A printing message is a notice that a certain part of the printing process is in progress or that a certain printing task needs to be accomplished.
QuickDraw GX sends a large number of printing messages during the printing process, and a printing extension or printer driver might need to respond to make available its features or functionality. For example, a printing extension could respond to a particular printing message called GXDespoolPage to add a date/time stamp to each page. Or a printer driver could respond to the GXOpenConnection message to verify that the corresponding printing device is working properly. This response of intercepting a specific printing message and taking some action is called a message override, which is performed by an override function that is defined in the extension or driver.

Before learning more about how message overrides work, it is important to have an overview of what happens when QuickDraw GX sends a printing message. Because the printing extension or printer driver may respond to a printing message, it is called a message handler. A number of message handlers, including an extension or driver, an application, and QuickDraw GX itself, can respond to printing messages.

Each message handler is part of the message chain, which links the handlers in a hierarchical sequence. Each handler in the hierarchy receives the message and decides whether to respond to the message and whether to forward the message to

the handler below it in the hierarchy.

In most cases, when the printing extension or printer driver overrides a printing message, it performs some operations and forwards the message to the next handler in the message chain. This is called a partial override. (A total override occurs when the message is not forwarded.) Because QuickDraw GX provides a default implementation for most of the printing messages, a partial override is used to add to the response of, or change the result of, the default implementation before or after forwarding the message. For those printing messages that require forwarding, a partial override can be used. If the messages are not forwarded, their default implementation is not invoked, which means that a vital operation might be neglected, potentially resulting in serious errors.

Depending on the nature of a message, a partial override can forward it to the other handlers and then perform the tasks, or it can perform the tasks and then forward it to other handlers. For example, if a printing extension is created that combines eight pages of a document into one page of thumbnail sketches, it needs to override the GXCountPages message, which QuickDraw GX sends to count the pages in the spool file. It forwards this message to let the default implementation count the pages, and the override would then modifies this value. On the other hand, if the extension created adds a background picture to each page as it gets printed, it needs to override the GXDespoolPage message. It adds the background picture to the page after forwarding the message to the default implementation, which would reads the page from the spool file.

QuickDraw GX also provides a number of printing functions that can only be called from within the message overrides that are implemented in the driver or extension. These functions perform a variety of operations, including:

- Displaying status information and printing alert boxes
- Interfacing with the paper trays
- Communicating imaging options between a driver and an application
- Gracefully handling errors that arise during the processing of certain printing messages

The message-passing architecture used for QuickDraw GX printing is supported by the Message Manager, which is a general-purpose software component of QuickDraw GX that can be used when programming for message passing.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:15948

System 7.5: Technical Overview Of QuickDraw GX (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: Technical Overview Of QuickDraw GX (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

This article provides a technical overview of QuickDraw GX.

DISCUSSION ----------

Introduction

QuickDraw GX provides a robust graphics environment, high-quality typography, worldwide text services, and an extensible print architecture that enables easy driver development. It is composed of three major technologies: new graphics capabilities, expanded and easier-to-use print architecture, and very sophisticated typography. QuickDraw GX is not intended to replace QuickDraw.

They coexist, ensuring compatibility with all existing applications.
By supporting high-resolution graphics with its Macintosh systems and LaserWriter printers, Apple started the desktop publishing revolution. With QuickDraw GX, Apple is setting the stage for the next generation in graphics. QuickDraw GX greatly extends and expands the graphics capabilities of the Macintosh, creating a new standard for desktop graphics computing and reaffirming the place of Macintosh as the premier publishing platform in the personal computer industry.

QuickDraw GX offers greater efficiency and power to Macintosh users by providing:

- Device- and resolution-independent graphics. Unlike QuickDraw, QuickDraw GX supports multiple resolutions and a much larger coordinate system for precise and resolution-independent imaging.

- Greatly enhanced graphic capabilities. Because QuickDraw GX is an object-based model (shapes are the basic building block for everything) all graphic primitives can be distorted, or transformed in many ways.

Rotation, perspective, skewing, and scaling are a few of the transforms offered by the system. Colors can also be transformed to allow for transparent overlapping shapes and realistic shading effects. In addition, all of the primitives can have various styles applied to create framed, dashed, patterned, and filled shapes.

- Simplified printing and print management via a new, customizable print architecture and user interface.

- The capability to create “portable” documents from any application, letting other users print and view documents without having the original application or fonts.

- Consistent color between scanners, displays, and printers via ColorSync color management technology.

- Powerful type and text capabilities that, in conjunction with updated or new applications, enable the display and printing of any typeface in any of the world’s myriad script systems.

- Tools for developers that result in new applications that offer greater sophistication in graphics, type, and printing.

Simplified and More Powerful Printing

QuickDraw GX makes Macintosh print functions even more powerful and convenient—with no software upgrades required.

QuickDraw GX lets you to display and control selected printers via printer icons on the Macintosh desktop. To print a document, you can simply drag the file to the desired printer icon. Because multiple printer icons can appear on the desktop, you can choose to send a document to any of a number of printers. An improved print dialog box appears in QuickDraw GX-compatible applications to let you select among multiple desktop printers without having to access the Chooser.

A desktop printer icon behaves much like a file server or other network device icon. Double-click on a printer icon, and a print queue status window appears. You can decide to reorder the print queue or postpone a print job simply by dragging document icons to a new location. You can also transfer print jobs to other printers by dragging document icons to another printer icon. These print management functions replace today’s Print Monitor.

Further benefits come from new printer extensions that can be used with existing applications. These extensions let you customize print output with watermarks and print multiple pages on a single sheet.

Portable Documents

QuickDraw GX supports a new type of document file format, known as a “print and view” document, that facilitates the exchange of documents in electronic form. With this technology, you can create a file, called a portable digital document, that can be opened, viewed, and printed from any other Macintosh with QuickDraw

GX installed.

Even if the other Macintosh doesn’t have the same application or typefaces that were used to create the document, the file retains all of the graphics and typographic information of the original document. No new software is required; portable documents can be created using any of today’s applications.

More Sophisticated Typography

Macintosh gave many users their first opportunity to work with high-quality type. This helped make their written work more readable and effective. Many Macintosh users are now demanding even better typography from their applications, and they want it to be even easier to work with type. Applications that work with QuickDraw GX satisfy both of these demands.

QuickDraw GX raises the standards of type and document composition, making typographic excellence the standard, not the exception. This is because QuickDraw GX automates much of the typographic process. Users who work extensively with type no longer have to determine the proper kerning and justification for a particular block of type, or remember to select special characters (such as ligatures) when typing. These settings and capabilities are built into QuickDraw GX fonts and are handled automatically within applications that support QuickDraw GX.

TrueType GX has an extended set of glyphs that support typographic features such as ligatures, swash characters, fractions, old style numerals, and small caps. Extended sets have been available previously on the Macintosh in collections called "expert sets," but they required multiple fonts and tedious mixing of font selection in order to achieve desired effects. QuickDraw GX provides support for context-sensitive substitution of the glyph used to represent a character, or characters, based on its position within a word or line of text.

The capabilities listed above require extended fonts, with extra glyphs, kerning information, ligature tables, and so on. New fonts can also support an expanded notion of Macintosh “styles.” Similar in capability to Adobe’s Multiple Master technology, these new fonts can support many degrees of boldness, condensing, or other features from one typeface.

Installation, screen display, and printing of fonts is simplified with QuickDraw GX, which includes support for Apple’s TrueType standard as well as a new version of Adobe Type Manager, ATM GX. This lets users select the typefaces they want, whether in TrueType or Type 1 format.

QuickDraw GX also provides extensive, system-level capabilities for the display and printing of any international text system, such as Arabic or Kanji. It doesn’t matter whether the text reads right to left, left to right, vertically, or some combination of the three. QuickDraw GX can even display text that combines different reading directions within the same line.

In addition, QuickDraw GX and WorldScript, Apple’s system technology for international software localization, provide Macintosh developers with a powerful set of tools for the creation and release of equivalent software versions worldwide. Specifically, QuickDraw GX provides support for the display

and graphical manipulation of international fonts and text systems on Macintosh computers. QuickDraw GX fully supports worldwide character sets based on international standards.

Consistent and Predictable Color Matching

It’s easy to create documents that contain color information — most Macintosh computers have color displays and most Macintosh applications are color-capable. The difficulty has been in trying to get the onscreen colors to match the colors produced on a variety of color output devices.

For example, a businessperson might have to redesign an entire presentation when she sees that the contrast between the text and the background color is not nearly as great on the transparencies as it is on the screen. Or a graphic designer might have to rework a design when the colors in a corporate logo come out differently in print than they looked on the screen.

To create better color matching, QuickDraw GX incorporates Apple’s ColorSync color management technology to let color devices and applications input, display, exchange, and output color information consistently and predictably. It matches colors between scanners, displays, printers, and even between Macintosh systems. You can send a color file from one Macintosh with QuickDraw GX installed to another, and the same color matching processes help maintain accurate color display and printout on the second machine.

Compatibility

Apple is committed to protecting customers’ investment in fonts, applications, and hardware while creating a foundation for extensive new features and product development possibilities. Current Macintosh applications and fonts work alongside QuickDraw GX and can take advantage of many of the printing enhancements it provides. Revised and newly-designed applications take full advantage of QuickDraw GX color, type, and graphics.

QuickDraw GX runs on 68020, 68030, or 68040 Macintosh systems and is also optimized for the PowerPC chip, letting applications access the greater speed and performance of the PowerPC technology.

Many of the features of QuickDraw GX, such as improved printing and portable document technology, are available to users immediately. Other features, such as advanced type and graphics, require developers to build these features into new QuickDraw GX-compatible applications.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15949

System 7.5: QuickDraw GX Typography Overview (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: QuickDraw GX Typography Overview (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

This article provides an overview of the typography features of QuickDraw GX.

DISCUSSION ----------

Introduction

With the introduction of QuickDraw GX, Apple delivers feature-rich imaging to the Macintosh. One of the most noticeably enhanced areas of the Macintosh imaging environment is the concept of intelligent fonts. With TrueType GX fonts, Macintosh users can see fonts with capabilities far beyond those of currently available fonts. These include concepts like contextual forms, ligatures that are employed dynamically, fractions, automatic subscripts and superscripts, automatic kerning, full support for international fonts, and the ability to mix Roman and non-Roman fonts on the same line.

The intelligence to support all these features resides in QuickDraw GX and within the fonts themselves. Applications that support QuickDraw GX and use TrueType GX fonts can rely on the imaging system to implement this new feature-rich typographical environment without having to be concerned with the details of how the type is displayed. QuickDraw GX treats text as a set of characters that can be displayed and edited, and as a graphic object that can be colored, rotated, and manipulated like any other graphic object.

Some of the specific typographical capabilities of QuickDraw GX are:

- Creation of layouts from descriptions of text, styles, and other information
- Automatic creation of contextual forms and ligatures
- Manual and automatic kerning, tracking, and letter spacing
- Sophisticated justification with support for Arabic kashidas
- Hit testing within the text
- Determination of the caret(s) for some location within the text

- Support of applications' line-breaking decisions with fast measurement routines
- Automatic reordering and rearrangement of text for languages like Arabic, Hebrew, and Hindi

QuickDraw GX deals with text primarily in "linguistic" terms ("kern by this amount" or "change the orientation of this text in a vertical line") rather than dealing with text primarily in "graphic" terms ("place this glyph at the following (x,y) location" or "set this glyph's rotation to 12 degrees"). The term "layout" is used extensively throughout this document so it is important to understand that layouts (a grouping of text on a single line or the visual ordering of symbols that convey information) are just shapes to QuickDraw GX. As is the case with all other shapes in the graphics system, a layout can be drawn, transformed, dashed, clipped to, and so on. For example, an entire text layout can be rotated by 45 degrees and skewed, yet this transformed layout can still be edited on the fly.

QuickDraw GX has three types of typographical shapes: text shapes, glyph shapes, and layout shapes. All three types of shapes can be used to display text.

Text shapes contain text in one style. Text shapes are the easiest, though least flexible, method for text display. Glyph shapes allow for drawing text in several styles and can be manipulated graphically, such as rotating them. Each glyph within a glyph shape can be drawn at a different angle. Layout shapes are the most sophisticated typographical shape and are the basis for the bulk of the advanced QuickDraw GX typographical features described in this document. Layout shapes use information contained in font tables (within the font itself) to display text with proper spacing, alignment, specialized glyphs for specific positional situations, ligatures, and various directional flows necessitated by many international scripts.

Much of QuickDraw GX layout functionality happens automatically — tables in TrueType GX fonts help control the layout process. By this means, applications can get sophisticated linguistic and layout behavior without having to specify parameters to control it and without having to include code to implement it. Although much of this work happens automatically, there are many ways to control the operation. The QuickDraw GX layout routines let features be turned on or off as desired.

Font vendors can create tables that implement a set of features. This scheme is open-ended; font vendors can create new kinds of tables, and QuickDraw GX automatically takes advantage of them. Applications can query fonts to determine the set of features available. The font also supplies a set of strings identifying the features that can be presented to the user.

Additional information on QuickDraw GX can be found in the Inside Macintosh volume on QuickDraw GX available from Addison Wesley.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:15950

Tech Info Library

System 7.5: PowerBook Utilities And Enhancements (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: PowerBook Utilities And Enhancements (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 14 February 1994

TOPIC ----------

This article provides an overview of utilities and enhancements for mobile computing contained in System 7.5.

DISCUSSION ----------

System 7.5 includes a new set of utilities that extend PowerBook battery life, synchronize files between laptop and desktop systems, and offer convenience features that make mobile computing easier and faster.

- Extended battery life. The PowerBook Assistant gives users increased hours of battery life by providing automatic power management — switching to full performance if the PowerBook is plugged in, and full conservation if it’s not. It also provides for quick and easy configuration of the PowerBook for either performance or battery conservation.

Battery management features include automatic backlight dimming and a permanent RAM disk feature that saves information between restarts and shutdowns.

The PowerBook Control Panel consolidates power-management features.

- Consolidated Control Strip. Because PowerBook control panels are now combined into a single control strip, you have simpler access to controls and can more easily customize your PowerBook systems. The Control Strip can be moved anywhere on the screen. The whole Strip or portions of it can be hidden and you can arrange the modules to fit your preferences. It includes the following modules:

- AppleTalk Switch: Lets you switch AppleTalk on or off without going to the Chooser.

- Battery Monitor: Provides a visual indication of present battery charge

levels, rate of battery consumption, and a digital read-out of battery time remaining. It also displays whether one or two batteries are being used and includes icons that let you know if the batteries are charged, charging, or draining.

– File Sharing: You can switch File Sharing on or off and change the sharing set-up.

–Hard Disk (HD) Spin Down: Lets you spin down the hard disk drive with a single click.

–Power Settings: Using the PowerBook tool bar, you can set your PowerBook system for better conservation or better performance or open the PowerBook Control Panel.

– Sleep Now: Lets you put the PowerBook into sleep mode with a single click.

– Sound Volume: By clicking on the Control Strip’s sound icon and selecting the volume, you no longer need to resort to the Control Panels.

– Video Mirroring: Lets you switch video mirroring on or off without going to the Control Panels. (Icon available only when a PowerBook is attached to an external monitor.)

• File synchronization. The PowerBook File Assistant automatically synchronizes files between PowerBook computers and other Macintosh systems. It gives you the freedom to work with your PowerBook whenever and wherever you want without worrying about whether you have the most current version of a document. The PowerBook File Assistant keeps any two files, folders, or disks synchronized – locally, over a network, or using a floppy disk. It provides “drag and drop” setup and lets you select automated or manual synchronization of data. Synchronization can be one-way or bi-directional.

• Convenience features. Other built-in utilities queue up documents to print as soon as the PowerBook is connected to a printer, and improve mouse tracking by enhancing cursor visibility. A sleep key puts the PowerBook into sleep mode when not in use to preserve battery life. When it comes out of sleep, hard disks and servers are automatically remounted.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.
13 Dec 1994 - Added keyword and made several minor technical changes.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15951

Tech Info Library

QuickDraw GX: Printing To Non-GX Supported Device (2/95)

Revised: 2/14/95
Security: Everyone

QuickDraw GX: Printing To Non-GX Supported Device (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC -----

How do I print to an output device that does not currently have a QuickDraw GX compatible print driver?

DISCUSSION -----

If you have a non-GX driver, you can disable QuickDraw GX via the extension manager and restart. This will let you print using the original driver.

The only other alternative is to check with the vendor of the output device to see if they are planning a GX-compatible driver.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15952

Tech Info Library

QuickDraw GX: Non-GX Print Drivers Not Shown In Chooser (2/95)

Revised: 2/14/95
Security: Everyone

QuickDraw GX: Non-GX Print Drivers Not Shown In Chooser (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 14 February

TOPIC ----------

I have a number of non-QuickDraw GX print drivers in my extensions folder yet they do not appear in the Chooser. How can I access them?

DISCUSSION ----------

When QuickDraw GX is disabled, these drivers appear in the Chooser. They are hidden when it is active because they are incompatible with QuickDraw GX technology.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:15953

Tech Info Library

System 7.5: Overview Of DOS Compatibility (1/96)

Revised: 1/4/96
Security: Everyone

System 7.5: Overview Of DOS Compatibility (1/96)

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Article Created: 02 August 1994
Article Reviewed/Updated: 4 January 1996

TOPIC ----------

This article provides an overview of how with System 7.5 you can read, write, and edit ProDOS, MS-DOS, Windows, and OS/2 files with your Macintosh computer.

DISCUSSION ----------

Macintosh PC Exchange and Macintosh Easy Open are a set of utilities that let ProDOS, MS-DOS, Windows, and OS/2 data files be opened and edited with compatible Macintosh applications. They work in tandem on the Macintosh to let you efficiently exchange data with users on these other platforms.

Macintosh PC Exchange

Macintosh PC Exchange lets you insert a DOS-formatted floppy disk into an Apple SuperDrive and view the disk's contents from the Macintosh desktop — just as if the floppy came from another Macintosh system. When you double-click on a DOS or Windows file to open it, Macintosh Easy Open automatically searches for applications and file translators that are capable of opening it and lists the applications for you. Once an application is selected, Macintosh Easy Open manages the translation and opening of the file.

MacTCP

Besides offering built-in AppleTalk networking, Apple has consistently provided compatibility with all major networking and enterprise systems. Apple builds Ethernet and Token Ring connectivity into its Macintosh systems and also supports a range of options for connecting with networks supporting IBM's SNA, Digital Equipment Corp.'s DECNet, Novell's IPX, and the TCP/IP and OSI protocols.

With System 7.5, Apple is now building in support for TCP/IP (Transmission Control Protocol/Internet Protocol), a major communications protocol for UNIX networking that is implemented pervasively in the higher education and research communities. It is also the standard protocol for the Internet communications network. TCP/IP networking protocols let multi-vendor computers communicate or connect with each other over a network. MacTCP, which has been sold standalone as Apple's standard software implementation of TCP/IP, lets you use your Macintosh to access information on Cray supercomputers, UNIX and Sun workstations, VAX systems, and a variety of hosts. Building MacTCP into System 7.5 ensures that TCP/IP support is readily accessible to the broadest base of Macintosh customers.

DOS Compatibility Card

If you own a Centris or Quadra 610, you can use the original DOS Compatibility Card, which allows you to have a real Intel x486SX processor inside your Macintosh computer.

If you own a Power Macintosh 6100, you can use the DOS Compatibility Card for the Power Macintosh. This card provides the same functionality of the orginal DOS Compatibility Card, but adds Sound Blaster capabilities, Windows 3.1, and an Intel x486DX processor.

If you own a Macintosh 630 computer, a DOS Compatibility Card functionally identical to the Power Macintosh DOS Compatibility Card is available.

These cards give you the advantage of using both MS-DOS/Windows and the Mac OS without a decrease in the Macintosh OS performance.

Third-Party Options

SoftWindows:

If you have a Power Macintosh system, with System 7.5 you can have an additional level of compatibility with DOS and Windows using emulation provided by SoftWindows from Insignia Solutions. SoftWindows comes both as a native PowerPC application, and a 68040 application. Both versions emulate an Intel x86 processor and lets you run DOS and Windows applications on top of the standard MacOS.

Insignia Solutions also provides SoftPC and SoftPC Professional for Macintosh owners without a PowerPC or 68040 Processor.

DOS on Mac:

DOS on Mac by Rely Corporation comes in several configurations depending on the model Macintosh you own. This card is similar to the Apple DOS Compatibility Card, since it provides a hardware solution to run MS-DOS/Window applications.

As a DOS and Windows user you can retain your investment in DOS and Windows data and take advantage of all the additional capabilities of the Power Macintosh

platform.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
04 Jan 1996 - Minor technical corrections.
05 May 1995 - Added 3rd party information.
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-96, Apple Computer, Inc.

Tech Info Library Article Number:15954

Tech Info Library

QuickDraw GX: Default Folder For PDD Maker Files (2/95)

Revised: 2/14/95
Security: Everyone

QuickDraw GX: Default Folder For PDD Maker Files (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

What folder do Portable Digital Document (PDD) files created by PDD Maker default to?

DISCUSSION ----------

Files created by the PDD Chooser extension default to the PrintMonitor Documents folder inside the system folder. The default folder can be changed by selecting the PDD Desktop Printer icon and choosing PDD Maker Setup from the Printing Menu.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:15955

Tech Info Library

System 7.5: PowerTalk Features for PowerBook Computers (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: PowerTalk Features for PowerBook Computers (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

This article provides an overview of the PowerTalk capabilities within System 7.5 available for PowerBook computers.

DISCUSSION ----------

Because PowerTalk software enables collaboration, it is especially useful for those of you who need to communicate with others, whether or not you are connecting to a local area network, a public e-mail service, or directly to another Macintosh computer. Even if you are not part of a network, you can install PowerTalk Personal Gateway Software (available from third parties) to get easy access to fax, pager, and e-mail services, as well as the Internet.

PowerTalk puts everything you need to communicate in one place. You can organize information needed to collaborate —- such as electronic addresses, phone and fax numbers, and supporting notes —- in easy-to-access catalogs that you can take with you wherever you go. Your DigiSign “signer” can also travel with you, enabling you to approve and verify documents — even when you are on the road.

PowerTalk was specifically designed for those of you who frequently connect to a network, work off-line, and then reconnect at a later time. With PowerTalk, you can quickly and easily copy mail from a server, read it off-line, and compose replies. When you reconnect to the network, all messages are sent automatically.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.
13 Dec 1994 - Added keyword and made minor technical changes.

Support Information Services

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Tech Info Library Article Number:15956

Tech Info Library

System 7.5: Where Spooled Documents Are Stored (5/95)

Revised: 5/31/95
Security: Everyone

System 7.5: Where Spooled Documents Are Stored (5/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 31 May 1995

TOPIC -----

Under QuickDraw GX, where do spooled documents reside until printed?

DISCUSSION -----

As with System 7.5 PrintMonitor (Background Printing), documents being printed are stored temporarily in the PrintMonitor Documents folder inside the system folder, located inside the System Folder.

This article was published in the "Information Alley":
Volume II, Issue 3, Page 6

Article Change History:
31 May 1995 - Added Info Alley information; made minor updates.
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:15957

System 7.5: Difference between Print Driver and Extension (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: Difference between Print Driver and Extension (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

This article differentiates between Printing Extensions and Printer Drivers when used in conjunction with QuickDraw GX.

DISCUSSION ----------

Printing Extensions

Printing extensions are add-on software components that can be created to extend the printing capabilities of applications. Printing extensions are used for tasks such as supporting hardware additions, modifying the appearance of printed pages, and allowing the provision of these capabilities without having to write an entire printer driver. When you place a printing extension in the Extensions folder (which is in the System Folder), the extension is available for use.

Printer Drivers

Printer drivers translate the instructions that compose QuickDraw GX shapes and pictures into printed output on a specific output device. Each printer driver sends data and instructions in a form specific to the device that it drives and manages the physical communications with the device. A separate driver must be developed for each hardware device that has different characteristics. Whenever a desktop printer is created, the Macintosh system software loads and uses the driver for that printer.

QuickDraw GX printing extensions and printer drivers are largely data-driven and take advantage of the QuickDraw GX message-based printing architecture.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:15958

Tech Info Library

QuickDraw GX: Printer Sharing And Password Protection (2/95)

Revised: 2/22/95
Security: Everyone

QuickDraw GX: Printer Sharing And Password Protection (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

This article describes password protection for printers under QuickDraw GX.

DISCUSSION ----------

Under QuickDraw GX you have the ability with a password to control access to printers shared on the network. As such, it is possible for users to capture a printer and assign a password to it. A captured and password protected printer is no longer visible to others on the network.

This feature is designed to be used with output devices that utilize specialized or expensive media such as color slide printers.

If a printer has been unintentionally hidden from general network access, it is possible to determine which computer has captured the printer using network monitoring or network management software.

Once the spooling computer has been located, the printer can be returned to general access.

Article Change History:
22 Feb 1995 - Added keyword; made minor technical udpates.
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:15959

Tech Info Library

System 7.5: Scriptable Finder Overview (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: Scriptable Finder Overview (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

This article provides an overview of the scriptable Finder in System 7.5.

DISCUSSION ----------

With the System 7.5 operating system, Apple now builds in its AppleScript scripting technology to let users automate routine or complex tasks — offering the broadest range of scripting options available.

Using AppleScript's "Watch Me" feature in supported applications, you can automate any series of actions — such as reformatting a document or recalculating a spreadsheet. You can also use scripting to easily build custom solutions by combining the most useful features of several applications — for instance, a word processing program could be scripted to automatically retrieve information from a customer database and an accounts payable module to generate a dunning letter.

As of early 1994, 80 software developers have announced support for AppleScript, including Microsoft, Claris, Aldus, ACIUS, Deneba, Great Plains, Symantec, WordPerfect, Alladin Systems, CE Software, and UserLand. By providing "scriptability," their applications can be linked to each other —- and with the Macintosh Finder —- via scripts.

Scripting Desktop Functions

With System 7.5, the Finder also becomes "scriptable", meaning that you can now automate system tasks with your scripts. The Scriptable Finder provides full Object Support Library support to the Macintosh Finder, letting the Finder be scripted and recorded. For instance, using AppleScript and the desktop functions of the Finder, you could create a script that backs up a hard disk onto a server. Taking advantage of the Scriptable Finder, you could also create a script that sets up a File Sharing "drop" folder, automatically enabling File

Sharing, specifying privileges, and creating a folder that can be shared.

Using AppleScript to script the Finder along with scriptable applications, you could automate the process of updating a weekly report. The script could retrieve and open the report template from a departmental server and then go onto the administrator's hard disk and open the most recent budget spreadsheet, selecting this month's figures and copying them directly into the report.

The script could then enter today's date in the report, open the PowerTalk "mailer" attached to the report document, identify people on several different mail services to whom it should be sent, and send it. Once sent, the script can do a "Save As" and name the report with the current date, saving it in an archive folder on the server.

Improvements Over Previous Finder/AppleScript Capabilities

The Finder Event Suite provided with the 7.0 Finder is inadequate for all but the most basic of scripting needs. Providing a Scriptable Finder is the most compelling thing that Apple could do to leverage the power of AppleScript and speech-recognition software.

Components of the Scriptable Finder

The following are components of the Scriptable Finder:

- Full scriptability and recordability of all Finder functions. You can write scripts to do anything that can be accomplished using the standard point-and-click interface currently supported by the Finder. You create sample scripts by turning on recording and using the standard point-and-click interface.

- The Shutdown Items folder found in the System Folder. Items in this folder are automatically run when the system is restarted or shutdown. You may place a custom script in this folder and have it run whenever you shut down your Macintosh. For example, if you have scripts in the Startup Items folder that logs onto servers, creates folders, and copies files, your "Shutdown" scripts could archive these folders and delete them from your desktop.

- Through scripting, the Finder can provide services to third-party applications.

Events and Objects Supported By the Scriptable Finder

Events

In addition to supporting a variety of constructs from the Core suite, the Finder suite defines Apple events for these functions:

- Cleaning up icons
- Ejecting disks
- Emptying the Trash
- Putting away icons

- Restarting a computer
- Shutting down a computer
- Putting a Macintosh Portable or PowerBook computer into sleep mode

Objects

The following objects are supported by the Scriptable Finder:

- Finder aliases
- The Finder application
- Application files
- Containers such as folders and disks
- Windows for Finder containers
- Control panels
- Desk accessories
- The desktop
- Disks
- Document files
- Files
- Folders
- Font files
- Gestalt information
- Info windows
- Keyboard layouts
- Processes
- Script resources
- Sound files
- Suitcases
- The Trash

AppleScript first became available as part of the operating system in System 7 Pro in October, 1993. With System 7.5, AppleScript becomes available to all System 7 users.

The AppleScript Scripter's Kit

System 7.5 includes AppleScript enabling technology to run AppleScripts on your system. However, if you want to create your own scripts, you need to purchase the AppleScript Scripter’s Kit (M1730LL/A), which includes documentation, sample programs, and a third part interface builder. The AppleScript Scripter’s Kit is available where other Apple software is sold.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.
14 Dec 1994 - Added keyword and Scripter's Kit informaiton; minor updates.

Support Information Services

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Tech Info Library Article Number:15960

Tech Info Library

System 7.5: Stickies Description (4/95)

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Security: Everyone

System 7.5: Stickies Description (4/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 7 April 1995

TOPIC -----

What exactly are "Stickies"?

DISCUSSION -----

Stickies are on-screen electronic notes, similar to 3M Post-it brand notes, that can be customized with various colors and stylized text. You can use them to remind yourself of key meetings, phone calls, or important dates. You can print or mail your sticky memos using Macintosh Drag and Drop.

Article Change History:
07 Apr 1995 - Made minor technical updates.
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:15961

Tech Info Library

System 7.5: Telephone Manager Overview (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: Telephone Manager Overview (2/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

This article provides an overview of the Telephone Manager component of System 7.5.

DISCUSSION ----------

Apple’s Telephone Manager has been available to developers for two years and is now built into the operating system with System 7.5. The Telephone Manager is part of the Macintosh Telephony Architecture (MTA), which provides a framework for the integration of personal computers and telephones.

The MTA framework lets developers create sophisticated telephony-based solutions that you can take advantage of with the built-in Telephone Manager support in System 7.5. Solutions include:

Telephony-Aware Applications

Telephony-aware applications that tie software applications to telephone functions. These include applications such as contact managers that can initiate telephone calls, databases that present information automatically based on incoming calls, calendaring programs that automatically dial scheduled conference calls, accounting applications that can automate accounts receivables follow-up phone calls, and electronic-forms applications that let individuals call the originator of a form before approving it.

Screen-based Telephony Applications

Screen-based telephony applications that provide you with an interface for a virtual telephone on your Macintosh desktop. At a basic level, these applications provide an easier-to-use, and better integrated alternative to the keypad on a telephone —- letting you place calls, answer calls, transfer and hold calls, and so on, with a simple, direct-manipulation user interface.

Examples include programs that log call times for professionals charging hourly rates, and phone applications for receptionists who juggle many calls simultaneously. Given how frequently most people use their telephones, these applications can quickly become essential to day-to-day productivity.

Programmed Telephony Applications

Programmed telephony applications that let you script a Macintosh computer to handle incoming calls and interact with callers to create telephone-based information retrieval systems, voice mail, and personal agents.

Telephony applications can be combined with PowerTalk’s catalogs technology for the storage of telephone numbers and other personal information. This provides a real-time application of PowerTalk’s integration of store-and-forward collaboration to the Macintosh user experience.

By offering built-in support for telephony, System 7.5 helps you benefit from the efficiencies of computer-telephone integration.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.
14 Dec 1994 - Added keyword; made minor technical updates.

Support Information Services

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Tech Info Library Article Number:15962

Tech Info Library

System 7.5: Thread Manager Overview (11/95)

Revised: 2/13/96
Security: Everyone

System 7.5: Thread Manager Overview (11/95)

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Article Created: 02 August 1994
Article Reviewed/Updated: 29 November 1995

TOPIC ----------

This article provides an overview of the Thread Manager component of System 7.5.

DISCUSSION ----------

Introduction

The Thread Manager is an addition to the Macintosh Toolbox that enables concurrent programming for true multitasking within an application. The Thread Manager supports cooperative and preemptive threads of execution at the application level, not at the system level.

The Thread Manager has the same rights and privileges as other services in the Macintosh Toolbox. The Thread Manager works on all Macintosh platforms running System 7 or later.

Thread Manager Overview

The Thread Manager has two types of threads: cooperative and preemptive. Additionally, the Thread Manager provides the basic services for creating, scheduling, and deleting threads and for gathering thread status.

Thread

A thread is a sequence of instructions executed in a program. A thread has a program counter and a stack to keep track of local variables and return addresses. A multithreaded process is associated with one or more threads.

Threads share process instructions and most of their data. Threads that share the process state have considerable interaction; it is possible for them to affect each other because there is no system-enforced protection between

threads.

Threads also share the open files; each thread sees the same open files. If one thread opens a file, another thread can read it. If shared data changes, it can be seen by other threads in the process.

Cooperative Threads

Cooperative threads allow cooperative multitasking. They are the most effective to use for scheduling and accessing Toolbox traps. Cooperative threads have the same capability as a standard application when working with memory allocation, file I/O, QuickDraw, and other resources. Operationally, cooperative threads yield to other cooperative threads only when the application explicitly makes one of the Thread Manager yield calls or changes the state of the current cooperative thread.

Cooperative threading in the Thread Manager works similar to the cooperative threading in the earlier Threads Package. The advantage of using the Thread Manager is that thread stacks are register-swapped during a context switch.

Preemptive Threads

Preemptive threads allow true multitasking at the application level. When an application gets control from the Process Manager, preemptive threads for that application are allowed to run.

Preemptive threads differ from cooperative threads because they can interrupt the currently executing thread at any time to resume execution. Preemptive threads can be designed to yield back to the just-preempted cooperative thread using a Thread Manager yield call or to wait for its time quantum to expire.

If the interrupted cooperative thread is in the stopped state, the next available preemptive thread is made to run. Preemptive threads then preempt each other in a round-robin fashion until the interrupted cooperative thread is made ready.

Data Type

Data type is an identifier within the Thread Manager that provides the identity and status of the thread. There are several data types in the Thread Manager. Data types determine the type of thread (cooperative or preemptive), the state of a thread (running, ready, or stopped), and a set of options for creating new threads.

The Main Thread

When an application launches with the Thread Manager installed, the Thread Manager automatically defines the application entry point as the main cooperative thread. The main cooperative thread is commonly referred to as the application thread or main thread.

End of the Thread

When threads finish executing, the Thread Manager automatically disposes of them. Preemptive threads are recycled to avoid moving memory. Recycling a thread causes the Thread Manager to clear out the internal data structure, reset it, and place the thread in the proper thread pool. (There are two pools: one for cooperative and one for preemptive threads.) Since recycling a thread doesn’t move memory, preemptive threads can dispose of themselves and other threads safely.

Requirements

The Thread Manager is part of the Macintosh Toolbox. Thread Manager requires System 7 or later.

Article Change History:
29 Nov 1995 - Added keyword, reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:15963

..TIL15965-Writing_Tools_Group_Inc.pdf

Tech Info Library

Writing Tools Group, Inc.

Revised: 7/29/94
Security: Everyone

Writing Tools Group, Inc.

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Article Created: 29 July 1994

Writing Tools Group, Inc.
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201 Alameda del Prado
Novato, CA 94948

Telephone: 415-382-8000

Telephone: 800-523-3520

Fax: 415-883-1629

Company Profile:
Develops and markets word processing, spelling, grammar checking and dictionary software.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15965

Tech Info Library

AELC: Installing Grady/Writing Center from Backup CD (8/94)

Revised: 8/2/94
Security: Everyone

AELC: Installing Grady/Writing Center from Backup CD (8/94)

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Article Created: 1 August 1994

TOPIC ----------

The Teacher Station of the Apple Early Language Connections (AELC) bundle includes two programs that are NOT installed on the Student stations: Grady Profile and The Writing Center. When I try to reinstall the Teacher software from the Backup CD these two programs are not installed. Why?

DISCUSSION ----------

The Easy Install option on the AELC Backup CD installs only the student software. To install all of the Teacher software, select "Customize" in the Installer, choose "Teacher Software" from the list of available options and click on the "Install" button.

Support Information Services

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Tech Info Library Article Number:15968

Newton Print Pack: Compatible Printers (M-X) (3/95)

Revised: 3/30/95
Security: Everyone

Newton Print Pack: Compatible Printers (M-X) (3/95)

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Article Created: 1 August 1994
Article Reviewed/Updated: 30 March 1995

TOPIC -----

Listed below are printers that will print to a Newton MessagePad when used with the Newton Print Pack.

DISCUSSION -----

Mannesman Tally

Manufacturer	Model	Driver
Mannesman Tally	MT 150/9	FX
Mannesman Tally	MT 150/24	LQ
Mannesman Tally	MT 151/9	FX
Mannesman Tally	MT 151/24	LQ
Mannesman Tally	MT 81	FX
Mannesman Tally	MT 82	LQ
Mannesman Tally	MT 85	FX
Mannesman Tally	MT 86	FX
Mannesman Tally	MT 87	FX
Mannesman Tally	MT 88	FX
Mannesman Tally	MT 92C	DJ
Mannesman Tally	MT 130/9	FX
Mannesman Tally	MT 130/24	LQ
Mannesman Tally	MT 131/9	FX
Mannesman Tally	MT 131/24	LQ
Mannesman Tally	MT 222	LQ
Mannesman Tally	MT 230/9	FX
Mannesman Tally	MT 230/24	LQ
Mannesman Tally	MT 290	FX
Mannesman Tally	MT 330	LQ
Mannesman Tally	MT 340	FX
Mannesman Tally	MT 490	FX

Mannesman Tally	MT 645	FX
Mannesman Tally	MT 661	FX
Mannesman Tally	MT 691	FX
Mannesman Tally	MT 735	LJ II
Mannesman Tally	MT 904	LJ II
Mannesman Tally	MT 905	LJ II
Mannesman Tally	MT 906	LJ II
Mannesman Tally	MT 906WP	LJ II
Mannesman Tally	MT 908	LJ II
Mannesman Tally	MT 911	LJ II
Mannesman Tally	MT 911PS	LJ II
Mannesman Tally	MT 7400C	DJ

NEC

Manufacturer	Model	Driver
NEC	P5XL	LQ
NEC	P6	LQ
NEC	P7	LQ
NEC	P9	LQ
NEC	P20	LQ
NEC	P30	LQ
NEC	P60	LQ
NEC	P70	LQ
NEC	P90	LQ
NEC	P2200	LQ
NEC	P2200XE	LQ
NEC	P3200	LQ
NEC	P3300	LQ
NEC	P5200	LQ
NEC	P5300	LQ
NEC	P6200	LQ
NEC	P6300	LQ
NEC	P8300	LQ
NEC	P9300	LQ
NEC	Silentwriter LC 260	LJ II
NEC	Silentwriter LC 860	LJ II

Okidata

Manufacturer	Model	Driver
Okidata	DOC•IT 3000	LJ II
Okidata	DOC•IT 4000	LJ II
Okidata	LaserLine 6	LJ II
Okidata	MicroLine 184 Turbo	FX
Okidata	MicroLine 280	FX
Okidata	MicroLine 320	FX
Okidata	MicroLine 320 Elite	FX
Okidata	MicroLine 321	FX

Okidata	MicroLine 321 Elite	FX
Okidata	MicroLine 380	LQ
Okidata	MicroLine 390	LQ
Okidata	MicroLine 390 Elite	LQ
Okidata	MicroLine 390 FB	LQ
Okidata	MicroLine 390 Plus	LQ
Okidata	MicroLine 391	LQ
Okidata	MicroLine 391 Elite	LQ
Okidata	MicroLine 391 Plus	LQ
Okidata	MicroLine 393	LQ
Okidata	MicroLine 393 B Plus	LQ
Okidata	MicroLine 393 C	LQ
Okidata	MicroLine 393 C Elite	LQ
Okidata	MicroLine 393 C Plus	LQ
Okidata	MicroLine 393 Elite	LQ
Okidata	MicroLine 393 Plus	LQ
Okidata	MicroLine 520	FX
Okidata	MicroLine 521	FX
Okidata	MicroLine 590	LQ
Okidata	MicroLine 591	LQ
Okidata	MicroLine 3410	FX
Okidata	OkiLaser 400	LJ II
Okidata	OkiLaser 800	LJ II
Okidata	OkiLaser 810	LJ II
Okidata	OkiLaser 820	LJ II
Okidata	OkiLaser 830	LJ II
Okidata	OkiMate 240	LQ
Okidata	PaceMark 3410	FX

Panasonic

Manufacturer	Model	Driver
Panasonic	KX-P1010	FX
Panasonic	KX-P1080	FX
Panasonic	KX-P1080i	FX
Panasonic	KX-P1090	FX
Panasonic	KX-P1091	FX
Panasonic	KX-P1091i	FX
Panasonic	KX-P1092	FX
Panasonic	KX-P1092i	FX
Panasonic	KX-P1093	FX
Panasonic	KX-P1123	LQ
Panasonic	KX-P1124	LQ
Panasonic	KX-P1124i	LQ
Panasonic	KX-P1160	FX
Panasonic	KX-P1180	FX
Panasonic	KX-P1180i	FX
Panasonic	KX-P1191	FX
Panasonic	KX-P1524	LQ
Panasonic	KX-P1592	FX
Panasonic	KX-P1595	FX

Panasonic	KX-P1624	LQ
Panasonic	KX-P1654	LQ
Panasonic	KX-P1695	FX
Panasonic	KX-P2023	LQ
Panasonic	KX-P2123	LQ
Panasonic	KX-P2124	LQ
Panasonic	KX-P2180	FX
Panasonic	KX-P2624	LQ
Panasonic	KX-P3123	LQ
Panasonic	KX-P3124	LQ
Panasonic	KX-P4410	LQ
Panasonic	KX-P4420	LJ II
Panasonic	KX-P4430	LJ II
Panasonic	KX-P4450i	LJ II
Panasonic	KX-P4451	LJ II

Roland

Manufacturer	Model	Driver
Roland	LP-800	DJ II
Roland	PR-1212A	FX
Roland	PR-1515	LQ
Roland	PR-2416	LQ
Roland	PR-2417	LQ
Roland	PR-2465	LQ
Roland	PR-9101	FX
Roland	PR-9104	FX
Roland	PR-9606	FX

Seikosha

Manufacturer	Model	Driver
Seikosha	BP-5420 FA	FX
Seikosha	BP-5460	FX
Seikosha	BP-5780	FX
Seikosha	LT-20	LQ
Seikosha	MP-1200 AI	FX
Seikosha	MP-1350 AI	FX
Seikosha	MP-3000 AI	FX
Seikosha	MP-3005 AI	FX
Seikosha	MP-5300 AI	FX
Seikosha	MP-5305 AI	FX
Seikosha	MP-5350 AI	FX
Seikosha	OP-104	LJ II
Seikosha	OP-108	LJ II
Seikosha	OP-115	LJ II
Seikosha	OP-215	LJ II
Seikosha	Priente 900	FX
Seikosha	Priente 2400	LQ

Seikosha	SBP-10 AI	FX
Seikosha	SBP-10 CX	FX
Seikosha	SBP-10 Plus	FX
Seikosha	SBP-10 TX	FX
Seikosha	SK-3000 AI	FX
Seikosha	SK-3005 AI	FX
Seikosha	SK-3005 Plus	FX
Seikosha	SL-80 AI	LQ
Seikosha	SL-90	LQ
Seikosha	SL-90 AI	LQ
Seikosha	SL-90 Plus	LQ
Seikosha	SL-92 Plus	LQ
Seikosha	SL-130 AI	LQ
Seikosha	SL-210	LQ
Seikosha	SL-230 AI	LQ
Seikosha	SL-270	LQ
Seikosha	SL-532	LQ
Seikosha	SP-10 Plus	FX
Seikosha	SP-185 AI	FX
Seikosha	SP-1600 AI	FX
Seikosha	SP-1900 Plus	FX
Seikosha	SP-2000 AI	FX
Seikosha	SP-2000 Plus	FX
Seikosha	SP-2000 S	FX
Seikosha	SP-2400	FX
Seikosha	SP-2415	FX

Sharp Electronics

Manufacturer	Model	Driver
Sharp Electronics	JX-9500	LJ II
Sharp Electronics	JX-9500H	LJ II
Sharp Electronics	JX-9500PS	LJ II
Sharp Electronics	JX-9550	LJ II
Sharp Electronics	JX-96500	LJ II
Sharp Electronics	JX-9700	LJ II

Star Micronics

Manufacturer	Model	Driver
Star Micronics	LaserPrinter 4	LJ II
Star Micronics	LaserPrinter 8II	LJ II
Star Micronics	LC 10	FX
Star Micronics	LC 20	FX
Star Micronics	LC 24-15	LQ
Star Micronics	LC 24-20	LQ
Star Micronics	LC 24-200	LQ
Star Micronics	LC 24-200 Colour	LQ
Star Micronics	LC 200	FX

Star Micronics	NB 15	LQ
Star Micronics	NB 24-10	LQ
Star Micronics	NB 24-15	LQ
Star Micronics	NX 15	FX
Star Micronics	NX 1000	LQ
Star Micronics	NX 1000 II	FX
Star Micronics	NX 1000 Rainbow	FX
Star Micronics	NX 1001	FX
Star Micronics	NX 1020 Rainbow	FX
Star Micronics	NX 1500	FX
Star Micronics	NX 2400	LQ
Star Micronics	NX 2410	LQ
Star Micronics	NX 2415	LQ
Star Micronics	NX 2420 Rainbow	LQ
Star Micronics	NX 2430	LQ
Star Micronics	StarJet SJ-48	LQ
Star Micronics	XB 2410	LQ
Star Micronics	XB 2415	LQ
Star Micronics	XB 2420	LQ
Star Micronics	XB 2425	LQ
Star Micronics	XR 1000	FX
Star Micronics	XR 1020	FX
Star Micronics	XR 1500	FX
Star Micronics	XR 1520	FX

Tandy/Radio Shack

Manufacturer	Model	Driver
Tandy/Radio Shack	DMP 103	FX
Tandy/Radio Shack	DMP 135	FX
Tandy/Radio Shack	DMP 136	LQ
Tandy/Radio Shack	DMP 240	LQ
Tandy/Radio Shack	DMP 302	LQ
Tandy/Radio Shack	DMP 2103	LQ
Tandy/Radio Shack	DMP 2104	LQ
Tandy/Radio Shack	DMP 2130	LQ
Tandy/Radio Shack	LP 950	LJ II
Tandy/Radio Shack	LP 990	LJ II

Texas Instruments

Manufacturer	Model	Driver
Texas Instruments	875	LQ
Texas Instruments	877	LQ
Texas Instruments	8920	FX
Texas Instruments	8930	FX
Texas Instruments	microLaser	LJ II
Texas Instruments	microLaser Plus	LJ II
Texas Instruments	microLaser Plus PS17	LJ II

Texas Instruments	microLaser Plus PS35	LJ II
Texas Instruments	microLaser PS	LJ II
Texas Instruments	microLaser PS17	LJ II
Texas Instruments	microLaser Turbo	LJ II
Texas Instruments	microLaser XL	LJ II
Texas Instruments	microLaser XL PS17	LJ II
Texas Instruments	microLaser XL PS35	LJ II
Texas Instruments	microLaser XL Turbo	LJ II

Toshiba

Manufacturer	Model	Driver
Toshiba	ExpressWriter 201	LQ
Toshiba	ExpressWriter 420	LQ
Toshiba	ExpressWriter 440	LQ
Toshiba	GX200	LJ II
Toshiba	GX400	LJ II
Toshiba	PageLaser 6	LJ II
Toshiba	PageLaser 12	LJ II

Xerox

Manufacturer	Model	Driver
Xerox	4197 MICR	LJ II
Xerox	4213	LJ II
Xerox	4235	LJ

Support Information Services

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Tech Info Library Article Number:15969

Tech Info Library

Newton OS 1.x: Supported Printers (3/96)

Revised: 3/12/96
Security: Everyone

Newton OS 1.x: Supported Printers (3/96)

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Article Created: 1 August 1994
Article Reviewed/Updated: 12 March 1996

TOPIC -----

What Printers are supported by the Apple MessagePad, MessagePad 100, MessagePad 110, and MessagePad 120 using the Newton OS 1.x?

DISCUSSION -----

The following Apple printers are supported:

- StyleWriter & StyleWriter II
- Personal LaserWriter LS
- Personal LaserWriter 300
- All Apple LocalTalk networkable LaserWriters such as:
  - LaserWriter
  - LaserWriter Plus
  - LaserWriter II, IInt, IIntx, IIf, and IIg
  - LaserWriter Pro 600, 630, and 810
  - Personal LaserWriter 320
  - LaserWriter Select 360
  - LaserWriter 16/600 PS
  - LaserWriter 4/600 PS
  - Color LaserWriter 12/600 PS (not in color)

Non-Apple, networkable laser printers may work with the Apple MessagePad, however these have not been tested by Apple Computer.

The following Apple printers are not supported:

Scribe
ImageWriter I, II, & LQ
Color StyleWriter 2400
StyleWriter 1200
Color StyleWriter Pro

Apple Color Printer
LaserWriter IIsc
Personal LaserWriter SC
LaserWriter Select 300 and 310

Non-Apple printers used with the Macintosh computer that require a serial connection, or are not laser printers, such as the Hewlett-Packard DeskWriter are not supported.

With the purchase of the Newton Print Pack, hundreds of other printers are available. A list of printers that the Newton Print Pack supports is available in the article "Newton Print Pack: Compatible Printers".

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Tech Info Library Article Number:15970

Tech Info Library

LaserWriter Pro 810: Printing From Windows NT (10/96)

Revised: 10/14/96
Security: Everyone

LaserWriter Pro 810: Printing From Windows NT (10/96)

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Article Created: 29 July 1994
Article Reviewed/Updated: 14 October 1996

TOPIC -----

Does the LaserWriter Pro 810 have a printer driver for Windows NT?

DISCUSSION -----

Microsoft includes a print driver for the LaserWriter Pro 810 with Windows NT 3.5, NT 3.51, and NT 4.0.

Since there is not a LaserWriter Pro 810 driver specifically designed for Windows NT 3.1 and Windows NT Adv. Server 3.1, you must choose another Apple LaserWriter from the NT printer driver menu. For example, the Apple LaserWriter IINT or Apple LaserWriter IIg selection will allow you to print to the LaserWriter Pro 810.

Windows NT can print to LaserWriter Pro 810 via IPX/SPX, TCP/IP, AppleTalk, and DEC LAT.

Article Change History:
14 Oct 1996 - Total rewrite of discussion.
22 Apr 1996 - Added Windows NT v3.51 information.
23 Aug 1995 - Made minor corrections.

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Tech Info Library Article Number:15971

Tech Info Library

System 7.5: Enhanced Large Volume Size Support (11/96)

Revised: 11/15/96
Security: Everyone

System 7.5: Enhanced Large Volume Size Support (11/96)

==========

Article Created: 1 August 1994
Article Reviewed/Updated: 15 November 1996

TOPIC ----------

I understand that under System 7.5, the maximum hard drive volume size has been increased from 2 GB to 4 GB. How was this accomplished?

DISCUSSION ----------

A set of modifications to the Finder and HFS were implemented to raise the current maximum volume size of 2 GB to 4 GB. This was done by treating volume sizes as unsigned values. The exact upper limit is 4063 MB. System 7.5.2 (and later) increases this limit to 2 terabytes on some computers, including:

- PowerBook 190, 1400, 5300 series and Duo 2300c/100.
- Macintosh Performa 5400 and 6400 series and 6360/160
- Power Macintosh 5400, 6400, 7200, 7500, 7600, 8500, and 9500 series
- Workgroup Server 7250/120 and Workgroup Server 8550 series

It is not necessary to have SCSI Manager 4.3 installed to take advantage of the larger volume sizes.

Article Change History:
15 Nov 1996 - Added info about terabyte support.
08 Sep 1995 - Added System 7.5.2 volume limit information.
14 Feb 1995 - Reviewed for technical accuracy.

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Tech Info Library Article Number:15972

Tech Info Library

ImageWriter II/L: 32K RAM Buffer Is Not Compatible (8/94)

Revised: 8/1/94
Security: Everyone

ImageWriter II/L: 32K RAM Buffer Is Not Compatible (8/94)

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Article Created: 1 August 1994

TOPIC ----------

I have a 32K RAM buffer for the ImageWriter II, can I use this in the ImageWriter II/L printer?

DISCUSSION ----------

The ImageWriter II/L was redesigned to include a 24K RAM buffer. The 32K RAM buffer designed for the ImageWriter II is not compatible with ImageWriter II/L.

Support Information Services

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Tech Info Library Article Number:15973

Tech Info Library

LaserWriter Pro 630: PC Cable Pinouts and Settings (8/94)

Revised: 8/1/94
Security: Everyone

LaserWriter Pro 630: PC Cable Pinouts and Settings (8/94)

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Article Created: 1 August 1994

TOPIC ----------

I have a LaserWriter Pro 630 connected to a Macintosh using LocalTalk and to an IBM PC using the Serial Port. The LaserWriter Pro 630 is set to Postscript LocalTalk and Postscript Serial 9600,n,8,1,X-ON/X-OFF, Binary. This setup has worked but after being switched off, seems to somehow have lost it's settings. The LaserWriter Pro 630 won't produce a test print with the Serial cable connected. If the cable is disconnected the LaserWriter Pro 630 starts up and produce a test print. I can also print from the Macintosh without problems. However, once the cable is reconnected, the Macintosh computer loses connection to the LaserWriter Pro 630 and the green light constantly flashes.

DISCUSSION ----------

The problem is most likely in the serial cable that connects the PC to the DB-9 port of the LaserWriter Pro 630. If the pinouts are not correctly mapped, then the printer behaves as you described -- flash the green ready light and not print the startup page. Here are the pinout requirements for the cable:

IBM PC/AT DB-9		LaserWriter DB-9
(RXD) 2	--------------	3 (TXD)
(TXD) 3	--------------	2 (RXD)
(DTR) 4	--------------	6 (DSR)
(SG) 5	--------------	5 (SG)
(DSR) 6	--------------	4 (DTR)

In terms of the communications settings, we would suggest thumbwheel switch setting #9 on the LaserWriter Pro 630. It's default parameter set is for PostScript serial 9600, n,8,1,XON/XOFF, binary.

..TIL15974-LaserWriter_Pro_630-PC_Cable_Pinouts_and_Settings_8-94.pdf

Support Information Services

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Tech Info Library Article Number:15974

Tech Info Library

AppleShare 4.0: Control Fonts, Client or Print Server (7/94)

Revised: 8/1/94
Security: Everyone

AppleShare 4.0: Control Fonts, Client or Print Server (7/94)

==========

Article Created: 27 July 1994

TOPIC ----------

In the AppleShare 4.0 Print Server, which system is responsible for having the fonts for a print job, the client system creating the job or the print spooler that the job is going to?

DISCUSSION ----------

The client is responsible for downloading the fonts if required to process a print job. The print server does maintain a list of the fonts available on the printer that the client queries, to determine which fonts are required to be downloaded.

Below is more detail into this printing process:

• The process of workstation to spooler is identical to that of workstation to printer. The AppleShare Print Server keeps a list of the LaserWriter's ROM, RAM, or hard drive resident fonts in RAM and it responds to the workstations FontQuery postscript command exactly as the printer would. If the font isn't in the list, then the workstation sends the font to the spooler, who in turn sends it to the printer.

• The fonts installed on a hard drive to some SCSI capable LaserWriters (IINTX, IIf, IIg, and Pro series) appear as though they were in the LaserWriter ROM. Adobe and Apple designed the hard drive option so the LaserWriter operates transparently, and the user can access the additional fonts without having to download them with utilities.

• There is no relation between the font file in the Print Server's System Folder and the downloaded fonts. If the Print Server's System Folder has the desired outline font, but the printer does not, the workstation will send the font to the spooler along with the job. If the workstation does not have a copy of the necessary outline font, the spooler CANNOT use its own copy and a bitmap version is used (or a substitute font if that option is selected).

• Our FontQuery command is used whether a print server is present or not, and the font list maintained by the print server changes as fonts are downloaded to the printer.

• During the capture process the print server builds its font list for the LaserWriter from the LaserWriter's responds to a FontList postscript command. The list remains until the server is shutdown or the LaserWriter is released. The list is dynamically updated as the spooler downloads files to the LaserWriter.

Support Information Services

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Tech Info Library Article Number:15975

Quadra 660AV: Poor Quality Output From Video-Out (8/94)

Revised: 8/2/94
Security: Everyone

Quadra 660AV: Poor Quality Output From Video-Out (8/94)

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Article Created: 02 August 1994

TOPIC -----

A Quadra 660AV customer gets very low quality output from the video-out port. Using composite or S-Video gives the same low quality.

Since we are in Europe he is using PAL TV-standard, he has tried the different settings in the Monitors Control Panel, but can't get good quality.

Do you have any suggestions?

DISCUSSION -----

While they appear similar, in fact, computer graphics and television video are extraordinarily incompatible. It is a significant achievement for Apple to have bridged these two worlds with a cost effective design. The output that the customer is getting is probably as good as they are going to get with the existing Macintosh video output hardware in the 660AV.

What the hardware has to do is convert a very high quality, 30MHz 640 by 480 pixel 66.7 Hz non-interlaced RGB Macintosh signal into a lower quality 15MHz 768 by 576 line PAL signal interlaced at 50Hz (25 frames per second). There are differences between the total number of active lines the Macintosh produces and the number produced by PAL video. We will produce 576 active lines while PAL video uses about 590. Some lines are blanked and rendered as black. This is necessary to maintain the 3:4 screen aspect ratio with a square pixel graphics model. Unfortunately, the circuitry that we supply on the Macintosh 660AV cannot perform that task at a very high quality and there is no workaround.

The only solution to get high quality video output from the Macintosh 660AV to videotape is to use a third party scan converter. Scan converters will convert an RGB signal to a PAL signal with convolution to eliminate single line flicker. Information about scan converters can be found on AppleLink in the Technical Information Library.

..TIL15976-Quadra_660AV-Poor_Quality_Output_From_Video-Out_8-94_(TA32219).pdf

Support Information Services

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Tech Info Library Article Number:15976

Tech Info Library

QuickDraw GX: How GX Fonts Differ From TrueType Fonts (5/96)

Revised: 5/17/96
Security: Everyone

QuickDraw GX: How GX Fonts Differ From TrueType Fonts (5/96)

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Article Created: 02 August 1994
Article Reviewed/Updated: 16 May 1996

TOPIC ----------

How does a QuickDraw GX specific font differ from a TrueType font?

DISCUSSION ----------

In QuickDraw GX, a letter seen on screen may not actually be representative of a single keystroke on a keyboard. QuickDraw GX introduces Characters, Glyphs, and codes to aid in generating a character or group of characters on screen.

A character is an abstract object having a single and unique semantic or phonetic meaning. A glyph represents the visual, graphical appearance of a character. For example, the glyphs for bold A, italic A, and underlined A are all graphical objects which may all be used to represent the character "A."

A font is a collection of glyphs that usually has some element of design consistency in appearance (such as serifs or stroke thickness), along with other information such as which glyphs represent ligatures or contextual forms.

Glyphs do not have a one-to-one relationship to characters: a given character may be represented by one or more glyphs (for example, "i" could be represented by 2 glyphs: a vertical stem plus a dot above the stem), and two or more characters can display as a single glyph. Context also affects the glyph used to represent a character. For example, in a cursive font a character may have four glyphs: a separate glyph for the character at the beginning, middle, and end of a word, and a glyph for the character in isolation. This is particularly true in context-sensitive written languages such as Arabic.

A complex font contains information associating some glyph indices with certain combinations of characters and rules. For example, information in a font may associate the glyph ID (or code) $1A01 (which happens to have the appearance "fi" - where the f and i are connected as a single character) with the combination of the two characters $0066 ("lowercase f") followed by $0069

("lowercase i"). Any font lacking such associative information is called a simple font. All TrueType fonts released with System 7.0 and System 7.0.1 are simple fonts.

The glyphs in a complex font can be divided into two classes: rendering forms, for which combination rules appear, and character glyphs, which have a one-to-one correspondence with character codes. Rendering forms include ligatures, applied marks, and contextual forms. In general, only character glyphs will contain entries in the font's character-to-glyph mapping table (since QuickDraw GX uses other tables in the font to generate rendering forms).

In order to utilize the new functionality in the QuickDraw GX, fonts must carry font information in the form of font tables describing the attributes for such things as baselines, glyphs, metamorphosis, kashidas, and more. TrueType GX fonts have these font tables.

In addition, a new style variation feature has been added to some fonts.

Font Families

The term font family refers to a group of fonts that share many characteristics. Helvetica, Helvetica Bold, and Helvetica Narrow are examples of fonts in a font family. Previously, a FOND resource was used to indicate font families. QuickDraw GX uses the font name table to detect font families instead of the FOND resource.

Extended Styles

QuickDraw supported the model of a font family with a set of predefined styles. These were plain, bold, italic, condensed, extended, underline, outline, and shadow. When a font was wanted in a certain style, it was left up to the Font Manager to first search for a font in the system that matched the desired style, and if one was not found, to algorithmically create the style from plain.

The new font system supports the model of a font family with an arbitrary number of named styles. Each style represents a designed typeface, such as "Regular," "Bold," "Demibold," and "Extra Condensed." The new graphics system supports variable amounts of algorithmic styling to be applied to the specific typeface supplied by the application.

Style Variations

A new style option is the concept of style variations. Similar in capability to Adobe's Multiple Master technology, these new fonts can support many degrees of boldness, condensing, or other features from one typeface. The font has multiple styles of a typeface built in to itself. The system then can interpolate between the styles to create type with a specific look. A font variation is an algorithmic method for producing a specific style along a variation axis, or range of font styles. That specific instance of a font style would be called a font instance.

Since such latitude exists with a single font, an entire page can be laid out using only one font. However, by varying the style, it will not look monotonous.

In addition, style variation can be used by an application to substitute for a font that is not available in the system and still maintain the same spacing. This avoids reflowing of the document.

Font Files

QuickDraw supported only fonts that were stored as resources. The new font system allows a font to be stored in a file's resource or data fork, or simply handled in memory. In addition, fonts that are stored in files never need to be read into memory all at once, allowing applications to use and edit fonts that need to be disk resident because of their size (for example, Asian fonts, which are about 6 megabytes per font).

Font Names

QuickDraw relied upon the resource name to identify the font families. This made it impossible to have multilingual family names and provided no support for arbitrarily named styles. The new font system supports fonts with multilingual names for their family and style, as well as names describing the typeface itself (Helvetica Bold), a unique name (Apple Computer Helvetica Bold 10), and others.

Open Font Architecture

The new graphics system has been designed to accommodate multiple, separately loadable scalers. Initially, only TrueType and Type 1 (from Adobe) scalers will support this interface, but over time it may be used by other scaler types.

The new scaler interface, Font Scaler API, is defined. The TrueType scaler was modified to adhere to the new interface. Adobe implemented a compatible version of their Type 1 scaler, which will be shipped with QuickDraw GX as part of ATM GX. The new graphics system accommodates the interface, such that the particular scaler will be invoked based upon the font currently selected by the application.

Adobe will store Type 1 fonts as "sfnts" (as TrueType fonts have been), but will include new outline and hinting table(s) for the Type 1 data. In this way, the Font Manager will not need to change to accommodate Type 1 fonts, yet Type 1 fonts will be fully functional under QuickDraw GX.

Article Change History:
15 May 1996 - Corrected the word monotonous.
23 May 1995 - Replaced high ASCII characters with simpler explanations.
14 Feb 1995 - Reviewed for technical accuracy.

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Tech Info Library Article Number:15977

Tech Info Library

PrintMonitor: Suggested Size = N/A (8/94)

Revised: 8/3/94
Security: Everyone

PrintMonitor: Suggested Size = N/A (8/94)

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Article Created: 3 August 1994

TOPIC ----------

I am unable to print. Every time I try to print various errors come up including "not enough memory to print". When I "Get Info" on my PrintMonitor in order to change the memory allocation, it says that the suggested size is "N/A".

DISCUSSION ----------

The PrintMonitor has been corrupted. You will need to replace it. Follow this procedure:

- Locate your original System Software disks that came with your Macintosh computer or the disks that came with your Apple printer.
- Open the Extensions Folder in the System Folder on the hard drive.
- Locate the PrintMonitor and drag it to the trash.
- Empty the trash.
- Drag a new copy of PrintMonitor into your Extensions folder from one of the System Software disks. (The disk name is usually "Printing"). Or you can copy PrintMonitor from one of your Apple printer disks.
- Restart your computer.

**NOTE: Some newer System Software disk sets now only contain compressed files on the disks. The PowerBook 500 series System Software disk set is an example of this. You won't be able to just drag a copy of PrintMonitor from one of these disks because the files need to be decompressed by the Apple Installer.

If you have a Macintosh computer with this type of disk set, follow this procedure:

- Locate your original System Software disks or the disks that came with your Apple printer.
- Open the Extensions Folder in the System Folder on the hard drive.
- Locate the PrintMonitor and drag it to the trash.

- Empty the trash.
- Insert the "Install Me First" disk.
- Double-click on the Installer icon.
- Welcome to the Apple Installer dialog appears. Click "OK".
- Click "Customize".
- Select "Software for All Apple Printers" from the list of options.
- Click "Install".
- Insert the "Printing and Fonts" disk when prompted.
- Re-insert the "Install Me First" disk when prompted.
- Restart your computer.

Support Information Services

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Tech Info Library Article Number:15979

Tech Info Library

Macintosh Basics: Can't Open Files in Mac Basics Fldr (8/94)

Revised: 8/4/94
Security: Everyone

Macintosh Basics: Can't Open Files in Mac Basics Fldr (8/94)

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Article Created: 3 August 1994

TOPIC ----------

When I double-click on a file in the Macintosh Basics folder, my Macintosh tells me it can't be opened because it can't find the application program that created it. Why does this happen? Is my Macintosh missing software?

DISCUSSION ----------

The Macintosh Basics application uses the files in the Macintosh Basics folder only when you are running the Macintosh Basics application. When you not running Macintosh Basics, you don't need to open these files. The files consist of graphics and other items used by the Macintosh Basics application.

The reason why you see the message stated above is that these files were created using an application called MacroMind Director. You probably do not have this application on your hard drive. It is important to note that you do not need MacroMind Director to view these files. These files only need to be viewed when you are running the Macintosh Basics application.

Support Information Services

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Tech Info Library Article Number:15980

Tech Info Library

Power Macintosh: Slow SoftWindows Performance with GeoPort

Revised: 8/3/94
Security: Everyone

Power Macintosh: Slow SoftWindows Performance with GeoPort

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Article Created: 03 August 1994

TOPIC --------------------

This article describes workarounds addressing slow SoftWindows performance on a Power Macintosh using the GeoPort Telecom Adapter and the Express Modem software.

DISCUSSION --------------------

SoftWindows performance can slowdown between 25% - 50% when the Express Modem software is enabled and waiting for a call. Either Fax Terminal or a data communication program set to auto answer can also cause this behavior.

If you do not need to use a modem while using SoftWindows, configure SoftWindows to ignore the modem port by going to the “Setup Menu,” choosing “PC Serial Ports” and setting “COM1” and “COM2” to NONE. This should keep SoftWindows from accessing the serial ports which subsequently will turn on the Express Modem software. Also, be sure that fax receive is turned off in the Fax Terminal program.

In most circumstances, use Macintosh Modem software for better performance. The overhead of x86 emulation in SoftWindows and emulating a modem extract a heavy performance toll when using DOS communication programs.

Support Information Services

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Tech Info Library Article Number:15981

Tech Info Library

MAE: How To Enhance Performance (8/94)

Revised: 8/3/94
Security: Everyone

MAE: How To Enhance Performance (8/94)

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Article Created: 1 August 1994

TOPIC ----------

Are there some things about installing MAE that might help performance? I loaded the MAE demo version on my Sparcstation 20 this morning. My first impression of the software is that it's a very slow emulator, for example window and menu operations are sluggish. I may not have everything set up correctly for the Sparcstation and/or MAE. The Sparcstation has 64 MB of RAM and 2 GB of disk space. MAE was set for 20 MB of RAM. MultiSpec was set for 3 MB of RAM.

Following are the timing comparisons for a 2-class, 7-channel classification of 28,561 pixels. This was done using the non-coprocessor version of the MultiSpec application since the 68881 is not emulated.

Sparcstation 20/MAE	2400 seconds.
Macintosh IIfx	161 seconds.
Macintosh IIfx using 68881	15 seconds.
Power Macintosh 8100 native mode	2 seconds.

DISCUSSION ----------

We think the following settings should speed your MAE graphics performance to about Macintosh IIci speeds. These settings are for a Sun workstation running Solaris 2.3. We suggests as Root user adjusting the file "/etc/system" to include the following:

Note: These are merely suggestions, you should take your specific environment into consideration as well.

```
set maxusers=# (# = a numerical value i.e. 20, 32, and so on)
set shmsys:shminfo_shmmax=8388608
set shmsys:shminfo_shmmin=1
set shmsys:shminfo_shmmni=200
set shmsys:shminfo_shmseg=12
```

We are assuming your System Folder and other files and directories are NOT on remote NFS disk space/mount points.

Support Information Services

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Tech Info Library Article Number:15982

Tech Info Library

PC Exchange 1.0.5: Modified File Dates Problem (8/94)

Revised: 8/3/94
Security: Everyone

PC Exchange 1.0.5: Modified File Dates Problem (8/94)

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Article Created: 2 August 1994

TOPIC ----------

When I insert a PC disk into the disk drive, and open a file using an open dialogue box with PC Exchange 1.0.5, all of the modification dates of the files on the disk are then changed to the current date on the Macintosh. It is important to be able to retain the original document creation date. Will PC Exchange 2.0.1 corrects this problem?

DISCUSSION ----------

We were able to duplicate the problem and verify that it has been fixed in Macintosh PC Exchange 2.0.1 and later. Below are the steps used to test PC Exchange 1.0.5 and 2.0.1.

System configuration: Quadra 610 DOS Compatible, 8MB RAM with a 160 MB Hard drive, and System 7.1.

1) Formatted 2 floppies on a Dell 486DX/50, hereafter called Disk 1 and Disk 2.
2) Copied various files to Disk 1.
3) Copied Disk 1 to Disk 2.
4) Loaded Macintosh PC Exchange 1.0.5 on Quadra 610, and restarted computer.
5) Insert Disk 1 into Quadra 610, and launched SimpleText.
6) Select "Open" from "File" menu.
7) When STDFile Open Dialog box comes up, click "Desktop" button, then double-click Disk 1.
8) Open text file on Disk 1 from SimpleText.
9) Close text file without modifying and quit SimpleText.
10) Open Disk 1 from the Finder, viewed by name and found all modified dates changed to current date and time.

We then tested Disk 2 with PC Exchange 2.0DC.

1) Loaded Macintosh PC Exchange 2.0DC on Quadra 610, and restarted computer.
2) Insert Disk 2 into Quadra 610, and launched SimpleText.
3) Select "Open" from "File" menu.
4) When STDFile Open Dialog box comes up, click "Desktop" button, then double-click Disk 2.
5) Open text file on Disk 2 from SimpleText.
6) Close text file without modifying and quit SimpleText
7) Open Disk 2 from the Finder, viewed by name and found all modified dates have not changed.

The results were the same for Macintosh PC Exchange 2.0.1 as they were for Macintosh PC Exchange 2.0DC, it looks like the problem has been fixed.

Support Information Services

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Tech Info Library Article Number:15983

AppleDesign Keyboard: Technical Specifications (8/94)

Revised: 8/3/94
Security: Everyone

AppleDesign Keyboard: Technical Specifications (8/94)

==========

Article Created: 2 August 1994

TOPIC --------------------

This article provides the technical specifications for the AppleDesign Keyboard.

DISCUSSION --------------------

Keys

• Total of 105
  - 60-key alphanumeric keypad (47 printing keys)
  - 18-key numeric keypad (16 printing keys)
  - 4-key inverted T-style cursor-control keypad
  - 15 programmable function keys
  - 6 special screen-editing keys
  - Escape key
  - Power-on/Reset key

Dimensions

• Height (maximum): 1.6-in. (4.1 cm)
• Width: 18.7-in. (47.5 cm)
• Depth: 6.9-in. (17.5 cm)
• Weight: 2.7 lb. (1.2 kg)
• Keyboard Angle:
  - Maximum: 12 degrees
  - Minimum: 6 degrees
• Height of home row: 1.2-in. (3.0 cm) (in the down position)
• Typical distance between keys: 0.75-in (1.9 cm)

Other Specifications

• Total key travel: approx. 4.5 cm
• Peak tactile force: >0.75 N

- Keyswitch minimum life: 10 million cycles
- Connector: Apple Desktop Bus (ADB) 4-pin minicircular
- Indicators: Three LEDs
- Cable Length: 6 ft. (1.8 m), attached

Power Requirements

- LEDs on: 150 mA typical

Environmental requirements

- Storage temperature: -90 to 140 degrees F (-40 to 60 degrees C)
- Operating temperatue: 50 to 104 degrees F (10 to 40 degrees C)
- Humidity: 95% maximum, noncondensing, typical

System Requirements

- Any Apple personal computer with an ADB interface

Product Details

- The keyboard has 15 function keys (F1-F15) and 6 special screen-editing keys (Home, Page Up, Page Down, Forward Delete, End, and Help)
- The function keys are operative with a Macintosh application that supports them, a remapping tool, or an MS-DOS application with the appropriate coprocessor card or software application.
- Remapping tools are available for configuration of the function keys. Macros can be defined for specific applications or globally for all applications. See your authorized Apple representative for details regarding these macro utilities.
- The Caps Lock LED is operative in the Macintosh environment. The Num Lock and Scroll Lock LEDs are used by some third-party applications and in alternate operating systems.

Support Information Services

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Tech Info Library Article Number:15984

Tech Info Library

Newton Connection Kit: Disk Errors Occur When Exporting (8/94)

Revised: 8/3/94
Security: Everyone

Newton Connection Kit: Disk Errors Occur When Exporting (8/94)

==========

Article Created: 2 August 1994

TOPIC -----

I am using the Newton Connection Kit 2.0 with my Quadra 700, and everytime I try to export into the DateBook Pro format, I get a disk error message. What is wrong?

DISCUSSION -----

Remove any digital ink from the Calendar application on the Newton MessagePad, and the problem goes away.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15985

Tech Info Library

Power Macintosh: About This Macintosh and Virtual Memory 8/94

Revised: 8/4/94
Security: Everyone

Power Macintosh: "About This Macintosh" and Virtual Memory 8/94

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Article Created: 04 August 1994

TOPIC -----

When virtual memory is enabled, the "About this Macintosh" memory is more than expected. For example, using a Power Macintosh 6100/60, virtual memory set to 16MB, but his “About” info window says he has 17,228.

Even taking into account the 1024k memory value instead of 1000, the memory allocation does not add up. What is taking up the additional memory?

DISCUSSION -----

The total memory value in "About this Macintosh" is obtained from the "lram" (logical RAM) Gestalt selector. This number is calculated slightly different on the Power Macintosh due to memory used by the NanoKernel (68K emulator). An adjustment to the number is performed to yield the best possible estimate of the remaining RAM as shown in the value for the largest unused block.

The discrepancy in values returned from different machines are usually caused by various color depth settings for on-board video. The expected discrepancy for the NanoKernel should be around 870K.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:15986

Macintosh Monitor Sense Codes: Technical Description (7/96)

Revised: 3/19/97
Security: Everyone

Macintosh Monitor Sense Codes: Technical Description (7/96)

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Article Created: 04 August 1994
Article Reviewed/Updated: 02 July 1996

TOPIC ----------

The following article is based on a Macintosh Tech Note titled "HW 30 - Sense Lines" originally written by Rich Collyer and Blake Roberts. It provides a detailed explanation of the standard and extended sense codes used to determine which monitor is connected to a particular Macintosh computer or video card.

DISCUSSION ----------

Sense Lines

The sense line protocol was implemented when Apple recognized the need for a mechanism that would allow a display card to identify the monitor connected to it. For example, the built-in video display circuitry on CPUs such as the Macintosh Quadras and the PowerBook 160 and 165c can configure itself according to the monitor that is connected at boot time. The identification scheme works fine, but there is one problem. There are only three sense lines and this limits the number of different monitors to seven plus the no-connect case. To overcome this limitation, newer display cards and built-in video use extensions to the sense line scheme that allow for new codes.

The first extension, type-7, is based on the following idea: When the display circuitry senses a configuration that in the original scheme signals “no display connected” (i.e. when none of the three sense lines are grounded), the card pulls down each sense line, one by one, and reads what the other lines return. To return a unique code, the only requirement is that the sense lines be interconnected, in the cable or the monitor itself, by wires or diodes. The beauty of this idea is that existing monitors are detected correctly and newer monitors can have their own encoding. The circuitry for detecting new monitors is relatively simple and has no active components. Adding the encoding to new or existing monitors involves only inexpensive diodes and wire. The type-6 extension has a similar approach.

The Original Scheme

In the original scheme, the display circuitry determines the type of monitor attached by reading three sense lines and comparing the signal value to ground. By convention, the sense lines are identified as 2, 1, and 0. Given three lines and two different states, on or off, there are a total of eight possible combinations. For a monitor to be recognized, a sense line on the monitor side is connected to ground to be read as a binary 0, or left unconnected to be read as a binary 1.

The first seven monitors listed in Table S-1 show the required sense line states for them to be recognized using the original sense line scheme. It’s worth noting that monitors using the original scheme need only have their sense lines read once to determine the monitor type. As new monitor types became available for the Macintosh, the extended sense line protocol was implemented.

Extended Type-7 Sense Codes

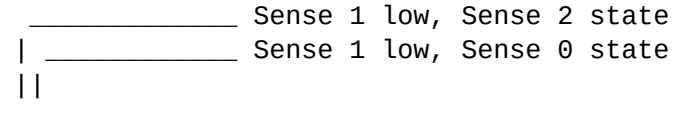
The extended sense line protocol is one of those oddities of software engineering that at first seems to defy logic. The protocol sets a standard for defining a 6-bit binary number that represents how the sense lines must respond for the monitor to be recognized correctly.

With this unusual introduction, let’s step back. Under the original scheme, sense lines were compared to ground to determine their state. To reiterate, with three pins there are a total of eight possible combinations, 000 (all grounded) to 111 (none grounded). Seven combinations of the sense line states are assigned to early monitor types. The eighth combination, 111 (signifying "no display connected" in the original scheme), is used to signal the extended type-7 sense line code protocol. This is also known as the no-connect sense line code protocol. The type-7 designation derives from the fact that the three sense lines are high relative to ground and can be represented in binary format as 0b111 or $07.

To implement the type-7 sense line protocol, the sense lines get tied to each other within the monitor using a combination of straight wire and/or diode connections. When the display system software reads the state of the three monitor sense lines and finds that none of them are grounded, it begins dynamic polling. The software tells the video card/hardware to assert each sense line and read the other two lines. Instead of being compared to ground, each line is compared to the asserted line. If a sense line has the same state as the asserted sense line, the state equates to a binary 0, otherwise it is binary 1.

The diagram in Figure 1 illustrates the type-7 sense line protocol notation. There are three pairs of binary numbers. Each pair of binary digits represents the relative state of two sense line pins to the third, which is held low. The pairs are always in the order: sense 2 low, sense 1 low, sense 0 low. Each bit in a pair is sense line specific, with the higher sense line bit to the left.

Begin_Graphic



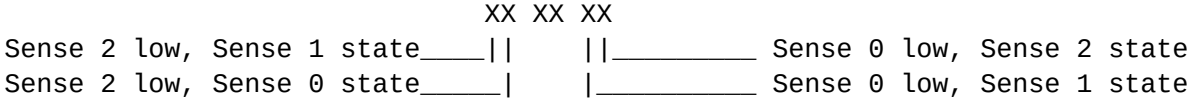


Figure 1—Extended Type-7 Sense Line Decode Method

End_Graphic

Extended Type-6 Sense Line Protocol

With the implementation of the Display Manager, the sense line protocol was extended further for a new family of monitors. The same method that gives the extended type-7 sense line protocol its designation applies to the three cases where one sense line is grounded. For the extended type-6 sense line protocol, pin 4, i.e. sense line 0, is grounded to pin 11 (see Table S-3) and the binary notation is expressed as 0b110 ($06) with the least significant bit representing sense line 0.

From Table S-1 below, note that the sense line configuration for this case corresponds to the Apple Hi-Res monitor. To extend the support of monitors in this family, one can add three new codes by connecting sense lines 1 and 2 with a jumper, or a diode in either direction. These new extended type-6 sense codes support three new monitor types which are capable of supporting the standard 640x480 resolution and other resolutions. See "Multiple Scan Monitors" below.

Multiple Scan Monitors

The Power Macintosh VRAM expansion cards include support for three new monitor types which use the extended type-6 sense codes. These new types are multiple scan rate monitors which can display in multiple screen resolutions. The VRAM expansion cards being shipped with the Power Macintosh units will support the multiple scan monitors with the resolutions listed in Table 1. Note that the Apple Multiple Scan 17 Display is sensed as a multiple scan 16 display type and the Apple Multiple Scan 20 Display is sensed as a multiple scan 21 display type.

Begin_Table

Table 1 Supported Multiple Scan Screen Resolutions

Monitor Type	Screen Resolution	Frame Rate (Hz)
Multiple Scan 14	640 x 480	66.67
	832 x 624	74.55
Multiple Scan 16	640 x 480	66.67
	832 x 624	74.55
	1024 x 768	74.93
Multiple Scan 21	640 x 480	66.67
	832 x 624	74.55
	1024 x 768	74.93

	1152 x 870	75.08

Summary

The three tables below summarize the contents of this tech note.

Table S-1 Sense Line Code Assignments

Monitor Type	Sense 2	Sense 1	Sense 0	Frame Rate (Hz)
RGB 21"	0	0	0	75.08
Full-Page (B&W 15")	0	0	1	75.08
RGB 12"	0	1	0	60.15
Two-Page (B&W 21")	0	1	1	75.08
NTSC Monitor	1	0	0	59.94 †
RGB 15"	1	0	1	75.08
Hi-Res (12-14")	1	1	0	66.67
Multiple Scan 14" *	1	1	0	See Table 1
Multiple Scan 16" *	1	1	0	See Table 1
Multiple Scan 21" *	1	1	0	See Table 1
No Display Connected	1	1	1	NA
PAL Encoder *	1	1	1	50.00 †
NTSC Encoder *	1	1	1	59.94 †
VGA *	1	1	1	59.94
Super VGA *	1	1	1	55.98
RGB 16" *	1	1	1	74.55
PAL Monitor *	1	1	1	50.00 †
RGB 19" *	1	1	1	74.93

End_Table

* These monitors require extended sense line support.
† Interlaced timing.

Note: The binary values in this table indicate the relative state of the sense pin measured against monitor ground, pin 11, on the DB-15 connector depicted in Table S-3 below.

Begin_Table

Table S-2 Extended Sense Line Code Assignments

Monitor Type	Sense 2 Low 1 & 0	Sense 1 Low 2 & 0	Sense 0 Low 2 & 1
Multiple Scan 14" *	00	00	11
Multiple Scan 16" *	00	10	11
Multiple Scan 21" *	10	00	11
PAL Encoder	00	00	00
NTSC Encoder	01	01	00
VGA/Super VGA	01	01	11

RGB 16"	10	11	01
PAL Monitor	11	00	00
RGB 19"	11	10	10

* Type-6

End_Table

Note: In this table, the column under "Sense 2 Low 1 & 0" indicates the values the software is reading from monitor sense lines 1 and 0 while driving sense line 2 low. Suppose you have a PowerBook 180c and you want it to believe there is an Apple 16" RGB monitor attached. The sense line code in Table S-2 for this monitor is 10 11 01. As shown in Figure 3, this sense code equates to sense line 2 being connected to sense line 0 with a jumper. Based on Table S-3, your tying pin 4 to pin 10 will make the PowerBook think that the 16" monitor is attached. It’s important to recognize that pins 4 and 10 in this example must not be tied to ground, otherwise a 12" RGB monitor would be indicated.

Begin_Table

Table S-3 Signal Assignments for the DB-15 External Video Connector

Pin	Signal Name	Signal Description
1	RED.GND	Red Ground
2	RED.VID	Red Video Signal
3	/CSYNC	Composite Sync Signal
4	SENSE0	Monitor Sense Line 0
5	GRN.VID	Green Video Signal
6	GRN.GND	Green Ground
7	SENSE1	Monitor Sense Line 1
8	n.c.	Not Connected
9	BLU.VID	Blue Video Signal
10	SENSE2	Monitor Sense Line 2
11	C&VSYNC.GND	Ground for CSYNC & VSYNC
12	/VSYNC	Vertical Sync Signal
13	BLU.GND	Blue Ground
14	HSYNC.GND	HSYNC Ground
15	/HSYNC	Horizontal Sync Signal

End_Table

Further Reference:
• Guide to the Macintosh Family Hardware, Third edition, Video Displays
• develop Issue 3, “Macintosh Display Card 8•24GC: The Naked Truth”
• Technical Note M.HW.ColorMonitors—HW 8 - Color Monitor Connections

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a

week.

Article Change History:
02 Jul 1996 - Added Fax Doc word
15 Nov 1995 - Added information about Multiple Scan 14.
09 Aug 1995 - Reformatted to make more readible on the World Wide Web.
06 Apr 1995 - Corrected Multiple Scan 15 product name.

Support Information Services

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Tech Info Library Article Number:15987

Tech Info Library

Apple PowerCD: Future Plans (8/94)

Revised: 8/4/94
Security: Everyone

Apple PowerCD: Future Plans (8/94)

==========

Article Created: 3 August 1994

TOPIC -----

Are there any plans for a follow on product to the Apple PowerCD?

DISCUSSION -----

The PowerCD was discontinued as of February 14, 1994. The PowerCD is no longer in stock or available for dealers to purchase. There are no plans to build future versions of the PowerCD.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15988

Tech Info Library

Color StyleWriter Pro: Error Due to Amount of RAM (1/95)

Revised: 1/13/95
Security: Everyone

Color StyleWriter Pro: Error Due to Amount of RAM (1/95)

==========

Article Created: 4 August 1994
Article Reviewed/Updated: 13 January 1995

TOPIC ----------

I recently added additional memory to my Power Macintosh computer, so it now has 72 MB of RAM. When I try to print, to the Color StyleWriter Pro, I get a -39 error. If I pull out two of the SIMMs, the problem goes away.

DISCUSSION ----------

This is a known problem with the Color StyleWriter Pro driver v1.5 and how it handles it memory space. This problem is documented in the Color StyleWriter Pro v1.5 ReadMe document. To correct this problem, use the Color StyleWriter Pro driver v1.5.2.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
13 Jan 1995 - Added information on new printer driver.
09 Dec 1994 - Added information on System Update 4.0.

Support Information Services

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Tech Info Library Article Number:15989

Tech Info Library

LaserWriter Pro 630: Changing Resolution With PostScript (2/95)

Revised: 2/8/95
Security: Everyone

LaserWriter Pro 630: Changing Resolution With PostScript (2/95)

==========

Article Created: 4 August 1994
Article Reviewed/Updated: 8 February 1995

TOPIC ----------

I have a LaserWriter Pro 630 connected to a UNIX workstation using a serial connection. I would like to change the printing resolution from 300 to 600 dpi using PostScript. What is the PostScript code I need to do this?

DISCUSSION ----------

The following PostScript code changes the printer's resolution to either 300 or 600 dpi. The PostScript array, [xxx xxx], contains two values, for vertical and horizontal resolution. These values must be the same, either both are 300 or 600.

Caution:
========
If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

You may change the resolution for a specific print job, or make the change persistant across print jobs.

To change the resolution for a particular job, include the following code in your print job:

```
  Change to 600 dpi
    1 dict dup /HWResolution [600 600] put setpagedevice

  Change to 300 dpi
    1 dict dup /HWResolution [300 300] put setpagedevice
```

To make the settings persistent across jobs, (settings remain until you change it with other PostScript code or a utility that changes the resolution), execute the command outside the server loop:

```
  Change to 600 dpi
    serverdict begin 0 exitserver
    1 dict dup /HWResolution [600 600] put setpagedevice

  Change to 300 dpi
    serverdict begin 0 exitserver
    1 dict dup /HWResolution [300 300] put setpagedevice
```

Article Change History:
08 Feb 1995 - Added PostScript caution message

Support Information Services

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Tech Info Library Article Number:15990

Tech Info Library

Internet: BinHex Translation Error (1/97)

Revised: 1/9/97
Security: Everyone

Internet: BinHex Translation Error (1/97)

==========

Article Created: 4 August 1994
Article Modified/Updated: 9 January 1997

TOPIC --

This article describes the “improper BinHex format” error that occurs when downloading files from Internet ftp servers and gives methods of avoiding future errors.

DISCUSSION --

Customers may complain of BinHex translation problems when they attempt to download software from ftp.info.apple.com (Apple's primary ftp site for Apple software updates) or other Internet sites.

In most cases, the customers will get half way through the download then have a BinHex related error message.

SOLUTION:

1) Update software -- In most cases, this error occurs when software packages like Fetch are being used. Older versions of Fetch tend to produce this error. If customers update to Fetch 3.0.1 (or the latest version of their client of choice), the problem is usually resolved.

2) Turn BinHex translation off -- BinHex (signified by .hqx) documents are large text files. If the first few lines of text are not what the BinHex translator expects, it will produce the “improper BinHex format” error. If this is the case, turn BinHex translation off, download the file as a binary, then use something like StuffIt Expander (freeware) to do the BinHex translation. It is generally more robust and able to see past many improper .hqx formatting errors.

Article Change History:
09 Jan 1997 - Updated to reflect latest information

..TIL15991-Internet-BinHex_Translation_Error_1-97_(TA32232).pdf

Support Information Services

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Tech Info Library Article Number:15991

Tech Info Library

MAE: Architecture (8/94)

Revised: 8/4/94
Security: Everyone

MAE: Architecture (8/94)

==========

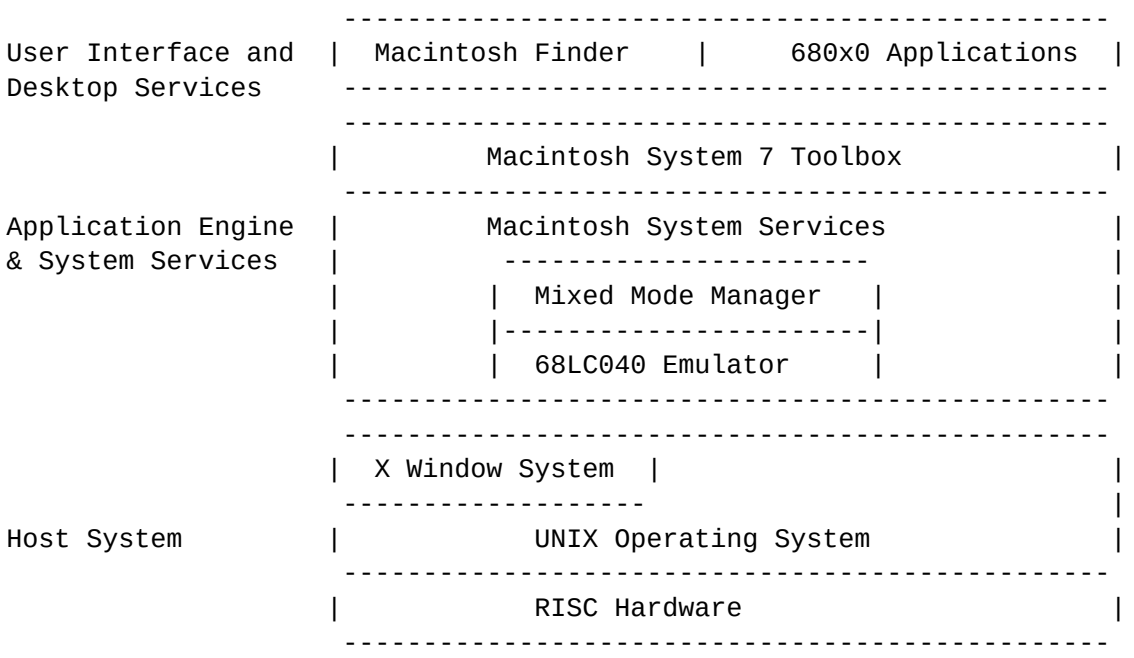
Article Created: 4 August 1994

TOPIC ----------

This article describes the Macintosh Application Environment (MAE) architecture.

DISCUSSION ----------

As the following architectural block diagram illustrates, MAE utilizes three distinct layers: Macintosh Desktop Services, Macintosh Application Engine, and Host System.



Apple designed these layers and their components to achieve the best integration with the X Window System, UNIX operating system and RISC-based hardware.

..TIL15992-MAE-Architecture_8-94_(TA32233).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:15992

Tech Info Library

MAE: Key Features (6/96)

Revised: 6/25/96
Security: Everyone

MAE: Key Features (6/96)

==========

Article Created: 4 August 1994
Article Reviewed/Updated: 25 June 1996

TOPIC ----------

This article describes the key features of the Macintosh Application Environment (MAE).

DISCUSSION ----------

One significant benefit of the MAE is its ability to run off-the-shelf Macintosh applications. But equally important is the seamless integration MAE provides you between the Macintosh and UNIX environment.

Of course you can use MAE to completely manage your Macintosh applications, folders and files. However, you can also use MAE to perform functions on your UNIX directories, files, applications and manage system services such as printers file servers, even over the network-all with the same intuitive, easy-to-use Macintosh style interface.

Benefits of MAE

MAE maximizes the efficiency of the UNIX user by supporting simple navigation and management of both Macintosh and UNIX file systems, and by providing:

• Enhanced productivity through shrink wrap Macintosh applications. MAE supports most productivity applications and tools long enjoyed by users of the Mac OS. In fact, MAE supports more of these applications than any competing technology.

• Copy-and-paste of text and graphics. Lets you transfer text and graphics between MAE and other X Windows via the copy-and-paste tools in the MAE Toolbar.

• Drag-and-drop UNIX command execution. To execute UNIX commands, the user merely "drags" the icon of a file or directory and "drops" it onto the icon of a UNIX command. For example, if you drag the icon of a directory to the ls icon,

the X window displays a list of the files in that directory.

• Support for NFS and AFS. MAE supports both NFS and AFS (Andrew File System 2.4) to provide access to the highly distributed file systems typical of workstation environments. NFS/AFS support lets you easily access appropriate files within these environments through the Finder.

New features of MAE version 2.0

New features of MAE version 2.0 provide the following additional benefits.

• AppleTalk for MAE. System administrators can now help users gain access to network resources more easily using AppleTalk networking capabilities. With the AppleTalk protocol, designed and developed by Apple Computer, users have a simple method to access printers, file servers, or other AppleTalk-enabled computers on the network using the Chooser.

• Improved speed and performance in a smaller amount of memory. MAE v2.0 takes advantage of two technological breakthroughs -- dynamic compilation and code block templates -- to obtain optimal emulator performance while consuming a minimal amount of memory. These techniques reduce system overhead and increase speed by letting MAE identify sections of Mac OS and applications code that are translated to native code, and run directly as native code on the underlying RISC architecture.

• MacTCP support. MacTCP is the Macintosh implementation of the TCP/IP networking protocol, which gives users access to the Internet as well as TCP/IP-based utilities such as Fetch and Telnet.

NOTE: Fetch 3.0 and higher will not work with MAE 2.0.2, use version 2.x.x.

• Sound Manager. Controlled by the Sound control panel, the MAE Sound Manager supports all standard sounds supported by a Macintosh computer.

• Dynamically resizable MAE window. Users can dynamically resize the MAE window using the Monitors control panel in MAE or the workstation's X Window size controls.

• Finder Window Update. Finder Window Update helps to reduce MAE overhead on the host system (for additional details, please see the section entitled Configuring MAE for the UNIX Environment).

• Cycle saving via Processor Slowdown. Processor Slowdown also helps to reduce MAE overhead on the host UNIX system (for additional details, please see the section entitled Configuring MAE for the UNIX Environment).

• Temporary Installer Volume (TIV). TIV is a utility that facilitates installation of Macintosh productivity applications in the UNIX host system (for additional details, please see the section entitled Configuring MAE for the UNIX Environment).

• NFS Heartbeat. An important enhancement for improved NFS robustness, NFS Heartbeat provides a mechanism by which to break out of "hung" network system

calls. These calls can hang when MAE attempts to access an inaccessible NFS-based file server.

• Productivity features from Macintosh System 7.5. MAE 2.0 enhancements from System 7.5 include:

- Launcher. The Launcher control panel lets users launch an application with a single click of a mouse button by selecting from lists of the most frequently used applications.

- Stickies. Allows users to create electronic "sticky notes" and place them anywhere in the MAE window.

- Improved desktop patterns. The Desktop Patterns control panel has been expanded to provide more colorful and textured Desktop patterns. Users can also create their own custom Desktop patterns by copying and pasting graphics into the control panel.

- Find File. This expander Finder utility lets users quickly search hard disk drives or file servers for a desired file.

- WindowShade. Allows users to shrink a window in MAE to just its title bar or re-expand it with two or three clicks of the mouse.

- Extension Manager. The Extension Manager control panel lets users enable or disable Macintosh control panels, extensions, and INITs in MAE.

Article Change History:
25 Jun 1996 - Updated Fetch information.
30 Jan 1996 - Completely revised this article.

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Tech Info Library Article Number:15993

Tech Info Library

ImageWriter II: Loopback Test Failed error (8/94)

Revised: 8/4/94
Security: Everyone

ImageWriter II: "Loopback Test Failed" error (8/94)

==========

Article Created: 4 August 1994

TOPIC ----------

When I attempt to do a self-test on my ImageWriter II/L it prints four lines then it says "LOOP BACK TEST FAILS." Why can't I get the printer to do normal a self-test?

DISCUSSION ----------

There are two types of self-tests; a Loop Back test, and a standard self-test. When a loop test is run on an ImageWriter II/L without the loop back plug the error message appears.

To initiate a Loop Back Test, hold down the Select button while powering on the ImageWriter II.

To initiate a standard self-test, hold down the Form Feed button while powering on the ImageWriter II.

Support Information Services

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Tech Info Library Article Number:15994

Tech Info Library

Macintosh 630 family: Adding an Internal CD-ROM Drive (8/94)

Revised: 8/5/94
Security: Everyone

Macintosh 630 family: Adding an Internal CD-ROM Drive (8/94)

==========

Article Created: 05 August 1994

TOPIC ----------

I ordered a Macintosh 630 family computer without an internal CD-ROM drive and now want to add one. What is the part number for the drive?

DISCUSSION ----------

There are two options for adding an internal CD-ROM drive to a 630 family machine.

- Order the LC 550/575 kit, part number B1551LL/A, and don't use the faceplate for the 550/575. Inside the cover of the 630, the door over the CD can be popped out with two squeeze clips.

- A specific upgrade for the 630 family will be available in the near future. Waiting for that kit is the other option.

Support Information Services

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Tech Info Library Article Number:15995

Tech Info Library

Power Macintosh: Problem Receiving Fax From External Modem 3/96

Revised: 3/18/96
Security: Everyone

Power Macintosh: Problem Receiving Fax From External Modem 3/96

==========

Article Created: 05 August 1994
Article Reviewed/Updated: 18 March 1996

TOPIC ----------

This article addresses reported problems receiving faxes via an external fax modem connected to a Power Macintosh computer.

DISCUSSION ----------

The problem of not being able to receive a fax from an external fax modem on a Power Macintosh has been resolved in System 7.1, System Update version 3.0 and later (including all versions of System 7.5). This update includes a patch that allows the serial port on the Power Macintosh to communicate properly with the external fax modem, thereby allowing faxes to be received.

If you have a Global Village modem, be sure that you have installed their Teleport Serial software version 2.08b or later. This version of the Teleport software will ensure that your Global Village modem performs properly on your Power Macintosh.

Be aware, though, that the install disks for 2.08b include a file called "AV/PPC Serial Tuner." If you have installed System Update 3.0 or later, then you may safely remove the serial tuner since it is included in the System Update.

Article Change History:
18 Mar 1996 - Clarified information.

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Tech Info Library Article Number:15996

Tech Info Library

Macintosh: Calculate Folder Size Doesn't Add Up (12/94)

Revised: 12/15/94
Security: Everyone

Macintosh: Calculate Folder Size Doesn't Add Up (12/94)

==========

Article Created: 05 August 1994
Article Reviewed/Updated: 15 December 1994

TOPIC ----------

When I enable "Calculate Folder Size" in the Views control panel, the amount of disk space shown is not equal to the sizes when all folder sizes are added up.

What is occupying the extra space?

DISCUSSION ----------

Simply adding up the folder sizes does not include the items on the desktop, nor invisible files.

For example, using a utility called Find Pro III to locate hidden files, 144 of them were found. 137 of them were named "Icon". These files are created when you paste an icon on a folder. If you create an empty folder and paste an icon on it, the "Get Info" window shows that the folder contains zero K and no items. However, if you throw this folder in the trash and "Get Info" on the trash, the window shows one file and one folder in the trash and the size of the file is greater than zero K. Therefore, the Finder apparently does not count invisible files when it calculates the size of a folder.

To summarize, the displaying of folder sizes is not always accurate due to the invisible files, which the Finder ignores, and the virtual memory swap file, which is whatever size is set in the Memory control panel. Also, items on the Desktop are not shown as being in any folder but they take up space and are included in total disk usage. By adding up all of the space these items take on the drive, the total amount of disk space used should be very close to the amount of space the disk info shows.

Article Change History:
15 Dec 1994 - Added keyword and made minor technical updates.

..TIL15997-Macintosh-Calculate_Folder_Size_Doesnt_Add_Up_12-94_(TA32238).pdf

Support Information Services

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Tech Info Library Article Number:15997

Tech Info Library

Assistant Toolbox Extension: Version History (11/95)

Revised: 11/27/95
Security: Everyone

Assistant Toolbox Extension: Version History (11/95)

==========

Article Created: 4 August 1994
Article Reviewed/Updated: 27 November 1995

TOPIC ----------

This article describes the version history for PowerBook File Assistant's Assistant Toolbox extension.

DISCUSSION ----------

PowerBook File Assistant 1.0 itself has not changed. It is still version 1.0. The only changes that have been made in all new versions of the PowerBook File Assistant so far have been updates to the Assistant Toolbox extension.

Versions Since Assistant Toolbox 1.0

1.1

All 500 Series PowerBooks that came with System 7.1.1 pre-installed contain Assistant ToolBox extension version 1.1.

1.2

All PowerBook computers that came with System 7.5 pre-installed and System 7.5 Upgrade Kits include Assistant ToolBox extension version 1.2.

Assistant Toolbox Change History

From 1.0 to 1.1

• Print Later - fixed a problem that caused the system to crash when Print Later was selected on a Duo.

• AutoRemounter - fixed a problem that caused a crash on Macintosh Classic computers.

• Video Mirroring - removed the cursor marks that appeared on external monitors.

• PRAM - changed PRAM location for storing Persistent RAM Disk information.

From 1.1 to 1.2

• This is the currently supported version although there are no major changes documented.

Article Change History:
27 Nov 1995 - Updated information on which versions shipped on which computers.
20 Jul 1995 - Corrected spelling of AutoRemounter; reviewed.

Support Information Services

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Tech Info Library Article Number:15998

DOS Compatibility Card: Printing to a HP LaserJet (3/95)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Printing to a HP LaserJet (3/95)

==========

Article Created: 5 August 1994
Article Reviewed/Updated: 1 March 1995

TOPIC ----------

How do I direct connect an HP LaserJet serial printer to a Quadra 610 DOS compatible, or the DOS Compatibility Card, so I do not have to go through the printer emulation mode?

DISCUSSION ----------

Here is how you need connect the printer to the Macintosh in order to use the HP LaserJet in both PCL and Auto mode. In the Auto mode the printer switches to PostScript if needed.

Communication Settings

On the printer set it to:

- Serial (or Auto to allow it to print from any port)
- 9600* (1)
- XON/XOFF
- Robust XON = OFF (2)

Notes:
(1) - You can also set the printer to 19,200, if you use the "Faster Printing Directly to Port" option in Windows.

(2) - You can also use Robust XON = ON

Cable Pinouts No Handshaking

. DB9 Male Din 8 Male
. -------- ----------

```
.  DCD 1----|
.  DTR 4----|--------------------|----1 HSKo (DTR)
.  RTS 7----|                    |----2 HSKi (CTS)
.  CTS 8----|
.     TxD 3------------------------5 RxD-
.     RxD 2------------------------3 TxD-
. SIG GND 5----------------------|----4 SIG GND
.                                |----7 GPi
.     DSR 6 - No Connection
.     RI  9 - No Connection
```

This cable is a straight through connection without handshaking. The way it is illustrated above is that pins 1,4,7, and 8 on the DB9 Male are connected to pins 1 and 2 on the Din 8 Male. Pin 5 on the DB9 is connected to both pins 4 and 7 on the Din 8. On this cable everything is grounded except for transmit and receive. The HSKo and HSKi on the Macintosh are not used, so a more straight forward cable like the one below can be used instead.

Cable Pinouts Straight Though Connection

```
.       DB9 Male                 Din 8 Male
.       --------                 ----------
DCD     1 No Connection          1  HSKo (DTR) No Connection
DTR     4 No Connection          2  HSKi (CTS) No Connection
RTS     7 No Connection
CTS     8 No Connection
RxD     2------------------------5  RxD-
TxD     3------------------------3  TxD-
SIG GND 5 No Connection          4  SIG GND  No Connection
DSR     6 No Connection          7  GPi      No Connection
RI      9 No Connection
```

Both of these cables work in Windows and DOS. You can use these cables in Windows at either 19,200 or 9600 baud. You can only use 9600 baud when you are using MS-DOS.

Setup

1) Open the PC Setup control panel

2) Configure either COM1 or COM2 for the desired Macintosh port

3) Click the Restart PC button

4) Click the OK button in the dialog box that asks if you want to continue.

5) Close the PC Setup control panel

6) Switch to DOS

Printing From DOS
---
1) Type in the following at the DOS prompt:

. MODE COM1:96,n,8,1,p

2) Type the following:

. MODE LPT1:=COM1:<cr>

You can print as usual from any DOS application.

Note:
It is preferable to use applications that can print directly to the serial port, instead of having to reroute LPT1. You can also add those commands listed above to the AUTOEXEC.BAT file so you do not have to re-type them after restarting.

Printing From Windows
---
1) In Windows, double-click the "Main" icon

2) Double-click the Control Panels icon

3) Double-click the Printers icon

4) Install the appropriate driver for the serial printer you are using.

Note:
Consult the Windows manual for driver installation if needed.

5) After driver installation, click the "Connect" button in the Printers Control Panel.

6) Select the appropriate COMM port, click the check box marked "Fast Printing Direct to Port"

7) Click the "Settings" button

8) Set the COMM port parameters to:

. Baud Rate: 19200
. Data Bits: 8
. Parity: None
. Stop Bits: 1
. Flow Control: Xon/Xoff

9) Click either "Set As Default Printer" or "Close" and Windows is setup to print to a DOS serial printer without having to go through emulation.

Article Change History:
01 Mar 1995 - Corrected some pinout labels.

Support Information Services

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Tech Info Library Article Number:15999

Tech Info Library

MAE: How to Check the MAE 1.0a Patch Install (8/94)

Revised: 8/8/94
Security: Everyone

MAE: How to Check the MAE 1.0a Patch Install (8/94)

==========

Article Created: 4 August 1994

TOPIC -----

How to find out if the Macintosh Application Environment (MAE) 1.0a the patch was installed correctly.

DISCUSSION -----

Type the following commands:

mae -version	to get the version of MAE
what -s engine	to get the version of the engine
what -s macd	to get the version of macd

You should also make sure you've updated your system folder as described in the patch documents, removing the system folder is one way.

Support Information Services

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Tech Info Library Article Number:16001

Tech Info Library

PostScript Fax: When Font Substitution Takes Place (8/94)

Revised: 8/8/94
Security: Everyone

PostScript Fax: When Font Substitution Takes Place (8/94)

==========

Article Created: 5 August 1994

TOPIC ----------

The manual that comes with the fax cartridge for the LaserWriter Pro 810 states that if the document being received contains anything other the the standard 35 fonts found in the printer, it substitutes the fonts with Courier. Is this true?

DISCUSSION ----------

According to the Adobe technical note #5135 titled "Supporting PostScript Fax", the PostScript interpreter handles an incoming PostScript Fax document in the same manner as any other PostScript language document. Depending on how each vendor implements their driver, a font substitution to Courier could take place, or the requested font could be included with the data stream. The LaserWriter 8f driver from Apple assumes that the receiving printer contains at least the minimum 35 font set that Adobe requires for PostScript Fax printers and all other type 1 and TrueType fonts contained in the document are downloaded to the receiving PostScript fax printer with the data stream. These are the fonts that PostScript assumes are available in ROM:

Times-Roman
Times-Bold
Times-Italic
Times-BoldItalic

Courier
Courier-Bold
Courier-Oblique
Courier-BoldOblique

Palatino-Roman
Palatino-Bold
Palatino-Italic
Palatino-BoldItalic

ITC Bookman-Light
ITC-Bookman-Demi
ITC-Bookman-LightItalic
ITC Bookman-DemiItalic

Helvetica
Helvetica-Bold
Helvetica-Oblique
Helvetica-BoldOblique

ITC Avante Garde-Light
ITC Avante Garde-Demi
ITC Avante Garde-BookOblique
ITC Avante Garde-Oblique

New Century Schoolbook-Roman
New Century Schoolbook-Bold
New Century Schoolbook-Italic
New Century Schoolbook-BoldItalic

Hevetica-Narrow
Helvetica-Narrow-Bold
Helvetica-Narrow-Oblique
Helvetica-Narrow-BoldOblique

ITC Zapf Chancery-MediumItalic
ITC Zapf Dingbats
Symbols Set

Downloading the fonts to the receiving printer do add transmission time, but due to PostScript Level II’s built-in LZW compression and decompression algorithms this averages out to about 35 seconds per font.

Support Information Services

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Tech Info Library Article Number:16003

Tech Info Library

Power Macintosh: Meaning of Error Type 11 (10/96)

Revised: 10/17/96
Security: Everyone

Power Macintosh: Meaning of Error Type 11 (10/96)

==========

Article Created: 8 August 1994
Article Reviewed/Updated: 17 October 1996
TOPIC ----------

I get an error Type 11 on my Power Macintosh computer when a program crashes. I never got this error on my 68k based Macintosh computers. Is this a new error for the Power Macintosh?

DISCUSSION ----------

A Type 11 error is listed as a hardware exception error. However, As with all Macintosh Type xx errors, they usually do not identify a particular software or hardware component error. Type xx errors are more general in nature.

You may see more Type 11 errors on a Power Macintosh computer because of problems with the software-based 68k emulator. The emulator allows the RISC processor to run older Macintosh software. If the emulator gets corrupted while loading into RAM, then some of the failures caused by this are reported as Type 11 or Hardware Exception errors. The emulator can get corrupted by either incompatible software or faulty hardware.

Troubleshooting Type 11 Errors

When troubleshooting Type 11 errors, always eliminate software problems first, then check the hardware.

To troubleshoot the problem, follow these steps:

Step 1

Upgrade your hard disk drivers and system software to the latest versions available.

Step 2

Contact the software vendor for compatibility information if the problem only

occurs in one application, and you can reproduce it consistently.

Step 3

Turn off all extensions and control panels if the error occurs in an application that is fully compatible with a Power Macintosh computer. Check the application again. If the problem goes away, then troubleshoot your extensions, control panels or fonts. Large numbers of fonts can cause similar errors, troubleshoot by moving them from the Fonts folder to another folder. If you still have problems, follow Step 4.

Step 4

Perform a clean installation of the system software, then test the system performance for a few days. If the problems continue, particularly in the Finder, there may be an issue with your Apple or non-Apple hardware.

Step 5

Disconnect any external or internal SCSI devices that have been may added (or exchanged for the original Apple hardware) and continue testing. Since SCSI device drivers load into memory when the Macintosh is turned on, they can generate conflicts similar to extension conflicts. If you are using a non-Apple formatting utility, contact the vendor of the utility for compatibility information. Removing internal SCSI devices is best performed by an Apple-authorized service provider.

Step 6

Remove any extra third-party RAM and test. This is best performed by an Apple-authorized service provider. Also verify that you are not using composite RAM.

Step 7

Remove Level 2 Cache RAM, if present, and test.

If you continue to get Type 11 errors using a clean version of the system software without any third-party hardware attached (including internal or external SCSI devices, additional RAM, or Level 2 cache RAM), you need to have your computer serviced by an Apple-authorized service provider.

For additional information about the cause of Type 11 errors, see Tech Info article, "Power Macintosh: Type 11 & No FPU Errors Technote."

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

This article was published in the Information Alley on 12 September 1996.

Article Change History:
17 Oct 1996 - Added kalley keyword.
02 Jul 1996 - Added Fax Doc word
28 May 1996 - Added article to fax.

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Tech Info Library Article Number:16004

Tech Info Library

LaserWriter Pro 810: Fonts Are Not Downloaded From HD (8/94)

Revised: 8/8/94
Security: Everyone

LaserWriter Pro 810: Fonts Are Not Downloaded From HD (8/94)

==========

Article Created: 8 August 1994

TOPIC ----------

A third party hard drive is attached to our LaserWriter Pro 810. The LaserWriter Utility recognizes the hard drive and lists the fonts on the drive, however fonts from this drive are not used during the printing process. Fonts from the Macintosh computer are still downloaded to the printer.

DISCUSSION ----------

There are no formal lists for compatibility between the LaserWriter Pro 810 and third-party manufactured SCSI hard drives, but there are three major requirements of when these drives are connected to Apple printers:

1. They must provide SCSI terminator power. For the 810, it must supply 5 volts DC to the SCSI line.

2. They must be able to report to the printer what size volume it is. This is done using the SCSI command "Mode Select."

3. The drive must support the SCSI "Unit Attention" command.

Some other things to check are:

- A gray terminator is being used on the external hard disk.

- SCSI ID is set to any number from 1 to 6.

- Use the LaserWriter Utility 7.6.2 to initialize the hard drive. This utility is available on AppleLink and other online services Apple posts software updates on.

We have connected a couple different hard drives to the LaserWriter Pro 810, and have had no trouble accessing TrueType or Type 1 fonts downloaded to the drive. The hard disks we've tried are an Apple 20SC, Quantum LPS 40, and Quantum LPS

80.

Please verify that all of the conditions above are met. We would also suggest contacting the drive manufacturer to verify compatibility with the LaserWriter Pro 810.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16005

Tech Info Library

Performa 550: System Folder Created w/ Dinosaur Safari CD (8/94)

Revised: 8/8/94
Security: Everyone

Performa 550: System Folder Created w/ Dinosaur Safari CD (8/94)

==========

Article Created: 8 August 1994

TOPIC ----------

When I launch the Dinosaur Safari CD from Creative Multimedia, a dialog box appears telling me that my Performa computer is having trouble starting up. I only have two options Shutdown or Continue? Why?

DISCUSSION ----------

The Performa 550 computer has a mini-System folder in a hidden partition on the hard drive. When something happens to the System folder on the hard drive, the mini-system folder is copied from the hidden partition to the hard drive.

- When you select Continue, the computer copies the mini-System folder and starts-up normally.

  - If a mini-system was copied to your hard disk, throw away the System suitcase in the mini-system folder, then throw away the entire mini-system folder. You need to "bless" the main system folder, then restart. One of the easiest ways of doing this is to open the System folder, then double-click the System suitcase. Once the System opens, close it and restart your computer.

- When you select Shutdown, the computer shuts down normally.

Regardless of which option you choose, there is nothing wrong with the system software on the hard drive. Creative Multimedia has determined that this problem only occurs on the Performa 550 computer.

Workaround

Copy the main icon from the CD to your hard disk. Launch the application from the hard disk instead of the CD. The program requires approximately 15 MB of hard disk space.

If you have additional questions about the Dinosaur Safari CD, or about this problem, contact Creative Multimedia.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16006

Tech Info Library

Power Macintosh: No Video After Displaying on TV (8/94)

Revised: 8/8/94
Security: Everyone

Power Macintosh: No Video After Displaying on TV (8/94)

==========

Article Created: 2 August 1994

TOPIC ----------

I have a Power Macintosh 7100AV and an Apple Multiple Scan 17 Display. I was displaying the video from the Macintosh on a television. When I changed the video back to the Multiple Scan Display, I only get a black screen. How can I get the video to display properly on the Multiple Scan Display?

DISCUSSION ----------

The Apple Multiple Scan Displays cannot show a video image using a 512x384 resolution. When a signal using this resolution is sent to a Multiple Scan Display, the image and the raster signals are cutoff and the LED displays an error condition.

To correct this problem, use the reset button on the computer, or hold down the Control, Command, and Power-on keys on the keyboard to restart the computer.

After restarting, the video returns to either the television, or the monitor. If the video is on the television, do the following to get the video on the Multiple Scan Display:

1) Open the Monitors control panel
2) Click on the Options button
3) If the "Upon Restart Display Video on Television" checkbox is selected, click the checkbox to turn off this option.
4) Click the "Display Video on RGB Monitor" checkbox
5) Click the "OK" button
6) Close the Monitors Control Panel
7) Restart your Macintosh Computer.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16007

Tech Info Library

Cannot Mount Macintosh HFS CDs in Novell 3.12 (8/94)

Revised: 8/9/94
Security: Everyone

Cannot Mount Macintosh HFS CDs in Novell 3.12 (8/94)

==========

Article Created: 8 August 1994

TOPIC -----

I'm trying to determine if Novell for Macintosh 3.12 and HFS CD-ROMs work together. I have the first two set up and I'm mounting ISO 9660 CDs fine. I'm not having any luck at all mounting Macintosh HFS CDs. Novell's phone support will not confirm or deny that they work at all. Is it possible to mount Macintosh CDs in Novel 3.12?

DISCUSSION -----

HFS CD volumes are not supported with Novell 3.12. They are supported with Novell 4.01, but you cannot load the HFS nlm and the ISO nlm at the same time, so it's one or the other.

Again, there is no Novell support for HFS CDs in Novell 3.12

As a workaround a company called Micro Design makes a product called SCSI Express that may do what you're looking for. It allows Macintosh CDs to be mounted under Novell Netware 3.xx. To locate a vendor's address and phone number, use the vendor name as a search string.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16008

Tech Info Library

Micro Design (8/94)

Revised: 8/9/94
Security: Everyone

Micro Design (8/94)

==========

Article Created: 9 August 1994

Micro Design

6985 University Blvd.
Winter Park, FL 32792

407-677-8333

407-677-8365 FAX

Company Profile:
Makes a product called SCSI Express that allows Macintosh CDs to be mounted under Novell Netware 3.xx.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16009

Tech Info Library

Power Macintosh: Energy Saver Compatibility (2/95)

Revised: 2/14/95
Security: Everyone

Power Macintosh: Energy Saver Compatibility (2/95)

==========

Article Created: 9 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

This article describes the Energy Saver (for monitors) compatibility issue with Power Macintosh 6100/60 and 6100/60AV using the built in HDI-45 video port (AudioVision Display Port).

DISCUSSION ----------

Energy Saver does not work on a Power Macintosh 6100/60 or 6100/60AV using the HDI-45 port unless one of following is installed on your Power Macintosh:

- PowerPC Enabler version 1.02
- System 7.5

Note: System Update 3.0 which included PowerPC Enabler 1.01 did not fix this problem.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.
08 Sep 1994 - Clarification of wording performed.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16010

Tech Info Library

Power Macintosh: SoftwareFPU and PowerFPU (6/95)

Revised: 6/9/95
Security: Everyone

Power Macintosh: SoftwareFPU and PowerFPU (6/95)

==========

Article Created: 9 August 1994
Article Reviewed/Upgraded: 9 June 1995

TOPIC ----------

How do I get FPU-dependent applications to work on a Power Macintosh or on any other computer without an integrated FPU?

DISCUSSION ----------

The microprocessor on Power Macintosh computers has an integrated FPU. However the 680x0 emulator, emulates 68LC040 instructions and does not emulate FPU instructions. Installing the shareware Control Panel SoftwareFPU, by John Neil & Associates, may allow programs that require an FPU to run. Version 2.45 or later is required on a Power Macintosh. Beginning with version 3.0, a native version is available that can double the performance compared to the emulated version. The native version is available to registered users only.

John Neil and Associates has introduced a commercial version called PowerFPU which is native and reported to be faster than SoftwareFPU 3.0.

To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
09 Jun 1995 - Added PowerFPU to the article.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16011

Tech Info Library

John Neil & Associates (6/96)

Revised: 6/5/96
Security: Everyone

John Neil & Associates (6/96)

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Article Created: 9 August 1994
Article Reviewed/Updated: 5 June 1996

John Neil & Associates

P.O. Box 2156
Cupertino, CA 95015

415-661-2944 FAX

Internet: johnneil@netcom.com
CompuServe: 70421,730
America Online: John Neil

Product information and technical support is available via e-mail at one of the above service addresses, or FAX. People without on-line access can order the native version of SoftwareFPU overnight plus a shipping charge by calling (800) 663-2943. John Neil and Associates have also introduced a commercial version called PowerFPU which is native and reported to be faster than SoftwareFPU.

Company Profile:
Shareware SoftwareFPU control panel.
PowerFPU control panel.

Article Change History:
05 Jun 1996 - Updated for technical accuracy.
05 Sep 1995 - Added references to PowerFPU.

Copyright 1994-96, Apple Computer, Inc.

Tech Info Library Article Number:16012

SoftWindows: Printing from Windows (8/94)

Revised: 8/9/94
Security: Everyone

SoftWindows: Printing from Windows (8/94)

==========

Article Created: 9 August 1994

TOPIC ----------

I have some questions about how SoftWindows handles certain printing operations.

1) When printing from DOS, is Windows bypassed?

2) Can I attach a serial to parallel cable to a DOS printer and print directly to the printer? (bypassing the Macintosh when printing).

3) Since the HP LJ4M has emulation switching and Softwindows supports network devices is it possible to load the HP printer drivers and print DOS jobs using PCL and IPX directly to the printer?

DISCUSSION ----------

1) If you are running DOS in a window under Windows, it does not bypass Windows. In this situation, Windows captures the job and prints it just as if you were printing from within a Windows application. If you are in DOS without Windows loaded, then DOS prints directly to the printer, and Windows is not involved.

2) As far as using a serial to parallel converter, we have no way to test this and it definitely would not be a supported configuration.

3) You can connected an HP LaserJet 4MPlus through a Netware 3.12 queue using IPX. Here is how you need to setup your computer:

   1) Set up a print queue on the Netware server, make sure the printer is configured correctly for your configuration. (See the printer and/or Netware documentation on how to do this if needed)

   2) In SoftWindows, load the appropriate network drivers. (I loaded, in order: lsl, etherspc, ipxodi, netx).

3) Log in to the network

4) Type in "capture /q=xxxx<cr>" where xxxx is the queue name you want to print to.

All print jobs from DOS configured for the LPT port will bypass any emulation and go directly to the NetWare print queue. Configure Windows for printing to the queue as you would any network printer - see the Windows documentation for additional information.

Support Information Services

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Tech Info Library Article Number:16014

Tech Info Library

LaserWriter Pro 600/630: Correcting Paper Jams W/ Labels (8/94)

Revised: 8/9/94
Security: Everyone

LaserWriter Pro 600/630: Correcting Paper Jams W/ Labels (8/94)

==========

Article Created: 9 August 1994

TOPIC --

Why do my labels jam when I print them on my LaserWriter Pro 630? I am carefully loading them into the cassette tray.

DISCUSSION --

The LaserWriter Pro 600 and 630 are susceptible to label printing problems if the cassette tray is used. Chapter 5 of the user manual contains the following information:

"Loading labels in the multipurpose tray

You can load one sheet of labels at a time into the multipurpose tray for manual printing.

- Important: When you print labels, use the multipurpose tray. (This helps avoid paper jams and curling)"

The manual clearly states that labels should be fed through the multi-purpose tray, and that only one sheet should be placed on the tray at a time. The LaserWriter Pro 600/630 cassette feeding mechanism uses a single metal 'snubber' to prevent multiple sheets from being pulled from the cassette tray when the pickup roller rotates. Labels are made up of two parts, a backing sheet and the label material. In some cases the 'snubber' can catch on the label sheet causing damage to the sheet or skewing it slightly so that it jams later in the winding paper path. The multi-purpose tray uses a friction retard pickup system which eliminates the need for a snubber, thereby improving the results when printing on labels.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16015

Tech Info Library

Macintosh Performa 550: Stores Have Different CD Bundles (8/94)

Revised: 8/30/94
Security: Everyone

Macintosh Performa 550: Stores Have Different CD Bundles (8/94)

==========

Article Created: 9 August 1994
Article Reviewed/Updated: 30 August 1994

TOPIC ----------

What are the differences between the Macintosh Performa 550 sold at Walmart and Performa 550 computers sold at other retail locations?

DISCUSSION ----------

The Walmart Performa 550 (M3327LL/A) contains a different CD bundle than previous Performa 550 computers.

All Performa 550 CD Bundles include:
• 1993(4) Time Magazine Almanac
• Grolier's Multimedia Encyclopedia
• The San Diego Zoo Presents Animals!
• The Tale of Benjamin Bunny CD

Walmart Performa 550 CD bundle includes the above CD, plus:
• Microsoft Dinosaurs
• The Wacky Jack's CD Game Show
• The Family Doctor CD

Keyboard

The Performa 550 computers sold by Walmart also ship with a different keyboard. The AppleDesign Keyboard is in the process of being phased-in with all Performa computers. Previous versions of the Performa 550 were bundled with Apple Keyboard II's. All Walmart Performa 550 computers are bundled with the AppleDesign Keyboard.

Article Change History:
30 Aug 1994 - Corrected bundle listings.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16017

Tech Info Library

Macintosh 630 Family of Computers: Modems and Ethernet (8/94)

Revised: 4/25/95
Security: Everyone

Macintosh 630 Family of Computers: Modems and Ethernet (8/94)

==========

Article Created: 9 August 1994
Article Reviewed/Updated: 25 April 1995

TOPIC ----------

My Performa 636 documentation states I have one Communications Slot for optional modem or Ethernet card. Can I add both a High Speed Modem and Ethernet Card to the Performa 636 or Macintosh 630?

DISCUSSION ----------

Yes. You have several options for modems and Ethernet cards for the Macintosh 630 family of computers (Quadra 630, LC 630, or Performa 636).

You can add the Apple CS Ethernet 10BASE-T or AAUI option to the Communication Slot of the Macintosh 630 family of computers and then add an external high speed modem.

If you would like both options to be internal, you can add the Apple Express Fax/Modem option to the Communications Slot and the LC Ethernet Card to the I/O Expansion (LC PDS) Slot.

The Macintosh 630 family of computers only has one Communication Slot, therefore you cannot add both the internal Apple Express Fax/Modem option and Communication Slot Ethernet card.

Compatible Apple cards for the Comm Slot are:

- Macintosh Express Fax/Modem - M2480LL/A (Discontinued)
- Apple Ethernet CS Twisted Pair Card - M3065Z/A
  (for use with a 10BASE-T compatible hub)
- Apple Ethernet CS Thin Coax Card - M2708Z/A
- Apple Ethernet CS AAUI Card - M3066Z/A

The following computers are in the Macintosh 630 family: Performa 630, Performa

635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Article Change History:
25 Apr 1995 - Added list of products and part numbers for Comm Slot.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16018

Tech Info Library

Power Macintosh Upgrade Card: General Troubleshooting (8/94)

Revised: 8/10/94
Security: Everyone

Power Macintosh Upgrade Card: General Troubleshooting (8/94)

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Article Created: 10 August 1994

TOPIC ----------

This article describes some procedures to follow when troubleshooting problems after installing a Power Macintosh Upgrade Card. Try these procedures if your Macintosh freezes or crashes when starting up in either 680x0 or PowerPC processor mode.

DISCUSSION ----------

To troubleshoot or identify problems related to the installation of a Power Macintosh Upgrade Card, try the following:

- Perform a clean install of the system software from the disks supplied with the Power Macintosh Upgrade Card.
- Check to see if the computer's DRAM SIMMs are composite. Composite SIMMs are not supported in a Macintosh and can cause problems in Macintosh computers using the upgrade card.
- Test with all external SCSI devices disconnected. Devices with older device drivers may cause the system to crash when starting up in PowerPC processor mode.
- Remove NuBus cards, especially third-party video cards, and test using the computer's built-in video. Drivers loaded for the cards may be incompatible.
- Remove any extra RAM and test. Maybe there is a SIMM installed that is not within specifications.
- Try the Power Macintosh Upgrade Card in another Macintosh computer, if one is available.

The goal of the troubleshooting procedure is to determine whether the card is

good. You can do this by making sure the Macintosh it is installed in is as close to factory specifications as possible (for example, no extra RAM, NuBus devices, and so on). If the tests still fail, it is possible that the card is failing. You can test the card by trying it with another Macintosh computers.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16020

Tech Info Library

AV Power Macintosh: Built-in Video Cannot Display Video (6/95)

Revised: 6/28/95
Security: Everyone

AV Power Macintosh: Built-in Video Cannot Display Video (6/95)

==========

Article Created: 10 August 1994
Article Reviewed/Updated: 28 June 1995

TOPIC ----------

When using Fusion Recorder, Video Monitor, or other 3rd party Video Applications, I get the message "Built in Video Can Not Display Video While in Current Number of Colors." What does this mean and how do I correct the problem?

DISCUSSION ----------

This message is generated on Power Macintosh AV computers when trying to use the digitizing capabilities of the AV card. The message is ambiguous in that it really means that there is not enough video memory available on the AV card to use it for digitizing (inputting) video. In most cases, this is because the number of colors the AV card is producing for the display is using too much video memory. The error message applies only to the monitor attached to the AV card.

To make more video memory available on the AV card so you can use the digitizing feature, adjust the following settings :

- Reduce the number of colors the monitor is configured to display with the Monitors Control Panel. It is best to set the color depth to 256 or Thousands of Colors. The digitizer will never work when monitor color depth is set to millions. This setting does not affect the number of colors that are captured during video input. After capturing video, you can set the depth back to millions for playback.

- For multiple scan or multiple resolution displays, change the resolution of the monitor to 832x624 or less with the Monitors Control Panel. Higher resolutions require more video RAM.

- For NTSC televisions attached to the AV card, turn off the 'Flicker Free" mode using the Monitors Control Panel. Using the "Flicker Free" mode also

uses up extra video memory and prevents the digitizer from working. Even though the image on the television flickers, the input video signal does not, and the captured image appears normal on playback after flicker free is re-selected.

If you have tried all of the above settings and still see the error message, you have the monitor attached to the HDI-45 video port. You need to attach the monitor to the AV card's DB 15 connector, then perform the setting changes again.

Apple recommends that you monitor all video capturing on a monitor or television attached to the AV card. There are some additional benefits when you attach a monitor to the AV Card. When the monitor is attached, to the AV Card, the computer doesn't have to perform as much video processing, providing you with a better frame capture rate.

Article Change History:
28 Jun 1995 - Changed reference from multiscan to multiple scan.

Support Information Services

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Tech Info Library Article Number:16022

Tech Info Library

AV Macintosh: Tips for Better NTSC output (2/95)

Revised: 2/8/95
Security: Everyone

AV Macintosh: Tips for Better NTSC output (2/95)

==========

Article Created: 10 August 1994
Article Reviewed/Updated: 8 February 1995

TOPIC ----------

This article provides some tips and hints on obtaining better NTSC video output using a Power Macintosh AV or Quadra AV series computer.

DISCUSSION ----------

Most Macintosh AV series computer owners are concerned with the quality of NTSC video output. Usually comparisons are made between an RGB monitor and a TV or NTSC monitor. Unfortunately, quality is limited by the NTSC standard itself. The standard was developed nearly 40 years ago and is outdated when compared to the more recent RGB standard. Since the NTSC video standard is drastically different from the RGB standard in the way it addresses video signals, there are some steps to follow to get the best looking Macintosh graphics on an NTSC device. Most Macintosh presentation applications recommend the following for best results:

- View your work on an NTSC monitor while creating the graphics. You will spot any problems as they are created.

- Stay well within the NTSC "safe zone" of 512 x 384 screen resolution (85% of the screen size.

- Avoid one-pixel wide horizontal lines. All lines should be at least two pixels wide and have an even number of lines.

- Do not use contrasting colors in adjoining areas. Buffer contrasting colors with a couple of lines of a neutral intermediate color.

- Instead of pure white, use light shades of gray.

- Use at least 24 point font size for titles.

- If titles are overlaid on video, use contrasting colors for the titles. If the video image is light, use dark letters, and if the video image is dark, use light letters. You can avoid the problem completely by displaying your letters on a solid background color, or contrasting drop shadow.

- Use solid colors to avoid flicker. For example, change the desktop pattern to a solid gray if you are displaying or recording the Finder on NTSC video.

- Do not use dithered patterns, or patterns that have alternating dots or lines.

Article Change History:
08 Feb 1995 - Added keyword; made several technical updates.

Support Information Services

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Tech Info Library Article Number:16024

Tech Info Library

What is the Record Button extension? (8/94)

Revised: 8/10/94
Security: Everyone

What is the "Record Button" extension? (8/94)

==========

Article Created: 10 Aug 1994

TOPIC -----

What is the "Record Button" extension is used for on my Macintosh computer? Where did it came from? Did it come with my Apple Adjustable Keyboard?

DISCUSSION -----

1. What is it (the Record Button extension) used for?

The Record Button extension permits the recording of a sound via the Adjustable Keyboard. With this extension installed, pressing the Record button on the Apple Adjustable Keyboard (the circular button in the lower right corner with the microphone icon next to it) will start and stop the recording of a sound. To use it, you must first open the Sound control panel, and click on the "Add..." button.

2. What are the other extensions that the Adjustable Keyboard Installer disk installs?

The Keyboard Installer disk installs the following resources:

- Sound control panel, version 7.1.1
- Record Button extension, version 1.0
- Keyboard Resources (to be added to System File), version 1.0

3. What machines need this extension to use the Record button on the Adjustable Keyboard?

The answer to this question is that if a Macintosh does not have this functionality in ROM, the Record Button extension provides it. For example, the functionality of the Record Button was incorporated into the ROMs on AV series and Power Macintosh systems.

4. What other Apple software disks and updates does the Record Button software come with besides the Apple Adjustable Keyboard software?

It is a component on the following:

- Keyboard Installer Disk
- System Update 2.x
- System Update 3.0

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Tech Info Library Article Number:16025

Tech Info Library

Power Macintosh: SoftWindows TCP/IP and MacTCP Together (10/94)

Revised: 10/28/94
Security: Everyone

Power Macintosh: SoftWindows TCP/IP and MacTCP Together (10/94)

==========

Article Created: 11 August 1994
Article Reviewed/Updated: 28 October 1994

TOPIC ----------

Is there a way to run MacTCP at the same time as TCP/IP under SoftWindows?

DISCUSSION ----------

Using only one Ethernet connection, it is not possible to run MacTCP and TCP/IP under SoftWindows at the same time. Network cards or on-board Ethernet cannot have identical communication protocols running simultaneously.

TCP/IP under SoftWindows will only work if MacTCP is turned off by removing it from the Control Panels Folder and restarting.

The only way to concurrently run MacTCP under the Macintosh OS and TCP/IP under SoftWindows is to have two Ethernet interfaces, one setup for MacTCP and one for SoftWindows.

Article Change History:
28 Oct 1994 - Added a solution for running both MacTCP and TCP/IP under SoftWindows.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16026

Tech Info Library

MAE: $HOME and System Folders (5/96)

Revised: 5/14/96
Security: Everyone

MAE: $HOME and System Folders (5/96)

==========

Article Created: 11 August 1994
Article Reviewed/Updated: 14 May 1996

TOPIC -----

This article provides a general overview of how MAE (Macintosh Application Environment) determines where to build or use a System Folder.

DISCUSSION -----

When a user launches MAE, without any options, MAE looks at that user's HOME environmental variable for their home directory. MAE will then look at their home directory, and if there is no System Folder there (which will be the case the first time a user launches MAE), MAE will build a System Folder. Keep in mind that by default, MAE looks for a directory (in their home directory) called "System Folder". If a user renames their system folder, MAE won't recognize it.

There are two things that can affect where MAE looks for a System Folder.

• The HOME variable. A user could change their home variable to another location. For example, root could change its HOME to point to /tmp, thereby alleviating the long desktop rebuilds associated with launching MAE as root. A user may also want to temporarily change their home directory from a NFS mounted directory to one that is local, for MAE performance benefits.

• The -sysfol option to MAE. For example, a developer may want two different system folders in their home directory, one for production use, and one for testing new extensions. By default, they would have a system folder in their home directory called "System Folder". They may have another system folder called "Really Cool System Folder". Launching MAE with no options would cause it to use "System Folder". But launching MAE with the -sysfol option would cause MAE to use the alternate system folder. Following is an example:

/appledir/bin/mae -sysfol /export/home/user/Really\ Cool\ System\ Folder

In the above example, MAE will still use the user's HOME directory, .mac

directory, to retain desktop attributes.

Note: The easiest way to generate another system folder is to rename your current system folder to something else, then launch MAE. MAE will see that there is no directory called System Folder in your home directory, and will generate a new one.

Article Change History:
14 May 1996 - Added more information to second point.

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Tech Info Library Article Number:16027

Tech Info Library

Power Macintosh: Compatible With Basic Color Display (8/94)

Revised: 8/11/94
Security: Everyone

Power Macintosh: Compatible With Basic Color Display (8/94)

==========

Article Created: 11 August 1994

TOPIC -----

Is the Apple Basic Color Display compatible with the Power Macintosh?

DISCUSSION -----

Yes, the Apple Basic Color Display is compatible with both the HDI-45 connector and the DB15 RGB Video connector.

The Apple Basic Color Display has a mini-DB15 (VGA) to DB15 Connector attached to the end of the monitor’s video cable. If you are attaching the monitor to the HDI-45 connector on the Power Macintosh, you need to use the HDI-45 to DB-15 cable to attach the monitor to the CPU.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16028

Tech Info Library

SoftWindows: Increasing MS Office Performance (8/94)

Revised: 8/11/94
Security: Everyone

SoftWindows: Increasing MS Office Performance (8/94)

==========

Article Created: 11 August 1994

TOPIC -----

I am running SoftWindows on my Power Macintosh 7100 computer along with Microsoft Office. However, the overall performance of Microsoft Office in SoftWindows is poor. How can I increase the performance?

DISCUSSION -----

Here are some things you can do to increase performance:

1) The most significant performance increase you can configure is to allocate as much memory to SoftWindows as possible.

2) Make sure Virtual Memory is turned off.

3) Decrease the disk cache to 96K (the default) in the Memory control panel.

4) Make sure at least 2 MB of RAM is left over from the difference between the memory partition allocated to SoftWindows, and the memory allocated under PC Memory in the Setup menu of SoftWindows. Don't allocate EMS memory, but use XMS memory only. For example, if you have 18 MB allocated to SoftWindows. Run SoftWindows, go to the "Setup" menu, and select "PC Memory". Make sure EMS memory is set to 0, and set Extended Memory (XMS) to 8 MB. Since SoftWindows needs about 10 MB for itself, this would leave roughly 2 MB for what's called the "Delta Cache", which should speed things up. For future reference, take the total amount of memory allocated to SoftWindows, subtract what you set up in the PC memory menu, subtract 10Mb, and that's roughly what you have left for the Delta Cache. You always want the Delta Cache to be about 2 MB - no less.

5) Set the monitor bit-depth to 256.

Insignia Solutions has a FAX-BACK system that you can call to get this information. The document number is 305. The Fax system phone number is 800-876-3872.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16030

System 7.5: Known Color Picker problems (3/95)

Revised: 3/23/95
Security: Everyone

System 7.5: Known Color Picker problems (3/95)

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Article Created: 11 August 1994
Article Reviewed/Updated: 23 March 1995

TOPIC ----------

This article discusses known problems with the System 7.5 Color Picker.

DISCUSSION ----------

There are known problems with the System 7.5 Color Picker. The Color Picker is a system dialog that appears in certain applications allowing you to choose colors from an adjustable color wheel. An easy way to see what the Color Picker looks like is to open the Color Control Panel and choose Other from the Highlight pop-up menu. System 7.5 has an enhanced color picker. These enhancements come from the Color Picker extension stored in the Extensions Folder.

When using this enhanced color picker with a Macintosh using two or more monitors, the Color Picker appears on the monitor configured for the highest bit-depth. For example, if you are using a Quadra 800 with a 16-inch display set to 256 colors and a 14-inch display set to millions of colors, the Color Picker shows up on the 14-inch display, since it is capable of showing more colors. The color picker always shows up on the monitor with the highest bit-depth, regardless of which monitor is the startup monitor. The monitor you have set as your startup monitor displays the “Welcome To Macintosh” screen.

Power Macintosh AV Computers
==========

On Power Macintosh AV systems using the HDI-45 port, the Color Picker displays on the monitor attached to the AV card if it is configured for more colors than the built-in video port, even if a monitor is not attached to the AV card. This happens because you can still configure the monitor port from the Monitors Control panel. If you do have the AV Card set to a higher bit-depth, the Color Picker can disappear from view. When the Color Picker displays, however, it is displaying on a non-existent monitor.

Workaround

Step 1
Press Return to close the invisible Color Picker window.

Step 2
Open the monitors Control Panel

Step 3
Adjust the color depth for the "ghost" monitor to 256 colors or less.

A better workaround is to move the monitor from the HDI-45 port to the AV monitor port. This eliminates these types of "ghost" monitor problems.

Article Change History:
23 Mar 1995 - Made minor updates.
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16031

Tech Info Library

LaserWriter Pro 600/630: Multipurpose Tray Paper Sizes (8/94)

Revised: 8/12/94
Security: Everyone

LaserWriter Pro 600/630: Multipurpose Tray Paper Sizes (8/94)

==========

Article Created: 11 August 1994

TOPIC ----------

What are the minimum and maximum paper sizes supported by the LaserWriter Pro 600/630 multi-purpose tray?

DISCUSSION ----------

The Canon P270 print engine that is used in the LaserWriter Pro 600 or LaserWriter Pro 630 supports the following paper sizes when using the multi-purpose tray:

	Minimum	Maximum
Width	90mm (3.54 inches)	216mm (8.50 inches)
Height	165mm (6.49 inches)	356mm (14.02 inches)

The LaserWriter Pro 600/630 PPD files used by the LaserWriter 8 driver provides support for standard paper sizes. The PPD file may need to be modified if other sizes are required. Additional information on how to modify PPD files is available from Adobe Systems as part of their PostScript software development kit. The information can also be accessed in electronic format using the Adobe file server which is available on the Internet at ftp.adobe.com.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16032

Tech Info Library

Macintosh AV & FusionRecorder: Red Dots with QuickTime (8/94)

Revised: 8/12/94
Security: Everyone

Macintosh AV & FusionRecorder: Red Dots with QuickTime (8/94)

==========

Article Created: 11 August 1994

TOPIC ----------

Why do I sometimes get red dots or pixels in the QuickTime movies I record using Fusion Recorder? This happens when I set the compression to "Video" at any quality and any frame rate.

DISCUSSION ----------

It is possible to get distinct, bright, red dots in QuickTime movies that are recorded on an AV-series Macintosh. QuickTime movies should only get these red dots when the Caps Lock key is in the "down" position during FusionRecorder's compression process. Setting the Caps Lock key to the "up" position should keep the red dots from appearing.

This behavior has been fixed in QuickTime 2.0.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16033

Tech Info Library

Macintosh 630 Family: Display Resolution and Color Depth (02/95)

Revised: 2/17/95
Security: Everyone

Macintosh 630 Family: Display Resolution and Color Depth (02/95)

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Article Created: 12 August 1994
Article Reviewed/Updated: 17 February 1995

TOPIC ----------

This article describes the various resolutions and color depths supported by the Macintosh 630 family along with the most commonly used displays to be used at the various resolutions.

The Macintosh 630 family can use both the Multiple Scan 17 and Multiple Scan 20 monitors though their resolutions are limited to 832 x 624 with no support for the TV/Video Module.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

DISCUSSION ----------

What is Resolution?

Resolution is the number of pixels (dots) a monitor can display on the entire screen. The more pixels there are, the higher the resolution. For example, a resolution of 640x480 is a total of 307,200 pixels on the screen (640 pixels horizontally and 480 pixels vertically). A resolution of 800x600 is 480,000 pixels. The increased number of pixels on the screen provides for a more detailed, crisper image – as well as slower screen-related processing (such as displaying an image).

What is Color Depth?

Color depth is the number of colors or shades of grey that a single pixel can display, which depends on the number of bits in memory each pixel uses (each byte of memory equals eight bits). The more bits-per-pixel used, the more colors and shades of grey you can display and the more video RAM you need to store the information. (The 630 family includes 1MB for video RAM.) For example, a color depth of one bit can display black or white. An 8-bit color depth can display

256 colors or shades of grey (the bits in one byte can be combined 256 different ways). A 16-bit color depth can display 32,768 colors. You can tell the video RAM needed by multiplying the resolution by the color depth (example: 640 times 480 times 2 (bytes) equals 614,400 bytes or 614K)

Resolution and Color Depth Table

Resolution	Scan Rate	Color Depth	Video RAM	Most Common Displays and Options
640x480	60Hz	32,768	614K	Multiple Scan 15 Display Apple Presentation System Apple TV/Video System
640x480	67Hz	32,768	614K	Performa Plus Display Apple Color Plus Apple Presentation System Apple Video System
800x600	60Hz	256	480K	Multiple Scan 15 Display Apple TV/Video System
800x600	72Hz	256	480K	Multiple Scan 15 Display No support for Apple TV/Video System
832x624 (1)	75Hz	256	519K	No support for Multiple Scan 15 Display No support for Apple TV/Video System

Notes:
(1) The resolution switching software, which is built into the Macintosh 630, lets a Multiple Scan Display use the 832x624 resolution. However, the video-in and TV tuner features of the Macintosh 630 will not work properly at this resolution.

(2) Full screen video capture and output is only supported at the 640x480 resolutions. This requires the Apple TV/Video System or Apple Video System to capture video and the Apple Presentation System to output video.

Article Change History:
17 Feb 1995 - Noted that Multiple Scan 17 and 21 work at limited resolution.
11 Jan 1995 - Added color depth and resolution defs & Video RAM column.
15 Dec 1994 - Added keyword and made minor updates.

Support Information Services

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Tech Info Library Article Number:16034

Tech Info Library

TelePort/Gold and Older Macintosh Computers (8/94)

Revised: 8/12/94
Security: Everyone

TelePort/Gold and Older Macintosh Computers (8/94)

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Article Created: 12 August 1994

TOPIC ----------

This article describes the incompatibility with the TelePort/Gold and older Macintosh computers.

DISCUSSION ----------

Global Village has reported that their TelePort/Gold modem cannot be used with a Macintosh 128K, 512K, or Plus. This information can also be found written on the product's box.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16035

Apple IP Gateway: Overview (12/94)

Revised: 12/9/94
Security: Everyone

Apple IP Gateway: Overview (12/94)

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Article Created: 12 August 1994
Article Reviewed/Updated: 9 December 1994

TOPIC ----------

This article provides an overview of the Apple IP Gateway.

DISCUSSION ----------

The Apple IP Gateway, a DDP/IP (Datagram Delivery Protocol/Internet Protocol) gateway, is Macintosh software which allows Macintosh computers using AppleTalk (usually Remote Access or LocalTalk) to access IP services on an IP internet. Typical services are Telnet, E-mail, WAIS, and Gopher which can be used to access internal company hosts or data on the Internet. MacTCP is required on both the client Macintosh (Apple Remote Access (ARA) or LocalTalk) and the gateway Macintosh.

The Apple IP Gateway could run on a Remote Access server (MultiPort or personal), an Apple Internet Router, or any other Macintosh on the network. Administration of the gateway is provided through a local application for setup and monitoring, along with an SNMP agent for remote monitoring.

Overview

A DDP/IP gateway is a node that sits both on an AppleTalk and an IP network and translates packets between them. The basic purpose of the DDP/IP gateway is to allow Macintosh clients on an AppleTalk only network to have access to TCP/IP hosts on an IP network. In the past, the main purpose for this type of service was the large number of Macintosh computers on LocalTalk. Recently, however, another less obvious use of DDP/IP has emerged. This is the growing number of ARA users. They too, need DDP/IP services because the ARA connection allows only AppleTalk packets to be transmitted.

To accomplish this functionality, Macintosh clients using ARA or other forms of AppleTalk send out IP packets that are encapsulated in DDP (by MacTCP) to the DDP/IP gateway. The gateway strips off the DDP header and the packet is sent to

the IP host on the IP internet. When an IP packet comes in on the IP port of the gateway, a DDP header is added and the packet is sent to the correct Macintosh client. If the packet is larger than allowed by AppleTalk (576 bytes), it is fragmented before being sent.

Most DDP/IP gateways that currently exist support both forwarding and routing of IP packets. The Apple IP Gateway only supports forwarding. That is, the Macintosh computers on the AppleTalk side of the gateway are an extension of the IP network as opposed to a separate subnet.

In addition to the basic packet translation service, the DDP/IP gateway provides address assignment services as well. One of the major advantages AppleTalk has over IP is that an AppleTalk node does not have to be configured with an address by a network administrator. The address assignment functionality of the gateway attempts to simulate this advantage. The gateway is configured with a range of IP addresses and can give them out to Macintosh computers who request them. Macintosh clients can also manually configure their own address if desired.

The DDP/IP gateway is useful on its own, but becomes even more powerful when combined with ARA servers or the Apple Internet Router (AIR). Combined with ARA, it allows ARA clients to access IP networks. Combined with AIR, it allows all of the AppleTalk networks on the router's AppleTalk internet to access IP networks.

The main components of the product are:

- System extension to load the gateway.
- Driver which implements the core gateway functionality.
- Administrative application for local configuration and monitoring.
- SNMP agent for remote monitoring.

The basic configuration required is a Macintosh II or later with System 7.1 or later, AppleTalk 58.1.3 or later, MacTCP 2.0.4 or later, and 4 MB of RAM. Any AppleTalk connection type is be supported (LocalTalk, EtherTalk, or TokenTalk) on the DDP side of the gateway, and Ethernet is be supported on the IP side of the gateway. The product runs in emulated mode on Power Macintosh computers.

MacTCP is required on the client and is configured to specify that a DDP/IP gateway is to be used and to indicate which zone it is in. A Macintosh client can request an IP address from the DDP/IP gateway at start-up and maintain the use of it until shutdown or reboot.

Because the clients may be in zones different from that of the gateway, it is difficult to know exactly when users are finished using their IP address. The correct method is to issue an NBPConfirm for the IP address in question and to time out the address when these confirms are not replied to for a given time. However, NBPConfirms are zone wide and the gateway does not know the zone of each client. The Apple IP Gateway implementation uses ICMP Echo (PING) to make sure the clients are still alive instead of NBPConfirms to avoid this problem.

Article Change History:
09 Dec 1994 - Made corrections for technical accuracy.

..TIL16036-Apple_IP_Gateway-Overview_12-94_(TA32276).pdf

12 Sep 1994 - Changed product name to reflect finished goods.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16036

Tech Info Library

Apple IP Gateway: General Setup Information Needed (5/95)

Revised: 5/3/95
Security: Everyone

Apple IP Gateway: General Setup Information Needed (5/95)

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Article Created: 12 August 1994
Article Reviewed/Updated: 3 May 1995

TOPIC ----------

This article provides a general description of the Apple IP Gateway.

DISCUSSION ----------

The user of this product is a network administrator responsible for AppleTalk networks and/or IP networks. They may or may not be the same person who sets up the Apple Remote Access server or the Apple Internet Router. The expertise will vary greatly depending on the person and the interface must therefore accommodate a range of novice to expert users.

The main tasks performed by the user are configuration, monitoring, and control. Configuration takes place in the MacTCP Control Panel as well as in an administrative application.

To configure the gateway, several items must be entered by the user. The following items must be configured in the MacTCP Control Panel:

- The IP address of the gateway.
- The subnet mask of the connected IP network.
- The default gateway to forward packets destined for a different IP subnet.
- The specific Ethernet port that is attached to the IP network.
- The domain name server (if any) to be used by the IP clients.

The following items must be configured in the administrative application:

- The dynamic addresses to be used for assignment to clients. These addresses are in a range; that is, they cannot be discontiguous.
- Whether or not to allow static addresses.
- The static addresses that clients can keep permanently. These addresses are in a range; that is, they cannot be discontiguous. This feature can be used to allow static addressing, but only if the addresses fall in a specific range.

- Whether or not the gateway should start when a Macintosh starts up.
- Whether or not to restrict access to the gateway.
- The list of networks which are not allowed (or are allowed) to use the gateway and how the list should be interpreted.

A monitoring window is available when the gateway is running with the following information:

- Graphical representation of network activity and errors.
- A list of addresses that have been assigned and to whom.

Note: For more detailed monitoring, the SNMP agent can be used.

The gateway can be controlled by the application as well:

- Gateway can be started.
- Gateway can be stopped.
- Client(s) can be disconnected.

In addition to the above task groups, some miscellaneous tasks exist as well:

- Statistics can be reset.
- Administrator password can be set and removed.

As a security feature, the administrator can restrict access to the gateway by AppleTalk network number. A list of network ranges can be entered that are allowed (or not allowed) to use the gateway. For instance, if the range 500-600 is entered in the list and the list is marked as a list of network that are not allowed to use the gateway, a client on network 40 can use the gateway and a client on network 510 cannot.

Article Change History:
03 May 1995 - Change title to better describe the article.
12 Sep 1994 - Changed product name to reflect finished goods name.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16037

Tech Info Library

Macintosh Displays: External Magnetic Emissions Tolerance (8/94)

Revised: 8/15/94
Security: Everyone

Macintosh Displays: External Magnetic Emissions Tolerance (8/94)

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Article Created: 15 August 1994

TOPIC --------------------

Our customer would like to know what the maximum tolerance, in milligauss, of the 14" RGB and 16" RGB monitors. We need to learn what is causing an interference pattern and determine a way around it.

It seems that there is some sort of magnetic field problem in his building causing monitor problems.

DISCUSSION --------------------

At this time, the display industry only recognizes emission standards related to the amount of emissions generated by a display. There is no standard that stipulates the amount of EMI a display can withstand and still continue to operate normally. Therefore, we do not test for this and cannot provide the information requested.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16038

Tech Info Library

System 7.5: Before You Install QuickDraw GX ReadMe (4/97)

Revised: 4/29/97
Security: Everyone

System 7.5: Before You Install QuickDraw GX ReadMe (4/97)

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Article Created: 15 August 1994
Article Reviewed/Updated: 29 April 1997

TOPIC ----------

The following article is the ReadMe document for QuickDraw GX.

DISCUSSION ----------

Contents

Before you install QuickDraw GX
- Printing and Faxing from QuickDraw GX
- QuickDraw GX and WorldScript II
- QuickDraw GX and At Ease

QuickDraw GX Printer Driver Upgrade Information
- CalComp
- Epson America
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- NEC Technologies
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Using Fonts
- Type 1 Fonts Enabled During Installation
- Adobe Type Manager (ATM) 3.7
- Enabling Type 1 Fonts After Installation
- Restoring Type 1 Fonts to Their Original State
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Before You Install QuickDraw GX

Printing and Faxing from QuickDraw GX

To print with QuickDraw GX, you need a QuickDraw GX printer driver for your printer.

- If you have an Apple printer, the QuickDraw GX versions of your currently installed printer drivers are installed with the QuickDraw GX software. All Apple printers (except the Apple Color Printer, and Color StyleWriter Pro) have GX drivers. The Color StyleWriter Pro will have a GX driver available soon.

- If you have a non-Apple printer, check with your Apple-authorized dealer or contact your printer vendor directly to make sure that you have the right printer driver for your printer. For printer vendor contact information, see the "QuickDraw GX Printer Driver Upgrade Information" section below.

- At the time of shipping, System 7.5 does not carry a QuickDraw GX version of a fax driver. These will be available very soon. For fax driver information, contact Apple Customer Assistance at 1-800-SOS-APPL or contact your fax vendor. For more information, see the "QuickDraw GX Fax Information" section later in this file.

QuickDraw GX and WorldScript II

Make sure that you are using WorldScript II version 7.2 or later. QuickDraw GX is not completely compatible with versions of WorldScript II prior to 7.2.

QuickDraw GX and At Ease

Make sure that you are using At Ease version 2.0.3.

QuickDraw GX Printer Driver Upgrade Information

If you are using a non-Apple printer, use the information below to contact the vendor about a printer driver upgrade. If your printer's vendor is not listed here, see the manual that came with your printer for contact information.

CalComp — PostScript compatible printers from CalComp should work with the standard LaserWriter GX PostScript driver. If you have any problems using QuickDraw GX with CalComp products and are within the United States or Canada, call CalComp at 800-451-7568. Outside the United States or Canada, contact the office in your area as listed in an appendix of your User's Guide.

Epson America—For information about Epson QuickDraw GX drivers, call the Epson End User Support Center at 1-800-922-8911 after October 1, 1994.

GCC Technologies—For information about GCC QuickDraw GX drivers and upgrade information contact GCC Technical Support at one of these numbers:

Phone Number:	617-276-8620
Fax Number:	617-275-1115
CompuServe:	67004,2302
AppleLink:	D0126
GEnie:	GCC.TECH
America OnLine:	GCC TECH

GDT Softworks Inc. — For upgrade information about GDT Softworks products (PowerPrint 2.5, PowerPrint/GX 3.0, PowerPrint/LT 3.0, PowerPrint/NW 3.0, PLOTTERgeist 3.0, PowerPlot 2.0, PowerPlot/LT 2.0, StyleScript 2.0), contact GDT:

GDT Softworks Inc.
Customer Service Upgrades
4664 Lougheed Highway, Suite 188
Burnaby, BC V5C 6B7 Canada

Phone Number:	1-800-663-6222 or 604-291-9121
Fax Number:	604-291-9689
AppleLink:	GDT.MKT
CompuServe:	72137,3246
Internet:	customer_service@gdt.com

Hewlett-Packard—If you need Post-Sale Assistance, Technical Assistance, or if you have any kind of questions about H-P peripherals, contact the H-P Computer Products Customer Support Center at 208-323-2551.

For users of DeskWriter 500 series printers, the fastest way to get a QuickDraw GX printer driver is from one of these electronic on-line services:

AppleLink:	Hewlett-Packard folder
CompuServe:	HP Peripherals forum (HPPER) Library 9
Internet:	IP address - 192.6.71.2
	Name - Anonymous
	Password - Send User Identification

HP Download Service: 208-344-1691 (modem settings: parity,N; data bits, 8; stop bits, 1)

To receive detailed instructions on accessing these on-line services, contact HP FIRST, Hewlett-Packard's document FAX retrieval service:

Inside the U.S. and Canada: 1-800-333-1917 (Then press 1 for HP FIRST.)
Outside the U.S. and Canada: 208-344-4809

To receive a disk with the QuickDraw GX printer driver, contact the HP Software Distribution Center at 303-339-7009. A nominal charge for materials and shipping applies.

Kodak — Call 1-800-CDKODAK, for technical support. To update and provide discussion for EKC drivers and print utilities, log on to CompuServe and 'go kodak'. In the Library menu, select browse and in the browse sections, select Kodak Printers. You can download these upgrades from CompuServe!

Lasermaster — For QuickDraw GX driver updates from Lasermaster, call Lasermaster Technical Support at 612-944-8509.

Lexmark International—Lexmark/IBM customers can get the latest QuickDraw GX drivers from:

Technical Support:	606-232-3000
Lexmark Bulletin Board:	606-232-5238
Internet:	anonymous ftp at ftp.lexmark.com
CompuServe:	Go Lexmark

Microspot—For information about "MacPlot Raster GX" and "MacPlot Pen Plotter Professional GX" Chooser level GX drivers or upgrade information, contact the Sales Department:

Microspot
12380 Saratoga-Sunnyvale Road, Suite 6
Saratoga, CA 95070

Phone Number:	1-800-622-7568 (1-800-MACPLOT) or 408-257-4000
AppleLink:	MICROSPOT
America OnLine:	MICROSPOT1
CompuServe:	70274,3650

NEC Technologies — Contact NEC Technical Support at 800-388-8888 or use one of the following:

NEC Bulletin Board:	508-635-4706
Main Phone Number:	508-264-8000
Main FAX Number:	508-264-8673
Support on AppleLink:	NEC Technologies forum in Third Parties

QMS, Inc. — For assistance with QMS printers, drivers, and driver updates, call QMS Customer
Technical Assurance:

Phone Number:	205-633-4500
FAX Number:	205-633-3716

Seiko Instruments — QuickDraw GX is supported by Seiko Instruments for the ColorPoint PostScript printer line with four drivers:

Printer Names	Required GX Driver
ColorPoint PS, PSX or PSN	ColorPoint PS/PSX/PSN GX driver

ColorPoint PSE	ColorPoint PSE GX driver
ColorPoint PSH	ColorPoint PSH GX driver
ColorPoint PSF	ColorPoint PSF GX driver

All driver upgrades are free and are available now:
Technical Support Department: 1-800-553-5312 (inside USA)
Technical Support Department: 408-922-5800
Seiko Bulletin Board: 408-428-9810

SuperMac Technology — For the SuperMac ProofPositive and the SuperMac Splash -- contact SuperMac Technical Support at 1-800-541-7680.

Tektronix — In the US and Canada, call Customer Support at 1-800-835-6100 or use the following:

Fax Number:	503-682-2980
AppleLink:	TEK.SUPPORT
Tektronix Bulletin Board:	503-685-4505
International Customers:	Please contact your local Tektronix office

Xerox — Xerox offers QuickDraw GX printer drivers for Xerox DocuTech Network Publisher Model 90 and Xerox DocuTech Network Publisher Model 135. For information on how to obtain the driver, customers can send an electronic mail message to: GX.Roch817@Xerox.com

QuickDraw GX Fax Information

To fax with QuickDraw GX, you need a QuickDraw GX fax driver for your modem. Use the information below to contact the vendor about a fax driver for your modem.

Express Modem — At the time of shipping, the Express Modem faxing capability is not compatible with QuickDraw GX. The express modem fax driver for QuickDraw GX will be available very soon.

GeoPort — GeoPort 1.2 is not QuickDraw GX compatible. The next version of GeoPort will be QuickDraw GX compatible.

Global Village — Global Village plans to add QuickDraw GX support to a future version of GlobalFax, and will send out a press release and an online-services announcement when it is available. To find the latest information on Global Village products, check Global Village forums on the following online services:

America Online:	global
CompuServe:	go global
Global Village BBS:	415-390-8334

Cypress Research—If you use Cypress Research FaxPro II, call 408-752-2700 and ask for Technical Support.

STF Technologies—For information about our "FaxPrint GX" printer driver contact STF Customer
Service:

Phone Number:	816-463-2021
Fax Number:	816-463-7958
Bulletin Board:	816-463-1131

CompuServe: 74740,1244 (Go STFTech)
America OnLine: STFtech

Using Fonts

Type 1 Fonts Enabled During Installation

During installation, QuickDraw GX enables any Type 1 fonts found in the System Folder, the Fonts folder, or the Extensions folder. However, you must ensure that each Type 1 font family is in its own suitcase. The installer enabler will not enable your Type 1 fonts if multiple font families are contained in one suitcase. QuickDraw GX does the following:

- creates a new folder called "Archived Type 1 fonts" in your Fonts folder
- moves all suitcases referring to Type 1 fonts to the "Archived Type 1 fonts" folder
- moves all Type 1 outline font files to the "Archived Type 1 fonts" folder
- makes a copy of the original suitcase and puts the copy in the Fonts folder
- creates one or more 'sfnt' font resources from the corresponding Type 1 outline font files and places the resources into the suitcase in the Fonts folder

The 'sfnt' (scalable font) resource was originally specified to contain TrueType font data. When QuickDraw GX enables a font, the 'sfnt' resource may contain either TrueType font data or PostScript Type 1 font data.

You can find instructions for installing QuickDraw GX in the Macintosh System 7.5 Upgrade Guide.

Adobe Type Manager version 3.7 (ATM GX)

ATM version 3.7 (ATM GX) is installed with QuickDraw GX. Type 1 fonts will display and print properly only if ATM 3.7 is installed and turned on. As with previous versions, ATM 3.7 rasterizes Type 1 font data from the POST resource in conventional outline font files (file type LWFN). In addition, ATM 3.7 rasterizes Type 1 font data from the 'sfnt' resource in suitcase files (file type FFIL). ATM 3.7 does not include font substitution capability.

Enabling Type 1 Fonts After Installation

You may need to enable Type 1 fonts that are not located in the System Folder, the Fonts folder, or the Extensions folder. Or you may need to enable Type 1 fonts installed after you install QuickDraw GX. To enable Type 1 fonts, use the Type 1 Enabler (one of the QuickDraw GX Utilities). You must ensure that each Type 1 font family is in its own suitcase. The Type 1 Enabler will not enable your Type 1 fonts if multiple font families are contained in one suitcase.

To install the QuickDraw GX Utilities and enable Type 1 fonts, see the instructions in Chapter 3 ("Installing QuickDraw GX") of the Macintosh System 7.5 Upgrade Guide.

The Type 1 Enabler supports only Type 1 fonts. If the Type 1 Enabler program encounters a suitcase containing Type 3 fonts, it displays the message "Contains a Type 3 font program" and does not enable the suitcase.

The Type 1 Enabler does not enable hybrid fonts. If you see the message "Contains a hybrid font program (see README file for details)" when the Type 1 Enabler attempts to enable Optima or ITC Eras, it may be because you have an old version of these fonts.These fonts cannot be enabled because they are hybrid fonts. If you are a registered owner of Optima or ITC Eras, call Adobe Systems Technical Support to obtain an upgrade to the non-hybrid versions of these families.

•••NOTE: The following section was inadvertantly omitted from the original Read Me.

Restoring Type 1 Fonts to Their Original State

If you remove QuickDraw GX from your system, you need to restore your Type 1 fonts. To restore Type 1 fonts, follow these steps:

1. Open the System Folder.
2. Open the Fonts folder.
3. Drag any suitcases that have been enabled to the Trash.
4. Open the •Archived Type 1 Fonts• folder.
5. Move the contents of the •Archived Type 1 Fonts• folder to the Fonts folder.
6. Drag the •Archived Type 1 Fonts• folder to the Trash.

If you want to switch back and forth between using QuickDraw GX and not using QuickDraw GX, skip Steps 2 and 3. This leaves both types fonts available.•••

Removing Duplicate Fonts

To make sure that QuickDraw GX properly manages currently installed fonts, you should make sure you have no duplicate fonts installed in the System Folder. Remove any duplicates that you find.

Article Change History:
28 Apr 1997 - Removed out dated on line references.
01 Dec 1995 - Added missing Restoring Type 1 Fonts section.
14 Feb 1995 - Reviewed for technical accuracy.

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Tech Info Library Article Number:16041

Tech Info Library

Solitaire Antics by Masque Publishing (8/94)

Revised: 8/15/94
Security: Everyone

Solitaire Antics by Masque Publishing (8/94)

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Solitaire Antics

Masque Publishing
PO Box 5223
Englewood, CO 80155

800-765-4223
303-290-9853
FAX: 303-290-6303
Tech support: Use main no.

Solitaire Antics includes 21 solitaire games with 3 levels of difficulty. Features over 55 animations with multimedia sound and 256 background colors from which to choose. Four decks available including Normal, Tarot, Mayan and Miniature.

Mfr. suggested list price: $25

Support Information Services

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Tech Info Library Article Number:16042

Tech Info Library

System 7.5: Automated Tasks Folder ReadMe (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: Automated Tasks Folder ReadMe (2/95)

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Article Created: 15 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

The following article is the ReadMe document for the Automated Tasks folder in the Apple menu.

DISCUSSION ----------

What are Automated Tasks?

Automated Tasks are AppleScript scripts that perform tasks in the Finder. To run a script (and perform its task), you can either choose the script from the Apple menu or activate the script in the Automated Tasks folder. The Automated Tasks folder is located in the AppleScript folder (inside the Apple Extras folder) on your hard disk.

How to Run the Scripts

The list below describes the task each script performs. It also tells you how to run the script from the Apple menu and from the Automated Tasks folder.

Add Alias to Apple Menu creates an alias for an item and puts the alias in the Apple Menu Items folder. (For more information on aliases, see the manual that came with your computer.)

- To use the script from the Apple menu: Select the item for which to create an alias. Then open the Apple menu and choose Automated Tasks and Add Alias to Apple Menu.

- To use the script from the Automated Tasks folder: Open the Automated Tasks folder and drag the item's icon onto the script's icon.

Find Original from Alias shows the original items of one or more aliases selected in the Finder.

- To use the script from the Apple menu: Select the alias (or aliases). Then open the Apple menu and choose Automated Tasks and Find Original from Alias.

- To use the script from the Automated Tasks folder: Open the Automated Tasks folder and drag the alias onto the script's icon.

Share a Folder checks to see if there is a folder named Drop Folder at the top level of the startup disk. If there is no Drop Folder, the script creates one. If File Sharing is off, it turns File Sharing on. It then sets full guest access privileges for the Drop Folder.

- To use the script from the Apple menu: Open the Apple menu and choose Automated Tasks and Share a Folder.

- To use the script from the Automated Tasks folder: Open the Automated Tasks folder and drag the folder you want to share onto the script's icon.

Start File Sharing turns file sharing on.

- To use the script from the Apple menu: Open the Apple menu and choose Automated Tasks and Start File Sharing.

- To use the script from the Automated Tasks folder: Open the Automated Tasks folder and double-click the script's icon.

Stop File Sharing turns file sharing off.

- To use the script from the Apple menu: Open the Apple menu and choose Automated Tasks and Stop File Sharing.

- To use the script from the Automated Tasks folder: Open the Automated Tasks folder and double-click the script's icon.

Turn Sound On sets the volume in the Sound control panel to the level 5.

- To use the script from the Apple menu: Open the Apple menu and choose Automated Tasks and Turn Sound On.

- To use the script from the Automated Tasks folder: Open the Automated Tasks folder and double-click the script's icon.

Turn Sound Off sets the volume in the Sound control panel to off (the menu bar will blink instead).

- To use the script from the Apple menu: Open the Apple menu and choose Automated Tasks and Turn Sound Off.

- To use the script from the Automated Tasks folder: Open the Automated Tasks folder and double-click the script's icon.

Running Automated Tasks at Startup and Shutdown

If you want a script to run whenever you start up your computer, drag the script's icon into the Startup Items folder (inside the System Folder).

If you want a script to run when you shut down your computer, drag the script's icon into the Shutdown Items folder (inside the System Folder). To run the script at shutdown, make sure you choose Restart or Shut Down from the Special menu (not from the Apple menu).

More Automated Tasks

See the More Automated Tasks folder for other scripts that perform Finder tasks. The More Automated Tasks folder is located in the AppleScript folder (inside the Apple Extras folder) on your hard disk.

The list below describes the task each script performs. It also tells you how to run the script in the More Automated Tasks folder.

Alert When Folder Changes tells you when an item is added to a folder. This script is useful when you are sharing a folder on a network. To use the script, you must first specify a single folder that you wish to watch. To specify the folder, drag the folder on top of the script (or double-click the script and select a folder in the dialog box). The script runs in the background while you work on other tasks. If any new items are added to the folder, the script identifies the new items in the folder. You can also modify the script to perform some other action when the folder changes.

Change Monitor to 256 changes the setting in the Monitors control panel to 256 colors or grays (bit depth of 8). If the monitor does not support 256 colors or grays, you can set the monitor to the maximum supported depth. This change is temporary. The next time you start up your computer the Monitors control panel setting will revert to the earlier setting.

Change Monitor to B&W changes the setting in the Monitors control panel to black and white (2 colors or grays). This change is temporary. The next time you start up your computer the Monitors control panel setting will revert to the earlier setting.

Hide/Show Folder Sizes turns the Calculate folders sizes checkbox in the Views control panel on and off.

Synchronize Folders compares the contents of two folders and synchronizes the contents. For example, if there is a file called "Document 1" in folder A and a file called "Document 2" in folder B, the script copies "Document 1" to folder B and "Document 2" to folder A so that both folders contain both files. If the files in both folders have the same name, the file with the later modification date is copied to the other folder.

Running Automated Tasks at Startup and Shutdown

If you want a script to run whenever you start up your computer, drag the script's icon into the Startup Items folder (inside the System Folder).

If you want a script to run when you shut down your computer, drag the script's icon into the Shutdown Items folder (inside the System Folder). To run the script at shutdown, make sure you choose Restart or Shut Down from the Special menu (not from the Apple menu).

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16043

Tech Info Library

System 7.5: Before You Install 7.5 ReadMe (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: Before You Install 7.5 ReadMe (2/95)

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Article Created: 15 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

The following article is the ReadMe document Before You Install System 7.5.

DISCUSSION ----------

Before you install Macintosh system software version 7.5, read the important information below.

Disk First Aid and HD SC Setup

To ensure a smooth upgrade to system software version 7.5, make sure you use Disk First Aid to verify the hard disk and HD SC Setup to update the hard disk before installing the system software. For instructions, see Chapter 1 ("Before You Install System 7.5") in the Macintosh System 7.5 Upgrade Guide.

IMPORTANT If you are installing software on a PowerBook 150, Macintosh Quadra 630, or Macintosh LC 630, you should just run Disk First Aid to verify the hard disk. You do not need to update your hard disk.

RAM Disk

If you use a RAM disk, turn it off before you install system software version 7.5. When the RAM disk is active during software installation, it uses too much memory and prevents your system from starting up.

Quit All Applications

Before you begin installing system software, quit all applications.

Start Up from Install Disk 1

After you run Disk First Aid, HD SC Setup and Safe Install, you can restart your

computer and insert the Install Disk 1 disk to install system software. Although starting up from the Install Disk 1 disk is not required, it uses less memory than starting up with your hard disk.

Installation Disks

If you are installing from floppy disks, make sure the installation disks are locked. For more information on locking disks, see the manual that came with your computer.

Installation Time

Depending on your model of Macintosh, installation may take fifteen minutes to about an hour.

PowerBook 150 with Internal Modem

There is a compatibility problem with the PowerBook 150 with an internal modem and some communication software programs. We have included a fix for this problem on the Before You Install disk. After you install System 7.5 on a PowerBook 150 with an internal modem, insert the Before You Install disk, drag PB 150 Modem Patch to the System Folder icon, and then restart your computer.

Server or Network Programs

Anytime you upgrade or re-install your Macintosh system software, you should also re-install your server or network programs, such as AppleShare or Apple Remote Access. For instructions, see the information that came with your server or network software.

IMPORTANT If you have Workgroup Server 95, do not upgrade to system software version 7.5. Workgroup Server 95 works only with system software version 7.0.1 and System Update 3.0.

Possible Startup Problem on Quadra 900 & 950

After you install System 7.5 on a Macintosh Quadra 900 or 950, it is possible that you may encounter a problem starting up your computer. If you have trouble starting up your computer, do these steps to solve the problem:

1. Restart your computer while holding down the Shift key (to start up without extensions).

2. When the computer is ready, open your Extensions folder (inside the System Folder) and drag SCSI Manager 4.3 out of the Extensions folder.

3. Restart your computer again.

4. After you've started up successfully, if you need the functionality that SCSI Manager 4.3 provides move SCSI Manager 4.3 back to your Extension folder and restart. Your computer should behave normally.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library

System 7.5: Full ReadMe (11/95)

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Security: Everyone

System 7.5: Full ReadMe (11/95)

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TOPIC ----------

The following article is the Read Me document for System 7.5.

DISCUSSION ----------

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TIPS

System Update 3.0

System Update 3.0 is a set of software enhancements that improves the performance and reliability of Macintosh computers running system software version 7.1, 7.1.1 (System 7 Pro), or 7.1.2 (for Power Macintosh). When you upgrade your system software from any of these versions to 7.5, you automatically get the enhancements provided in System Update 3.0.

PowerBook Duo 210 and 230 Models

When Macintosh system software 7.5 is installed, PowerBook Duo 210 and 230 models can use Type III batteries.

PowerBook 200 and 500 Series Printing to Serial Printers

If you have trouble printing to a serial printer that is connected to the Printer/Modem port of your PowerBook 200 or 500 series computer, do these steps:

1. Depending on whether or not your PowerBook has Express Modem installed, do one of the following:
   - Open the Express Modem control panel and choose Use External Modem.
   - Open the PowerBook Setup control panel and choose Normal.

2. Open the Chooser and do the following:
   - Turn off AppleTalk.
   - Select the serial printer.
   - Select the printer/modem icon (or the modem icon if the printer/modem icon is not available).

How to Reconnect to a Lost Server

When connection to a server is unexpectedly lost, the server's icon remains dimmed on the screen. If you double-click the dimmed icon or choose the server from the Recent Servers item in the Apple menu, you get a message telling you that the disk could not be opened because you do not have enough access privileges. Before you can reconnect to the server, you must close any open files, and then drag the server's dimmed icon to the Trash. If you need to save

your work on an open file, use Save As to save it on a different disk.

How to Use the old "Find File" Feature

In System 7.5, the Find File program appears when you choose Find from the File menu. If you want to use the earlier Find feature instead of the Find File program, follow these instructions:

1. To launch Find, press Command-Shift-F.
2. To find an item again, press Command-Shift-G.

How to Use the Shutdown Items folder

The Shutdown Items folder (inside the System Folder) allows you to specify scripts or programs that automatically run during the shutdown process. It works much like the Startup Items folder. To specify an item to run during shutdown, follow these instructions:

1. Put the item into the Shutdown Items folder.

2. To run the Shutdown Items, choose Shut Down or Restart from the Special menu. (Do not choose Shut Down from the Apple menu. It will not launch items in the Shutdown Items folder.)

How to Rebuild Your Desktop

It is not necessary to rebuild your desktop periodically. However, when you do rebuild your desktop see the information below.

Some Apple and non-Apple extensions may interfere with rebuilding your desktop. To prevent problems, you'll need to turn off all extensions except Macintosh Easy Open before you rebuild the desktop. When you finish rebuilding the desktop, turn the extensions you normally use back on.

To rebuild the desktop, follow these steps:

1. Before you rebuild your desktop, use the Extensions Manager to save a record of the extensions that are currently turned on.
   - Open the Extensions Manager control pane.
   - Open the Sets pop-up menu, and choose Save Set.
   - When the Save Set dialog box opens, type a name for your currently selected extensions (for example, 'My Extensions'). When you close the dialog box, the name of your set is added to the Sets pop-up menu.

2. To turn off all extensions, open the Sets pop-up menu again and choose All Off.

3. To turn on Macintosh Easy Open, find it on the list and click it to put a checkmark beside it.

4. To rebuild the desktop, restart your computer while holding down the Command and Option keys.

5. When you see the dialog that says "Are you sure you want to rebuild your desktop on your disk? All of your info window comments will be lost," release the keys and click OK.

6. When the desktop is rebuilt, open the Apple menu and choose Control Panels.

7. Open the Extensions Manager control panel.

8. To turn your extensions back on, open the Sets pop-up menu and choose the name you gave your set of extensions in step 1 (for example, 'My Extensions').

9. Restart your computer to activate the extensions.

CloseView and the Apple Video Player

You can use CloseView to magnify part of the display up to 16 times and to invert the display. CloseView is not currently compatible with the Apple Video Player. If you want to view video in the Apple Video Player, you must turn off CloseView. To turn off CloseView, press Command-Option-O or open the CloseView control panel and click the Off button.

Express Modem Software

Any time you re-install your Macintosh system software, you should also re-install your Express Modem software.

TROUBLESHOOTING

Incorrect "Guide" File Balloons

System 7.5 includes Apple Guide documents which provide the on-screen instructions and other information that you need to help you use your computer. However, if you turn on Balloon Help (by choosing Show Balloons from the ? menu) and point to a Guide file icon on the hard disk, the balloon may give you the wrong information about where the file belongs or what you can do with it. To avoid being misled by incorrect balloons, follow the guidelines below:

- Leave Guide files where they are. Some Guide files (for example, the Guide file named "Macintosh Guide") belong in the Extensions folder. Others will not work if they are put into the Extensions folder.

- Keep application programs that have Guide files in the same folder as the Guide file. For example, keep the file named "File Assistant Guide" in the same folder as the File Assistant program. If you move a Guide file that belongs with an application program, you won't be able to get help while using the program.

Apple Guide Documents and Sleep

If your PowerBook is set to go to sleep automatically, it will not sleep while an Apple Guide document is open. If you're not sure whether an Apple Guide document is open, here's how to check: Look for a window that contains instructions and "floats" on top of all the other windows on your screen. An Apple Guide document window remains frontmost and active even when you click other windows to make them active. Also, look for a window with rows of dots (rather than lines) in the title bar. To close an Apple Guide document, click the close box in the upper-left corner of the window.

QuarkXPress

To use QuarkXPress with System 7.5 on a Power Macintosh, you must upgrade to QuarkXPress version 3.3.1 or later. For upgrade information contact Quark, Inc. at 1-800-788-7835.

GeoPort and Power Macintosh

System 7.5 on the Power Macintosh requires version 1.0.1 of "GeoPort for Power Macintosh." Other GeoPort versions are not compatible with System 7.5 on the Power Macintosh. Version 1.0.1 of GeoPort is available on the CD version of System 7.5 or from 1-800-SOS-APPL.

NOTE: This is not part of the Read Me file. GeoPort for Power Macintosh 1.0 and 1.0.1 will function with System 7.5, but there are outstanding bugs customers need to work around:

- 1.0 has two problems with virtual memory:
  - Network file transfers will fail when VM is on.
  - Data connections will fail when VM is on.

- 1.0 and 1.0.1 will crash the computer on restart if there are any faxes waiting to be sent in the Waiting to be Faxed folder.

- The modem speaker must be turned off at all times through the Express Modem control panel to prevent intermittent crashing.

This article can help you locate the GeoPort for Power Macintosh 1.0.2 update, it is available on online services:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

Using ISO 9660 and High Sierra CD-ROM Discs

Discs in the ISO 9660 and High Sierra formats have version numbers attached to filenames. Some application programs need these version numbers in order to use the files. If you have problems using an ISO 9660 or High Sierra CD with a program, follow the instructions below to make the version numbers available to the program:

1. Make sure the application program you want to use with the CD is active.

2. Drag the CD icon to the Trash to eject the disc.

3. Hold down the Option key while you reinsert the disc. Keep holding down the Option key until the disc is in the player. The program should now be able to locate the filenames on the CD-ROM disc.

Printing Large Fonts with LaserWriter Version 7.2 or 8.1.1

If QuickDraw GX is not installed and your printer uses either the LaserWriter 7.2 or the LaserWriter 8.1.1 (or earlier version 8) driver, your system may crash rather than report an out-of-memory error when printing large QuickDraw GX fonts or other large fonts. The problem will be fixed in the LaserWriter 8.2 driver.

Problem with AudioVision 14 Display Software on PowerBooks

If you have AudioVision 14 Display software installed on a PowerBook, you may have trouble with the pointer "freezing" (not responding to the trackball) after you install System 7.5. To fix the problem, do these steps:

1. Turn off your computer.
2. Start up your computer while holding down the Shift key (to turn off all extensions).
3. When the computer is ready, drag the AudioVision extension out of the Extensions folder.
4. Restart your computer to turn the extensions back on.

The Assistant Toolbox and Non-Networked Printers

If the Assistant Toolbox extension is installed on your computer, the Print Later option (LaterLaser) works only with networked PostScript printers. If you are printing on a non-networked printer—particularly a LaserWriter Select 310—you should open the Extensions Manager control panel and turn off the Assistant Toolbox extension.

Losing Your Desktop When You Have an AV Card Installed

If you have an audio-video (AV) card installed, it is possible to lose access to your desktop. If you encounter the problem on a Power Macintosh, see the Troubleshooting section in the manual that came with your computer. If you encounter the problem on another model of Macintosh computer, see the information below:

- If you select the AV card in the Monitors control panel when no monitor is attached to the card—This usually happens when the Monitors control panel is set to "Rearrange on close" and you move the menu bar to a video card (such as the Power Macintosh AV Card or a non-Apple video card) when no monitor is attached to the card. The computer cannot determine whether the AV card really has a monitor attached. When you restart the computer, you do not have access to your desktop. To correct the problem, you will have to remove the AV card and change the primary monitor back.

- If you are using a single monitor that is NOT attached to the AV card and the AV card is set to greater bit depth than your monitor—When you start up the computer with the AV card installed, the system thinks that there is a monitor attached to the AV card. For example, if you are using a single monitor that is not attached to the AV card, the system thinks there are two monitors. The new color picker tries to show itself on the deepest screen available. If the depth of the AV card is greater than the bit depth of your main display, the AV card becomes the main display. To correct the problem, attach a monitor to the AV card, and then restart your computer and use the Monitors control panel to set the AV card to black and white (1 bit depth).

Macintosh Centris/Quadra 660AV, Quadra 840AV, and Alert Sounds

If you have a Macintosh Centris/Quadra 660AV or Quadra 840AV, some system alert sounds may not play correctly with the Alert Volume turned down. To avoid the problem, keep the Alert Volume turned all the way up and adjust the Built-in system volume. (To adjust Built-In volume, open the Sound control panel and choose Sound Out from the pop-up menu.)

Help with the Japanese or Chinese Language Kit

Japanese and Chinese Language Kits version 1.1 or earlier may not be compatible with System 7.5. To run effectively, please upgrade your language kit to version 1.1.1 or later.

Volumes Larger than 2 GB

Volumes larger than 2 gigabytes (GB) with lots of files may show a negative number for bytes used in the Get Info dialog box. An incorrect number of bytes used does not indicate that the data on your disk is damaged.

RasterOps Video Board

Some older RasterOps video boards with ROM earlier than 2.0 may not be compatible with System 7.5. Before installing System 7.5, you should determine the ROM revision of the RasterOps video board by doing the steps below:

1. Start up your computer with the RasterOps video board.
2. When the RasterOps logo appears, look at the ROM version in the top right corner of the monitor.

Boards with ROM revision 2.0 or later should operate correctly with System 7.5.

If your ROM is earlier than 2.0, contact RasterOps Technical Support for upgrade information. The RasterOps Technical Support department is available Monday through Friday from 8:00 a.m. to 7:00 p.m. Eastern Standard Time.

Worldwide: (317) 577-8788
U.S.: (317) 577-8788
AppleLink: RASTERHELP

IMPORTANT INFORMATION ABOUT MACINTOSH PC EXCHANGE

This section contains important information about Macintosh PC Exchange

Apple File Exchange and Macintosh PC Exchange

The Apple File Exchange software is not compatible with PC Exchange and should not be used while PC Exchange is installed. Version 2.0 of PC Exchange contains an easier and more intuitive method for accessing DOS and Apple II ProDOS disks on a Macintosh.

AutoDoubler

To use AutoDoubler with Macintosh PC Exchange, you must first open the AutoDoubler control panel and turn off the "Show DD on Compressed Files" option.

ClarisWorks Version 1.0v2 or Earlier

Some versions of ClarisWorks cannot read or write files on DOS-format floppy disks. To open a PC document in ClarisWorks, you must first copy the document to your computer's hard disk. Always save ClarisWorks documents on your Macintosh hard disk. You can then copy the documents to a DOS-format floppy disk. Contact Claris to obtain version 1.0v3 or later of ClarisWorks.

Compressed PC Disks and Files

Macintosh PC Exchange does not work with DOS-format floppy disks or SCSI hard disks that have been compressed using Stacker or other MS-DOS or Windows disk-compression utilities. Before transferring compressed DOS files to a Macintosh, you must decompress the files and save them to a non-compressed DOS-format floppy disk.

Working with PC-Format Disks Containing Multiple Partitions

If a SCSI hard disk or removable media cartridge has been formatted to contain multiple partitions, you can use PC Exchange to mount the Macintosh-, DOS-, or ProDOS-format partitions as individual logical drives on the Macintosh desktop. If the disk contains both Macintosh and DOS-format partitions, PC Exchange will only recognize the Macintosh partition. In addition, PC Exchange will only recognize ProDOS-format partitions on SCSI hard disks that are less than 32 megabytes.

You can use PC Exchange to erase existing individual partitions on a SCSI hard disk or removable media cartridge if they have the same format. However, you cannot use PC Exchange to reformat and resize individual partitions contained on the disk. Nor can you format a Macintosh-format hard disk or removable media cartridge as a DOS-format disk. To resize or reformat multiple Macintosh, DOS, or ProDOS partitions, you need to use third-party software designed for partitioning hard disks and removable media cartridges.

Working with DOS-Format SCSI Removable Media Devices

In order for PC Exchange to recognize SCSI removable media devices, you must turn on the device and eject any cartridges before you turn on your Macintosh system.

Do not install the device driver software that came with your removable media device. Instead, open the PC Exchange control panel, click the Options button, select your SCSI device from the list, and then restart your Macintosh. PC Exchange will install its own device driver for that SCSI device.

The Eject Disk command is unavailable when you are working with removable media devices. To unmount and eject a removable media cartridge, drag the device's icon to the Trash. Once the device has spun down and the red light goes out, you can manually eject the cartridge from the drive. To access a removable media cartridge that has been ejected, simply reinsert the cartridge in the drive.

When initializing and formatting Bernoulli and SyQuest cartridges on a PC-compatible computer, use the disk setup and partitioning software that came with the SCSI controller card installed in your PC or that came with your Bernoulli or SyQuest device. Do not use the MS-DOS Fdisk command to initialize a removable media cartridge. In addition, you should use the MS-DOS Format command to format the disk before you copy DOS files to a newly initialized removable media cartridge on a PC.

When you initialize a removable media cartridge on a PC-compatible computer, you must fully partition, initialize, and erase the cartridge using the software that came with your SCSI controller card or removable media drive. If you do not, PC Exchange may not recognize the new DOS-format partitions on that cartridge.

Working with DOS-Format SCSI Hard Disk Drives

In order for PC Exchange to recognize SCSI hard disk drives, you must turn on the drive before you turn on your Macintosh.

Do not install the device driver software that came with your removable media device. Instead, open the PC Exchange control panel, click the Options button, select your SCSI device from the list, and then restart your Macintosh. PC Exchange will install its own device driver for that SCSI device.

When initializing and formatting an external SCSI hard disk on a PC-compatible computer, use the MS-DOS Fdisk command or the disk setup and partitioning software that came with the SCSI controller card installed in your PC. In addition, you should use the MS-DOS Format command to format and erase the disk before you copy DOS files to a new SCSI hard disk on a PC.

Tips and Problems

- A "Sad Mac" error may occur on your Macintosh if a removable media cartridge is left in the drive during startup. To keep this problem from occurring, manually eject removable media cartridges from the drive before you turn on your Macintosh.

- PC Exchange cannot recognize SCSI hard disks, removable media devices, or drive container files that contain more than one gigabyte of disk space.

Article Change History:
29 Nov 1995 - Corrected minor typo.
14 Feb 1995 - Reviewed for technical accuracy.
13 Dec 1994 - Reviewed for accuracy.

Support Information Services

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Tech Info Library

System 7.5: PlainTalk Software ReadMe (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: PlainTalk Software ReadMe (2/95)

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Article Created: 15 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

The following article is the ReadMe document for the PlainTalk software.

DISCUSSION ----------

About the PlainTalk software

The PlainTalk software you have received (version 1.3) is designed to work with System 7.5 only on Macintosh Quadra 840AV, Macintosh Quadra 660AV, and Power Macintosh computers.

About the Sound control panel

Speech recognition works best when the original (default) sound settings are chosen in the Sound control panel. If you have problems while using your computer's speech recognition capabilities, make sure that the following settings are chosen in the Sound control panel:

- The Sound Out rate should be set to 24.000 kHz if you are using a Macintosh Quadra 840AV or 660AV. If you are using a Power Macintosh computer, set the rate to 22.050 kHz.
- In the Options section under Sound In, turn off Playthrough (make sure there is no X in the box next to Playthrough).

If PlainTalk runs but doesn't recognize what you're saying

PlainTalk has some ability to adapt to background sounds in a room. Occasionally, PlainTalk will appear to not recognize what you're saying because it has not yet adapted properly. If this happens, you can help PlainTalk adapt by turning it on using the Speech Setup control panel and speaking into the microphone at a normal distance and volume for a while. On the Power Macintosh computer, PlainTalk will usually adapt after about 20 seconds of speech. On the

Macintosh Quadra 840AV and Quadra 660AV it can take a few minutes of speech for PlainTalk to adapt. Once it has adapted, PlainTalk should be able to recognize and respond to utterances like "Computer, what time is it?". PlainTalk will remain properly adapted the next time you turn it on.

If you see a message that there isn’t enough memory available

If you see a message that the SR Monitor is having trouble due to lack of memory, save all your open documents and quit the applications you have open.

To avoid running out of memory while using speech

- Quit the applications you have open.
- Use the Speech Setup control panel to choose a voice that takes up less memory, or turn off voice feedback. (The voices named “Agnes,” “Bruce,” and “Victoria” take up the most memory.)
- Use the Memory control panel to turn on virtual memory. (With virtual memory on, voices may be slightly distorted and, with some applications, speech performance may decrease.)
- Add more memory to your computer.

If you are running System 7.5 with PowerTalk, QuickDraw GX, and PlainTalk installed, then it is recommended that you have at least 12MB of RAM on a Macintosh Quadra 840AV or Macintosh Quadra 660AV, or at least 16MB of RAM on a Power Macintosh.

Speech Recognition Files

The Apple Extras folder on your hard disk contains an "Introduction to Speech" application and files needed for speech recognition scripting to work. Don’t delete items from this folder unless you are sure you don’t need them, and make sure that you keep backup copies of any files you delete.

If you write scripts

The Speech Macro Editor enables you to create and edit scripts that run in response to a spoken command. If such scripts contain loop commands, such as the AppleScript Repeat statement, make sure that the loop has an exit. If you inadvertently specify a loop statement that has no exit (an infinite loop), the commands within that statement will repeat indefinitely. If this happens, restart your computer.

If you have edited the "My Speech Macros" file in the Extensions folder, back up that file before installing this new PlainTalk software, because the PlainTalk installer will replace the existing "My Speech Macros" file with a new one.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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..TIL16046-System_7-5-PlainTalk_Software_ReadMe_2-95_(TA32285).pdf

Tech Info Library Article Number:16046

System 7.5: Portables Extras ReadMe (3/95)

Revised: 3/22/95
Security: Everyone

System 7.5: Portables Extras ReadMe (3/95)

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Article Created: 15 August 1994
Article Reviewed/Updated: 22 March 1995

TOPIC ----------

The following article is the ReadMe document for the Portables Extras.

DISCUSSION ----------

About Portables Extras

The Portables Extras folder contains the PowerBook File Assistant folder, where you'll find:

- File Assistant, an application program that helps you synchronize files and folders on PowerBooks and desktop computers

- Battery Recondition, an application program you can use on certain PowerBook models to recharge the battery.

Using File Assistant to Synchronize Files

Synchronizing files is especially helpful if you frequently use two computers. If you use a PowerBook with a desktop Macintosh, Duo Dock, or network file server, you may want to keep identical copies of a file or folder in both places.

Start File Assistant by double-clicking the File Assistant icon. Then choose File Assistant Guide from the Apple Guide (question mark) menu to learn how to use File Assistant. File Assistant Guide contains step-by-step instructions for synchronizing files and folders.

IMPORTANT The File Assistant Guide must remain in the same folder as the File Assistant program, or you will not be able to get help while using the File Assistant program. If you choose Show Balloons from the Apple Guide (question mark) menu, and point to the File Assistant Guide icon, the information in the

balloon may be incorrect. It is not possible to open and edit the File Assistant Guide.

Also, if you have files named Assistant Tidbits 1 and Assistant Tidbits 2 in your System Folder, drag them to the Trash to remove them. The 'tidbits' files belong to an older version of File Assistant.

Using Battery Recondition

The Battery Recondition program works with certain models of PowerBook. If it doesn’t work with your computer, a message will appear when you try to start the Battery Recondition program.

For more information on recharging your computer’s battery, see the user’s guide that came with your computer, and the Batteries and Power topic in Macintosh Guide. Choose Macintosh Guide from the Apple Guide (question mark) menu.

Article Change History:
22 Mar 1995 - Corrected wording of Duo Dock.
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16047

System 7.5: PowerTalk Extras ReadMe (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: PowerTalk Extras ReadMe (2/95)

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Article Created: 15 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

The following article is the ReadMe document for PowerTalk Extras.

DISCUSSION ----------

PowerTalk Extras are application programs and utilities for your PowerTalk electronic mail and collaboration software.

How to Use PowerTalk Extras

The list below describes the items in the PowerTalk folder and tells you how to use each item.

AppleMail and AppleMail Guide

AppleMail is a built-in electronic mail program that lets you write and send messages. To use AppleMail, double-click its icon.

AppleMail Guide is a document that provides on-screen instructions and other information while you are using AppleMail. Make sure you leave AppleMail Guide where it is, in the same folder with the AppleMail program. You can't open the AppleMail Guide file directly. It contains information that is available from the Guide menu (marked with the ? icon) while you are using the AppleMail program.

To get help while you're using AppleMail, open the Guide menu (marked with the ? icon) and choose AppleMail Guide.

Demonstration Signer and DigiSign Utility

PowerTalk's DigiSign digital signatures software lets you electronically approve and verify data. The DigiSign Utility lets you begin the process of obtaining a

Signer file. The Demonstration Signer is a sample file showing how your Signer file will look.

For more information, open the Guide menu (marked with the ? icon) and choose PowerTalk Guide. Then click the Topics button and see the items for the topic "Digital Signatures."

Untitled Info Card

You can use the Untitled Info Card to create a card that contains information about a person or group of people. An information card usually contains a person's name, postal address, electronic address, and telephone numbers. An information card for a group contains pointers (or aliases) to information about the individuals in the group.

Information cards are usually stored in catalogs, although you can keep an information card on your desktop or in a Finder window.

For more information on using information cards, open the Guide menu (marked with the ? icon) and choose PowerTalk Guide. Then click the Index button and see the items for the index term "info card/information card."

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16048

Tech Info Library

System 7.5: QuickDraw GX software ReadMe (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: QuickDraw GX software ReadMe (2/95)

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Article Created: 15 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

The following article is the ReadMe document for QuickDraw GX.

DISCUSSION ----------

Contents

Tips
- Restoring Type 1 Fonts to Their Original State
- Tekton Plus RegularSC Prints as Courier From Some Applications

Troubleshooting
- QuickDraw GX and Memory
- Printing Problems
- QuickDraw GX and Application Programs
- If Your Macintosh Fails to Restart
- Installing QuickDraw GX with the Power Macintosh Upgrade Card
- The Tray Mismatch Scaling Option
- QuickDraw GX with the Vector Imaging System on the Power Macintosh

Tips

Restoring Type 1 Fonts to Their Original State

If you remove QuickDraw GX from your system, you need to restore your Type 1 Fonts. To restore Type 1 fonts, follow these steps:

1. Open the System Folder.
2. Open the Fonts folder.
3. Drag any suitcases that have been enabled to the Trash.

4. Open the •Archived Type 1 Fonts• folder.
5. Move the contents of the •Archived Type 1 Fonts• folder to the Fonts folder.
6. Drag the •Archived Type 1 Fonts• folder to the Trash.

Tekton Plus RegularSC Prints as Courier From Some Applications

In application programs which do not take advantage of QuickDraw GX, Tekton Plus appears as two fonts: Tekton Plus Regular and Tekton Plus RegularSC. Applications such as Adobe Illustrator, QuarkXPress, and Aldus PageMaker print characters from Tekton Plus RegularSC as Courier on PostScript printers.

Troubleshooting

QuickDraw GX and Memory

- On a Macintosh with 8 MB of available memory with Macintosh system software version 7.5, QuickDraw GX, and PowerTalk, you can enable only a limited number of printing extensions and desktop printers. More than 7 of each at the same time may cause a low-memory alert to appear. If you want to have more than 7 desktop printers, removing a printing extension will help alleviate memory difficulties and vice-versa. If a low-memory alert does appear, try deactivating printing extensions or removing desktop printers. For more information about desktop printers and printing extensions, see the Macintosh System 7.5 Upgrade Guide.

- The presence of several inactive desktop printers (with Xs through the icon) on the desktop or on disks other than the startup disk can cause low-memory alerts to appear. They may also cause your computer to be unable to start up. To solve the problem, hold down the Shift key as you start up your computer. When the computer is ready, drag the inactive desktop printers to the Trash.

Printing Problems

- Occasionally, jobs waiting in a desktop printer queue may not be printed. Be sure to check the status of the document in the desktop printer to ensure it is not on hold. If the status of the document is normal and your document is not printing, restart your Macintosh.

- If you set up “client” desktop printers (created in Chooser with the Servers pop-up menu), keep these client desktop printer windows closed. Leaving these windows open causes extra network traffic and may cause your system to crash.

- Once QuickDraw GX is installed, do not lock the System file. Locking the System file may cause your system to crash, especially if you drag the default desktop printer icon to the Trash. The reason is that QuickDraw GX software stores the name of the default desktop printer (and the name of its Chooser extension) in the System file. To unlock the System file, select the System file's icon, choose Get Info from the File menu, then

click the Locked checkbox to remove the X.

- Occasionally, your system may not respond when you choose Shut Down while printing. If you choose Shut Down repeatedly, the correct message will appear (asking whether you want to shut down after printing or shut down immediately). If you try to cancel the shutdown at this point, the computer may still shut down. If this happens, no print jobs are lost. The document currently being printed will finish and any other print jobs will show up in the print queue when you start up your computer again. If a print job is on Hold after you start up again, select it and click Resume.

QuickDraw GX and Application Programs

- If possible, do not use the QuickDraw GX Helper (to turn off desktop printing) with WordPerfect. In WordPerfect, when you turn desktop printing off, the third item on the Apple Menu (which corresponds to the first alphabetic item in the Apple Items folder) opens.

- In PageMaker version 5.0, documents containing PICTs will print without the PICTs and an extra blank page may be printed at the end of some documents. To print correctly, hold down the Option key when you choose Print from the File menu.

- Adobe Illustrator version 5.5 incorrectly installs ATM 3.6.1 alongside ATM 3.7 (ATM GX) when ATM 3.7 is already installed. ATM will not run when two versions of ATM are installed at the same time. To remove ATM 3.6.1 after installing Adobe Illustrator 5.5, follow these steps:

1. Open the System Folder.
2. Drag the ~ATM 68020/030/040 file onto your desktop.
3. Open the Control Panels folder in the System Folder.
4. Drag the ATM 3.6.1 control panel (named ~ATM™) onto your desktop.
5. Restart your Macintosh.
6. Drag the ~ATM™ and ~ATM 68020/030/040 files to the Trash.

- To print on a PostScript printer using Insignia Solutions' SoftPC and SoftWindows products, you must turn off desktop printing or use the Epson LQ-2500 output option. To turn off desktop printing, use the QuickDraw GX Helper (one of the QuickDraw GX Utilities). To install the QuickDraw GX Utilities, see the instructions in Chapter 3 ("Installing QuickDraw GX") of the Macintosh System 7.5 Upgrade Guide.

- You should print documents that use the Al-Nashir Al-Sahafi font (Arabic Design Studio) on raster (non-PostScript) printers. If you try to print an Al-Nashir Al-Sahafi document on a PostScript printers, no document will print.

- When you open Adobe Acrobat Reader or Adobe Acrobat Exchange with QuickDraw GX or ATM 3.7 installed, the following message appears: “The ATM Font Database must be installed to use Acrobat. The program will now quit.” This error message is displayed (even if the ATM Font Database is present) because ATM 3.7 does not have font substitution capability,

which is a requirement for Acrobat products.

If your Macintosh Fails to Restart

Occasionally, your Macintosh may fail to restart when you choose Restart from the Special menu.

If this occurs, follow these steps:

1. Open the Special menu and choose Restart.
2. Hold down the Shift key as the computer starts up.
3. When the computer is ready, open the System Folder.
4. Open the Preferences folder (inside the System Folder).
5. Drag the Finder Preferences file from the Preferences folder into the Trash.
6. Open the Special menu and choose Restart again.

Installing QuickDraw GX with the Power Macintosh Upgrade Card

When you install QuickDraw GX on a Macintosh with the Power Macintosh Upgrade Card, make sure that the upgrade card is enabled before installing QuickDraw GX.

The Tray Mismatch Alert Scaling Option

The Tray Mismatch Alert scaling option is not completely implemented for QuickDraw GX 1.0.1. Under certain circumstances, the pages will not be properly scaled even if you select the Scale option. To avoid this problem, format the pages from within the application program to match the output device tray.

QuickDraw GX with the Vector Imaging System on the Power Macintosh

There is a problem with the Vector Imaging System and Power Macintosh. If you have problems plotting, turn off Modern Memory in the Memory control panel.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16049

Tech Info Library

Color StyleWriter Pro: Transparency Requirements (1/95)

Revised: 1/19/95
Security: Everyone

Color StyleWriter Pro: Transparency Requirements (1/95)

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Article Created:15 August 1994
Article Reviewed/Updated: 9 January 1995

TOPIC ----------

This is a list of frequently asked questions about the specifications of transparency film required for a Color StyleWriter Pro.

DISCUSSION ----------

Q: Does the Color StyleWriter Pro transfer any heat which could affect the transparency?

A: The Color StyleWriter Pro does not use heat to fuse the ink to the printing material. The bubble jet printing process uses miniature heating elements to heat the ink and cause it to jettison from the print nozzle. The amount of heat produced is insignificant.

Q: Does the printer have an optical sensor which requires a paper backed transparency?

A: The Color StyleWriter Pro utilizes a photosensor with a mechanical flag to detect the presence of paper. This configuration allows it to operate properly using either clear or opaque printing materials, however for best results Apple's paper backed transparencies should be used.

Q: Why does apple recommend using the more expensive paper backed transparencies if an optical sensor is not used?

A: Apple's paper backed transparencies are priced competitively with other brands and optimized for use in Apple's ink-jet printers. The paper backing aids in transporting the paper through the paper feed mechanism, viewing printed slides prior to viewing them on an

overhead projector, and eliminates the need for putting the potentially light diffusing absorbent material on both sides of the transparency film during manufacturing.

Apple transparencies are formulated to minimize ink drying times and prevent paper feeding problems. The surface finish aids in fast drying times and Apple's transparencies can be stack printed without risk of smudging or other print quality problems.

Q: Can a less expensive, non-backed transparency be used?

A: Apple strongly recommends the use of transparencies designed specifically for the Color StyleWriter Pro. There are many other transparencies designed for ink-jet printers that may work, however Apple does not make any specific recommendations. If you wish to use non-Apple transparencies, you should test a small quantity to make sure that the results are acceptable.

Article Change History:
09 Jan 1995 - Removed recommendations for specific brands.

Support Information Services

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Tech Info Library Article Number:16050

Tech Info Library

System 7.5: Shut Down From Special or Apple Menu (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: Shut Down From Special or Apple Menu (2/95)

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Article Created: 15 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

After installing System 7.5, I noticed that in addition to being able to select Shut Down from the Special menu, there is a Shut Down desk accessory under the Apple menu.

Why are there two selections and does it matter which one I use?

DISCUSSION ----------

The two different choices for shutting down your computer are functionally equivalent. The Desk Accessory does bypass any items in the Shutdown Items folder however.

The shut down selection under the Apple menu is intended for Performa users who may have the Finder hidden for security reasons.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16051

Tech Info Library

Reading Maze and Color Printing to ImageWriter II (9/94)

Revised: 9/15/94
Security: Everyone

Reading Maze and Color Printing to ImageWriter II (9/94)

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Article Created: 16 August 1994
Article Reviewed/Updated: 15 September 1994

TOPIC ----------

I am having trouble printing from Reading Maze to an Apple Imagewriter II with a color ribbon.

DISCUSSION ----------

The Reading Maze program, included with the Apple Early Language Connections (AELC) package, will not print in color to an ImageWriter II with a Color Ribbon.

Reading Maze is produced by Great Wave Software. According to Great Wave, this program uses direct color Quickdraw routines that the ImageWriter II driver does not support. The Apple Color StyleWriter Pro and several Hewlett Packard printers will print in color with Reading Maze.

There is a third party product that may support color printing to the Imagewriter. Look at MacPalette, made by MicroSpot USA, Inc.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Article Change History:
15 Sep 1994 - Revised article for clarity.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16053

Tech Info Library

Support Professional Solution Series: Description (11/96)

Revised: 11/20/96
Security: Everyone

Support Professional Solution Series: Description (11/96)

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Article Created: 17 August 1994
Article Reviewed/Updated: 20 November 1996

TOPIC ----------

This article provides a description, system requirements, and part numbers for Apple Computer's Support Professional Solution Series.

For detailed ordering instructions including ordering by purchase order, see the TIL article "How To Order The Support Professional Solution Series"

DISCUSSION ----------

Apple's Support Professional Solution Series is a comprehensive solution for anyone who supports users of Apple technologies.

Offering a wealth of Apple support information and assistance through a wide range of delivery methods, Support Professional helps you reduce training costs, improve response time, and manage support resources more efficiently. It frees you to spend more time analyzing long-term strategies instead of dealing with day-to-day crises. It also brings you up to speed on new products and technologies so you can anticipate their impact on support operations.

Support Professional covers the complete technical-support cycle, from readiness to response. The Support Briefing System helps you prepare for new technologies with quarterly CD-ROM discs, followed by teleconferences where your questions on emerging Apple Technologies are answered in real time by Apple engineers.

The Support Information System gives you access to the Apple Support Library for thorough answers to technical problems. This includes a searchable version of the Technical Information Library, a subset of the same database used by Apple Authorized Service Providers and support technicians at SOS-APPL. It's supplemented by bimonthly CD-ROM discs containing Apple product information and software; news-letters for support personnel; Apple data sheets; and the Support Notices! e-mail service, which provides up-to-the-minute bulletins on hot and emerging support issues.

The Skill Module System helps new support personnel and key users come up to speed through self-paced training on Apple technologies. You can use its Skill Module Library as is or configure a custom learning package with its Skill Module Developer Kit.

There are two Support Professional Solution Series to choose from: the 500 Series and the 700 Series. With the 700 Series, you get direct, unlimited access to senior Apple support engineers through the toll-free Support Professional Escalation Line.

Support Professional is a cross-platform solution, with all client software and the Skill Module Library supported on both Macintosh and Microsoft Windows software-based systems.

Features

Comprehensive support information

- Receive regular information on the latest Apple technologies
- Access CD-ROM-based and network-based support databases
- Participate in teleconferences with Apple technical experts
- Receive up-to-the-minute support bulletins via e-mail
- Get immediate assistance from Apple support engineers through a telephone hotline (700 Series only)

Efficient delivery

- CD-ROM mailings
- E-mail newsletters and bulletins
- Teleconferences
- Fax service

Customization and scalability

- Select the level of Apple support information you need
- Expand your number of users easily
- Access support information from a Macintosh or Microsoft Windows software-based system

Technical Specifications

System Requirements

Support Information System Server

- 68040-based Macintosh, Power Macintosh, or Apple Workgroup Server system
- 8MB of RAM (12MB required for AppleShare 4.x soft-ware; 16MB required for AppleShare Pro software)
- System 7.0.1 or later (A/UX 3.1 or later if running on an Apple Workgroup Server 95)
- Hard disk with approximately 10MB of available space for AppleSearch software (100MB if indexes are stored), plus space for subscriber-added content and indexes
- CD-ROM drive (additional drives recommended for mounting and sharing other

Apple
support CD-ROM discs such as the Apple Software Archive CD)
• Optional: AppleShare 3.0.3, 4.x, or AppleShare Pro
• To obtain Internet access for Wide Area Information Server (WAIS) searches, only the Support Information System Server needs to be connected to the Internet

Support Information System Client (Macintosh)
• 68020-based or later Macintosh system
• 4MB of RAM
• System 7.0.1 or later
• Hard disk with 2MB of available space
• A compatible monitor
• AppleTalk network connection to the server (client does not require a direct Internet connection to access Internet services through the server)

Support Information System Client (Windows)
• 386-, 486-, or Pentium-based computer
• 8MB of RAM
• Windows 3.1, 3.1.1, or Windows for Workgroups 3.11 software
• Hard disk with 6MB of available space
• A compatible monitor

Support Briefing System Viewer (Macintosh)
• 68020-based or later Macintosh system (68030 or later recommended)
• 8MB of RAM
• System 7.0 or later, with QuickTime and Color QuickDraw installed
• Hard disk with 330K of available space
• Monitor with at least 16 levels of gray (256 colors or more recommended)
• CD-ROM drive

Support Briefing System Viewer (Windows)
• 25-MHz 80386-based computer
• 4MB of RAM (8MB recommended)
• MS-DOS 5.0 or higher software
• Microsoft Windows 3.1.1 or higher software
• Hard disk with 3MB of available space
• VGA color monitor (256-color VGA adapter recommended)
• QuickTime for Windows software (provided)
• Compatible sound adapter
• Mouse
• CD-ROM drive

Skill Module Builder and Packager
• 68020-based or later Macintosh system
• 8MB of RAM
• System 7.1 or later
• Hard disk with 1MB of available space
• Monitor with at least 16 levels of gray (256 colors or more recommended)
• QuickTime software (provided)
• Sound Manager software (provided)
• Optional: Microphone, CD-ROM drive, printer

Skill Module Player and Apple Skill Module Library (Macintosh)
- 68020-based or later Macintosh system
- 8MB of RAM
- System 7.1 or later
- Hard disk with 1MB of available space for the application and 10K per user for logging and progress tracking; 10MB of additional free space required to install complete library
- Monitor with at least 16 levels of gray (256 colors or more recommended)
- CD-ROM drive (not required for server access)
- QuickTime software (provided)
- Sound Manager software (provided)
- Optional: Printer

The Apple Skill Module Library can also be provided to users over a network.

Skill Module Player and Apple Skill Module Library (Windows)
- 25-MHz 80386-based computer
- 4MB of RAM (8MB recommended)
- MS-DOS 5.0 or higher software
- Microsoft Windows 3.1.1 or higher software
- Hard disk with 3MB of available space for the application and 10K per user for logging and progress tracking; 8MB of additional free space required to install complete library
- VGA color monitor with 256-color VGA adapter
- QuickTime for Windows software (provided)
- Compatible sound adapter
- Mouse
- CD-ROM drive (not required for server access)
- Optional: Printer

The Apple Skill Module Library can also be provided to users over a network.

Ordering Information

Support Professional Solution 501
Order No. M3845LL/A
- One copy of the Base Module, which includes:
  - Support Information System Server Kit
  - Apple Support Library CD subscription
  - Apple Skill Module Library
  - Skill Module Developer Kit
- One copy of the Access Module, which includes:
  - Access Module User Guide
  - Support Briefing System Viewer software
  - Support Information System Client software
  - Briefing CD and teleconference subscription
  - Subscriptions to Support Journal, Support Notices!, Information Alley, and data sheets

Support Professional Solution 701
Order No. M3849LL/A
- Same as 501, plus access to the Apple Support Professional Escalation

Line

Support Professional Solution 703
Order No. M3850LL/A
• Includes three copies of the Access Module

Support Professional Solution 705
Order No. M3851LL/A
• Includes five copies of the Access Module

Support Professional Access Module 700
Order No. M3848LL/A
• Additional Access Module for use with any 700 Series package

Component Extensions and Upgrades

Support Information System Server Kit (for setting up additional SIS server, includes; Support Library CD, Software Archive CD and Extras CD) Order No. M3854LL/A

Escalation Line Extended Hours (Available only with 700 Series packages)
Order No. M3853LL/A

Product specifications are subject to change. Check with your Apple reseller for the most current information about product specifications and configurations.

For more information on Support Professional, call: 1-800-745-2775 or visit our website at http://support.info.apple.com/SPP/SPP.html.

Article Change History:
20 Nov 1996 - Added information to SIS Server kit.
10 Apr 1996 - Corrected minor typo.
05 Apr 1996 - Updated with latest package information.

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Tech Info Library Article Number:16057

Tech Info Library

System 7.5: Proper Disk Cache Setting (4/96)

Revised: 4/26/96
Security: Everyone

System 7.5: Proper Disk Cache Setting (4/96)

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Article Created: 17 August 1994
Article Reviewed/Updated: 26 April 1996

TOPIC ----------

Under System 7.5, is the default Disk Cache setting appropriate for all levels of memory installed? If not, what would the proper setting be?

DISCUSSION ----------

It is recommended that the Disk Cache be set to 32K per megabyte (MB) installed of physical memory. For an 8 MB Macintosh, the proper Disk Cache setting would be 256K.

In System 7.5, 7.5.1, and 7.5.2, the Memory control panel had an anomaly where, if you click the "Default" button, it will always set the Disk Cache setting to 96K no matter how much memory you have installed. However, this has been fixed in System 7.5.3, and the default is now equal to 32K per MB installed. You can updgrade to System 7.5.3 using System 7.5 Update 2.0, which is available on the online services.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" - Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" - Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

This article was published in the Information Alley on 19 April 1996.

Article Change History:
26 Apr 1996 - Added alley info.
19 Apr 1996 - Added info about System Update.

14 Feb 1995 - Reviewed for technical accuracy.

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Tech Info Library Article Number:16058

Tech Info Library

Video Mirroring: Ways to Maximize Performance (8/94)

Revised: 8/18/94
Security: Everyone

Video Mirroring: Ways to Maximize Performance (8/94)

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Article Created: 18 August 1994

TOPIC -----

I intend to use my PowerBook and Video Mirroring for presentations. What steps can I take to improve performance?

DISCUSSION -----

Here are some suggestions to maximize Video Mirroring performance:

- keep color settings to the minimum bit depth actually needed
- keep use of animated transition effects to a minimum
- minimize use of complicated graphics
- minimize number of individual graphics per slide
- turn off virtual memory during presentations
- disable extensions that are not required for the presentation

Support Information Services

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Tech Info Library Article Number:16059

Tech Info Library

Power Macintosh AV: Displaying Flicker Free Video on TV (3/95)

Revised: 3/1/95
Security: Everyone

Power Macintosh AV: Displaying Flicker Free Video on TV (3/95)

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Article Created: 18 August 1994
Article Reviewed/Updated: 01 March 1995

TOPIC ----------

Using my Power Macintosh AV model with a television connected, I want to display flicker free images on the TV at 512 x 384. There is no option for this in the Monitors control panel, how can this be accomplished?

DISCUSSION ----------

To display flicker free images on your TV, follow these steps:

1. Open the Monitors control panel, click on the Options button and choose
. 640x480 Resolution on 17" monitor
2. In the Video Display Options box, choose display video on television
3. Choose switch
4. Choose upon restart display video on television
5. Restart your Macintosh
6. In the Monitors control panel, select 256 colors
7. Click on the Options button, choose 512x384 (NTSC TV only)
8. Select flicker free format

Article Change History:
01 Mar 1995 - Revised title to more accurately reflect contents of article.

Support Information Services

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Tech Info Library Article Number:16060

Tech Info Library

QuickDraw GX: Desktop Printing On/Off Retained After Quit (2/95)

Revised: 2/14/95
Security: Everyone

QuickDraw GX: Desktop Printing On/Off Retained After Quit (2/95)

==========

Article Created: 18 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC -----

With QuickDraw GX installed, if I disable Desktop Printing in one application, will it be disabled in all applications?

DISCUSSION -----

No, the Desktop Printing on/off setting is not a global setting. Changing the setting in one application affects that application only.

Additionally, quitting the application does not reset Desktop Printing. It will remain set as it was when the application was quit.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16062

Tech Info Library

QuickDraw GX: Multi Page Printing on One Sheet of Paper (2/95)

Revised: 2/14/95
Security: Everyone

QuickDraw GX: Multi Page Printing on One Sheet of Paper (2/95)

==========

Article Created: 18 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

I just installed System 7.5 and QuickDraw GX and would like to print multiple text pages on one sheet of paper. Using the Layout feature in the Page Setup dialog box of the LaserWriter 8.x driver I was able to do this.

How can I accomplish this with System 7.5 after QuickDraw GX is installed?

DISCUSSION ----------

There are two methods to print multiple text pages on one sheet of paper.

An extension to QuickDraw GX called Pierce Paper Saver can be installed. Pierce Paper Saver is included with the System 7.5 Personal and Group Upgrade Kits.

If you do not have the Pierce Paper Saver printing extension installed, the following procedure will allow you to utilize the LaserWriter 8.x multi page printing feature while running System 7.5:

Step 1
Make sure you have installed GX Helper via the Custom Install of QuickDraw GX.

Step 2
Remove all old LaserWriter drivers with the exception of the 8.x version.

Step 3
While in your application, under the Apple menu, select "Turn Desktop Printing Off."

Step 4
A dialog box will appear asking you to confirm your selection, select OK.

You will now be using the LaserWriter 8.x driver and have the ability to use all

the features of the 8.x driver.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16064

Tech Info Library

Workgroup Server 9150: DAT Tape Length and Type (8/94)

Revised: 8/18/94
Security: Everyone

Workgroup Server 9150: DAT Tape Length and Type (8/94)

==========

Article Created: 18 August 1994

TOPIC --------------------

What kind of DAT tape is required by the Apple Workgroup Server 9150?

DISCUSSION --------------------

The Workgroup Server 9150 uses MRS DAT tapes. The tapes come in 90 and 120 meter lengths.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16065

Tech Info Library

PowerBook: Printing to Serial Printer w/One Serial Port (9/95)

Revised: 9/6/95
Security: Everyone

PowerBook: Printing to Serial Printer w/One Serial Port (9/95)

==========

Article Created: 19 August 1994
Article Reviewed/Updated: 6 September 1995

TOPIC ----------

We have a number of customers who have bought PowerBook 500 series computers with a StyleWriter II. The problem is the printers will stop printing, usually with an error message "Port is Busy", even though AppleTalk is turned off. Can you advise if there is a problem in printing to the StyleWriter II from a PowerBook 500 computer.

If a problem exists, is there a work around?

DISCUSSION ----------

The PowerBook 520(c) and 540(c) computers employ a single serial port which is a combination Printer/Modem port. In order to use this port for serial printing, use the following information to properly configure your PowerBook 500 series computer:

If the Express Modem is installed:
- Open the Express Modem control panel and select Use External Modem.
- Open the PowerBook Setup control panel and select Normal.

Open the Chooser and do the following:
- If using the PowerBook 200 series, turn OFF AppleTalk.
  Because the PowerBook 500 series is equipped with Ethernet, you only have to disable AppleTalk if you are using the serial port for network services. You can verify that you are using Ethernet by making sure the Network Control Panel is set for Ethernet.
- Select the serial printer driver.
- Select the "printer/modem" icon (or the modem icon if the printer/modem icon is not available).

Note: Domestic PowerBook 500 series computers will have a Global Village Powerport Mercury modem installed, not an Express modem, and therefore will only

need to have the PowerBook Setup control panel set to normal for step #1.

A similar problem can also occur when using the Color StyleWriter 2400 or other serial printer. If you see no port selection choices, make sure the PowerBook Setup control panel is set for Normal.

When using other serial printers on the PowerBook with the Assistant Toolbox installed, it is possible to have other difficulties printing. Apple engineering is aware of these problems and is working towards a solution. Workarounds are described in other articles in the Tech Info Library. Use PowerBook and Assistant Toolbox as search criteria.

Looking beyond for a longer term solution to this problem, any future Apple serial printer drivers will provide only one port selection (called the "Printer/Modem") in the Chooser. Also, the instructions outlined above are being included in the Read Me file for System 7.5.

This problem can also occur when printing to any serial printer with other PowerBook computers that have a single serial port including the PowerBook 150 and the PowerBook 200 series.

Article Change History:
06 Sep 1995 - Clarified when you have to turn off AppleTalk.
14 Mar 1995 - Clarified Discussion section, added Color StyleWriter 2400.
06 Feb 1995 - Changed PowerBook 145 to PowerBook 150.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16067

Tech Info Library

AppleSearch WAIS Gateway: Connecting to the Internet (9/94)

Revised: 9/13/94
Security: Everyone

AppleSearch WAIS Gateway: Connecting to the Internet (9/94)

==========

Article Created: 19 August 1994
Article Reviewed/Updated: 12 September 1994

TOPIC ----------

How do I use the WAIS gateway capability of AppleSearch 1.5 to access information on the Internet?

DISCUSSION ----------

AppleSearch is Apple's client/server information retrieval system. It allows users to search large text databases for topics of interest. The AppleSearch WAIS (Wide Area Information Server) gateway expands the scope of AppleSearch beyond Local Area Networks to the Internet.

The WAIS gateway, the primary new feature of AppleSearch 1.5, allows Macintosh users on a AppleTalk network to search WAIS servers on the Internet for information related to specific topics or keywords.

INTERNET CONNECTION

In order to use the AppleSearch/WAIS gateway, you must have a TCP/IP connection from a Macintosh to the Internet. This can be accomplished with the Apple IP Gateway software, Shiva Fastpath, Cisco router or some other DDP/IP (Datagram Delivery Protocol/Internet Protocol) gateway. The Internet connection can be either dial-up or dedicated.

HOW IT WORKS

The AppleSearch server software handles all communication with the AppleSearch client Macintosh computers on your AppleTalk network. The WAIS gateway software communicates with the AppleSearch server via Apple Events and handles all communications with the Internet-based WAIS servers. Both the AppleSearch server and WAIS gateway software reside on the same Macintosh computer (You could also install the Apple IP Gateway software on this same machine to provide a cost effective Internet connection).

Once the IP connection to the Internet is in place, you will use the WAIS gateway software to connect to WAIS.com (the WAIS server directory on the Internet) and download its list of known WAIS servers. From this list you will use the AppleSearch server software to specify which WAIS servers or "libraries" can be accessed by your AppleSearch clients.

An AppleSearch client on the AppleTalk LAN can make requests for information from available WAIS servers. The WAIS servers will appear as AppleSearch libraries. When a request is made, it is passed from the AppleSearch server to the WAIS gateway, reformatted, and sent on to the target WAIS server. The WAIS server returns a ranked relevance list of document titles or "hits" that fit the criteria of the search. The AppleSearch user then selects which document he/she wants to view. That document is downloaded from the WAIS server, through the WAIS gateway, to the AppleSearch server and made available to the AppleSearch client user.

Using AppleSearch, users don't have to have direct Internet access to make use of Internet resources; they can go through the server from either their desktop or portable computer without being directly connected to the Internet themselves. This gateway approach allows the AppleSearch server administrator to choose which WAIS sources are available to the LAN users, allowing their selection on the basis of what is appropriate or applicable to the users.

Article Change History:
12 Sep 1994 - Changed Apple IP Gateway name to reflect finished goods name.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16069

A/UX: No AppleShare PDS file

Revised: 8/19/94
Security: Everyone

A/UX: No AppleShare PDS file

==========

Article Created: 19 August 1994

TOPIC -----

I noticed that when one starts up Personal File Sharing on a Macintosh running A/UX, no "AppleShare PDS" file is created at the root level of the volume. If there is no PDS file, where is the information on access privileges stored?

DISCUSSION -----

There is no file called "AppleShare PDS" in the File Sharing implementation of the A/UX Macintosh environment. Instead, the information normally contained in the PDS file is stored in several files located in the folder:

```
System Folder
   Preferences
      File Sharing
```

The files will have names similar to:

```
.HfsPDF.2.41.52.PM
.HfsPDF.6.15.47.AM
.UnixRoot
```

The files with the name .HfsPDF.??.??.??.?? are the PDS information for each one of the Macintosh HFS volumes attached to the server. The ??.??.??.?? portion of the name reflects the creation date for the volume.

The file .UnixRoot contains the PDS information for the "/" volume. This includes other UFS mounted volumes.

The implementation is similar to the way File Sharing saves access data for Read-Only media and Removable Media.

If you remove these files, the access information will be lost.

..TIL16070-A-UX-No_AppleShare_PDS_file_(TA32306).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16070

Tech Info Library

At Ease: Writing Center Get Pictures Problem (7/96)

Revised: 7/2/96
Security: Everyone

At Ease: Writing Center "Get Pictures" Problem (7/96)

==========

Article Created: 19 August 1994
Article Reviewed/Updated: 02 July 1996

TOPIC ----------

If you're using At Ease and you select "Get Pictures" from The Writing Center's Picture menu, it only allows you to open documents contained in that user's Documents folder. How can this be changed to get pictures from a different folder?

DISCUSSION ----------

At Ease Prior To Version 2.0.3

When launching The Writing Center from At Ease (and the user whom you log in as is restricted in At Ease to opening documents in their Document folder only), selecting "Get Pictures" from The Writing Center's Picture menu will only allow you to open documents contained in the user's Documents folder.

Try these workarounds:

1) If you launch The Writing Center from the Finder, you could navigate to the Pictures folder in The Writing Center folder on the hard drive to "Get Pictures". In short, you can NOT access the pictures without allowing the user At Ease access priviledges to open items outside of their own Documents folder.

2) Another workaround would be to place aliases to each picture in the user's Documents folder.

At Ease Version 2.0.3

At Ease 2.0.3 adds an option to the Options menu in At Ease Setup. It's called Application Preferences and allows the administrator to set "open" and "save" preferences for each application to which users are given access.

The procedure is the same for both At Ease and At Ease for Workgroups:

1) Open At Ease Setup.

2) Select "Application Preferences" from the Options menu. You'll see a list of all available applications. Highlight "The Writing Center" and ensure that there are "X"s in the boxes next to "open location" and "save location." By default, they'll be selected already. Click on "OK" to save.

3) Quit At Ease Setup and log into At Ease as a user who has full access privileges to the hard drive. In other words, do not log on as a user who only has access to a floppy disk, but as a user who can open documents from anywhere on the hard drive. (These will be access privileges you've previously defined for a user from within At Ease Setup.)

4) Open either a new or a previously created Document in The Writing Center. Then, from the Edit menu, select "Preferences...."

5) Click on "Set Default Picture Folder...." A file dialog box will appear from which you can navigate to the location of your new Pictures folder, which can be anywhere you want it to be. Highlight this folder and click "Select." You're finished.

   SPECIAL NOTICE: Unless you log on as a user who has access privileges to the hard drive, clicking on the "Set Default Picture Folder" button will simply bring up the familiar "Please Insert Disk" message.

Thereafter, all users, whether they have access privileges to the hard drive or not, can retrieve (or save) Pictures from the default Picture folder you have defined from within The Writing Center.

NOTE: At Ease 2.0.3, in addition to the changes discussed in this article, is also compatible with System 7.5.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
02 Jul 1996 - Added Fax Doc word
18 Jan 1995 - Added numbered steps describing how to resolve the problem.
05 Oct 1994 - Updated for clarity.
26 Sep 1994 - Added At Ease 2.0.1 workaround.

Support Information Services

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Tech Info Library Article Number:16071

Tech Info Library

QuickTime: Not Recommended with 68000 Computers (8/94)

Revised: 8/19/94
Security: Everyone

QuickTime: Not Recommended with 68000 Computers (8/94)

==========

Article Created: 19 August 1994

TOPIC --------------------

Is QuickTime compatible with my 68000 based Macintosh?

DISCUSSION --------------------

Due to performance limitations of the 68000 microprocessor, QuickTime is not recommended for use with a 68000 based computer. This would include the Macintosh 128k through the Macintosh SE and the Macintosh Classic.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16073

MacTCP: Information on Version 2.0.6 (8/94)

Revised: 8/22/94
Security: Everyone

MacTCP: Information on Version 2.0.6 (8/94)

==========

Article Created: 22 August 1994

TOPIC --------------------

I understand there will be a new release of MacTCP soon. Are there any specific details available on new features or bug fixes?

DISCUSSION --------------------

There will be a bug fix revision to MacTCP beyond the current 2.0.4. For some originally silly, but now sacred (or at least superstitious) reasons, we'll skip the odd-numbered 2.0.5 and go straight to 2.0.6.

This is _not_ a full-scale bug fix release, and it is certainly not a feature enhancement release. We're trying very hard to keep all the engineering attention on the next generation Open Transport/TCP, so that we can bring you nifty things like IP Multicast support and reconfiguration without requiring a machine reboot. But occasionally, there comes a time when a specific bug fix can't be postponed.

Many of you have heard of the new AppleSearch/WAIS gateway. Obviously, it depends on MacTCP. During the final QA testing on the gateway, we discovered a bug in the MacTCP dnr that can cause a system crash. This bug is extremely rare in all normal circumstances, but the demands that the WAIS gateway places on the dnr at not normal - in fact, it is a very high stress client of the dnr. Since this is a crashing bug, and since we expect that AppleSearch/WAIS gateway customers would be likely to encounter the bug, we felt that a maintenance upgrade was in order. Thus, the gateway will ship with MacTCP 2.0.6 installed.

For all other MacTCP users, there is only one other change that _might_ lead you to install MacTCP 2.0.6. MacTCP 2.0.4 has a peculiarity in the way that it handles BootP when the BootP server is on a different subnet than the client Mac. This is _not_ a crashing bug, and workarounds are possible. However, in certain configurations, Macs will apparently fail to find the BootP server on the network. The Mac is actually receiving the response from the server, but is being very "picky" about the infromation in the header. In these certain cases,

the Mac rejects/drops the response packet, because it considered the header to contain invalid information. The RFC does not specify that this test be made, so we stopped making it. Thus, the 2.0.6 build fixes this "bug" -- translation, improves interoperability in the real world.

There are no other changes, and no other users need upgrade. It won't hurt anything if you do, but it won't help anything either. In particular, in order to meet the needs of the AppleSearch team and their shipping schedule, we are continuing to postpone other requested changes related to the DNR's memory management. Customers running BIND 4.9.3(x) have experienced out-of-memory situations that result from the "verbose" behavior of such DNS installations. We'll keep monitoring this situation, and try to make the right decision as time goes on. Again, Open Transport/TCP is not that far away, and we want to keep focused on that if at all possible.

MacTCP 2.0.6 will be released electronically, at no upgrade fee. It will probably be in the form of a "patcher" such as was initially done for MacTCP 2.0.4. If you decide that you need 2.0.6, you will need to be at MacTCP 2.0.4 to apply the 2.0.6 patch. And, as I already noted, it will be preinstalled on the AppleSearch/WAIS gateway.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16074

Tech Info Library

System 7.5: DataViz Translators Included W/Upgrades Only (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: DataViz Translators Included W/Upgrades Only (2/95)

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Article Created: 19 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

I noticed that the System 7.5 upgrade kits contain the MacLinkPlus translators by DataViz. These were not installed on my recently purchased Macintosh and was wondering why.

DISCUSSION ----------

The MacLinkPlus translators are bundled with the System 7.5 upgrade kits as a promotion. They have not been licensed for installation on new Macintosh computers, only in upgrade kits. (Upgrade kits included in the promotion are personal upgrade kits as well as 10, 30 and 100 multi-pack upgrade kits. Site licenses are NOT involved in this promotion).

Support for the translators themselves is provided by DataViz, support for Macintosh Easy Open or Macintosh PC Exchange is provided by Apple Computer, Inc.

This article provides information about a non-Apple product. Please contact the vendor for additional information about their product.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16075

Tech Info Library

System 7.5: PC Exchange 2.0.2 Mounts Removable Media (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: PC Exchange 2.0.2 Mounts Removable Media (2/95)

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Article Created: 19 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

If I want to use a SyQuest type removable cartridge drive with my Macintosh running System 7.5, do I need to install the software for the drive? I understand that PC Exchange enables me to mount cartridges on the fly.

DISCUSSION ----------

PC Exchange (PCX) 2.0.2 will allow you to mount removable media, such as SyQuest cartridges, on the fly negating the need to install separate software.

Step 1
To enable this, you must open the PCX control panel and select Options.

Step 2
Once selected, a list of connected devices will be present, clicking on your cartridge drive will place a check mark next to it indicating that the driver for that device will be loaded at restart.

Step 3
Restart your computer and you now have the ability to insert cartridges on the fly.

The Eject Disk command is unavailable when working with removable media devices. To unmount and eject a removable media cartridge, drag the device's icon to the Trash. Once the device has spun down and the red light goes out, you can manually eject the cartridge from the drive. To access a removable media cartridge that has been ejected, simply reinsert the cartridge in the drive.

When initializing and formatting Bernoulli and SyQuest cartridges on a PC-compatible computer, use the disk setup and partitioning software that came with the SCSI controller card installed in your PC or that came with your Bernoulli or SyQuest device. Do not use the MS-DOS Fdisk command to initialize

a removable media cartridge. In addition, you should use the MS-DOS Format command to format the disk before you copy DOS files to a newly initialized removable media cartridge on a PC.

When you initialize a removable media cartridge on a PC-compatible computer, you must fully partition, initialize, and erase the cartridge using the software that came with your SCSI controller card or removable media device. If you do not, PC Exchange may not recognize the new DOS-format partitions on that cartridge.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16076

Tech Info Library

LaserWriter Pro 810: Maximum Name Length Via Ethernet (8/94)

Revised: 8/22/94
Security: Everyone

LaserWriter Pro 810: Maximum Name Length Via Ethernet (8/94)

==========

Article Created: 22 August 1994

TOPIC ----------

A customer is trying to name their LaserWriter Pro 810 via Ethernet. The users guide states that they can select a name up to 31 characters in length but they have been unable to get beyond 16 characters. Is there a misprint in the manual?

DISCUSSION ----------

The LaserWriter Pro 810 User's Guide is correct. For clarification, the last paragraph of page 43 in the manual states:

"IMPORTANT: The LaserWriter Utility will let you create a name up to 31 characters when you are using the printer via the serial or LocalTalk port, and a name up to 16 characters when you are using the printer via the Ethernet port. (The printer can have two different names: one for the LocalTalk connection and one for the Ethernet connection.)"

The reasoning behind only supporting 16 characters for the Ethernet printer name is due to the 810's virtual printer technology (only applicable on the printer's Ethernet interface). Since there can be a total of 64 different virtual printers, the data structure keeping track of the names could only support a 16 character string. In other words, there was only enough memory to store 16 x 64 characters.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16078

Tech Info Library

TokenTalk NB Card and Power Macintosh Compatibility (3/95)

Revised: 3/23/95
Security: Everyone

TokenTalk NB Card and Power Macintosh Compatibility (3/95)

==========

Article Created: 19 August 1994
Article Reviewed/Updated: 23 March 1995

TOPIC ----------

Is the TokenTalk NB Card (661-0460) compatible with Power Macintosh computers? We have two Power Macintosh 8100/80, and one Power Macintosh 8100/80 AV computers. Also will the TokenTalk NB Card work the Power Macintosh 8100/110 computers?

The AV Power Macintosh will boot with the card installed, but there is no network for testing to see if the card works. The other two Power Macintosh computers will not even boot (no chime, no video, no HD access, but the fan is running).

DISCUSSION ----------

The old TokenTalk NB Card (661-0460) has not been tested with any of the Power Macintosh systems and is not compatible.

The Token Ring 4/16 NB Card and Token Ring NB/c Card are compatible with the Power Macintosh 7100/66 and /80, Power Macintosh 8100/80 and /110, Workgroup Server 8150, and Workgroup Server 9150 systems. The Token Ring NB/c Card is compatible with the Power Macintosh 6100/60 and /66, and Workgroup Server 6150 when using the NuBus Adapter Card. The System 7.1.2 installer has TokenTalk software for the Token Ring 4/16 NB Card but not for the Token Ring NB/c Card. NSI 1.4.5 or later is included in the box with the Token Ring NB/c Card. For the Token Ring 4/16 NB Card, we highly recommend that NSI 1.4.5 or later be used to install the latest Token Ring software.

If you plan on using MacTCP, you need to use MacTCP 2.0.4 or later. Operationally, there is no difference between the 680x0 and these Power Macintosh systems in regards to Apple's Token Ring cards.

Article Change History:

23 Mar 1995 - Updated for higher speed Power Macintosh computers.

Support Information Services

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Tech Info Library Article Number:16080

Tech Info Library

PlainTalk: Freezes After Startup (8/94)

Revised: 8/23/94
Security: Everyone

PlainTalk: Freezes After Startup (8/94)

==========

Article Created: 23 August 1994

TOPIC -----

After booting the Macintosh, when the Plaintalk feedback window open and is “ready” , the computer freezes up when interpreting the first spoken commands. What is the problem?

DISCUSSION -----

Speech recognition works best when the original (default) sound settings are chosen in the Sound control panel. If you have problems while using your computer's speech recognition capabilities (such as locking up, slow performance, or freezes of the computer), make sure that the following settings are chosen in the Sound control panel:

• The Sound Out rate should be set to 24.000 kHz if you are using a Macintosh Quadra 840AV or 660AV. If you are using a Power Macintosh computer, set the rate to 22.050 kHz.

• In the Options section under Sound In, turn off Playthrough (make sure there is no X in the box next to Playthrough).

Support Information Services

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Tech Info Library Article Number:16081

Tech Info Library

LaserWriter Select 360: RAM Needed for Legal Page (8/94)

Revised: 8/23/94
Security: Everyone

LaserWriter Select 360: RAM Needed for Legal Page (8/94)

==========

Article Created: 23 August 1994

TOPIC ----------

How much ram is necessary for the LaserWriter Select 360 to print a legal size page of text?

DISCUSSION ----------

The memory requirements for printing a legal size page depend on the selected resolution, the imageable area, number of fonts downloaded to the printer, and the PostScript overhead requirements. The imageable area can be calculated from the border information available in page setup by clicking on the dog-cow icon.

The chart below indicates the amount of memory set aside by the printer for the page buffer which stores the processed image just before printing.

DPI(H)	X	DPI(V)	X	Imageable Area	=	Page Buffer	Comments
300		300		6.722 x 12.5		945K	Std. Legal
300		300		8.112 x 13.639		1.245MB	Larger Print Area On
600		600		6.722 x 12.5		3.781MB	Std. Legal
600		600		8.112 x 13.639		4.979MB	Larger Print Area On

Once the printer has allocated memory for the page buffer it also allocates space for the PostScript interpreter, PostScript dictionaries, display list, font caching, and program memory. The standard 7 MB LaserWriter Select 360 provides enough DRAM to print a full legal page at 600 DPI with over 1MB of virtual memory remaining for downloading fonts.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16082

Tech Info Library

SIMM Stack: Description (10/94)

Revised: 10/10/94
Security: Everyone

SIMM Stack: Description (10/94)

==========

Article Created: 23 August 1994
Article Reviewed/Updated: 10 October 1994

TOPIC ----------

This article provides a brief description of the SIMM Stack.

DISCUSSION ----------

The SIMM Stack is a HyperCard based stack that contains visual and text based information relating to memory upgrade requirements, specifications, and capabilities of Apple Macintosh computers and applicable LaserWriter printers.

The stack is updated at major product introductions. These articles can help you locate the SIMM Stack:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
10 October 1994 - Added keyword and new parent folder

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16083

Tech Info Library

PlainTalk 1.3 and PlainTalk 1.2: System Compatibility (7/95)

Revised: 7/25/95
Security: Everyone

PlainTalk 1.3 and PlainTalk 1.2: System Compatibility (7/95)

==========

Article Created: 23 August 1994
Article Reviewed/Updated: 25 July 1995

TOPIC ----------

Is PlainTalk version 1.3 compatible with System 7.1.2? We find it crashes when run with 7.1.2 systems.

DISCUSSION ----------

We installed PlainTalk 1.3 on a Power Macintosh with System Software 7.1.2 installed. It did not "crash" the CPU, but every time we tried to open a folder or file we received an error message that "Finder got an error: Apple Event timed out."

Checking the Read Me file that was installed with PlainTalk 1.3, showed this release was, "designed to work with System 7.5 only on Macintosh Quadra 840AV, Macintosh Quadra 660AV, and Power Macintosh computers".

We recommend the following:

Version	O/S Version	CPU
PlainTalk 1.3	7.5 or 7.5.1	Quadra 660AV and 840AV, All Power Macintosh computers except the 5200 series
PlainTalk 1.2	7.1.2	All Power Macintosh computers except the 5200 series
PlainTalk 1.2	7.1, 7.1.1	Quadra 660AV and 840AV

Article Change History:
25 Jul 1995 - Added information on the Power Macintosh 5200.
26 Apr 1995 - Added System 7.5.1.
14 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

..TIL16085-PlainTalk_1-3_and_PlainTalk_1-2-System_Compatibility_7-95_(TA32319).pdf

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16085

QuickDraw GX: Current Benefits of Installation (2/95)

Revised: 2/14/95
Security: Everyone

QuickDraw GX: Current Benefits of Installation (2/95)

==========

Article Created: 23 August 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

Is there any benefit to running QuickDraw GX with applications that do not explicitly support it?

DISCUSSION ----------

QuickDraw GX improves all-around the printing system on the Macintosh. This works for old as well as new GX-savvy applications.

Some things that you can do without ANY upgrades to your applications:

- Create and use desktop printers.

- Eliminate the need for the Chooser when switching printers.

- Do drag and drop printing of existing documents onto printers.

- Create Portable Digital Documents (PDDs), which let you view and print documents created on other computers, even if you do not have the original application OR the original fonts. (And when you print the document the *actual* fonts, outlines, and hints are used so that your output looks exactly as it would on the original person's machine).

- Use background printing for all drivers.

- Employ better memory management on PostScript devices -- no more need for "unlimited downloadable fonts".

- Print everything -- with no differences between drivers and what comes out on one but not another (for example, text rotation PicComments).

- Employ full color and grayscale support for all appropriate output devices.

- Handle printing control entirely through the Finder; no more PrintMonitor.

- Use printing extensions (two come bundled on the System 7.5 Personal and Multi-User Upgrade CD-ROM), from both commerical and freeware/shareware vendors that let you do things like 4-up printing, background washes, and other page-modifications without the application being involved.

- Use four new fonts. These fonts are much nicer with GX applications, but you can still use them from your old applications as well.
  - Hoefler (Roman, Italic, Ornaments)
  - Apple Chancery
  - Skia
  - Tekton

- Define and use PrinterSharing - you can share any printer (including non-network printers) with other people, and can have Users & Groups and password protection of the printer.

- Employ fully integrated ColorSync support, including support for PostScript device-independant color matching.

- Take advantage of the full generation of PostScript Level 1, Level 2, portable PostScript, and optional ADSC-compliant PostScript. Use the built-in and fully-tested "save as PostScript" option in the driver. Use device-specified control over PostScript font embedding.

- Employ true support for outline fonts on all printers, including large glyph set fonts (such as Asian languages) with output at the full resolution of the device. This feature also provides fast download times through sparse font downloading.

While it is true that both GX and GX printing become even MORE interesting with new applications -- it's not true to say that QuickDraw GX offers nothing until this happens.

Article Change History:
14 Feb 1995 - Reviewed for technical accuracy.
11 Jan 1995 - Added keyword and made minor technical updates.
25 Aug 1994 - Slight modification of Discussion for ease of readability.

Support Information Services

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Tech Info Library Article Number:16086

Tech Info Library

Patton Electronics Co. (8/94)

Revised: 8/24/94
Security: Everyone

Patton Electronics Co. (8/94)

==========

Article Created: 24 August 1994

Patton Electronics Co.

7622 Rickenbacker Dr.
Gaithersburg, MD 20879

Phone: 301-975-1000

Company profile: Patton Electronics provides electrical surge suppression and voltage conditioning equipment.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16087

Tech Info Library

Powercom America, Inc. (8/94)

Revised: 8/24/94
Security: Everyone

Powercom America, Inc. (8/94)

==========

Article Created: 24 August 1994

Powercom America, Inc.

1040A S. Melrose St.
Placentia, CA 92670-7119

Phone: 714-632-8889

Company profile: Powercom America provides electrical surge suppression and voltage conditioning equipment.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16088

Tech Info Library

Best Power Technology, Inc. (8/94)

Revised: 8/24/94
Security: Everyone

Best Power Technology, Inc. (8/94)

==========

Article Created: 24 August 1994

Best Power Technology, Inc.

PO Box 280, Rt. 1
Necedah, WI 54646

Phone: 800-356-5794 or 608-565-7200

Company profile: Best Power Technology provides electrical surge suppression and voltage conditioning equipment.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16089

Tech Info Library

Protecting Ethernet Networks from Power Surges (8/94)

Revised: 8/24/94
Security: Everyone

Protecting Ethernet Networks from Power Surges (8/94)

==========

Article Created: 24 August 1994

TOPIC ----------

Are there any companies that sell products which can protect Ethernet networks from damage caused by lightning strikes or electrical surges?

DISCUSSION ----------

There are a number of products on the market that can be used to protect incoming power, telephone, and network systems. The list below provides a small sampling of companies that sell products designed to protect Ethernet networks against electrical surges and spikes.

Use the company names as keywords to search for more information about these companies. Please contact each company for a description of the products they provide.

Panamax

Patton Electronics Co.

Powercom America, Inc.

Best Power Technology, Inc.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16090

SoftWindows, Version 1.0.2 Read Me (6/95)

Revised: 6/27/95
Security: Everyone

SoftWindows, Version 1.0.2 Read Me (6/95)

==========

Article Created: 24 August 1994
Article Reviewed/Updated: 27 June 1995

TOPIC ----------

This article is the SoftWindows, Version 1.0.2 - Read Me information. This information is provided by Insignia Solutions Incorporated.

DISCUSSION ----------

SoftWindows, Version 1.0.2 - Read Me information

This file contains the latest information relating to SoftWindows, Version 1.0.2

1. Contents
==========

• What's New in SoftWindows
• Memory settings - for best performance
• More Performance Tips - Getting the best out of SoftWindows
• Other Tips
• SoftNode - Networking Support for SoftWindows
• CD-ROM Support
• AccessPC compatibility
• External floppy drive support
• Miscellaneous
• Acknowledgments
• Your Comments Please

2. What's New in SoftWindows
==========
2.1 Version 1.0.2

This minor revision contains a number of enhancements in the following areas:
• Networking
  - 802.2 frame types are supported using Apple's Token Ring cards

  - NetBEUI protocols are now supported over Apple's Token Ring cards
  - PATHWORKS version 4 or 5 using the DECnet protocol is now supported
  - The batch files used to configure Windows for Workgroups have been corrected
  - Batch files for configuring Banyan VINES are supplied
- Licensing
  - support for multiple user licenses has been added
- General
  - The LQ2500 printer emulation has been improved
  - BACKUP.EXE has been added to the hard disk
  - SoftWindows no longer aborts with an "Error 11" panel

2.2 Version 1.0.1

This minor revision updated the version of DOS to version 6.21 from version 6.2. The difference between the two versions concerns the DoubleSpace utility, which has been removed for legal reasons. If you need to increase your available disk space, we recommend that you use Macintosh utilities or other third party PC utilities.

2.3 Version 1.0

This was the first version of SoftWindows for the Power Macintosh. If you are familiar with the SoftPC family of products for the 68k Macintosh computers, then these are the key features introduced in SoftWindows:

- It's fast - running at entry level 486 speeds. This is achieved through:
  - Being a PowerPC native application which takes full advantage of the performance of your Power Macintosh
  - Insignia's advanced emulation technology
  - Having access to the source code of Windows from Microsoft, which enables us to modify Windows to give extra speed, without jeopardizing compatibility.
- Improved SmartCopy - the Windows utility that links the Macintosh and Windows clipboards now allows bi-directional transfer of text and bitmap graphics data between PC and Macintosh applications.
- Improved networking - the list of supported network operating systems now includes Banyan VINES, so you can connect to Novell NetWare, LAN Manager, LAN Server, Windows NT Advanced server, and Banyan VINES servers. Also, using Novell's LAN Workplace for DOS, you can connect to UNIX file servers through TCP/IP.
- Improved PC CD-ROM support - Audio CD support is better and dual format CDs are supported.

3. Memory settings - for best performance
==========

The amount of memory that you dedicate to SoftWindows is set up by the SoftWindows installer, depending on the options you select during installation.

This determines three key features:
i) The maximum amount of PC memory available to your PC applications
ii) The maximum size and depth you may specify for the Windows desktop
iii) The performance of SoftWindows.

Stated simply, the more memory you give to SoftWindows, the better it will be. However, devoting a large portion of your Macintosh memory to running SoftWindows will limit your ability to run other Macintosh applications simultaneously.

If you want to dedicate more memory to SoftWindows:
• Make sure SoftWindows is not running: Quit SoftWindows if it is.
• Select SoftWindows in the Finder by clicking its icon once.
• Select "Get Info" from the Finder's File Menu
• Enter a higher number in both the Minimum and Preferred Size boxes.
• Click the close box for the dialog.

If you have given too much memory to SoftWindows, go through the above procedure typing a smaller number into the Minimum and Preferred Size boxes.

To see the effect of your changes, select PC Memory… from the SoftWindows Setup menu. The size of the "DeltaCache" (which controls the SoftWindows performance - bigger is better) is displayed in the top right hand corner of the dialog. This should be between 0k (slowest) and 1024k (fastest). For some applications, there is an extra performance boost with a DeltaCache of 2048k. Additional DeltaCache beyond 2048k will have little effect on SoftWindows performance.

4. More Performance Tips - Getting the best out of SoftWindows

• Make sure that SoftWindows is set up to use at least 3 MB of PC Extended memory, by using the PC Memory… command from the SoftWindows Setup menu. Windows runs much better with 3 MB rather than the minimum 1 MB of extended memory - even on a hardware PC.
• Make sure the setting in your Macintosh "Monitors" Control Panel matches the number of colors you have selected for the Windows Desktop. This is displayed by selecting the Windows Desktop… command from the SoftWindows Setup menu.
• Make sure the Windows Desktop is entirely on one monitor.
• Make sure the Windows Desktop is unobscured by other windows. (Note that when the Windows desktop is in an optimal position, the title bar will have a check mark (√) appended. If there is no title bar then holding down Command and option keys will display a hand icon with a dot in the middle).
• Try boosting the DeltaCache to about 2048k, as described above.
• Try turning File Sharing off, it can slow down your applications on the Power Macintosh.
• Make sure you do not have the MacsBug debugger installed - it slows down the entire Power Macintosh.

5. Other Tips

5.1 Loading DOS High

In order to maximize the amount of available conventional memory to PC applications, you may load DOS high by adding the line

DOS=high

to the CONFIG.SYS file.

6. SoftNode - Networking Support for SoftWindows

6.1 Ethernet card compatibility

SoftNode is compatible with the on-board Ethernet fitted in all Power Macintosh computers and virtually all Macintosh Ethernet cards.

If you are using third party Ethernet solutions, please ensure with the manufacturer that you have the latest version of the driver software.

The Apple Ethernet NB card has had a number of problems in the past. These are all believed to be addressed in version 1.4.2 of Apple's Network Software Installer disk.

SCSI based Ethernet - A number of SCSI Ethernet adapters have drivers which pad out the packets of the Ethernet II frame type. This causes illegal instructions in PC applications using this frame type, although other frame types work well. If it is not possible to use a different frame type, this problem may be solved by connecting via a SoftNode Ethernet Gateway for IPX protocols. This applies to the Focus Nuvo-Link SC and to Dayna's DaynaPORT SCSI/Link products.

6.2 Token Ring card compatibility

SoftNode is compatible with Token Ring cards which support the Apple .TOKN standard. These include cards from DCA, Asanté and CableTron (which work in SoftPC on today's 68k Macintosh computers). Please contact the relevant manufacturers to check that you have the latest version of the driver software required for their cards in Power Macintosh computers.

You will need version 1.4.5 of Apple's Network Software Installer if you need to use the Token Ring 802.2 frame type with Apple Token Ring cards.

You can use SoftNode in an environment where other cards are installed by:

- Installing a supported card in one Macintosh.
- Installing a SoftNode Token Ring Gateway on that Macintosh.
- Using the SoftNode ATALK.BAT batch file from other Macintosh computers to access the Novell file server via the SoftNode Gateway.

6.3 DECnet protocol support in PATHWORKS

The DECnet protocol requires that the Ethernet card you use in your Macintosh has a particular address based on the "area" and "node" you have been assigned in your DECnet network by the system administrator. In order to override the default address, a small utility is provided to install this new address.

This utility may be installed by a new custom option in the SoftWindows installer, called DECnet Address Override Utility. This places the utility in the Utilities folder within the SoftWindows folder. Double-click the utility, then:

- click "Change Address…"

- specify the area and node given to you by the system administrator
- click Generate
- click OK
- restart your Macintosh to use the new address

7. CD-ROM Support

Audio CD-ROM support is much improved over previous versions of SoftPC. In addition, it is now possible to use CD-ROMs that have both a Macintosh (HFS) partition and a PC (ISO 9660) partition. Use of these hybrid CDs requires that you have a CD-ROM driver that is capable of accessing both partitions. The Apple CD-ROM driver is not one of these, but Insignia's RapidCD product will replace the Apple CD driver to enable this functionality. FWB's CD-ROM Toolkit is also compatible.

8. AccessPC compatibility

Insignia's AccessPC product allows you to mount SoftPC hard disk files on the Macintosh desktop so that you can see the DOS files and directories as documents and folders. Version 3.0.2 of AccessPC also allows you to mount SoftWindows hard disk files. If you have an earlier version (3.0 or 3.01) you may patch it to give this extra feature. Simply run the application called "PatchAccessPC" which is on the first SoftWindows installation disk and follow the instructions in the subsequent dialogs. Note that the AccessPC control panel should be closed when you patch it, and you will need to restart the Macintosh afterwards.

9. External floppy drive support

At the time of writing, the only diskette drive that may be set up as SoftWindows A: or B: drive is the internal FDHD drive (also known as the "SuperDrive") in the Power Macintosh. Other diskette drives supplied by third party manufacturers work with SoftPC on 68k Macintosh computers and are expected to work as soon as the drivers for these devices are fixed to work on Power Macintosh computers.

Since every Power Macintosh is equipped with a SuperDrive, lack of support of 3rd party 3.5" drives is not expected to be a big issue. If you really need to use 5.25" PC diskettes, the DaynaFile drives from Dayna Communications and the DOSFloppy from PLI work with SoftPC on 68k Macintosh computers. No information is currently available for when these devices will work on Power Macintosh computers.

10. Miscellaneous

10.1 Tutorial Error

Some configurations of SoftWindows are NOT supplied with a tutorial diskette. If this is the case, you may install the tutorial application from your SoftWindows hard disk. To do this, you should choose Run… from the Windows Program Manager File menu, and type C:\WNPST\SETUP in the command line field and click OK. (The manual incorrectly uses the WINPST directory instead of the WNPST directory).

10.2 Windows Desktop Size

Note that changing monitors, or monitor resolutions, between invocations of Windows, can lead to a Windows Desktop which is larger than the current monitor size. This may be fixed by manually resizing the Windows desktop from the SoftWindows Setup menu. The changes will take effect the next time Windows is run.

11. Acknowledgments

11.1 WinPost

The tutorial Windows application supplied with SoftWindows is WinPost, by Eastern Mountain Software. Please note that this is a shareware version of WinPost: if you decide to continue using it, please send the registration fee of $30 (USA/Canada/Mexico) or $35 (all other countries) to Eastern Mountain Software, P.O. Box 6394, Bellevue, WA 98008-0394, USA. Telephone: (206) 391-3483.

11.2 DEVLOD

SoftWindows is supplied with a version of DEVLOD.COM from "Undocumented DOS" by Schulman et al. (Addison-Wesley, 1993). Copyright (c) 1993 Andrew Schulman, Ralf Brown, Jim Kyle, David Maxey, Ray Michels.

11.3 DOS for Dummies/ Windows for Dummies

The SoftWindows User Guide is not intended to be a reference guide for using DOS and Windows. If you need a DOS or Windows reference, we recommend DOS for Dummies by Dan Gookin and Windows for Dummies by Andy Rathbone, both by IDG books. These excellent books are used and recommended by the Insignia Technical Support specialists who are certainly not "dummies"!

12. Your Comments Please

The SoftWindows User Guide has details of how to contact Insignia's Technical Support or Customer Service departments. Please contact these departments if you have any problems with the software or wish to get further product information.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
27 Jun 1995 - Added kppc keyword.

Support Information Services

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..TIL16092-SoftWindows_Version_1-0-2_Read_Me_6-95_(TA32324).pdf

Tech Info Library Article Number:16092

Japanese Language Kit: Printing to a File (4/95)

Revised: 4/3/95
Security: Everyone

Japanese Language Kit: Printing to a File (4/95)

==========

Article Created: 24 August 1994
Article Reviewed/Updated: 3 April 1995

TOPIC ----------

I am experiencing problems downloading postscript files using the LaserWriter Utility 7.6.1. The files were created on a system with the Japanese Language Kit installed. They were then "printed" to a file, instead of a printer, using LaserWriter 8.1.1.

The printer I used was a LaserWriter IIg. This postscript file was sent from Japan to Australia, to another machine which has the following software installed: the LaserWriter 8.1.1, LaserWriter Utility 7.6.1, and the Japanese Language Kit v1.1. When this file was sent to print using the LaserWriter Utility, the printed page contained garbage Roman characters, instead of the Japanese characters.

I think the problem arises from the fact that the fonts in the Japanese Language Kit are not downloadable. If I try to download these fonts using the LaserWriter Utility, it says that the Osaka, HonMincho, and other fonts are not downloadable. Is there any solution to this?

DISCUSSION ----------

You are correct that 2-byte fonts are not downloadable to the LaserWriter, and that is the reason why the PostScript files print garbage characters instead of Japanese text - they are not downloadable to files.

Solutions

- Use the localized version of LaserWriter 8 (version J1-8.1.2). This is available only in Japan.

- Or use the LaserWriter 8.2

Previously, customers had to have a Kanji LaserWriter printer or the

Japanese-localized LaserWriter driver to print PostScript files. Now, both LaserWriter J1-8.1.2 and LaserWriter 8.2 rasterize the 2-byte Japanese fonts into a bitmap as long as "Font Inclusion" is selected when printing to a file. Save the file as Binary, NOT ASCII, in order to save the information properly.

LaserWriter 8 Drivers Printing Japanese Text To Disk

Below are how the various LaserWriter 8 drivers behave when printing a file to disk with Japanese text:

- LaserWriter 8.1.1 does not download Kanji fonts.
"Font Inclusion" can be selected; but you will get the message "Job terminated due to error"

- LaserWriter J1-8.1.2 downloads Kanji fonts.
"Font Inclusion-All" must be selected; it defaults to "Font Inclusion-None".

- LaserWriter 8.2 downloads Kanji fonts.
"Font Inclusion-All" must be selected; it defaults to "Font Inclusion-None"

Note to U.S. Customers

Since the LaserWriter J1-8.1.2 driver is only available in Japan for use with LaserWriter 610 or LaserWriter 360-J, we recommend that customers in the United States install LaserWriter 8.2.

Article Change History:
03 Apr 1995 - Added information on saving in Binary format.
01 Mar 1995 - Reviewed for accuracy including new 8.2 driver info.

Support Information Services

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Tech Info Library Article Number:16093

Tech Info Library

Apple Multiple Scan 15 Display: Macintosh Video Support (3/96)

Revised: 3/15/96
Security: Everyone

Apple Multiple Scan 15 Display: Macintosh Video Support (3/96)

==========

Article Created: 24 August 1994
Article Reviewed/Updated: 15 March 1996

TOPIC ----------

This article gives the video modes supported on each Macintosh computer with the Apple Multiple Scan 15 Display, and which computers require display adapters.

DISCUSSION ----------

Begin_Table

Macintosh	Video Available		Display Manager
	640x480	832x624	Mode Switching?
Power Macintosh - 45 Pin conn	Y	Y	Y
Power Macintosh - AV card	Y	Y	Y
Power Macintosh - 2 MB VRAM*	Y	Y	Y
Power Macintosh - 4 MB VRAM*	Y	Y	Y

* - Additional RAM goes into the VRAM expansion card

Quadra 700	Y	Y	Y
Quadra 900	Y	Y	Y
Quadra 800	Y	Y	Y
Quadra 950	Y	Y	Y
Quadra 660AV	Y	Y	Y
Quadra 840AV	Y	Y	Y
Quadra 610	Y	Y	Y
Quadra 650	Y	Y	Y
Quadra 605	Y	Y	Y
Quadra 630 (2)	Y	N	Y
Centris 610	Y	Y	Y
Centris 650	Y	Y	Y
Macintosh IIci (1)	Y	N	N

Macintosh	Video Available 640x480	Video Available 832x624	Display Manager Mode Switching?
Macintosh IIsi (1)	Y	N	N
Macintosh IIvx (1)	Y	N	N
Macintosh IIvi (1)	Y	N	N
Display Card 24AC	Y	Y	Y
8•24	Y	Y	N
8•24 GC	Y	Y	N
4•8	Y	Y	N
Macintosh II	N	N	N/A
Macintosh IIx	N	N	N/A
Macintosh IIfx	N	N	N/A
Macintosh IIcx	N	N	N/A
Performa 400 (1)	Y	N	N
Performa 410 (1)	Y	N	N
Performa 430 (1)	Y	N	N
Performa 405 (1)	Y	N	N
Performa 450	Y	Y	N
Performa 460	Y	Y	N
Performa 466	Y	Y	N
Performa 467	Y	Y	N
Performa 475	Y	Y	Y
Performa 476	Y	Y	Y
Performa 550	Y	Y	N
Performa 600 (1)	Y	N	N
Performa 600CD (1)	Y	N	N

Notes:
(1) - Requires a display adapter to provide the proper sync signal.
(2) - The Macintosh 630 family only supports a Macintosh resolution of 640x480. However, other VGA and SuperVGA resolutions are available.

Macintosh	Video Available 640x480	Video Available 832x624	Display Manager Mode Switching?
PowerBook 180	Y	Y	N
PowerBook 180c	Y	Y	N
PowerBook 165	Y	Y	N
PowerBook 165c	Y	Y	N
PowerBook 160	Y	Y	N
PowerBook 100	N	N	N/A
PowerBook 140	N	N	N/A
PowerBook 145	N	N	N/A
PowerBook 170	N	N	N/A

PowerBook Duo 210	N	N	N/A
PowerBook Duo 230	N	N	N/A
PowerBook Duo 250	N	N	N/A
PowerBook Duo 270C	N	N	N/A
PowerBook 500 Series	Y	Y	Y
PowerBook 190 Series	Y	Y	Y
PowerBook 5300 Series	Y	Y	Y
MiniDock	Y	Y	N
DUO DOCK	Y	Y	N
DUO DOCK II	Y	Y	Y
Macintosh LC 475	Y	Y	Y
Macintosh LC III	Y	Y	N
Macintosh LC (1)	Y	N	N
Macintosh LC II (1)	Y	N	N

Notes:
(1) - Requires a display adapter to provide the proper sync signal.

End_Table

Display Adapters

The Apple Multiple Scan 15 Display has several resolutions. Macintosh computers designed before the introduction of Apple Multiple Scan 15 Display only recognizes the display as a 14-inch color display without an adapter. The adapters, available through Apple Resellers and the third party companies, contain a sense code that tricks the Macintosh into believing that the display is fixed frequency display. Without the adapter, the display will be fixed at a 640x480 resolution. The display adapter also provides the proper sync signal from some computers built-in video to the Multiple Scan 15 Display.

Computers and Video Cards Not Requiring Video Adapters

Power Macintosh family
Macintosh Centris
Macintosh Quadra
Macintosh LC 475
Macintosh Performa 475 and 476
Macintosh Display Card 24AC
Macintosh 630 family
PowerBook 5300 Series
PowerBook 190 Series
PowerBook 500 Series

These units use the Apple Multiple Scan software to change resolutions.

Computers and Video Cards Requiring Video Adapters

Macintosh II Family
PowerBooks
Duo Dock and MiniDock*
Macintosh Performa Computers (except 475, 476, and 630 series)
Macintosh LC, LC II, LC III (except 475 and 630 series)
Video Cards - 4•8, 8•24, 8•24GC

* - The Duo Dock does not require a video adapter to change resolutions when System 7.5 is installed.

Maximum Resolutions With Video Adapters

Begin_Table

Computer	832x624	Notes
Macintosh II	No	3
Macintosh IIx	No	3
Macintosh IIfx	No	3
Macintosh IIcx	No	3
Macintosh IIci	No	4
Macintosh IIsi	No	4
Macintosh IIvx	No	4
Macintosh LC	No	4
Macintosh LC II	No	4
Macintosh LC III	Yes	
Performa 400	No	4
Performa 405	No	4
Performa 410	No	4
Performa 430	No	4
Performa 450	Yes	
Performa 460	Yes	
Performa 466	Yes	
Performa 467	Yes	
Performa 600	No	4
PowerBook 160	Yes	
PowerBook 165	Yes	
PowerBook 165C	Yes	
PowerBook 180	Yes	
PowerBook 180C	Yes	
Duo & MiniDock	Yes	6
4•8, 8•24, 8•24GC	Yes	

Notes:
(3) - No built-in video. Video is limited only by the video card used.
(4) - Limited to a resolution of 640x480 with built-in video.
(6) - The Duo Dock does not require a video adapter to change resolutions when System 7.5 is installed.

End_Table

Display adapters are available from several third-pary companies such as Enhanced Cable Technology, Griffin Technology, and MacAdapt. An display adapter allows you to connect a Multiple Scan Display to other Macintosh products, such as the Macintosh 8•24 card, Macintosh II, PowerBook computers, and Duo Dock products.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
15 Mar 1996 - Corrected PowerBook model.
08 Feb 1996 - Added additional display adapter information on IIsi & IIci.
29 Jan 1996 - Corrected switching information on Performa 476.

Support Information Services

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Tech Info Library Article Number:16094

TITLE

System 7.5: Clean Install Procedure

Article ID: 16095
Created: 8/24/94
Modified: 4/27/98

TOPIC

Is there any shortcut for doing a clean system folder install under System 7.5? I would like to do this without having to remove the Finder or System file and renaming the system folder.

DISCUSSION

Purpose of a Clean Installation

A normal system software installation modifies and updates the existing System Folder. A clean installation disables the existing System Folder, leaving all files in place, and forcing the Installer to create a new System Folder.

A clean system installation brings the system software back to the standard configuration. This is necessary when system software has been damaged or modified, preventing a normal installation. It is also useful in troubleshooting.

Follow these instructions in the order presented.

Restart with Disk Tools or Apple Macintosh CD

If you have a Disk Tools Disk:

Shut down your Macintosh computer.

Insert Disk Tools in the floppy drive, and turn on the computer. At the desktop, the Disk Tools floppy disk's icon should be in the upper-right corner of your screen with your hard drive's icon below it.

If the computer ejects the Disk Tools disk, make sure you have an Apple SuperDrive (formerly FDHD) that will read high-density disks and that you are using the Disk Tools that came with System 7.5.

If you have an Apple Macintosh CD that came with your computer:

Step 1

Insert the Apple Macintosh CD in the CD-ROM drive.

Step 2

Restart your Macintosh.

Step 3

If you have a Power Macintosh or a Macintosh 630 series computer, hold down the letter 'C' on the keyboard and turn the computer on. If you have a Macintosh 570 series computer, turn on the computer and immediately hold down the Command-Option-Shift and the large Delete keys simultaneously. Keep these keys held down until you see the "Welcome to Macintosh" message.

At the desktop, the Apple Macintosh CD's icon should be in the upper-right corner of your screen with your hard drive's icon below it. If any other hard drives appear above the Apple Macintosh CD, shut down the computer, all attached devices and remove the large SCSI

cable from the rear of the Macintosh and try again. If the internal hard drive still appears above the Apple Macintosh CD, go to the Control Panels under the Apple Menu, open the Startup Disk item, select the Apple Macintosh CD, close all open windows and restart. The Apple Macintosh CD should then appear above the hard drive.

Run Disk First Aid

Disk First Aid can detect and repair problems with a hard disk.

Step 1

Open the Disk Tools disk or the Apple Macintosh CD. Apple Macintosh CD users should open the Utilities Folder.

Step 2

Double-click on the Disk First Aid icon. Select the main hard drive's icon at the top of the Disk First Aid window.

Step 3

Click on Verify. Disk First Aid will check your hard disk for any potential problems. If it finds a problem, click Repair. It will attempt to fix the problem.

Step 4

Repeat this procedure for each hard disk attached to the system.

Step 5

When you are finished verifying the hard disks, choose Quit from the File menu to return to the desktop.

If Disk First Aid cannot repair a hard disk, you should back up the hard disk and reinitialize it using the appropriate formatting utility for that drive. For Apple drives, use Apple HD SC Setup.

Update Hard Disk Drivers

Apple HD SC Setup

If you do not an Apple hard drive, or you use third-party software to format your hard disk, do not use the Apple HD SC Setup utility. You should contact your hard drive vendor to verify that your formatting software is compatible with System 7.5.

If you have an IDE drive in your computer, refer to the Internal HD Format and Drive Setup sections below. Also see the Drive Setup section to see which computers with SCSI drives can use Drive Setup as well as Apple HD SC Setup.

Follow these steps to update the hard disk driver on your Apple SCSI hard drive using Apple HD SC Setup:

Step 1
---
* Disk Tools users: Double-click the Apple HD SC Setup icon on the Disk Tools disk.

* Apple Macintosh CD users: Double-click the Apple HD SC Setup icon in the Utilities folder.

Step 2

Click on the Update button.

Step 3

When you are finished, click Quit to return to the desktop.

Sometimes HD SC Setup cannot update the hard disk driver (indicated by a "dimmed" Update button). Here are some possible causes and solutions:

* If a third-party utility was used to format your hard disk, you should obtain the latest version of the utility to update your hard disk driver.

* If a version of Apple HD SC Setup more recent than the version on the Disk Tools disk was used to format your hard drive, do not update the hard disk drivers.

* Your Macintosh has an internal IDE drive. Refer to the Internal HD Format and Drive Setup sections below.

* If an earlier System 6 version of Apple HD SC Setup formatted the drive, it may not have left enough room for the updated driver. You do not have to update the hard disk drivers. However, if you intend to use file sharing or have a Macintosh that can use virtual memory, then you need to back up the disk and reinitialize it with the current version of HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

* If the driver is corrupt, the Macintosh does not recognize the drive (that is, the drive does not show on the desktop when you start from a floppy disk). You may wish to reinitialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

* If the driver has been modified with compression or security software you will not be able to update the driver. Contact the vendor of the compression or security software for additional help.

Drive Setup

Drive Setup can be used in all Power Macintosh computers as well as all computers (desktop and PowerBook) with IDE drives. The only exception is the PowerBook 150, which must use the Internal HD Format utility.

Follow these steps to update the hard disk driver on your Apple SCSI hard drive using Drive Setup:

Step 1

Double-click the Drive Setup icon.

Step 2

Select the drive you wish to update.

Step 3

From the Functions menu select Update Driver.

Step 4

When you are finished, click Quit to return to the desktop.

Drive Setup 1.0.4 is included with System 7.5 Update 2.0, which is available on online services.

Internal HD Format

The PowerBook 150 is the only computer which requires Internal HD Format. However, you cannot update the driver on the PowerBook 150 because it is loaded into ROM.

Check Available Hard Disk Space

Open the hard disk's window and select "by Icon" in the View menu. The amount of available disk space appears in the upper right corner of any open window.

To install System 7.5 with PowerTalk and QuickDraw GX, you should have at least 21 MB available on the hard disk where you plan to install the system software. Installation of the base operating system requires approximately 14 MB of drive space.

If there is less than the required space available, you will need to delete some unnecessary files by moving them to the Trash. Choose Empty Trash from the Special menu, and you will have more disk space available. If you want to keep the files, copy them onto floppy disks or other media before moving them to the Trash.

Install System 7.5

From Floppy Disk

Step 1

You have finished using the Disk Tools disk so, choose Shut Down from the Special menu. The Disk Tools will automatically eject.

Step 2

Insert the "Install Disk 1" disk into the Macintosh and turn the computer on. The computer will start up using the system file on the Install disk.

Step 3

Once the "Welcome to System 7.5" message appears, click Continue.

Step 4

When the installer window appears, press the Command-Shift-K keys simultaneously (the Command key is the key with the Apple and Cloverleaf). You will be presented with a small dialog box with two selections:

- Update Existing System Folder
- Install New System Folder

For a Clean install, select Install New System Folder and click "OK." Make sure the Destination Disk on the bottom left is the disk you want to install onto, then click Clean Install on the bottom right. This will install a new system folder and rename you current folder "Previous System Folder."

Step 5

Insert the other disks when the Installer instructs you to.

From the Personal Upgrade Kit CD-ROM

Step 1

Insert the "Macintosh System 7.5" CD-ROM into the Macintosh.

Step 2

Open the "Macintosh System 7.5" CD-ROM by double-clicking on its icon in the upper right corner of the screen.

Step 3

Open the "Installation" folder. Open the "System Install" folder

Step 4

Double-click the "Install" icon.

Step 5

When the "Welcome to System 7.5" message appears, click Continue.

Step 6

When the installer window appears, press the Command-Shift-K keys simultaneously (the Command key is the key with the Apple and Cloverleaf). You will be presented with a small dialog box with two selections:

- Update Existing System Folder
- Install New System Folder

For a clean install, select Install New System Folder and click "OK." Make sure the Destination Disk on the bottom left is the disk you want to install onto, then click Clean Install on the bottom right. This will install a new system folder and rename you current folder "Previous System Folder."

If your computer came with an an Apple Macintosh CD

Step 1

Open the "System Software Install" folder on the Apple Macintosh CD or click the Install Software button in the Launcher window.

Step 2

Double-click the "System 7.5 Installer" icon.

Step 3

When the "Welcome to System 7.5" message appears, click Continue.

Step 4

When the installer window appears, press the Command-Shift-K keys simultaneously (the Command key is the key with the Apple and Cloverleaf). You will be presented with a small dialog box with two selections:

- Update Existing System Folder
- Install New System Folder

For a clean install, select Install New System Folder and click "OK." Make sure the Destination Disk on the bottom left is the disk you want to install on, then click Clean Install on the bottom right. This will install a new system folder and rename you current folder "Previous System Folder."

Note: After performing a System 7.5 Clean Install, when About This Macintosh is selected under the Apple menu, it will no longer display the specific Macintosh name. Instead, it will display only "Macintosh", "Macintosh Powerbook", or "Power Macintosh" depending on which system it is running. If System 7.5 is installed over an existing system (pre 7.5), it retains the specific Macintosh name for the About This Macintosh window. This holds true for future Macintosh computers also.

A CLEAN INSTALL OF SYSTEM 7.5 IS NOW COMPLETE. THE FOLLOWING STEPS ARE FOR TROUBLESHOOTING

Verify Problem Resolution

After performing a clean installation, verify that you resolved the problem before adding anything to the new System Folder. Adding items to the System Folder before resolving your problem defeats the purpose of performing a clean installation.

Install Non-Standard Items

You can now reinstall the non-standard items from the old System Folder (now named "Previous System Folder") such as fonts, screen savers and device drivers. If possible, you should reinstall these items from their original disks.

If the original disks are not available, you may move the non-standard items from the Previous System Folder to the new System Folder. Be careful not to replace anything that is already in the new System Folder. Only move items that are not already in the new System Folder.

Step 1

Open each corresponding folder within the System Folder and the Previous System Folder and then compare the contents.

Step 2

Move anything that is not already in the new System Folder and its sub folders from the Previous System Folder and its sub folders.

Step 3

Restart your Macintosh.

Troubleshooting Extension Conflicts

Any system extensions or control panels installed appear as icons across the bottom of the screen when you restart. They load into memory at startup time and modify the standard behavior of the operating system.

Verify Conflict

If the Macintosh fails to restart or behaves erratically, you probably have an incompatible or conflicting INIT (also known as a system extension or control panel). To verify this problem, follow these steps:

Step 1

Restart, and after you see the picture of a computer with a smile, hold down the Shift key.

Step 2

Release the Shift key when the "Welcome to Macintosh, Extensions Off" message appears.

Step 3

When the Macintosh is ready, try to recreate the erratic behavior.

If the problem no longer occurs, then you have a conflicting extension or control panel. Continue with the steps in the next section.

Isolate Incompatible or Corrupted INITs in System Folder

Step 1

Open the Control Panels from the Apple Menu. Double click on the control panel called Extensions Manager.

Step 2

Go to the pop-up menu that says All On and pull it down to System 7.5 Only. This will disable all non-standard extensions and control panels. You will notice that the other items no longer have a check mark by them. Close the Extensions Manager.

Step 3

Go to the Special menu and choose Restart.

Step 4

Attempt to recreate the problem.

Step 5

If the problem does not occur, use the Extensions Manager to enable another extension or control panel and restart the Macintosh. Note: You can enable items in the Extension Manager by simply clicking on the name of the item so that a check mark appears.

Step 6

Attempt to recreate the original problem.

Repeat steps 5 and 6 for each item listed in the Extensions Manager until the problem recurs. The last item returned to the System Folder is probably the cause of the problem.

Final Steps

Verify that your applications are performing normally. If not, refer to the application manual or contact the vendor.

When the Macintosh behaves as expected and you are sure that all needed items in the Previous System Folder are transferred, move the Previous System Folder to the Trash, and choose Empty Trash from the Special menu.

System Update

After performing a clean installation of System 7.5, you may want to consider installing System 7.5 Update 2.0 and then installing System 7.5.5 Update to ensure that you have the most current version of the system software.

NOTE: There is a sequence you must follow if you want to install System 7.5.5 Update software. Since you have just performed a clean System 7.5 installation, follow the sequence below:

1) Performed a clean installation of System 7.5
2) Install System 7.5 Update 2.0

3) Install System 7.5.5 Update

System 7.5 Update 2.0 and System 7.5.5 Update are available from the Apple Software Updates area of many online services. If you do not have access to any online services, please call 1-800-SOS-APPL for more information.

These articles can help you locate the software update mentioned here:

- Article 14724: "**Where To Find Apple Software Updates**" - Lists online services for free Apple software updates.
- Article 16332: "**US Apple SW Updates Available Online**" - An index to USA Apple Software Updates showing the current software location on the Internet.
- Article 17664: "**WW Apple SW Updates Available Online**" - An index to International Apple Software Updates showing the current software location on the Internet.

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

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Document Information
Product Area: Mac OS System Software
Category: System 7.5.x
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Tech Info Library

System 7.5: Clean Install Procedure (10/96)

Revised: 10/4/96
Security: Everyone

System 7.5: Clean Install Procedure (10/96)

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Article Created: 24 August 1994
Article Reviewed/Updated: 4 October 1996

TOPIC ----------

Is there any shortcut for doing a clean system folder install under System 7.5? I would like to do this without having to remove the Finder or System file and renaming the system folder.

DISCUSSION ----------

Purpose of a Clean Installation
==========
A normal system software installation modifies and updates the existing System Folder. A clean installation disables the existing System Folder, leaving all files in place, and forcing the Installer to create a new System Folder.

A clean system installation brings the system software back to the standard configuration. This is necessary when system software has been damaged or modified, preventing a normal installation. It is also useful in troubleshooting.

Follow these instructions in the order presented.

Restart with Disk Tools or Apple Macintosh CD
==========

If you have a Disk Tools Disk:

Shut down your Macintosh computer.

Insert Disk Tools in the floppy drive, and turn on the computer. At the desktop, the Disk Tools floppy disk's icon should be in the upper-right corner of your screen with your hard drive's icon below it.

If the computer ejects the Disk Tools disk, make sure you have an Apple SuperDrive (formerly FDHD) that will read high-density disks and that you are using the Disk Tools that came with System 7.5.

If you have an Apple Macintosh CD that came with your computer:

Step 1

Insert the Apple Macintosh CD in the CD-ROM drive.

Step 2

Restart your Macintosh.

Step 3

If you have a Power Macintosh or a Macintosh 630 series computer, hold down the letter 'C' on the keyboard and turn the computer on. If you have a Macintosh 570 series computer, turn on the computer and immediately hold down the Command-Option-Shift and the large Delete keys simultaneously. Keep these keys held down until you see the "Welcome to Macintosh" message.

At the desktop, the Apple Macintosh CD's icon should be in the upper-right corner of your screen with your hard drive's icon below it. If any other hard drives appear above the Apple Macintosh CD, shut down the computer, all attached devices and remove the large SCSI cable from the rear of the Macintosh and try again. If the internal hard drive still appears above the Apple Macintosh CD, go to the Control Panels under the Apple Menu, open the Startup Disk item, select the Apple Macintosh CD, close all open windows and restart. The Apple Macintosh CD should then appear above the hard drive.

Run Disk First Aid
==========

Disk First Aid can detect and repair problems with a hard disk.

Step 1

Open the Disk Tools disk or the Apple Macintosh CD. Apple Macintosh CD users should open the Utilities Folder.

Step 2

Double-click on the Disk First Aid icon. Select the main hard drive's icon at the top of the Disk First Aid window.

Step 3

Click on Verify. Disk First Aid will check your hard disk for any potential problems. If it finds a problem, click Repair. It will attempt to fix the problem.

Step 4

Repeat this procedure for each hard disk attached to the system.

Step 5

When you are finished verifying the hard disks, choose Quit from the File menu to return to the desktop.

If Disk First Aid cannot repair a hard disk, you should back up the hard disk and reinitialize it using the appropriate formatting utility for that drive. For Apple drives, use Apple HD SC Setup.

Update Hard Disk Drivers

Apple HD SC Setup

If you do not an Apple hard drive, or you use third-party software to format your hard disk, do not use the Apple HD SC Setup utility. You should contact your hard drive vendor to verify that your formatting software is compatible with System 7.5.

If you have an IDE drive in your computer, refer to the Internal HD Format and Drive Setup sections below. Also see the Drive Setup section to see which computers with SCSI drives can use Drive Setup as well as Apple HD SC Setup.

Follow these steps to update the hard disk driver on your Apple SCSI hard drive using Apple HD SC Setup:

Step 1

• Disk Tools users: Double-click the Apple HD SC Setup icon on the Disk Tools disk.

• Apple Macintosh CD users: Double-click the Apple HD SC Setup icon in the Utilities folder.

Step 2

Click on the Update button.

Step 3

When you are finished, click Quit to return to the desktop.

Sometimes HD SC Setup cannot update the hard disk driver (indicated by a "dimmed" Update button). Here are some possible causes and solutions:

• If a third-party utility was used to format your hard disk, you should obtain the latest version of the utility to update your hard disk driver.

• If a version of Apple HD SC Setup more recent than the version on the Disk Tools disk was used to format your hard drive, do not update the hard disk drivers.

• Your Macintosh has an internal IDE drive. Refer to the Internal HD Format and Drive Setup sections below.

• If an earlier System 6 version of Apple HD SC Setup formatted the drive, it may not have left enough room for the updated driver. You do not have to update the hard disk drivers. However, if you intend to use file sharing or have a Macintosh that can use virtual memory, then you need to back up the disk and reinitialize it with the current version of HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

• If the driver is corrupt, the Macintosh does not recognize the drive (that is, the drive does not show on the desktop when you start from a floppy disk). You may wish to reinitialize it with HD SC Setup. This erases the disk, so be certain you back up the hard disk first.

• If the driver has been modified with compression or security software you will not be able to update the driver. Contact the vendor of the compression or security software for additional help.

Drive Setup

Drive Setup can be used in all Power Macintosh computers as well as all computers (desktop and PowerBook) with IDE drives. The only exception is the PowerBook 150, which must use the Internal HD Format utility.

Follow these steps to update the hard disk driver on your Apple SCSI hard drive using Drive Setup:

Step 1

Double-click the Drive Setup icon.

Step 2

Select the drive you wish to update.

Step 3

From the Functions menu select Update Driver.

Step 4

When you are finished, click Quit to return to the desktop.

Drive Setup 1.0.4 is included with System 7.5 Update 2.0, which is available on online services.

Internal HD Format

The PowerBook 150 is the only computer which requires Internal HD Format. However, you cannot update the driver on the PowerBook 150 because it is loaded into ROM.

Check Available Hard Disk Space

Open the hard disk's window and select "by Icon" in the View menu. The amount of available disk space appears in the upper right corner of any open window.

To install System 7.5 with PowerTalk and QuickDraw GX, you should have at least 21 MB available on the hard disk where you plan to install the system software. Installation of the base operating system requires approximately 14 MB of drive space.

If there is less than the required space available, you will need to delete some unnecessary files by moving them to the Trash. Choose Empty Trash from the Special menu, and you will have more disk space available. If you want to keep the files, copy them onto floppy disks or other media before moving them to the Trash.

Install System 7.5

From Floppy Disk

Step 1

You have finished using the Disk Tools disk so, choose Shutdown from the Special menu. The Disk Tools will automatically eject.

Step 2

Insert the "Install Disk 1" disk into the Macintosh and turn the computer on. The computer will start up using the system file on the Install disk.

Step 3

Once the "Welcome to System 7.5" message appears, click Continue.

Step 4

When the installer window appears, press the Command-Shift-K keys simultaneously (the Command key is the key with the Apple and Cloverleaf). You will be presented with a small dialog box with two selections:

- Update Existing System Folder
- Install New System Folder

For a Clean install, select Install New System Folder and click "OK." Make sure the Destination Disk on the bottom left is the disk you want to install onto, then click Clean Install on the bottom right. This will install a new system folder and rename you current folder "Previous System Folder."

Step 5

Insert the other disks when the Installer instructs you to.

From the Personal Upgrade Kit CD-ROM

Step 1

Insert the "Macintosh System 7.5" CD-ROM into the Macintosh.

Step 2

Open the "Macintosh System 7.5" CD-ROM by double-clicking on its icon in the upper right corner of the screen.

Step 3

Open the "Installation" folder. Open the "System Install" folder

Step 4

Double-click the "Install" icon.

Step 5

When the "Welcome to System 7.5" message appears, click Continue.

Step 6

When the installer window appears, press the Command-Shift-K keys simultaneously (the Command key is the key with the Apple and Cloverleaf). You will be presented with a small dialog box with two selections:

- Update Existing System Folder
- Install New System Folder

For a clean install, select Install New System Folder and click "OK." Make sure the Destination Disk on the bottom left is the disk you want to install onto, then click Clean Install on the bottom right. This will install a new system folder and rename you current folder "Previous System Folder."

If your computer came with an an Apple Macintosh CD

Step 1

Open the "System Software Install" folder on the Apple Macintosh CD or click the Install Software button in the Launcher window.

Step 2

Double-click the "System 7.5 Installer" icon.

Step 3

When the "Welcome to System 7.5" message appears, click Continue.

Step 4

When the installer window appears, press the Command-Shift-K keys simultaneously (the Command key is the key with the Apple and Cloverleaf). You will be presented with a small dialog box with two selections:

- Update Existing System Folder
- Install New System Folder

For a clean install, select Install New System Folder and click "OK." Make sure the Destination Disk on the bottom left is the disk you want to install on, then click Clean Install on the bottom right. This will install a new system folder and rename you current folder "Previous System Folder."

Note: After performing a System 7.5 Clean Install, when About This Macintosh is selected under the Apple menu, it will no longer display the specific Macintosh name. Instead, it will display only "Macintosh", "Macintosh Powerbook", or "Power Macintosh" depending on which system it is running. If System 7.5 is installed over an existing system (pre 7.5), it retains the specific Macintosh name for the About This Macintosh window. This holds true for future Macintosh computers also.

A CLEAN INSTALL OF SYSTEM 7.5 IS NOW COMPLETE. THE FOLLOWING STEPS ARE FOR TROUBLESHOOTING

Verify Problem Resolution
==========

After performing a clean installation, verify that you resolved the problem before adding anything to the new System Folder. Adding items to the System Folder before resolving your problem defeats the purpose of performing a clean installation.

Install Non-Standard Items
==========

You can now reinstall the non-standard items from the old System Folder (now named "Previous System Folder") such as fonts, screen savers and device drivers. If possible, you should reinstall these items from their original disks.

If the original disks are not available, you may move the non-standard items

from the Previous System Folder to the new System Folder. Be careful not to replace anything that is already in the new System Folder. Only move items that are not already in the new System Folder.

Step 1

Open each corresponding folder within the System Folder and the Previous System Folder and then compare the contents.

Step 2

Move anything that is not already in the new System Folder and its sub folders from the Previous System Folder and its sub folders.

Step 3

Restart your Macintosh.

Troubleshooting Extension Conflicts

Any system extensions or control panels installed appear as icons across the bottom of the screen when you restart. They load into memory at startup time and modify the standard behavior of the operating system.

Verify Conflict

If the Macintosh fails to restart or behaves erratically, you probably have an incompatible or conflicting INIT (also known as a system extension or control panel). To verify this problem, follow these steps:

Step 1

Restart, and after you see the picture of a computer with a smile, hold down the Shift key.

Step 2

Release the Shift key when the "Welcome to Macintosh, Extensions Off" message appears.

Step 3

When the Macintosh is ready, try to recreate the erratic behavior.

If the problem no longer occurs, then you have a conflicting extension or control panel. Continue with the steps in the next section.

Isolate Incompatible or Corrupted INITs in System Folder

Step 1

Open the Control Panels from the Apple Menu. Double click on the control panel called Extensions Manager.

Step 2

Go to the pop-up menu that says All On and pull it down to System 7.5 Only. This will disable all non-standard extensions and control panels. You will notice that the other items no longer have a check mark by them. Close the Extensions Manager.

Step 3

Go to the Special menu and choose Restart.

Step 4

Attempt to recreate the problem.

Step 5

If the problem does not occur, use the Extensions Manager to enable another extension or control panel and restart the Macintosh. Note: You can enable items in the Extension Manager by simply clicking on the name of the item so that a check mark appears.

Step 6

Attempt to recreate the original problem.

Repeat steps 5 and 6 for each item listed in the Extensions Manager until the problem recurs. The last item returned to the System Folder is probably the cause of the problem.

Final Steps
===========

Verify that your applications are performing normally. If not, refer to the application manual or contact the vendor.

When the Macintosh behaves as expected and you are sure that all needed items in the Previous System Folder are transferred, move the Previous System Folder to the Trash, and choose Empty Trash from the Special menu.

System Update

After performing a clean installation of System 7.5, you may want to consider installing System 7.5 Update 2.0 and then installing System 7.5.5 Update to ensure that you have the most current version of the system software.

NOTE: There is a sequence you must follow if you want to install System 7.5.5 Update software. Since you have just performed a clean System 7.5 installation, follow the sequence below:

1) Performed a clean installation of System 7.5
2) Install System 7.5 Update 2.0
3) Install System 7.5.5 Update

System 7.5 Update 2.0 and System 7.5.5 Update are available from the Apple Software Updates area of many online services. If you do not have access to any online services, please call 1-800-SOS-APPL for more information.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
04 Oct 1996 - Updated to System 7.5.5 and added keyword.
02 Jul 1996 - Added Fax Doc word
28 Jun 1996 - Updated to System 7.5 Update 2.0.

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Tech Info Library Article Number:16095

Tech Info Library

PowerBook 500 Series Keyboards and Power Icon (8/94)

Revised: 8/24/94
Security: Everyone

PowerBook 500 Series Keyboards and Power Icon (8/94)

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Article Created: 24 August 1994

TOPIC ----------

I've noticed different symbols on the PowerBook 500 Series keyboards (circle w/line, and triangle). What is the difference between the keyboards?

DISCUSSION ----------

Apple has used two different icons on the power up key on the PowerBook 500 Series keyboards. One is a circle with a line in it, the other is a triangle that points to the left. Only the Icon printed on the key is different, there is no change in the function associated with the key.

Support Information Services

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Tech Info Library Article Number:16100

Tech Info Library

PC Exchange: ProDOS, MS DOS, and Macintosh Partitions (8/94)

Revised: 8/24/94
Security: Everyone

PC Exchange: ProDOS, MS DOS, and Macintosh Partitions (8/94)

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Article Created: 24 August 1994

TOPIC ----------

I'm sharing ProDOS or MS DOS partitions on a volume with a Macintosh partition. Why can't I see the ProDOS and MS DOS partitions with PC Exchange?

DISCUSSION ----------

Any ProDOS or MS DOS volume originally formatted as a Macintosh volume may not work with PC Exchange. It seems certain Macintosh residue (boot block information) is left on the drive so PC Exchange is confused at the Macintosh-like characteristics. Since PC Exchange sees the drive as a Macintosh drive, it just ignores it and won't mount as a MS DOS or ProDOS volume.

The solution is to perform a low level format on any Macintosh volume before formatting it with a non-Macintosh operating system. This low level format (with some Apple II or DOS utility) eliminates Macintosh boot block information from the drive so PC Exchange won't see it as a Macintosh drive.

Support Information Services

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Tech Info Library Article Number:16101

Tech Info Library

QuickTime: Playing a Startup Movie (2/95)

Revised: 2/8/95
Security: Everyone

QuickTime: Playing a Startup Movie (2/95)

==========

Article Created: 25 August 1994
Article Reviewed/Updated: 8 February 1995

TOPIC -----

Is it possible to have a QuickTime movie play on screen during system startup?

DISCUSSION -----

To have a QuickTime movie play on screen during system startup, take an existing QuickTime movie, rename it "Startup Movie" and put it in your System Folder (root level). Now, when you start up the computer the movie plays automatically when the QuickTime extension loads.

The movie plays in a small window in the middle of your monitor screen. No tools are available (such as pause, rewind, sound). The movie window does not go away until the rest of the extensions finish loading. After that, the screen normally clears itself.

Article Change History:
08 Feb 1995 - Added keyword and made minor technical updates.

Support Information Services

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Tech Info Library Article Number:16102

Tech Info Library

System 7.5: Hangs on Restart With GeoPort/Express Modem (12/95)

Revised: 12/2/95
Security: Everyone

System 7.5: Hangs on Restart With GeoPort/Express Modem (12/95)

==========

Article Created: 25 August 1994
Article Reviewed/Updated: 2 December 1995

TOPIC ----------

On a Macintosh with System 7.5 and Express Modem or GeoPort installed, the Macintosh sometimes freezes on startup. Is there a work around?

DISCUSSION ----------

Yes, there is an incompatibility between Fax Terminal and System 7.5 where the machine may crash if there are any faxes pending on startup. The work around is:

1) If the machine is already hung, reboot with extensions off, locate the faxes in the "Fax waiting to be sent" folder, remove them manually and then reboot. These faxes will not be sent.

2) Open the Fax Terminal application and disable fax reception.

3) If you must have fax reception on, you must make sure that all faxes have been sent and that there are no delay-send faxes before you shut down or restart.

This problem can occur with versions 1.0.1 and earlier of GeoPort for Power Macintosh software running on Power Macintosh 6100, 7100, and 8100 computers; versions 1.2 and earlier of GeoPort for 68040-based AV computers software running on Quadra 660AV, and 840AV; and with versions 1.5.3 and earlier of Express Modem software running on Macintosh PowerBook computers, PowerBook Duos, Macintosh LC 575, and Quadra 630.

Issue Resolution

You should use the Apple Telecom 2.x or later software. This article can help you locate this software update:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

Article Change History:
02 Dec 1995 - Changed distribution status, and updated resolution information.
17 May 1995 - Clarified software update information.
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16104

Tech Info Library

Power Macintosh: GeoPort May Cause Freeze Up (12/95)

Revised: 12/2/95
Security: Everyone

Power Macintosh: GeoPort May Cause Freeze Up (12/95)

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Article Created: 25 August 1994
Article Reviewed/Updated: 2 December 1995

TOPIC ----------

On a Power Macintosh with System 7.5 and GeoPort installed, the Macintosh sometimes freezes when the modem attempts to dial. Is there a work around?

DISCUSSION ----------

Yes, there is an incompatibility between GeoPort and System 7.5 where the machine may freeze when it attempts to dial. GeoPort for Power Macintosh 1.0 and 1.0.1 will function with System 7.5, but there are outstanding bugs customers need to work around:

- 1.0 has two problems with virtual memory:
  - Network file transfers will fail when Virtual Memory (VM) is on.
  - Data connections will fail when VM is on.

- 1.0 and 1.0.1 will crash the computer on restart if there are any Faxes waiting to be sent in the Waiting to be Faxed folder.

- The modem speaker must be turned off at all times through the Express Modem control panel to prevent intermittent crashing.

Apple Telecom 2.x or later software is available and fixes the problems listed. This article can help you locate this software update, it is available on online services:

- "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

Article Change History:
02 Dec 1995 - Change distribution status and updated workaround information.
08 Dec 1994 - Made clarification for accuracy.

10 Oct 1994 - Updated workaround information.

Support Information Services

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Tech Info Library Article Number:16105

Tech Info Library

Quadra 800: AppleCD 300i Plus Upgrade Issue (8/94)

Revised: 8/25/94
Security: Everyone

Quadra 800: AppleCD 300i Plus Upgrade Issue (8/94)

==========

Article Created: 25 August 1994

TOPIC ----------

Can the following Internal CD-ROM drive components be installed in a Quadra 800?

M3152LL/A AppleCD 300i Plus Internal Drive
and
M2847LL/A AppleCD 300i Plus Mounting Kit

A customer's dealer had trouble installing the drive and mounting kit because:

1. After installation, the top cover plastics and metal shielding of the Quadra 800 obscures the eject button of the CD-ROM drive.

2. The front bezel for the CD will not mount on the front of the top cover for the same reason.

3. Audio cable is too short. The supplied audio cable is about 2" long. On the Power Macintosh 8100/80, the audio cable connector is on the top edge of the logic board. On the other hand, the Quadra 800 audio connector is lower down, in the middle of the logic board.

We examined three different Quadra 800s, and all the top covers had the same problem. There is no way to eject the tray to insert a CD after the top cover is mounted.

DISCUSSION ----------

What you found is correct. After installation, the top cover plastics and metal shielding of the Quadra 800 obscures the eject button of the CD-ROM drive. The front bezel for the CD will not mount on the front of the top cover for the same reason.

However, there are two versions of the cover top, service p/n 922-0847 for the Quadra 800. The one that causes the fit problem has engineering p/n 805-0456-08 and the one that fits correctly has engineering p/n 805-0666A. This information will be forwarded to the organizations that can make changes in the Finished Goods kits.

In the meantime, for the customers the only solution is to order p/n 922-0847 from the service price pages.

The correct audio cable is available as a service part. The part number is 922-0842.

Support Information Services

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Tech Info Library Article Number:16106

Tech Info Library

System 7.5:MacTCP, CloseView, Easy Access & Easy Install (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5:MacTCP, CloseView, Easy Access & Easy Install (2/95)

==========

Article Created: 25 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

I have been using Easy Install for System 7.5 on a couple systems, and I cannot seem to find MacTCP, CloseView, or Easy Access when completed.

Could you please let me know how to install MacTCP, CloseView, and Easy Access on System 7.5 if it doesn't do it through Easy Install?

DISCUSSION ----------

MacTCP, CloseView, and Easy Access are not part of the Easy Install process under System 7.5, you need to perform a Custom Install to include these features.

- MacTCP: Click Custom Install and expand the view for Networking Software, you will see that MacTCP is the last item in the list. Click the MacTCP check box and then click Install if there are no other items you wish to install at this time.

- CloseView: Click Custom Install and expand the view for Control Panels, find CloseView in the alphabetical list. Click the CloseView check box and then click Install if there are no other items you wish to install at this time.

- Easy Access: Click Custom Install and expand the view for Control Panels, find Easy Access in the alphabetical list. Click the Easy Access check box and then click Install if there are no other items you wish to install at this time.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
01 Sep 1994 - Added CloseView and Easy Access not being part of Easy Install.

Support Information Services

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Tech Info Library Article Number:16107

Tech Info Library

PrintMonitor: Description (5/95)

Revised: 5/23/95
Security: Everyone

PrintMonitor: Description (5/95)

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Article Created: 25 August 1994
Article Reviewed/Updated: 11 January 1995

TOPIC ----------

What is PrintMonitor and how is it used?

DISCUSSION ----------

The PrintMonitor application program included with Macintosh system software is an example of a background printer or spooler. Background spooler software runs on the Macintosh computer and temporarily stores, or spools, documents to be printed on the computer's hard disk. The computer must remain connected to the network until the print job is finished, but it can perform other tasks during that time.

The PrintMonitor program opens automatically whenever a user prints a document with background printing turned on. When a print command is issued, PrintMonitor spools the document to a file in the PrintMonitor Documents folder. It then waits for the selected printer to become available, establishes a network connection, and sends the document to the printer.

Aside from the convenience provided by PrintMonitor, it also provides users with additional management control in printing their documents. With PrintMonitor users can:

- See the name of the document that is currently being printed, the document's status (for example, how many pages still need to be printed), and the name of the printer being used

- Cancel a document currently printing or waiting to print

- Specify a date and time to print a document or postpone a job indefinitely

- Monitor paper supply

- Signal when to feed paper manually

PrintMonitor's icon blinks at the right end of the menu bar when the printer is out of paper or to signal that you must confirm a manual operation. It can also be set to display an alert message. To change the notification method, use the program's Preferences command in the File menu.

Article Change History:
11 Jan 1995 - Added keyword and made minor technical updates.

Support Information Services

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Tech Info Library Article Number:16108

Tech Info Library

System 7.5: Using with LikeWise (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Using with LikeWise (2/95)

==========

Article Created: 25 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

We have several Power Macintosh 6100's and LikeWise 1.0.1. We cannot make a LikeWise client floppy disk because a Power Macintosh minimal installation will not fit on a 1.44MB floppy disk. Since we require network support for ethernet to use LikeWise, the Disk Tools disk does not provide a solution.

This also appears to be a problem with System 7.5 since there does not appear to be a way to make a bootable floppy using the installer.

DISCUSSION ----------

LikeWise is a discontinued product. Using it with System 7.5 is not supported.

That said, the System 7.5 Multi-User Upgrade Kits include a disk image entitled "Network Access". Customers will be able to use Disk Copy to create a bootable System 7.5 floppy with network access. This is the recommended way to create a bootable floppy for any Macintosh that is FDHD-equipped and System 7.5-capable.

LikeWise 1.0.1 should work with the Network Access bootable floppy. The LikeWise Client on the 7.0.1 LikeWise Client DART Image is named Finder. You can use it to replace the Finder on the 7.5 Network Access floppy. It appeared to work fine during the minor testing we did.

There are also several third-party applications that serve as alternatives to LikeWise. They are:

- GraceLAN Update Manager
- Instant Update
- NetDistributor Pro
- Version Master

It is recommended that customers use one of these products with System 7.5.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16109

Tech Info Library

Apple Guide: Where to Obtain Guide Maker (4/95)

Revised: 4/3/95
Security: Everyone

Apple Guide: Where to Obtain Guide Maker (4/95)

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Article Created: 1 September 1994
Article Reviewed/Updated: 3 April 1995

TOPIC ----------

How can I obtain Guide Maker, the Apple Guide Authoring Kit?

DISCUSSION ----------

Macintosh Guide, which is included in Macintosh System 7.5, utilizes a technology called Apple Guide. Apple Guide is an electronic assistant that leaps beyond traditional help systems and guides the user through specific procedures one step at a time, actually leading the user through to the completion of the task.

With Apple Guide, a user can learn how to accomplish new or complex tasks by following on-screen prompts. Apple Guide also provides on-screen “coachmarks” that provide visual clues by circling or highlighting items such as menu selections.

Businesses, schools, and other organizations can reduce training and support costs by creating their own Apple Guide to lead users through tasks that are unique to their company or organization. For example, a human resources department could use Apple Guide to assist employees in filling out forms electronically—guiding the user through obtaining the correct form from a network server, filling it out, and sending it to the proper electronic mailbox.

The Apple Guide Authoring Kit is available as a separate product from Addison Wesley. The kit allows you to create your own customized Guide files.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
03 Apr 1995 - Reviewed for technical accuracy.

15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
06 Jan 1995 - Removed info on where to obtain free copies as program expired.

Support Information Services

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Tech Info Library Article Number:16110

Tech Info Library

Alert Sounds: Distortion at Lower Volume Levels (8/94)

Revised: 8/26/94
Security: Everyone

Alert Sounds: Distortion at Lower Volume Levels (8/94)

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Article Created: 26 August 1994

TOPIC -----

Our customer is hearing distorted audio in Sound Control Panel at low volumes. When selecting alert sounds, as the audio level is reduced, the distortion increases. This problem occurs in 8 bit and 16 bit sounds at all resolutions.

The audio does not distort when triggered from the Volumes menu, only the Alert Sounds menu.

Steps we used to reproduce the problem:

1. Open Sound Control Panel.
2. Set volume slider to full volume.
3. Gradually lower slider. As volume decreases, distortion increases.
4. For maximum distortion, set slider to the lowest possible audible volume level.

DISCUSSION -----

This is actually normal behavior for Sound Manager 3.0. The loss of resolution is due to scaling of the actual sound samples. For 8-bit samples (and especially quiet sounds), there isn't much resolution to begin with (256 levels). The alert volumes slider scales each of these samples when sending them to the output channel, causing the distortion noted.

In the future, the Sound Manager might apply some sort of non-linear scaling for 8-bit sounds to minimize this problem.

Support Information Services

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Tech Info Library Article Number:16111

Tech Info Library

PowerBook 280c: Not Shutting Down After Memory Install (11/94)

Revised: 11/8/94
Security: Everyone

PowerBook 280c: Not Shutting Down After Memory Install (11/94)

==========

Article Created: 26 August 1994
Article Reviewed/Updated: 8 November 1994

TOPIC ----------

I just had extra RAM added to my PowerBook 280c. Now it will not shut down when I select Shut Down from the Special menu. How can I resolve this problem?

DISCUSSION ----------

This is an issue with PowerBook 280c's that have version 1.5 of the Express Modem software and extra RAM installed.

The solution is to upgrade the Express Modem software to 1.5.2. This problem was addressed in the 1.5.2 version of that software.

To locate software updates mentioned in this article please refer to the following Tech Info Library articles:

Where to Find Apple Software Updates
Obtaining Apple Product Support in the USA

Article Change History:
08 Nov 1994 - Reviewed.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16112

Tech Info Library

Macintosh 630 family: VideoShop Can't Record From TV (8/94)

Revised: 8/29/94
Security: Everyone

Macintosh 630 family: VideoShop Can't Record From TV (8/94)

==========

Article Created: 29 August 1994

TOPIC ----------

I am trying to record video from the TV Tuner card in my Quadra 630 with VideoShop and it is not working. Is this a known problem and is there a workaround?

DISCUSSION ----------

It seems that VideoShop is unable to record from the TV Tuner, in fact, TV is not even an input source option in the Video Settings screen. According to Avid, the QuickTime vdig which is included in the 630 does not allow Quicktime software to connect through to the TV Tuner.

The only workaround is to record the TV signal through Apple Video Player and then import that QuickTime movie into VideoShop.

Support Information Services

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Tech Info Library Article Number:16114

Macintosh 630 Family: General Questions & Answers (11/95)

Revised: 11/29/95
Security: Everyone

Macintosh 630 Family: General Questions & Answers (11/95)

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Article Created: 25 August 1994
Article Reviewed/Updated: 29 November 1995

TOPIC ----------

This article provides some common questions and answers concerning the Quadra/LC/Performa 630 series computer.

DISCUSSION ----------

Question: If I purchase a Quadra 630 with the Apple Video TV System card installed, can I output the video to a NTSC device such as a television or VCR?

Answer: Yes, however you need to purchase the Apple Presentation System to do this. Without the Apple Presentation System, you cannot display the video from the Quadra 630 to a NTSC device. A PAL version of the Apple Presentation System is also available.

Question: Does the image from the Apple Presentation System appears in some sort of video capture Software or is it the whole Macintosh screen shown?

Answer: The Apple Presentation System displays the entire Macintosh Screen up to 640x480. You cannot use the Apple Presentation System at higher resolutions because the upper bits of VRAM would be off the edge of the NTSC screen.

Question: If I use the Apple Presentation System to display my screen on a television, is there a way to still use my computer monitor?

Answer: Yes, the Apple Presentation System allows you to connect both.

Question: What connectors are available on the Apple TV/Video System card?

Answer: The Apple TV/Video System card provides:

TV Tuner Card

• One coaxial connector

Video Input Card

• One S-Video connector
• Two Audio Connectors (one for the left and right audio channels)

Article Change History:
29 Nov 1995 - Updated format.

Support Information Services

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Tech Info Library Article Number:16117

Tech Info Library

LaserWriter Pro 810: Speeding Up Ethernet Performance (8/94)

Revised: 8/29/94
Security: Everyone

LaserWriter Pro 810: Speeding Up Ethernet Performance (8/94)

==========

Article Created: 26 August 1994

TOPIC ----------

I have a LaserWriter Pro 810 and I have noticed that when I print to it using the Ethernet port it takes a long time to print. How can I speed up the printing process using the Ethernet port.

DISCUSSION ----------

Macintosh AppleTalk print jobs sent to the LaserWriter Pro 810's Ethernet port can take up to 50% longer than printing to the LocalTalk port on the printer. This "slowness" varies with the type of document being printed as well as the number of pages, and is most noticeable printing the first page of a multi-page document, or merely a one page document.

This problem is due to Ethernet data having to propagate through the printer's unidirectional parallel port architecture to get to the PostScript interpreter. For reverse communications (data from the PostScript interpreter to the client), additional processing is required to parse the data and then funnel the information back using the serial port. The serial port is used as the communications "backchannel" since the printer's parallel port is unidirectional.

We recommend using LocalTalk if possible when speed and/or performance is required. To use LocalTalk, you would place the LaserWriter Pro 810 on a LocalTalk network segment, while the workstations may remain on Ethernet. In this case, you need to use an AppleTalk router to connect the LocalTalk and Ethernet networks. Ethernet must be used when alternate protocols, such as IPX, TCP/IP, and LAT are paramount. If you need alternate protocols, then the LocalTalk solution is not an option.

Support Information Services

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Tech Info Library Article Number:16118

Tech Info Library

System 7.5: Old Enablers May Remain After Easy Install (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Old Enablers May Remain After Easy Install (2/95)

==========

Article Created: 29 August 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

After installing System 7.5 over my old System 7.1 folder, I noticed that some enablers remained in the system folder. Can I throw them away?

DISCUSSION ----------

When selecting Easy Install from the System 7.5 Installer and installing over 7.1 systems, the installer will fail to remove the PowerBook 150 Enabler, the PowerBook 500 Series Enabler, and the Workgroup Server 9150 Enabler.

This is not a problem, as 7.5 will ignore the enabler. The enablers can be safely tossed in the trash.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16120

Tech Info Library

System 7.5.x: Large Server Volume Size Shown Incorrect (9/95)

Revised: 9/29/95
Security: Everyone

System 7.5.x: Large Server Volume Size Shown Incorrect (9/95)

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Article Created: 29 August 1994
Article Reviewed/Updated: 29 September 1995

TOPIC ----------

I am using System 7.5 and later on some Power Macintosh computers trying to access a 10 GB hard disk through AppleTalk. The disk is attached to a Microsoft Windows NT Server. The problem is the server volume size, as viewed by the Macintosh, is not accurate.

Where is the additional drive space on these network volumes?

DISCUSSION ----------

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

This would typically be a question for Microsoft, however, we have found a way to modify Windows NT server 3.5 and 3.51 to correctly report the volume size. The information below comes from a Microsoft Technical Information Document, which we are including here for your convenience.

PSS ID Number: Q120739
Article last modified on 06-06-1995
PSS database name: WINNT

3.50

WINDOWS

The information in this article applies to:

- Microsoft Windows NT Server version 3.5

SUMMARY
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A registry flag controls the maximum volume size and free space reported by the Services for Macintosh (SFM) file server. Since System 7.5 now allows Macintoshes to support volumes up to 4GB-1 (0xFFFFFFFF), administrators may want to use this flag to help Macintosh clients if all clients are running System 7.5 and the SFM volume resides on a disk partition greater than 2018MB.

MORE INFORMATION
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Pre-System 7.5 Macintoshes support volume sizes up to 2GB-1 (although tests have shown the actual limit to be around 2018MB). Because of this, SFM restricts the values it reports for total and free space on SFM volumes to 2018MB, when the actual size of the SFM volume's disk partition is larger.

System 7.5 can handle volumes up to 4GB-1, and you may find it useful to raise the maximum values reported for SFM volumes to this new limit.

WARNING: ALL Macs connected to the volume must be System 7.5; reporting a volume size greater than 2GB-1 to a pre-System 7.5 Macintosh crashes Macintosh Finder.

You can raise the maximum reported size for SFM volumes to 4GB-256 (0xFFFFFF00) by creating the SFM volume, then editing the registry entry:

   HKEY_LOCAL_MACHINES\System\CurrentControlSet\Services
      \MacFile\Parameters\Volumes\<VolumeName>

   Properties=xxxxx

   by adding 262144 (0x00040000) to the number xxxxx.

WARNING: Using Registry Editor incorrectly can cause serious, system-wide problems that may require you to reinstall Windows NT to correct them. Microsoft cannot guarantee that any problems resulting from the use of Registry Editor can be solved. Use this tool at your own risk.

Stop and restart Macfile to make this change take effect on the SFM volume.

In Windows NT 3.51 you can change this value globally for all volumes. To do this, add bit 0x10 to the following section of the registry and every volume will be 4GB enabled:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MacFile\Parameters
ServerOptions: REG_DWORD: xxxx

Additional reference words: prodnt 3.50 3.51
KBCategory: kbnetwork kbenv
KBSubCategory: ntmac ntregistry

Copyright Microsoft Corporation 1995.

Article Change History:
29 Sep 1995 - Revised with Microsoft Corporation information.
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16121

Tech Info Library

Multiple Scan 17 Display: DOS Card Requires Adapter (8/94)

Revised: 5/24/95
Security: Everyone

Multiple Scan 17 Display: DOS Card Requires Adapter (8/94)

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Article Created: 29 August 1994

TOPIC ----------

I have connected an Apple Multiple Scan 17 Display to a Macintosh Quadra 610 with the DOS compatibility card. When I try to switch from the Macintosh to the DOS environment, the screen fades slightly, but system freezes and never switches to DOS. On the PC Setup control panel only the 16-in and VGA options are available. It seems like that Macintosh recognizes the monitor as an Apple 16-in display.

Is the Apple Multiple Scan 17 Display compatible with DOS Compatibility Card? If the answer is yes, which resolutions are supported in the Windows or DOS applications, and which is the correct configuration to make it work?

DISCUSSION ----------

The sense pins on the Multiple Scan 17 Display signal the Macintosh that a 14-in. monitor is connected and the Macintosh sets up the video signal up for a 14-in. display. However when the video software loads and queries the monitor, it determines that it is really a 17-in. display, and re-sets the video accordingly.

The problem on the Quadra 610 DOS compatible is that the initial video setup is sent to the DOS Compatibility Card, and so the card is set incorrectly for that monitor. The Macintosh video software has no access to change the parameters that were previously set in the DOS compatibility card.

Workaround

The only workaround is to configure the sense pins on the monitor for a Apple 16-in. display. This allows the Macintosh to correctly set the DOS compatibility Card video parameters at startup. There are two vendors that sell adapters that allow you to configure the sense pins on the monitor; James Engineering and Enhance Cable Technology.

Once you have attached the proper cable adapter which sets the sense pins for a 16-in. display, the DOS compatibility card supports all 16-in. resolutions. A complete list of these resolutions is available in the Technical Information Library article titled "DOS Card: Video Modes Supported".

To locate a vendor's address and phone numbers, use the vendor name as the search string.

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Tech Info Library Article Number:16122

Tech Info Library

QuickTime Movie Player Audio Distortion (8/94)

Revised: 8/29/94
Security: Everyone

QuickTime Movie Player Audio Distortion (8/94)

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Article Created: 29 August 1994

TOPIC -----

Audio is distorted in QuickTime Movie Player at low volumes. The Volume fader on the Movie Controller does indeed lower the volume of the sound in the movie, but leaves the sound of the aliasing and hiss at the same level, no matter what volume setting is used.

At lower volume levels, the noise is as loud as the intended program material. This does not seem to happen if you open the same file in SoundEdit 16 or DigiTrax. Lowering the sound playback volume lowers all that is included in the program material, including hiss and anomolies. Is this a problem with Sound Manager 3.0?

DISCUSSION -----

All volume in QuickTime is handled by the Sound Manager.

This is actually normal behavior for Sound Manager 3.0. The loss of sound resolution is due to scaling of the actual sound samples. For 8-bit samples (and especially quiet sounds), there isn't much resolution to begin with (256 levels). The alert volume slider scales each of these samples when sending them to the output channel, causing the distortion.

In the future, the Sound Manager may apply some sort of non-linear scaling for 8-bit sounds to minimize this problem.

The work around is to record audio in QuickTime movies to a level that allows comfortable playback while the Movie Player volume control is at its highest level.

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Tech Info Library Article Number:16123

Tech Info Library

DOS Compatible Card and Large Multiscan Monitors (8/94)

Revised: 8/29/94
Security: Everyone

DOS Compatible Card and Large Multiscan Monitors (8/94)

==========

Article Created: 29 August 1994

TOPIC ----------

We purchased a Mitsubishi 27 inch multiscan monitor, for use with our Quadra 610 DOS compatible computers. We can display the Macintosh side fine, but when we switch to DOS, the screen goes black.

Does a Mitsubishi 27 inch Multiscan monitor work with the Quadra 610 DOS Compatible computer?

DISCUSSION ----------

The maximum resolution on the DOS compatible card is 800x600 with 16 colors. In order to use this resolution, the sense pin configuration must match that of an Apple 16 inch monitor on the Macintosh side. The problem is the video on the DOS compatible card is set up at boot time, and cannot be changed until a reboot. If the sense pins are configured for, say, an Apple 14 inch and then the resolution is changed through software, the graphics chip on the DOS compatible card is in an undetermined state. This will keep it from outputting a recognizable signal, so no video is displayed.

The work around is to configure the sense pins on the monitor for a Apple 16 inch monitor. This will allow the Macintosh to set the correct video parameters on boot, to be sent to the DOS compatible card. There are two vendors that we know of that sell adapters that will allow you to configure the sense pins on the monitor. The vendor names are: James Engineering and Enhance Cable Technology. To locate a vendor's address and phone number, use the vendor name as a search string.

Once you have attached the proper cable adapter which sets the sense pins for a 16 inch display, the DOS compatible card will support the same resolutions which are supported for a 16 inch attached monitor, which is outlined in the TIL article: "DOS Card: Video Modes Supported".

Note: Once you configure the sense pins for an Apple 16 inch Color Display,

unless the Mitsubishi comes with special software, you won't be able to switch resolutions while the computer is running on the Macintosh side.

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Tech Info Library Article Number:16124

Tech Info Library

Multiple Scan 15 Display: Meaning of LED Colors (6/95)

Revised: 6/15/95
Security: Everyone

Multiple Scan 15 Display: Meaning of LED Colors (6/95)

==========

Article Created: 29 August 1994
Article Updated: 15 June 1995

TOPIC -----

Why does the LED on Multiple Scan 15 Display change colors?

DISCUSSION -----

The LED on the front of the monitor turns amber instead of green if the signal cable (video cable) is not connected to the CPU or if the monitor is not detecting a video signal from the cpu. The LED in normal operation is green when the monitor is turned on. However, the monitor LED does change briefly during a normal startup.

Article Change History:
15 June 1995 - Changed unclear language

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Tech Info Library Article Number:16125

Tech Info Library

QuickTake and UV Light (8/94)

Revised: 8/29/94
Security: Everyone

QuickTake and UV Light (8/94)

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Article Created: 29 August 1994

TOPIC ----------

I'm thinking about using the QuickTake camera to take pictures of fluorescent objects in a background of high UV light (both long and short wavelength), so that I could then read them into my computer.

The main concern is whether taking pictures with a high UV light background will burn out the photo receptors in the camera, and whether they could possibly use filters to screen out the UV light before it got to the camera.

DISCUSSION ----------

According to our engineers, the QuickTake camera will not be adversely affected in a fluorescent lighting environment. Therefore, you will not need to use any type of light filters.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16127

Tech Info Library

Macintosh 630 Family: Video Frame Capture Rate (12/94)

Revised: 12/23/94
Security: Everyone

Macintosh 630 Family: Video Frame Capture Rate (12/94)

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Article Created: 29 August 1994
Article Reviewed/Updated: 23 December 1994

TOPIC ----------

What is the frame capture rate for the Macintosh 630 family computer that has the Apple TV/Video system installed?

DISCUSSION ----------

There is no official frame rate specification. Frame rates provided below are not official specifications, but results we got when we tested a Quadra 630.

When recording, the Apple Video Player uses the best possible frame rate. This rate can be affected by several different factors, including the version of QuickTime used, third-party system extensions, and the monitor's bit-depth settings.

In our testing, we found the highest frame rates when using the following setup:

- Quadra 630 (we were unable to test an LC or Performa 630-series)
- QuickTime 1.6.2 (this version is installed by the Apple TV/Video System)
- no third-party extensions
- monitor set to "Thousands" of colors at the 640x480 resolution.

We found that performance levels vary greatly. But, as a guideline, you can expect to get up to approximately 16 frames per second (fps) when recording a 160x120 pixel window, about 8 fps for a 320x240 window, and about 2.5 fps for a 640x480 window.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Article Change History:
23 Dec 1994 - Reviewed for technical accuracy and reclassified.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16129

Tech Info Library

A/UX: Support for bootp and rarpd (8/94)

Revised: 8/29/94
Security: Everyone

A/UX: Support for bootp and rarpd (8/94)

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Article Created: 29 August 1994

TOPIC -----

Does A/UX 3.0 support bootp and/or rarpd?

DISCUSSION -----

Neither the desktop version of A/UX 3.0.1 nor the AWS 95 A/UX 3.1 supports bootp or rarpd.

Note that development on the desktop version of A/UX 3.0.1 has been discontinued. The latest version of A/UX 3.1 was developed for the Apple Workgroup Server 95, hence it does not support non-AWS 95 CPUs.

The future AIX/PowerOpen product MAY support bootp and rarp protocols, but this has not been finalized.

Several other Apple products may use bootpd and rarpd for auto configuation and management, including:

MacTCP	rarpd,bootp for assigning addresses
LW 810	rarpd for assigning addresses; bootp for loading software (not implemented yet)

People who wish to use bootp and rarpd to manage the above mentioned Apple products will need to configure the rarpd or bootp programs on another Unix machine.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16130

Tech Info Library

DOS Compatibility Card: Serial Support vs. SoftWindows (8/94)

Revised: 8/29/94
Security: Everyone

DOS Compatibility Card: Serial Support vs. SoftWindows (8/94)

==========

Article Created: 29 August 1994

TOPIC --------------------

I have a MS-DOS program, that uses serial communications, that works fine on my Power Macintosh 6100 running SoftWindows, however it doesn't work on my Dos Compatible Quadra 610. The software vendor claims the problem is related to the way the Macintosh supports the RS-232. Is there a difference between the way the DOS Compatibility Card and SoftWindows handles serial support?

DISCUSSION --------------------

Due to the RS-232 implementation of the Macintosh, not all RS-232 signals are available. These signals are not available: Carrier Detect (CD), Data Set Ready (DSR), Request to Send (RTS), and Ring Indicator (RI). If your application or serial device requires these signals, it will not work.

The DOS Compatibility Card does not support Carrier Detect (CD). You must configure your communications applications so they do not use CD. Most communications applications can be set to respond to the CARRIER string sent back by most modems.

The work around is for the customer to configure their software to use XON/XOFF for flow control. If their software does not allow for XON/XOFF then the software will not run on our DOS Card.

The serial problem is the same for all Macintosh computers, but SoftWindows does some special software processing of serial signals to "emulate" the missing RS-232 signals. The SoftWindows manual has the following information:

Serial Limitations-

Programs that do not work well are those that are extremely timing sensitive, or that rely on serial port lines that are not available on the Macintosh serial port.

SoftWindows has no access to the DSR, DCD or RI signals, and the RTS line cannot be set up, due to lack of lines. Instead, SoftWindows makes the DSR and RLSD/DCD lines seem to always have the same status as the DTR line. RI is always set to off.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16131

Tech Info Library

MacAdapt (formerly James Engineering) (2/95)

Revised: 2/1/95
Security: Everyone

MacAdapt (formerly James Engineering) (2/95)

==========

Article Created: 29 August 1994

MacAdapt (formerly James Engineering)

6329 Fairmont Ave.
El Cerrito, CA 94530

510-525-0789

Company Profile:
Makes video adaptors.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16132

Tech Info Library

LaserWriter Pro 630: Switching Paper Trays w/ PostScript (2/95)

Revised: 2/8/95
Security: Everyone

LaserWriter Pro 630: Switching Paper Trays w/ PostScript (2/95)

==========

Article Created: 29 August 1994
Article Reviewed/Updated: 8 February 1995

TOPIC ----------

Is there any tray select software, or Postscript files available to switch trays on a Laserwriter Pro 600/630 on a Unix computer?

DISCUSSION ----------

Yes, the following postscript functions codes to select and print to different paper trays on a LW Pro 630 using the "lpr" command under A/UX. Note that the postscript codes below must be inserted in a Postscript (ready) file. For printing text files you can first use the "enscript" program which converts text files to Postscript format. For example, "enscript -pout.en out.txt". The following values passed to the /zselectmediasource function select the desired tray:

```
   0 zselectmediasource       % select the standard 250 sheet standard tray
   1 zselectmediasource       % select the multipurpose tray
   2 zselectmediasource       % select the optional 500 sheet tray
   3 zselectmediasource       % select the optional envelope feeder
```

Note that lines which start with % are the comments in Postscript.

For example, the following codes segment (appended at the end of defined functions) selects the letter sized paper from the 500 sheet tray:

```
letter
zsetmultipurposepagesize
2 zselectmediasource
```

Caution:
========
If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered

correctly, can place the LaserWriter into a condition requiring service.

PostScript source code

```
% Paper source selection code for the LW Pro.
% Copyright (c) ) Apple Computer, Inc. 1992-1993

/zbdf
{
   bind def
}bind def

/zxdf
{
   exch def
}zbdf

%-----------------------------------------------------------------------
% zislwpro  -- boolean
% Returns true if product is LaserWriter Pro 600 or 630.

/zislwpro
{
   statusdict begin/product load end dup(LaserWriter Pro 630)eq
   exch(LaserWriter Pro 600)eq or
}zbdf

%-----------------------------------------------------------------------
% zisntr  -- boolean
% Returns true if product is Personal LaserWriter NTR.

/zisntr
{
   statusdict begin/product load end(LaserWriter Personal NTR)eq
}zbdf

%-----------------------------------------------------------------------
% zadjustpagedevice  dict --
% Similar to setpagedevice but attempts to preserve much of the graphics state
% across the call.  For level 2 PostScript ONLY.

/zadjustpagedevice
{
   /zpagedevicedict zxdf

   % Save everything.
   matrix currentmatrix

   currenttransfer currentgray
   systemdict/currentcolorscreen known
   {
```

```
   currentcolorscreen true
   }
   {
   currentscreen false
   }ifelse

   zpagedevicedict setpagedevice

   % Restore everything.
   {
   setcolorscreen
   }
   {
   setscreen
   }ifelse

   setgray settransfer setmatrix
}zbdf

%--------------------------------------------------------------------------
% zsetmultipurposepagesize  --
% Matches and thus sets the page size for the multipurpose tray.

/zsetmultipurposepagesize
{
   systemdict/setpagedevice known
   {
   % Check for LaserWriter NTR or LaserWriter Pro
   zisntr{0}{zislwpro{1}{-1}ifelse}ifelse

   % stack: -- 0, 1, or -1.
   % LW NTR multipurpose tray = 0, LW Pro multipurpose tray = 1
   dup 0 ge
   {
   1 dict dup begin/InputAttributes 1 dict dup 4 index
   1 dict dup/PageSize currentpagedevice/PageSize get put put def end
zadjustpagedevice
   }if pop
   }if
}zbdf

% zmanualfeedoff  --
% Turns manual feed off.
/zmanualfeedoff
{
   statusdict/manualfeed known
   {
   statusdict/manualfeed false put
   }if
}zbdf

%--------------------------------------------------------------------------
% zselectmediasource  source --
```

```
% Selects the given paper source (tray) for auto feed.  Should only be called
% on LW Pro.
% Source values are 0, 1, 2, 3 meaning respectively: 250 sheet standard
% cassette, multipurpose tray, 500 sheet optional cassette, optional envelope
% feeder.

/zselectmediasource
{
   % Save the source request into the priority array.
   1 array astore/zmediasourcepriority zxdf

   % Turn off manual feed.
   zmanualfeedoff

   % Check for presence of setpagedevice operator
   systemdict/setpagedevice known
   {
   % Verify tray presence.
   currentpagedevice/InputAttributes get zmediasourcepriority 0 get

   % stack: dict key --
   known
   {
   % Update the current page device (select the tray).
   % We also force the current page device to the PageSize of
   % the selected tray -- this will force the paper to be drawn from
   % the requested tray regardless of the paper size actually sensed
   % by the tray (i.e. this will override auto page size matching).
   4 dict begin/InputAttributes 1 dict dup/Priority zmediasourcepriority put
def
   /PageSize currentpagedevice/InputAttributes get zmediasourcepriority 0 get
get/PageSize get def
   /ManualFeed false def
   /Policies 1 dict dup/PageSize 1 put def currentdict end zadjustpagedevice
   }if
   }if
}zbdf
```

Article Change History:
08 Feb 1995 - Added PostScript caution message.

Support Information Services

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Tech Info Library Article Number:16133

Tech Info Library

Read Me(ARA 1.0 Client Enabler) File (8/94)

Revised: 8/29/94
Security: Everyone

Read Me(ARA 1.0 Client Enabler) File (8/94)

==========

Article Created: 29 August 1994

TOPIC -----

This article is the Read Me(ARA 1.0 Client Enabler) File.

DISCUSSION -----

1.0 Client Enabler for Apple Remote Access 2.0.1 Servers

These enablers are designed for Apple Remote Access 2.0.1 MultiPort and Personal Servers. They allow those servers to accept calls for ARA 1.0 clients. They do not provide bug fixes of other enhancements. You do not need to use the enablers if no version 1.0 clients require access to your version 2.0.1 Personal or MultiPort server.

The enablers work by modifying certain of your ARA 2.0.1 server files, changing their version number to 2.0.1RevB. No changes need be made to either 1.0 or 2.0 clients. To install the enablers, simply run the appropriate enabler application on the server machine. If you want to provide 1.0 client access on a version 2.0 server, you must first install the ARA 2.0.1 upgrade before running the enabler application.

These enablers are for the nonlocalized (English-language) version only.

LIMITATIONS

• External third-party security was introduced with version 2.0 of ARA. If a server requires a client to have external security modules in its System Folder, version 1.0 clients will not be able to connect.

• In the highly improbable event of line errors at the time of connection, it is possible for a version 2.0.1 client to retry a connection by using version 1.0 ARA protocol. If the retry succeeds, some ARA version 2.x features may not be available to the client for the duration of the connection. This connection degradation is not likely to occur, and even if it does, the user may never

notice. If the user does encounter problems, he or she should disconnect and make the call again.

MultiPort 2.0.1RevB - CLIENT 1.0 INCOMPATIBILITIES

Here is a list of the 2.0 security features that have no counterpart in 1.0 clients:

• The client's account requires an external security module.

• The "Always Require User to Enter Password" checkbox is checked in the Server Preferences dialog box.

• The client's account has "Require New Password on Next Login" checked.

• The client's password has an expiration date.

• The client's password must be of a minimum size specified by the administrator.

When a 1.0 client attempts to connect to a server that has 2.0-only security features in place that apply to the client's ARA account, the connection attempt is refused by the server. The client receives the following message in a dialog box:

"The connect attempt failed. Remote Access on the computer you are calling refused to connect."

The server records the following two messages in the activity log:

"Connection attempt refused."
"Caller's ARA version insufficient for security or password settings."

Note: For all of the security features just listed, if a 1.0 call is denied access and is followed by a 2.0 call to the same account, the security is handled in the standard 2.0 way. For example, say that the user's password has expired and he or she is refused access when calling in with 1.0. The next time the user calls in with 2.0, he or she will be presented with the normal password-expired dialog box.

In addition, if dial-in-and-transfer and callback-only ports are being used on the 2.0.1 MultiPort server, 1.0 clients may encounter the "The connect attempt failed…" error message if their accounts are not set up properly for callback. The administrator should verify that a callback number is entered and checked for each 1.0 client that uses a dial-in-and-transfer port.

WARNINGS

• On the version 2.0.1 Personal Client/Server, the Compatibility checkbox is obsolete and should be left unchecked. Checking this box causes the Remote Access Personal application to deactivate the Change Password item in the Setup menu.

• If you try to apply the enabler a second time on your server, an error message will appear.

• Apple does not recommend use of this enabler with MNP-10 modems.

• Run the enabler application from a disk on your system and not from another system on a network. A system crash may result if you try to launch the application from a remote system.

INSTALLATION

Two enabler applications are supplied on this disk: one for the MultiPort Server (ARA MP 1.0 client enabler), and the other for the Personal Client/Server (ARA PS 1.0 client enabler). Before you launch the application appropriate for your server, you may want to back up the files that will be modified. Backup is not necessary if you have the original ARA installation floppy disks handy. If you do want to go back to the original version of the server, do not use the Installer on the disks. Instead, simply copy the files back to the Extensions folder.

On the Personal Client/Server, two files in the Extensions folder will be affected by the enabler. Their names as originally installed are:

• Apple Remote Access Personal
• Link Tool Manager

On the MultiPort Server, four files in the Extensions folder will be affected:

• Apple Remote Access MP
• Call Back Client
• Call Back Server
• Link Tool Manager

When the enabler application runs, it will prompt you with standard file dialog boxes for the names and locations of the files to be modified.

When the enabler application exits, restart the system.

Support Information Services

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Tech Info Library Article Number:16134

Tech Info Library

Quadra 610/650/800: How to Configure for NTSC or PAL (8/94)

Revised: 8/30/94
Security: Everyone

Quadra 610/650/800: How to Configure for NTSC or PAL (8/94)

==========

Article Created: 30 August 1994

TOPIC ----------

How can I configure NTSC and/or PAL video on a Quadra 610, 650, or Quadra 800?

DISCUSSION ----------

As you are aware, many Macintosh computers support the NTSC and PAL video formats and both the Quadra 610 and 650 fall into this category.

Their respective sense line configurations to generate the appropriate video signal are listed below.

NTSC Pins 4,7, and 11 (ground) are tied together. Sense pin 10 is not connected (logic high) Pin 5 is the composite signal and pin 6 is composite ground.

PAL Sense pins 4, 7, and 10 are tied together. Pin 5 is the composite signal and pin 6 is composite ground.

Support Information Services

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Tech Info Library Article Number:16135

Tech Info Library

System 7.5: Personal and Multi User Upgrade Kit Contents (7/96)

Revised: 7/3/96
Security: Everyone

System 7.5: Personal and Multi User Upgrade Kit Contents (7/96)

==========

Article Created: 30 August 1994
Article Reviewed/Updated: 02 July 1996

TOPIC ----------

The following article provides information on what is contained within each System 7.5 upgrade kit.

DISCUSSION ----------

****
Multi-User Upgrade Kit (MUK)
****

Media:
- 14 Disk Set:
  - Before You Install
  - Install Disk 1
  - Install Disk 2
  - Install Disk 3
  - Install Disk 4
  - Install Disk 5
  - Install Disk 6
  - Install Disk 7
  - MacLink Plus for 10/30/100 users
  - Install - PowerTalk & QuickDraw GX
  - QuickDraw GX 1
  - QuickDraw GX 2
  - PowerTalk
  - Disk Tools
- MUK-CD (includes network administrator tools)

Print Materials:
- Manual (030-5660) - Upgrade Guide to System 7.5
- Manual (030-5759) - Group Upgrade Guide to System 7.5
- System 7.5 SLA - 10/30/100 user Software License Agreement

Reg Card (030-6491) - Standard SW reg card
E•World Getting Started Guide (030-5957)
E•World SLA (030-5490)
Booklet, CD Instructions (030-6116)
:YOUR MACINTOSH SYSTEM 7.5 CD-ROM INSTALLATION KIT
:Your installation kit includes a CD-ROM disc and a floppy disk. The
:CD-ROM disc contains the software to install System 7.5 and extra
:application programs. The floppy disk contains software to start up
:your computer and Apple CD-ROM drive.
:
:For installation instructions, see you Macintosh System 7.5 Upgrade
:Guide. Start with Chapter 1 ("Before You Install"). As you follow
:the steps, look for notes that begin "If you are installing from a
:CD..." and follow the instructions in the notes. If you have a
:problem before the installation is complete, you can use the floppy
:disk to start up your computer.
Manual, 3rd party (030-6125) - Guide to 3rd party 7.5 savvy apps
Pack List for 10/30/100 user kit
Digital Signature order form - 10/30/100
Reg Card, 3rd party, DataViz - Reg card for the MacLink Plus translators
Includes troubleshooting info, instructions in use of the product,
detachable reg card, etc.
POS sticker

****
Personal Upgrade Kit (PUK) - CD
****

Media:
PUK-CD
Disk Tools Disk

Print Materials:
Manual (030-5660) - Upgrade Guide to System 7.5
System 7.5 SLA - single user Software License Agreement
Reg Card (030-6491) - Standard SW reg card
E•World Getting Started Guide (030-5957)
E•World SLA (030-5490)
Booklet, CD Instructions (030-6116)
:YOUR MACINTOSH SYSTEM 7.5 CD-ROM INSTALLATION KIT
:Your installation kit includes a CD-ROM disc and a floppy disk. The
:CD-ROM disc contains the software to install System 7.5 and extra
:application programs. The floppy disk contains software to start up
:your computer and Apple CD-ROM drive.
:
:For installation instructions, see you Macintosh System 7.5 Upgrade
:Guide. Start with Chapter 1 ("Before You Install"). As you follow
:the steps, look for notes that begin "If you are installing from a
:CD..." and follow the instructions in the notes. If you have a
:problem before the installation is complete, you can use the floppy
:disk to start up your computer.
Manual, 3rd party (030-6125) - Guide to 3rd party 7.5 savvy apps

```
    Pack List for PUK-CD
    Digital Signature order form - single user
    Reg Card, 3rd party, DataViz - Reg card for the MacLink Plus translators
        Includes troubleshooting info, instructions in use of the product,
        detachable reg card, etc.
    POS sticker - PUK-CD specific


************************************
Personal Upgrade Kit - 1.44mb diskette
************************************

Media:
    14 Disk Set:
        Before You Install
        Install Disk 1
        Install Disk 2
        Install Disk 3
        Install Disk 4
        Install Disk 5
        Install Disk 6
        Install Disk 7
        MacLink Plus for 10/30/100 users
        Install - PowerTalk & QuickDraw GX
        QuickDraw GX 1
        QuickDraw GX 2
        PowerTalk
        Disk Tools

Print Materials:
    Manual (030-5660) - Upgrade Guide to System 7.5
    System 7.5 SLA - single user Software License Agreement
    Reg Card (030-6491) - Standard SW reg card
    E•World BRC (030-5452) - mail in e•world fulfillment offer
    Manual, 3rd party (030-6125) - Guide to 3rd party 7.5 savvy apps
    Pack List for 10/30/100 user kit
    Digital Signature order form - 10/30/100
    Reg Card, 3rd party, DataViz - Reg card for the MacLink Plus translators
        Includes troubleshooting info, instructions in use of the product,
        detachable reg card, etc.
    POS sticker - PUK-dsk specific

This article is one of many available through the Apple Fax center. For a
complete list of available fax documents, search the Tech Info Library for Apple
Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select
document number 20000 (Apple Fax - Document Index - Product Support Literature).
 The Apple Fax center is available free of charge 24 hours a day, 7 days a
week.

Article Change History:
02 Jul 1996 - Added Fax Doc word
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
30 Jan 1995 - Updated for fax system.
```

Support Information Services

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Tech Info Library Article Number:16137

Tech Info Library

Workgroup Server 8150 & 9150: DAT Drive Specifications (1/96)

Revised: 1/9/96
Security: Everyone

Workgroup Server 8150 & 9150: DAT Drive Specifications (1/96)

==========

Article Created: 30 August 1994
Article Reviewed/Updated: 9 January 1996

TOPIC ----------

What are the specifications on the HP 1533A DAT drive in Apple's Workgroup Server 8150?

DISCUSSION ----------

The Digital Audio Tape (DAT) drive used in the Workgroup Servers 8150 and 9150 is from Hewlett-Packard, model HP C1533A DDS-2. It supports 60m and 90m DDS Media Recognition System cartridges in addition to the new 120m Digital Data Storage-2 cartridges.

The specifications given below are based on the following general assumptions:

- Media must conform to the DDS Media specifications and not be damaged or faulty.
- The drive and media must remain within their respective operating and non-operating environmental specifications.
- The drive is in good operating condition
- Read-after-write rewrites are used as necessary on writing.

Performance (DDS-DC Mode)

Capacity:
- 60 meter tape (DDS-1) 2.6 GB (typical)
- 90 meter tape (DDS-1) 4.0 GB (typical)
- 120 meter tape (DDS-2) 8.0 GB (typical)

NOTE: Tape capacity is dependent upon compressibility of data. For example, text files compress better that applications.

Transfer Rate

Sustained:
- 510 KB per second (native)
- 1.0 MB per second (typical)
- 1.5 MB per second (maximum)

Burst:
- Asynchronous 3.0 MB per second (maximum)
- Synchronous   7.5 MB per second (maximum)

Article Change History:
09 Jan 1996 - Included note under capacity for clarity.

Support Information Services

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Tech Info Library Article Number:16138

Tech Info Library

System 7.5: Additional Software on Personal Upgrade CD (3/95)

Revised: 3/23/95
Security: Everyone

System 7.5: Additional Software on Personal Upgrade CD (3/95)

==========

Article Created: 30 August 1994
Article Reviewed/Updated: 23 March 1995

TOPIC ----------

This article details the additional software contained on the CD-ROM version of the System 7.5 Personal Upgrade Kit.

DISCUSSION ----------

PowerTalk

QuickMail Gateway
Internet Gateway
CompuServe Gateway
Fax Gateway
PowerTalk Direct DialUp
Notify -Pager Gateway
Notify! Pager Gateway
PowerTalk Tour

QuickDraw GX

Peirce Paper Saver
Peirce Watermark
GX Font Demonstration

Miscellaneous
---
e•World
Eric's Ultimate Solitaire
PlainTalk Update
QuickTime Extras
At Ease Patch

Article Change History:
23 Mar 1995 - Corrected spelling of Watermark.
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16139

Tech Info Library

PostScript Fax: Maximum Limit for Fax Number Field (8/94)

Revised: 8/30/94
Security: Everyone

PostScript Fax: Maximum Limit for Fax Number Field (8/94)

==========

Article Created: 30 August 1994

TOPIC ----------

Is there a maximum length to phone numbers entered into the PostScript Fax phone book?

DISCUSSION ----------

When establishing the fax phone character limits, consideration was made for faxing international locations, using calling cards, and other conditions that required long field lengths. The limits are:

- Fax Number field limit - 126 characters (visible characters - 25)
- DialCallee string limit - 100 characters

From a user perspective the limit is less than 100 characters, somewhere between 95 to 97, as the DialCallee string limit includes characters the fax driver places in the string for specifying Pulse or DTMF (Touch-Tone) dialing, possible DTMF symbols sent to a telephone exchange, pauses, and a character requesting the fax card to wait for dial tone or not.

Support Information Services

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Tech Info Library Article Number:16140

Tech Info Library

LaserWriter Pro 810: No Parallel Support (8/94)

Revised: 8/30/94
Security: Everyone

LaserWriter Pro 810: No Parallel Support (8/94)

==========

Article Created: 30 August 1994

TOPIC -----

According to information found in the 8/94 version of the Apple Facts product guide the LaserWriter Pro 810 supports simultaneous connections to LocalTalk, Ethernet, serial, and parallel interfaces. How do I obtain the parallel interface?

DISCUSSION -----

Early versions of the Apple Facts guide dated through 8/94 contain an error in the LaserWriter Pro 810 section by referring to a parallel interface on the LaserWriter Pro 810. The LaserWriter Pro 810 does NOT include a parallel port, but does include Ethernet, RS-232 serial, and LocalTalk interfaces.

Due to last minute changes in the printer product lineup a parallel printer interface card for the LaserWriter Pro 810 was inadvertently left on the service price pages. The part is listed as Apple service part number 661-0850 and is called a communications card. Although this parallel card can be installed in the LaserWriter Pro 810 in place of the Ethernet option, Apple does not provide support for it. The card will be removed from the service price pages shortly.

Support Information Services

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Tech Info Library Article Number:16142

Tech Info Library

Toner Cartridges: Compatibility List for Other Printers (11/96)

Revised: 11/12/96
Security: Everyone

Toner Cartridges: Compatibility List for Other Printers (11/96)

==========

Article Created: 30 August 1994
Article Reviewed/Updated: 12 November 1996

TOPIC ----------

Does Apple support the use of Apple LaserWriter Toner Cartridges in printers from other vendors that use the same print engine?

DISCUSSION ----------

Apple encourages the use of Apple toner cartridges in laser printers that use a compatible print engine. A comprehensive listing of the current Apple toner cartridges and the third-party printers that they will work in are listed below.

Begin_Table

Apple Part #	Compatible Printers
M6002	Apple - LaserWriter IISC, LaserWriter IINTX, LaserWriter IIF, LaserWriter IIG
	Blaser - Blaser II
	Brother - HL-8, HL-8D, HL-8E, HL-8PS/AP, HL-8V
	Canon - LBP-SX, LBP-200V, LBP-8 II, LBP-8 II R LBP-8 II T, LBP-8 III, LBP-8 III R, LBP-8 III T LBP-8 III RX, LBP-8 III TX
	CompuGraphic - CG408
	Comterm - Laser II
	CPT - LP-8

Data General - 6454

DEC - DECLASER 2100, DECLASER 2150, DECLASER 2200
DECLASER 2250, DECLASER LN 05, DECLASER LN 06

EICON - Laser 400, Script 400 Version 1 & 2

Genicom - 6000, Acewriter, Acewriter 6140,
Acewriter 6142, Acewriter 6145

Hewlett Packard - LaserJet II, LaserJet IID, LaserJet III
LaserJet IIID

IDS - LPC3

Imagen - 2308/S, 2308/S Turbo, 3308/S, 3308/S Turbo

Lasermaster - (original model)

NBI - LP910, LP911

NEC - Silentwriter II Model 260, 290, 990

Newgen Systems - Turbo PS/300, Turbo PS/360,
Turbo PS/480, Turbo PS/630,
Turbo PS/660, Turbo PS/840, Turbo PS/880

NEXT - Laser PTR

Olivetti - LP5000, PG108, PG208, PG303

QMS - 2308/S, 3308/S Turbo Imageserver XP, KISS Plus,
Lasergrafix 810, 820, PS 810, PS 815, PS 820 Turbo,
PS 825

Siemens - Highprint 7800

Star Micronics - LaserPrinter 8, LaserPrinter 8 II

Tandem - Laser-LX, Laser 5573-LX, Laser 5573-D,
Laser 5574, Laser 5574-PC

Wang - LDP-8, LDP-8 DSK-T, LDP-8 III, LDP-8 III-D

Apple Part #	Compatible Printers
M0180	Apple - LaserWriter, LaserWriter Plus
	Blaser - Blaser, BlaserStar, Blaser Five
	Canon - LBP-CX, LBP-8 A1, LBP-8 A2, LBP-8 D A1

CompuGraphic - CG300-PS, EP308

CPT - LP-6, LP-8GS, LP-8S, PS-8

Data General - 4557, 4558

Eastman Kodak - 1306, Keeps

Hewlett Packard - LaserJet, LaserJet Plus,
LaserJet 500 Plus, 1686 TA,
2686 LaserJet, 2686TA LaserJet

Imagen - 8/300, 2308, 3308 Imageserver XP, Designer,
Executive, Imagestation

Interleaf - LP1-306, LPR-308, OPS-2000

Lasersmith - PS-300, PS-415, PS-415GT, PS-415 MAC,
PS-415+, PS-600+, PS-6830GT, PS-830 MAC,
PS-830+

NCR - 6416

QMS - Kiss, Big Kiss, Big Kiss II, PS-800, PS-800+,
SmartWriter

Wang - LPS-8

Apple Part #	Compatible Printers
M0089LL/A	Apple - Personal LaserWriter LS, Personal LaserWriter SC, Personal LaserWriter NT, Personal LaserWriter NTR
	Brother - HL-4, HL-4PS, HL-4V, HL-4Ve
	Canon - LBP-LX, LBP-4, LBP-4+, LBP-4 III+, P110
	DEC - DECLASER 1100, DECLASER 1150, DECLASER 1152, DECLASER LN 07, DECLASER LN07R
	Hewlett Packard - 33471A, LaserJet IIP, LaserJet IIP Plus, LaserJet IIIP, LaserJet IIIP/MAC
	Lasermaster - 400, 600, 800, 1000/4 AFM, 1000/4 KX, Maxwriter 600, Win Printer 400, Win Printer 800, Win Printer 800I
	Newgen Systems - Turbo PS300/P, PS/360P, PS/400P, PS/660P, 800P
	QMS - PS 410

Siemens - Highprint 7500

Star Micronics - Laserprinter 4, 4 Starscript

Wang - LDP-4P

Apple Part #	Compatible Printers
M2045G/A	Apple - Personal LaserWriter 300, Personal LaserWriter 320, LaserWriter 4/600 PS Hewlett Packard - LaserJet 4L, LaserJet 4ML, LaserJet 4M Plus, LaserJet 4 Plus

Apple Part #	Compatible Printers
M2029G/A	Apple - LaserWriter Select 300, LaserWriter Select 310

Apple Part #	Compatible Printers
M1960G/A	Apple - LaserWriter Select 360, LaserWriter Select 300, LaserWriter Select 310

Apple Part #	Compatible Printers
M2473G/A	Apple - LaserWriter Pro 600, LaserWriter Pro 630, LaserWriter 16/600 PS Canon - LBP-EX, LBP-8 IV, P 270 Hewlett Packard - LaserJet 4, LaserJet 4M, 4M Plus, 4 Plus

Apple Part #	Compatible Printers
M1853G/A	Apple - LaserWriter Pro 810 Compaq - PageMarq 15, PageMarq 20 Data Products - LZR 1500 Series, LZR 2000 Series Genicom - 7150 Star Micronics - Newsprinter 20 Wang - XP-15, XP-20, 8812

Apple Part #	Compatible Printers

M3602G/A	Apple - LaserWriter Pro 810
	Compaq - PageMarq 15, PageMarq 20
	Data Products - LZR 1500 Series, LZR 2000 Series
	Genicom - 7150
	Star Micronics - Newsprinter 20
	Wang - XP-15, XP-20, 8812

End_Table

Article Change History:
12 Nov 1996 - Added LaserWriter 4/600 PS.
22 Oct 1996 - Corrected LaserWriter 16/600 PS listing.
04 Jun 1996 - Added LaserWriter 16/600 PS.

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Tech Info Library Article Number:16143

Tech Info Library

Express Modem: Ver. 1.5.3 Fixes Cannot be Used... Error (8/94)

Revised: 8/31/94
Security: Everyone

Express Modem: Ver. 1.5.3 Fixes "Cannot be Used..." Error (8/94)

==========

Article Created: 31 August 1994

TOPIC ----------

Our customer getting a message when she tries to use her internal Express Fax/Modem that this modem cannot be used with this computer which is a Performa 636. She's tried looking for 'settings' so she can set them to 'generic' but the 'settings' cannot be found.

The software seems to load on startup because the startup INIT shows up and the Express software folder is on the hard drive. Her disk says she's running software v. 1.1.2. The model number on the box for the product is M2480LL/A which is the kit for the Macintosh 630 series.

DISCUSSION ----------

It would appear the customer is using the incorrect Express Modem software. Please have the customer use Express Modem 1.5.3.

The following Macintosh systems are supported by the Express Modem 1.5.3 release:

- PowerBook 160, 165, 165c, 180, 180c using an internal Apple PowerBook 14.4 Modem Card.

- PowerBook Duo 210, 230, 250, 270c, 280, 280c using an internal Apple PowerBook Duo 14.4 Modem.

- PowerBook 520, 520c, 540, 540c using an internal Apple PowerBook Express Modem II Card.

- LC 575, Macintosh 630 using an internal Macintosh Express Fax/Modem.

- The Express Fax software also allows you to send faxes with PowerBook models 100, 140, 145, 150 and 170 when used with the Apple PowerBook Fax/Data Modem.

Files found on Express Modem 1.5.3 disk:

File Name	Version #
AppleLink US Access	
Express Modem 14400	1.0
Express Modem ARA 2.0	1.0
Express Modem AT Cmds	1.5.2
Express Modem CCL	1.0
Express Modem ReadMe	1.5.3
Express Modem Tool	1.5.3
Express Modem	1.5.3
Fax Cover	1.5.2
Fax Extension	1.5.2
Fax Sender	1.5.2
Fax Terminal	1.5.2
Fax Viewer	1.5.2
Installer Script	1.5.3
Installer	3.4
My first fax	
PowerBook Setup	7.3
PowerBook	7.3.1
Sample	
Standard	
System Enabler 131	1.0.3

Express Modem 1.5.3 was released to support Japanese System Software and systems.

To locate software updates mentioned in this article please refer to the following Tech Info Library articles:

Where to Find Apple Software Updates
Obtaining Apple Product Support in the USA

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16144

Tech Info Library

AppleShare: Platforms & Mac OS Releases Supported (11/96)

Revised: 11/19/96
Security: Everyone

AppleShare: Platforms & Mac OS Releases Supported (11/96)

==========

Article Created: 31 August 1994
Article Reviewed/Updated: 18 November 1996

TOPIC -----

This article details the supported platforms (see the following Note) and Mac OS releases for the AppleShare product line.

NOTE: Supported means users can expect technical assistance from Apple and all issues will be prioritized along with all other development efforts.

DISCUSSION -----

Begin_Table

Supported Platforms

AppleShare 3.0.1	- all 68030-based and below systems
AppleShare 4.0.1/4.0.2	- all 68040-based systems, except 660AV and 840AV*
AppleShare 4.0.2	- PowerPC-based systems with clock speeds less than or equal to 80mhz (except 6100/66 and 7100/80)
AppleShare 4.1	- all NuBus PowerPC-based systems available through 4/95 (not the 7200, 7500, 8500, or 9500 systems)
AppleShare 4.2	- all NuBus PowerPC-based systems (not the 7200, 7500, 8500, or 9500 systems)
AppleShare 4.2.1	- runs on PCI-based Workgroup Servers and NuBus-based Workgroup Servers and Power Macintosh computers. AppleShare 4.2.1 is compatible with Open Transport on PCI-based Power Macintosh computers 7200, 7500, 8500, and 9500. Apple has not certified AppleShare 4.2.1 and Open Transport on NuBus-based Power Macintosh computers. AppleShare 4.2.1 will NOT run on any 680x0-based Macintosh systems.

NOTE: No version of AppleShare is supported on computers which use the 603- or

603e-based PowerPC processor. Also, AppleShare 4.0.2 for Power Macintosh is no longer sold separately.

Supported Mac OS Releases

AppleShare 3.0.1	- System 7.0 or greater
AppleShare 4.0.1/4.0.2	- System 7.0.1 (With System 7 Tune-Up 1.1.1) or greater
AppleShare 4.1	- System 7.1.2 or greater
AppleShare 4.2	- System 7.5.1 or greater
AppleShare 4.2.1	- System 7.5.3
AppleShare Workstation 3.5	- System 7.0 or greater
AppleShare Workstation 3.6	- System 7.5.1 or greater
AppleShare Workstation 3.6.1	- System 7.5.1 or greater
AppleShare Workstation 3.6.2	- System 7.5.1 or greater

End_Table

NOTE: From a functionality standpoint, AppleShare 4.0.1 is identical to the product AppleShare 4.0.2 for 68040-based Macintosh Computers. There is no need to upgrade AppleShare 4.0.1 to AppleShare 4.0.2. The only differences between these versions are the version number itself, and that AppleShare 4.0.2 is available in a complete retail package, while AppleShare 4.0.1 is available as a tune-up only requiring installation over an existing copy of AppleShare 4.0.

If you have Workgroup Server 95, do not upgrade to system software version 7.5 or later. A Workgroup Server 95 running A/UX works only with system software version 7.0.1 and Tune-Up 1.1.1.

This article was published in the "Information Alley":
Volume I, Issue 21, Page 5 and updated in
Volume II, Issue 7, Page 19 and updated in
Volume II, Issue 18, Page 7
This article was published in the Information Alley on 18 April 1996.

Article Change History:
18 Nov 1996 - Added note on 603 and 603e PowerPC processor.
30 May 1996 - Updated system software versions supported.
18 Apr 1996 - Added Info Alley information.

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Tech Info Library Article Number:16145

Tech Info Library

Power Macintosh: Correct GeoPort Software Version Info (1/95)

Revised: 1/16/95
Security: Everyone

Power Macintosh: Correct GeoPort Software Version Info (1/95)

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Article Created: 11 November 1993
Article Reviewed/Updated: 16 January 1995

TOPIC ----------

A Power Macintosh which has GeoPort for Power Macintosh software installed is getting the error message, "Express Modem cannot be run on this Macintosh". How can we alleviate the error message?

DISCUSSION ----------

If Power Macintosh users install the Quadra 660AV and 840AV version of GeoPort software, they will get the error message, "Express Modem cannot be run on this Macintosh", when they try to open the Express Modem Control Panel.

However, you can also get this error message when using older versions of the Power Macintosh version of the GeoPort software. You can verify the correct version by doing a Get Info on the Express Modem Control Panel. The Power Macintosh version will read "Express Modem GeoPort for Power Macintosh (with version number)" at the top of the Get Info window.

The minimum version needed for the Power Macintosh is 1.0 or later, while the Quadra 660AV, and 840AV version is 1.1.2 or later. If customers have the incorrect version, they need to install the Power Macintosh version.

Also GeoPort for Power Macintosh 1.0, 1.0.1, and 1.0.2 functions with System 7.5, but you need to use these workarounds:

- 1.0 has two problems with virtual memory
  - Network file transfers will fail when Virtual Memory (VM) is on.
  - Data connections will fail when VM is on.

- 1.0 and 1.0.1 will crash the computer on restart if there are any faxes waiting to be sent in the Waiting to be Faxed folder.

- The modem speaker must be turned off at all times through the Express

Modem control panel to prevent intermittent crashing.

In cases, where this error message occurs even with the correct version of GeoPort software installed, a clean installation of system software is recommended. A reinstallation of the GeoPort for Power Macintosh software is needed also.

This article can help you locate the latest GeoPort software updates:

"Where To Find Apple Software Updates"
Lists online services for "free" Apple software updates.

Article Change History:
16 Jan 1995 - Added New version information.
10 Oct 1994 - Corrected minimum version of GeoPort for Power Macintosh, and added workarounds for System 7.5.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16148

Tech Info Library

HyperCard: Standalone Apps and Search Paths (8/94)

Revised: 8/31/94
Security: Everyone

HyperCard: Standalone Apps and Search Paths (8/94)

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Article Created: 31 August 1994

TOPIC ----------

How are search paths handled in standalone HyperCard applications?

DISCUSSION ----------

A standalone HyperCard application includes what is essentially an embedded copy of the HyperCard Player. However, a standalone application, unlike HyperCard or the Player, does not have a Home stack. Rather, the stack embedded within the standalone application is its own Home stack. Therefore, the standalone's stack script must perform all the tasks the Home stack normally takes care of.

In regard to search paths, the Home stack stores a set of locations where HyperCard looks for stacks, documents, and applications. If your standalone goes to other stacks, or opens other applications or documents, you'll need to store these paths and maintain the globals that go with them. Otherwise, every time your standalone tries to access another file, it will ask the user to locate the file. To see how you need to maintain these globals, look at the getHomeInfo handler in the Home stack script.

In order to support the search paths for stacks, applications, and documents in a stand-alone application, the embedded stack needs to have three cards named "Stacks", "Applications", and "Documents". Each of these three cards needs to have a background field named "paths". This is where the search path information will be stored.

To test this, create a stack with one button which launches TeachText on the first card. Verify that it works. Then select "New Background", which creates a new card and background. Select "New Field" and name the field "paths". Then name the card "Stacks". Do this two more times, naming the next two cards "Applications", and "Documents". When the stack is saved as an application everything should work exactly the same as the original HyperCard stack had.

A good source of additional information on this topic is the book, HyperCard 2.2

by Winkler, Kamins, and DeVoto. See the chapter titled Coding for Special Environments.

Support Information Services

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Tech Info Library Article Number:16149

Tech Info Library

Energy Saver Power Ratings for Applicable Products (6/95)

Revised: 6/28/95
Security: Everyone

Energy Saver Power Ratings for Applicable Products (6/95)

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Article Created: 31 August 1994
Article Reviewed/Updated: 28 June 1995

TOPIC ----------

This article discusses the amount of power our Energy Star compliant products draw while in energy saver mode. This list will be updated as additional products and information becomes available.

DISCUSSION ----------

Product	Power Consumption in energy saver mode
Apple 20" Multiple Scan	10 Watts
Apple 17" Multiple Scan	10 Watts
Apple 15" Multiple Scan	< 5 Watts

Article Change History:
28 Jun 1995 - Changed reference from multiscan to Apple Multiple Scan.

Support Information Services

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Tech Info Library Article Number:16150

Tech Info Library

System 7.5: Set Background Pattern of Desk Accessories (9/95)

Revised: 9/29/95
Security: Everyone

System 7.5: Set Background Pattern of Desk Accessories (9/95)

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Article Created: 01 September 1994
Article Reviewed/Updated: 29 September 1995

TOPIC ----------

Is it possible to set the background pattern of Desk Accessory utilities like Find File, Scrapbook, and others?

DISCUSSION ----------

Although this is not documented, you can change the background pattern of Desk Accessory utilities by holding the Option key down when the Desktop Patterns window is displayed. The Set Desktop Pattern button changes to Set Utilities Pattern.

Scroll through the patterns to find one you like then click on the Set Utilities Pattern button to select the pattern. The new pattern appears as the background of the Calculator, Find File, Jigsaw Puzzle, Keycaps, and Scrapbook.

This article was published in the "Information Alley":
Volume II, Issue 10, Page 9

Article Change History:
29 Sep 1995 - Added Info Alley information; updated article.
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16152

Tech Info Library

System 7.5: Old Find File Still Available (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Old Find File Still Available (2/95)

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Article Created: 1 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

Is the old-style Find File still available with System 7.5?

DISCUSSION ----------

Yes. People who do not want to use the new Find File for System 7.5 can still access the old Find File by pressing Command+Shift+F or by holding down the Shift key while selecting Find... from the File menu.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16153

Tech Info Library

System 7.5: Network Startup Diskette for Net Installs (6/95)

Revised: 6/14/95
Security: Everyone

System 7.5: Network Startup Diskette for Net Installs (6/95)

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Article Created: 09 January 1995
Article Reviewed/Updated: 14 June 1995

TOPIC -----

Is there a diskette image available which will allow me to mount an AppleShare file server to perform a net install of software?

DISCUSSION -----

The System 7.5 Group Upgrade CD will include a Disk Copy image of the Network Access Disk which will have AppleShare, Ethernet, Chooser and Finder support. This Disk Copy image can be found in the Administrator Tools folder, in the Network Access folder on the CD.

This will provide customers with a disk that will start any Macintosh and let them mount an AppleShare file server in order to "Net Install" system software. There is no TokenRing support.

Article Change History:
14 Jun 1995 - Added information on which CD to find the Disk Image.
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16154

Tech Info Library

System 7.5: Date & Time Problem with Adobe Illustrator (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Date & Time Problem with Adobe Illustrator (2/95)

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Article Created: 1 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

A problem has been discovered with Date & Time (aka SuperClock) on System 7.5 that will cause Adobe Illustrator to crash when printing to a LaserWriter IISC or Personal LaserWriter SC.

DISCUSSION ----------

The workaround to this problem is to turn off the Menu bar clock before printing from Illustrator. The problem was discovered too late to include this information in the ReadMe file before System 7.5 shipped.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16155

Tech Info Library

System 7.5: Apple Menu Items Contents (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Apple Menu Items Contents (2/95)

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Article Created: 1 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC

This article describes the initial contents of the System 7.5 Apple Menu Items folder, as well as how you can customize and expand the items in this folder. The items in the Apple Menu Items folder appear in the menu at the left end of the menu bar, indicated by the Apple logo. You choose items from this menu to open items that you have placed in the Apple Menu Items folder, and to get information about programs that are currently running (“About…”).

DISCUSSION

Default Apple Menu Items

The following is a brief description of the contents of the Apple Menu Items folder. Since you can customize and expand the items in your Apple Menu, the contents of your Apple Menu Items folder may vary.

AppleCD Audio Player

Gives you control of audio CDs inserted into your Macintosh.

Calculator

An online calculator.

Chooser

Gives you access to select which printer you want to use as well as other network services.

Control Panels

This is an alias to the control panel folder.

Find File

Lets you search for files on volumes mounted on your desktop based on a variety of search criteria.

Jigsaw Puzzle

An online jigsaw puzzle game.

Key Caps

Provides you with a visual representation of a keyboard and what character is produced for each key in every font installed in your Fonts folder. Key Caps is not able to display the extended keyset of QuickDraw GX Fonts.

Note Pad

A small note pad for keeping notes or reminders.

Recent Applications

A folder that stores an alias to applications that have recently been opened. You can set how many applications it remembers via the Apple Menu Options control panel.

Recent Documents

A folder that stores an alias to documents that have recently been opened. You can set how many it remembers via the Apple Menu Options control panel.

Recent Servers

A folder that stores an alias to servers that have recently been accessed. You can set how many it remembers via the Apple Menu Options control panel.

Scrapbook

The scrapbook can hold text, graphics, and QuickTime files for use in other applications.

Stickies

Stickies are similar to 3M™ Brand Post-It notes in electronic form.

• Shut Down

This is an alternative to the Shut Down selection under the Special menu. When your select the • Shut Down menu item, any item in the Shutdown Items folder in your system folder is not acted on.

Article Change History:
16 Feb 1995 - Added keyword; updated keyword; made several technical updates.

Support Information Services

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Tech Info Library Article Number:16157

Tech Info Library

System 7.5: Control Panels Folder Contents (1/97)

Revised: 1/15/97
Security: Everyone

System 7.5: Control Panels Folder Contents (1/97)

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Article Created: 1 September 1994
Article Reviewed/Updated: 15 January 1997

TOPIC ----------

After recently upgrading to System 7.5, I am curious as to the purpose of my Control Panels folder and its contents.

DISCUSSION ----------

A Control Panel is a small piece of software which provides you with a method to configure your computer to match your needs.

The following is a brief description of the contents of a standard System 7.5 Control Panels folder, and on which computers each is installed. The contents of your Control Panels folder may vary.

Apple Menu Options

Lets you enable or disable hierarchical menus, and set the number of recent documents, applications, and servers.

ATM GX - All

Adobe Type Manager (ATM) is the Adobe font utility for Type 1 Postscript fonts that works in much the same way as TrueType. It gives you a good quality screen display with any font size. In addition, it improves the output of QuickDraw printers, such as the ImageWriter and Deskwriter.

Auto Power On/Off - See NOTE

Set your computer to turn on and/or off at a specified time on a daily basis or on a specified date. Only for systems with soft power on technology introduced with the Macintosh II.

NOTE: See the Tech Info Library article titled "System 7.5: Energy Saving

Features" for full list of supported computers

AutoRemounter - PowerBook models except 100, 140, 145, 145B, 170

Lets a PowerBook sleep without a warning dialog box appearing about losing network services. It also remounts any file servers that were connected when the system went to sleep.

Brightness - Classic and Classic II

Adjust Brightness of screen through control panel for computers with soft brightness control such as the Classic and Classic II.

Button Disabler - Performa and LC 500, 5200, 5300, and 5260

Disables the buttons on the front of the Macintosh or Performa 500, 5200, 5300, and 5260 series so users (usually students) cannot adjust the volume or brightness.

NOTE: The following computers are in the corresponding Macintosh families:

• Macintosh 5200CD family: Macintosh 5200/75 LC, Performa 5200, Performa 5210, Performa 5215, and Performa 5220.

• Macintosh 5300CD family: Macintosh 5300/100 LC, Performa 5300.

Cache Switch - Quadra, Centris and Performa 400/500 series

Control Panel installed only on 68040 based Macintosh computers which enables or disables the 040 processor caching. For compatibility reasons, it may need to be disabled in some applications.

Color - All

Set the color of text that is highlighted and the border color of windows.

CloseView - All Macintosh computers EXCEPT Power Macintosh

Magnifies the display for easier viewing.

ColorSync System Profile - All

Part of the ColorSync system that provides consistent color attributes through various input and output methods.

Date & Time - All

Configure and set the date and time of your system.

Desktop Patterns - All

Change the pattern or color of the desktop background.

Easy Access - All

When turned on, an audible whistle is heard and an icon appears in the upper right corner besides the Application Menu icon. Turning it off prompts a whistle again.

It provides ability to press combination keys one at a time (Sticky Keys); the ability to move pointer using numeric Keypad (Mouse Keys); and set Typing Speed for Macintosh with audible response (Slow Keys).

Extensions Manager - All

Specify which extensions load at system startup.

File Sharing Monitor - All

See who is connected to your computer while File Sharing is active.

General Controls - All

Set a number of overall system parameters, including Desktop hiding, Launcher visibility at startup, Folder protection so that files in the system and/or applications folder cannot be thrown away, the rate that the insertion point blinks, how many times a menu selection blinks when selected, and which default folder appears in the Save dialog box.

Keyboard - All

Set the repeat rate and delay before repeat for your keyboard.

Labels - All

Customize the color and text that makes up the Label of a document when viewed at the Finder level.

Launcher - All

By placing an alias to your favorite applications, files, or folders in the Launcher Items in the system folder, you can use the Launcher to open them without having to navigate through your hard drive.

MacTCP - All

Lets Macintosh computers connect to services via TCP/IP services. Replaces part of the AppleTalk protocol stack.

Macintosh Easy Open - All

A system software extension that lets you open a document when you do not have the application that created it.

Map - All

Provides a reference to location and time for certain cities.

Memory - All

Lets you to set the disk cache, memory manager setting, enable or disable Virtual Memory, and configure a RAM Disk.

Monitors - All

Set the number of colors or shades of gray that are displayed.

Mouse - All

Set the tracking speed and double click speed of your mouse.

Network - All

Select between any network options installed in your computer. Typical choices are LocalTalk, Ethernet, or Token Ring.

Numbers - All

Set the format of numerical data such as the placement of the decimal point and separators for monetary functions.

PC Exchange - All

Lets MS-DOS and ProDOS floppy disks, and SyQuest and Bernoulli disks be mounted on the Macintosh desktop. Applications that have the appropriate translators can be linked to DOS documents through the DOS suffix to automatically launch the application when the document is double-clicked.

Power Macintosh Card - Macintosh computers with Power Macintosh card installed
---
Macintosh computers with a 68040 processor direct slot can be upgraded to a PowerPC processor via an expansion card.

Gives the user the option of selecting which processor to use. This selection is made via the Power Macintosh Card control panel. It is a simple off or on selection. The system has to be restarted for the new selection to take effect.

PowerBook - All PowerBook models

Full control of HD sleep, system sleep, and display dimming – also setting for processor cycling, and on certain machines, reduced processor speed. Also controls the backlight and the built-in video.

Also controls the backlight and the built-in video.

PowerBook Display - PowerBook 160, 165c, 180, 180c, and 200 series models
---
Controls the Video Mirroring function.

PowerBook Setup - PowerBook 200 and 500 series

Defines setting for SCSI Disk Mode. Also defines Normal and Compatible Mode.

In the Normal mode, the modem is addressed via the System 7 Communication Toolbox, and the external port is available for usage.

If your communication program is not compatible with the Communication Toolbox, set the PowerBook Setup control panel to Compatible. This mode prevents the external serial port from being addressed by other programs, as well as preventing communication with a serial printer.

Screen - Macintosh computers with built-in display

Controls the brightness and contrast of the built-in monitor on certain Macintosh models.

Serial Switch - Macintosh IIfx and Quadra 950.

Provides compatibility for some applications that use the printer or modem port. Serial port option is either Faster or More Compatible.

Sharing Setup - All

Configure File Sharing and enter the network identity of your Macintosh.

Sound - All

Select an alert sound and volume.

Speech Setup - 660 AV, 840 AV, Power Macintosh AV models

Enables Speech recognition, lets you select voice, character, responding method, and provides control of recognition and the ability to “name” the computer for recognition.

Startup Disk - All

Select which volume your computer starts up from.

Text - All

Select what text script and behavior (country) is used.

Trackpad - PowerBook 500 series

Provides support for the trackpad used in the PowerBook 500 series.

Users & Groups - All

Configure who can access your hard drive when File Sharing is enabled.

Views - All

Customize what information is displayed in Finder windows.

WindowShade - All

Hide a window by clicking on its title bar.

Article Change History:
15 Jan 1997 - Corrected Computer list in Button Disabler section.
06 Sep 1996 - Added computers to Button Disabler section.
09 Jun 1995 - Updated for clarity.

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Tech Info Library Article Number:16158

Tech Info Library

System 7.5, 7.5.1, 7.5.2: Extensions Folder Contents (10/96)

Revised: 10/4/96
Security: Everyone

System 7.5, 7.5.1, 7.5.2: Extensions Folder Contents (10/96)

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Article Created: 1 September 1994
Article Reviewed/Updated: 4 October 1996

TOPIC

This article lists the purpose and contents of the Extensions folder in System 7.5, System 7.5.1 and System 7.5.2.

DISCUSSION

An extension is a relatively small file that modifies the operation of your Macintosh. Unlike a control panel, you typically do not have any direct interaction with an extension. It makes the appropriate modification when your system starts up and remains present until it is shut down.

The following is a brief description of the contents of a standard System 7.5 Extensions folder. The contents of your Extensions folder may vary. You can use the Extensions Manager control panel to disable any of the following extensions, if you do not need them to be active on your system.

The Extensions Manager control panel

The Extensions Manager control panel lets you control which Extensions load when your computer starts up.

The Extensions

The System 7.5 extensions are listed in alphabetical order:

A/ROSE

Allows communication between the Macintosh main logic board and Macintosh Coprocessor Platform (MCP) based NuBus cards which run the Apple Real-Time

Operating System, such as Apple Token Ring 4/16 NB card or the Apple Serial NB card.

About Apple Guide

This is the guide file which provides information about Apple Guide. When in the Finder, you can read the contents of this file by selecting About Apple Guide under the question mark icon in the upper right corner of your screen.

Apple CD-ROM

This is the driver software for any installed Apple CD-ROM drive.

Apple Guide

Apple Guide is Apple's integrated help system.

Apple Photo Access

This is part of the CD-ROM software which lets you view Kodak PhotoCDs.

AppleScriptLib

AppleScriptLib implements the AppleScript Open Scripting Architecture (OSA) component.

AppleScript

AppleScript provides you with the ability to automate repetitive tasks within scriptable applications.

AppleShare

AppleShare is the software that lets you have access to shared network volumes through the Chooser.

AppleTalk ImageWriter

This is the printer driver for a networked ImageWriter printer.

Audio CD Access

This is part of the CD-ROM software that lets you play audio CDs through your internal or external CD-ROM drive. It requires the AppleCD Audio Player or equivalent to control the CD.

Assistant Toolbox

Base extension for Auto Remounter (for PowerBook computers), allows file synchronization, battery management, and easy mobile computing. Provides support for "Persistent RAM disk" and deferred printing. Has a conflict with the Select 310 printer driver, and can block printing. The workaround is to turn off background printing.

Caps Lock

Provides caps lock function for PowerBooks (the keyboards do not have Caps lock key). When the caps lock function is active, an "up" arrow is displayed in the menu bar next to the Balloon Help icon.

Clipping Extension

Lets Drag & Drop create clipping files on the desktop.

Color Picker

Color Picker is a tool that presents a standard interface for color selection. With this dialog, any application can ask the user to choose a color.

EM Extension

This extension detects if you are pressing the space bar while your computer is starting up. If the space bar is pressed when the EM Extension is loaded, the Extensions Manager control panel is immediately launched.

EtherTalk Phase 2

This is the driver software that lets a Macintosh connect to an Ethernet network.

File Sharing Extension

File Sharing lets you share part or all of your hard drive so others on a network can access it.

Find File Extension

The Find File extension instructs the System to use the Find File desk accessory in place of the Find command built into the Finder. If you disable this extension with Extensions Manager, and then choose Find from the File menu, you will get the old Find interface from System 7.1.

Finder Help

Provides the support for Balloon Help for the Finder.

Finder Scripting Extension

Provides support for scripting of the Finder through AppleScript.

Foreign File Access

This is part of the CD-ROM software that lets you mount non-Macintosh file system CDs such as ISO 9660 or High Sierra formats.

High Sierra File Access

This is part of the CD-ROM software that lets you view non-Macintosh file system CDs created in the High Sierra format.

IIci/IIsi Monitors

Hardware specific information for the Monitor Control Panel that describes the capabilities of the built in video card for the IIci and IIsi.

Removing this file has no effect on the ability of the Macintosh to use the built-in video card or the ability to select the bit depth, but options that are found in the "option" section of the Monitor Control Panel may not be available (gamma settings, for example).

ImageWriter

This is the ImageWriter print driver.

ISO 9660 File Access

This is part of the CD-ROM software that lets you view non-Macintosh file system CDs created in the ISO 9660 format.

LaserWriter

This is the LaserWriter print driver version 7.2.

LaserWriter 8

This is the LaserWriter print driver version 8.x.

MacinTalk Pro

Lets a Macintosh computer read text documents in human-like voices.

Macintosh Guide

Apple Guide database describing Macintosh.

MacTCP Token Ring Extension

For customers who have standardized on TCP/IP over Token Ring.

Mailbox Extension

Provides Mailbox support under PowerTalk.

My Speech Macros

Support for Speech Macro Editor.

Network Extension

Used by Personal File Sharing to select network options.

ObjectSupportLib

ObjectSupportLib is a library developers use to implement the OSA object model. For example, how to refer to a word of a paragraph of a document.

Personal LaserWriter SC

This is the Personal LaserWriter SC print driver.

PowerBook Guide Additions

Apple Guide database describing PowerBook related topics.

PowerBook Monitors Extension

Hardware specific information for the Monitor Control Panel that describes the capabilities of the Video system for the PowerBooks.

Removing this file has no effect on the ability of the Macintosh to use the built-in video card or the ability to select the bit depth, but options that are found in the "option" section of the Monitor Control Panel may not be available (gamma settings, for example).

PowerPC Finder Update

Extends the width of the "About This Macintosh" dialog box (under the Apple Menu). This extension prevents the Macintosh Name from being clipped. The names of the Power Macintosh computers are longer than the standard Macintosh names, and part of the name was not displayed in the standard About This Macintosh dialog box.

PowerPC Monitors Extension

Support for AudioVision 14" Monitor.

PowerTalk Extension

Provides support for the PowerTalk services. Also has information that the keychain uses.

PowerTalk Guide

Apple Guide database describing PowerTalk.

PowerTalk Manager

Provides management of the AOCE Mailbox and services.

Printer Descriptions

This folder contains descriptions for a multitude of printers that are used by

the LaserWriter 8 driver.

Printer Share

Provides the ability to share non-network printers (like StyleWriter II), across a network.

PrintMonitor

PrintMonitor handles the printing process when you have Background Printing enabled.

Quadra AV Monitors Extension

Hardware specific information for the Monitor Control Panel that describes the capabilities of the built in video card for the Quadra & Centris AV systems.

Removing this file has no effect on the ability of the Macintosh to use the built-in video card or the ability to select the bit depth, but options that are found in the "option" section of the Monitor Control Panel may not be available (gamma settings, for example).

Quadra Monitors Extension

Hardware specific information for the Monitor Control Panel that describes the capabilities of the built in video card for the Quadra & Centris Computers.

Removing this file has no effect on the ability of the Macintosh to use the built-in video card or the ability to select the bit depth, but options that are found in the "option" section of the Monitor Control Panel may not be available (gamma settings, for example).

QuickTime

Lets you play QuickTime movies within any application that supports QuickTime.

QuickTime PowerPlug

Provides native support of QuickTime for Power Macintosh computers when used in combination with QuickTime 2.0. It, by itself, is not a fully functional version of QuickTime. It is an extension which must be used in addition to QuickTime 2.0.

QuickTime Musical Instruments

Supports 30 Roland Standard MIDI sound samples that can be accessed by QuickTime applications with no additional MIDI equipment.

Scripting Additions

These extend the AppleScript language with special features, such as finding the date or time of day. With scripting additions installed, AppleScript acts as if these features are part of the language. Scripting additions are required only

when a script uses them; many scripts use them.

SCSI Manager 4.3

This is an update to the driver software used by the Macintosh to access hard drives. It is coded into the ROM in the Power Macintosh computers.

Shortcuts

Apple Guide database describing Finder Shortcuts.

Speech Guide Additions

Mix-In for Apple Guide describing speech.

Speech Recognition

Provides support for Speech recognition.

SR Monitor

Extension used to monitor and interpret speech.

StyleWriter II

This is the print driver for the StyleWriter II.

System Speech Rules

Supports the voices/dialect of speech.

TokenTalk Phase 2

Driver for Token Ring Card.

TokenTalk Prep

Support for TokenTalk Phase II.

Video Guide Additions

Mix-In for Apple Guide describing Video.

WorldScript Power Adapter

Support for Language Kits on Power Macintosh computers.

Extensions Added by System 7.5 Update 1.0
==========

Apple Guide

Apple Guide version 1.2.5 improves performance, runs native on Power Macintosh models, and is compatible with At Ease.

File Sharing

File Sharing version 7.6.1 improves overall performance and provides new functionality. When file sharing is turned on, removable disks and CD-ROMs will automatically be shared–except for audio CDs, which will no longer be shared. You no longer have to turn off file sharing in order to eject a removable disk or CD-ROM.

Finder Update

Updates resources in the Finder code.

MathLib

The updated Math Functions Library (MathLib) boosts performance of math operations on Power Macintoshes.

SCSI Manager

Adds SCSI Manager version 4.3.1
• works with Performa 630 series, PowerBook 150, Quadra 630, and LC 630.
• fixes a potential data corruption problem on Quadra 840AV and Quadra 660AV models.
• Fixes a potential crash problem when using some external hard disks

Speech Manager

Speech Manager version 1.3 is included. It was not included on the System 7.5 upgrade disks.

ThreadsLib

ThreadManager resource.

Update File Replaces Some Extensions

The System 7.5 Update file loose in the System Folder contains the functionality of and removes the following extensions: EM Sound Update, PowerBook 150 Update, and Mount IDE Drive.

Extensions Added by System 7.5.2
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7200 & 9500 Guide Additions

Mix-In for Apple Guide describing the Power Macintosh 7200 & 9500.

7500 & 8500 Guide Additions

Mix-In for Apple Guide describing the Power Macintosh 7500 & 8500.

Apple Color SW Pro CMM

ColorSync 2.0 color-matching method file for maintaining consistent color information between documents.

AV Setup

Extension used by Sound & Displays control panel included in the second release of System 7.5.2.

Color SW 2000 Series CMM

ColorSync 2.0 color-matching method file for maintaining consistent color information between documents.

Color SW 2400

This is the print driver for the Color StyleWriter 2400.

Color SW Pro

This is the print driver for the Color StyleWriter Pro.

ColorSync

Resources for color matching between different hardware and applications.

Display Guide Additions

Mix-In for Apple Guide describing Sound and Displays control panel on the Power Macintosh 7500 and 8500.

Energy Saver Extension

Provides compatibility for background prcesses associated with Energy Saver software.

Energy Saver Guide Additions

Mix-In for Apple Guide describing Energy Saver software on the Power Macintosh 7500 and 8500.

Ethernet (Built-In)

Open Transport code resource to allow access to built-in Ethernet port.

Graphics Accelerator

Provides video acceleration for the PCI video card on the Power Macintosh 9500.

Macintalk 3

Speech generation extension included in the second release of System 7.5.2.

Open Tpt AppleTalk Library

Open Transport code resource for AppleTalk communication protocol.

Open Tpt Internet Library

Open Transport code resource for TCP/IP communication protocol.

Open Transport Library

Open Transport code resource.

OpenTptAppleTalkLib

Open Transport code resource for AppleTalk communication protocol.

OpenTptInternetLib

Open Transport code resource for TCP/IP communication protocol.

OpenTransportLib

Open Transport code resource.

Printer Descriptions Folder

Contains PostScript drivers for Apple printers.

Scripting Additions Folder

Contains AppleScript applets used in various preinstalled scripted functions such as MonitorDepth switching in the Control Strip.

Serial (Built-In)

Open Transport code resource to allow access to built-in serial port.

SystemAV

Audio-video input extension included in the second release of System 7.5.2.

Tutorial Items

Files used when running the Macintosh Tutorial under the Apple Guide menu.

Video Startup

Extension used by Apple Video Player.

Voices Folder

Contains voice files used by PlainTalk and Text-to-Speech applications.

Article Change History:
04 Oct 1996 - Removed keyword.
01 Oct 1996 - Changed title to specify system software versions.
19 Sep 1996 - Added keyword.

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Tech Info Library Article Number:16159

Tech Info Library

System 7.5: System Folder Contents (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: System Folder Contents (2/95)

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Article Created: 01 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

After recently upgrading to System 7.5, I am curious as to the purpose of my system folder and its contents.

DISCUSSION ----------

The following is a brief description of the major contents of the system folder and what their purpose is. The contents of your system folder may vary.

Finder

Provides the Finder environment.

Apple Menu Items

This folder contains all the items which appear under the Apple menu. Any item such as a folder, application, or document, which is put into this folder will immediately appear under the Apple menu.

Clipboard

Temporary Storage place for last item cut or copied

Control Panels

Individual control panel files reside in this folder. Control Panels allow you to customize how you interface with your Macintosh and how it interfaces with other Macintosh Computers on a network.

Extensions

Software which modifies how your Macintosh works without your intervention is

stored in the Extensions folder.

Fonts

Font suitcases or individual files reside in this folder. The Font folder is limited to a total of 128 suitcase and font files (PostScript fonts are not included in the 128 file limit). Suitcases can hold an unlimited number of font files, as long as 16MB of disk space is not exceeded.

Launcher Items

Contains files, folders, or applications which will appear in the Launcher window.

Note Pad File

Contains the text for Note Pad

Preferences

Many applications create a preferences file for themselves, those files reside in the Preferences folder.

PrintMonitor Documents

Files which you have selected to be printed with Background Printing enabled will temporarily reside in this folder. After the print job has been completed, the system software will remove the temporary file.

Scrapbook File

Stores the items placed in the Scrapbook

Shutdown Items

Applications or scripts which you would like to execute when your computer is shut down reside in this folder. Keep in mind that these applications or scripts will only run if you choose Shut Down from the Special menu. Choosing Shut Down from the Apple menu will bypass these items.

Startup Items

This folder contains applications or scripts which you would like to launch or run when your computer is started up.

System

This is the actual system file, it cannot be modified from the Finder level.

Universal Enabler

Provides additional system software code for the Macintosh.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16160

Tech Info Library

System 7.5: Please Insert the Hard Drive Problem (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: "Please Insert the Hard Drive" Problem (2/95)

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Article Created: 1 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

There is an issue involving third-party SCSI drivers and the new Color Picker in System 7.5. This issue affects APS (Allied Peripheral Systems) drivers prior to v3.0, SCSI Director, CMS Enhancements, and drivers made by Transoft (they used to make APS drivers and they make SCSI Director and also OEM their driver).

DISCUSSION ----------

The problem is as follows:

At startup, Color Picker makes an alias to itself. The alias information will be incorrect because this particular driver marks the startup volume as ejectable.

After loading Finder, the driver then marks the volume as not ejectable. The Color Picker alias information is now wrong. Under System 7.5, if the hard disk driver is not compatible, you will get a message stating "Please Insert the hard drive" or a system crash when accessing either the color control panel or color picker. This occurs because the alias cannot be resolved, it is pointing to a hard drive that does not exist.

Some applications are dependent on the Color Picker. Third-party application vendors are concerned for their customers because of this issue.

This is a third-party problem and the drivers will need to be updated. Customers should contact APS (800-334-7550). Upgrade cost vary, depending on when the drive was purchased.

The number for CMS (Ameritech) is (714) 222-6000. The number for Transoft is (800) 949-6463.

A workaround is to turn off 'Finder Eject' in the driver software. You can run the formatting utility and choose the option. The option is only needed for

Syquest/Removable Media.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
24 Jan 1995 - Change title and wording for better searchability.
28 Nov 1994 - Added CMS to the article.

Support Information Services

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Tech Info Library Article Number:16161

Tech Info Library

PowerBook: Asst Toolbox Problem w/Serial Printers (11/94)

Revised: 11/9/94
Security: Everyone

PowerBook: Asst Toolbox Problem w/Serial Printers (11/94)

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Article Created: 31 August 1994
Article Reviewed/Updated: 09 November 1994

TOPIC ----------

When I power on my PowerBook with a serial printer connected, my printer prints out a strings of garbage characters. Why?

DISCUSSION ----------

Some PowerBook computers are bundled with Assistant Toolbox installed. The Assistant Toolbox opens AppleTalk during the startup process so it is available without having to restart if you need to make it active. This causes problems with some serial printers.

There are two workarounds for this problem.
1) Turn the printer on only just before you need to use it. If it is not on when you turn the PowerBook on, then it will not print out garbage.

2) Remove Assistant Toolbox from the Extensions Folder, then zap PRAM and choose the printer in the Chooser.

Article Change History:
09 Nov 1994 - Minor change to Discussion.

Support Information Services

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Tech Info Library Article Number:16162

Tech Info Library

System 7.5: Using At Ease or KidDesk With Apple Guide (8/95)

Revised: 8/14/95
Security: Everyone

System 7.5: Using At Ease or KidDesk With Apple Guide (8/95)

==========

Article Created: 1 September 1994
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

Why doesn't Apple Guide seem to work properly with At Ease 2.0 installed and turned on in System 7.5? What about KidDesk? Are they not compatible?

DISCUSSION ----------

At Ease
=======
At Ease and Apple Guide are compatible. However, there are some common misunderstandings about how Apple Guide works with At Ease.

If At Ease 2.0 is installed and turned on, Apple Guide does not function in System 7.5. The Help menu contains only Balloon Help items, with no mention of Apple Guide. It also contains About Balloon Help instead of About Apple Guide.

However, At Ease and Apple Guide can be used together on the same system. If an application contains a guide file for its help system, this guide is available to all At Ease users who can access that application through At Ease. Used within the application, the guide functions normally.

Within the At Ease panels themselves, no guides are available because none have been written for it yet. Apple hopes to have one ready for a later release of At Ease. The Macintosh Guide, which normally appears in the System 7.5 Finder, does not appear in the At Ease panels, and should not. This guide depends on the Finder to display its red "coach marks", open Control Panels, and so on. Since At Ease users do not normally have access to Control Panels and system settings, it is inappropriate to have the Macintosh Guide available and fully functional in At Ease.

A problem does occur when a system starts up in At Ease, and then a user or administrator goes to the Finder. In this situation, the Macintosh Guide, which normally appears in the Finder, is unavailable. This is a problem in Apple

Guide. Apple Guide treats the Finder in a special way and does not load in situations when the Finder is "off". All products that replace the Finder, like At Ease does, experience the same problem. Apple is developing a fix for this problem which should be available at a later date.

The impact on the user is that, if they startup in At Ease, and then go to the Finder, both the Macintosh Guide and application specific guides, are not available. In order to use Macintosh Guide in the Finder, At Ease must be turned off by the administrator and the computer restarted.

This situation has the potential to be viewed as an incompatibility between Apple Guide and At Ease. It is NOT, and we hope that this information helps you understand the problem. This is not a situation where you have to choose between System 7.5 and At Ease. Apple Guide behaves as it should for At Ease users.

At locations where At Ease is used, most of the system's users operate their computers in At Ease, not in the Finder. Hence most end users will have access to application guides. Administrators who do have access to the Finder are generally advanced users that do not use Macintosh Guide very often.

KidDesk
=======
Edmark's KidDesk software has this same issue with Apple Guide because it is an interface that takes over for the Finder similar to the way At Ease does. Edmark Tech Support is advising customers to obtain System 7.5 Update 1.0 to resolve issue with Kid Desk and problems with Apple Guide.

How To Tell If KidDesk Is Loading With Apple Guide

KidDesk creates an alias of itself in the Startup Items folder. Starting with the System 7.5 Extensions Manager set "System 7.5 Only" will not disable KidDesk. The alias must be removed to prevent its launch at startup. KidDesk 1.0 by Edmark prevents Apple Guide from displaying "Macintosh Guide" and "Shortcuts" when pulling down the "Apple Guide" menu. It reverts to displaying "About Balloon Help" and "Show Balloons" and "Finder Shortcuts" instead of any Apple Guide files loaded. These are the same menu options displayed as if Apple Guide did not load at startup.

This article provides some information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor, Edmark, for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
14 Aug 1995 - Reviewed for technical accuracy.
15 May 1995 - Changed title.
31 Mar 1995 - Added more information about KidDesk.

Support Information Services

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Tech Info Library Article Number:16163

Tech Info Library

PowerBook 500: PCMCIA Expansn Module Q&A & Tech Specs

Revised: 9/11/96
Security: Everyone

PowerBook 500: PCMCIA Expansn Module Q&A & Tech Specs (Discont)

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Article Created: 02 September 1994
Article Reviewed/Updated: 11 September 1996

TOPIC ----------

This article provides information on the PCMCIA Expansion Module for the PowerBook 500 series computer.

The PCMCIA Expansion Module for the PowerBook 500 series computer was discontinued in September 1996.

DISCUSSION ----------

Question: What is PCMCIA?

Answer: The Personal Computer Memory Card International Association (PCMCIA) was formed in 1989 to create a standard technology for very small memory cards, to be used in lightweight, mobile computing devices. A card that uses PCMCIA-standard technology is referred to by the PCMCIA as a PC Card, and is about the size of a credit card.

To date, PC Card technology has been used primarily in personal digital assistant (PDA) devices. For example, Apple integrates this technology in its Newton MessagePad communications assistants. But PC Card technology is quickly migrating to personal computers (it is becoming a standard feature in DOS and Windows software–based portable computers), and it will eventually be incorporated in peripheral devices such as printers. The PowerBook 500 series computers are now integrating this capability, and they offer distinct advantages over competitive personal computer systems that use PC Cards.

Question: What can PC Cards do for me?

Answer: As mobile computing and telecommuting become more common, and as smaller, more portable computer systems become available, solutions for providing lightweight, high-capacity media will increase in popularity.

PC Cards offer four key benefits:

• Flexibility in expanding your computer’s capabilities. PC Cards provide the easiest way for you to extend the capabilities of your PowerBook 500 series computer. You can install everything yourself in a matter of seconds. There is no complex system configuration required, and the hardware component plugs directly into an expansion slot. Just insert PC Cards into your PowerBook to add storage capacity, applications, fax/data modem capability, cellular capability, or networking capability.

• Thousands of computing solutions. Cellular modems, fax/data modems, paging, storage, local area and wide area networks, global positioning systems, digital video capture, data collection, and data encryption. These solutions and thousands more are possible through PC Cards. For example, you can have remote access to your desktop computer, electronic mail, the Internet, servers, and networks by inserting a cellular modem PC Card into your PowerBook, launching Apple Remote Access software, and dialing your cellular telephone.

• Lightweight, compact, and portable media. PC Cards provide a simple, lightweight expansion solution. Portable devices such as PowerBook computers and Newton MessagePad units require expansion media that won’t add significant weight. Because PC Cards are so small and convenient to carry, they are perfectly suited for use with portable computers and PDAs.

• Low energy consumption. PC Cards consume less power than traditional floppy disk technology. By running an application off a PC Card instead of the hard disk in your PowerBook, you will use less battery power—an obvious advantage when using your PowerBook on the road.

Question: How do I use PC Cards in my PowerBook 500 series computer?

Answer: You need an accessory product called the PowerBook PCMCIA Expansion Module and its accompanying software. Adding it to your PowerBook is as easy as inserting a battery: The PowerBook 500 series computers have a processor-direct slot in the left battery compartment, and you just slide the PCMCIA Expansion Module into the slot. Then insert PC Cards into the module, just as you would insert floppy disks into a floppy disk drive. It is that simple.

The PowerBook PCMCIA Expansion Module weighs only four ounces, making it a particularly attractive accessory for your PowerBook computer.

Question: How is Apple’s implementation of PC Card technology in PowerBook computers better than what’s offered on other computing platforms?

Answer: Apple’s implementation of PC Card technology provides several unique advantages:

• Seamless integration of hardware and software. The advantage of true “plug-and-play” capability is perhaps the most important. Unlike in the DOS and Windows environments, where a variety of conflicting PCMCIA implementations

abound, the PowerBook environment uses only one PCMCIA implementation. As a result, there are no compatibility conflicts, and you don't need to perform any complex system reconfigurations before using PC Cards— you just insert a PC Card into the PowerBook PCMCIA Expansion Module and you're ready to work. The integration of hardware and software makes PowerBook the only computer line to deliver the ease of use promised by this new technology.

• Immediate, flexible card recognition. The PowerBook PCMCIA Expansion Module accepts two Type I or Type II PC Cards, or one Type III PC Card. Through Apple's hardware and software integration, the module can even simultaneously accept Type I and Type II PC Cards that provide different functionality—such as a cellular modem card and a storage card.

• No disruptions to your work. You can remove and switch PC Cards in your PowerBook 500 series computer without restarting your system. Icons for PC Cards appear on the screen in the same way that floppy disk icons do. To eject a PC Card, simply click the Quick Eject module on the Control Strip shown on the screen. These features make using PC Cards in a PowerBook 500 series computer exceptionally convenient and easy.

• A structured implementation plan. Apple will introduce PCMCIA for PowerBook 500 series computers in two phases. The initial release of the PowerBook PCMCIA Expansion Module will include basic driver software that enables PowerBook 500 series computers to accommodate PC Cards that provide the three most popular capabilities—storage capacity, modem capability, and cellular functionality. Soon afterward, the PowerBook PCMCIA Expansion Module will be able to accept third-party software drivers and cards, for an even wider range of capabilities. In addition, Apple is investigating the integration of PC Card technology into its desktop computers and printers.

Question: Will PC Cards developed for other platforms work in PowerBook 500 series computers?

Answer: Most modem and storage PC Cards that are available for other operating systems, such as DOS or Windows, and that conform to PCMCIA standards will work with the PowerBook PCMCIA Expansion Module. The Newton Fax Modem Card also works in the PowerBook PCMCIA Expansion Module. Other PC Cards require software drivers provided by the developer (these drivers are typically system extensions, which you simply drag into the System Folder). For a list of currently available cards, call the number below, or contact the card manufacturer directly for compatibility information.

For more information.

To receive a list of currently available PC Cards via fax, call 1-800-462-4396 in the United States, or 1-800-263-3394 in Canada. Request document number 10307.

PowerBook PCMCIA Expansion Module Technical Specifications:

PCMCIA standard
• PCMCIA Release 2.1 compliant

- PC Card Manager: Apple implementation of Card and Socket Services
- Apple-proprietary PCMCIA host adapter ASIC Standard device drivers (clients)
- Modem and ATA drivers stored in flash ROM on Expansion Module (software upgradable)

PC Card connector
- Two slots support two Type I or Type II cards or one Type III card
- Software-activated PC Card ejection mechanism
- Processor-direct slot (16-bit data, 15.7-MHz bus)

Power requirements
- In idle mode (no cards inserted): 8 mA at 5 volts
- With cards inserted: 13 mA plus the card requirement
- Maximum current available: 600 mA between both card slots

Size and weight
- Height: 0.96 in. (24.3 mm) at bezel; 0.79 in. (20 mm) at top and bottom of case
- Length: 4.76 in. (120.7 mm)
- Width: 3.35 in. (85 mm) at bezel; 3.05 in. (77.4 mm) at top and bottom of case
- Weight: 3.8 ounces (113 grams)

Environmental requirements
- Operating temperature: 50 degrees F to 104 degrees F (10 degrees C to 40 degrees C)
- Storage temperature: –13 degrees F to 140 degrees F (–25 degrees C to 60 degrees C)
- Relative humidity: 20 percent to 80 percent noncondensing
- Operating altitude: 0 to 10,000 ft. (0 to 3,048 m)
- Maximum storage altitude: 15,000 ft. (4,722 m)

Order number
M2995LL/C

Article Change History:
11 Sep 1996 - Added information about discontinued date.
31 May 1996 - Updated part number.
03 Apr 1995 - Reviewed for technical accuracy.

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Tech Info Library Article Number:16164

Tech Info Library

Writing Center: Difficulty Quitting the Application (8/95)

Revised: 8/22/95
Security: Everyone

Writing Center: Difficulty Quitting the Application (8/95)

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Article Created: 2 September 1994
Article Reviewed/Updated: 3 March 1995

TOPIC -----

The Writing Center application freezes almost every time I select Quit. It does not seem to make any difference whether I am running in At Ease or the Finder.

DISCUSSION -----

After checking with The Learning Company and Hewlett Packard, it appears that the Hewlett Packard drivers for the all the 500 series Deskwriters are not compatible with any version of The Writing Center previous to 1.05. The problem with the drivers lies in the way they deal with color graphics.

The Learning Company has an update available to update your copy of The Writing Center to version 1.05. If you already have version 1.05 of the Writing Center, then the update may have been performed incorrectly and you should contact The Learning Company.

This article provides information about non-Apple products. Apple Computer, Inc. is not responsible for its content. Please contact the vendors mentioned for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
22 Aug 1995 - Added information about updater availability.
03 Mar 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16165

Tech Info Library

PCMCIA Expansion Module: Where to Find Available Cards (9/94)

Revised: 9/2/94
Security: Everyone

PCMCIA Expansion Module: Where to Find Available Cards (9/94)

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Article Created: 02 September 1994

TOPIC --------------------

Where can I get information on what PCMCIA cards will work with my PCMCIA Expansion Module?

DISCUSSION --------------------

Most modem and storage PC Cards that are available for other operating systems, such as DOS or Windows, and that conform to PCMCIA standards will work with the PowerBook PCMCIA Expansion Module.

The Newton Fax Modem Card also works in the PowerBook PCMCIA Expansion Module. Other PC Cards require software drivers provided by the developer (these drivers are typically system extensions, which you simply drag into the System Folder).

For a list of currently available cards, call the number below, or contact the card manufacturer directly for compatibility information.

To receive a list of currently available PC Cards via fax, call 1-800-462-4396 in the United States, or 1-800-263-3394 in Canada. Request document number 10307.

Support Information Services

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Tech Info Library Article Number:16166

Tech Info Library

PCMCIA for PowerBook: Frequently Asked Questions (4/97)

Revised: 4/2/97
Security: Everyone

PCMCIA for PowerBook: Frequently Asked Questions (4/97)

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Article Created: 07 September 1994
Article Reviewed/Updated: 02 April 1997

TOPIC ----------

This article answers some frequently asked questions (FAQ) about the PowerBook PCMCIA Expansion Module for the PowerBook 500 series and the built-in PCMCIA (PC card) bay for the PowerBook 190, 5300 and 1400 series computers.

Questions Answered in this FAQ:
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1) Can I plug in PC Cards on the fly?

2) Will the Apple PCMCIA modem for the Newton work with PowerBook 500 PCMCIA Expansion Module, and PowerBook 190/5300/1400 computers?

3) Will Newton storage cards work with PCMCIA capable PowerBooks?

4) If I insert a DOS formatted drive card, will it be recognized?

5) How do I initiate the ejection of a PC Card?

6) How are cards physically ejected and how do I get them out if that method fails?

7) The card will not come out even when I insert a paper clip. What now?

8) Can I start my PowerBook from a PC Card?

9) How much power does the PCMCIA Expansion Module draw?

10) What kind of power draw can I expect from PC cards on the PowerBook 5300/1400 series?

11) How do I protect the PDS connector on the PCMCIA Expansion Module when it is

removed?

12) I understand there are three types of PC Cards, how many of each type will PCMCIA-capable PowerBooks accept?

13) Are there standards which assure that every PC Card is the same size?

14) Which PC Cards can I use with the PCMCIA Expansion Module and with the PowerBook 5300/1400 computers?

15) I inserted a modem card, but nothing happened. What's wrong?

16) Yesterday I set up my fax software and it worked fine. Now, it never dials.

17) I'm getting the message that the modem card can't be ejected because it's in use, but it's not in use.

18) The PCMCIA modem acts differently than an external modem rated at the same speed with the same software. (It could be the case that the external modem connects while the PCMCIA modem does not, or that the PCMCIA modem connects at a faster or slower speed.) Why is this?

19) I'm trying to eject a storage card, but the computer tells me I can't because the card is in use. But its not in use! There are absolutely no files or programs open.

20) My friend uses a DOS-compatible laptop with a PCMCIA slot. Can I copy documents onto a storage card with my PowerBook so that she'll be able to read them after inserting the card into her DOS machine?

21) What does PCMCIA stand for?

22) I inserted a Maxtor hard drive, and it has trouble ejecting.

23) I get poor and erratic results using a cellular phone with my PCMCIA modem.

24) I'm taking a mass storage card back and forth between a Macintosh and a PC. The problem is that each machine shows a different set of files and folders, and each machine claims to have the entire hard drive! The Macintosh thinks its a Macintosh drive (that is, it does not have the special PC icon), and the PC thinks its a PC drive! This can not be! What's going on?

25) Dragging the icon to the trash (or using the other software controls) to eject a card sometimes does not work. I get a message that the card was not ejected successfully. But sometimes this same card does eject just fine. Why?

26) Some cards are ejected all the way out and slide across my desk. Is this dangerous? Can I damage the card if it falls off the desk?

27) Sometimes I get poor throughput or failed file transfers when I'm using a high-speed modem connection. Sometimes it works fine. Why?

28) Where else can I go for answers?

29) Question: Where can I get the latest Apple software updates for my PowerBook?

DISCUSSION ----------

1) Question: Can I plug in PC Cards on the fly?

Answer: Yes, individual cards can be plugged in at any time the PowerBook is powered on and they will be recognized. If, however, the actual PCMCIA Expansion Module is inserted or removed while the unit is powered on or in sleep mode, the unit will shut down.

2) Question: Will the Apple PCMCIA modem for the Newton work with PowerBook 500 PCMCIA Expansion Module, and PowerBook 190/5300/1400 computers?

Answer: Yes, the Apple PCMCIA modem for the Newton will work with PCMCIA capable PowerBooks provided you are using a communications application that uses the CTB (Communications Toolbox). The vast majority of communications programs currently available are CTB compliant.

3) Question: Will Newton storage cards work with PCMCIA capable PowerBooks?

Answer: No, Newton storage cards will not work with PowerBooks. They use a different PCMCIA implementation and many are too wide to properly fit into a PowerBook.

4) Question: If I insert a DOS formatted drive card, will it be recognized?

Answer: If PC Exchange 2.0.2 or later is installed, the drive will be mounted on the desktop and you'll have full access to its files. PC Exchange itself does not do anything with regard to file format. However, you may or may not have an application on your PowerBook which can do anything useful with the PC files.

5) Question: How do I initiate the ejection of a PC Card?

Answer: PC Cards should eject if the desktop icon is dragged to the Trash or if Put Away is selected from the Special menu.

6) Question: How are cards physically ejected and how do I get them out if that method fails?

Answer: PC Cards are ejected by a mechanism triggered by a thin bi-metalic wire called NitiNol (Nickel Titanium alloy) which contracts when a voltage is applied to it. This contraction triggers the mechanism to eject the card. If you are having trouble ejecting a PC Card, a paperclip can be inserted into the small

hole next to the PCMCIA slot to manually eject the card. Avoid manually pulling the card out of the computer - this could leave the mechanism set in the wrong position (see the next question).

7) Question: The card will not come out even when I insert a paper clip. What now?

Answer: You can pull the card out yourself with a pair of needle nose pliers or sometimes with your fingers, if you have strong fingernails. Once the card is pulled out, try inserting the paper clip again to release the spring mechanism. If you hear the springs release, you can try inserting the card (or a different card) again. Of course, the problem may recur.

Inspect the card for any obvious physical damage, large scratches, or other irregularities. If the ejection problem recurs, especially with various cards, you should have your PCMCIA Expansion Module/PowerBook 5300/190/1400 inspected by an Apple-authorized dealer or returned to Apple by calling 800-SOS-APPL.

8) Question: Can I start my PowerBook from a PC Card?

Answer: The PC Card slots are polled at startup, so if a card is inserted which contains the appropriate resources to start up the PowerBook and the startup control panel has the PCMCIA device selected, it will boot from the card.

9) Question: How much power does the PCMCIA Expansion Module draw?

Answer: Idle with no cards: .460 mA...less than 1 milliamp.

Operating with cards: Typical is 56mA plus inserted cards power draw. Maximum is 58mA plus inserted cards power draw.

The cards can vary from 150mA for modems to 600mA for rotating media. (New ExCA spec is trying to limit cards to 300mA.) Also, some cards have very high peak requirements (spinning up drive).

The PowerBook 500 series PDS connector is rated at 600mA continuous for the entire PDS module.

10) Question: What kind of power draw can I expect from PC cards on the PowerBook 5300/1400 series?

Answer: The following numbers are based on initial testing by Apple Computer. Some cards may vary from these numbers.

(Use mono-spaced font for best viewing)

Type of Card	Plugged In	Active
Modems	100-300mA	100-390mA

Memory	3-21mA	100mA
Hard Disks	200-300mA	300-350mA
Ethernet	285-480mA	285-480mA

11) Question: How do I protect the PDS connector on the PCMCIA Expansion Module when it is removed?

Answer: A small cover for the connector is included with the module. This cover should be in place any time the module is removed from the PowerBook.

12) Question: I understand there are three types of PC Cards, how many of each type will PCMCIA-capable PowerBooks accept?

Answer: There are two card slots which can accept one each Type I or Type II, or a single Type III card in the bottom slot.

13) Question: Are there standards which assure that every PC Card is the same size?

Answer: The PCMCIA PC Card standard only defines a specification for the pin configuration and the height of the card. The most common variations are the width of the card and rounding of the corners. If you have problems with the fit of a PC Card, try using the bottom slot.

The specification defines all dimensions for a Type II except radius of corners. In reality, not all cards (but most) conform to the spec. Some modem Type II specs exceed the 5mm height. The 5mm is a maximum.

What is undefined for Type III cards is the top case minimum dimensions. The maximum is defined, so cards that conform to the maximum work with the connector. Variants of the spec (unusual shapes and divots) in the top case cause problems.

14) Question: Which PC Cards can I use with the PCMCIA Expansion Module and with the PowerBook 5300/1400 computers?

Answer: With the PCMCIA Expansion Module for the PowerBook 500 series, you can use modem cards that conform to the PCMCIA 2.1 standard and flash cards and hard disk cards that conform to the ATA standard.

PCMCIA on the PowerBook 5300 and 1400 offers full Card and Socket Services support. This means that any 3rd party developer can modify their software drivers to make their cards available on the Macintosh. Card and Socket Services is part of the PCMCIA industry standard.

Apple will offer Card and Socket Services for the 500 series expansion module in the near future.

Through Apple's automated fax info system, you can obtain a list of currently

available PCMCIA products for PowerBook computers. Call (800) 462-4396 and request document #10307. Note that document ID's sometimes change so you might want to have a catalog of available documents faxed to you first.

15) Question: I inserted a modem card, but nothing happened. What's wrong?

Answer: In release one of the PCMCIA Expansion Module, modem cards don't appear on the desktop. If the PCMCIA Quick Eject control strip module is visible, then its appearance will reflect that either the upper or lower slot (or both) contains cards. If the control strip isn't visible (or isn't installed) then there will be no visible change when a modem card is inserted. However, the insertion of a modem is sensed by the software, and the modem is added to the list of devices available in the CTB (Communications Toolbox).

Programs which support the CTB (including MicroPhone, ARA) will display either upper card slot or lower card slot (or both, if you've inserted two PCMCIA modems) when you have the program open and are looking at the Connection dialog. The name and location of this setup command will vary from program to program. There's a popup menu in which you specify which port contains the modem you wish to use. With a PCMCIA modem, the names of the ports will always be either upper card slot or lower card slot. These ports only show up in the list while a modem is inserted in a slot.

This is different from the traditional printer and modem ports, which always appear, regardless of whether you have an external modem plugged into them. In the case of the PowerBook 500, 5300, 1400,and 190 series, which has only one physical serial port, it's called Printer-Modem Port.

With the PowerBook 5300, 1400 and 190 series, a PC Card's icon should always appear on the desktop if it is being recognized. If the icon does not appear, check to make sure all of the appropriate software is installed.

16) Question: Yesterday I set up my fax software and it worked fine. Now, it never dials.

Answer: Sometimes software doesn't successfully store the identity of the port to which your modem is connected. The software may have fallen back to its default of the Printer-Modem port. Or, you might have inserted the modem into a different slot than you used last time. Check the connection settings of your software; for the port, select either upper card slot or lower card slot as appropriate.

17) Question: I'm getting the message that the modem card can't be ejected because it's in use, but it's not in use. I don't have any programs running, other than the Finder!

Answer: Some software, such as fax modem software, will put the modem into auto-answer mode. The modem may have to be considered busy while the modem listens for an incoming call. This can happen with a background process or a system extension, in which case there doesn't have to be an open application.

Launch your software and check the setup controls to see if auto-answer is on. For example, if there's a control for Answer on <3> rings, you might have to temporarily turn the modem software off or set it to Answer on <never> to free up and then eject the modem. Refer to the users guide which came with your modem software for more information.

18) Question: The PCMCIA modem acts differently than an external modem rated at the same speed with the same software. (It could be the case that the external modem connects while the PCMCIA modem does not, or that the PCMCIA modem connects at a faster or slower speed.) Why is this?

Answer: The answer to this question is very much the same as the answer for a customer just starting to use any new modem. Modems differ in their use of the Hayes command set. The PCMCIA Expansion Module and PowerBook 5300/1400 allow you to plug in a modem, but operating the modem and setting up your software to use the modem and connect to other services is not within the control of the PCMCIA hardware and software. You need to consult the user guide and/or the tech support service of your modem manufacturer and your modem software publisher to determine the correct AT commands.

To determine whether or not the modem is being made available (which is all that Apple's software is responsible for), get into the setup connection dialog. Its exact name and location varies from program to program. The method or tool (again, terms vary) should usually be Serial Tool. In some cases, Apple Modem Tool will also work.

When Serial Tool is selected, a window containing choices for port should appear. This window might have a horizontal scroll bar. The window will likely contain icons named, for example, modem/printer and upper card slot. If either upper card slot or lower card slot appears, then the PowerBook is working correctly (If the window also contains internal modem, then you have a built-in internal modem. This is not the same as your PCMCIA modem.) You should click the upper card slot (or lower card slot) icon to select the PCMCIA modem.

Further modem configuration, such as speed, handshaking, setup strings, AT commands, and so on, are the responsibility of the user, and the modem and software provider. Those settings should not be affected by whether the user has a modem plugged into the PCMCIA slot or an external modem plugged into the back of the computer. The PCMCIA Expansion Module and the 5300/1400 makes the modem available, but it does not control it.

19) Question: I'm trying to eject a storage card, but the computer tells me I can't because the card is in use. But its not in use! There are absolutely no files or programs open.

Answer: This is a common phenomenon when people start using any type of removable media, such as Syquest drives or PCMCIA cards. If File Sharing is on, then any drive which was in the computer when it started up can not be dismounted. Temporarily turn off File Sharing by using either the Control Strip module which looks like a folder or the Control Panel named Sharing Setup. After removing the card, you can turn File Sharing back on.

20) Question: My friend uses a DOS-compatible laptop with a PCMCIA slot. Can I copy documents onto a storage card with my PowerBook so that she'll be able to read them after inserting the card into her DOS machine?

Answer: Maybe. If you initialize a PCMCIA storage card on your Macintosh, it will be a Macintosh formatted volume, and your friends computer will probably not be able to recognize it unless her computer has software meant to translate Macintosh disks.

However, if you're using PC Exchange 2.0.2 or later, then a PCMCIA card formatted on a DOS machine should be readable. PC Exchange version 1.x handles DOS floppies only (not hard disks or removable devices like PCMCIA).

21) Question: What does PCMCIA stand for?

Answer: It stands for Personal Computer Memory Card International Association.

22) Question: I inserted a Maxtor hard drive, and it has trouble ejecting.

Answer: Some Maxtor drives use a case that's not perfectly rectangular. The unusual shape can cause problems during ejection. If any card can not be ejected, even when you insert a paper clip into the proper hole, the card will need to be removed by an Apple technician.

Note: The following unsupported workaround allows use of Maxtor cards: Insert a type I or Type II card (such as a modem or ATA flash card) into the top slot. Using a pair of needle nose pliers, pull the card out of the top slot. (If it was a storage card, and its icon had appeared on the desktop, drag the icon to the trash.) Physically pulling the card out of the slot without using any of the software ejection controls will leave the springs and levers in the top slot cocked back out of the way. The Maxtor drive can then be inserted, used, and ejected normally. When you're done using the Maxtor drive, insert a card into the top slot (as you do so you will not feel any resistance, because the springs are already cocked back). Then use the control panel or control strip to remove the card. It will auto-eject, and the springs will return to their normal position. At this point, attempting to insert a Maxtor drive may again result in problems.

23) Question: I get poor and erratic results using a cellular phone with my PCMCIA modem.

Answer: Cellular modem connections can suffer from a variety of problems:

Signal Strength

We have seen situations in which even though the phone itself indicates a strong signal, and voice calls are fine, data connections are unreliable. If possible, try moving to a different area, preferably away from buildings and towards a

known cell site.

Connection Speed

Connecting at 4800 bps or 7200 bps is often more successful than either 2400 or 9600 bps. If you add the AT command %B4800 or %B7200 to the modem initialization string of your communications program, your modem will only try to connect at that speed. It won't negotiate a speed with the other modem. We have seen this significantly improve connections.

Sensitivity To Temporary Carrier Loss

Cellular connections undergo temporary interruptions much more often than traditional land-based phone lines. For example, when your connection is handed off from one cell to another (which can occur even when you are not moving), it's not uncommon for the carrier signal to disappear for an instant and then be reconnected. This happens automatically, usually without your noticing.

Modems use the S10 register to determine how long to wait before permanently hanging up the connection when a loss of carrier is detected. The duration of carrier loss which a modem will withstand before giving up the host varies from modem to modem, but many of the modems you're likely to connect to (such as those at online services) are likely to have a very short duration specified in the S10 register.

Even if your cellular modem's S10 register has been set (via a connection script or options file) to be tolerant of long periods of carrier loss, if the remote modem to which you're connecting to has a small value in the S10 register, your connection may fail often. If possible, ask the person in control of the other modem to set a larger value in the S10 register. Most modems allow a value from 1 to 255 (measured in tenths of a second). The default is often 14 tenths. Increasing this value to, say, 100 or more tenths.

24) Question: I'm taking a mass storage card back and forth between a Macintosh and a PC. The problem is that each machine shows a different set of files and folders, and each machine claims to have the entire hard drive! The Macintosh thinks its a Macintosh drive (that is, it does not have the special PC icon), and the PC thinks its a PC drive! This can not be! What's going on?

Answer: This can happen if you take a Macintosh-formatted card, then initialize it on certain PC configurations, and then bring it back to the Macintosh for use under PC Exchange.

The Mac files and folders should all be gone, (because of the PC initialization) but they're still visible. During the initialization on the PC, the part of the disk which contained the Macintosh directory information wasn't deleted as it should have been. The drive is now in a dangerous and vulnerable state! Some of the files may still be openable (on each respective machine), but there are no guarantees, and the drive will certainly become corrupted if you continue to put more files on it.

If you have a drive in this state, you should immediately copy the files to a

different location, such as the computer's internal hard disk. Do this both on the Macintosh and the PC. You may receive error messages, and some of the files may not be copied successfully, because each computer thinks it has full ownership of the same areas of the disk.

So far, this behavior has been seen only when the PC initialization is done with the IBM driver on a ThinkPad. The driver which comes with Ventura Micro software does not have this problem. Other versions of C&SS (Card & Socket Services) running on the ThinkPad are still under investigation.

If you reinitialize the drive in the Macintosh (using the Erase Disk command in the Special menu), it will no longer be recognizable to the PC, and you will be able to use it again safely if you use it only in the Macintosh.

Cards which are formatted on the PC (and never formatted on the Macintosh) can be used successfully going back and forth. The problem only occurs when a Macintosh-format card is re-formatted on a PC.

25) Question: Dragging the icon to the trash (or using the other software controls) to eject a card sometimes does not work. I get a message that the card was not ejected successfully. But sometimes this same card does eject just fine. Why?

Answer: Occasionally a card may not seat itself fully and cock the springs back quite all the way, so that the springs cannot push the card out when you request an ejection. Try pushing first on one corner of the card, making sure its firmly seated, then try the ejection again. If that does not work, push the other corner of the card and try the ejection.

If the card still does not auto-eject, you'll have to manually eject the card by inserting a bent paper clip into the hole next to the card. Notice that the upper and lower slots each have their own ejection hole.

SunDisk flash cards are particularly susceptible to this phenomenon when they're inserted into the top slot.

26) Question: Some cards are ejected all the way out and slide across my desk. Is this dangerous? Can I damage the card if it falls off the desk?

Answer: The amount of force necessary to disconnect the card from the internal connector and push it out varies widely from card to card. Type III hard drives are much heavier than Type I ATA flash cards, for example. For that reason its inevitable that some cards may come out far enough to leave the computer completely. PCMCIA cards are designed for the unpredictable rigors of portable computer users, and the chance of damaging the card is very low.

27) Question: Sometimes I get poor throughput or failed file transfers when I'm using a high-speed modem connection. Sometimes it works fine. Why?

Answer: This might be caused by a long-standing issue with Macintosh serial

communications; if you have LocalTalk active, it can interfere with other high-speed serial activity. Modem connections with DTE or port speeds of 19,200 and above can be particularly sensitive to this issue.

If you're using LocalTalk, consider turning AppleTalk off (using the Chooser) while you're doing modem transfers. Keeping your DTE or port speed the same as your modem connection can help. Using hardware handshaking can also help. Consult the documentation for your modem and communication software for more information about DTE speed and hardware handshaking.

28) Question: Where else can I go for answers?

Answer: If you haven't done so already, check the other PowerBook FAQ documents. Also, depending on where you found this FAQ, you should have access to Apple's Technical Information Library - located on the Internet at: <http://til.info.apple.com/>. This library is Apple's offical tech support database and contains thousands of technical articles which are easily searchable using boolean search strings.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

29) Question: Where can I get the latest Apple software updates for my PowerBook?

- On the Internet at the following sites:
  - Worldwide Web: <http://www.info.apple.com/swupdates>
  - ftp: <ftp://ftp.info.apple.com/>
- On America Online, use keyword: applecomputer
- On CompuServe, use GO: APLSUP

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TITLE

PowerBook and iBook: AC Adapter, Battery, and Recharger Identification

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TOPIC

This article provides information for all PowerBook power adapters, batteries, and battery chargers, and how to identify them.

DISCUSSION

Apple offers several AC adapters, batteries, and battery chargers for PowerBook computers. The information below will help to identify them.

AC ADAPTERS

PowerBook 100 Series
M5140
The first AC adapter, 15 watt (W), shipped with the PowerBook 100, 140, and 170. The tip can be damaged and cause the logic board to also be damaged. The symptom is that the computer does not run from the battery or start with the battery out of the unit, but works fine with the adapter plugged in. **Note**: This adapter, M5140, has been replaced by model M4662.

M5651
The second AC adaptor, 19 W, shipped with the PowerBook 145b, 160, 165, and 180. This adapter works with the PowerBook 140, 145, 145b, 160, 165, 170, and 180. The tip has been revised to alleviate possible damage to the tip and logic board. **Note**: This adapter, M5651, has been replaced by model M4662.

M5652
The third AC adapter, 24 W, is also identified with 24w on the AC adapter tip. This adapter ships with the PowerBook 165c and 180c, and works with the PowerBook 140, 145, 145b, 160, 165, 165c, 170, 180, and 180c. **Note**: This adapter, M5651, has been replaced by model M4662.

APS-17adp
The fourth AC adapter, 17 W, shipped with the PowerBook 150, and works with the PowerBook 100 or 150. If a PowerBook 100 needs to have the AC adapter replaced, it should be replaced with this one. AC adapters producing more than 19 watts can damage the PowerBook 100 and 150.

PowerBook 500 Series
M1910 or M1893
AC adapter for Macintosh PowerBook 500 series computers.

PowerBook 190 and 5300 Series
M3747 or M3037
AC adapter for Macintosh PowerBook 5300 and 190 series computers.

PowerBook (Duo) 200 and 2300 Series
M7783 (Duo Adapter)
PowerBook Duo 210, 230, 250, 270c, and 280 computers include a 25-watt power adapter.

M2693 (Duo Adapter)
The PowerBook Duo 280c included a 36-watt power adapter that is fully backward compatible with all Duo computers.

M4174 (Duo Adapter)
The PowerBook Duo 2300c includes a 36-watt power adapter that is fully backward compatible with all Duo computers.

PowerBook 1400 Series
M4895 or M4896*
AC adapter for Macintosh PowerBook 1400 series computers.

Note: The M4402 adapters may also be used for this model.

PowerBook 2400
M5937
36-watt AC adapter for the Macintosh PowerBook 2400c computer.

PowerBook 3400 and G3
M4896* or M4895
45-watt AC adapter for Macintosh PowerBook 3400 series computers.

Note: Model M4896 has replaced model M4895. However, the two are interchangeable.
Note: The M4402 adapters may also be used for this model.

PowerBook G3 Series
M4402
45-watt AC adapter for PowerBook G3 Series computers.

Note: The M4895 or M4896 adapters may also be used for the PB G3 Series.

PowerBook G3 Series (Bronze Keyboard)
M4402
45-watt AC adapter for the PowerBook G3 Series (Bronze keyboard) computer.

Note: The M4895 or M4896 adapters may also be used for the PB G3 Series.

iBook
M7387LL/A
45 watt AC adapter for the iBook computer. It will also power PowerBook G3 models.

BATTERIES
The following table identifies the battery used in each PowerBook and iBook model.

Battery type legend:
Sealed Lead Acid (SLA)
Nickel Cadmium (NiCad)
Nickel Metal Hydride (NiMH)
Lithium Ion (LiIon)

PowerBook/iBook Model	Battery Type	Ampere Hours	Full Charge Voltage	Service P/N	Model No. on Battery
Portable	SLA	5.4	6.5	076-0376	M5137
100	SLA	2.3	6.0	661-0782	M3053
140/145/170	NiCad	2.5^	6.75	661-0013	M5417
145B	NiCad	2.5^	6.75	661-0013	M5653
150	NiCad	2.5^	6.75	661-0013	M5653
160/165/180	NiCad	2.5^	6.75	661-0013	M5654
165c/180c	NiCad	2.5^	6.75	661-0013	M5654
190	NiMH	1.9	16.1	661-1656	M7782
Duo 210/230	NiMH Type I	.95	13.5	661-1656	M7782
Duo 250/270c	NiMH Type II	1.4	13.5	661-1735	M1499**
280	NiMH Type II	1.4	13.5	661-1735	M1499**
280c	NiMH Type III	1.6	13.5	661-0053	M1499**
520/520c	NiMH*	1.8	10.8	661-0055	M1906
540/540c	NiMH*	1.8	10.8	661-0055	M1906

1400	NiMH	3	11.0	922-3078	M2538
2300c	NiMH Type III	1.6	13.5	661-0053	M1499**
2400	LiIon	2.5.	12.6	922-3076	M5876
3400	LiIon	2	16.2	922-2471	M5139
5300	NiMH	1.9	16.1	661-1028	M3254
G3	LiIon	3	16.2	076-0719	M4895
G3 Series	LiIon	3	16.5	661-2069	M6385, M4685
G3 Series (Bronze Kbd.)	LiIon	3	16.5	661-2183	M7318***
iBook	LiIon	45 watt hr.	14.4	N/A	M7426

^ These computers are also compatible with Model No. M5654 2.9 Ah battery
* Uses PowerBook Intelligent Battery
** Type II and Type III batteries used in the 200 and 2300 series (Duo) have the same model # M1499, but have "Type 2" or "Type 3" printed on them
*** Batteries for the PowerBook G3 Series and the PowerBook G3 Series (Bronze keyboard) are not interchangeable due to physical size differences.

BATTERY CHARGERS

PowerBook 100 Series
M1027LL/A
Use this model with the AC adapter that comes with the PowerBook. This charger works with the PowerBook 140, 145b, 150, 160, 165, 165c, 170, 180, and 180c.

M5130LL/A
The battery charger for the PowerBook 100.

PowerBook 500 Series
M1910
Macintosh PowerBook 500 Series AC Adapter.

PowerBook 190 & 5300 Series
M3747
Macintosh PowerBook Power Adapter for 5300 and 190 series

PowerBook (Duo) 200 & 2300 Series
M7778
The first Duo battery charger. This charger only charges Type I batteries.

M1812
The second Duo battery charger. This battery charger charges Type I, II, and III batteries. To achieve full compatibility with Type III batteries, you must update the firmware in the charger. If you have a recharger model M1812 and you need to update it, follow these steps:

1. Shut down the PowerBook Duo computer, make sure the Type III battery and any necessary software has been installed. If you are running System 7.5.1 the Type III Battery extension must be installed.
2. Plug the power adapter into an AC outlet using the power cord that came with the computer.
3. Snap the recharger onto the side of the power adapter.
4. Plug the power adapter cable into the power adapter port on the back of the Duo computer.
5. Turn on the PowerBook Duo to download the update to the charger.

M4178
The third Duo battery charger. This battery charger charges Type I, II, and III batteries.

PowerBook 1400
No battery charger was made available by Apple.

PowerBook 2400
No battery charger was made available by Apple.

PowerBook 3400 and G3

No battery charger was made available by Apple.

PowerBook G3 Series and G3 Series (Bronze keyboard)
No battery charger was made available by Apple.

iBook
No battery charger was made available by Apple.

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

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Document Information
Product Area: Computers
Category: PowerBook
Sub Category: General Topics

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Tech Info Library

PowerBook: Battery, Recharger & AC Adapter Identification (4/97)

Revised: 4/2/97
Security: Everyone

PowerBook: Battery, Recharger & AC Adapter Identification (4/97)

==========

Article Created: 02 September 1994
Article Reviewed/Updated: 02 April 1997

TOPIC ----------

Is there a list of all PowerBook power adapters, batteries, and battery chargers and how to identify them?

DISCUSSION ----------

Apple offers several AC adapters, batteries, and battery chargers for PowerBook computers. The information below will help to identify the various power adapters, batteries, and battery chargers.

==========

POWER ADAPTERS

==========

PowerBook 100 Series
==========

M5140

The first AC adapter, 15 watt, shipped with the PowerBook 100, 140, and 170. The tip can be damaged and cause the logic board to also be damaged. The symptom is that the machine does not run from the battery or start with the battery out of the unit, but works fine with the adapter plugged in.

M5651

The second AC adaptor, 19 watt, shipped with the PowerBook 145b, 160, 165, and 180. This adapter works with the PowerBook 140, 145, 145b, 160, 165, 170, and 180. The tip has been revised to alleviate possible damage to the tip and logic board.

M5652

The third AC adapter, 24 watt; it is also identified with 24w on the AC adapter tip. This adapter ships with the PowerBook 165c and 180c, and works with the PowerBook 140, 145, 145b, 160, 165, 165c, 170, 180, and 180c.

APS-17adp

The fourth AC adapter, 17 watt; ships with the PowerBook 150, and works with the PowerBook 100 or 150. If a PowerBook 100 needs to have the AC adapter replaced, it should be replaced with this one. AC adapters producing more than 19 watts can damage the PowerBook 100 and 150.

PowerBook 500 Series
====================

M1910

AC adapter for Macintosh PowerBook 500 series computers.

PowerBook 190 & 5300 Series
===========================

M3747

AC adapter for Macintosh PowerBook 5300 and 190 series computers.

PowerBook (Duo) 200 & 2300 Series
=================================

M7783 (Duo Adapter)

PowerBook Duo 210, 230, 250, 270c, and 280 computers include a 25 W power adaptor.

M2693 (Duo Adapter)

The PowerBook Duo 280c included a 36 W power adaptor which is fully backward compatible with all Duo computers.

M4174 (Duo Adapter)

The PowerBook Duo 2300c includes a 36 W power adaptor which is fully backward compatible with all Duo computers.

=========

BATTERIES

=========

PowerBook 100 Series

M3053

A lead acid battery, which only works with the PowerBook 100.

M5417

A 2.5 amp battery; which shipped with the PowerBook 140, 145, 150, and 170. This battery works with the PowerBook 140, 145, 145b, 160*, 165*, 165c*, 170, 180*, and 180c*.

NOTE: While this battery works with the preceding PowerBook computers that are marked with an asterisk (*), Apple does not recommend using this battery with these computers due to short battery life.

M5653

A 2.8 amp battery; shipped with the PowerBook 160 and 180, and works with the PowerBook 140, 145b, 150, 160, 165, 165c, 170, and 180c.

M5654

A 2.9 amp battery; shipped with the PowerBook 165c and 180c, and works with the PowerBook 140, 145b, 150, 160, 165, 165c, 170, and 180c. This battery provides the most battery life of all Apple Nickel Cadmium (NiCad) batteries.

PowerBook 500 Series

M1908

The Nickel Metal Hydride (NiHM) battery for the PowerBook 500 series.

PowerBook 190 & 5300 Series

M3254

The Nickel Metal Hydride (NiHM) for the PowerBook 190 and 5300 series computers.

PowerBook (Duo) 200 & 2300 Series

M7782

A Duo Type I battery, which shipped with the PowerBook Duo 210/230. The battery door could interfere with proper seating of the battery. The door must be in a locked position when inserted in the Duo. The battery works in newer Duo computers, but because this battery provides less power, battery life is greatly diminished when used in newer PowerBook Duos. This battery works with PowerBook

Duo Enabler 201.

M1499

A Duo Type II battery shipped with the PowerBook Duo 250, 270c, and 280. This battery has a High Capacity Type II logo, twice the battery life of a Type I battery. A new battery charger was required to charge these and newer batteries. The Type II battery requires PowerBook Duo Enabler 1.0.

NOTE: If an Express Modem is installed make sure the battery patch extension is installed.

M1499

A Duo Type III battery, which shipped with the Duo 280 and 280c. This battery has 15% more power than the Type II and requires PowerBook Duo Enabler 2.0 if using system software 7.1.1 or greater. If you do not have system software 7.1.1, you should just install the Type III battery extension. The Type III extension is not required with the PowerBook Duo 2.0 enabler.

M2780

PowerBook High-Capacity Duo Type III Rechargeable Battery that shipped with the Macintosh PowerBook (Duo) 2300c.

==========

BATTERY CHARGERS

==========

PowerBook 100 Series
==========

M1027LL/A

Use this model with the AC adapter that comes with the PowerBook. This charger works with the PowerBook 140, 145b, 150, 160, 165, 165c, 170, 180, and 180c.

M5130LL/A

The battery charger for the PowerBook 100.

PowerBook 500 Series
==========

M1910

Macintosh PowerBook 500 Series AC Adapter.

PowerBook 190 & 5300 Series
==========

M3747

Macintosh PowerBook Power Adapter for 5300 and 190 series

PowerBook (Duo) 200 & 2300 Series
==========

M7778

The first Duo battery charger. This charger only charges Type I batteries.

M1812

The second Duo battery charger. This battery charger charges Type I, II, and III batteries.

M4178

The third Duo battery charger. This battery charger charges Type I, II, and III batteries.

Article Change History:
16 May 1996 - Corrected minor typographical errors
22 Feb 1996 - Added part numbers for 500, 190, 5300, and 2300 series.
06 Mar 1995 - Added keyword; made several technical updates and clarifications.
02 Apr 1997 - Updated Duo 200 & 2300 Power Adapter section.

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Tech Info Library Article Number:16168

Tech Info Library

System 7.5: ATM Upgrade to Version 3.8 Info (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: ATM Upgrade to Version 3.8 Info (2/95)

==========

Article Created: 02 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

Our customers are wondering why Adobe Type Manager (ATM) 3.8 was not included in System 7.5 and why Apple does not provide the upgrade to ATM 3.8.

DISCUSSION ----------

Adobe Technical Support has indicated that customers can call Adobe (800-833-6687) to upgrade from version 3.7 to 3.8.

The upgrade costs $29.95 and includes 30 fonts. Primarily, only Power Macintosh customers should be interested in the 3.8 version as it now has native code.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16169

System 7.5 MUK: About CD Extras Read Me (4/97)

Revised: 5/2/97
Security: Everyone

System 7.5 MUK: About CD Extras Read Me (4/97)

==========

Article Created: 02 September 1994
Article Reviewed/Updated: 29 April 1997

TOPIC ----------

The following article is the "CD Extras ReadMe" from the System 7.5 Multi-Pack Upgrade Kit.

DISCUSSION ----------

About CD Extras

IMPORTANT If you have questions about third-party application programs in the CD Extras Folder, contact the software vendor directly. The telephone number or address for each vendor is located with the software program.

The Apple and third-party utilities included in this folder add powerful functionality to System 7.5. The various tours in this folder will help you learn and use new System 7.5 features. The folder includes the following:

PowerTalk Extras

- Personal gateways from third-party vendors let you take advantage of PowerTalk's Mailbox for sending to and receiving from a variety of sources, including CompuServe, faxes, the Internet, pagers, and QuickMail. When installed on your Macintosh or PowerBook computer, a personal gateway and provides direct access to a specific communication service.

- Apple's PowerTalk Direct Dialup Mail lets you exchange mail with PowerTalk users everywhere–not just on your computer network. If you have a modem and a telephone line, you can connect to other PowerTalk users and exchange mail and documents.

- The PowerTalk Tour gives you an overview of PowerTalk features.

QuickDraw GX Extras

- QuickDraw GX Print Extensions by Pierce Software, Inc. enhance your QuickDraw GX printing capabilities. With programs that support QuickDraw GX, the print extensions let you print watermarks in the background of each page and print 2,3,4, 6, 9, or 16 pages on each printed page.

- Linotype-Hell's QuickDraw GX Type Expo is a tour of new features found in QuickDraw GX fonts. Your computer must be configured correctly to run the Type Expo, or the system crashes. For configuration information, see the Read Me file that comes with the software.

Other Extras

- a solitaire game called Eric's Solitaire Sample that includes Klondike and Eight-off (by Delta Tao Software, Inc.)
- Macintosh QuickTime 2.0 extras
- software to upgrade to PlainTalk version 1.3 and At Ease version 2.0.3

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Article Change History:
01 May 1997 - Removed out dated on line references.
16 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

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Tech Info Library Article Number:16171

Tech Info Library

System 7.5 MUK: Administrator Tools Read Me (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5 MUK: Administrator Tools Read Me (2/95)

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Article Created: 02 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

The following article is the "Administrator Tools ReadMe" from the System 7.5 Multi-Pack Upgrade Kit.

DISCUSSION ----------

Read Me for Administrator Tools

The Administrator Tools folder contains utilities that help a network administrator or other expert perform the group upgrade to System 7.5.

The following items are included in this folder:

- User Instructions : printable instructions that help the user connect to the upgrade server.

- Basic Connectivity Set: tools to be used with the Communications Toolbox installed as part of System 7.5. (Some application programs use one or more of these tools; see the Read Me file in the Basic Connectivity Set folder for information.)

- Disk Images: the disk image files and the Disk Copy program with which you create installation disks for System 7.5.

- LaserWriter Namer: a new version of the utility used to name a LaserWriter printer.

- Network Access: the Network Access Disk contains minimal system software and network software that can be used to start up any Macintosh (newer than Macintosh Plus) and to connect to a server by means of a LocalTalk or EtherTalk network connection.

- AppleShare 3.0.3 Patch: double-click the icon of the AppleShare 3.0.3 Patch if you have are not using AppleShare 4.0 and you plan to continue using version 3.0 of this software.

For more information about the contents of each folder, see the Read Me files in each folder or consult the System 7.5 Group Upgrade Handbook in the System 7.5 upgrade package. For a summary of new features in System 7.5, see Chapter 6, “What’s New,” of the System 7.5 Upgrade Guide (also in the upgrade package).

Article Change History:
16 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16172

Tech Info Library

System 7.5 MUK: MacLink®Plus Version 7.52 Read Me (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5 MUK: MacLink®Plus Version 7.52 Read Me (2/95)

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Article Created: 02 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

The following article is the "MacLink®Plus Version 7.52 ReadMe" from the System 7.5 Multi-Pack Upgrade Kit.

DISCUSSION ----------

MacLink®Plus Version 7.52
System 7.5 Upgrade Kit Installation Notes

The MacLinkPlus Installer

Just double-click on the MacLinkPlus Installer. It will check your system configuration, select the most likely installation options, and lead you through the installation process. Descriptive information is provided for each option, and you will have the opportunity to review, and if necessary, change the selected options.

Installing from a CD

The MacLinkPlus Installer suggests you install after restarting your Macintosh with Extensions turned off to avoid any conflicts with your existing Extensions. If you wish to install with Extensions off and you are installing from a CD, you should first copy the entire "DataViz Translators" installation folder to your hard drive, then restart with your Extensions off. After you have restarted, open the installation folder from the hard drive and double-click the MacLinkPlus installer.

Special Considerations

There are special considerations to be aware of for certain translations, such as when translating between frame-based and flat word processors, or between 2-D

and 3-D spreadsheets.

We strongly advise you to read the Read Me document that is installed in your MacLinkPlus folder, especially if you will be using files from one or more of the following programs: ClarisWorks; Lotus WK3; MacWrite Pro; Nisus; or WordPerfect 6.0.

The Read Me document is also available as “Late Breaking News” in your installer’s completion window.

DataViz, Inc.
55 Corporate Drive
Trumbull, CT USA 06611
(203) 268-0030

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Article Change History:
16 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16173

Tech Info Library

System 7.5 MUK: GeoPort Update Information Read Me (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5 MUK: GeoPort Update Information Read Me (2/95)

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Article Created: 2 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

The following article is the "GeoPort Update Information ReadMe" from the System 7.5 Multi-Pack Upgrade Kit.

DISCUSSION ----------

GeoPort Update Information

Version 1.0.1 of "GeoPort for Power Macintosh" was not available for this version of the CD.

GeoPort will be updated in it's next release to work with Macintosh System 7.5. We expect the release to be available by the end of 1994. Apple apologizes for any inconvenience this may cause you in the interim.

You may contact the Apple Assistance Center at 1-800-SOS-APPL for ordering information.

NOTE

This is not part of the Read Me file. GeoPort for Power Macintosh 1.0 and 1.0.1 will function with System 7.5, but there are outstanding bugs customers need to work around:

- 1.0 has two problems with virtual memory:
  - Network file transfers will fail when VM is on.
  - Data connections will fail when VM is on.

- 1.0 and 1.0.1 will crash the computer on restart if there are any Faxes waiting to be sent in the Waiting to be Faxed folder.

- The modem speaker must be turned off at all times through the Express

Modem control panel to prevent intermittent crashing.

This article can help you locate the GeoPort for Power Macintosh 1.0.2 update, it is available on online services:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

Article Change History:
16 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
05 Oct 1994 - Added NOTE section to article.

Support Information Services

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Tech Info Library Article Number:16174

Tech Info Library

System 7.5 MUK: Printer Update Read Me (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5 MUK: Printer Update Read Me (2/95)

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Article Created: 02 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

The following article is the "Printer Update ReadMe" from the System 7.5 Multi-Pack Upgrade Kit.

DISCUSSION ----------

Read Me for Printer Update

This folder contains the Installer program and new printer software for computers on your network that will continue to use System 6.

If you are using System 6 and you share a printer with people who are using System 7 (version 7.0 or later), you need to upgrade your printer software. (When a System 7 computer prints on a LaserWriter than has been initialized with an earlier printer driver, its driver causes the printer to restart. Although this process is harmless, it is time-consuming and also clears fonts from the printer’s memory.)

You don’t need to upgrade your printer software if you are upgrading from system software version 7.0 or 7.1 to System 7.5, or if you don’t share a printer with anyone who uses System 7 or 7.1.

To upgrade your printer software:

1. Double-click the Installer icon in this folder.
2. When the Welcome screen appears, press Return.
3. When the Installer dialog box appears, make sure the name of your startup disk appears next to the
hard disk icon. If necessary, click Switch Disk until the correct name appears.
4. Click Install.
5. When the installation is complete, click Quit.

If you need help using the Installer, see your network administrator.

Article Change History:
16 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16175

Tech Info Library

System 7.5 MUK: Before You Install 7.5 Read Me (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5 MUK: Before You Install 7.5 Read Me (2/95)

==========

Article Created: 02 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

The following article is the "Before You Install 7.5 ReadMe" from the System 7.5 Multi-Pack Upgrade Kit.

DISCUSSION ----------

Read Me

Before you install Macintosh system software version 7.5, read the important information below.

Disk First Aid and HD SC Setup

To ensure a smooth upgrade to system software version 7.5, make sure you use Disk First Aid to verify the hard disk and Apple HD SC Setup to update the hard disk before installing the system software. For instructions, see “Before You Install System 7.5” in the Macintosh System 7.5 Group Upgrade Handbook.

IMPORTANT If you are installing software on a PowerBook 150, Macintosh Quadra 630, or Macintosh LC 630, you should just run Disk First Aid to verify the hard disk. You do not need to update your hard disk.

RAM Disk

If you use a RAM disk, turn it off before you install system software version 7.5. When the RAM disk is active during software installation, it uses too much memory and prevents your system from starting up.

Quit All Applications

Before you begin installing system software, quit all applications.

Installation Time

Depending on your model of Macintosh, installation may take fifteen minutes to about an hour.

PowerBook 150 with Internal Modem

There is a compatibility problem with the PowerBook 150 with an internal modem and some communication software programs. We have included a fix for this problem in the Before You Install folder (inside the Installation folder). After you install System 7.5 on a PowerBook 150 with an internal modem, open the Before You Install folder, drag PB 150 Modem Patch to the System Folder icon, and then restart your computer.

Server or Network Programs

Any time you upgrade or re-install your Macintosh system software, you should also re-install your server or network programs, such as AppleShare or Apple Remote Access. For instructions, see the information that came with your server or network software.

IMPORTANT If you have Workgroup Server 95, do not upgrade to system software version 7.5. Workgroup Server 95 works only with system software version 7.0.1 and System Update 3.0.

Possible Startup Problem on Quadra 900 & 950

After you install System 7.5 on a Macintosh Quadra 900 or 950, it is possible that you may encounter a problem starting up your computer. If you have trouble starting up your computer, do these steps to solve the problem:

1. Restart your computer while holding down the Shift key (to start up without extensions).

2. When the computer is ready, open your Extensions folder (inside the System Folder) and drag SCSI Manager 4.3 out of the Extensions folder.

3. Restart your computer again.

4. After you've started up successfully, if you need the functionality that SCSI Manager 4.3 provides move SCSI Manager 4.3 back to your Extensions folder and restart. Your computer should behave normally.

Article Change History:
16 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16176

Tech Info Library

System 7.5 MUK: MacLinkPlus Manual Offer Read Me (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5 MUK: MacLinkPlus Manual Offer Read Me (2/95)

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Article Created: 02 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

The following article is the "MacLinkPlus Manual Offer ReadMe" from the System 7.5 Multi-Pack Upgrade Kit.

DISCUSSION ----------

GET FULL MANUALS FOR JUST $10!* (Yes, this includes shipping & handling!**)

NOTE: You must have REGISTERED MacLinkPlus with us already (or do so when placing this order). A "QuickStart/Registration card" should have been included in your Macintosh System Upgrade kit package.

*Offer good only 60 days from the date of purchase of your upgrade package. (You must provide proof of purchase). **Shipping included in USA only; outside USA add $5 each.

Pay by CREDIT CARD (Visa, M/C or AMEX with expiration date) or CHECK (US funds).

Complete the form below and...
- FAX to: "Attn: Manual Offer" (203) 268-4345
- or CALL our Sales & Upgrade Hotline: 800 733-0030 or (203) 268-0030
- or MAIL to:
Attn: Manual Offer
DataViz, Inc.
55 Corporate Drive
Trumbull, CT 06611 USA

••••••••••

NAME:
COMPANY:
ADDRESS:

CITY:
STATE:
ZIP:
COUNTRY (if outside USA):
PHONE NUMBER:
FAX NUMBER:
E-MAIL:
MACINTOSH MODEL (i.e., Power Macintosh 7100, PowerBook 540):
SERIAL NUMBER from MacLinkPlus Registration Card (IMPORTANT):
DATE OF PURCHASE of System 7.5 Upgrade Kit (with copy of receipt):
Number of manuals at $10 each (limit to # of Macs your license covers):
Credit Card#:
Expiration Date:
Signature:
Part# MUKSO-257
••

Article Change History:
16 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16177

Tech Info Library

System 7.5 MUK: QuickDraw GX Installation Read Me (4/97)

Revised: 4/3/97
Security: Everyone

System 7.5 MUK: QuickDraw GX Installation Read Me (4/97)

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Article Created: 02 September 1994
Article Reviewed/Updated: 02 April 1997

TOPIC ----------

The following article is the "QuickDraw GX Installation ReadMe" from the System 7.5 Multi-Pack Upgrade Kit.

DISCUSSION ----------

URGENT--Read Me!

Contents

Before you install QuickDraw GX
- Printing and Faxing from QuickDraw GX
- QuickDraw GX and WorldScript II
- QuickDraw GX and At Ease

QuickDraw GX Printer Driver Upgrade Information
- CalComp
- Epson America
- GCC Technologies
- GDT Softworks Inc.
- Hewlett-Packard
- Kodak
- Lasermaster
- Lexmark International
- Microspot
- NEC Technologies
- QMS, Inc.
- Seiko Instruments
- SuperMac Technology
- Tektronix
- Xerox

QuickDraw GX Fax Information
- Express Modem
- GeoPort
- Global Village
- STF Technologies
- Cypress Research

Using Fonts
- Type 1 Fonts Enabled During Installation
- Adobe Type Manager (ATM) 3.7
- Enabling Type 1 Fonts After Installation
- Restoring Type 1 Fonts to Their Original State
- Removing Duplicate Fonts

Before You Install QuickDraw GX

Printing and Faxing from QuickDraw GX

To print with QuickDraw GX, you need a QuickDraw GX printer driver for your printer.

- If you have an Apple printer, the QuickDraw GX versions of your currently installed printer drivers are installed with the QuickDraw GX software. All Apple printers (except the Apple Color Printer, and Color StyleWriter Pro) have GX drivers. The Color StyleWriter Pro will have a GX driver available soon.

- If you have a non-Apple printer, check with your Apple-authorized dealer or contact your printer vendor directly to make sure that you have the right printer driver for your printer. For printer vendor contact information, see the "QuickDraw GX Printer Driver Upgrade Information" section below.

- At the time of shipping, System 7.5 does not carry a QuickDraw GX version of a fax driver. These will be available very soon. For fax driver information, contact Apple Customer Assistance at 1-800-SOS-APPL or contact your fax vendor. For more information, see the "QuickDraw GX Fax Information" section later in this file.

QuickDraw GX and WorldScript II

Make sure that you are using WorldScript II version 7.2 or later. QuickDraw GX is not completely compatible with versions of WorldScript II prior to 7.2.

QuickDraw GX and At Ease

Make sure that you are using At Ease version 2.0.3.

QuickDraw GX Printer Driver Upgrade Information

If you are using a non-Apple printer, use the information below to contact the

vendor about a printer driver upgrade. If your printer's vendor is not listed here, see the manual that came with your printer for contact information.

CalComp
PostScript compatible printers from CalComp should work with the standard LaserWriter GX PostScript driver. If you have any problems using QuickDraw GX with CalComp products and are within the United States or Canada, call CalComp at 800-451-7568. Outside the United States or Canada, contact the office in your area as listed in an appendix of your User's Guide.

Epson America
For information about Epson QuickDraw GX drivers, call the Epson End User Support Center at 1-800-922-8911 after October 1, 1994.

GCC Technologies
For information about GCC QuickDraw GX drivers and upgrade information contact GCC Technical Support at one of these numbers:

Phone Number:	617-276-8620
Fax Number:	617-275-1115
CompuServe:	67004,2302
AppleLink:	D0126
GEnie:	GCC.TECH
America OnLine:	GCC TECH

GDT Softworks Inc.
For upgrade information about GDT Softworks products (PowerPrint 2.5, PowerPrint/GX 3.0, PowerPrint/LT 3.0, PowerPrint/NW 3.0, PLOTTERgeist 3.0, PowerPlot 2.0, PowerPlot/LT 2.0, StyleScript 2.0), contact GDT:

GDT Softworks Inc.
Customer Service Upgrades
4664 Lougheed Highway, Suite 188
Burnaby, BC V5C 6B7 Canada

Phone Number:	1-800-663-6222 or 604-291-9121
Fax Number:	604-291-9689
AppleLink:	GDT.MKT
CompuServe:	72137,3246
Internet:	customer_service@gdt.com

Hewlett-Packard
If you need Post-Sale Assistance, Technical Assistance, or if you have any kind of questions about H-P peripherals, contact the H-P Computer Products Customer Support Center at 208-323-2551.
For users of DeskWriter 500 series printers, the fastest way to get a QuickDraw GX printer driver is from one of these electronic on-line services:

AppleLink:	Hewlett-Packard folder
CompuServe:	HP Peripherals forum (HPPER) Library 9
Internet:	IP address - 192.6.71.2 Name - Anonymous Password - Send User Identification

HP Download Service: 208-344-1691 (modem settings: parity,N; data bits, 8; stop bits, 1)

To receive detailed instructions on accessing these on-line services, contact HP FIRST, Hewlett-Packard's document FAX retrieval service:
Inside the U.S. and Canada: 1-800-333-1917 (Then press 1 for HP FIRST.)
Outside the U.S. and Canada: 208-344-4809

To receive a disk with the QuickDraw GX printer driver, contact the HP Software Distribution Center at 303-339-7009. A nominal charge for materials and shipping applies.

Kodak
Call 1-800-CDKODAK, for technical support. To update and provide discussion for EKC drivers and print utilities, log on to CompuServe and 'go kodak'. In the Library menu, select browse and in the browse sections, select Kodak Printers. You can download these upgrades from CompuServe!

Lasermaster
For QuickDraw GX driver updates from Lasermaster, call Lasermaster Technical Support at 612-944-8509.

Lexmark International
Lexmark/IBM customers can get the latest QuickDraw GX drivers from:

Technical Support:	606-232-3000
Lexmark Bulletin Board:	606-232-5238
Internet:	anonymous ftp at ftp.lexmark.com
CompuServe:	Go Lexmark

Microspot
For information about "MacPlot Raster GX" and "MacPlot Pen Plotter Professional GX" Chooser level GX drivers or upgrade information, contact the Sales Department:

Microspot
12380 Saratoga-Sunnyvale Road, Suite 6
Saratoga, CA 95070

Phone Number:	1-800-622-7568 (1-800-MACPLOT) or 408-257-4000
AppleLink:	MICROSPOT
America OnLine:	MICROSPOT1
CompuServe:	70274,3650

NEC Technologies
Contact NEC Technical Support at 800-388-8888 or use one of the following:

NEC Bulletin Board:	508-635-4706
Main Phone Number:	508-264-8000
Main FAX Number:	508-264-8673
Support on AppleLink:	NEC Technologies forum in Third Parties

QMS, Inc.
For assistance with QMS printers, drivers, and driver updates, call QMS Customer

Technical Assurance:

Phone Number: 205-633-4500
FAX Number: 205-633-3716

Seiko Instruments
QuickDraw GX is supported by Seiko Instruments for the ColorPoint PostScript printer line with four drivers:

Printer Names	Required GX Driver
ColorPoint PS, PSX or PSN	ColorPoint PS/PSX/PSN GX driver
ColorPoint PSE	ColorPoint PSE GX driver
ColorPoint PSH	ColorPoint PSH GX driver
ColorPoint PSF	ColorPoint PSF GX driver

All driver upgrades are free and are available now:
Technical Support Department: 1-800-553-5312 (inside USA)
Technical Support Department: 408-922-5800
Seiko Bulletin Board: 408-428-9810

SuperMac Technology
For the SuperMac ProofPositive and the SuperMac Splash, contact SuperMac Technical Support at 1-800-541-7680.

Tektronix
In the US and Canada, call Customer Support at 1-800-835-6100 or use the following:

Fax Number:	503-682-2980
AppleLink:	TEK.SUPPORT
Tektronix Bulletin Board:	503-685-4505
International Customers:	Please contact your local Tektronix office

Xerox
Xerox offers QuickDraw GX printer drivers for Xerox DocuTech Network Publisher Model 90 and Xerox DocuTech Network Publisher Model 135. For information on how to obtain the driver, customers can send an electronic mail message to:
GX.Roch817@Xerox.com

QuickDraw GX Fax Information

To fax with QuickDraw GX, you need a QuickDraw GX fax driver for your modem. Use the information below to contact the vendor about a fax driver for your modem.

Express Modem
At the time of shipping, the Express Modem faxing capability is not compatible with QuickDraw GX. The express modem fax driver for QuickDraw GX will be available very soon.

GeoPort
GeoPort 1.2 is not QuickDraw GX compatible. The next version of GeoPort will be QuickDraw GX compatible.

Global Village
Global Village plans to add QuickDraw GX support to a future version of GlobalFax, and will send out a press release and an online-services announcement when it is available. To find the latest information on Global Village products, check Global Village forums on the following online services:

America Online:	global
CompuServe:	go global
Global Village BBS:	415-390-8334

Cypress Research
If you use Cypress Research FaxPro II, call 408-752-2700 and ask for Technical Support.

STF Technologies
For information about our "FaxPrint GX" printer driver contact STF Customer Service:

Phone Number:	816-463-2021
Fax Number:	816-463-7958
Bulletin Board:	816-463-1131
CompuServe:	74740,1244 (Go STFTech)
America OnLine:	STFtech

Using Fonts

Type 1 Fonts Enabled During Installation

During installation, QuickDraw GX enables any Type 1 fonts found in the System Folder, the Fonts folder, or the Extensions folder. However, you must ensure that each Type 1 font family is in its own suitcase. The installer enabler will not enable your Type 1 fonts if multiple font families are contained in one suitcase. QuickDraw GX does the following:

- creates a new folder called •Archived Type 1 fonts• in your Fonts folder
- moves all suitcases referring to Type 1 fonts to the •Archived Type 1 fonts• folder
- moves all Type 1 outline font files to the •Archived Type 1 fonts• folder
- makes a copy of the original suitcase and puts the copy in the Fonts folder
- creates one or more 'sfnt' font resources from the corresponding Type 1 outline font files and places the resources into the suitcase in the Fonts folder

The 'sfnt' (scalable font) resource was originally specified to contain TrueType font data. When QuickDraw GX enables a font, the 'sfnt' resource may contain either TrueType font data or PostScript Type 1 font data.

You can find instructions for installing QuickDraw GX in the Macintosh System 7.5 Group Upgrade Handbook.

Adobe Type Manager version 3.7 (ATM GX)

ATM version 3.7 (ATM GX) is installed with QuickDraw GX. Type 1 fonts will display and print properly only if ATM 3.7 is installed and turned on. As with previous versions, ATM 3.7 rasterizes Type 1 font data from the POST resource in conventional outline font files (file type LWFN). In addition, ATM 3.7 rasterizes Type 1 font data from the 'sfnt' resource in suitcase files (file type FFIL). ATM 3.7 does not include font substitution capability.

Enabling Type 1 Fonts After Installation

You may need to enable Type 1 fonts that are not located in the System Folder, the Fonts folder, or the Extensions folder. Or you may need to enable Type 1 fonts installed after you install QuickDraw GX. To enable Type 1 fonts, use the Type 1 Enabler (one of the QuickDraw GX Utilities). You must ensure that each Type 1 font family is in its own suitcase. The Type 1 Enabler will not enable your Type 1 fonts if multiple font families are contained in one suitcase.

To install the QuickDraw GX Utilities and enable Type 1 fonts, see the instructions in Chapter the sections named "Installing QuickDraw GX" in the Macintosh System 7.5 Group Upgrade Handbook or the Macintosh System 7.5 Upgrade Guide.

The Type 1 Enabler supports only Type 1 fonts. If the Type 1 Enabler program encounters a suitcase containing Type 3 fonts, it displays the message "Contains a Type 3 font program" and does not enable the suitcase.

The Type 1 Enabler does not enable hybrid fonts. If you see the message "Contains a hybrid font program (see README file for details)" when the Type 1 Enabler attempts to enable Optima or ITC Eras, it may be because you have an old version of these fonts. These fonts cannot be enabled because they are hybrid fonts. If you are a registered owner of Optima or ITC Eras, call Adobe Systems Technical Support to obtain an upgrade to the non-hybrid versions of these families.

Removing Duplicate Fonts

To make sure that QuickDraw GX properly manages currently installed fonts, you should make sure you have no duplicate fonts installed in the System Folder. Remove any duplicates that you find.

Article Change History:
02 Apr 1997 - Removed referece to specific on line services.
16 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
12 Oct 1994 - Revised the QuickDraw GX Fax Information section.

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Tech Info Library Article Number:16178

Tech Info Library

System 7.5 MUK: User Instructions Read Me (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5 MUK: User Instructions Read Me (2/95)

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Article Created: 02 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

The following article is the "User Instructions ReadMe" from the System 7.5 Multi-Pack Upgrade Kit.

DISCUSSION ----------

Read Me for User Instructions

The two versions of the User Access Template in this folder contain instructions for connecting to a group upgrade file server.

You can customize either version of this template with the names of the zone, server, and volume containing the installation software, then distribute the instructions to users.

The template is provided in two formats: a Microsoft™ Word 5.0 document and a MacWrite II document.

Article Change History:
16 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16179

Tech Info Library

System 7.5 MUK: What is MacLinkPlus Read Me (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5 MUK: What is MacLinkPlus Read Me (2/95)

==========

Article Created: 02 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

The following article is the "What is MacLinkPlus ReadMe" from the System 7.5 Multi-Pack Upgrade Kit.

DISCUSSION ----------

What is MacLinkPlus and why install it?

MacLinkPlus is file translation software which allows you to:

- Easily use DOS/Windows files on your Mac
- Convert Mac files into DOS/Windows files
- Convert between different Mac formats

When translating between different Mac and PC formats, such as Word Mac and WordPerfect for Windows, MacLinkPlus makes sure the file's original formatting remains intact (i.e., bold, italics, graphics, etc.). It converts thousands of combinations of files including word processing, spreadsheet, graphics and database formats.

Who should install it?

You should install MacLinkPlus if you think you will ever have to use files from DOS/Windows users or other Mac users who use applications that are different than yours (i.e., you use Word Mac, but your colleagues use ClarisWorks or WordPerfect, etc.)

It's there when you need it - automatically!

Perhaps the best thing about MacLinkPlus is that you won't see it until you need it. Your System 7.5 Upgrade kit came with a System Extension called Macintosh Easy Open. When you double-click on a file that wasn't created by an

application you have, Easy Open pops up choices of applications on your Mac you can open the file into with the help of MacLinkPlus file translation.

The MacLinkPlus QuickStart Registration card included in your System 7.5 Upgrade package provides more information on the uses of MacLinkPlus.

Article Change History:
16 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16180

Tech Info Library

Macintosh 630 Family: No Built-in Portrait Display Support 9/94

Revised: 10/11/94
Security: Everyone

Macintosh 630 Family: No Built-in Portrait Display Support 9/94

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Article Created: 2 September 1994

TOPIC ----------

Can I use the Apple Portrait Display with a Macintosh Quadra 630 computer?

DISCUSSION ----------

None of the Macintosh 630 family computers provide onboard video support for the Apple Portrait Display. In order to support the Apple Portrait Display you need a separate display card. The Macintosh 630 family computers have an LC style PDS slot, so Apple's Portrait Display Card will not work in this computer. However, if a third party video card supports the LC style PDS slot and the Portrait Display, it should work.

The Portrait Display resolution is 640 pixels horizontal by 870 pixels vertical.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16181

Tech Info Library

Multiple Scan 15 Display: Interference Causes Skewing (8/94)

Revised: 9/2/94
Security: Everyone

Multiple Scan 15 Display: Interference Causes Skewing (8/94)

==========

Article Created: 2 September 1994

TOPIC -----

I have a Multiple Scan 15 Display and the top of the video image is skewed. As the is rotated around in a circle, the problem gets worse or better. This problem occurs even when the monitor is not sitting on the computer or close to the computer.

DISCUSSION -----

The symptoms you describe appear to be a classic case of external interference. Your guess that it is most likely due to the earth's magnetic field is most likely correct. In any event, it seems as though something external to the display is causing the problem. Try the following:

1. Move the display/CPU to a different building and see if the problem persists. My guess is that it will then work satisfactorily --indicating a problem in the environment you have it now.

2. If there are metal objects in the area (ie. large metal cabinets, desks, or other fixtures), use a hand held degaussing coil to demagnetize these items. They can be the source of the problem.

Finally, if the problem is the earth's magnetic field there is not much you can do to correct the situation unless you move the monitor elsewhere, or swivel it on its axis to a point that minimizes the distortion. All monitors can adversely be affected by stray magnetic fields.

Support Information Services

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Tech Info Library Article Number:16182

Tech Info Library

NSI Version in System 7.5 Install (2/95)

Revised: 2/15/95
Security: Everyone

NSI Version in System 7.5 Install (2/95)

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Article Created: 2 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

What version of the Network Software Installer (NSI) software is included with System 7.5.

DISCUSSION ----------

The networking software installed with System 7.5 is the same found in NSI 1.4.4.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.
Support Information Services

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Tech Info Library Article Number:16185

Tech Info Library

A/UX and AppleShare PDS File (9/94)

Revised: 9/2/94
Security: Everyone

A/UX and AppleShare PDS File (9/94)

==========

Article Created: 2 September 1994

TOPIC -----

I'm finding that an AppleShare PDS file doesn't get created when you turn on personal file sharing on a computer running A/UX (as it does on a regular Macintosh). Where do the access privileges get stored?

DISCUSSION -----

There is no file called "AppleShare PDS" in the File Sharing implementation of the A/UX Macintosh environment.

Instead of that file, the information normally contained in the PDS file is in the files located in the folder:

```
System Folder
   Preferences
      File Sharing
```

The files will have names similar to:

```
.HfsPDF.2.41.52.PM
.HfsPDF.6.15.47.AM
.UnixRoot
```

The files with the name .HfsPDF.??.??.??.?? are the PDS information for each one of the Macintosh HFS volumes attached to the server. The ??.??.??.?? portion of the name reflects the creation date for the volume.

The file .UnixRoot contains the PDS information for the "/" volume. This includes other UFS mounted volumes.

The implementation is similar to the way File Sharing saves access data for Read Only media and Removable Media.

If you remove these files, the access information will be lost.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16186

Tech Info Library

Japanese Language Kit: WordPerfect 3.0 and Date Format (3/95)

Revised: 3/3/95
Security: Everyone

Japanese Language Kit: WordPerfect 3.0 and Date Format (3/95)

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Article Created: 6 September 1994
Article Reviewed/Updated: 3 March 1995

TOPIC ----------

Customer is running System 7.1, Japanese Language Kit (JLK) 1.0 or 1.1, and WordPerfect 3.0.

After quitting WordPerfect 3.0, all dates in the Finder window are displayed in Japanese (if a Japanese font is selected in the "Font for Views"). They must restart the computer to return to U.S. date formats.

STEPS TO DUPLICATE:
Step 1
Clean install System 7.1 or System 7 Pro on any Mac.

Step 2
Install JLK 1.0 and WordPerfect 3.0 (or 3.0a)

Step 3
Open hard drive window, set View to "by Name," set "Font for Views" to Osaka and select "Show Date" in the Views control panel. Note the U.S. date format in the open window.

Step 4
Open WordPerfect, type anything in English, save and quit. The Finder window now displays Japanese date formats.

Step 5
Restart and dates return to U.S. formats.

We also observe that if you load the Chinese Language kit 1.0 or 1.1, garbage characters appear in the Japanese date format when a Chinese font is selected as the font for views.

DISCUSSION ----------

We have verified that the dates do change when WordPerfect 3.0 has been used with the Japanese Language Kit to create a document.

Updating to WordPerfect 3.1 will cure the issue. Contact Novell about the upgrade.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor, Novell, for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
03 Mar 1995 - Added information about WP 3.1 upgrade.

Support Information Services

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Tech Info Library Article Number:16189

Tech Info Library

QuickDraw GX: Read Me File Error and WorldScript II 7.2 (4/97)

Revised: 5/2/97
Security: Everyone

QuickDraw GX: Read Me File Error and WorldScript II 7.2 (4/97)

==========

Article Created: 6 September 1994
Article Reviewed/Updated: 2 May 1997

TOPIC -----

The QuickDraw GX "URGENT--Read Me!" file that comes with System 7.5 installation disks states "Make sure you are using WorldScript II version 7.2 or later. QuickDraw GX is not completely compatible with versions of WorldScript II prior to 7.2." This information is incorrect.

DISCUSSION -----

Using WorldScript II v7.2 is not enough to ensure Apple language kit compatibility with QuickDraw GX under System 7.5.

Chinese Language Kit

An updater has been posted to many online services which will provide the Chinese Language Kit compatibility with System 7.5. The Chinese Language Kit Updater Version 1.0 updates the Chinese Language Kit to version 1.1.1.

Japanese Language Kit

Apple will release an update for the Japanese Language Kit in Spring 1995 time frame. The update will be compatible with System 7.5 and QuickDraw GX.

For users of the Japanese Language Kit who need immediate compatibility, they can run their language kit with System 7.5 using and interim update available on CompuServe, and the Internet. (Located in System Software directory).

These articles can help you locate the software update mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates.

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
01 May 1997 - Removed out dated on line references.
27 Feb 1995 - Added information about the CLK and JLK Updaters.

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Tech Info Library Article Number:16190

Tech Info Library

Apple Workgroup Server 95: Recovering From a Crash (01/95)

Revised: 1/12/95
Security: Everyone

Apple Workgroup Server 95: Recovering From a Crash (01/95)

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Article Created: 6 September 1994
Article Reviewed/Updated: 12 January 1995

TOPIC ----------

This article describes recovering from a crash on an Apple Workgroup Server (WS) 95.

DISCUSSION ----------

Apple's Workgroup Server 95 is based on the A/UX operating system. A/UX integrates the Macintosh System 7 Finder interface with industry-standard UNIX. Because the Workgroup Server 95 is running A/UX, the procedure for recovering from a system crash is different than that used to recover a Macintosh running the Macintosh operating system.

Restarting the Server

The System 7 Finder runs as an A/UX process. Therefore it is possible for the Finder to be "locked up" but still have other A/UX processes running within the server.

Complete the following steps, in the order they are given, to reduce the chance of worsening the existing problem or causing further problems with A/UX during system shutdown and restart.

1) Simultaneously press and release the three keys: COMMAND-CONTROL-E. The COMMAND-CONTROL-E key sequence forces a restart of the Macintosh Finder process running within A/UX. After pressing and releasing the keys, wait for at least one minute for the Finder to restart before proceeding. If you are able to successfully restart the Finder process, it is recommended that you immediately restart the WS 95 by selecting the Restart option under the Special menu and go to the section on Running fsck.

2) If no response is generated by COMMAND-CONTROL-E, turn the Workgroup Server 95 off using the key switch on its front panel. Turn the key counter-clockwise to the "Off" position sends a signal to the main logic board to perform an orderly shutdown of A/UX processes. As before, wait at least one minute for this action to complete before assuming it was unsuccessful. If you are successful in shutting down the server, turn the key back to the "On" position, restart the server, and go to the section on Running fsck.

The last option for restarting the server is to press the Reset button on the front panel of the server. Do this only if both the previously mentioned steps were not successful.

Running fsck

When restarting the server after a system crash, it is recommended that you perform a manual file system check (fsck) from the A/UX Startup shell. Any file system inconsistency is made worse if you continue to use the file system (thus modifying it further) without running fsck.

To enter A/UX Startup, watch for the status box that says “Welcome to the Apple Workgroup Server 95” – it appears when you turn on the system. Click the Cancel button or press Command-. (period) to cancel the A/UX startup process and display the A/UX Startup shell. Once the A/UX Startup shell window is displayed, this command-line prompt appears:

startup#

At the prompt, type this UNIX command (using lower case):

fsck -y /dev/default

Press Return to start fsck. The fsck program lets you know which phase and what file system it is in at any given time. It may take several minutes to complete the check. For a complete description of all the phases of fsck, refer to the "Server Administration with A/UX" manual that came with your Workgroup Server 95.

On completion of fsck, if you see a message that says “FILE SYSTEM WAS MODIFIED” it is recommended that you run fsck again using the same command. You want fsck to make a complete check without changing anything.

Launching A/UX

Once the file system has been checked, you need to launch A/UX. At the startup prompt type this command and press Return:

launch

The server should now launch normally.

You may want to consider manually running fsck periodically (every 2 weeks) as part of your normal server maintenance. This could help to prevent system

crashes or poor server performance.

Article Change History:
12 Jan 1995 - Added keyword and made minor technical updates.

Support Information Services

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Tech Info Library Article Number:16194

Tech Info Library

LaserWriter Pro 810 UNIX Utility: Available by ftp (9/94)

Revised: 9/6/94
Security: Everyone

LaserWriter Pro 810 UNIX Utility: Available by ftp (9/94)

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Article Created: 6 September 1994

TOPIC ----------

I've got a LaserWriter Pro 810 and some UNIX workstations without floppy drives. My understanding is the LaserWriter Pro 810 UNIX disk is in UNIX or tar format, and is unreadable from a DOS or Macintosh computer.

Is there an ftp site where the LaserWriter Pro 810 UNIX software can be found?

DISCUSSION ----------

You are correct, the LaserWriter Pro 810 Utility for UNIX workstations was distributed in UNIX tar format on a floppy disk, which cannot be read from a DOS or Macintosh computer.

We have generated a compressed tar format file of the LaserWriter Pro 810 Utility for a generic UNIX workstation. It can be found at:

ftp.support.apple.com (130.43.6.3) under the /pub/lw810 directory.

The Read Me is also included. The files you need are "lw810.unix.Z" and "lw810.unix.readme".

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16195

Tech Info Library

Multiple Scan 15 Display: Compatibility with Macintosh II (2/96)

Revised: 2/8/96
Security: Everyone

Multiple Scan 15 Display: Compatibility with Macintosh II (2/96)

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Article Created: 6 September 1994
Article Reviewed/Updated: 8 February 1996

TOPIC ----------

This article covers compatibility issues with the Multiple Scan 15 Display and Macintosh II computers.

DISCUSSION ----------

Macintosh II, IIx, IIcx

Since these computers do not have built-in video support, a video card must be used. If the video card does not support software resolution switching, a video adapter may be required to display any resolution other than 640x480.

Macintosh IIsi, IIci

Out of the box, the built-in video in these computers does not support the Multiple Scan 15 Display. To use the Multiple Scan 15 Display with these computers, you must either use a compatible third-party display adapter, or use a separate video card instead of the built-in video.

Apple 8•24, 8•24GC Video Card

The Apple 8•24 and 8•24GC video card displays a resolution of 640x480 on the Multiple Scan 15 Display. In order to use another resolution, a display adapter is required.

Macintosh II 4-bit and 8-bit Video Cards

Some third-party display adapters allow you to use these video cards with Multiple Scan 15 Display.

Display adapters are available from several third-pary companies such as Enhanced Cable Technology, Griffin Technology, and MacAdapt.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
08 Feb 1996 - Added additional information on third-party display adapters.
25 Sep 1995 - Removed 4•8 from incompatible video cards.
30 Jan 1995 - Corrected Enchanced Cable Technology name.

Support Information Services

Copyright 1994-96, Apple Computer, Inc

Tech Info Library Article Number:16196

Tech Info Library

LaserWriter Fax Log: Contains Status of Transmissions (9/94)

Revised: 9/6/94
Security: Everyone

LaserWriter Fax Log: Contains Status of Transmissions (9/94)

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Article Created: 6 September 1994

TOPIC ----------

Is there a way of determining the status of a fax transmission from one of the LaserWriter Select 360's optional fax cards?

DISCUSSION ----------

LaserWriter Fax Log keeps a record of all the faxes you send from your computer through your fax-capable printer. Each time you send a fax, Fax Log adds to its list information about the recipient of the fax, the printer you used to send the fax, and the status of the transmission.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16197

GeoPort Telecom Adapter: Pin assignments (9/94)

Revised: 9/6/94
Security: Everyone

GeoPort Telecom Adapter: Pin assignments (9/94)

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Article Created: 6 September 1994

TOPIC --------------------

What are the pin assignments for the GeoPort Telecom Adapter?

DISCUSSION --------------------

The following are the GeoPort Telecom Adapter Mini-DIN 9 pin assignments:

Pin #	Standard Definition	GeoPort DMA Definition	GeoPort Non-DMA Definition
1	HSK(0)	POD RESET/ATT	POD RESET/ATT
2	HSK(I)	SCLK(I)	SCLK(I)
3	TxDa-	TxDa-	TxDa-
4	SHIELD_GND	GND_return	GND_return
5	RxDa-	RxDa-	RxDa-
6	TxDa+	TxDa+	TxDa+
7	GPi(A)	WAKEUP/TxHS	Unused
8	RxDa+	RxDa+	RxDa+
9	+5 VDC	DC Power	DC Power (If available)

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16199

Tech Info Library

Monitors CDEV: One Resolution on Multiple Scan Display (9/94)

Revised: 7/6/95
Security: Everyone

Monitors CDEV: One Resolution on Multiple Scan Display (9/94)

==========

Article Created: 6 September 1994
Article Reviewed/Updated: 06 July 1995

TOPIC ----------

I have a Multiple Scan 17 Display connected to a Power Macintosh computer, however the Monitors control panel only displays one resolution. I have tried reinstalling the system software and resetting the Parameter RAM (PRAM), but neither of these fixed the problem. What could be wrong?

DISCUSSION ----------

If the resolution options do not appear in the Monitors control panel, first try to reset the monitor settings using the controls on the front of the monitor. To reset all picture controls on the monitor, follow this step:

- While holding down the Control button on the monitor, press the Reset button using the tip of a pen.*

Sometimes the monitor provides the wrong 'sense' signal to the computer causing the Monitors control panel to think that the Multiple Scan Display is not capable of different resolutions. Resetting the monitor should fix the problem.

The resolution settings are stored in RAM and created when the Macintosh starts up based on what the computer senses from the monitor. The current resolution setting selected in the Monitors Control panel is stored in the System File.

*Note: This procedure will reset all of the picture controls, including brightness and contrast, to their original levels. See the Multiple Scan 17 Display User's Guide for instructions on resetting specific controls.

Article Change History:
06 Jul 1995 - Added instructions from manual for resetting controls

Support Information Services

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Tech Info Library Article Number:16200

Tech Info Library

Apple Basic Color Monitor: No Immunity Rating (9/94)

Revised: 9/6/94
Security: Everyone

Apple Basic Color Monitor: No Immunity Rating (9/94)

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Article Created: 6 September 1994

TOPIC --------------------

I have a lot of the Apple Basic Color Monitors, and almost all of them are experiencing EMI related interference. These monitors are used within an office building, and the building management doesn't think it's related to their building.

Are their minimum levels in Milligauss or Microtesla before the Apple Basic Color Monitor begins to experience EMF interference in the display.

DISCUSSION --------------------

There is currently no accepted industry standard for magnetic field susceptibility (also known as radiated immunity). All the standards center on the amount of emissions generated by the display (radiated emissions). Therefore, we do not test for and have no records that list the amount of EMI/EMF that a particular monitor can tolerate.

I would recommend that you operate the monitors with all fluorescent lights in the area turned off--this could point you to the problem. This is the number one cause of external interference in an office environment and can usually be corrected by replacing defective bulbs.

Support Information Services

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Tech Info Library Article Number:16204

Tech Info Library

Multiple Scan 15 Display: Compatibility w/ IIsi & IIci (2/96)

Revised: 2/8/96
Security: Everyone

Multiple Scan 15 Display: Compatibility w/ IIsi & IIci (2/96)

==========

Article Created: 6 September 1994
Article Reviewed/Updated: 8 February 1996

TOPIC ----------

Why doesn't the Multiple Scan 14 or 15 Display work with the built-in video of the Macintosh IIsi and Macintosh IIci?

DISCUSSION ----------

Out of the box, the built-in video on the Macintosh IIci and Macintosh IIsi computers are not compatible with the Multiple Scan 15 Display, even though both use the 640x480 resolution. The problem is related to the sync lines. The Macintosh IIci and Macintosh IIsi were designed to work with the 13-in. HighRes RGB, which uses sync on green input. The new Multiple Scan 15 Display only accepts sync on separate input lines, one for the horizontal and one for the vertical. There is at least one third-party display adapter you can use, which enables you to use the Multiple Scan 14 or Multiple Scan 15 Display with either the Macintosh IIsi or Macintosh IIci computer.

Display adapters are available from several third-pary companies such as Enhanced Cable Technology, Griffin Technology, and MacAdapt.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
08 Feb 1996 - Added information on third-pary display adapter.
09 Jun 1995 - Corrected type of sync used.
01 Dec 1994 - Removed the Macintosh LC from discussion.

Support Information Services

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Tech Info Library Article Number:16206

Tech Info Library

PowerTalk: Obtaining Certificates (7/96)

Revised: 7/5/96
Security: Everyone

PowerTalk: Obtaining Certificates (7/96)

==========

Article Created: 6 September 1994
Article Reviewed/Updated: 5 July 1996

TOPIC ----------

The process by which an end-user obtains a Certificate involves three steps.

1) Completion of a Certificate Signing Request.

2) Validation of identity (as stated in the Certificate Signing Request) by an authorized entity.

3) Issuance of the Certificate based on the validated Certificate Signing Request.

DISCUSSION ----------

Overview

Every PowerTalk package in the U.S.A. will include a voucher for one Signer file.

RSA Data Security Inc. is the root of all public key certificate sets. Individual users will be able to obtain a public key certificate directly from RSA. Negotiations are underway to establish a method for overseas customers to receive certificates. The Tech Info Library article titled "Locating Vendor Information" can help you search for RSA Data Security's address and phone number.

Large corporations and other organizations can contract with RSA to issue certificates to their employees. By convention, the certificate chain can only be two levels deep. Therefore, it will not be possible for a corporation authorized by RSA to issue certificates, to in turn, authorize another organization to issue certificates.

The DigiSign Utility is used to create a Signer Approval Request and the

unapproved Signer file. Once a Signer Approval has been issued by the issuing authority, the DigiSign Utility will again be used to merge the unapproved Signer file with the Signer Approval file to create a final Signer file.

Completion of a Certificate Signing Request

Every Public Key Cryptography Standards (PKCS) or Internet Privacy Enhanced Mail (PEM) compliant application includes the functionality to generate an electronic Certificate Signing Request. The Certificate Signing Request (hereafter, "Request") includes the necessary information to issue a Certificate.

The process of completing the Request starts with the generation of an RSA key pair. This functionality is included in the application. Typically, the user will then provide some personal identification information and choose an appropriate distinguished name, which will make the Certificate unique.

Validation of a Certificate Signing Request

The next step in the process is validation of the identity of the end-user with the information contained in the Request. How this is done depends upon the type of Certificate Issuing relationship that an organization or individual has with RSA. The possible relationships are Certificate Issuing System (CIS)-Issuer, Co-Issuer, or Unaffiliated.

Begin_Table

CIS-Issuer	The end-user takes the Request, with proper ID, to the Organizational Notary (ON) to be validated. The ON will use internal procedures to confirm the authenticity of the user's identifying information and the uniqueness of their distinguished name.
Co-Issuer	The process is the same as that for a CIS-Issuer.
Unaffiliated	The end-user takes the Request, with proper ID, to be notarized by an official Notary Public.

End_Table

Fulfilling a Certificate Signing Request

The end-user now has a Request that has been completed and validated. The final step is fulfilling the Certificate Signing Request by issuing the Certificate based on the Request. Again, how this is done depends upon the type of Certificate Issuing relationship that an organization enters into with RSA.

Begin_Table

CIS-Issuer	The validated Request is taken to the Certificate Issuer (CI), within the organization, who then issues the Certificate using the Certificate Issuing System (CIS).
Co-Issuer	The ON sends the validated Request to the VeriSign Inc.

	which then issues the Certificate on behalf of the organization.
Unaffiliated	The validated Request is mailed to VeriSign Inc. whose staff will verify that the Notary Public stamp/seal is valid, verify uniqueness of the distinguished name, generate the Certificate (if the request is valid) and send the user the Certificate on diskette or via E-mail.

End_Table

Generating a Certificate

An example of how an unaffiliated Certificate will be generated in conjunction with typical commercial software (call it Application X), is described below.

1) Application X, a security-aware application, has been developed with one of RSA's toolkits. This application includes functionality for the generation of RSA key pairs as well as Certificate Signing Request forms.

2) The end-user (let's call him Kurt) uses the application's key generation utility on his computer to generate his own RSA key pair, and also inputs personal identifying information to be contained in his Certificate.

3) Application X produces a printed paper or electronic form, containing Kurt's public key and personal identifying information (this is his Certificate Signing Request). Kurt takes the form to a Notary Public for notarization.

4) Kurt mails the notarized form to VeriSign Inc. for processing.

5) VeriSign Inc. processes the request as an Unaffiliated Certificate Signing Request. VeriSign Inc.'s staff uses CIS to create a Certificate based on the request.

6) VeriSign Inc. sends the completed Certificate back to Kurt via diskette, or E-mail (via Internet) for use within Application X.

Generation of an end-user Certificate, utilizing RSA's Co-Issuer relationship, differs from the process described above in that there must be an Organizational Notary (ON) within the organization that completes step 5 rather than RSA. For organizations with a CIS on-site, steps 5 and 6 are completed by the organizations ON and CI, respectively.

Article Change History:
10 Apr 1996 - Updated article.
18 Oct 1995 - Added how to contact RSA Data Security Inc.
18 Jan 1995 - Added Overview section.

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Tech Info Library Article Number:16207

Tech Info Library

SNA•ps Gateway: Can't Be Used With Token Ring NB/c Card (9/94)

Revised: 9/6/94
Security: Everyone

SNA•ps Gateway: Can't Be Used With Token Ring NB/c Card (9/94)

==========

Article Created: 6 September 1994

TOPIC ----------

Can I use the Apple Token Ring NB/c card with SNA•ps Gateway, SNA•ps 5250, or SNA•ps 3270 software?

DISCUSSION ----------

No. The Apple Token Ring NB/c card is not MCP (Macintosh Coprocessor Platform) compliant. In other words, this card does not have an on-board microprocessor. The SNA•ps Gateway, SNA•ps 5250 and SNA•ps 3270 software require a coprocessor on the communications card.

The reason a coprocessor is needed is that the SNA•ps gateway software is actually downloaded onto the communications card. The card then handles all the processing necessary to establish and maintain an SNA connection with the IBM host computer.

You can run the SNA•ps 5250 GC or SNA•ps 3270 GC (gateway client) software on a Macintosh with the Token Ring NB/c card. The SNA•ps client software communicates with the SNA•ps gateway using AppleTalk protocols, which the Token Ring NB/c card supports.

The full size Apple 4/16 Token Ring NB card and Serial NB card (which are required to run the SNA•ps gateway software) will not fit inside the Centris/Quadra 610, Quadra 660AV, or Power Macintosh 6100. Therefore, these Macintosh models cannot be used as SNA•ps gateways.

Support Information Services

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Tech Info Library Article Number:16208

Tech Info Library

System 7.5: Update for HP DeskWriter C Printer Driver (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Update for HP DeskWriter C Printer Driver (2/95)

==========

Article Created: 07 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

My Macintosh running System 7.5 gets a System Error -14 when printing to a HP DeskWriter C. When I deactivate all "color" extensions with the extensions manager, it prints fine.

DISCUSSION ----------

HP Printer Support reports their current HP DeskWriter C driver, v5.0, is not fully compatible with System 7.5. HP is working on a revised driver that will be compatible with System 7.5, but not QuickDraw GX. This driver is anticipated to become available in the next 1 to 2 months.

Contact HP Printer Support (206-323-2551) to be placed on the driver's distribution list. The cost of the update is $5.80 to cover shipping and handling.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16209

Tech Info Library

QuickDraw GX: Repair Utils Show Resource Fork Error (2/95)

Revised: 2/15/95
Security: Everyone

QuickDraw GX: Repair Utils Show Resource Fork Error (2/95)

==========

Article Created: 7 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

Some disk repair utility programs are reporting that there is a problem with the QuickDraw GX extension's resource fork. Norton Utilities is reporting this problem on numerous CPUs here in Austin, but we have not noticed any decrease in performance.

The disk repair programs report it is a problem that cannot be fixed. Norton indicates that it is a serious error. Customers running disk repair utilities will be alerted to the problem. What is causing this error to be reported?

Here are sample excerpts from Norton Utilities 3.0 and Public Utilities reports:

Norton Utilities 3.0 Disk Repair Report

Serious errors were found.
Scan Catalog
An error was found in a file record in the catalog b-tree.
The resource fork for the file, “QuickDraw™ GX”, has an incorrect physical length. (node 192, record 1) (5,6,16)
Node #192, Record Offset 1
Norton Utilities is unable to fix this problem.

Public Utilities 1.0.1 Disk Repair Report

Disk: Hard Disk
Wednesday, August 31, 1994, 11:36:44 AM
No serious errors were found.
Some errors were fixed.
System Folder
The following files in your System Folder have damaged resource forks.
Hard Disk:System Folder:Extensions:QuickDraw™ GX

Public Utilities is unable to fix this problem.

DISCUSSION ----------

We ran Norton 3.0 on a Power Macintosh and did not get the invalid file length error for the QuickDraw GX extension. However, we had used ResEdit to look at the extension before running the Norton utility. ResEdit had to do some minor repairs before it would open the extension.

The first part of the resource fork is a header which contains information about the length of the fork. Specifically, the header contains the offset to the resource map and the length of the map. Since the resource map is at the end of the fork, the offset to the resource map and the length of the resource map should add up to the length of the resource fork.

However, the resource fork of the QuickDraw GX extension has some extra bytes added after the resource map. The data in the resource fork is not corrupted in any way and the Resource Manager is not affected by the extra bytes.

We contacted Symantec and were told that Norton compares the actual fork length to the sum of the offset to the resource map and the length of the resource map. If these values are not equal, Norton reports an incorrect physical length for the file. They are also aware of this error being reported for the QuickDraw GX extension, but have not determined what to do about it at this time.

Symantec suggests we tell anyone who calls about this message to ignore it for now, but only if the message pertains to the QuickDraw GX extension.

Apple engineering says that the extra bytes in the QuickDraw GX resource fork are due to the compression scheme used to compress the resources. They are looking into correcting the problem but it is not a high priority since the problem does not cause any side effects except for confusing some disk repair utilities.

Article Change History:
15 Feb 1995 - Reviewed for technical accuracy, revised System 7.5 keyword.

Support Information Services

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Tech Info Library Article Number:16210

Tech Info Library

PSI (Performance Systems International, Inc.) (9/94)

Revised: 9/7/94
Security: Everyone

PSI (Performance Systems International, Inc.) (9/94)

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Article Created: 7 September 1994

PSI (Performance Systems International, Inc.)
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510 Huntmar Park Drive
Herndon, VA 22070 USA

Telephone: 1-800-psi-3031

Telephone: 703-709-0300

Fax Back Information: 1-800-FAX-PSI1

Internet e-mail information: interramp-info@psi.com

Company Profile:
Sells Internet access and connectivity to large and small organizations, and also to individuals with the Interramp product offering, which provides full Internet access to subscribers.

Support Information Services

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Tech Info Library Article Number:16212

Tech Info Library

Power Macintosh: Compatible with Old External AppleCD SC (9/95)

Revised: 9/7/95
Security: Everyone

Power Macintosh: Compatible with Old External AppleCD SC (9/95)

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Article Created: 07 September 1994
Article Reviewed/Updated: 7 September 1995

TOPIC ----------

Is the AppleCD SC External CD drive compatible with the Power Macintosh using Apple CD Setup 4.5 that comes with the Power Macintosh?

DISCUSSION ----------

The AppleCD SC external CD-ROM drive is compatible with Power Macintosh computers. If there are problems mounting CD's, check for proper termination, that the most current version of the CD-ROM driver software is installed, and use cables that are properly shielded.

Article Change History:
07 Sep 1995 - Made minor correction.

Support Information Services

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Tech Info Library Article Number:16214

DataPro, Inc. (9/94)

Revised: 9/7/94
Security: Everyone

DataPro, Inc. (9/94)

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Article Created: 7 September 1994

DataPro, Inc.

DataPro USA
600 Delran Parkway
Delran, NJ 08075 USA

Telephone: 1-800-328-2776

Fax: 609-764-2812

DataPro International

McGraw-Hill House
Shoppenhangers Road
Maidenhead, Berkshire, England
SL6 2QL

Telephone: +44(0) 628 773277

Fax: +44(0) 628 773628

Company Profile:
Develops and markets industry and product reports and reviews, distributed online, on CD-ROM and on paper.

Support Information Services

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Tech Info Library Article Number:16216

Tech Info Library

Extended Keyboard: Purpose of Num/Caps/Scroll Lock LEDs (10/94)

Revised: 10/10/94
Security: Everyone

Extended Keyboard: Purpose of Num/Caps/Scroll Lock LEDs (10/94)

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Article Created: 07 September 1994
Article Reviewed/Updated: 10 October 1994

TOPIC ----------

What are the num lock, caps lock, and scroll lock LED's for on my Extended Keyboard and Extended Keyboard II? I've seen the caps lock LED come on but not the other two.

DISCUSSION ----------

The three LED's are triggered by an application, or, in the case of the caps lock LED, the activation of the caps lock function. The scroll lock and num lock are illuminated in only a few applications under the Macintosh operating system.

The num lock LED will illuminate to indicate that the numeric keypad is locked into a mode where only numerals will be recognized. Some DOS/Windows applications use the numeric keypad for functions other than entering numerals. The num lock is activated most frequently by spreadsheet applications in the Mac OS environment.

The scroll lock is not implemented in many current Macintosh applications. Some spreadsheet applications take advantage of the scroll lock to move the spreadsheet data up or down in the window. Its original purpose was to pause data scrolling by on screen in terminal emulation applications. This allowed one screen worth of information to be read by the user.

Article Change History:
10 Oct 1994 - Clarified use of the num lock and scroll lock keys.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16217

System 7.5 Upgrade CD: Contents (4/97)

Revised: 4/3/97
Security: Everyone

System 7.5 Upgrade CD: Contents (4/97)

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Article Created: 07 September 1994
Article Reviewed/Updated: 02 April 1997

TOPIC ----------

The following article contains a list of the System 7.5 Upgrade CD contents.

DISCUSSION ----------

Macintosh System 7.5:Back-Up CD

.Disk Copy 4.2 alias
.Disk Images
.- Disk Copy 4.2 4.2
.- Disk Tools.image
.- Install Disk 1.image
.- Install Disk 2.image
.- Install Disk 3.image
.- Install Disk 4.image
.- Install Disk 5.image
.- Install Disk 6.image
.- Install Disk 7.image
.Using Disk Copy

Macintosh System 7.5:CD Extras

.About CD Extras
.- Eric's Solitaire Sampler
. - Eric's Solitaire Sample 1.0.2
.- QuickTime Extras
. - About QuickTime Extras
. - Movies
. - Animation
. - QT Clock - 30fps

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.      - QuickTime Logo Movie
.    - MoviePlayer                          1.0
.    - Music
.      - BACH1.MOV
.      - BACH2.MOV
.      - BEETHOV.MOV
.      - MOZART1.MOV
.      - SONNE.MOV
.    - Photos
.      - PHOTOS.MOV
.      - Best if played from hard disk
.        - Icon[13]
.      - INFOBAHN
.  - QuickTime Musical Instruments          2.0
.- Stereogram
.  - 7.5
.- Team Movies
.  - 7.5 Engineering Team
.  - 7.5 Team Members & Fans
.  - At Ease 2.0.3 Updater
.    - At Ease 2.0.3 Updater                2.0.3
.    - Using At Ease 2.0.3
.  - GeoPort
.    - GeoPort ReadMe
.  - PlainTalk 1.3
.    - Install Speech                       1.3
.    - PlainTalk
.      - AppleScript
.        - InlineFilter.cmp
.        - Script Editor.cmp
.        - Scripting Additions
.          - Beep                           1.1
.          - Choose Application             1.1
.          - Choose File                    1.1
.          - Current Date                   1.1
.          - Dialects
.English Dialect.cmp
.French Dialect.cmp
.Japanese Dialect.cmp
.          - Display Dialog                 1.1.1
.          - File Commands                  1.1
.          - Load Script                    1.1
.          - New File                       1.1
.          - Numerics                       1.1
.          - Read/Write Commands            1.1.1
.          - Run Script                     1.1.1
.          - Scripting Components           1.1
.          - Speech Scripting               1.3
.          - Store Script                   1.1
.          - String Commands                1.1
.          - Time to GMT                    1.1.1
.      - FinderEnhancement
.      - Install Speech                     1.3
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.      - MacinTalk Pro.cmp
.      - PlainTalk Installer                4.0.3
.      - QuicKeys OSA Component.cmp
.      - Speech Preferences
.    - PlainTalk 2
.      - Scriptable Text Editor.cmp
.      - Speech Recognition
.        - My Speech Macros                 1.3
.        - Speakable Items
.          - Icon[13]
.          - open Apple Menu Items folder
.          - open General Controls
.          - open Monitors
.          - open Print Monitor
.          - open Script Editor
.          - open Sharing Setup
.          - open Simple Text
.          - open Sound
.          - open Speech Macro Editor
.          - open Speech Setup
.          - open the Apple Extras folder
.          - open the Control Panels folder
.          - open the Extensions folder
.          - open the Fonts folder
.          - open the System Folder
.          - open the Trash
.        - Speech Macro Editor.cmp
.        - Speech Recognition.cmp
.        - Speech Setup.cmp
.        - SR Monitor.cmp
.        - System Speech Rules              1.3
.      - AppleScript.cmp
.      - CEToolbox.cmp
.      - PlainTalk Read Me
.      - SimpleText.cmp
.      - Speech Guide Additions.cmp
.      - Speech Manager.cmp
.      - TTS Agnes.cmp
.      - Speech and QuicKeys
.        - Extensions
.          - ButtonAction                   1.0
.          - Choosy                         1.3.1
.          - Display                        1.0.2
.          - Location                       1.2.2
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.          - Pop-up Menu                    1.0
.          - Screen Ease                    2.2.1
.          - SoftKeys                       1.0.1
.          - SpeakerChanger                 1.0.1
.          - System 7 Specials              2.0
.          - Wait...                        2.0
.        - Sample Scripts
.          - QuicKeys Script Examples
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.          - Read Me (QK Script Examples)
.        - Using Speech with QuicKeys
.      - TTS Victoria.cmp
.      - Voices
.        - Albert                          1.3
.        - Bad News                        1.3
.        - Bahh                            1.3
.        - Bells                           1.3
.        - Boing                           1.3
.        - Bubbles                         1.3
.        - Cellos                          1.3
.        - Deranged                        1.3
.        - Good News                       1.3
.        - Hysterical                      1.3
.        - Junior                          1.3
.        - Kathy                           1.3
.        - Pipe Organ                      1.3
.        - Princess                        1.3
.        - Ralph                           1.3
.        - Trinoids                        1.3
.        - Whisper                         1.3
.        - Zarvox                          1.3
.      - Introduction to Speech
.        - Introduction to Speech.cmp
.      - TTS Bruce.cmp
.    - PlainTalk Installer                 4.0.3
.    - PlainTalk Read Me
.    - QuicKeys Test Drive
.      - QK TD License Agreement
.      - QuicKeys Test Drive Installer     1.0.1
.      - Read Me (QK Test Drive)
.  - About Direct Dialup Mail
.  - Direct Dialup Mail
.    - Dialup Files
.    - Install Direct Dialup               1.1
.    - Installer                           4.0.3
.    - Remote Access resources
.  - Install Direct Dialup                 1.1
.  - Installer                             4.0.3
.  - Using Direct Dialup
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.  - Drop Send
.  - Key Chain
.  - Mail
.  - Mobility
.  - PowerTalk Tour                        1.0
.  - Shared Cast
.  - STG
.  - Summary
.  - Topics
.- PowerTalk Mail Gateways
.  - About PowerTalk Gateways
.  - CompuServe Gateway
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.    - CompuServe Mail Installer           1.01
.    - Read Me
.    - SERVICE TERMS
.    - What's in it for me?
.  - ExMachina Notify! Pager Gateway
.    - Notify!/PT Installer                2.0
.    - Notify/PT READ ME
.  - StarNine Internet Gateway
.    - Fax Order Form                      CG MiniViewer 1.1
.    - Icon[13]
.    - Installer                           3.3
.    - License Agreement                   CG MiniViewer 1.1
.    - Mail*Link PT/INET Script
.    - Mail*Link® PT/INET
.      - Drop Contents on System Folder
.        - Hosts
.        - MacTCP                          2.0.4
.        - Mail*Link PT/INET               1.0.2
.      - Mail*Link Extras
.        - ML Test                         1.0.2 d1
.        - StarNine                        1.0
.        - Support Info
.        - StarNine
.          - Mail*Link PT/INET
.Mail*Link Key                           1
.Mail*Link Prefs
.Mail*Link Resources                     1.0.2
.xDownload All
.      - Read Me
.    - Quick Reference                     CG MiniViewer 1.1
.    - README FIRST
.    - User Guide                          CG MiniViewer 1.1
.  - StarNine QuickMail Gateway
.    - Fax Order Form                      CG MiniViewer 1.1
.    - Icon[13]
.    - Installer                           3.3
.    - License Agreement                   CG MiniViewer 1.1
.    - Mail*Link PT/QM Script
.    - Mail*Link® PT/QM
.      - Drop Contents on System Folder
.        - Mail*Link PT/QM                 1.0.4
.        - QuickMessenger                  2.0v1
.      - Mail*Link Extras
.        - Import QM Address Books         1.0.4
.        - StarNine                        1.0
.        - Support Info
.        - StarNine
.          - Mail*Link PT/QM
.Mail*Link Key                           1
.xDownload All
.          - StarNine QM CSAM Resources    1.0.4
.      - README
.    - Quick Reference                     CG MiniViewer 1.1
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.    - README FIRST
.    - User Guide                          CG MiniViewer 1.1
.  - STF PowerFax PE Gateway
.    - Installer                           4.0
.    - InstallScript                       1.0.4
.    - PowerFax PE Installer
.      - CoverPages.sit
.      - Default Settings
.      - Drivers.sit
.      - FaxMonitor.sit
.      - Gateway.sit
.      - Installer                         4.0
.      - InstallScript                     1.0.4
.      - ModemProfiles                     1.0.4
.      - PowerFax PE Read Me
.      - STF
.        - Icon[13]
.      - STFApplications.sit
.      - STFPanels.sit
.    - PowerFax PE Manual                  CG MiniViewer 1.1
.    - PowerFax PE Read Me
.    - PowerFax PE Two
.      - PowerFax PE Manual                CG MiniViewer 1.1
.  - GX TYPE EXPO                          4.0
.  - Icon[13]
.  - IMPORTANT - READ ME FIRST
.  - PopUp Menu XObj
.  - Shared.Dir
.  - • Catalogue
.  - • Ende
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.  - • glossary
.  - • Hauptmenue
.  - • Impressum
.  - • Intro 1
.  - • Intro 2
.  - • L-Products
.  - • Self1
.  - • Self2
.  - • Self3
.  - • Self4
.  - • Spacing
.  - • Substitution
.  - • Variations
.- Peirce Watermark & Paper Saver
.  - Drag to a Desktop Printer Icon…
.  - Icon[13]
.  - Peirce Instructions & Info
.  - Peirce Paper Saver                    1.0
.  - Peirce Watermark                      1.0

Macintosh System 7.5:DataViz Translators
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.DataViz Installer ReadMe
.MacLinkPlus Installer                      7.52 EOT
.MacLinkPlus.cpt
.Other DataViz Products
.- Conversions Plus                         CG MiniViewer 1.0
.- Other MacLinkPlus Products               CG MiniViewer 1.0
.Special Manual Offer
.What is MacLinkPlus?

Macintosh System 7.5:Disk Tools
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.Apple HD SC Setup                          7.3.2
.Disk First Aid                             7.2

Macintosh System 7.5:Installation
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.Before you Install
.- PB 150 Modem Patch                       1.0
.- Read Me                                  7.5
.- Safe Install Utility                     7.5
.PowerTalk Install
.- Install PowerTalk                        1.1
.- Installer                                4.0.3
.- PowerTalk
.  - PowerTalk
.- Install
.  - Install QuickDraw GX                   1.0.1
.  - Installer                              4.0.3
.  - Installer Pieces
.    - ColorSync
.    - ColorSync Profiles
.    - ColorSync System Profile
.    - Drivers
.      - ImageWriter GX
.      - ImageWriter LQ GX
.      - LaserWriter 300 GX
.      - LaserWriter GX
.      - LaserWriter IISC GX
.      - PDD Maker GX
.      - StyleWriter GX
.    - Hoefler Text
.    - PrinterShare GX
.    - QuickDraw GX--Read Me
.    - SimpleText                           1.1.1
.  - URGENT--Read Me!
.- Install QuickDraw GX                     1.0.1
.- Installer                                4.0.3
.- QuickDraw GX 1
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.- QuickDraw GX 2
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.  - Apple Chancery
.  - ATM GX
.  - LaserWriter Utility
.  - PaperType Editor
.  - QuickDraw GX
.  - QuickDraw GX Helper
.  - Skia
.  - Tekton Plus
.  - Type 1 Enabler
.- URGENT--Read Me!
.- Install Disk 1
.  - Installer                          4.0.3
.  - System                             7.5
.  - System 7.5 Installation            7.5.1
.- Install Disk 2
.  - Installation Tome 2                7.5
.  - System Morsels                     7.5
.- Install Disk 3
.  - Installation Tome 3                7.5
.- Install Disk 4
.  - Installation Tome 4                7.5
.- Install Disk 5
.  - Installation Tome 5                7.5
.- Install Disk 6
.  - Installation Tome 6                7.5
.- Install Disk 7
.  - Installation Tome 7                7.5
.- Installer                            4.0.3
.- System 7.5 Installation              7.5.1
```

Article Change History:
02 Apr 1997 - Removed reference to specific on line service.
15 Feb 1995 - Review for technical accuracy and change keyword.
12 Dec 1994 - Reviewed for technical accuracy for top 20 keyword.

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Tech Info Library Article Number:16218

MAE: Read Me File (9/94)

Revised: 9/7/94
Security: Everyone

MAE: Read Me File (9/94)

==========

Article Created: 7 September 1994

TOPIC -----

This article contains the MAE Read Me file.

DISCUSSION -----

READ.ME for /pub/mae/info 5/12/94

This directory contains general information about MAE for the MAE user community.

The product-info directory contains the latest MAE product announcements and reports.

The mae-announce directory contains daily digests of articles posted to the mae-announce mailing list (see the mail-list.txt file in this directory for information on how to subscribe to this and other mailing lists).

The mae-users directory contains daily digests of user discussions from the mae-users mailing list (see the mail-list.txt file in this directory for information on how to subscribe to this and other mailing lists).

The Product FAQ contains general information about the product and licensing. This FAQ answers questions about support, pricing and product specifications.

The Technical FAQ contains information of about product performance, tuning, workarounds and other technical tips.

The Trial FAQ contains information specific to the MAE Trial.

The MAE bug-report-form is a standard form you should use to inform Apple about bugs and issues related (only) to MAE through mail address mae-bugs@medraut.apple.com. Note that if you want a response to your problem, please report it to Apple support at 1-800-SOS-APPL.

Other information willbe posted to this directory as deemed necesessary.

If you would like to post information to this directory, please place it along with a note describing how and where you'd like it posted into the /pub/mae/incoming directory for consideration.

If you would like to post an announcement related to MAE, please subscribe and send mail to the moderated mailing list mae-announce@medraut.apple.com for consideration.

Support Information Services

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Tech Info Library Article Number:16219

Tech Info Library

MAE: Read Me Patch.MAE 1.0a (9/94)

Revised: 9/7/94
Security: Everyone

MAE: Read Me Patch.MAE 1.0a (9/94)

==========

Article Created: 7 September 1994

TOPIC -----

This article contains the Read Me for Patch.MAE 1.0a.

DISCUSSION -----

README.PATCH.MAE1.0a (last updated on 6/16/94)

LICENSE STATEMENT

THIS PATCH IS COVERED BY THE "SOFTWARE LICENSE FOR MACINTOSH APPLICATION ENVIRONMENT PATCH" (see the file /pub/mae/patches/mae_patch_license.txt on the ftp server ftp.support.apple.com). PLEASE READ THE LICENSE CAREFULLY BEFORE DOWNLOADING THIS SOFTWARE. BY DOWNLOADING AND/OR USING THIS SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THE LICENSE. IF YOU DO NOT AGREE TO THE TERMS OF THIS LICENSE, YOU ARE NOT AUTHORIZED TO DOWNLOAD THIS SOFTWARE.

INCREMENTAL UPDATE FOR APPLE'S MAE 1.0 PRODUCT

The files in this directory allow you to update your purchased copy of the Apple MAE 1.0 product for free. By applying the latest patch, your copy of MAE 1.0 will be updated with the bug fixes from all prior patches.

IMPORTANT

MAE must NOT be running while applying this patch. This patch WILL NOT work on the Trial version of MAE.

WHAT THIS PATCH FIXES

The latest patch (patch "a") fixes the following bugs. (The letter in parenthesis indicates at which patch level the bug was fixed):

Change Depth Crash -
(a) Changing bit-depths using the Monitor Control Panel can cause MAE to crash under certain circumstances.

Newline / CR Problems -
(a) Saving files as type TEXT in certain applications can result in a file that is stripped of Carriage Returns.

Groups -
(a) MAE may crash at startup if the user belongs to more than 8 UNIX groups.

Finder Desktop Rebuilds -
(a) The Finder desktop rebuild scans the users home directory when it shouldn't.

Floppy Dialog -
(a) On Solaris, the wrong floppy dialog can be displayed under certain circumstances.

FILES AFFECTED

```
appledir/bin/mae
appledir/bin/macd
appledir/lib/engine
appledir/sys/Finder       (see UPDATE SYSTEM FOLDERS below)
appledir/sys/MAE Enabler  (see UPDATE SYSTEM FOLDERS below)
```

HOW TO DOWNLOAD

On the FTP server "ftp.support.apple.com" (130.43.6.3), get the appropriate tar file [sun or hp] from the "patches" directory.

IMPORTANT: Make sure you use ftp "binary transfer" mode to get the files.

/pub/mae/patches/README.PATCH.MAE1.0a - This file.

/pub/mae/patches/mae_patch_1.0a/maepatch1.0a.hp.tar - This is the most recent incremental update for MAE 1.0 running on HP Series 700 workstations.

/pub/mae/patches/mae_patch_1.0a/maepatch1.0a.sun.tar - This is the most recent incremental update for MAE 1.0 running on Sun SPARC workstations.

Download the appropriate file for your workstation.

APPLYING THE PATCH

Place the tar file anywhere, and "untar" it by running the following command:

On HP Workstations:

```
% tar xovf maepatch1.0a.hp.tar
```

On Sun Workstations:

```
% tar xovf maepatch1.0a.sun.tar
```

IMPORTANT: The account used to install the patch should be the same as the one used to install MAE (or it must have read/write privileges to all MAE files created by the MAE 1.0 installer).

Now change directories into the newly created "maepatch1.0a.hp" or "maepatch1.0a.sun" directory, and apply the patch by running the "PATCH.SH" program as follows:

On HP Workstations:

```
% cd maepatch1.0a.hp
% ./PATCH.SH
```

On Sun Workstations:

```
% cd maepatch1.0a.sun
% ./PATCH.SH
```

Follow the on-screen instructions to PATCH.SH.

UPDATE SYSTEM FOLDERS

You must now copy the updated Finder and MAE Enabler into any existing MAE 1.0 System Folders. There are three options for doing this.

Option 1:

The script update.sysfol can be run to update individual System Folders. Replace 'appledir' with the path to your apple directory.

```
% cd appledir
% ./update.sysfol
```

Follow the on-screen instructions to update.sysfol.

Option 2:

Issue these commands (replace 'appledir' with the path to your apple directory and 'System Folder' with the path to your System Folder):

```
% cd System\ Folder
% mv Finder Finder.bak
% cp appledir/sys/Finder Finder
% mv MAE\ Enabler MAE\ Enabler.bak
```

```
% cp appledir/sys/MAE\ Enabler MAE\ Enabler
```

Note: The backslashes ('\') above are necessary because of the spaces in the filenames.

Option 3:

You can remove your System Folder(s), and MAE will automatically create an updated System Folder for you the next time you run MAE.

CAUTION: Doing this will remove any additional files you have installed in your System Folder.

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Support Information Services

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Tech Info Library Article Number:16221

Tech Info Library

System 7.1: Troubleshooting Common Problems (10/95)

Revised: 12/20/96
Security: Everyone

System 7.1: Troubleshooting Common Problems (10/95)

==========

Article Created: 7 September 1994
Article Reviewed/Updated: 16 October 1995

TOPIC ----------

This article describes how to troubleshoot common problems with System 7.1. A full explanation for each item is provided in the Discussion section.

- Getting Type 1, Type 2, or Type 3 errors when launching or using an application
- Having difficulty rebuilding the Desktop
- Desktop pattern is gone
- Cursor alternates between watch and arrow; no Desktop pattern
- Difficulty throwing away a damaged font
- "Need later version. System 7.1 is not the latest." error message
- Can't rename the hard disk drive
- Difficulty turning on File Sharing
- Slow performance
- Taking a long time for Macintosh to start up
- Date and time are wrong or missing
- Fixing corrupted volume/folder custom icons

DISCUSSION ----------

Problem: You encounter Type 1, Type 2, or Type 3 errors when launching or using

an application.

Solution: These errors are generally caused by a system extension or Control Panel device that was poorly written or is corrupt. There are two possible scenarios:

1) You get the error with more than one application.

- If you can consistently generate the error, restart with extensions off (hold down the Shift key during system startup). Attempt to duplicate the error. If it no longer occurs, the problem is being caused by one of your system extensions or Control Panel devices. You must remove the extensions and Control Panel devices in an orderly fashion to isolate the one that is causing the problem.

- If you cannot consistently generate the error, were any new system extensions or Control Panel devices added to the system around the time the error started to occur? If so, remove the new extension and test to see if you still experience the problem.

- If you cannot isolate the problem down to one or two extensions or Control Panel devices, restart the Macintosh from the Disk Tools disk, trash the Finder and System files, and reinstall the system software.

- If you cannot isolate the problem, follow the procedure for a "clean" system install. A clean install builds a completely new System Folder. Before adding any third-party extensions to the new, clean system, test to be sure you cannot reproduce the original error.

2) You get the error with one application only.

- Determine if this application has ever worked correctly on this Macintosh. If not, call the company that wrote the application for further instructions. There may be some type of software incompatibility or required upgrade.

- If the application has worked properly in the past, restart with extensions off (hold down the Shift key during system startup). Attempt to duplicate the error. If it no longer occurs, the problem is being caused by one of your system extensions or Control Panel devices. You must remove the extensions and Control Panel devices in an orderly fashion to isolate the one that is causing the problem.

- If the error still occurs with extensions turned off, remove the Preferences file for the application (if it has one) and restart the Macintosh. It is possible for Preferences files to become corrupted.

- If you cannot isolate the problem, reinstall the application program from the original floppy disks or CD-ROM. You may also want to contact the company that wrote the application for further instructions.

Problem: Application and/or File icons are displayed as generic icons on the Desktop. When trying to open a file, you get an "Application unknown" error when double-clicking on it.

Solution: This problem can occur when adding Finder extensions such as PowerTalk or Adobe Type Manager. When the Finder rebuilds the Desktop file, it reads the information from all files on the directory with Read/Write access. A conflict can occur if it encounters a file that is already open. This forces the rebuild to quit without updating all files.

To correct this problem, restart with extensions off. When the message Welcome to Macintosh-Extensions Off displays, release the Shift key and hold the Option and Command keys. This forces the Desktop to be rebuilt. Once completed, restart the Macintosh.

NOTE: Under System 7.5, use the Extension manager to restart with only the Macintosh Easy Open Control Panel installed, and rebuild the Desktop. MEO must also add tables to the Desktop file. It fails if any Finder extensions are open when it tries to build its own tables.

Problem: The Desktop Pattern options in the General Control Panel are missing.

Solution: This problem can occur if programs such as Desktop Patterns or Wallpaper were installed. These programs remove the resources for the General Control Panel's desktop patterns.

To correct this:

- Run the desktop program used, and "remove" the patterns. The method of doing this varies between applications, but typically the option is in the File menu.

- Restart with the Disk Tools disk and trash the Finder and System files from the System Folder. Then reinstall the System software. (Be sure there are no custom fonts or sounds in the System suitcase before trashing.)

Problem: When you restart the Macintosh, it draws a menu bar on the screen with no text, freezes, and the cursor alternates between the watch and arrow. The Macintosh never completes the startup sequence. Restarting with Extensions off and zapping the Parameter RAM (PRAM) do not help.

Solution: Startup with the Option key held down. This forces the Finder to close all open windows. The Finder is having trouble with a window coordinate. It is not able to draw the window on the screen. This causes the system to become stuck in a loop.

Problem: A font cannot be dragged out of the Font Folder.

Solution: The font has become corrupt. Drag the Font Folder to the Desktop. Drag the damaged font out to the Trash. Move the Font Folder back into the System Folder.

Problem: At startup, the error message "Need later version. System 7.1 is not the latest" displays.

Solution: The appropriate System Enabler has been removed from the System Folder. Restart from the Disk Tools disk. Locate and replace the necessary System Enabler file. You can also reinstall the system software from the original floppy disks or CD-ROM.

Problem: The hard disk drive cannot be renamed. System 7 File Sharing has been turned off.

Solution: This problem can be caused by a Macintosh running System 6.0.X accessing the Macintosh running System 7.1 via System 7 File Sharing. Run Disk First Aid v7.2 and RenameRescue. These programs can repair the drive.

Problem: You cannot turn System 7 File Sharing on.

Solution: Check the following:

- Verify that there is at least 340K of memory available on the hard disk.

- Check that there are no DOS volumes mounted through PC Exchange. If there are, eject the volume and try again.

- Zap the Parameter RAM (PRAM) by restarting the Macintosh and holding down the COMMAND-OPTION-P-R keys. Wait for the second startup chime. This resets the serial ports so you need to reactivate AppleShare on most Macintosh computers.

- Delete the User & Groups data file in the Preferences folder; restart the Macintosh; enter the Owner password in the Sharing Setup Control Panel; turn File Sharing on. When the machine is restarted, a new Users & Groups data file is created. Any old user and group information is lost.

- Delete the File Sharing folder in the Preferences folder; restart the Macintosh; turn File Sharing on.

- If any media is formatted with a third-party utility, check with the vendor to be sure it is compatible with System 7 File Sharing.

- Delete the invisible file called AppleShare PDS on the root of any volumes that are shared; restart the Macintosh; turn File Sharing on. The PDS file can be deleted by running ResEdit or a third-party utility that can view invisible files. Use the utility to unlock the file and make it visible on the desktop. It can then be trashed from the Finder.

- Backup the data and reformat the drive. The problem can be caused by bad blocks on the drive.

Problem: Macintosh system performance is slow.

Solution: Check the following:

- Turn off Virtual Memory in the Memory Control Panel

- Turn off Calculate Folder Size in the Views Control Panel

- Turn off File Sharing

- For Macintosh computers with a 68040 processor, check that the 040 Cache is on in the Cache Switch Control Panel

- Zap the Parameter RAM (PRAM)

Problem: The Macintosh is taking a long time to start up.

Solution: This can be caused by adding a large number of new fonts. Fonts are read at the time the "Welcome to Macintosh" message displays.

Problem: The date and time are incorrect or missing.

Solution: This is usually caused by a corrupted System file. Do the following:

- Restart using the Disk Tools diskette.

- Backup any non-Apple sounds and keyboard layouts.

- Drag the System suitcase file to the Trash and empty the Trash.

- Restart using the original Install disk and perform a normal system software installation.

Problem: Custom icons assigned to volumes and folders are displayed as the generic document icon. When attempting to edit the icon through Get Info, the error message "This command cannot be completed because it cannot be found" is displayed.

Solution: Custom icons are saved directly into a file's resource fork. An attribute bit is set to alert the Finder that a custom icon should be displayed. Folders and volumes do not have resource forks so custom icons are saved instead to an invisible file named ICON. This file is located at the root level of the folder or volume.

If the link between the folder or volume and the ICON file is lost, the Finder may display a generic document icon in place of the custom icon. This corrupted icon cannot be edited using Get Info. You need a program such as ResEdit to repair the damage.

- From the Finder, create another custom icon for another folder or volume.

- Using a file utility such as ResEdit, find the ICON file for this newly created custom icon and make that file visible. Remember that the new ICON file is located at the root level of the folder or volume.

- From the Finder, copy the now-visible ICON file to the folder or volume that has the damaged ICON file. You may receive the message "Are you sure you want to replace the older file..." Click OK.

- Using the file utility program, make the ICON file invisible again.

- The generic icon should now turn into the new custom icon. You should now be able to edit or delete this icon through Get Info.

Article Change History:
16 Oct 1995 - Removed keyword.
14 Aug 1995 - Revised formatting to match standard Question & Answer.
10 Feb 1995 - Revised spelling and format.

Support Information Services

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Tech Info Library Article Number:16222

Tech Info Library

Do Not Use Norton Speed Disk 3.0 (6/95)

Revised: 6/28/95
Security: Everyone

Do Not Use Norton Speed Disk 3.0 (6/95)

==========

Article Created: 8 September 1994
Article Reviewed/Updated: 28 June 1995

TOPIC ----------

Do not use Norton Speed Disk 3.0.

DISCUSSION ----------

Symantec Corporation reports a problem running Norton Speed Disk 3.0 for the Macintosh on any hard disk. Running this program can cause data loss on the hard disk. This report comes directly from Symantec. Symantec suspended shipment of this product and, in September 1994, replaced all units in retail stores with a 3.1 version. Symantec also shipped updates automatically to registered users and upgrade customers. If you did not automatically receive an update, they are available through Symantec customer service and several online services. Contact Symantec at (800) 441-7234 for additional information.

Article Change History:
28 Jun 1995 - Reviewed.
13 Jan 1995 - Added keyword and updated with latest information.

Support Information Services

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Tech Info Library Article Number:16223

AppleSearch: Not Recognizing Users (9/94)

Revised: 9/8/94
Security: Everyone

AppleSearch: Not Recognizing Users (9/94)

==========

Article Created: 8 September 1994

TOPIC -----

Customer is experiencing problems with AppleSearch 1.0.1 running on an AWS 9150 with AppleShare 4.0.2. Everything seems to be properly installed. AppleShare is working and they have turned on Program Linking in the Sharing Setup Control Panel.

However, they have found that regardless of the AppleSearch login they use (Administrator or any other user name and password) they get the error "Sorry, this user name is not recognized." Can you provide any suggestions as to what this problem might be?

DISCUSSION -----

This error is generated when the AppleShare user profiles have not been defined to use Program Linking. The server administrator must use AppleShare Admin to open each AppleSearch user's AppleShare profile and check the “Program Linking Enabled” option.

Support Information Services

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Tech Info Library Article Number:16224

Tech Info Library

PowerBook: Using MacLink Plus With Only One Serial Port (3/95)

Revised: 3/31/95
Security: Everyone

PowerBook: Using MacLink Plus With Only One Serial Port (3/95)

==========

Article Created: 7 September 1994
Article Reviewed/Updated: 31 March 1995

TOPIC ----------

This article provides instructions on using MacLink Plus by DataViz with a PowerBook that only has one serial port.

DISCUSSION ----------

Powerbook 500 series with Internal Modem

Cable or modem connection through serial port

- Make AppleTalk inactive.
- In Powerbook Setup control panel, choose Normal (not Compatible).
- Set MacLinkPlus up for phone port.

Modem connection through internal modem

- In the Powerbook Setup control panel, choose Compatible (not Normal).
- In the PowerPort 500 control panel, turn the modem on.
- Set MacLinkPlus up for phone port.

Powerbook 500 series without Internal Modem

Cable or modem connection through serial port

- Make AppleTalk inactive.
- Select LaserWriter.
- Set MacLinkPlus up for Printer/Modem port.

Powerbook Duo with Express Modem, undocked

Cable or modem connection through serial port

• Make AppleTalk inactive.
• Select LaserWriter.
• Set MacLinkPlus to use the Printer/Modem port.

Do this by using one of the two methods below:

• In the Express Modem control panel, click on Status and change it to Settings, then choose External Modem (not Internal Modem).

Or

• If you cannot click on Status & change it to Settings, then open the Powerbook Setup control panel and choose Normal (not Compatible).

Modem connection through internal modem

• In the Express Modem control panel, choose Settings, then choose Internal Modem (not External Modem).
• Set MacLinkPlus up for phone port.

Note: Docked, the Duo can be treated as any other Macintosh.

Powerbook Duo without Express Modem, undocked

Cable or modem connection through serial port

• Make AppleTalk inactive.
• In Powerbook Setup control panel, choose External Modem.

Note: This control panel may be called Portable, Powerbook, or Powerbook Setup.

• Set MacLinkPlus to use the phone port.

Modem connection through internal modem

• In Powerbook Setup control panel, choose Internal Modem.

Note: This control panel may be called Portable, Powerbook, or Powerbook Setup.

• Set MacLinkPlus to use the phone port.

Note: When docked, the Duo can be treated as any other Macintosh.

Article Change History:
31 Mar 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16226

AppleTalk: Troubleshooting Ghosting Problems (9/94)

Revised: 9/8/94
Security: Everyone

AppleTalk: Troubleshooting Ghosting Problems (9/94)

==========

Article Created: 8 September 1994

TOPIC ----------

Printers and file servers on my LocalTalk network sometimes disappear from the list of available devices in the Chooser. I have verified that the devices are plugged in, turned on, and properly connected to the network. Why does this happen?

DISCUSSION ----------

The phenomenon you describe is called ghosting. There are several possible causes for ghosting.

The first is that the total length of your network cabling may be too long. The signal reaching your Macintosh from the ghosting devices is weak. Do not exceed the published maximum cable lengths. For LocalTalk cabling, the maximum is 1000 feet (If you are using PhoneNet cabling, check manufacturer specifications). For Ethernet Thin Coax, the maximum is 600 feet per segment. For Ethernet 10BaseT twisted-pair, the maximum is 328 feet per segment. If your cabling is too long, you should consult your network administrator or phone installer about possibly rerouting the cables. You might also want to consider the use of a star controller (if not already using one) to help boost the signal and shorten cable runs.

The second cause of ghosting can be reflections in the signal. Reflections are like electrical echos. They can cause serious communications problems. Small reflections are caused by changes in impedance (resistance) in the wire along its length. You can have changes in impedance when the network wire changes from one wire type to another or from one wire gauge to another. It can also happen when there are kinks in twisted-pair wire. Large reflections occur when a wire has not been properly terminated. This will almost always cause problems. Verify that your network cabling is in good condition, you have no loose network connectors, and that the network is properly terminated.

The third possible cause of ghosting is exceeding the maximum number of nodes

(devices) on the network. For LocalTalk, the maximum number of nodes is 32. For Ethernet Thin Coax, the maximum is 30.

Support Information Services

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Tech Info Library Article Number:16227

Tech Info Library

System 7.5: Compatible with Power Macintosh Upgrade Card (2/95)

Revised: 3/23/95
Security: Everyone

System 7.5: Compatible with Power Macintosh Upgrade Card (2/95)

==========

Article Created: 08 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

Is System 7.5 compatible with the Power Macintosh Upgrade Card? If so, are there any special instructions for installation?

DISCUSSION ----------

Yes, System 7.5 is fully compatible with the Power Macintosh Upgrade Card.

Make sure the card is active when the install takes place so that the appropriate resources are installed for both the card and the parent Macintosh.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

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Tech Info Library Article Number:16230

Tech Info Library

Disk First Aid: Invalid PEOF Error (2/95)

Revised: 2/7/95
Security: Everyone

Disk First Aid: Invalid PEOF Error (2/95)

==========

Article Created: 9 September 1994
Article Reviewed/Updated: 7 February 1995

TOPIC ----------

Disk First Aid reports an "Invalid PEOF" error with some numbers after it. It says it is unable to repair the problem. Norton Utilities Disk Doctor reports no error could be found. What is an Invalid PEOF?

DISCUSSION ----------

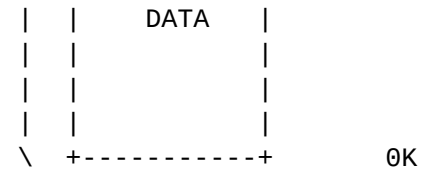
An "invalid PEOF" is an invalid Physical End Of File.

This error means Disk First Aid found a problem with the length of a particular file and cannot fix it. Macintosh files have two end of file markers -- a Logical End Of File (LEOF) and a Physical End Of File (PEOF). The logical end of file is the number of bytes allocated to data in a file. The physical end of file is the number of bytes currently allocated to the whole file.

The Macintosh allocates "blocks" of space to files on a volume (disk) for efficiency in reading/writing the files. The block size varies depending on the volume size. Most files never completely fill up their allocated blocks.

For example, if a given block size for a volume is set to 512K bytes and a file is allocated 2 blocks (1024 bytes total in file), a file with 650 bytes of data would have an LEOF of 650 and a PEOF of 1024, as this diagram illustrates:

```
         /  +-----------+    1024K     <--- PEOF
         |  |           |
         |  |           |
         |  |           |
         |  |           |
  FILE   <  +-----------+     650K     <--- LEOF
         |  |           |
         |  |           |
         |  |           |
```



If the PEOF is less than the LEOF, then problems with reading a file may occur. Disk First Aid is finding a PEOF allocation problem. Of course, if this problem is in the Desktop files or the System file, then system crashes and other anomalies may result.

If Disk First Aid cannot repair the problem, you should consider backing up the data and reformatting the drive -- even if other utilities give the drive a clean bill of health. Each disk utility program is good at finding different problems. Trusting your data to only one utility is never wise. The conflicting reports are usually a sign that something is wrong with the file system and it needs to be fixed.

Article Change History:
07 Feb 1995 - Added keyword; added diagram; updated discussion.

Support Information Services

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Tech Info Library Article Number:16231

Tech Info Library

Power Macintosh: No Video w/ SCSI External Devices Attached 9/94

Revised: 9/9/94
Security: Everyone

Power Macintosh: No Video w/ SCSI External Devices Attached 9/94

==========

Article Created: 09 September 1994

TOPIC -----

There have been reports that Power Macintosh computers sometimes fail to display video via the High Performance Video Card (HPV) or the AV video card when external SCSI devices are powered on.

This article discusses a possible cause for this problem.

DISCUSSION -----

Reference the following configuration:

Power Macintosh 8100/80 with CD-ROM and 500 megabyte HD
Apple 16” Color Display attached to the HPV card
Ehman Video Card and monochrome display
MicroTek Scanner (ID 6)
APS Syquest (ID 2)
Bernoulli (ID 4)

The computer would not produce video on the monitor attached to the HPV card if any one of the external SCSI devices were powered on before starting the computer. The display attached to the Ehman card would work fine. The same SCSI chain worked fine on another Power Macintosh 8100.

To troubleshoot, we checked SCSI ID’s, cable lengths, and termination. We also zapped the PRAM and booted from the Power Macintosh System Software CD. The problems persisted.

As a last resort, we reseated the HPV card and the problem went away. The Macintosh would display video on the 16” display with all SCSI devices attached and the devices worked properly.

Reseating the HPV card on a Power Macintosh should only be performed by an Apple Authorized Service Provider as damage to the computer's logic board can result

if not done properly.

Support Information Services

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Tech Info Library Article Number:16233

Tech Info Library

System 7.5: Clean Install Fails with Sorry Button (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Clean Install Fails with Sorry Button (2/95)

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Article Created: 09 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

If you attempt to perform a "Clean Install" with System 7.5 (Command+Shift+K at the Easy Install dialog), you may get the "A clean install cannot be performed on the 'disk name' " message with a "Sorry" button.

DISCUSSION ----------

This will occur if you do not have the blessed or active system folder on the drive you are installing on. A clean install disables the active system folder, so if the active system folder is not there the install will fail.

A workaround is to perform a standard install rather than using the Command/Shift/K, clean, install procedure.

Article Change History:
15 Feb 1995 - Reviewed for accuracy and keyword.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16234

Tech Info Library

System 7.5: Disk Tools Takes Longer to Load (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Disk Tools Takes Longer to Load (2/95)

==========

Article Created: 09 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

I noticed that the new "universal" 7.5 Disk Tools disk seems to run slower than earlier Disk Tools disk. Is there a reason for this?

DISCUSSION ----------

This can be attributed to more compressed resources on the 7.5 Disk Tools disk. It takes longer to decompress and load these compressed resources than on earlier Disk Tools disks without compressed resources.

Article Change History:
15 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16235

Tech Info Library

QuickTime: Performance Tips for Digitizing Video (11/95)

Revised: 11/29/95
Security: Everyone

QuickTime: Performance Tips for Digitizing Video (11/95)

==========

Article Created: 9 September 1994
Article Reviewed/Updated: 29 November 1995

TOPIC ----------

This article provides tips for producing digitized video. There are a number of things you can do to improve capture performance and increase the frame rate of your movies. Some of these tips improve performance, and others only adjust performance marginally.

DISCUSSION ----------

PRODUCTION STRATEGIES
==========

One of the most important elements in producing QuickTime video movies is the quality of the original footage. The better the quality of the original video, the better the quality of the final QuickTime movie.

- Hi-8, S-VHS, Beta or 3/4" (Umatic) video produces better results than VHS or 8mm
- Always use a new tape when shooting.
- Add light when shooting indoors to improve contrast and reduce video noise.
- Use a tripod to reduce camera shake.
- Avoid large sudden movements of the camera, either pans or zooms.
- Move the microphone off camera if possible. Purchase a shot-gun microphone.

Making the Connection

Do not overlook the connections between your equipment!

- Use S-Video cable rather than RCA cables (if possible). S-Video signal retains more fidelity than the composite signals.
- Use good quality cables and connectors.

- Use component video (separate RGB cables) rather than S-Video cable if your digitizing board and VCR support this type of connection.

TIPS FOR IMPROVING THE FRAME RATE

Defragment your disk drive!

A badly fragmented drive impacts performance.

Turn Off AppleTalk and Non-Essential Extensions

Turning off AppleTalk improves performance. Turning off other non-essential screen extensions can also improve performance.

Set the Screen Depth to 16 Rather than 24 Bits

If your digitizing card supports both 16 and 24 bit screen depths, then digitize at 16 bits; particularly if you are using the Apple Video Compressor.

A 16 bit image is 2/3 the size of a 24 bit image. The smaller sized image can be passed around much faster. The image quality of 16 versus 24 is very similar. The Apple Video Compressor only saves 16 bit information anyway.

QuickTime relative performance in order of bit-depth, 1 being better performance:

1. 16-bit
2. 24/32-bit
3. 8-bit
4. 1-bit

Reduce the Frame Size

The size of the frame affects the frame rate. Reducing the frame size increases the frame rate of the movie. When adjusting the frame size remember to check the frame size before recording. Note down the frame size and check it before you begin a recording session. It’s very easy to adjust the frame size for one or two movies, then forget to adjust it for a second digitizing session.

Use the None Compressor

Capturing using the None Compressor generally produces the highest frames rates (though if you have a fast processor, the Apple Video Compressor may be just as efficient.) Capture using the None Compressor and then recompress using the Apple Video Compressor or the Compact Video Compressor. Several Applications, including VideoShop (Avid) and Movie Recorder (Apple) offer automatic post-compression options. These programs capture using the None Compressor, then immediately recompress using the compressor of your choice. We don’t recommend using the Compact Video compressor in these situations.

NOTE: This does NOT apply to recording using the VideoSpigot with the ScreenPlay

application. ScreenPlay uses a special compressor which provides much higher frame rates. Also, if you are using the VideoSpigot, then use the application ScreenPlay to capture movies rather than recording in an application like Premiere or Movie Recorder. Much higher frame rates are possible using ScreenPlay.

Use Faster Equipment

- Faster storage device. A faster hard disk usually improves your capture performance.

QuickTime relative performance on storage devices, 1 being better performance:

1. RAID devices on PCI SCSI cards
2. RAID devices on NuBus SCSI cards
3. Large internal hard disks on direct SCSI interfaces
4. Large internal hard disks on IDE interfaces
5. Small internal hard disks on direct SCSI interfaces
6. Small internal hard disks on direct IDE interfaces
7. Quad speed CD-ROM drives
8. Double speed CD-ROM drives
9. Single speed CD-ROM drives
10. Floppy disks

- Faster processor. A faster processor improves your capture performance.

QuickTime relative performance on processors, 1 being better performance:

1. 150Mhz PowerPC 604
2. 132Mhz PowerPC 604
3. 120Mhz PowerPC 604
4. 110Mhz PowerPC 601
5. 100Mhz PowerPC 601
6. 40Mhz Motorola 68040
7. 66/33 MHz Motorola 68040 (includes FPU)
8. 66/33 MHz Motorola 68LC040
9. 117Mhz PowerPC 603e
10. 100Mhz PowerPC 603e

- Hardware compression boards (such as RasterOps MoviePak, SuperMacs Digital Film, and Radius VideoVision Studio) produce the highest frame rates possible. All three are capable of 30 frames per second, but they require fast processors (ideally a Quadra), fast hard disks (usually a disk array) and produce very large files which can take a long time to recompress.

Use Special Capture Applications

It is possible to capture high frame rate movies without buying a new computer or hardware acceleration board. The utility Grab Guy (on the Apple QuickTime CD) performs multi-pass captures using a computer controllable Sony VCR (generally only the professional decks with time code support). Grab Guy captures every 6 frames (or so) and does multi-passes to record the whole movie.

VideoToolKit from Abbate Video offers a step-record option. Using just about any

controllable VCR, VideoToolKit places the VCR in pause, digitizes the frame, steps the VCR forward a frame, and digitizes the next frame. This requires a VCR with a clean pause, and places extra stress on the tape, but is a cheap alternative for capturing clips.

DETERMINING THE OPTIMUM FRAME RATE

It's important to remember that the optimum frame rate is dependent not just on the capture hardware, but also on the playback platform. If you are recording for distribution on CD-ROM, Apple recommends the following:

180 x 160 at 12 frames per second (compressed using Apple Video Compressor) 240 x 180 at 12 frames per second (compressed using the Compact Video Compressors)

These numbers are designed to provide acceptable performance when playing on an LC from a standard speed CD-ROM. If the processor speed is larger, or a double-speed CD-ROM is assumed, then these figures increase.

KNOW YOUR COMPRESSION ALGORITHM

The more you know about the compression algorithm you are using, the better you will know how to use it, and how to adjust the various parameters for best results. For example, reducing the luminance (brightness information) information in an image will have a greater effect on compression performance than adjusting the chrominance (color). Most compression algorithms make use of the fact that the eye is less sensitive to changes in chrominance information than changes in luminance information . Many algorithms use color-subsampling to reduce the chrominance information. However, reducing the luminance information can reduce the data rate as well.

- Make sure the frame size is divisible by 4. The Compact Video Compressor is most efficient if the frame size (both horizontal and vertical) is evenly divisible by 4. i.e. 240 x 180 is okay, but 242 x 182 is not as efficient.

ADJUST KEY FRAMES

Reducing the frequency of key frames will usually reduce the data rate, and improve performance, however reducing the key frame rate reduces performance when playing the movie in reverse, or when trying to skip ahead in a movie. Generally the Key Frame rate should be set to one per second of video, but if you know the movie will not be interrupted, searched or played in reverse, then you can increase this figure.

USE FILTERED DOWN SAMPLING

Most of the digitizing boards simply ignore or skip pixels to reduce the image size. For example, to create a 320 x 240 image, every second pixel is ignored. This results in stair stepping (aliasing) effects. To reduce these effects, capture the movie at a larger size, then recompress and resize the movie using filtered down sampling. ConvertToMovie and MovieShop both offer this option.

SOUND

- Capture at 22 kHz. This provides best quality. Downsample to 11 kHz for best quality and smallest size for distribution.
- To adjust the sound track, you can export the sound file from Premiere as an AIFF file and then use Sound Edit or another sound editing program to adjust the sound. Then bring the sound back into Premiere.
- The MacRecorder does not accurately stay at 22 kHz during recording. Use MovieShop to resample the sound during compression.

CREATING QUICKTIME ANIMATIONS

PROMotion exports an animation to QuickTime. MovieWorks saves all of its animation in QuickTime format. MacroMind Director can save movies to QuickTime format, as well as play movies within an animation (you must have version 3.1 to do this. Also, if you are using hardware acceleration, get version 3.2 which fixes a problem in Director.)

3D PROGRAMS SUPPORT QUICKTIME

Many 3D programs now support QuickTime. Typestry from Pixer saves flying logos as a QuickTime movie. Infini-D can export a 3D animation to QuickTime. It also lets you use a QuickTime movie as a surface within an animation (so you can have a QuickTime movie playing within a television set.)

PLAYING MOVIES IN HYPERCARD

Both Apple and Claris have released XCMDs for playing QuickTime movies in HyperCard. The Apple XCMDs are on the Apple QuickTime Developer CD, while the Claris XCMDs are available as part of HyperCard (and were available as an upgrade to owners of HyperCard. These XCMDs are different—the Apple XCMDs offer more sophisticated functions, but are not officially supported. You must license either set to distribute with your HyperCard stacks.

USE JPEG COMPRESSOR TO STORE MOVIES

Movie size can be reduced drastically by recompressing using the JPEG

compressor. However, the movie does not play well when compressed using JPEG.

Article Change History:
29 Nov 1995 - Corrected minor typo.
28 Nov 1995 - Updated information on hardware's affect on playback performance.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16236

Tech Info Library

System 7.5: Improper Shut Down Warning Dialog Box (9/94)

Revised: 2/15/95
Security: Everyone

System 7.5: Improper Shut Down Warning Dialog Box (9/94)

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Article Created: 09 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

After installing System 7.5, upon restarting my computer after a system error, I noticed that a dialog box warning me that my computer was not shut down properly appears. It only appears if I was unable to do a proper shut down of my computer.

How can I alleviate of this dialog box?

DISCUSSION ----------

In the General control panel, under Shut Down Warning either select, or deselect the checkbox to turn the warning dialog box on or off.

Article Change History:
15 Feb 1995 - Review for accuracy and change keyword.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16237

Tech Info Library

Apple Remote Access: v1.0 Client Access to v2.0 Servers (1/97)

Revised: 1/20/97
Security: Everyone

Apple Remote Access: v1.0 Client Access to v2.0 Servers (1/97)

==========

Article Created: 9 September 1994
Article Reviewed/Updated 20 January 1997

TOPIC ----------

Is there a way to dial into, and gain access to an Apple Remote Access 2.0 server from the 1.x client?

DISCUSSION ----------

A software patch is now available that lets customers using Apple Remote Access (ARA) server software 2.0.1 accept calls from ARA 1.0 clients. The patch is available immediately at no charge to ARA customers in the U.S. and enables both Apple Remote Access Personal and MultiPort Servers (version 2.0.x) to accept calls from ARA 1.0 clients.

The server software does not provide any additional enhancements beyond enabling Version 1.0 clients to access Version 2.0.x servers nor does it add ARA 2.0 functionality to the ARA 1.0 client. If you do not require connections from ARA 1.0 clients to 2.0.x servers you do not need to update your remote access server software.

The Apple Remote Access Update is available from user groups and from the following online locations:

- On the Internet at the following sites:
  - Worldwide Web: <http://www.info.apple.com/swupdates>
  - ftp: <ftp://ftp.info.apple.com/>
- On America Online, use keyword: applecomputer

- On CompuServe, use GO: APLSUP

Article Change History:
20 Jan 1997 - Updated online references.
22 Feb 1995 - Updated version numbers.

07 Feb 1995 - Added keyword and made several corrections.

Support Information Services

Copyright 1994-97, Apple Computer, Inc.

Tech Info Library Article Number:16240

Tech Info Library

System Software: System Taking 20MB After a Clean Install (1/95)

Revised: 1/6/95
Security: Everyone

System Software: System Taking 20MB After a Clean Install (1/95)

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Article Created: 9 September 1994
Article Reviewed/Updated: 06 January 1995

TOPIC -----

A customer reports that no matter how many "clean" system installs they do the System Software takes up 20MB RAM, as reported in ‘About This Macintosh’. This problem occurs even when booting from the CD-ROM. What can cause this to happen?

DISCUSSION -----

First check the memory control panel settings. If the computer supports it, make sure 32-bit addressing is on or all RAM above 8MB will get allocated to the system software. Next make sure the disk cache is not too high. Disk Cache is recommended to be set at 32K per 1024K of physical RAM or lower. Memory used by the RAM Disk is allocated to the system software. Boot with extensions off to see if an extension is using the additional RAM. Lastly, under System 7.1 and later, move the fonts folder to the desktop and reboot to see if a corrupt font is using the RAM.

The System Heap and System Software partition can hold a lot of different software components. In a situation like this, after starting the CPU with a known good System Folder or after a clean install, look for incompatible device drivers as the culprit. Device drivers can be present on any SCSI device attached to the Macintosh or on NuBus/PDS expansion cards. Test by disconnecting the SCSI chain or by removing internal cards.

Article Change History:
06 Jan 1995 - Updated discussion section.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16242

Tech Info Library

QuickDraw GX: Converting Type 1 Fonts (2/95)

Revised: 2/15/95
Security: Everyone

QuickDraw GX: Converting Type 1 Fonts (2/95)

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Article Created: 9 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC -----

During the installation of QuickDraw GX on a Macintosh running System 7.5, the installer will automatically convert any Type 1 fonts that are installed.

DISCUSSION -----

This process will "double" the amount of disk space currently required by any installed Type 1 fonts. The reason for this is because after the installation, the Type 1 fonts will exist in their converted format and also in their original form within a "•Archived Type 1 Fonts•" folder in the System Folder.

If a customer has many megabytes of Type 1 fonts installed, this could be an issue.

Article Change History:
15 Feb 1995 - Reviewed for accuracy and change keyword.

Support Information Services

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Tech Info Library Article Number:16243

Tech Info Library

System 7.5: Quadra 900/950 Boot Problem (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Quadra 900/950 Boot Problem (2/95)

==========

Article Created: 9 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

There have been a few reports of Quadra 900 or 950 owners having problems after upgrading to System 7.5. The system fails to complete the boot process the first time after installing 7.5. The system could hang when extensions load, when the desktop is rebuilding, or when the desktop appears. This problem is not 100% consistent and not reproducible.

DISCUSSION ----------

The work around is to boot with extensions off, remove the SCSI Manager 4.3 extension from the System Folder, then restart and let the system boot normally.

After the Quadra 900 or 950 has booted normally once, the SCSI Manager 4.3 extension can be placed back in the Extensions folder without any further problems.

Article Change History:
15 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16244

Tech Info Library

Delphi Internet Services Corporation (9/94)

Revised: 9/9/94
Security: Everyone

Delphi Internet Services Corporation (9/94)

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Article Created: 9 September 1994

Delphi Internet Services Corporation

(Often called Delphi)
1030 Massachusetts Avenue
Cambridge, MA 02138

Support: 1-800-695-4005

Business: 617-491-3393

Fax: 617-441-4903

e-mail information: info@delphi.com

Company Profile: providers of the Delphi online service, which provides full text only Internet access, including e-mail, usenet discussion groups, gopher, WAIS and the worldwide web access. Supports up to 14,400 bps modem access. Access via the Internet (Telnet) Sprintnet, and Tymnet.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16245

Tech Info Library

Token Ring NB/c Card: Token Ring Control Panel Not Needed-3/95

Revised: 3/27/95
Security: Everyone

Token Ring NB/c Card: Token Ring Control Panel Not Needed-3/95

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Article Created: 9 September 1994
Article Reviewed/Updated: 27 March 1995

TOPIC ----------

The Apple Token Ring NB/c Card Icon does not appear in the Token Ring Control Panel. The problem is consistent with six different Power Macintosh 6100 computers. The same software works fine in the Power Macintosh 7100 and 8100 computers, although the installed cards are Apple Token Ring 4/16 NB Cards. What is the problem and how does one switch to Token Ring?

DISCUSSION ----------

The Token Ring control panel does not work with the 7 inch Token Ring NB/c Card. Simply switch over to TokenTalk in the Network Control Panel and set the jumper on the card to configure speed. You must have done a "drag" install of the control panel since the installer for network software does not install this control panel for this particular card.

Article Change History:
27 Mar 1995 - Made minor corrections.

Support Information Services

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Tech Info Library Article Number:16247

Tech Info Library

Too Many Nested Folders Error (9/94)

Revised: 9/9/94
Security: Everyone

Too Many Nested Folders Error (9/94)

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Article Created: 9 September 1994

TOPIC ----------

I have a folder with more than 99 folders inside. I'm unable to trash the folder and cannot trash the folders nested within them. The error message states "Cannot empty the trash... to many nested folders." Is there a way to get rid of this folder without having to initialize the hard drive?

DISCUSSION ----------

We were able to duplicate your problem by creating a folder on the root level of the disk and preceding to make new folders until we had a folder with 100 folders. Get Info on the parent folder showed 99 items.

The folder can be deleted as follows:

1) Opening the parent folder.
2) Choosing view by name.
3) Option-click on the triangle to display the entire hierarchy.
4) Scroll down and to the right (folders nested this deep really cause the Finder to indent).
5) Trash the folders from the bottom up.

This does not have to be done one folder at a time, you should be able to delete at least 50 or more at a time.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16248

Tech Info Library

System 7.5: MODE32 Now Compatible (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: MODE32 Now Compatible (2/95)

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Article Created: 12 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

How can I utilize more than 8MB of memory in my Macintosh which does not have 32 bit clean ROMs?

DISCUSSION ----------

Connectix Corporation today announced a cooperative agreement with Apple Computer, Inc. to release Version 7.5 of MODE32. The new version will ship on September 16, 1994 and is fully compatible with System 7.5.

MODE32 is a system extension and control panel that enables Macintosh II, IIx, IIcx and SE/30 computers to use standard System 7 32-bit addressing. This feature is otherwise unavailable on these Macintosh models, yet is needed to run System 7.5. MODE32 is only designed for use on these four Macintosh computers.

As of this release Apple is officially dropping development support for its internally-developed 32-bit addressing solution for these models. Apple's 32-Bit System Enabler is not compatible with System 7.5, and no additional versions of this Enabler are expected to be released.

Users may obtain information about acquiring, installing, and using MODE32 from Apple at 800-SOS-APPL. Users may also continue to contact Apple Computer regarding compatibility problems of Macintosh products with 32-bit addressing. However, they should report compatibility issues appearing to relate specifically to MODE32 directly to Connectix.

MODE32 7.5 has been licensed to Apple for unlimited, free distribution. Connectix retains all right, title and interest in the product itself. As with prior versions of MODE32, users may freely download copies from the Connectix AppleLink, America Online, or CompuServe BBS forums. They may also get MODE32 from many Apple dealers, user groups, or, for a handling fee, directly from Connectix.

Users may copy and distribute System 7 compatible versions of MODE32 to others. Any handling or other commercial fees must be approved by Connectix. International users may contact their local Connectix distributor for information about how to obtain a copy.

Connectix will work to maintain MODE32 compatibility with future versions of System 7, and will revise the version number to match the highest version number of System 7 software which has been qualified as compatible with MODE32. If a version can be developed for Macintosh Systems subsequent to System 7.x, users may be asked to pay an upgrade fee or purchase a new product.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
15 Feb 1995 - Review for accuracy and change keyword.

Support Information Services

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Tech Info Library Article Number:16249

Tech Info Library

Restoration CD: Market Software Series ReadMe, Jan '95 (4/96)

Revised: 4/2/96
Security: Everyone

Restoration CD: Market Software Series ReadMe, Jan '95 (4/96)

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Article Created: 12 September 1994
Article Reviewed/Updated: 02 April 1996

TOPIC ----------

This file contains a listing of all the software configurations available on the CD. In addition, this file contains important information about the release of the Apple Restoration CD that supersedes information in the Apple Restoration CD User's Guide.. Refer to the on-line descriptions and those provided here when selecting a software configuration to restore on Macintosh computers.

DISCUSSION ----------

Apple Restoration CD - Read Me File
Market Software Series, January 1996

Restoration CD Configuration Information

For your convenience, the contents for all of the Market Software Series volumes are listed here:

Volume 10, January 1996
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Description	Part Number
Education Software Summer 1995 for LC580	
7.5.1 for AELC - Student	694-0458
7.5.1 for AELC - Teacher	694-0452
7.5.1 for Early Childhood Connections	694-0450
7.5.1 for Spanish Language Connection-Student	694-0554

7.5.1 for Spanish Language Connection-Teacher 694-0543

Volume 9, January 1996
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Description	Part Number
Fall 1995 Performa Software	
7.5.1 for 5200CD	694-0652
7.5.1 for 6230CD	694-0651
7.5.1 for 580CD	694-0569

Volume 8, January 1996
======================

Description	Part Number
Fall 1995 Performa Software	
7.5.1 for 5215CD	694-0648
7.5.1 for 6200,6218	694-0667
7.5.1 for 6220CD	694-0645

Volume 7, January 1996
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Description	Part Number
Fall 1995 Performa Software	
7.5.1 for 6205CD	694-0586
7.5.1 for 6214CD	694-0566
7.5.1 for 6216CD	694-0540

Volume 6, May 1995
==================

Description	Part Number
April 1995 Performa Software	

7.5 for 5200LC/75	**694-0408**
7.5.1 for 640CD DOS Compatible	**694-0429**

Volume 5, January 1995

Description	Part Number
September 1994 Performa Software	
7.5 for 6112	694-0331
October 1994 Education Software	
7.5 for AELC - Student	694-0393
7.5 for AELC - Teacher	694-0392
7.5 for Early Childhood Connections	694-0394
7.5 for Spanish Language Connection - Student	694-0396
7.5 for Spanish Language Connection - Teacher	694-0395

Volume 4, September 1994

Description	Part Number
September 1994 Performa Software	
7.5 for 637-Money Magazine Edition	694-0336
7.5 for 630CD,635CD,638CD	694-0334
7.5 for 630	694-0348
7.5 for 636	694-0349
7.1P6 for 460-Refurbished system	694-0333
April 1994 Performa Software	
7.5 for 575,577,578	694-0329
October 1993 Performa Software	
7.5 for 475-Marts/Catalog/ Consumer Electronics	694-0328

Volume 3, June 1994

Description	Part Number
October 1993 Performa Software	
7.1P6-476-Office Product Superstores	694-0260
7.1P6-476-Clubs	694-0258
April 1994 Business Software	
7.1-Quadra 605 Productivity Software	694-0290*
Education Software	
7.1-1994 Spanish Language Connection-Student	694-0283
7.1-1994 Spanish Language Connection-Teacher	694-0278
July 1994 Performa Software	
7.1.2P-630,635	694-0303
7.1.2P-636	694-0302
Other	
7.1-Quadra 610 DOS configuration	694-0268-B

Volume 2, February 1994

Description	Part Number
Education Software	
7.1-1994 Early Childhood Connections LC575	694-0245-B
7.1-1994 AELC - Student for LC575	694-0256*
7.1-1994 AELC - Teacher for LC575	694-0255*
7.1-1993 AELC - Student for LCIII	694-0235*
7.1-1993 AELC - Teacher for LCIII	694-0232*
7.1-1993 AELC - Student for LCII,LC520	694-0241*
7.1-1993 AELC - Teacher for LCII,LC520	694-0240*
7.1-1992-1993 AELC - Student for LCII,LCIII	694-0113-B
7.1-1992-1993 AELC - Teacher for LCII,LCIII	694-0112-B
7.1-1993 Q3 Educator Advantage program for LCII,LCIII,Centris 610,Quadra 610	694-0239*
7.0.1-1992 Back to School-Classic II, LCII,IIsi	694-0227
7.0.1-1992 Back to School-PowerBook	694-0226
7.1-1992 Q1 Educator Advantage program	694-0022*

Volume 1, March 1994
==========

Description	Part Number
April 1994 Performa Software	
7.1P6 - 575,577,578	694-0275
January 1994 Performa Software	
7.1P5 - 560 - Money Magazine Edition	694-0243
October 1993 Consumer Software	
7.1 - Consumer PowerBook 145B	694-0185*
October 1993 Performa Software	
7.1P6-410-Marts/Catalog/Consumer Electronics	694-0275
7.1P6-460-Marts/Catalog/Consumer Electronics	694-0275
7.1P6-466-Marts/Catalog/Consumer Electronics	694-0275
7.1P6-475-Marts/Catalog/Consumer Electronics	694-0275
7.1P6-550-Marts/Catalog/Consumer Electronics	694-0275
7.1P3-460-Office Product Superstroes	694-0177
7.1P3-467-Clubs	694-0174
April 1993 Performa Software	
7.1P2-405-SuperStores, WordPerfect Works	694-0094
7.1P2-405,430,450-Consumer Elct.,ClarisWorks	694-0093
7.1P2-450-SuperStores, WordPerfect Works	694-0067
7.1P2-600-Consumer Electronics, ClarisWorks	694-0065
7.1P2-600CD-Consumer Electronics, ClarisWorks	694-0068
7.1P2-600-SuperStores, GreatWorks, MYOB	694-0070
7.1P2-600CD-SuperStores, GreatWorks, MYOB	694-0069
October 1992 Performa Software	
7.0.1P-200,400-GreatWorks, Quicken, T/Maker	694-0001K
7.0.1P-200,400-GreatWorks, Quicken	694-0002K
7.0.1P-200,400-ClarisWorks	694-0003K
7.0.1P-200,400-GreatWorks, MYOB	694-0004K

* Apple recommends that you install the System Update 3.0 from the CD after you install this configuration. Apple recommends that you install CD-ROM software if the computer being restored has a CD-ROM player attached.

Important Information
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1. You can use the Apple Restoration CD on the Apple CD SC Plus and newer Apple CD-ROM drives. If you are not booting from the Apple Restoration CD, you also need the appropriate CD-ROM software driver installed on your Macintosh computer.

2. You cannot boot from the Apple Restoration CD on Macintosh SE, SE/30, Classic, II, IIx, or IIcx computers. With these computers, start your Macintosh with a bootable hard drive and then run the Restoration CD installer program from the Other Items window that appears in the Finder.

3. If you're restoring software to a blank replacement hard drive in a single-drive system, the computer should boot from the Apple Restoration CD after a few seconds. If the computer has an internal hard drive capable of booting the computer, press and hold down the Shift, Option, Command, and Delete keys while starting the system. If the computer has multiple SCSI hard drives that are set up as bootable startup disks, disconnect or leave them powered off while using the Apple Restoration CD. Here are a few other notes about booting from the Apple Restoration CD:

a. On Macintosh SE, SE/30, II, IIx, IIcx, IIci, IIfx, IIsi, and Performa 20 400, 405, and 430 computers, pressing and holding down the Shift, Option, Command, and Delete keys during startup disables the hard drive installed as SCSI device 0.

b. On all other computers except those listed in items 2 and 3a, pressing a holding down the Shift, Option, Command, and Delete keys during startup disables the hard drive chosen with the Startup Disk control panel. If no disk was chosen with the Startup Disk control panel, the computer will either disable the hard drive installed as SCSI device 0 or the key sequence will have no effect (depending on the model of computer).

c. In general, if you are using an Apple CD 300 player and you set the CD-R drive's SCSI device number to a higher number than a bootable hard drive, the computer should boot from the CD-ROM drive. If other devices are starting the computer, either disconnect them, set the CD-ROM drive to be the startup disk, or specify a hard drive to be the startup disk and then use the Shift-Option-Command-Delete key sequence to disable the drive. If the computer still attempts to boot from SCSI device 0, even after using the Shift-Option-Command-Delete key sequence, you can reset the startup disk to SCSI device 0 by clearing parameter RAM (pressing and holding down Option-Command-P-R keys while starting up your system). Note, however, that clearing parameter RAM also clears other user settings.

Article Change History:
02 Apr 1996 - Replace entire contents with updated information.
07 Sep 1995 - Made Minor Corrections.
08 Aug 1995 - Added Restoration CD Volume 6.

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Tech Info Library Article Number:16250

Tech Info Library

System 7.5: Cannot Disable Desktop Printing in Finder (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Cannot Disable Desktop Printing in Finder (2/95)

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Article Created: 12 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

I am unable to disable desktop printing when the Finder is the current application. I have GX Helper installed, so what is wrong? I am trying to utilize the 4-up printing feature of LaserWriter 8.x, with the help of GX Helper.

DISCUSSION ----------

Desktop printers cannot be disabled when the Finder is the current application, and thus the LaserWriter 8.x driver (which has 4-up printing capability) is not available. The important thing to note here is the behavior of GX Helper. Basically, GX Helper and its ability to disable desktop printing ONLY operates in the following situations:

• It can only disable desktop printing with applications that are not GX-aware. Since the Finder is GX-aware, desktop printers cannot be disabled.

• It only works with equivalent APPLE-brand printer drivers that are in the Extensions folder. For LaserWriter GX, it will use LaserWriter driver v7.2. LaserWriter 7.2 was the only version tested with GX Helper. LaserWriter driver 8.x and 8.xf seem to work with GX Helper, but they are not an Apple supported solution in the current revision. Also, any third-party printer drivers will NOT be seen by GX Helper.

Article Change History:
15 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16251

MacTest Pro: RAM Test is Greyed Out (9/94)

Revised: 9/13/94
Security: Everyone

MacTest Pro: RAM Test is Greyed Out (9/94)

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Article Created: 12 September 1994

TOPIC ----------

A technician is having problems checking the RAM in a Power Macintosh 7100/70 using MacTest Pro.

The RAM memory test is greyed out. The tech has tried three machines with memory configs as follows:

16 MB
32 MB
72 MB

The tech did not try to run the tests with Apple memory. Is there an issue here?

DISCUSSION ----------

Working with information from the Diagnostics group, we were able to duplicate the problem and solve the greyed out RAM test problem. We found that if AppleTalk is ON, the RAM test will be greyed out - turning off AppleTalk allows the test to be selected.

If this does not help the service provider please let us know. Below is the information provided by the Diagnostics group:

(1) Copy the MacTest Pro application and desired test modules to the unit-under-test's hard drive. Check carefully that AppleTalk is OFF and that Virtual Memory is OFF. Launch MacTest Pro from the hard drive, then try again to run the memory diagnostic tests. (See MacTest Pro Ref. Guide 073-0368-B, pages 29-30 and 41-42 for more details.)

(2) If the buttons are still greyed out, please ask the technician to document as thoroughly as possible what s/he's doing, so that we can reproduce the problem ourselves. Every detail helps - eg. boot from floppy vs. launch from

hard disk, sw version #'s, memory config's, any other sw running at the time...

Having the buttons greyed out tends to indicate that the problem is with MacTest Pro, not with the unit-under-test. I'm including "not knowing how to use MacTest Pro" in this category, since that indicates a possible ease-of-use, training or documentation issue.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16252

Tech Info Library

QuickDraw GX: Cannot Move Desktop Printers off Desktop (2/95)

Revised: 2/15/95
Security: Everyone

QuickDraw GX: Cannot Move Desktop Printers off Desktop (2/95)

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Article Created: 12 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

Is there any way to move desktop printer icons off of the desktop? It appears an alias may be placed in a folder, but the originals, as far as I can determine, must reside on the desktop.

DISCUSSION ----------

With the current release of QuickDraw GX, there is no way to move a "desktop printer" off the Macintosh Desktop and have it be functional. The QuickDraw GX team is aware of this issue and is looking into changing this in a future version of QuickDraw GX.

Currently, no time line exists for implementing this change if it is implemented.

Article Change History:
15 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16253

Tech Info Library

QuickDraw GX/PowerTalk Installer Disk: Choose Button (2/95)

Revised: 2/15/95
Security: Everyone

QuickDraw GX/PowerTalk Installer Disk: Choose Button (2/95)

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Article Created: 12 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

This article describes the QuickDraw GX/PowerTalk Installer disk, and the need to select which install script you wish to install. If the script is not double clicked, a choose button allows you to navigate to the installer script you want to use.

DISCUSSION ----------

The QuickDraw GX/PowerTalk Installer disk has two scripts, "Install QuickDraw GX" and "Install PowerTalk". If you click on the installer application instead of a script, you are presented with the message, "The Installer found 2 Installer documents on the disk 'disk name'. Please open the specific document you wish to use.", along with Quit and Choose buttons.

The "Choose" button will allow you to navigate to the installer script you want to install.

Article Change History:
15 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

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Tech Info Library Article Number:16255

Tech Info Library

Power Macintosh: Monitor Displays the Wrong Tint (3/95)

Revised: 3/23/95
Security: Everyone

Power Macintosh: Monitor Displays the Wrong Tint (3/95)

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Article Created: 12 September 1994
Article Reviewed/Updated: 23 March 1995

TOPIC ----------

When attaching a monitor to the built in video of a Power Macintosh, the monitors video has a pinkish color. Is this a monitor problem or a problem with the computer?

DISCUSSION ----------

First check the video cable connection. Power Macintosh computers with a monitor attached to the built in video port (HDI-45), the cable must be seated correctly. This is very important when you use the Power Macintosh Display Adapter. The Power Macintosh Display Adapter allows a standard DB-15 video connector to attach to the HDI-45 port on the computer.

If the colors displayed on your monitor are not correct, follow these steps:
1) Make appropriate monitor adjustments
2) Reseat the cable
3) Replace the Power Macintosh Display Adapter
4) Try another monitor

These steps should help isolate the problem.

Article Change History:
23 Mar 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16256

Tech Info Library

LaserWriter 8.x: Why Apple Supports it Along With GX (2/95)

Revised: 2/15/95
Security: Everyone

LaserWriter 8.x: Why Apple Supports it Along With GX (2/95)

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Article Created: 12 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC -----

Why does Apple have two printing platforms, LaserWriter 8.x and LaserWriter GX?

DISCUSSION -----

Apple is currently developing product for both platforms (LaserWriter 8.x and GX) in order to provide short-term support for our customers. As an example, Apple does not currently have support for PostScript Fax or PPD files in LaserWriter GX, so this functionality is provided to our customers through the LaserWriter 8.x platform.

In terms of a long-term strategy, the goal is to provide the functionality of both driver platforms into one; LaserWriter GX and its Printer Extensions capability.

Article Change History:
15 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16257

Tech Info Library

Apple Token Ring NB/c Card: Can't Change TR Address (9/94)

Revised: 9/14/94
Security: Everyone

Apple Token Ring NB/c Card: Can't Change TR Address (9/94)

==========

Article Created: 13 September 1994

TOPIC ----------

Is there a way to see and/or change the token ring address on the Apple Token Ring NB/c card?

DISCUSSION ----------

Because the Apple Token Ring NB/c card does not use the Token Ring control panel, there is no way to see the current default token ring address assigned to the card. There is also no way to change the token ring address or adjust the timer values.

The reason for this is that the NB/c card is intended for use on TokenTalk networks. With TokenTalk, there is no need to know or change the token ring address. The only way to determine the burned in token ring address for the card would be to examine a token ring line trace.

If a customer wants to be able to determine the token ring address from within the Macintosh, they must use the full size Apple 4/16 Token Ring NB card.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16259

Tech Info Library

Problem Changing Preferred Memory Size of Locked File (7/95)

Revised: 7/19/95
Security: Everyone

Problem Changing Preferred Memory Size of Locked File (7/95)

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Article Created: 13 September 1994
Article Reviewed/Updated: 19 July 1995

TOPIC ----------

I have an application shared on an AppleShare 3.x File Server. The application is locked in the Get Info dialog box. I want to increase the amount of Preferred Memory allocated for the application.

I open the Get Info dialog, unlock the file, change the Preferred Memory, lock the file, and then close the Get Info dialog. However, the information in Get Info reverts back to the original memory setting.

DISCUSSION ----------

The following workaround lets you change the Preferred Memory setting on locked applications either shared by an AppleShare File Server, or on your local hard disk:

1) Open Get Info dialog box for the application file.
2) Unlock the file if it is locked.
3) Close the Get Info dialog box.
4) Open Get Info for the application file a second time.
5) Change the Preferred Memory setting.
6) Close the Get Info dialog box.
7) Open Get Info for the application file a third time.
8) Lock the file.
9) Close the Get Info dialog box.

Article Change History:
19 Jul 1995 - Added local hard drive to article.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16260

PowerTalk: There is No Custom Remove Option (2/95)

Revised: 2/15/95
Security: Everyone

PowerTalk: There is No Custom Remove Option (2/95)

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Article Created: 13 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC

This article describes how to remove PowerTalk from your system folder, because there is no removal option in the PowerTalk Installer.

DISCUSSION

When you install PowerTalk, which comes with System 7.5, you can only install, there is no option for Remove or Custom Remove. The way to de-install PowerTalk is to drag the 13 PowerTalk components from the System Folder to the Trash. By removing PowerTalk you can reduce RAM requirements and increase hard disk space.

If you have been using PowerTalk, be sure to empty your Mailbox and verify there are no items waiting to be sent before you remove PowerTalk.

Here are all of the files and folders that need to be removed:

	Component
Apple Menu Items (folder)	
. Mail and Catalogs (folder)	1
Control Panels (folder)	
. PowerTalk Setup (control panel)	2
Extensions (folder)	
. AppleTalk Service (PowerTalk extension)	3
. Catalogs Extension (system extension)	4
. Mailbox (system extension)	5
. PowerTalk Guide (Apple Guide document)	6
. PowerTalk Extension (system extension)	7
. PowerTalk Manager (system extension)	8

PowerTalk Data (folder) 9

Preferences (folder)
. AppleMail Letterheads (folder) 10
. PowerTalk Setup Preferences (PowerTalk Manager document) 11
. PowerTalk Startup Preferences (PowerTalk Manager document) .. 12

Apple Extras (folder)
. PowerTalk (folder) 13

Article Change History:
15 Feb 1995 - Reviewed for accuracy and changed keyword.
09 Feb 1995 - Noted to empty mailbox prior to removing PowerTalk.
03 Feb 1995 - Added generic statement on RAM and HD space.

Support Information Services

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Tech Info Library Article Number:16261

Tech Info Library

QuickTake 100: Creating GIF and Screen Saver files (9/94)

Revised: 9/13/94
Security: Everyone

QuickTake 100: Creating GIF and Screen Saver files (9/94)

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Article Created: 13 September 1994

TOPIC --------------------

Is there a way to convert a QuickTake image into a GIF file format? Also, is there a way to convert a QuickTake image into a screensaver?

DISCUSSION --------------------

Files created by the QuickTake camera are simply 24 bit Macintosh PICT images. Most graphic software packages that recognize the PICT and GIF file formats will allow you to save a PICT file as a GIF file. For example, you can do this with PhotoShop or DeBabelizer. In addition, there is a wide array of public domain and shareware software available on most of the online services that also lets you do this.

One part of the conversion process is to reduce the image quality. This is necessary because the QuickTake document is stored as a 24 bit (16 million Colors) image and a GIF file is stored as an 8 bit (256 colors) image. Some programs do this automatically, others do not. Depending on the software you use to convert the image, you may need to do this.

Screen Saver

One way make a QuickTake image into a screen saver is to use the AfterDark screen saver. Slide Show, one of AfterDark's modules, will blank the screen and display one or more specified Macintosh PICT images.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16262

Tech Info Library

QuickTime 2.0: Movie Making Notes (11/95)

Revised: 11/28/95
Security: Everyone

QuickTime 2.0: Movie Making Notes (11/95)

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Article Created: 13 September 1994
Article Reviewed/Updated: 28 November 1995

TOPIC ----------

This article discusses some things to consider when making movies with QuickTime 2.0.

DISCUSSION ----------

Making Movies

QuickTime 2.0 supports movies of higher data rates, frame rates, and frame sizes than in the past. The problem for content developers of how to balance these variables to create the best possible movie still remains.

The improvements apply to all existing decompressors. Cinepak, Apple Video, Animation, and Graphics compressors will show the best result. Further, best playback result, as always, are obtained when the movie is played back at either its normal size or at exactly double size.

There is no magic formula for how to make the best movie. You need to select your target playback machine and experiment with some variables. In the following paragraphs some benchmark numbers are provided to help get you started.

To make video based movies, use the Cinepak (previously Compact Video) compressor. If you have a Power Macintosh computer with the QuickTime PowerPlug extension installed, CinePak compression runs about 2.5 times faster than on a Quadra 950.

Movies can now typically be made which take full advantage of the target device. This means you can make movies at 150k/sec and have them play back from a CD150. You can also make movies at 300k/sec and have them play back on a CD300. There are other limiting factors, however, such as frame rate and frame size. Even if you can't get the desired frame rate (due to video hardware limitations), you

may be able to take advantage of the higher data rate in other ways. For example, you might choose to include higher quality audio.

The biggest limiting factor for movie playback is usually the performance of video memory. NuBus video cards are much slower than on board video memory.

On a Macintosh IIfx it is possible to play a 320x240 movie at 15 fps to 8 and 16 bit displays, and sometimes to 32 bit displays. A 320x240 movie can play on the same fx at 30fps, in most cases. There is no on board video memory on the fx, which greatly limits performance.

On an Macintosh LC 475, a 320x240 movie at up to 30fps can play to the on board video memory at 16 bits. A 240x180 can be played pixel doubled at 15fps at 16 bits, which is full screen for the 12 inch monitor. These same numbers also apply for a Duo 270c.

On any Quadra, a 320x240 movie can be played at 30fps (or more in many cases) to on board video at any depth. A 320x240 movie can also be played pixel doubled at between 15 and 24 fps, depending on the amount of motion in the content. A 320x240 movie can be played at 30 fps to most NuBus video boards.

On the Power Macintosh computers a 320x240 movie can be played at 30fps to on board video. On most Power Macintosh computers, a 320x240 movie can be played back pixel doubled at 30 fps.

To playback "full screen" movies on many machines requires a special application. When the movie plays back it must not intersect the menu bar or the rounded corners of the desktop, or performance will suffer. Currently the simplest way to play a movie full screen is using OttoPlayer, which is on the QuickTime 1.5 and 1.6 developer CD's.

When making movies, for frame rates up to about 15fps, the movie data rate should be no higher than 150k/sec. For movies at 30fps, the data rate typically needs to be close to 300k/sec.

One way to get higher performance from low end machines is to play movies back at 8 bits. Less data has to be pushed through to video memory per frame, so more frames or bigger frames can be used. Unfortunately, 8 bit video can look rather grainy. One way to improve this is to calculate a custom color table for the movie for use on 8 bit displays. Two tools are included with the seed which allow you to do this. SetMovieColorTable lets you take an existing color table and attach it to a movie. MakeMovieColorTable lets you calculate a color table for a movie. The color table attached to the movie will be used in MoviePlayer and in other applications which use the Movie Controller to control the palette. The custom color table is only used for playback to displays at 8 bits or less. At 16 and 32 bit, the color table is not used. This allows you to create a single movie which will playback well at any bit depth. The process of attaching a color table to a movie does not change the compressed data in any way.

Existing Content

Existing content will playback much more smoothly using QuickTime 2.0. Frames are now displayed at much more accurate times. This helps to eliminate the

"jerkiness" associated with software based digital video.

QuickTime has always required that a movie be "pre-rolled" before being played. The pre-roll process allows the movie to allocate all the resources it needs to play the movie, and to start reading from the disk. Some applications fail to pre-roll the movie before playing. Others don't pre-roll with the correct values. If it plays back well in MoviePlayer (and poorly in the application), the application probably isn't pre-rolling. In QuickTime 2.0 pre-rolling is much more important than in the past. With earlier versions of QuickTime, it was possible to almost get away without pre-rolling the movie. With QuickTime 2.0, not pre-rolling the movie can cause extremely bad playback. If a movie starts out playing badly, it probably has not been pre-rolled. MoviePlayer does pre-roll correctly. If a movie plays badly inside another application, try playing it in MoviePlayer.

Looping Movies

The way looping is usually handled in QuickTime is somewhat different in QuickTime 2.0. Previously, a movie in loop mode would start to accumulate all its frames in memory. This made the movie playback better once all the frames were loaded. However, if all the frames couldn't be loaded, because there wasn't enough memory, it actually made playback worse as the Memory Manager thrashed around looking for free space. In QuickTime 2.0 the frames are not ever cached in memory. However, work has been done in 2.0 to improve looping performance. Most movies should now loop extremely smoothly from hard disk. From CD movies should loop smoothly, with only a slight delay between the end and beginning.

Article Change History:
28 Nov 1995 - Corrected minor typo.
15 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

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Tech Info Library Article Number:16264

Tech Info Library

English Text to Speech Software: Read Me (4/97)

Revised: 4/28/97
Security: Everyone

English Text to Speech Software: Read Me (4/97)

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Article Created: 14 September 1994
Article Reviewed/Updated: 9 April 1997

TOPIC --

This article contains the Text to Speech Software Information - Read Me First file found in the Apple Software Updates areas on CompuServe and the Internet. English Text-to-Speech software version 1.4.1 was released on 08-Aug-95.

DISCUSSION ---

Using the English Text-to-Speech Software.

With the English text-to-speech software installed, many Macintosh programs can read English text out loud. One of the programs that can read to you is the SimpleText program, which comes with this computer and is already installed on your hard disk. (You are probably reading this document using the SimpleText program.)

The instructions in this document tell you:

– what you need to use this software;
– how to install the software;
– how to try out the software using SimpleText;
– how to choose a standard (default) voice;
– some technical details;
– how to solve common problems.

What you need to use the English text-to-speech software.

To use the software, you need the following software and hardware.

– a Macintosh or Power Macintosh computer;
– version 6.0.7 or later of system software;
– at least 300 kilobytes of RAM in addition to what the rest of your system software takes;

– at least 5 megabytes of space available on your hard disk.

Installing the software.

To install the English text-to-speech software, follow these steps.

1. Print these instructions before you start. You will not be able to view them on screen during the installation.

2. If you have been using an earlier version of text-to-speech software, see the note for you at the end of this section.

3. Quit any programs you have been using.

4. While holding down the Shift key on the keyboard, choose Restart from the Special menu. Don’t release the Shift key until you see the “Extensions Off” message on your screen.

5. To start the Installer program, double-click its icon. You can find the Installer program in the same place you found these instructions.

6. In the introductory screen that appears, click Continue.

7. In the next screen, click Install. The installation takes a few minutes.

8. When you see a message reporting that the installation was successful, click Restart.

After the computer restarts, you can start using the text-to-speech software. You can try it out using the instructions in the next section.

Note for users of PlainTalk 1.0: The improved version of MacinTalk Pro included with this text-to-speech software is intended to replace the old PlainTalk text-to-speech software. However it may not work with some computers that have a 68030 processor. If you have such a computer and want to keep using the old PlainTalk text-to-speech software, you should not use the standard Install procedure described in these steps. Instead, after step 6, choose Custom Install from the pop-up menu, select MacinTalk 2 or MacinTalk 3, then proceed with steps 7 and 8.

Trying out the text-to-speech software.

You can try out the text-to-speech software in the SimpleText program by following these steps.

1. Open any SimpleText document. Or, since this document is already open, you can do the remaining steps with it.

2. Click anywhere in the text to make sure nothing is selected.

3. Choose "Speak All" from the Sound menu. (If you cannot hear anything, you may have the sound turned all the way off. Check in the Sound or "Sound & Displays" control panel.)

4. If you want the computer to stop reading, choose Stop Speaking from the Sound menu.

You can also try the following:

– To read a portion of the file, select the words you want to read then choose Speak Selection from the Sound menu.

– To have the computer speak in a different voice, select a voice from the Voices sub-menu in the Sound menu, then choose the Speak All or Speak Selection command from the Sound menu.

– To use the text-to-speech features of other programs, see the instructions that came with those programs.

Choosing a standard (default) voice.

If you have system software version 7.0 or later, you can use the Speech control panel to choose your favorite voice to be the default voice for all your programs. (To use the Speech control panel on some black-and-white 68000 computers, like the Macintosh SE, you need to have system software 7.1 or later.) To set the default voice, follow these steps.

1. Open the Control Panels window by pulling down the Apple (🍎) menu and choosing Control Panels.

2. Open the Speech control panel by double-clicking its icon in the Control Panels window.

3. Open the Options pop-up menu at the top of the Speech control panel and choose Voice.

4. To change the default voice, choose the voice you want from the Voice pop-up menu. To hear what the voice you chose sounds like, click the speaker button. If you're concerned about RAM usage, Agnes, Bruce, and Victoria take about 1,500 kilobytes of RAM; the rest take 300 kilobytes or less.

5. To change the rate at which the default voice speaks, move the slider.

6. Close the control panel.

Technical details.

The software that enables your computer to speak has these components:

– Speech Manager, a system extension;

– one or more of these English speech synthesizers, depending on your hardware and software:
- MacinTalk 2 for standard-quality speech,
- MacinTalk 3 for high-quality speech,
- MacinTalk Pro for highest-quality speech.

— several voice files, each identified with one particular synthesizer;

— the Speech control panel (if you have system software 7.0 or later).

The Installer installs the files that are appropriate for your system.

— If you have version 6.0.7 or 6.0.8 of system software on any Macintosh, these files are installed.
- Speech Manager, in the System Folder;
- MacinTalk 2, in the System Folder;
- 9 voices, in the Voices folder, which is in the System Folder.

— If you have version 7.0 or later of system software on a Power Macintosh or on a Macintosh with a 68040 processor, the following files are installed.
- Speech Manager, in the Extensions folder;
- the Speech control panel, in the Control Panels folder;
- MacinTalk 3 and MacinTalk Pro, in the Extensions folder;
- 19 MacinTalk 3 voices, in the Voices folder, which is in the Extensions folder;
- 3 MacinTalk Pro voices (Agnes, Bruce, and Victoria), also in the Voices folder.

* If you have version 7.0 or later of system software on a Macintosh with a 33 MHz or faster 68030 processor, the following files are installed.
- Speech Manager, in the Extensions folder;
- the Speech control panel, in the Control Panels folder;
- MacinTalk 3, in the Extensions folder;
- 19 voices, in the Voices folder, which is in the Extensions folder.

* If you have version 7.0 or later of system software on any other computer, the following files are installed.
- Speech Manager, in the Extensions folder;
- the Speech control panel, in the Control Panels folder;

(Note: On Macintosh SE computers, the Speech control panel requires version 7.1 or later of the system software)
- MacinTalk 2, in the Extensions folder;
- 9 voices, in the Voices folder, which is in the Extensions folder.

Troubleshooting (problems and solutions).

Problem — My Macintosh won't speak.
Solution - Turn up the speaker volume in the Sound control panel.
Solution - Choose a voice that requires less random-access memory. The voices Agnes, Bruce, and Victoria take the most memory.

Problem — The Installer program says there’s a problem with the hard disk.
Solution - Re-install your system software, then try installing the English text-to-speech software again.

Problem — The Installer program displays other error messages.
Solution - Make sure you restart the computer with extensions off, as described in "Installing the Software," above.

Problem — I had an older version of text-to-speech software, then did a custom installation of the new software, but some of my older voices disappeared.

Solution - The custom installation you chose erased the older version of the software that can use those voices. You can install newer versions of the voices by doing another custom installation of the new software to install MacinTalk 2 or MacinTalk 3 — whichever you used to have. (If you’re not sure which you had, you can install both.)

The following Apple Tech Info Library articles can help you locate the software update mentioned here:

* "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

* "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
09 Apr 1997 - Removed out dated on line references.
21 Aug 1995 - Added new read me for version 1.4.1.

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Tech Info Library Article Number:16268

Tech Info Library

MacinTalk: Which Version to Use (8/95)

Revised: 8/22/95
Security: Everyone

MacinTalk: Which Version to Use (8/95)

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Article Created: 14 September 1994
Article Reviewed/Updated: 22 August 1995

TOPIC ----------

What is MacinTalk and which version should I install on my Macintosh?

DISCUSSION ----------

MacinTalk is used in combination with Apple's Text-to-Speech software. It enables your Macintosh to provide Text-to-Speech capabilities for applications that support Text-to-Speech. SimpleText is an example of an application that supports Text to Speech.

MacinTalk 2 is well suited for low-end environments where available memory is low and CPU bandwidth is limited. Minimum configuration is System 6.0.7 running on a Mac Plus.

MacinTalk 3 is well suited for mid-range computing environments. Minimum configuration is System 7 running on a 68030 processor running at 33Mhz or any 68040 or PowerPC processor.

MacinTalk Pro requires System 7 or greater and is intended for higher performance 68040 and PowerPC Macintosh computers.

To install the correct version of MacinTalk on your computer, download the English (or Spanish) Text-to-Speech software from an online service.

The latest Text-to-Speech software package features a new "smart installer" that automatically determines what speech resources are right for your computer. It will automatically install the correct files for your computer when you perform the Easy Install.

To Install MacinTalk

Step 1

Restart your Macintosh holding down the Shift key until you see the "Welcome to Macintosh, Extensions Off" screen.

Step 2

Double-click the Installer in the English (or Spanish) Text-to-Speech folder you downlaoded.

Step 3

Click Easy Install.

Step 4

Restart your Macintosh.

Step 5

Use SimpleText to try out the Text-to-Speech software.

The following articles can help you locate the software mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates.

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
22 Aug 1995 - Updated which file to download and installation instructions.
30 Jun 1995 - Added note indicating the software has been taken off line
19 Apr 1995 - Added information about how to find software online.

Support Information Services

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Tech Info Library Article Number:16271

QuickDraw GX: How to Select Printer Options or Trays (1/95)

Revised: 1/25/95
Security: Everyone

QuickDraw GX: How to Select Printer Options or Trays (1/95)

==========

Article Created: 14 September 1994
Article Reviewed/Updated: 19 January 1995

TOPIC ----------

This article describes the steps necessary when using the LaserWriter GX driver to choose specific printer options or trays.

DISCUSSION ----------

When using QuickDraw GX with the LaserWriter GX driver, you may notice that you cannot find specific LaserWriter options such as PhotoGrade or DPI settings. Unlike earlier LaserWriter drivers, such as the LaserWriter 8.x driver, the operating system does not query the printer for available options when the printer is selected in the Chooser. Instead, the query happens when the first print job is sent to a specific printer using the LaserWriter GX driver.

This means that the specific printer options will not be available until after printing at least once to a desktop printer.

If you are printing from non-GX savvy applications, you should use the LaserWriter Utility included with QuickDraw GX (using custom install) to set certain printer options or bypass the LaserWriter GX driver by installing the QuickDraw GX Helper extensions (using custom install).

How to Select Specific LaserWriter Options
---

1) Create a desktop printer using the LaserWriter GX driver in the Chooser
2) Print a one page document or the desktop to the printer
3) Choose Page Setup from a QuickDraw GX savvy application.
4) Select the specific LaserWriter under the "Format For:" pop-up menu. Do NOT choose LaserWriter GX but the specific name of the LaserWriter.
5) Click on the "LaserWriter Options" icon on the left side of the window.

You should see all the options available for the LaserWriter you have chosen

such as 300/600 DPI or PhotoGrade. The options available here are dependent on the printer model. Consult your printer's documentation for a complete description of features.

How to Select Multi-purpose Input Trays
---
1) Create a desktop printer using the LaserWriter GX driver in the Chooser
2) Print a one page document or the desktop to the printer
3) Select the printer on the desktop and choose "Input Trays" from the Printing Menu.
4) Make the appropriate selections.

The manual feed tray is not supported in the current version of the LaserWriter GX driver.

You will know if QuickDraw GX has queried the specific Desktop Printer properly if the dialog window that comes up for paper trays specifically mentions the printer model (example:LaserWriter Pro).

Article Change History:
19 Jan 1995 - Added information on manual feed tray.

Support Information Services

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Tech Info Library Article Number:16274

A/UX: Swap Space Running Low Messages (9/94)

Revised: 9/14/94
Security: Everyone

A/UX: Swap Space Running Low Messages (9/94)

==========

Article Created: 14 September 1994

TOPIC ----------

Even though I have lots of swap space and only a little bit is being used, I STILL get a lot of messages saying that my swap space is running low. Why does this occur?

DISCUSSION ----------

Unix is justifiably concerned about having adequate swap space. A system crash caused by this can be difficult to recover from. If you do a "/etc/swap -l" and see that you're only using a small portion of your swap space and have a "lot" left, then you can safely ignore the messages (just how much is a "lot" is hard to say, but if you have 25000 blocks and are only using 1000 or 2000, then I'd say you were fine). If you DO need more swap space, then you have a few options:

a. Using 'kconfig', reduce the number and size of buffers.
   This isn't really a good idea since it could really degrade performance as well as possibly causing more panics.

b. Add more swap space.
   Fine, if you have it. You could either add another disk as swap (nice) or repartition your present disk to create a larger Swap partition (Ack!).

c. Add more memory.
   If you have more memory, then this will reduce the need to augment it with swap space... RAM's cheap too! There is an old rule of thumb that the size of Swap should be about 2 to 3 times the amount of RAM, which would seem to contradict the above. The thing is that if with the _present_ workload you are swapping like crazy, then adding RAM will reduce tha swapping. If, however, you start increasing the work-load, then swapping will start again, and you better have

enough of it! This was the original intent of the Rule-Of-Thumb. At the very least, Swap should always be at least as big as the amount of RAM you have.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16275

A/UX: Copy File System From One Partition to Another (9/94)

Revised: 9/14/94
Security: Everyone

A/UX: Copy File System From One Partition to Another (9/94)

==========

Article Created: 14 September 1994

TOPIC -----

How can I copy a complete file system from one disk partition to another?

DISCUSSION -----

You have three options: dd, dump.bsd and cpio (pax MAY work but tar won't since it won't handle special-type files). If the two partitions are the same size, you can use 'dd' (to copy c0d0s0 to c5d0s3, e.g.):

```
$ dd < /dev/rdsk/c0d0s0 > /dev/rdsk/c5d0s3
```

To use dump.bsd, you can use the following command (this assumes that the destination disk in mounted on /mnt and you want to copy the root file system which is on SCSI 0... of course, you must be root and it would be MUCH better to do this in single-user mode):

```
$ dump.bsd 0f - /dev/rdsk/c0d0s0 | (cd /mnt; restore xf -)
```

To use cpio, you must use it in a pipe with find. For example, to copy /usr (let's assume it's on it's own file system) to another disk|partition (assume it's mounted on /mnt) then you can use (you can add the "-depth" flag to 'find' if you want):

```
$ cd /usr
$ find . -print | cpio -pdmuva /mnt
```

The problem with this is that if the mount point of the destination disk falls under the file system's directory you're trying to copy, you'll load up your destination disk. For example, the following would NOT work:

```
$ cd /
$ find . -print | cpio -pdmuva /mnt
```

because 'find' would see the stuff in /mnt (which you just put in there) and try to copy in back to /mnt! To way to avoid this is by adding a little filter:

```
$ cd /
$ find . -print | grep -v '^./mnt*' | cpio -pdmuva /mnt
```

If you have GNU find, then you can use it with it's '-xdev' option, which prevents find from walking through other file systems:

```
$ cd /
$ find . -xdev -print | cpio -pdmuva /mnt
```

dump.bsd creates a "truer" copy of your file system (the access and modification dates aren't mucked with... with the find/cpio pipe, at the least the directory dates are touched) but pre-3.1 versions of restore couldn't restore named pipes. These are easy to creat though using 'mknod'. The only named pipes included in the default A/UX distribution are:

```
/usr/lib/cron/FIFO
    prw-------   1 root     sys            0 Oct 18 16:08

/usr/spool/lpd/AppleTalk/pipe
    prw-rw----   1 daemon   daemon         0 Oct 19 06:11
```

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16276

Tech Info Library

A/UX: UUCP under A/UX 3.0 (9/94)

Revised: 9/14/94
Security: Everyone

A/UX: UUCP under A/UX 3.0 (9/94)

==========

Article Created: 14 September 1994

TOPIC ----------

What is different about UUCP under A/UX 3.0?

DISCUSSION ----------

UUCP under 3.0 is much improved over it's previous "incarnation" under 2.0.1. 3.0 uses HDB (for HoneyDanBer) UUCP instead of standard UUCP. Some nice things are bidirectional getty (also known as uugetty in other Unixs) which allows both incoming and outgoing communication over serial lines as well as better performance and reliability.

You may consider getting Alexis Rosen's "sendmail.cf" file for use under UUCP sendmail. This config file has been modified to allow UUCP and sendmail to work beautifully together. You may also want to consider simply installing smail to replace sendmail.

Under 3.0, be sure that you are running the latest version: 1.16. It can be found on aux.support.apple.com in aux.patches/supported/3.0. Be sure that you get the new dial.o on ftp.apple.com (pub/earlw/dial) to avoid breaking syslog. Under 3.0.1 (and later) all is OK.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16277

AppleCD 300: No CD-I Support (9/94)

Revised: 9/15/94
Security: Everyone

AppleCD 300: No CD-I Support (9/94)

==========

Article Created: 14 September 1994

TOPIC -----

In the AppleCD 300i plus manual, it claims that CD-I mode 2, Forms 1 and 2 are supported. What are these, and how is CD-I Supported on the Macintosh?

DISCUSSION -----

The CD-ROM specification provides two Modes and the CD/XA provides a specification for two Forms.

Here is some information on the modes to assist in understanding CD-ROM specifications:

--MODE 1 and 2--

To achieve the first level of Photo CD compatibility, Kodak’s Photo CD requires a CD-ROM drive that provides Mode 2/Form 1 services.

CD-ROM Mode 1 is the standard ability to read CD-ROMs. A CD-ROM drive must support this mode to be considered a CD-ROM drive.

CD-ROM Mode 2 allows for additional capabilities. In relation to Photo CDs the CD-XA Form 1 is the most important element. Mode 2/Form 1 allows the Photo CD to be recognized and read.

CD-I

Philips CD-I CD-ROMs come in two varieties; either it is an interactive multimedia title or it is a MPEG encoded video or feature length movie.

The interactive multimedia titles need the Philips game controllers, and OS9 which would not be compatible with the Macintosh. The MPEG encoded CD-ROMs need special MPEG playback hardware that is not yet available for the Power Macintosh line.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16278

Tech Info Library

LaserWriter 8.2: Changes to Printer Driver (9/94)

Revised: 2/9/95
Security: Everyone

LaserWriter 8.2: Changes to Printer Driver (9/94)

==========

Article Created: 14 September 1994
Article Reviewed/Updated: 9 February 1995

TOPIC ----------

This article provides a list of changes and enhancements made in the LaserWriter 8.2 printer driver.

DISCUSSION ----------

We would suggest that all customers upgrade to the LaserWriter 8.2 driver. There are some major fixes and some new enhancements that make the driver easier to use.

New "Setup" Functionality

The Chooser "Setup" button now automatically queries the printer, selects the appropriate PPD file, and configures the paper trays accordingly. Previous versions of LaserWriter 8 required you to click "Setup" in the Chooser, click on "Auto Setup" to select the PPD file, then click on "Configure" to set up paper trays. All of this is now completed in step by clicking on "Setup" button. After the printer is set up, you still have the option of manually configuring PPDs and paper trays by clicking on the "Setup" button a second time.

Job Destination No Longer "Sticky"

LaserWriter driver v8.2 now always reverts back to "Printer" as the destination in the Print dialog box, instead of retaining the previous print job destination. For example, if the printer was were the last job went, the printer was the default destination for the next job. This happened when "Printer", "File", or "Fax" was selected. This caused problems with inadvertant faxes on PostScript Fax capable printers. If the most recent job had "Fax" as the destination of the job, then the next print job was automatically set for "Fax". In addition, there are also some applications that do not provide the print dialog box when using certain features of their program. Since you can't change the destination, this can become a problem. However, with the LaserWriter 8.2

driver, this is no longer a problem.

Shift Tab Feature

Editable fields in all dialogs which currently support tabbing from field to field now support reverse direction tabbing using the shift tab feature. Applications adding fields to existing Print and Page Setup dialogs with editable fields obtain this feature.

Program Fixes

One of the main problems fixed in this release is where PICT files with rotated objects would print incorrectly. This was most evident with PICT images from MacDraw Pro, and exported by other applications - rotated objects in the PICT would not be printed at the correct location or angle.

One other problem that is now fixed, occurred when you tried printing to the original LaserWriter (PostScript Ver 23.0). It would typically result in a PostScript error.

There are other various fixes in LaserWriter 8.2 that address both driver and third-party application issues. Apple is suggesting that if you are using a previous version of the LaserWriter 8 driver, that you upgrade to LaserWriter driver 8.2. Apple recommends that you use this update for both the fixes and additional features.

These articles can help you locate software updates mentioned in this article:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
09 Feb 1995 - Corrected wording.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16279

Tech Info Library

QuickTake 100: Software Development Kit Available (9/94)

Revised: 9/15/94
Security: Everyone

QuickTake 100: Software Development Kit Available (9/94)

==========

Article Created: 15 September 1994

TOPIC -----

Is there is an API (application program interface) available for QuickTake for Windows? Is it possible to have a Visual Basic application running under Windows access automatically the camera?

DISCUSSION -----

There seems to be some confusion over the existence of a Software Development Kit (SDK) for the QuickTake 100 camera. However, there is a SDK available for the QuickTake 100 camera. It contains all the development tools necessary for both the Macintosh and Windows environments.

The Software Development Kit is available through APDA, Apple's source for developer tools, and all support for the product comes from them.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Support Information Services

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Tech Info Library Article Number:16280

Tech Info Library

LaserWriter Pro 810: Switching Emulation from Windows (8/95)

Revised: 9/1/95
Security: Everyone

LaserWriter Pro 810: Switching Emulation from Windows (8/95)

==========

Article Created: 15 September 1994
Article Reviewed/Updated: 31 August 1995

TOPIC ----------

Is there a way to switch the emulation on the LaserWriter Pro 810 when using the serial interface to communicate from an MS-DOS Computer?

DISCUSSION ----------

The following PostScript command allows you to switch from PostScript to HP PCL emulation on the serial port of the LaserWriter Pro 810. This code can be downloaded from any of the ports that currently have PostScript set as the language. If only the serial port is being used, then once the language of the serial port has been changed to HP PCL, you cannot return back to PostScript except by using the control panelon the printer, or by downloading the PostScript code using another port such as Ethernet, or LocalTalk.

PostScript Code

Caution:
If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

To select either PCL or PostScript printer job language, before sending your print job to the printer, transmit the following "emulator" command:

(%Serial%)<</Interpreter PARAMETER /Protocol TYPE>>setdevparams

Valid PARAMETER values are /PostScript and /LaserJetIIP

Valid TYPE values are /Normal when PARAMETER is /PostScript, and /Raw when PARAMETER is LaserJetIIP.

Example:

(%Serial%)<</Interpreter /LaserJetIIP /Protocol /Raw>>setdevparams

This emulator command string places the RS232 Input Port's Printer Type in LaserJetIIP emulation.

Language switching

If you would like "on-the-fly" functionality of being able to switch languages at any time on the serial port, you need to set the serial port for PostScript, and then download/include the following PostScript code at the front of the PCL job to switch temporarily to HP PCL emulation:

statusdict begin 5 setsoftwareiomode end

Upon completion of the job, the serial port's page description language will switch back to PostScript though the last line of the PCL job must have the following command string:

ESC DEL 0 (which is hex '1B 7F 30')

NOTE:
This command string contains spaces for readability--don't include spaces when entering this command in your file. For example, without spaces it reads: 'ESCDEL0' or '1B7F30'. Also, you must follow this string with a Control-D.

This PCL control string returns the printer back into the PostScript mode when the current HP PCL job is completed.

Article Change History:
31 Aug 1995 - Clarified disscusion area.

Support Information Services

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Tech Info Library Article Number:16282

Tech Info Library

Color StyleWriter Pro: Requires Color QuickDraw for Color (9/94)

Revised: 9/15/94
Security: Everyone

Color StyleWriter Pro: Requires Color QuickDraw for Color (9/94)

==========

Article Created: 15 September 1994

TOPIC -----

The Color StyleWriter Pro specification sheet states that it requires Color QuickDraw support in order to print color. Will it print the eight standard colors supported by standard quickdraw? These eight colors are supported by the ImageWriter II and LQ drivers on the early 68000 based Macintosh computers.

DISCUSSION -----

When using a 68000 based Macintosh (non-Power Macintosh) that doesn’t support Color QuickDraw all color information is lost and the document prints in black and white. The eight basic colors that are supported on all Macintosh computers when printing to the ImageWriter II and LQ are not supported on the Color StyleWriter Pro when using a 68000 based Macintosh without color QuickDraw.

A Color StyleWriter Pro connected to a 68000 based Macintosh that is being shared will not print color even if a Color QuickDraw capable Macintosh is sending a color document to the shared printer. In order to print color the system that the Color StyleWriter Pro is physically connected to must also support Color QuickDraw otherwise the documents print in black and white.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16285

Tech Info Library

System 7.5: Printer Installer May Replace PrintMonitor (2/95)

Revised: 2/15/95
Security: Everyone

System 7.5: Printer Installer May Replace PrintMonitor (2/95)

==========

Article Created: 15 September 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

Print software installer disks may replace System 7.5 PrintMonitor with an older version.

DISCUSSION ----------

Users of System 7.5 need to know that some currently shipping Apple printer installer disks may replace the System 7.5 PrintMonitor with an older version.

Specifically, the LaserWriter Select 360 installer replaces the System 7.5 PrintMonitor v7.1.2 with v7.1. This behavior has not been documented in any other printer installers, though it may exist there also. Tests with LaserWriter driver version 8.2fc1 in this configuration have not revealed any obvious problems yet, but the effect this might have on other printer drivers has not been explored.

Plans are to fix this issue in forthcoming LaserWriter installer releases, but System 7.5 owners will be at the mercy of the large numbers of installers already in the field.

What we propose is to have a Read Me item whose substance would be to instruct the user to:

• Drag their PrintMonitor to the root level of the startup disk

• Run the printer installer normally

• Compare the 'Get Info' version number of the PrintMonitor which was placed in the Extensions folder by the printer installer to the version number of the PrintMonitor which they saved in the root before the install, and use the newer version.

This information did not get into the System 7.5 Read Me.

Article Change History:
15 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

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Tech Info Library Article Number:16286

Tech Info Library

LaserWriter Bridge v1.0: Do Not Rename (5/95)

Revised: 5/16/95
Security: Everyone

LaserWriter Bridge v1.0: Do Not Rename (5/95)

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Article Created: 15 September 1994
Article Reviewed/Updated: 16 May 1995

TOPIC ----------

This article describes a problem which occurs if you rename the "LaserWriter Bridge" v1.0 file.

DISCUSSION ----------

The LaserWriter (LW) Bridge is a Control Panel Device that allows a LaserWriter Select 360 to be bridged to an Ethernet network. The bridge resides on a host Macintosh that is connected to Ethernet. The Select 360 is linked to the host Macintosh through LocalTalk.

The name "LaserWriter Bridge" must NOT be renamed; otherwise, it will not function properly as follows: The dialog box that appears when you shutdown your computer running the bridge software, warning you that there are uncompleted print jobs in progress will NOT display.

Article Change History:
16 May 1995 - Added version number to article.
02 Dec 1994 - Changed access privileges.

Support Information Services

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Tech Info Library Article Number:16287

Tech Info Library

Apple Internet Router 3.0.1 and Power Macintosh (9/94)

Revised: 9/15/94
Security: Everyone

Apple Internet Router 3.0.1 and Power Macintosh (9/94)

==========

Article Created: 15 September 1994

TOPIC -----

Does the Apple Internet Router (AIR) 3.0.1 work on a Power Macintosh 7100/66 8/250/CD computer?

DISCUSSION -----

The Apple Internet Router 3.0.1 software is the only Apple Internet Router software compatible with the Power Macintosh systems. There is one compatibility situation to be aware of: Power Macintosh systems allow only one NuBus card to be a bus master.

Because of this, it is not possible to have more than one Apple Serial NB Card installed in a Power Macintosh system. The Ethernet NB Card and Apple Token Ring NB/c Cards are not bus master cards so there are no problems with these cards.

The Apple Token Ring 4/16 NB Card is a little more complicated. When this card is used with driver software from NSI 1.4.4 and earlier, it is a bus master card and may not be used in conjunction with another bus master card on a Power Macintosh system.

NSI 1.4.5 contains new drivers for the Apple Token Ring 4/16 NB Card. These drivers are what we would call "dumb" drivers. With the Apple Token Ring 4/16 NB Card driver, the 68000 processor on card is not used at all. This is a good thing for most situations. The driver is faster than the old driver and has an added benefit of not putting the card in bus master mode. This means more than one card can be installed in a Power Macintosh system. The only caveat here is the dumb driver does not work with the SNA•ps Gateway product. A "smart" driver is included on the NSI 1.4.5 disk just for the SNA•ps Gateway product. This driver puts the card in bus master mode.

Another issue to note here is that it is not possible to have the "dumb" and "smart" drivers for the Apple Token Ring 4/16 NB Card installed and used at the same time. If both drivers are installed, the "smart" driver will be used.

The Apple Token Ring NB/c Card is never in bus master mode and has only one driver. This driver does not support the SNA•ps Gateway product at this time.

Support Information Services

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Tech Info Library Article Number:16289

Tech Info Library

A/UX: What is A/UX? (2/95)

Revised: 2/27/95
Security: Everyone

A/UX: What is A/UX? (2/95)

==========

Article Created: 16 September 1994
Article Reviewed/Updated: 27 February 1995

TOPIC ----------

What is A/UX?

DISCUSSION ----------

A/UX is Apple's implementation of UNIX (it's Apple's/UNix) for various Macintosh computers. A/UX merges two computing environments, UNIX and the Macintosh Finder OS, and provides the full functionality of both.

A/UX is based on AT&T UNIX System V.2.2 with numerous extensions from V.3, V.4 (such as streams), and BSD 4.2/4.3 (such as networking, the Fast File System, job control, lpr, NFS with Yellow Pages, SCCS, and sendmail 5.64). It also provides full POSIX compliance. A/UX provides SYSV, BSD and POSIX compatibility switches and libraries.

A/UX is fully compliant with the System V Interface Definition (SVID). A/UX provides all three standard shells: sh, csh, and ksh. X-Windows is also provided standard.

A/UX 3.0 and later incorporates System 7 for the Macintosh allowing for the use of the vast majority of Macintosh applications under A/UX. System 7 and UNIX are fully-integrated under A/UX 3.0 and later with the UNIX file system being seen as a disk drive by the Finder.

There are people who feel that A/UX is a near-perfect implementation of UNIX. Of course, every operating system has its share of devotees, so that's not a very valid scale of whether the system is any good. A/UX is UNIX -- it's not some form of pseudo-UNIX. It insulates the user from UNIX, if required, but the System Administrator needs to become UNIX-aware. Furthermore, if you want straight UNIX, you can get it. People may also complain that A/UX is based on an "obsolete" version of AT&T UNIX (V.2.2). In many ways, Apple's extensions make A/UX very V.3-like (V.3 is in many ways an enhanced V.2 -- it even uses the V.2

kernel). The list of extensions to A/UX are impressive. Compare what you get standard with other systems and you'll be shocked! On some, 'cc', 'f77', NFS, etc... are costly options.

The main consideration (and opposition) to A/UX is the platform it runs on: the Macintosh. Some consider this a boon, others a bust. As of February 1995, Apple computers with the 68030- and 68040-based workstations run A/UX. All Power Macintosh computers are not compatible with A/UX.

If you need super-fast state-of-the-art number crunching capability then A/UX may not be for you; you can get faster workstations with other platforms. Of course, you'll have to "settle" for their operating systems, but if you need it, then that's how you'll get it. Of course, this doesn't mean that A/UX "crawls".

There are very few people who need this type of performance though. If you need (or just want) a UNIX workstation with the speed and power of UNIX and the user interface and application selection of the Macintosh then A/UX is the way to go. In many ways, A/UX is the UNIX "for the rest of us" even if we are long-time UNIX users. If you love the Macintosh, you'll love A/UX; if you love UNIX, you'll love A/UX. And if you want a near-perfect marriage of the two, then you'll love A/UX.

Note: This article and a full list of frequently asked questions about A/UX can be found on the ftp server jagubox.gsfc.nasa.gov (128.183.44.1).

Article Change History:
27 Feb 1995 - Corrected address for the ftp server.

Support Information Services

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Created: 9/16/94
Author: EAR
Source: DRC
Library: TECHINFO

Tech Info Library Article Number:16291

Tech Info Library

QuickDraw GX: Desktop Printers Can't Be Thrown Away (9/95)

Revised: 9/14/95
Security: Everyone

QuickDraw GX: Desktop Printers Can't Be Thrown Away (9/95)

==========

Article Created: 16 September 1994
Article Reviewed/Updated: 14 September 1995

TOPIC ----------

I cannot throw away my QuickDraw GX Desktop printer; an error message tells me it is busy.

DISCUSSION ----------

After creating and using a desktop printer, it cannot be moved off of the desktop or be thrown away. When you attempt to move the desktop printer to a folder or the Trash, the following error message is displayed: "The desktop printer cannot be moved off the desktop because it is busy."

In order to throw away a desktop printer, you must first quit from all of the applications that printed to it.

Article Change History:
14 Sep 1995 - Changed title.
01 Sep 1995 - Reviewed for technical accuracy.
30 Aug 1995 - Changed title.

Support Information Services

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Tech Info Library Article Number:16292

Tech Info Library

LaserWriter 16/600 PS: Specifications (9/95)

Revised: 9/1/95
Security: Everyone

LaserWriter 16/600 PS: Specifications (9/95)

==========

Article Created: 16 September 1994
Article Reviewed/Updated: 01 September 1995

TOPIC -----

This article provides the specifications for the Apple LaserWriter 16/600 PS printer.

DISCUSSION -----

Technical Specifications
==========

Print engine and controller:

True laser engine
25-MHz AMD 29030 RISC processor
80C186 I/O processor

Print Engine Duty Cycle:
---
5 years or 450,000 pages, with no monthly page limit. Recommended service interval is 200,000 pages due to wear on fuser and rollers.

Print quality:

600-dpi resolution
FinePrint, Apple's resolution-enhancement technology
Enhanced 600-dpi gray-scale imaging:
. – Standard (effective 106 lines/inch dithered halftone,122 gray
. levels)
. – PhotoGrade, Apple's graphic image enhancement technology (requires
. an additional 4MB of RAM for a total of 12MB minimum)

Memory:

8MB of RAM standard
Expandable to 32MB with optional upgrades

Interfaces:

- Simultaneous connection to Ethernet, LocalTalk, and bidirectional
. parallel interfaces
- Simultaneous support for AppleTalk, Novell NetWare IPX, and TCP/IP
. networking protocols
- Internal and external SCSI ports for hard disk font storage

Print speed:
---
17 (A4 size) to 16 (letter size) pages per minute (actual speed varies depending on images printed and computer used)

Maximum print area:

The maximum printable area is the area of a certain size paper minus it's margins. The printable area for each size of paper will be affected by:

Top Margin (A), Left Margin (C), Right Margin (D) and Bottom Margin (B)

A=3.5mm B=5.0mm, C=3.5mm D=4.0mm

These margins apply to ALL the various sizes of paper listed below. Subtracting A, B, C and D from the paper size will yield the maximum printable area.

Paper Size	Metric (mm)
US Letter	216 x 279
US Legal	216 x 336
Executive	184 x 267
Comm 10 envelope	105 x 241
A4 Letter	210 x 297
B5 Letter	176 x 250

CAUTION:
The operator must use caution when printing from the multi-purpose or manual tray. Because the printer does not auto-regulate print size (as is the case when using a cassette), the operator must take care NOT to print outside the the above-listed margins. Otherwise, loose toner will be deposited in the excess toner collector, therefore reducing it’s useful life.

Fonts:

Apple Font Library: 64 fonts total
– 29 fonts in ROM from the following font families:
. ITC Avant Garde Gothic, ITC Bookman, Courier, Helvetica,
. Helvetica Narrow, New Century Schoolbook, Palatino, Symbol,
. Times, ITC Zapf Chancery, and ITC Zapf Dingbats

– 35 fonts on Macintosh disk from the following font families:
. Chicago, Delphian, ITC Garamond Narrow, Geneva, Helvetica Black,
. Helvetica Compressed, Lubalin Graph, Lucida Bright, Machine,
. Monaco, Nadianne, New York, Old English Text, Onyz, Oxford, Swing,
. and Zeal

Prints any TrueType or PostScript fonts

Languages supported:

PostScript Level 2
PCL 5

Storage:

Optional internal 245MB hard disk drive

Paper Capacities:

Standard
. 100-sheet multipurpose tray (also holds up to 10 envelopes)
. 250-sheet letter cassette
Optional
. 500-sheet feeder (with universal cassette)
. Envelope feeder: up to 75 envelopes

Print Materials:

Media: 20- to 24-lb. (60 to 80 g/m) stock from cassette; up to 32-lb.
. stock (135g/m) manually
Paper: U.S. letter, U.S. legal, A4, A5, B5 Labels, envelopes, most
. textured stock, and transparencies
Envelopes: Common #10, Monarch, C5, and DL

Power Requirements:

U.S. domestic and Japanese versions: 90–100 VAC, 48–52 Hz, 58–62 Hz (Japan)
. 103.5–126.5 VAC, 58–62 Hz (US)
European version: 198–264 VAC, 48–52 Hz

Power Consumption:

Operating mode: 390 W (max average)
Standby mode: 125 W (max average)
Energy-saving mode: 26 W

Environmental Requirements

Temperature: 50 to 90 degrees F (10 to 32 degrees C)
Humidity: 20% to 80% noncondensing
Toner cartridge transit environment: –4 to 104 degrees F
. (–20 to 40 degrees C)

Size and Weight:

Height: 12.1-in. (30.7 cm)
Width: 16.7-in. (42.4 cm)
Depth: 16.9-in. (42.9 cm)
Weight: 40.0-lb. (18.0 kg)

System Requirements

One of the following personal computers:

– An Apple Macintosh computer with system software version 7.1 or later and at least 4MB of RAM. QuickDraw GX is also supported.

– An IBM or IBM-compatible computer with Microsoft Windows versions 3.1 or later and at least 2MB of RAM (4MB recommended), or MS-DOS version 3.3 or later and at least 640K of RAM.

Ordering Information
===

M2471LL/A

Apple LaserWriter 16/600 PS
Toner cartridge
User's guide
Limited warranty

Options and accessories

- LaserWriter Toner Cartridge M2473G/A
- LaserWriter 16/600 PS 500-Sheet Feeder (supports letter, legal, A4, B5 paper) Includes 500-sheet universal cassette. M2650G/A
- LaserWriter 16/600 PS Envelope Feeder (capacity for 75 envelopes) M2649G/A
- LaserWriter 500-Sheet Universal Cassette (supports letter, legal, A4, B5 paper) M5862G/A
- LaserWriter 250-Sheet Universal Cassette (supports letter, legal, A4, B5 paper) M6525G/A
- LaserWriter 16/600 PS Fax Card (U.S.) M3298LL/A
- LaserWriter 16/600 PS Fax Kit (International) M3620*/A
- LaserWriter 16/600 PS 245MB Internal Hard Disk Drive M3297G/A
- Macintosh 4MB Memory Expansion Kit (1–4MB SIMM) M1507LL/A
- Apple Ethernet Thin Coax Transceiver (cable not included) M0329Z/B
- Apple Ethernet AUI Adapter M0432LL/A
- Apple Ethernet Twisted-Pair Transceiver M0437Z/B

Article Change History:
01 Sep 1995 - Added country to electrical specifications.
12 Apr 1995 - Added printable area.
26 Jan 1995 - Added duty cycle.

..TIL16293-LaserWriter_16-600_PS-Specifications_9-95.pdf

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16293

Tech Info Library

AWS 95 and System 7.5 Client Workstations Volume Size (2/95)

Revised: 2/16/95
Security: Everyone

AWS 95 and System 7.5 Client Workstations Volume Size (2/95)

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Article Created: 12 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

Will Macintosh workstations running System 7.5 support 4 GB volumes on a Apple Workgroup Server (AWS) 95? I know that I shouldn't put System 7.5 on the "/" partition of the AWS 95, but I would like all of my System 7.5 clients the ability to access shared 4 GB volumes.

1) What are the file system limits to the 7.0.1 Macintosh process under A/UX, will it support 4 GB on the root directory?

2) What are the sharing limits in AppleShare Pro, for versions 1.0 and 1.1? Does it support sharing folders with more than 2 GBs and 32,000 files?

3) Is there a way using System 7.5 to share 4 GB volumes?

DISCUSSION ----------

As of A/UX 3.1, we support UFS file systems up to 4 GB. The A/UX Finder however, can't handle this sized volumes correctly. If you have a volume larger than 2 GB, the A/UX Finder will report the correct space available and correct disk usage. If you try to write anything to that volume, it will fail telling you that more space is needed. You will only be able to read or copy items from that volume.

The largest volume that can be shared by AppleShare Pro 1.1 is 2 GB. AppleShare Pro does not know how to deal with volumes larger than 2 GB. If, for example a volume larger than 2 GB is available, it can be shared but the reported amount of disk space available and disk space used will be incorrect.

We did some tests using System 7.1 and System 7.5, and in both cases the results were the same. The reported amount of disk space available and disk space used are incorrect from the AppleShare Pro server, you run into a similar error condition as the one described above. You can read from the volume but you are

unable to write to it.

Part of my tests included sharing a 2.8 GB volume from a Power Macintosh 8100 running System 7.5. When this volume was mounted from another system running System 7.5, the volume was accessible with no problem. When mounted from a Macintosh running System 7.1 there were errors in the window information for disk space used and available. If the Macintosh running System 7.1 has the AppleShare Workstation software 3.5 installed, the window information will appear to be correct but the behavior of the system will be erroneous.

Lastly, if a site has all System 7.5 systems and uses Personal File Sharing, they will be able to share volumes up to 4 GB. The bottom line is that as of September, 1994 the only configuration with 4 GB file systems we support is Personal File Sharing under System 7.5.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

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Tech Info Library Article Number:16294

Tech Info Library

System 7.5: Invisible Desktop Files (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Invisible Desktop Files (2/95)

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Article Created: 16 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

In the System 7.5 Find File dialog box, a customer used the Option key to allow selection of "visibility is invisible." Among the invisible files, she observed were two AppleShare PDS files, a desktop, two Desktop DB and two Desktop DF files.

Under what conditions do multiple Desktop files or AppleShare PDS files appear in the Find File window? Why do additional invisible files appear?

DISCUSSION ----------

It is possible to find multiple Desktop files or AppleShare PDS files in the Find File window when Find File is used to search multiple disks. If Find File is set to find items on local disks, then users may be able to see varying combinations of the "AppleShare PDS", "Desktop DB", "Desktop DF", and "Desktop" files.

The following chart shows the general rules of how and when these files appear:

This file...	May appear on this kind of disk...	Because of this software.
"AppleShare PDS"	hard disk, and other modifiable volumes (not floppy disks)	System 7 File Sharing
"Desktop DB" or "Desktop DF"	CD-ROM, hard disk, and other modifiable volumes (not floppy disks)	System 7.0, or later
"Desktop"	Any kind	System 6.0.X, or earlier

In general, an AppleShare PDS file should appear for each hard disk volume (or other modifiable volume) which has been used with File Sharing. A Desktop DB and Desktop DF file should appear for each mounted CD-ROM volume and any other volume (except for floppy disks) which has been used with System 7.0, or later. A Desktop file should appear for each floppy disk, and any other volume that has been "touched" by System Software 6.0.X or earlier.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

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Tech Info Library Article Number:16295

Color StyleWriter 2400: Specifications (5/96)

Revised: 5/14/96
Security: Everyone

Color StyleWriter 2400: Specifications (5/96)

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Article Created: 16 September 1994
Article Reviewed/Updated: 15 May 1996

TOPIC ----------

This article contains the specifications for the Color StyleWriter 2400 printer.

DISCUSSION ----------

Product Description

The Apple Color StyleWriter 2400 printer is an affordable ink-jet printer that provides high-performance color and black-and-white printing. It's ideal for home, education, and small-business users who require convenient, superior quality color capability.

Technical Specifications

Print Method:
- Thermal ink jet

Print Quality:
- 360- by 360-dpi color (Rev. A and B)
- 720- by 360-dpi Black & White (Rev. B)

Interfaces:
- High-speed serial (RS-422)
- Optional LocalTalk Module

Speed:
- Up to 3 pages per minute with the high-performance black ink cartridge.
- Up to 0.3 page per minute for color
- Actual speed depends on the documents printed and the Macintosh used

..TIL16296-Color_StyleWriter_2400-Specifications_5-96.pdf

Fonts:
- TrueType font support (64 scalable TrueType fonts included)
- Adobe PostScript font support when used with Adobe Type Manager software.

Ink Cartridges:
- Color Ink Cartridge (includes print head, color ink tank[cyan, magenta, and yellow], and black ink tank)
  -- Color tank approximately 100 pages at 7.5% coverage
  -- Black tank approximately 40 pages at 5% coverage
  -- Cartridge approximately 2000 pages at 7.5% coverage

- High-Performance Black Ink Cartridge for black-and-white printing.
  -- 900 pages at 7.5% coverage.

Print Materials:
- 16- to 24-lb. (60 to 90 g/m2) bond or copier paper
- Paper: U.S. letter, U.S. legal, A4, and envelops (#10 business and monarch)
- Most letterhead and colored stock, labels, and envelops.
- For superior graphics and imaging results, Apple recommends Apple glossy and premium paper and Apple back-print film.
- For fast dry time and vibrant colors on overhead transparencies, Apple recommends Apple color ink jet transpariencies.

Paper Capacity:
- Multipurpose try that accommodates up to 100 sheets of paper or 15 envelopes.

Printable Surface:
- Maximum printable line: 8.1-in. (20.6 cm)
- Minimum margins: 0.2-in. (0.5 cm) left and right; 0.1-in (0.3 cm) top; 0.28-in. (0.7 cm) bottom

Size and weight:
- Height: 8.3-in. (21.1 cm)
- Width: 14.4-in (36.5 cm)
- Depth: 8.4-in. (21.5 cm)
- Weight: 7.9 lb. (3.6 kg)

Power Consumption:
- Operating mode: 45 W (maximum)

Operating Environment:
- Temperature: 59 to 86 degress F (15-30 degrees C)
- Humidity: 10% to 80% noncondensing

Power Requirements:
- U.S./Japan: 100-120 volts, 50-60 Hz, 1 amp
- Europe/Australia: 220 to 240 volts, 50 Hz, 0.5 amp

System Compatibility:
- Any color-capable Apple Macintosh personal computer with 4MB of RAM and a hard disk drive. Requires Color QuickDraw. Color QuickDraw

first shipped with the Macintosh II, and is in every Macintosh II class computer, which includes the SE/30. This EXCLUDES the Macintosh Plus, Macintosh Classic, Macintosh SE, and Macintosh PowerBook 100 (they will not print in color).
- System software version 7.1 or later
- Supports QuickDraw GX

Fonts Included

The following TrueType fonts are included:

ITC Avant Garde	ITC Bookman	Chicago
Courier	Delphian	ITC Garamond Narrow
Geneva	Helvetica	Helvetica Black
Helvetica Compressed	Helvetica Narrow	ITC Lubalin Graph
Lucida Bright	ITC Machine	Monaco
Nadianne	New York	New Century Schoolbook
Old English Text	Onyx	Oxford
Palatino	Swing	Symbol
Times	ITC Zapf Chancery	ITC Zapf Dingbats
Zeal		

Ordering Information

Apple Color StyleWriter 2400 - M2888LL/A

Ink Cartridges:
- Color Ink Cartridge - M3328/A
- High-Performance Black Ink Cartridge - M3240G/A

Replacement Tanks (for two tank process):
- Color Ink Tank - M3329G/A
- Black Ink Tank - M3330G/A

Media (also compatible with Color StyleWrite Pro)
- Letter-size transparency - M2658G/A
- Letter-size premium paper - M2952G/A
- Letter-size glossy paper - M3655G/A
- Letter-size black-print film - M2953G/A
- A4-Size transparency - M1959G/A
- A4-Size premium paper - M2951G/A
- A4-Size glossy paper - M3656G/A
- A4-Size back-print film - M2954G/A

Options

LocalTalk Module - M3458G/A

Article Change History:
14 May 1996 - Corrected ink cartridge specs.
25 Mar 1996 - Corrected Rev. B specifications.
12 Feb 1996 - Added changes in Rev. B specifications.

..TIL16296-Color_StyleWriter_2400-Specifications_5-96.pdf

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Tech Info Library Article Number:16296

Tech Info Library

Color StyleWriter 2400: Color Banding at Bottom of Page (9/94)

Revised: 9/27/94
Security: Everyone

Color StyleWriter 2400: Color Banding at Bottom of Page (9/94)

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Article Created: 16 September 1994

TOPIC ----------

At the bottom of the page I get white horizontal lines, colors out of phase and color banding. How can this be avoided?

DISCUSSION ----------

This can occur on the bottom 0.8 inch of the page, due to the friction rollers not being in contact with the paper. Only fix is to increase margin at bottom of the page, as noted on Page 57 of the User's Manual.

Support Information Services

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Tech Info Library Article Number:16297

Tech Info Library

Macintosh Processor Upgrade: PDS and Comm Slot Usage (4/97)

Revised: 4/8/97
Security: Everyone

Macintosh Processor Upgrade: PDS and Comm Slot Usage (4/97)

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Article Created: 16 September 1994
Article Reviewed/Updated: 8 April 1997

TOPIC ----------

I need the following information on the Macintosh Processor Upgrade:

1) Will the board fit into a Quadra 605 if any of our Ethernet adapters
. are installed in the computer's PDS?

2) Will the board fit into a Quadra 630 if any of the Comm Slot cards or
. Video/TV cards are installed in the computer?

DISCUSSION ----------

The Macintosh Processor Upgrade (discontinued), containing the PowerPC 601 chip, fits in the processor socket of the 68LC040 microprocessor. In order to install the board, the 68LC040 is removed from the computer’s logic board, the upgrade board is placed in the 68LC040 socket, and the 68LC040 chip is placed in the upgrade board, retaining the computer’s original microprocessor. This upgrade board is different from the Power Macintosh Upgrade Card (M2843LL/A), which only fits into the 68040 PDS in Macintosh Quadra 900, 950, 800, 700, 650, and 610 computers.

Because of space and power requirements, the Macintosh Processor Upgrade cannot be used in any Macintosh computer with an LC-style expansion card such as the Apple IIe Card or the LC Ethernet card.

The communications slot in the Macintosh LC/Performa 57X, the Macintosh LC/Performa 58X, and the Macintosh 630 family computers can be used when the upgrade is installed.

The Macintosh Processor Upgrade is compatible with:

- Macintosh 630 family
- Macintosh LC 475, 575, 580

- Macintosh Quadra 605
- Macintosh Performa 475, 476, 575, 576, 577, 578, 580, and 588

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

The Macintosh Processor Upgrade requires System 7.5 (included with the upgrade).

Note that the Macintosh Processor Upgrade has been discontinued.

Article Change History:
08 Apr 1997 - Updated with availability information.
07 Jul 1995 - Updated article for technical accuracy.
16 Dec 1994 - Corrected name of product.

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Tech Info Library Article Number:16298

Tech Info Library

Color StyleWriter 2400: Avoiding Ink Blobs (9/94)

Revised: 9/27/94
Security: Everyone

Color StyleWriter 2400: Avoiding Ink Blobs (9/94)

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Article Created: 16 September 1994

TOPIC --------------------

Sometimes when printing with the Color StyleWriter 2400 I get a blob of ink on the paper. How can I avoid this?

DISCUSSION --------------------

This problem shows up as missing dots on the page followed by a blob of ink. This situation only occurs with the the color printhead. The problem rarely occurs, because it requires three conditions:

1) Printing very heavy density color area fills across the whole page.

2) Printing at engine speed (meaning that the printer can't be pausing during printing).

3) Printing in Normal mode (not an option for transparencies, where colored backgrounds are often used).

Even when these conditions are met, the problem occurs on only 1.5% of pages printed.

The fix is to switch the printing mode to BEST.

Support Information Services

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Tech Info Library Article Number:16299

Tech Info Library

PostScript Fax: Variables Influencing Speed (9/94)

Revised: 9/19/94
Security: Everyone

PostScript Fax: Variables Influencing Speed (9/94)

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Article Created: 16 September 1994

TOPIC ----------

When being used to receive a fax, how many pages per minute can a LaserWriter Select 360 print?

DISCUSSION ----------

Unfortunately, we have no benchmarks that provide the throughput of faxed documents. The engine print speed is rated at 10 pages per minute. This doesn't take into account factors such as: the time required for a workstation to prepare the print job, the time required to transmit the print job over a network, the time for the printer to process the print job, or any of the variables associated with faxing. It is just the throughput of the printer.

For example, if you were to print 11 copies of a 1 page document, the first page may require 40 seconds to process/print. The remaining pages might then only require 6 seconds each (60 seconds/10 pages). In this example, the 40 seconds I refer to is a number I pulled "out-of-the-air." The actual time may be more or less, and for very complex documents it may take a great deal longer (perhaps 10 minutes or more).

Additional variables to take into consideration with fax jobs are:

- whether the job is a PostScript file or a raster file
- how clean the phone line transmission is
- the fax transmission rate (4800 or 9600 baud)
- if the transmitting or receiving printer is processing other jobs
- whether there are fonts in the job that aren't resident in the printer
- if you are sending the job to one or more addresses
- the size of the job and whether it can be transmitted in one call or if it requires multiple calls

Some of these variables are discussed in more detail below.

The fastest fax jobs will typically be PostScript fax file jobs using few built-in fonts. PostScript fax file sizes are compressed by the built-in LZW compression and decompression capability of PostScript Level 2, making PostScript fax files significantly more compact than traditional faxes, reducing the transmission time and cost. However, if the file contains complex graphics or images it is possible for the size of the PostScript file to exceed the size of a raster fax.

If the document being sent requires fonts beyond the standard 35 fonts, the PostScript Fax printer will automatically send the additional fonts along with the PostScript file to the recipient's fax printer. PostScript fonts are generally about 35KB in size and require approximately 35 seconds of additional transmission time for each font transmitted. Once the file reaches the target printer, if the document contains 35 fonts, this printer will take significantly more time to process the job as compared to a document having one font, as would be the case with any print job.

If the destination printer is busy printing a document, that printer will save away incoming faxes in memory and print them when it's done with the current job. In one test, we received and buffered more than 20 pages of PostScript fax data on a LaserWriter Select 360f with no difficulties. However, we have not tested the upper limit. We can't give you a specific number of pages or fax jobs that can be buffered as "your mileage may vary". Variables that will affect this are:

- whether the fax job is a PostScript fax file or a G3 raster job
- are fonts being downloaded
- is the job in Group 3 standard mode (200 dpi by 100 dpi) or G3 fine mode (200 dpi by 200 dpi)
- is a hard drive connected to the printer and what is it's capacity

The transmission of a PostScript language file to a single destination is always made in a single call. Raster faxes can be transmitted in multiple calls.

Once the faxed document has been received by the printer, the processing time to complete the job is the same as if the file were sent directly to the printer from a workstation on the network.

Support Information Services

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Tech Info Library Article Number:16301

Tech Info Library

Color StyleWriter 2400: Substitute Ink Cartridges (9/94)

Revised: 9/27/94
Security: Everyone

Color StyleWriter 2400: Substitute Ink Cartridges (9/94)

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Article Created: 16 September 1994

TOPIC --------------------

Are there any substitute ink cartridges I can use with the Color StyleWriter 2400 printer?

DISCUSSION --------------------

The following Canon replacement cartridges and tanks work:

- BC-20 -replacement for High Perforance Black Cartridge (M3240G/A)
- BC-21 -replacement for Color Ink Cartridge (M3328G/A)
- BCI-21 Black -replacement for Black Ink Tank (M3330G/A)
- BCI-21 Color - replacement for Color Ink Tank (M3329G/A)

Support Information Services

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Tech Info Library Article Number:16302

MAE: Finder sync Performance Related Problems (9/94)

Revised: 9/16/94
Security: Everyone

MAE: Finder "sync" Performance Related Problems (9/94)

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Article Created: 16 September 1994

TOPIC ----------

Why does the arrow change to a watch for long periods of time? My configuration is as follows:

MAE on HP/UX where MAE's /apple/ directory and all user files (HOME directory and everything else) are on a networked file server, and user workstations run MAE across the network. We use HP 710s as our workstations.

DISCUSSION ----------

What you're seeing is the Finder trying to reconcile its view of open folders with the underlying reality of the UNIX filesystem. Since filesystem objects can be created or destroyed without the Finder's knowledge (for example with the 'rm' command), the Finder must periodically scan all open folders. If the modification date on the directory is more recent than the Finder's last "sync" of the folder, the Finder must re-read the directory contents to find out what's really there. By default, this re-sync occurs every 10 seconds. Unfortunately, this can be a performance problem for folders on NFS servers.

All is not lost however. The sync delay is a resource in the Finder, and you can change it with ResEdit. To change this value, do the following from within MAE:

1) Open your System Folder, select "Finder", and choose Duplicate from the File menu (this creates "Finder copy").
2) Drop "Finder copy" on ResEdit.
3) Double-click the "fval" icon in the ResEdit window.
4) Double-click resource number 128.
5) At offset 0x32, there should be a "000A". Double-click this and change it to some greater number. For example, changing it to "0040" will cause the Finder to perform its sync every 64 seconds.
6) Choose Quit from the File menu and answer Yes to the "Save?" dialog.
7) Create a new folder and move the current Finder into it.
8) Rename "Finder copy" to "Finder".

9) Select Shutdown from the Special menu.

From your shell, do the following:

```
rm ~/System\ Folder/Preferences/Finder\ Preferences*
```

When MAE is restarted, the new Finder sync delay should be in effect. Be aware that increasing the Finder's sync delay will lead to a larger time window where the Finder may have an inaccurate view of the filesystem, but it will decrease the delays that you're seeing.

Support Information Services

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Tech Info Library Article Number:16303

Tech Info Library

QuickTime: Music Architecture Specifications (9/94)

Revised: 9/19/94
Security: Everyone

QuickTime: Music Architecture Specifications (9/94)

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Article Created: 16 September 1994

TOPIC --------------------

I need to know the answers to these questions about QuickTime:

1) When QuickTime plays music, does it play a MIDI file or does it make the music track into a QuickTime movie?

2) Is QuickTime GM and GS standard (in other words, when it uses Roland files, a guitar stays a guitar and a bass stays a bass).

3) Is QuickTime 16 or 24 or some other value polyphonic.

DISCUSSION --------------------

When QuickTime plays music, the music track is an embedded MIDI file within the QuickTime movie file. I have included some additional information about the Macintosh Music Architecture that further explains QuickTime music tracks:

A QuickTime music track can store several sampled sounds, and a time-ordered playback list for these sounds. In this case, the same musical output is produced every time the track is played. However, a music track might not carry the sampled sounds with it; it might only carry the name of the desired sound, such as “piano.” The movie would then be considered to be playing “correctly” regardless of exactly which piano-type-sound was used to reproduce the music, as long as it was a “piano.”

The Macintosh Music Architecture consists of three main pieces: the Note Allocator, the Tune Player, and various music components. Music components are sound-playing devices and softwares. Initially, we intend to support a software-only music component, and a General MIDI music component.

The Note Allocator maintains a database of what music components are presently attached to the Macintosh. This database is maintained by the user via a

configuration utility (unfortunately, MIDI -- the standard communication protocol for musical synthesizers -- does not support self-configuration). Most users will not have to use this utility, since they will have no external music components, and will be using the software-only component. Most of those users who do have devices will need only click on the “General MIDI Synthesizer in Modem Port” or “General MIDI Synthesizer in Printer Port” buttons.

The Tune Player will play a time-ordered list of events into a music component. To determine which music component to use, it will negotiate with the Note Allocator.

A music component is a software or device-driver with a standard interface that produces musical notes. The component is characterized by two values: the maximum polyphony, and the maximum number of different timbres which can be produced. Unlike MIDI devices, a music component is not constrained to a multitimbrality of 16. There is no API limit to the maximum polyphony.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16305

Tech Info Library

LaserWriter Pro 810: DOS Fax Software On Windows Disk (3/97)

Revised: 3/4/97
Security: Everyone

LaserWriter Pro 810: DOS Fax Software On Windows Disk (3/97)

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Article Created: 15 September 1994

TOPIC ----------

Is there a manual or MS-DOS software available for the optional fax card in the LaserWriter Pro 810?

DISCUSSION ----------

The DOS Fax software for the LaserWriter Pro 810 is located on the "LaserWriter Pro 810 Fax Software for Windows" Diskette that ships with the printer. Although not readily apparent, the psfax files on the disk are in fact the DOS fax software. The LaserWriter Pro 810 uses the same PSFAX as the LaserWriter Select 360. For a list of valid commands for psfax, go to the DOS prompt and type:

psfax/?

NOTE:
The LaserWriter Pro 810 fax software does not work with Windows 95 or Windows NT, you must use Windows 3.x.

Article Change History:
04 Mar 1997 - Added note about Windows NT and Windows 95.

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Tech Info Library Article Number:16308

Tech Info Library

System 7.5: DayStar Accelerator Cards and Mode32 (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: DayStar Accelerator Cards and Mode32 (2/95)

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Article Created: 19 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

Customers with DayStar accelerator cards are reporting problems after installing System 7.5.

DISCUSSION ----------

According to DayStar tech support, Mode32 needs to be installed prior to System 7.5 in order to use the PowerCache cards with System 7.5. The PowerCache cards will not work in the Mac II, Mac IIx, or Mac IIcx without it. They have been doing in house testing with Mode32 v7.5 and have found no problems.

However, use of MODE32 version 1.2 with System 7.5 may cause serious file corruption. Customers need to get Mode32 v7.5 in order to use both the PowerCache card and System 7.5 on Macintosh computers that do not have 32-bit ROMs.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword.
08 Nov 1994 - Noted that MODE32 must be installed prior to System 7.5.

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Tech Info Library Article Number:16313

Tech Info Library

System 7.5: Macintosh TV Control Panel Problem (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Macintosh TV Control Panel Problem (2/95)

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Article Created: 19 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

I recently installed System 7.5 onto a Macintosh TV. When I switched to the TV Mode, all I got was some colored outlines of the television picture. Thinking that I had installed the software incorrectly, I performed a clean system install and also cleared the PRAM. This didn't help. The computer seems to function OK. The problem is just with the TV/video modes.

DISCUSSION ----------

Version 1.0.2 the TV Setup control panel is now available from a variety of online sources. This version fixes the compatibility issues with the Macintosh TV and System 7.5.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword.
31 Jan 1995 - Corrected formatting and changed title.
26 Oct 1994 - Corrected name of Control Panel.

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Tech Info Library Article Number:16314

Tech Info Library

LaserWriter Pro 630: Printing Legal Landscape in Windows (9/94)

Revised: 9/19/94
Security: Everyone

LaserWriter Pro 630: Printing Legal Landscape in Windows (9/94)

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Article Created: 19 September 1994

TOPIC ----------

When I print a legal sized document from the multipurpose tray in the landscape mode from Microsoft Windows, it looks like it was printed for a letter size document.

DISCUSSION ----------

The default setting for the multipurpose tray is letter size documents. The .WPD file, which defines the settings and adjustments, that shipped with the LaserWriter Pro 630 does not allow you to change this setting. A new version of the .WPD file allows you to setup the multipurpose tray for legal sized paper.

You can also select the generic PostScript driver as a workaround. If you use the generic PostScript driver, you may encounter situations where additional paper trays cannot be accesed. In this case, use the new .WPD files.

The new .WPD files for version 1.02 of the LaserWriter Pro 630 are available on any of the online services that Apple post software updates to.

Once you have the .WPD files on a DOS diskette, follow these steps to install them on your hard drive.

1) Exit Windows
2) Insert the diskette.
3) Assuming that the disk is in drive "A:", type
   xcopy a:*.wpd c:\windows\system
4) When the system asks you if you want to overwrite the files,
   enter "y" for yes.
5) Start Windows and the new driver should be in place. If you try to
   print legal and it doesn't work, remove the installed 630 driver by
   going into the Printer Control Panel, highlighting the 630, and
   clicking the "Remove" button.

After doing that, follow these steps:
A) Click the "Add" button
B) A list of printers appears. Double-click the "Install Unlisted or Updated Printer" choice - it is at the top of the list.
C) When it prompts for a disk, type in: c:\windows\system
D) Select the proper printer from the list that comes up.

Support Information Services

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Tech Info Library Article Number:16315

Tech Info Library

AWS 95: Partition Limit In A/UX and Workaround (3/95)

Revised: 3/31/95
Security: Everyone

AWS 95: Partition Limit In A/UX and Workaround (3/95)

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Article Created: 19 September 1994
Article Reviewed/Updated: 31 March 1995

TOPIC ----------

I have the following question about the Apple Workgroup Server (AWS) 95:

I need to be able to create more than 12 UNIX partitions on a drive attached to an AWS 95. My company makes large external RAID drives, in the range of 40 GB. I need to put 20 to 30 partitions on a drive, so the partition sizes are small enough to be usable by AppleShare and the Finder. The AWS 95 sees the array as a single SCSI device.

Within HDSC setup, I can create 12 Free UNIX slices, numbered 3-14. If I try to create any more, the following error: "The setup program cannot create/display any more partitions." This error would be expected, as HDSC Setup seems limited to 12 UNIX slices.

The only way I can see to create more than 12 UNIX slices would be to use "dp" and "newfs" to create the number of slices needed, and put filesystems on them. Will this work? Are "dp", "newfs", or "mount" restricted in the number of partitions they can work with? I believe there is a hard limit of about 25 UNIX slices on a drive. Is that correct?

DISCUSSION ----------

We have been able to verify your symptoms with HDSC Setup and the "dp" utility under A/UX 3.1. By default, 15 is the maximum number of disk partitions allowed on a drive before seeing the error message, "Invalid partition number. Range 0 <= n < 15", while adding more than 15 partitions in a drive under "dp".

"newfs" has nothing to do with the number of disk partitions in a drive, it creates a filesystem according to the information provided in the dpm (disk partition map). Also the "mount" command has nothing to do with the number of disk partitions in a drive, the number of mountable filesystems, however, is defined by the kernel NMOUNT parameter, which is tunable via "kconfig". The

default value of NMOUNT is 32 in A/UX 3.1.

Workaround

With the "dp" program, the "U" (Uninitializes the map) command, and the "i" (Initialize the map) command under the "Command" mode allow you to change the number of disk partition map entries (dmpe) in a drive. The "U" command cleans up ALL existing partition maps including Apple_Driver and Apple_HFS partitions. The "i" command prompts you for the "Number of dpme's", which at this point you can enter the desired number, for example 32 instead of the default which is 15. Also 32 slices (logical units for the file systems) are the total allowed on a drive. Then, use the "a" (adds a partition) command to created a partition for an UNIX file system.

Care should be taken while issuing the "U" and the "a" commands. The "U" command wipes out all existing partition maps, and the "a" command ONLY creates partitions for UNIX filesystems (type of "Apple_UNIX_SVR2").

WARNING: Do NOT attempt this on the hard drive containing your startup software because it will be lost. "dp" cannot create Mac OS HFS or Apple_Driver partitions.

Below is an example of "Uninitialize", "initialize", and "adds" of a new partition on the drive, /dev/rdsk/c103d0s31

```
# dp /dev/rdsk/c103d0s31
Command? U
Command? i
Number of dpme's: 32
Command? a
Partition number ('*' for any): 17
Physical start (block #) [0]: 2900096
Physical length (blocks) [0]: 200000
Name[]: Free\ UNIX\ slice\ 15
Default type? y
Logical start (block #) [0]: 0
Logical length (blocks) [0]: 200000
Cluster # [0]: 0
FS type (1=UNIX, 2=EFS, 3=SFS) [?]: 1
Root file system? n
Usr file system? n
Command? w
Command? q
```

If you plan on using the workaround above, be aware that no Mac OS HFS partition can be created under "dp", and be sure to backup you Mac OS HFS partition before issuing the "U" command. Also, all commands entered under "dp" will not take effect until a "w" command is entered.

FYI: If you have more than 15 partitions in a drive and try to re-partition or display with HDSC Setup, it will complain with the following:

Customizing the partitions failed.

There are too many partitions on the disk for the setup program to display.

Article Change History:
31 Mar 1995 - Made minor changes.

Support Information Services

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Tech Info Library Article Number:16317

Tech Info Library

MODE32 Version 7.5: Release Notes and Instructions (5/96)

Revised: 6/4/96
Security: Everyone

MODE32 Version 7.5: Release Notes and Instructions (5/96)

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Article Created: 20 September 1994
Article Reviewed/Updated: 22 May 1996

TOPIC ----------

This Document is divided into the following sections:

- "Do I need MODE32?"
- Changes in Version 7.5
- Summary Description
- Installation
- Quick Tips
- Choosing and Changing Between 24-Bit and 32-Bit Modes
- Which Software is 32-Bit Clean?
- How to Obtain Connectix Products

DISCUSSION ----------

"DO I NEED MODE32?"

If you have a Mac II, IIx, IIcx, or SE/30 with System 7 and want to run in 32-bit addressing mode - the answer is yes; MODE32 gives your Mac the ability to run in 32-bit addressing mode under these systems.

If you have any other Macintosh model the answer is no. Your Mac either: (1) has the 32-bit addressing option built into ROM, (2) is incapable of running in 32-bit mode (has a 68000 Processor), (3) is always in 32-bit addressing mode (Power Macintosh, PowerBook 500 series and AV models), (4) is running System 6.

CHANGES IN VERSION 7.5

WARNING! DO NOT INSTALL MODE32 v1.2 WITH SYSTEM 7.5!

Use of MODE32 version 1.2 with System 7.5 may cause serious file corruption. If you have already installed version 1.2 (the control panel version) into a System 7.5 system - or even if you have already removed it - reinstall fresh System

Software. Version 1.2 of MODE32 can cause file resource corruption in System 7.5. The only way to correct the problem is to reinstall a fresh version System Software 7.5. Once you have reinstalled System Software, you can use version 7.5 of MODE32 to gain 32-Bit Addressing capability.

MODE32 version 7.5 introduces a new interface and offers some compatibility improvements over version 1.2. MODE32 v7.5 has an installer that will automatically remove an old version of MODE32 control panel and replace it with MODE32 7.5 system extension. When installed, the MODE32 7.5 system extension is always enabled; you can access 32-bit addressing in the Memory control panel without having to adjust MODE32.

Connectix confirms that MODE 32 version 7.5 is compatible with System Software 7.5.3.

Other new features:

- Compatibility with the Thread Manager extension (built into System 7.5 - 7.5.3).
- System 7.0.1 Virtual Memory will no longer crashes with certain combinations of NuBus cards.
- Mac II without a 68851 PMMU running System 7.1 or newer won't hang on restart
- Certain hard disks that would previously cause continuous restarts can now be used as the startup disk.
- Improved performance when using virtual memory.
- Compatibility with DiskLock 2.0.
- Improved compatibility with some 68040 accelerators.
- Improved power-on testing of memory beyond 8M.

SUMMARY DESCRIPTION

MODE32 is the utility for Mac II, IIx, IIcx, and SE/30 users who would like to use System 7 32-bit mode to access more than 8 contiguous megabytes of real or extended application memory. It is especially useful for pre-press, image processing, desktop publishing, animation, CAD, scanning, other memory-intensive applications, or use of large numbers of applications.

MODE32 enables the use of the standard 32-bit addressing mode of System 7.0. This new mode allows direct access to up to 128 megabytes of standard RAM or up to one gigabyte of extended memory, eliminating the traditional "eight megabyte barrier." 32-bit addressing would normally not be possible on the SE/30, II, IIx, and IIcx systems because of the software built into their ROMs. Those ROMs are only compatible with the less powerful 24-bit addressing mode which was standard in System 6.0. By extending the compatibility of the ROMs to the new 32-bit mode, MODE32 provides full System 7.0 32-bit functionality to these

earlier machines.

Some applications and INITs are not "32-bit clean," that is, they are incompatible with 32-bit mode. Such software usually causes your system to crash immediately when run in 32-bit mode. When you need to work with any non 32-bit clean INITs or applications we recommend using Maxima (see How To Obtain Connectix Products). Maxima extends addressing of your physical memory to 14 megabytes without resorting to 32-bit addressing, so it is compatible with essentially all applications.

INSTALLATION
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1) Double-click on the MODE32 Installer.

2) Select the drive in which to install MODE32. By default, the boot drive will be selected.

3) Click the Install button.

4) Select "Register Now…" and complete the registration information and click OK.

5) If you have a modem, click "Send". If you do not have a modem but have a printer, click "Print". If you do not have a printer or modem click "Don't Register" and use the toll-free phone number to register your copy of MODE32 7.5.

6) When you see a message saying that installation was successful, click "Restart" to load MODE32 or click "Quit" to return to Finder. You must restart your Mac in order to load MODE32.

7) After restart, open the Memory control panel (in the Control Panels folder in the System Folder). A 32-Bit Addressing option is now available. Click the On button and close the control panel.

8) Restart your Macintosh.
   * NOTE: Not all applications, system extensions and hard disk drivers are compatible with 32-bit addressing. Follow the instructions listed in MODE32 Quick Tips or check with the manufacturer if you have problems using a particular product with 32-bit addressing.

QUICK TIPS

- After you install MODE32, remove all the Startup, Control Panel, and Chooser documents (INITs, cdevs and rdevs) that you are not sure are 32-bit clean and Restart your system before you switch into 32-bit mode. You can then go back and add the ones in question one at a time.

- If you have a problem with a particular INIT or application, make sure that you have the most recent version. Many software products that were originally not 32-bit clean are being re-released in a 32-bit compatible version. Contact the publisher for compatibility details.

- If you wish to temporarily disable MODE32 hold down the ESC key (the upper left key on your keyboard) during boot. Your system then automatically launches in 24-bit mode. The 32-Bit Addressing portion of the memory control panel will still be "On," so your system will automatically return to 32-bit mode after the next reboot.

- MODE32 only works on Macintosh II family systems with non 32-bit clean ROMs (II, IIx, IIcx, or SE/30). It is not needed on Macintosh computers with 32-bit clean ROMs (IIci, IIsi, IIfx, LC, and so on), and it does not work on systems that have early ROM designs (128, 512, Plus, SE, Classic, Portable, and so on).

- MODE32 only works with System 7.0 and later. If you want to use 32-bit addressing mode with System 6.0 you need to use the Connectix product, OPTIMA.

- Do not forget to Restart your system after you change your addressing mode.

CHOOSING AND CHANGING BETWEEN 24-BIT AND 32-BIT MODES

Even though your system now has a powerful 32-bit mode, you may still wish to use 24-bit mode from time to time because of its more complete compatibility. Which mode you should use depends on how much memory you need.

32-bit Mode:
The System 7.0 implementation of 32-bit mode allows up to one gigabyte (1024 megabytes) of directly addressable memory. However, the main boards of the modular Macintosh systems are not wired to accept more than 128 megabytes of standard RAM. So you can access up to 128MB of physical memory or 1 gigabyte of extended memory in 32-bit mode.

You should be aware that 32-bit mode is only compatible with "32-bit clean" applications so you may not want to use it unless you need a lot of memory. It will only take one incompatible INIT or application to crash the system in 32-bit mode.

"32-bit addressing mode" means that all 32 bits of each address generated by the processor are interpreted by the Macintosh to be part of the address. It is often confused with 32-bit Color QuickDraw and 24-bit color video monitors, neither one of which is at all related to memory addressing modes. The 32-bit mode on your system will function in the same manner as the standard 32-bit mode on the IIci, IIsi, IIfx, LC, and newer models.

24-bit Mode:
The standard 24-bit mode allows you to access up to eight megabytes of physical RAM or up to 13 megabytes of extended memory. The advantage of 24-bit addressing mode is that it is compatible with the full range of Macintosh software, whereas only "32-bit clean" applications and INITs will run in the more powerful 32-bit mode. So, whenever your memory requirements can be adequately served by 24-bit mode, the increased compatibility of this mode may make it easier to use. By adding MAXIMA, RAM Doubler, or Virtual 3.0 to your system you can access 14 megabytes of physical or extended application memory, respectively, in 24-bit

mode. However, any of this memory over eight megabytes will be fragmented, with the result that no single application can use all 13 or 14 megabytes. (In 32-bit mode, all of the memory up to one gigabyte is contiguous so that each application can access all the application memory.) Generally, if eight (or 14) megabytes of application memory is sufficient for your needs, you should consider using 24-bit mode because of its superior compatibility.

How to Change Memory Addressing Modes

Once you have installed MODE32 you can select 32-bit mode exactly the same way you would on the latest Macintosh systems. Open the standard System 7 "Memory" control panel (under the Apple menu) and click the "On" button in the 32-Bit Addressing portion. (This portion of the panel will only appear if you are using MODE32.) Then Restart your system. You can switch back to 24-bit mode at any time by following the same procedure, clicking the "Off" button instead of the "On" button.

WHICH SOFTWARE IS 32-BIT CLEAN?

The current versions of most applications are already 32-bit clean and many more clean versions will be released as System 7 becomes more widely used. However, there are enough incompatible products in use that you may still have to do some work to get your own system ready for 32-bit mode.

Start by running Apple's System 7 Compatibility Checker to see what you are using that may cause a problem. Eliminate anything it identifies as not 32-bit (or System 7) compatible. Then, temporarily strip your system down to the bare essentials, putting the non-critical INITs in a Temporarily Disabled folder, or by turning them off with a 32-bit clean INIT chooser. It is much faster to start with a minimal set of INITs and add things one-by-one than it is to try everything and then eliminate the ones that don't work. (One of the best ways to do this is to start with a fresh System Folder in a 32-bit environment and add Startup, Control Panel and Chooser documents a few at a time.) Reboot and check the functionality of the software by exercising it a little, then add back a few more items.

If you get a crash or can't boot when you try to Startup in 32-bit mode, don't panic. Just reboot, holding down the ESC key (to temporarily switch to 24-bit mode) and start looking for the incompatible software. If you crashed while the INITs were loading, remember the last one that posted an icon to the desktop. The next one in alphabetical sequence is the most likely culprit. If you were running an application, don't use or even launch it for a while and get the rest of the system running smoothly. Then go back to that application and confirm that it was the problem. When you identify a product as non-32-bit compatible check to see if you have the current version. If not, contact the vendor as you may be entitled to a free or inexpensive upgrade. If they do not have a 32-bit clean version yet, find out if and when they plan to release one.

Even the NuBus and Process Direct Slot (PDS) cards in your machine must be running code which is 32-bit clean. Some NuBus cards have code that gets executed when the machine starts. These problems will exist even with a clean System Folder when you are in 32-bit mode. If you believe that you may have a incompatible NuBus or PDS card, try using a different card with the same

functionality (for example another video card), test the suspect card in a 32-bit clean system (IIci, IIsi, IIfx, LC, and newer), or contact the manufacturer.

HOW TO OBTAIN CONNECTIX PRODUCTS

To obtain the Connectix products mentioned in this document (Maxima, OPTIMA, RAM Doubler) contact Connectix Corporation. To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
22 May 1996 - Updated references to Mode32 with SSW 7.5.3.
22 Nov 1994 - Added information on how to find Connectix address and phone number.

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Tech Info Library Article Number:16319

Tech Info Library

Apple Early Language Connections: LC 575 Use CD-ROM 5.0 (9/94)

Revised: 9/20/94
Security: Everyone

Apple Early Language Connections: LC 575 Use CD-ROM 5.0 (9/94)

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Article Created: 19 September 1994

TOPIC ----------

I've had to reinstall the Apple Early Language Connections software on my Macintosh LC 575 computer, and now I cannot get the CD-ROM to recognize any CD ROMS that I put into the computer.

DISCUSSION ----------

Version 4.0 of the Apple Early Language Connections CD uses version 4.0.3 of the CD-ROM drivers. The Macintosh LC 575 and other computers that use the AppleCD 300i Plus CD-ROM Drive, require version 5.0 of the drivers. In order to install the Apple Early Language Connections CD on a Macintosh LC 575 computer, follow these steps:

1) Insert the Apple Early Language Connections CD and reinstall the software.
2) Restart your Macintosh
3) Place the Macintosh LC 575 Install Me First CD in the computer.
4) Use the Custom install option to install version 5.0 of the CD-ROM software.
5) Restart your Macintosh

Once the new CD-ROM drivers are installed, you can use the CD-ROM drive.

Note: Version 4.1 of the Apple Early Language Connections CD uses version 5.0 of the CD-ROM software, so you don't need to custom install the CD-ROM drivers.

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Tech Info Library Article Number:16321

..TIL16322-Apple_Home_Learning_Q_and_A_1-95_(TA32528).pdf

Tech Info Library

Apple Home Learning Q & A (1/95)

Revised: 1/23/95
Security: Everyone

Apple Home Learning Q & A (1/95)

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Article Created: 23 September 1994
Article Reviewed/Updated: 23 January 1995

TOPIC ----------

This article provides answers to commonly asked questions on Apple Home Learning (AHL).

DISCUSSION ----------

Q) Why is Apple entering the Home Learning market and what type of products will be offered?

A) Apple is uniquely positioned to enter this market due to its leadership in creating high quality technology used in K-12 schools and, due to the phenomenal success of its Performa hardware line, strong name recognition and credibility in the home market. Apple has been very successful in working with schools to provide the best hardware and software solutions aimed at helping children succeed in all aspects of the curriculum. Realizing that students engage in many learning activities at home in support of their school experience, Apple wants to help students and their parents by providing them with high quality products that engage the learner as well as make learning fun.

AppleSoft's Home Learning line will engage children by using technology to tap into their love of learning. Children will like AHL products because they are fun, because they encourage the child to explore his world, and because they provide a meaningful interactive experience. For the young child, AHL software will be as much fun as playing a video game. And for the older child, AHL software will be an acceptable alternative to video game. AHL products will be designed first for the home user, with educator input to insure their educational value.

Apple's message to parents is that Apple delivers innovative software to bring the family a fun experience with educational value. Apple Home Learning products should be viewed as "health food for the mind." AppleSoft's At Ease gives children an alternative to the traditional

Macintosh desktop and makes it easier for children to access products included in the Apple Home Learning line. In addition, AHL products will be sold for both Macintosh and MS Windows operating systems.

Q) Why did Apple choose Scholastic? Who else are you working with?
A) Scholastic is one of the premier providers of educational materials to schools. Scholastic's products are well received by parents, teachers, and, most of all, children. Apple is currently working with other developers and will be making further product announcements in 1995.

Q) Why is Apple entering the consumer software business when Claris already has entered the consumer software business with their Clear Choice line of products?
A) Claris, a subsidiary of Apple, publishes Macintosh and Windows productivity applications, with special strengths in software for generalist users in education, small business and the home. Under its Clear Choice line, Claris also publishes a variety of software for the home market. AppleSoft's Educational Products Group will focus specifically on the Home Learning market.

Q) Does this mean Apple is competing with its own home learning software developers?
A) Apple will help bring new titles to the marketplace that help to round out the total of home learning products available to parents and children. Apple will primarily seek to work with leading developers and educators in creating home learning products.

Q) Isn't this an already saturated market?
A) The home learning segment of the software marketplace is among the fastest growing areas of the software business. There are many opportunities for developers to create products that fill a variety of needs. Apple has a unique opportunity to leverage it's leadership in schools and in computers for the home to participate in this rapidly expanding segment of the software business.

Q) What channels is Apple focusing on? How will you sell it?
A) Apple Home Learning software will be sold through retail establishments including mail-order, superstores, mass merchants, consumer electronics stores, computer stores and software only establishments. AHL products will also be sold as part of hardware/software bundles and direct to K-12 schools.

Q) What's the first product and when? How many products this year?
A) The first product to come under the Apple Home Learning label is WiggleWorks, developed with Scholastic. WiggleWorks is an excellent example of a product that has the ability to engage children in learning the skills necessary to become good readers while, at the same time, provide children with a "fun" experience. WiggleWorks is unique in its combination of the engaging qualities of interactive books with educational value of a system that supports fundamental reading and writing skills.

WiggleWorks is a full system which supports young children in their

reading, writing, listening, and speaking development. The books which Scholastic commissioned for WiggleWorks are high-quality, cover multiple genres, connected to school curriculum, and many are by noted authors and illustrators. Apple will add to the Apple Home Learning line based on customer and market needs. AppleSoft expects to announce additional AHL products IN 1995.

Q) Are you taking on Microsoft Home?
A) No. As mentioned earlier, AppleSoft is not announcing the publication of a large number of products aimed at competing one-on-one with existing third-party products. AppleSoft will continue to work with Microsoft and other third-party developers to insure that the marketplace is filled with quality home learning products. Many of these products will be published by Microsoft, as well as other developers, some will be published by Apple.

Q) Is the AppleSoft Home Learning Group actively seeking developers for co-publishing/distribution?
A) Yes. AppleSoft is actively seeking further development partners for products that fit the Apple Home Learning strategy of providing children with learning experiences that make learning fun. Perspective developers can contact the AppleSoft Home Learning group through AppleLink address HOME.LEARNING

Q) What organizational infrastructure is in place to successfully sell, distribute and market these products to the retail channel?
A) AppleSoft has developed a complete two-tier software distribution and marketing system in the U.S., including direct relationships with all leading distributors and resellers. AppleSoft has also established software distribution in all major European, Pacific, North American and Latin American countries.

Q) What marketing/retail merchandising vehicles will AppleSoft use to position its products in the retail channel?
A) AppleSoft will use all its available creative resources to develop materials that drive demand in the retail channel. This includes attractive packaging, point-of-sale merchandising, collateral, demo disks, advertising, etc.

Q) Will Apple only acquire or will Apple also develop new products?
A) Apple plans to leverage widely recognizable names and properties whenever possible, as well as initiate innovative product development to create captivating products for children, teachers, and parents. AppleSoft will publish products developed by other developers as well as products harvested from Apple's internal development efforts.

Q) Why should competing third-party developers continue to work with Apple?
A) Our third-party developers are very important to our continued success. AppleSoft will continue to provide developers with information, technical support and marketing opportunities to help all developers become and remain successful.

Q) Why is Apple doing software products for Windows?
A) Apple's focus with the Apple Home Learning line is on strengthening the connection between the home and school. Apple computers clearly dominate in the school market. And while the penetration of Macintosh in the home continues to increase, largely due to the very successful Performa series, we do recognize that many families do have PC computers at home. Apple feels it's important to bring it's excellent educational technology and expertise to all children.

Q) Will there be any difference between your Mac and Windows products?
A) It depends on the product. There will be some minor user interface difference between the Mac and Windows versions of WiggleWorks.

Q) Will all of the AHL products be delivered for both Mac and Windows?
A) Not necessarily. Some products will take advantage of unique Macintosh capabilities that are not available on Windows.

Article Change History:
23 January 1995 - Corrected spelling errors

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Tech Info Library Article Number:16322

Tech Info Library

Apple Basic Color Monitor: No Support with Macintosh IIci (9/94)

Revised: 9/20/94
Security: Everyone

Apple Basic Color Monitor: No Support with Macintosh IIci (9/94)

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Article Created: 19 September 1994

TOPIC -----

I have a Macintosh IIci and cannot get the Apple Basic Color Monitor to work properly on it. I can get the Apple Color Plus display to work with the IIci and I can get Apple Basic Color Monitor to work from a DOS computers's SVGA port.

DISCUSSION -----

The built-in video technology of the Macintosh IIci and IIsi do not support the VGA video format. The first Macintosh computer to support the VGA format was the LC.

Support Information Services

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Tech Info Library Article Number:16323

Tech Info Library

Personal LaserWriter LS: No Driver with System 7.5 (2/95)

Revised: 2/16/95
Security: Everyone

Personal LaserWriter LS: No Driver with System 7.5 (2/95)

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Article Created: 19 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

I have a Personal LaserWriter LS printer and installed System 7.5, but I cannot find the Personal LaserWriter LS printer in my Chooser. Is the Personal LaserWriter LS printer supported under System 7.5?

DISCUSSION ----------

The Personal LaserWriter LS driver that shipped with the printer does not work with System 7.5. In order to use the Personal LaserWriter LS printer under System 7.5, use the LaserWriter 300 printer driver. If you installed QuickDraw GX, use the LaserWriter 300 GX driver.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

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Tech Info Library Article Number:16324

Tech Info Library

CD-ROM Setup 5.0: ISO 9660 Disc Directory Not Right (9/94)

Revised: 9/20/94
Security: Everyone

CD-ROM Setup 5.0: ISO 9660 Disc Directory Not Right (9/94)

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Article Created: 19 September 1994

TOPIC ----------

I have a ISO 9660 formatted CD and cannot get an accurate file count using the Get Info option. For example, if I have a 1000 files on the disk, Get Info reports that there are only 29 files on the disc. I need to get an accurate file count, so I need to know how?

DISCUSSION ----------

There has been a documented problem with ISO 9660 extension versions 5.0 through 5.0.1. related to the disc directory and the ability to correctly read text files. In general, ISO 9660 CD-ROMs should work like any other Macintosh volume.

There is a new version of the ISO 9660 extension numbered 5.0.2. It comes with System 7.5. It will fix the problems that customers have been having with directories and problems involving unreadable text files.

Support Information Services

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Tech Info Library Article Number:16325

Tech Info Library

PlainTalk and MacinTalk: Differences and When to Use (11/95)

Revised: 11/29/95
Security: Everyone

PlainTalk and MacinTalk: Differences and When to Use (11/95)

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Article Created: 20 September 1994
Article Reviewed/Updated: 29 November 1995

TOPIC ----------

This article describes Speech Recognition and Text-to-Speech found in PlainTalk, MacinTalk 2, and MacinTalk Pro and their differences and when to use them.

The latest English Text-to-Speech software package features a new "smart installer" that automatically determines which speech resources are right for your computer. It will automatically install the correct files for your computer when you perform the Easy Install.

DISCUSSION ----------

PlainTalk
=========

PlainTalk provides the Quadra 840AV, Centris/Quadra 660AV, and all Power Macintosh systems* seamless integration of Speech Recognition and Text To Speech technologies.

Speech Recognition

The Speech Recognition component of PlainTalk is based on the Casper technology. It is a continuous-speech system that is independent of the person speaking.

Speech Recognition enables a whole new user experience whereby you can streamline operations by simply invoking commands or complex macros by speaking them.

Text to Speech

Text to Speech component of PlainTalk gives an AV computer the ability of reading text based information and synthesizing speech using the computer’s

speaker.

Multiple voices at various sound quality levels are supported. This enables new capabilities such as audible proof reading or in combination with the telephony capabilities that GeoPort provides to listen to your email messages from remote locations.

Writing Speech Commands

Writing speech commands is accomplished through these methods:

- AppleEvent enabled applications commands are written using AppleScript.

- Non-AppleEvent enabled applications will use a new version of QuickKeys from CE Software that support spoken Commands.

Version Table

The following table provides information on what version of PlainTalk works with various versions of the Mac O/S and computer models:

Begin_Table

Version	O/S Version	Macintosh Computer
PlainTalk 1.4.1	7.5	All Power Macintosh computers (excluding the 8-bit 5200 series*) with a PlainTalk microphone.
PlainTalk 1.3	7.5	Quadra 660AV and 840AV, All Power Macintosh computers (excluding the 8-bit 5200 series*) with a PlainTalk microphone.
PlainTalk 1.2	7.1.2	All Power Macintosh computers, (excluding the 8-bit 5200 series*) with a PlainTalk microphone.
PlainTalk 1.2	7.1, 7.1.1	Quadra 660AV and 840AV.

End_Table

* Early versions of the Macintosh 5200/75 LC had 8-bit sound input. Use the search string '5200 and 8-bit and 16-bit' to locate the TIL article "Power Macintosh 5200/75 LC: 8-bit or 16-bit Sound?" for help determining whether your computer has 8-bit or 16-bit sound in.

MacinTalk
==========

MacinTalk software enables any Macintosh to provide Text to Speech capabilities for applications that support Text to Speech. SimpleText is an example of an

application that supports Text to Speech.

There are two options available — MacinTalk 2 or MacinTalk Pro — when installing Text to Speech software:

MacinTalk 2

MacinTalk 2 is well suited for low-end computing environments where available memory is low and CPU bandwidth is limited. Minimum configuration is System 6.0.7 running on a Macintosh Plus.

To use MacinTalk 2 you need these files:

- Speech Manager (1.4)
- MacinTalk 2 (1.4)
- MacinTalk 2 Voices (1.4)
- SimpleText (1.1)

MacinTalk 3

MacinTalk 3 is well suited for mid-range computing environments. Minimum configuration is System 7 running on a 68030 processor running at 33Mhz or any 68040 or PowerPC processor.

To use MacinTalk 3 you need these files:

- Speech Manager (1.4)
- MacinTalk 3 (1.4)
- MacinTalk 3 Voices (1.4)
- SimpleText (1.1)

MacinTalk Pro

MacinTalk Pro requires System 7 or greater. It is intended for 68040 or PowerPC processor equipped computers only. To use MacinTalk Pro you need these files:

- Speech Manager (1.4)
- MacinTalk Pro (1.4)
- SimpleText (1.1)

In addition, you need at least one of the voices from the Voices folder (not the MacInTalk2 Voices file). There are "High Quality" and "Small" versions of Agnes, Bruce, and Victoria. "High Quality" means that there is very little compression on the voice file resulting in high audio fidelity but larger size. "Small" means high compression on the voice file resulting in small voice footprint but lower audio fidelity.

These articles can help you locate the PlainTalk software mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
29 Nov 1995 - Corrected minor typo.
23 Oct 1995 - Added information on the 5200 and 6200 series computers.

Support Information Services

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Tech Info Library Article Number:16328

Tech Info Library

System 7.5: Shutdown DA Bypasses Shutdown Folder (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Shutdown DA Bypasses Shutdown Folder (2/95)

==========

Article Created: 21 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

The System 7.5 "• Shutdown" Desk Accessory bypasses any items in the Shutdown Items folder during shutdown.

DISCUSSION ----------

This may cause problems for customers expecting, for example, an AppleScript to execute from the Shutdown Items folder upon shutdown.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

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Tech Info Library Article Number:16330

Tech Info Library

US Apple SW Updates Available Online (03/97)

Revised: 3/31/97
Security: Everyone

US Apple SW Updates Available Online (03/97)

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Article Created: 19 September 1994
Article Reviewed/Updated: 28 March 1997

TOPIC -----

This document serves as an index to the Domestic Apple Software Updates areas located on, AppleLink, America Online and the Internet. The first part of this article: Article Change History, lists the most recent changes to the Software Updates. The second part is an alphabetical list of the software updates, along with the current location.

Please search the Apple Tech Info Library using the string "Apple Software Updates" for a current list of online services to which Apple Software Updates are posted. (You can also use the special keyword: kol to search for this information and other on line related information in the Apple Tech Info Library.)

DISCUSSION -----

- Article Change History:
28 Mar 97 - Add TokenTalk Prep 2.5.3
27 Mar 97 - Add PowerBook 3400 Modem AT Commands & S-Registers
26 Mar 97 - Add MacIPX/CS II Ethernet Patcher
12 Mar 97 - Add PB1400 ATA Flash 1.0
12 Mar 97 - Add PowerBook VM Tuner 1.0
11 Mar 97 - Add Newton Package Installer for Windows (NEWTINST.EXE)
11 Mar 97 - Add Newton Package Installer for Mac (NPI 1.1)
10-Mar-97 - Add Hangul Jojung 1.0
7-Mar-97 - Add CFM-68K Runtime Enabler 4.0, Disk Copy 6.1
3-Mar-97 - Add QTEASY16.EXE AND QTPLUG16.EXE (Quicktime for Win 3.1)
3-Mar-97 - Add QTEASY32.EXE AND QTPLUG32.EXE (Quicktime for Win 95)
28-Feb-97 - Add Macsbug 6.5.4 Info
28-Feb-97 - Add CD-ROM Software 5.3.2
28-Feb-97 - Add WBOFF.EXE
28-Feb-97 - Add Cyberdog 1.2.1 (3 disks/Net Install) Delete Cyberdog 1.2
25-Feb-97 - Add Fax Cover Pages 1.2.

23-Feb-97 - Add CFM-68k 4.0b1.sea
13-Feb-97 - Add 7.5.5 SCSI Server Update
11-Feb-97 - Add MRJ 1.0 and NCI 1.0b5 (Mac and DOS-Win)

Key to Location Abbreviations:

AIISP - Apple II Supplemental	
ARA - Apple Remote Access	OPS - Other Printing Software
CTB - Comm Toolbox	OSS - Other System Software
D-P - Display-Peripherial	OLS - Older System Software
LWS - LaserWriter	OT - Open Transport
MP - MessagePad	
N-C - Networking-Communications	PSU - PowerBook System Update
NCU - Newton Connection Utilities	PSW - Printing Software for Windows
NSU - Newton System Updates	PTG - Printing
ONC - Other Networking-Communications	QTW - QuickTime for Windows
ONU - Other Newton Updates	SYS - System
OPB - Other PowerBook Software	SPE - Speech

The Alphabetical List of USA Apple Software Updates:

040 VM Update 1.0 - Macintosh/SYS/Other System
32-Bit System Enabler 1.0.3 - Macintosh/SYS/Other System
5xxx-6xxx Tester 1.0 - Macintosh/Utilities
630 SCSI Update 1.0 - Macintosh/SYS/Other System
6360-64xx-54xx Update 1.0 - Macintosh/SYS/Other System
7.5.5 SCSI Server Update - Macintosh/N-C/Apple Share
8*24 GC Software 7.0.1 - Macintosh/D-P
950 Color Addition 1.0 - Macintosh/SYS/Other System
About PlainTalk 1.4.1 - Macintosh/SYS/Speech /PlainTalk 1.4.1
Adobe Acrobat Reader 2.1 - Macintosh/Utilities
ADSP 1.5.1 - Macintosh/N-C/Comm Toolbox
AMK Spinning Cursor Bug Fix - Macintosh/Utilities
APD 1.1.3 Update - Macintosh/Utilities
Apple CD-ROM 5.0.4 - Macintosh/D-P
Apple Color Printer 1.0 - Macintosh/PTG/Other Printing
Apple Color SW Pro CMM 1.0 - Macintosh/PTG/Other Printing
Apple DocViewer 1.1.1 - Macintosh/Utilities
Apple Event Manager 1.0.3 - Macintosh/SYS/Other System
Apple Guide Authoring Kit Offer - Macintosh/Utilities
Apple HD SC Setup 7.3.5 - Macintosh/Utilities
Apple II SCSI Utilities - Apple II/Apple II Supplemental
Apple II Startup Disk 2.2 - Macintosh/N-C/AppleShare
Apple II System Disk 3.2 - Apple II/Apple II Supplemental
Apple II Video Overlay Card - Apple II/Apple II Supplemental
Apple IIGS CD Setup 5.1 - Apple II/Apple II Supplemental
Apple IIGS System 6.0.1 - Apple II/Apple IIGS System 6.0.1
Apple Internet Router 3.0.1 Patch - Macintosh/N-C/Network Software Installer
Apple LAN Utility 1.0b4 - Macintosh/Unsupported
Apple Memory Guide 1.3 - Macintosh/Utilities
Apple Menu Options 1.02 - Macintosh/SYS/Other System
Apple Modem Tool 1.5.3 - Macintosh/N-C/Comm Toolbox

Apple Printer Utility 2.1.1 - Macintosh/PTG/LaserWriter
Apple Remote Access 2.0.1 Info - Macintosh/N-C/ARA
Apple Spec 11-96 - Macintosh/Utilities
Apple Spec App - Macintosh/Utilities
Apple System Profiler 1.0.1 - Macintosh/Utilities
ApplePhone 1.0.1 - Macintosh/Unsupported
AppleScan 1.0.2 - Macintosh/D-P
AppleSearch 1.0.1 Patch - Macintosh/N-C/ONC
AppleSearch 1.5.1 Patch - Macintosh/N-C/ONC
AppleShare 3.0.3 Patch - Macintosh/N-C/AppleShare
AppleShare 4.2.1 to 4.2.2 - Macintosh/Updater Net-Comm/AppleShare
AppleShare 4.2 Upgrade Info - Macintosh/N-C/AppleShare
AppleShare Setup 1.0.1 - Macintosh/Utilities
AppleShare Tune-Up 4.0.1 - Macintosh/N-C/AppleShare
AppleTalk ADSP Tool 1.0 - Macintosh/N-C/Comm Toolbox
AppleTalk Image Writer 7.0.1 - Macintosh/PTG/Other Printing
AppleVision Fix 1.1 - Macintosh/D-P
AppleVision Fix 1.1 - Macintosh/SYS/System 7.5 Update 2.0
AppleVision Fix 1.1 Info - Macintosh/SYS/Older SYS/For System 7.5.2 and 7.5.3
AppleVision Software 1.0.2 - Macintosh/D-P
ARA 1.0 Client Enabler - Macintosh/N-C/ARA/Other ARA Software
ARA 1.0 Original Scripts - Macintosh/N-C/ARA/ARA 1.0 Original Scripts
ARA 1.0 User Scripts - Macintosh/N-C/ARA/ARA 1.0 User Scripts
ARA 2.0 Original Scripts - Macintosh/N-C/ARA/ARA 2.0 Original Scripts
ARA 2.0 User Scripts - Macintosh/N-C/ARA/ARA 2.0 User Scripts
ARA Client 2.1 Updater - Macintosh/N-C/ARA/ARA Updates
ARA MP Server 2.1 Patches - Macintosh/N-C/ARA/ARA Updates
ARA PS 2.1 Updater - Macintosh/N-C/ARA/ARA Updates
AS Custom Settings 1.0 - Macintosh/Unsupported
ASFU Fixer 1.0.1 - Macintosh/PTG/Other Printing
Assistant Toolbox 1.0.1d1 - Macintosh/Unsupported
At Ease 2.0.3 Update - Macintosh/SYS/At Ease
At Ease 4.0.1 Updater - Macintosh/SYS/At Ease
At Ease Update 1.0 - Macintosh/SYS/At Ease
At Ease WG 3.0.3 Updater - Macintosh/SYS/At Ease
At Ease 3 CDROM Prefs Patch - Macintosh/SYS/At Ease
At Ease-IDE Utility Disk 1.0 - Macintosh/SYS/At Ease
Audio Volume 1.1 Installer - Macintosh/SYS/Other System
AudioVision Installer 1.0.2 - Macintosh/D-P
AV Serial Extension 1.0 - Macintosh/SYS/Other System
Avid Cinema 1.1 Update Macintosh - D-P
AWS 95 Tune-Up 1.0 - Macintosh/N-C/ONC
AWS 95 Tune-Up 2.0 - Macintosh/N-C/ONC
Backgrounder 1.3 - Macintosh/PTG/Other Printing
Backlight Control 1.0 - Macintosh/Utilities
Basic Color Monitor (1.0) - Macintosh/D-P
Basic Connectivity Set 1.1.1 - Macintosh/N-C/Comm Toolbox
Battery Tools 2.0 - Macintosh/PowerBook/Other PB SW
Cache Switch 7.0.1 - Macintosh/SYS/Other System
CD-ROM Software 5.1.7 - Macintosh/D-P
CD-ROM Software 5.3.2 - Macintosh/D-P
CFM-68K 4.0 - Macintosh/System/CFM-68K
Chinese Lang. Kit Updater - Macintosh/SYS/Language Kits

Chooser 7.3 - Macintosh/PTG/Other Printing
CISMAIL.EXE - Newton/For DOS-Windows/ONU
CIS Mail 2.0 v.1.0.2 - Newton/For MacOS/ONU
Color Classic Update 1.0 - Macintosh/SYS/Other System
Color Laser Writer 8.3.2 - Macintosh/PTG/LaserWriter
Color SW Pro 1.5.2 - Macintosh/PTG/Other Printing
Color SW Pro GX 1.0 - Macintosh/SYS/QuickDraw GX
Color SW Pro GX `.0 - Macintosh/PTG/OPS
Color SW 1500 2.2.1 (3.sea disks & NetInst.sea) - Macintosh/PTG/OPS
Color SW 2500 2.2.1 (4.sea disks & NetInst.sea) - Macintosh/PTG/OPS
Colorsync 2.0 Plug-ins - Macintosh/Utilities
ColorSync 2.1.1 - Macintosh/SYS/Other System
Compatibility Checker 2.0 - Macintosh/SYS/Older SYS/For System 7.1.x
Cyberdog 1.2.1 - Macintosh/SYS/Net-Comm/Cyberdog
CPU Energy Saver 1.0.6 - Macintosh/SYS/Other System
DART 1.5.2 - Macintosh/Utilities
Desktop Printing 2.0.1 - Macintosh/PTG/Other Printing
Direct Dialup 1.1.1 - Macintosh/SYS/Other System
Direct Dialup Mail 1.1.2 - Macintosh/SYS/PowerTalk
Disk Copy 4.2 - Macintosh/Utilities
Disk Copy 6.1 - Macintosh/Utilities
Disk First Aid 7.2.2 - Macintosh/Utilities
Disk Image Mounter 1.0.1 - Macintosh/Utilities
Display Card 24AC 1.2 - Macintosh/D-P
Display Software 2.0.2 - Macintosh/D-P
Document Converter 1.0.4 - Macintosh/Utilities
DOS Compatibility 1.5 - DOS-Windows/DOS and PC Compatibility SW
Drive Firmware Update 1.2 - Macintosh/SYS/Other System
Drive Setup 1.0.5 - Macintosh/Utilities
Drive Setup 1.2 - Macintosh/Utilities
Duo Battery Patch 1.0 - Macintosh/PowerBook/Other PB SW
EM Sound Update 1.0 - Macintosh/SYS/Other System
English Speech Recognition - Macintosh/SYS/Speech /PlainTalk 1.4.1
English Text-to-Speech - Macintosh/SYS/Speech /PlainTalk 1.4.1
Ethernet Built-In 1.0.2 - Macintosh/N-C/ONC
Express Modem 1.5.5 - Macintosh/N-C/ONC
Finder Scripting Ext 1.2 - Macintosh/SYS/Other System
Font Extension 3 1.0.4 - Macintosh/SYS/Language Kits
Fontsize Patch 1.1 - Macintosh/SYS/Language Kits
Geoport-EM 3.1.1 Update/Macintosh/N-C/Apple Telecom
GeoPort/Express Modem 3.0 Updater/Macintosh/N-C/Apple Telecom
GlobalFax 2.5.2P Update - Macintosh/N-C/ONC
GrayShare Update 1.0 - Macintosh/PTG/Other Printing
Graphics Accelerator 1.0.7 - Macintosh/Unsupported
GX 1.1.3 Net Install - Macintosh/SYS/QuickDraw GX
Hangul Jojung 1.0 - Macintosh/System/Language Kits
HC 2.3 Color Stack Repair.sea - Macintosh/Utilities
HC 2.3.5 Stacks.sea - Macintosh/Utilities
HC 2.3.5 Update Installer - Macintosh/Utilities
HC 2.3.5 Updater - Macintosh/Utilities
HCIIGS 1.1 - Apple II/HyperCard IIGS 1.1
HideEworld - Newton/For MacOS/ONU
HyperCard Player 2.3.5 - Macintosh/Utilities

HyperMover.IIGS - Apple II/HyperCard IIGS
HyperMover.Mac - Apple II/HyperCard IIGS
HyperScan 2.0.1 - Macintosh/D-P
Ignore Dialtone 1.0.fc1 - Macintosh/Unsupported
ImageWriter 7.0.1 - Macintosh/PTG/Other Printing
IMF & DT Disk Images - Macintosh/SYS/System Enablers
Intelligent Battery Update 1.0.3 - Macintosh/PowerBook/Other PB SW
Internal HD Format 1.3 - Macintosh/Utilities
Internet Router 3.0.1 Patch - Macintosh/N-C/ONC
Invisible AWS 95 Fix (elap) - Macintosh/N-C/ONC
IP Gateway 1.0.1 Patch - Macintosh/N-C
IP Gateway 1.0.1 Patch - Macintosh/N-C/ONC
ISO 9660 File Access 5.0.2 - Macintosh/D-P
ISO 9660 File Access 5.0.2 - Macintosh/SYS/Other System
JLK Info - Macintosh/SYS/Language Kits
LT & LW Bridge 2.1/Macintosh/N-C/Other N-C
Laser Prep 7.1.2 - Macintosh/PTG/LaserWriter
Laser Prep 7.2 - Macintosh/PTG/LaserWriter
LaserWriter 300 1.2 - Macintosh/PTG/LaserWriter
LaserWriter 8.2.3f - Macintosh/PTG/LaserWriter
LaserWriter 3.0.8 for Windows 3.1 (LW Win 3.1 3.0.8) - DOS & Windows/PTG
LaserWriter 4.1 for Windows 95 (LW Win 95 4.2) - DOS & Windows/PTG
LaserWriter 8.4.1 - Macintosh/PTG/LaserWriter
LaserWriter Fax Tuneup 1.0 - Macintosh/PTG/LaserWriter
LaserWriter Printing Software 8.3.2 - Macintosh/PTG/LaserWriter
LaserWriter Printing Software 8.3.4 - Macintosh/PTG/LaserWriter
LaserWriter Pro 810 For Windows - DOS & Windows/PTG
LaserWriter Pro Energy Star Software - Macintosh/PTG/LaserWriter
LaserWriter Select 310 7.0.1 - Macintosh/PTG/LaserWriter
 LQ AppleTalk ImageWriter 7.0.1 - Macintosh/PTG/Other Printing
LaserWriter SW for Windows 1.0.2 - DOS & Windows/PTG (older version,.sea file)
Location Manager 1.0 Macintosh/PowerBook/Other PB SW
LW Select 310 For Windows - DOS & Windows/PTG (.sea and .exe file formats)
LWSW102.zip (LW SW for Windows 1.0.2) - DOS & Windows/PTG (older version, zip file)
Mac Drag and Drop 1.1 - Macintosh/SYS/Other System
MacDNS 1.0.3 - Macintosh/N-C/ONC
Macintosh Basics 5.0.3 - Macintosh/Utilities
Macintosh Tutorial - Macintosh/Utilities
Macintosh Easy Open 1.1.1 - Macintosh/SYS/Other System
MacIPX CS II Patcher - Macintosh/Unsupported SW
MacPPP 2.5 - Macintosh/N-C/ONC
MacsBug 6.5.3 - Macintosh/Utilities
Macbug 6.5.4 Info - Macintosh/Utilities
MacTCP 2.0.4 Update - Macintosh/N-C/ONC
MacTCP 2.0.6 Update - Macintosh/N-C/ONC
MacTCP Ping 2.0.2 - Macintosh/Unsupported
MacTCP Token Ring Extension 1.0 - Macintosh/N-C/ONC
MacX25 1.2 Patch - Macintosh/N-C/ONC
MailLink for PowerTalk INET - Macintosh/SYS/PowerTalk
MailLink for PowerTalk MS - Macintosh/SYS/PowerTalk
MailLink for PowerTalk QM - Macintosh/SYS/PowerTalk
MANUAL.PDF - Newton/For DOS-Windows/ONU

MegaPhone 1.0.2 - Macintosh/N-C/Other N-C
MegaPhone 1.0.3P - Macintosh/N-C/ON-C
MegaPhone Manual 2.0- Macintosh/N-C/Other N-C
Mercury ATandT GW 1.0C - Macintosh/Unsupported
Mercury Envoy GW 1.0C - Macintosh/Unsupported
Mercury MCI Mail GW 1.0C - Macintosh/Unsupported
Mexican Spanish TTS - Macintosh/SYS/Speech /PlainTalk 1.4.1
MIDI Management Tools 2.0.2 - Macintosh/Unsupported
MODE32 7.5 - Macintosh/SYS/Other System
Modem Enabler 1.0 - Newton/For MacOS/Other Newton Updates
MDMENBLR.ZIP- Newton/For DOS-Windows/MP System Updates
Modem Script Generator 1.0a1 - Macintosh/Unsupported
Monitor Energy Saver 1.0 - Macintosh/D-P
Monitor Energy Saver 1.1 - Macintosh/D-P
Mount IDE Drive 1.0 - Macintosh/SYS/Other System
Mouse Basics 4.5 - Macintosh/Utilities
MoviePlayer 2.5- Macintosh/Utilities
MovieShop 1.2.1 - Macintosh/Unsupported
MP 100 1.3.415333 - Newton/For MacOS/MP System Updates
MP 110 1.3.45333 - Newton/For MacOS/MP System Updates
MP 120 2.0.516263 - Newton/For MacOS/MP System Updates
MP 120 Tour and Handwriting - Newton/For MacOS/ONU
MP 130 2.0.526205 - Newton/For MacOS/MP System Updates
MP345333.EXE - Newton/For DOS-Windows/MP System Updates
MP415333.EXE - Newton/For DOS-Windows/MP System Updates
MP445333.EXE - Newton/For DOS-Windows/MP System Updates
MP516263.ZIP - Newton/For DOS-Windows/MP System Updates
MP526205.ZIP - Newton/For DOS-Windows/MP System Updates
MRJ 1.0 - Macintosh/System/Java
NBU101EN.ZIP - Newton/For DOS-Windows/ONU
NBU User's Guide - Newton/For MacOS/ONU
NCU 1.0b5 - Newton/For MacOS/Unsupported
NCU10B5.EXE - Newton/For DOS-Windows/Unsupported
Network Access Disk 7.5 - Macintosh/Utilities
Network Asst. 2.0.1 Updater - - Macintosh/SYS/At Ease
Network Launch Fix 1.0.2 - Macintosh/N-C/ONC
Network Software Installer 1.4.4 - Macintosh/N-C/Network Software Installer
Network Software Installer ZM-1.4.5 - Macintosh/N-C/Network Software Installer
Network Software Installer ZM-1.5 - Macintosh/N-C/Network Software Installer
Network Software Installer ZM-1.5.1 - Macintosh/N-C/Network Software Installer
NEWTINST.EXE - - Newton/For MacOS/Other Newton Updates
Newton System Update 1.0.5 - Newton/For MacOS/MP System Updates
Newton System Update 1.1.1 - Newton/For MacOS/MP System Updates
NewtonMail Modules 1.0.1 - Newton/For MacOS/MP System Updates
NPI 1.1 - Newton/For MacOS/Other Newton Updates
NTK 1.5.2b2 Updater - Newton/For MacOS/Other Newton Updates
Ofoto Update 2.0.2 Information - Macintosh/D-P
Open Transport 1.0.8 - Macintosh/N-C/OT
Open Transport Manual - Macintosh/N-C/OT
OpenDoc 1.1 - Macintosh/SYS/OpenDoc
OT 1.1 Manual - Macintosh/SYS/System 7.5 Update 2.0
OT 1.1.1 - Macintosh Macintosh - N-C/Open Transport
OT 1.1.1 Extras - Macintosh - N-C/Open Transport

OT 1.1.2 - Macintosh Macintosh - N-C/Open Transport
OT 1.1.2 Extras - Macintosh - N-C/Open Transport
OT PPP 1.0 Macintosh - N-C/Open Transport
OT PPP 1.0 Manual - Macintosh - N-C/Open Transport
OT PPP 1.0 Net Install - Macintosh - N-C/Open Transport
OPS Info (read me) - Macintosh/PTG/Other Printing
PANTONE for AppleVision - Macintosh/Unsupported
PANTONE for Color LW - Macintosh/PTG/LaserWriter
PANTONE for Color LW (12/600).exe - DOS & Windows - DOS & Windows/PTG
PB1400 ATA Flash 1.0 - Macintosh/PowerBook/PB 1400
PB 1400 HD Updater 1.0 - Macintosh/PowerBook/PB 1400
PB 1400 PMU Updater 1.0.1 - Macintosh/PowerBook/PB 1400
PB 1400 Floppy Update 1.0.2 - Macintosh/PowerBook/PB 1400
PB 2300c Update 1.0 - Macintosh/PowerBook/Other PB SW
PB 3400 AT Commands - Macintosh/System/PowerBook/Other PB SW
PC Card Software 2.0 - Macintosh/PowerBook/Other PB SW
PC Net Exchange 1.0.1 - Macintosh/N-C/AppleShare
PC Setup 1.0.2 - DOS & Windows/DOS and PC Compatibility SW (For Quadra 610 DOS Compatible)
PC Setup DIMM Patch - Macintosh/Unsupported
PS Fax Cover Page Utilities - Macintosh/Unsupported
Personal LW NTR For Windows - DOS & Windows/PTG
Personal LW SC 7.0.1 - Macintosh/PTG/LaserWriter
PhotoFlash 2.0 to 2.0.1 Updater - Macintosh/D-P
PlainTalk 1.2.1 - Macintosh/SYS/Speech /PlainTalk 1.2.1
PlainTalk 1.3 - Macintosh/SYS/Speech /PlainTalk 1.3.1
PlainTalk User Guide 1.2.1 - Macintosh/SYS/Speech /PlainTalk 1.2.1
PlainTalk User Guide 1.3 - Macintosh/SYS/Speech /PlainTalk 1.3.1
Portable Control Panel 1.3 - Macintosh/SYS/Other System
Portable StyleWriter 1.0.1 - Macintosh/PTG/Other Printing
Power Macintosh 7500/8500 Disk Tools - Macintosh/SYS/Other System
Power Macintosh 7500/8500 Install 1 - Macintosh/SYS/Other System
Power Macintosh AV Update 1.0-Bootable Disk - Macintosh/SYS/Other System
Power Macintosh AV Update 1.0-Extension Only - Macintosh/SYS/Other System
PowerBook 150 Enabler 1.1. - Macintosh/SYS/System Enablers
PowerBook 500 Series 1.0.2 - Macintosh/SYS/System Enablers
PowerBook 5300 SW Update - Macintosh/PowerBook/PB 5300 SW Update
PowerBook Duo Enabler 1.0 - Macintosh/SYS/System Enablers
PowerBook Duo Enabler 2.0 - Macintosh/SYS/System Enablers
PowerBook VM Tuner 1.0 - Macintosh/PowerBook/PB 1400
PowerCD Setup 1.0.1 - Macintosh/D-P
PowerPC Enabler 1.0.2 - Macintosh/SYS/System Enablers
PowerPC Enabler 1.1.1 - Macintosh/SYS/System Enablers
PowerPC Interrupt Extension - Macintosh/SYS/Other System
PowerTalk Gateways - Macintosh/SYS/PowerTalk
PowerTalk Guided Tour 1.1 - Macintosh/SYS/PowerTalk
PowerTalk Info - Macintosh/SYS/PowerTalk
PowerTalk Manager 1.5 - Macintosh/SYS/PowerTalk
PowerTalk PPC 1.0.2 - Macintosh/SYS/PowerTalk
PowerTalk PPC 1.0.2 France - Macintosh/SYS/PowerTalk
PowerTalk Solutions Guide - Macintosh/SYS/PowerTalk
PPC Upgrade Enabler 1.0.1 - Macintosh/SYS/System Enablers
Print Monitor 7.0.1 - Macintosh/PTG/LaserWriter

Printer Share 1.1.2 - Macintosh/PTG/Other Printing
PrintMonitor 7.1 - Macintosh/PTG/LaserWriter
PrintMonitor 7.1.2 - Macintosh/PTG/Other Printing
PT 1.1.6 - Macintosh/SYS/PowerTalk
PT 1.2.3 - Macintosh/SYS/PowerTalk
PT Mail Folders 1.5 - Macintosh/Unsupported
PT Mail Reader 1.1 - Macintosh/SYS/PowerTalk
QDGX Spooler Patch 1.0.2 - Macintosh/Unsupported
QTEASY16.EXE- DOS-Windows/QT
QTPLUG16.EXE- DOS-Windows/QT
QTEASY32.EXE- DOS-Windows/QT
QTPLUG32.EXE- DOS-Windows/QT
QD3D1523.ZIP - DOS-Windows/QuickDraw 3D
QuickDraw 3D 1.0.6 - Macintosh/SYS/QuickDraw GX
QuickDraw GX 1.1.3 - Macintosh/SYS/QuickDraw GX
QuickKeys Test Drive - Macintosh/SYS/Speech /PlainTalk 1.3.1
QuickKeys Test Drive 1.2.1 - Macintosh/SYS/Speech /PlainTalk 1.2.1
QuickTake for Power Mac 1.0 Macintosh/Display-Peripheral
QuickTime 2.1 - Macintosh/SYS/QuickTime
QuickTime 2.1.1 for Windows 3.1 - DOS & Windows/QTW
QuickTime 2.1.1 for Windows 95 - DOS & Windows/QTW
QuickTime 2.5 - Macintosh/SYS/QuickTime
QuickTime 2.5 Extras - Macintosh/SYS/QuickTime
QuickTime MPEG 1.0 - Macintosh/SYS/QuickTime
QuickTIme Plug-in 1.1 - Macintosh/SYS/QuickTime
QuickTime TV 1.0.4b19 - Macintosh/Unsupported
Rename Rescue 1.0 - Macintosh/SYS/Older SYS/For System 7.0.x
Scanner 2.0 (system extension) - Macintosh/D-P
Scanner 3.0 (system extension) - Macintosh/D-P
Screen 1.0.6 - Macintosh/SYS/Other System
Security Info - Macintosh/N-C/ARA/Other ARA Software
Serial Switch 1.1 - Macintosh/SYS/Other System
Serial Tool 1.0.2 - Macintosh/N-C/Comm Toolbox
SerialDMA 2.0.2 - Macintosh/N-C/ONC
Server Remote Control v1.0 - Macintosh/Utilities
Shrinkit1.1 - Apple II/Apple II Supplemental
SimpleSound 1.0 - Macintosh/Utilities
SimpleText 1.3 - Macintosh/Utilities
Slow SCSI Extension - Macintosh/Unsupported
SNA*ps 3270 1.1.2 Patch - Macintosh/N-C/ONC
Sound Manager 3.1 - Macintosh/SYS/Other System
SpoolLauncher 2.1.1 - Macintosh/PTG/Other Printing
SpoolMaster 2.1.1a - Macintosh/PTG/Other Printing
SSW 6.0.3 - Macintosh/SYS/Older SYS/For System 6.0.x
SSW 6.0.5 - Macintosh/SYS/Older SYS/For System 6.0.x
SSW 6.0.8 - Macintosh/SYS/Older SYS/For System 6.0.x
SSW 7.0 - Macintosh/SYS/Older SYS/For System 7.0.x
SSW 7.0.1 - Macintosh/SYS/Older SYS/For System 7.0.x
System 7 Tune-up 1.1.1 - Macintosh/SYS/Older SYS/For System 7.0.x
System 7.5 Update 2.0 (14 Disks) - Macintosh/SYS/System 7.5 Update 2.0
Sys75 Upd2.0 Custom Install - Macintosh/Unsupported
System 7.5.3 Rev 2 - Macintosh/SYS/Older SYS/For System 7.5.2 and 7.5.3
System 7.5.5 Update - Macintosh/SYS/System 7.5.5 Update

System Enabler 001 (1.0.1) - Macintosh/SYS/System Enablers
System Enabler 003 (1.1) - Macintosh/SYS/System Enablers
System Enabler 040 (1.1) - Macintosh/SYS/System Enablers
System Enabler 065 (1.2) - Macintosh/SYS/System Enablers
System Enabler 088 (1.2) - Macintosh/SYS/System Enablers
System Enabler 131 (1.0.3) - Macintosh/SYS/System Enablers
System Enabler 401 (1.0.5) - Macintosh/SYS/System Enablers
System Enabler 403 (1.0.2) - Macintosh/SYS/System Enablers
System Enabler 404 (1.0) - Macintosh/SYS/System Enablers
System Enabler 405 (1.0) - Macintosh/SYS/System Enablers
System Enabler 406 1.0 - Macintosh/SYS/System Enablers
System Update 3.0 800K Disk - Macintosh/SYS/Older SYS/For System 7.1.x
System Update 3.0.1 1.4MB Disk -Macintosh/SYS/Older SYS/For System 7.1.x
Telecom 2.3.3 - Macintosh/N-C/Apple Telecom
Telecom 2.3.3 PC Card Modem - Macintosh/N-C/Apple Telecom
Telephone Manager (2.0) - Macintosh/N-C/ONC
Telephone Manager 1.1.1 - Macintosh/SYS/Other System
Text Tool (1.0.1) - Macintosh/N-C/Comm Toolbox
TextEditor (1.3a1) - Macintosh/N-C/ONC
The Namer (7.0) - Macintosh/PTG/Other Printing
Thread Manager 2.0.1 - Macintosh/SYS/Other System
TokenTalk Prep 2.5.3 - - Macintosh/N-C/Other N-C
TOUR_HWI.ZIP - Newton/For DOS-Windows/ONU
Trackpad Climate COntrol - Macintosh/PowerBook/Other PB SW
TTY Tool (1.0.1) - Macintosh/N-C/Comm Toolbox
TTYFont (1.0) - Macintosh/N-C/Comm Toolbox
TV Setup 1.0.2 - Macintosh/SYS/Other System
Update 2.0 Late Breaking Tips - Macintosh/SYS/System 7.5 Update 2.0
Video Monitor 1.0.1 - Macintosh/Unsupported
Video SW Install 1.5.1 - Macintosh/D-P
VideoSync 1.0 - Macintosh/Unsupported
VideoSynchII - Macintosh/Unsupported
VT102 Tool (1.0.2) - Macintosh/N-C/Comm Toolbox
VT102Font (1.0.1) - Macintosh/N-C/Comm Toolbox
Windows NPI 2.0 - Newton/For MacOS/ONU
WBOFF.EXE - Macintosh/Unsupported
WINNP12.EXE - Newton/For DOS-Windows/ONU
WGS Not Supported with System 7.5.5/Macintosh/SYS/System 7.5.5 Update
WorldScript Updater 1.1 - Macintosh/SYS/Language Kits
X11 Server Update For A/UX 3.0 - Macintosh/N-C/ONC
XMODEM Tool (1.1) - Macintosh/N-C/Comm Toolbox
ZM-AppleShare WS 3.6.5 - Macintosh/N-C/AppleShare
ZyXEL Modem Scripts - Macintosh/Unsupported/User Contributed CCLs

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US Apple SW Updates Available Online (10/96)

Revised: 10/9/96
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US Apple SW Updates Available Online (10/96)

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Article Reviewed/Updated: 10 October 1996

TOPIC -----

This document serves as an index to the Domestic Apple Software Updates areas located on, AppleLink, America Online and the Internet. The first part of this article: Article Change History, lists the most recent changes to the Software Updates. The second part is an alphabetical list of the software updates, along with the current location.

Please search the Apple Tech Info Library using the string "Apple Software Updates" for a current list of online services to which Apple Software Updates are posted. (You can also use the special keyword: kol to search for this information and other on line related information in the Apple Tech Info Library.)

DISCUSSION -----

Article Change History:
10 Aug 1996 - Added ColorSync 2.1.1, Graphics Acelerator 1.07, Sys75 Upd2.0 Custom Install and removed ColorSync 2.0.
03 Aug 1996 - Added At Ease 3.0.3 Updater, At Ease 3 CDROM Prefs Patch, and WGS Not supported with 7.5.5.
24 Sep 1996 - Added OT 1.1.1b8, OT 1.1.1b8-Extras, OT PPP 1.0f1c9,OT 1.1.1b8-Extras, removed OT1.1.b7
21 Sep 1996 - Added System 7.5.5 Update, CyberDog 1.1, OpenDoc 1.1, AppleShare 4.2.1 to 4.2.2, Apple Spec 9-96.
03 Sep 1996 - Added Display SW 2.0.2 and removed Display SW 2.0 & 1.2

Key to Location Abbreviations:

AIISP - Apple II Supplemental
ARA - Apple Remote Access

CTB - Comm Toolbox
D&P - Display-Peripherial
LWS - LaserWriter
N&C - Networking-Communications
NSU - Newton System Updates
ONC - Other N-C
ONU - Other Newton Updates
OPB - Other PowerBook Software
OPS - Other Printing Software
OSS - Other System Software
OLS - Older System Software
OT - Open Transport
PSU - PowerBook System Update
PSW - Printing Software for Windows
PTG - Printing
QTW - QuickTime for Windows
SYS - System
SPE - Speech

The Alphabetical List of USA Apple Software Updates:
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040 VM Update 1.0 - Macintosh -> System -> Other System
32-Bit System Enabler 1.0.3 - Macintosh -> System -> Other System
5xxx-6xxx Tester 1.0 - Macintosh -> Utilities
630 SCSI Update 1.0 - Macintosh -> System -> Other System
8*24 GC Software 7.0.1 - Macintosh -> D&P
950 Color Addition 1.0 - Macintosh -> System -> Other System
About PlainTalk 1.4.1 - Macintosh -> System -> Speech ->PlainTalk 1.4.1
Adobe Acrobat Reader 2.1 - Macintosh -> Utilities
ADSP 1.5.1 - Macintosh -> N&C -> Comm Toolbox
AMK Spinning Cursor Bug Fix - Macintosh -> Utilities
APD 1.1.3 Update - Macintosh -> Utilities
Apple CD-ROM 5.0.4 - Macintosh -> D&P
Apple Color Printer 1.0 - Macintosh -> Printing -> Other Printing
Apple Color SW Pro CMM 1.0 - Macintosh -> Printing -> Other Printing
Apple DocViewer 1.1.1 - Macintosh -> Utilities
Apple Event Manager 1.0.3 - Macintosh -> System -> Other System
Apple Guide Authoring Kit Offer - Macintosh -> Utilities
Apple HD SC Setup 7.3.5 - Macintosh -> Utilities
Apple II SCSI Utilities - Apple II -> Apple II Supplemental
Apple II Startup Disk 2.2 - Macintosh -> N&C -> AppleShare
Apple II System Disk 3.2 - Apple II -> Apple II Supplemental
Apple II Video Overlay Card - Apple II -> Apple II Supplemental
Apple IIGS CD Setup 5.1 - Apple II -> Apple II Supplemental
Apple IIGS System 6.0.1 - Apple II -> Apple IIGS System 6.0.1
Apple Internet Router 3.0.1 Patch - Macintosh -> N&C -> Network Software
Installer
Apple LAN Utility 1.0b4 - Macintosh -> Unsupported
Apple Memory Guide - Macintosh -> Utilities
Apple Menu Options 1.02 - Macintosh -> System -> Other System
Apple Modem Tool 1.5.3 - Macintosh -> N&C -> Comm Toolbox
Apple Printer Utility 2.0 - Macintosh -> Printing -> LaserWriter
Apple Remote Access 2.0.1 Info - Macintosh -> N&C -> ARA

Apple Spec 9-96 - Macintosh -> Utilities
Apple Spec 9-96v2 - Macintosh -> Utilities
Apple System Profiler 1.0.1 - Macintosh -> Utilities
ApplePhone 1.0.1 - Macintosh -> Unsupported
AppleScan 1.0.2 - Macintosh -> D&P
AppleSearch 1.0.1 Patch - Macintosh -> N&C -> ONC
AppleSearch 1.5.1 Patch - Macintosh -> N&C -> ONC
AppleShare 3.0.3 Patch - Macintosh -> N&C -> AppleShare
AppleShare 4.2.1 to 4.2.2 - Macintosh -> Updater Net-Comm -> AppleShare
AppleShare 4.2 Upgrade Info - Macintosh -> N&C -> AppleShare
AppleShare Setup 1.0.1 - Macintosh -> Utilities
AppleShare Tune-Up 4.0.1 - Macintosh -> N&C -> AppleShare
AppleTalk ADSP Tool 1.0 - Macintosh -> N&C -> Comm Toolbox
AppleTalk Image Writer 7.0.1 - Macintosh -> Printing -> Other Printing
AppleVision Fix 1.1 - Macintosh -> D&P
AppleVision Fix 1.1 - Macintosh -> System -> System 7.5 Update 2.0
AppleVision Fix 1.1 Info - Macintosh -> System -> Older System -> For System 7.5.2 and 7.5.3
AppleVision Software 1.0.2 - Macintosh -> D&P
ARA 1.0 Client Enabler - Macintosh -> N&C -> ARA -> Other ARA Software
ARA 1.0 Original Scripts - Macintosh -> N&C -> ARA -> ARA 1.0 Original Scripts
ARA 1.0 User Scripts - Macintosh -> N&C -> ARA -> ARA 1.0 User Scripts
ARA 2.0 Original Scripts - Macintosh -> N&C -> ARA -> ARA 2.0 Original Scripts
ARA 2.0 User Scripts - Macintosh -> N&C -> ARA -> ARA 2.0 User Scripts
ARA Client 2.1 Updater - Macintosh -> N&C -> ARA -> ARA Updates
ARA MP Server 2.1 Patches - Macintosh -> N&C -> ARA -> ARA Updates
ARA PS 2.1 Updater - Macintosh -> N&C -> ARA -> ARA Updates
AS Custom Settings 1.0 - Macintosh -> Unsupported
ASFU Fixer 1.0.1 - Macintosh -> Printing -> Other Printing
Assistant Toolbox 1.0.1d1 - Macintosh -> Unsupported
At Ease 2.0.3 Update - Macintosh -> System -> At Ease
At Ease Update 1.0 - Macintosh -> System -> At Ease
At Ease WG 3.0.2 Updater - Macintosh -> System -> At Ease
At Ease WG 3.0.3 Updater - Macintosh -> System -> At Ease
At Ease 3 CDROM Prefs Patch - Macintosh -> System -> At Ease
At Ease-IDE Utility Disk 1.0 - Macintosh -> System -> At Ease
Audio Volume 1.1 Installer - Macintosh -> System -> Other System
AudioVision Installer 1.0.2 - Macintosh -> D&P
AV Serial Extension 1.0 - Macintosh -> System -> Other System
AWS 95 Tune-Up 1.0 - Macintosh -> N&C -> ONC
AWS 95 Tune-Up 2.0 - Macintosh -> N&C -> ONC
Backgrounder 1.3 - Macintosh -> Printing -> Other Printing
Backlight Control 1.0 - Macintosh -> Utilities
Basic Color Monitor (1.0) - Macintosh -> D&P
Basic Connectivity Set 1.1.1 - Macintosh -> N&C -> Comm Toolbox
Battery Tools 2.0 - Macintosh -> PowerBook -> Other PB SW
Cache Switch 7.0.1 - Macintosh -> System -> Other System
CD-ROM Software 5.1.7 - Macintosh -> D&P
Chinese Lang. Kit Updater - Macintosh -> System -> Language Kits
Chooser 7.3 - Macintosh -> Printing -> Other Printing
CISMAIL.ZIP - Newton -> For DOS-Windows -> Other Newton Updates
Color Classic Update 1.0 - Macintosh -> System -> Other System
Color Laser Writer 8.3.2 - Macintosh -> Printing -> LaserWriter

Color StyleWriter 1500 2.2 (3 disk images) - Macintosh -> Printing -> Other Printing
Color StyleWriter 2500 2.2 (3 disk images) - Macintosh -> Printing -> Other Printing
Color SW Pro 1.5.2 - Macintosh -> Printing -> Other Printing
Color SW Pro GX 1.0 - Macintosh -> System -> QuickDraw GX
Color SW Pro GX `.0 - Macintosh -> Printing -> Other Printing
Colorsync 2.0 Plug-ins - Macintosh -> Utilities
ColorSync 2.1.1 - Macintosh -> System -> Other System
Compatibility Checker 2.0 - Macintosh -> System -> Older System -> For System 7.1.x
CompuServe Mail for Newton 2.0 - Newton -> For MacOS -> Other Newton Updates
Cyberdog 1.1 - Macintosh -> System -> Net-Comm -> Cyberdog
CPU Energy Saver 1.0.6 - Macintosh -> System -> Other System
DART 1.5.2 - Macintosh -> Utilities
Desktop Printing 2.0 - Macintosh -> Printing -> Other Printing
Direct Dialup 1.1.1 - Macintosh -> System -> Other System
Direct Dialup Mail 1.1.2 - Macintosh -> System -> PowerTalk
Disk Copy 4.2 - Macintosh -> Utilities
Disk First Aid 7.2 - Macintosh -> Utilities
Disk Image Mounter 1.0.1 - Macintosh -> Utilities
Display Card 24AC 1.2 - Macintosh -> D&P
Display Software 2.0.2 - Macintosh -> D&P
Document Converter 1.0.4 - Macintosh -> Utilities
DOS Compatibility 1.5 - DOS & Windows -> DOS Compatibility
Drive Firmware Update 1.2 - Macintosh -> System -> Other System
Drive Setup 1.0.5 - Macintosh -> Utilities
Duo Battery Patch 1.0 - Macintosh -> PowerBook -> Other PB SW
EM Sound Update 1.0 - Macintosh -> System -> Other System
English Speech Recognition - Macintosh -> System -> Speech ->PlainTalk 1.4.1
English Text-to-Speech - Macintosh -> System -> Speech ->PlainTalk 1.4.1
Ethernet Built-In 1.0.2 - Macintosh -> N&C -> ONC
Express Modem 1.5.5 - Macintosh -> N&C -> ONC
Finder Scripting Ext 1.2 - Macintosh -> System -> Other System
Full MegaPhone Manual - Macintosh -> N&C -> Apple Telecom
GlobalFax 2.5.2P Update - Macintosh -> N&C -> ONC
GrayShare Update 1.0 - Macintosh -> Printing -> Other Printing
Graphics Accelerator v1.0.7 - Macintosh -> Unsupported
GX 1.1.3 Net Install - Macintosh -> System -> QuickDraw GX
HC 2.3.5 Stacks.sea - Macintosh -> Utilities
HC 2.3.5 Update Installer - Macintosh -> Utilities
HC 2.3.5 Updater - Macintosh -> Utilities
HCIIGS 1.1 - Apple II -> HyperCard IIGS 1.1
HideEworld - Newton -> For MacOS -> Other Newton Updates
HyperCard Player 2.3.5 - Macintosh -> Utilities
HyperMover.IIGS - Apple II -> HyperCard IIGS
HyperMover.Mac - Apple II -> HyperCard IIGS
HyperScan 2.0.1 - Macintosh -> D&P
Ignore Dialtone 1.0.fc1 - Macintosh -> Unsupported
ImageWriter 7.0.1 - Macintosh -> Printing -> Other Printing
IMF & DT Disk Images - Macintosh -> System -> System Enablers
Intelligent Battery Update 1.0.3 - Macintosh -> PowerBook -> Other PB SW
Internal HD Format 1.3 - Macintosh -> Utilities

Internet Router 3.0.1 Patch - Macintosh -> N&C -> ONC
Invisible AWS 95 Fix (elap) - Macintosh -> N&C -> ONC
IP Gateway 1.0.1 Patch - Macintosh -> N&C
IP Gateway 1.0.1 Patch - Macintosh -> N&C -> ONC
ISO 9660 File Access 5.0.2 - Macintosh -> D&P
ISO 9660 File Access 5.0.2 - Macintosh -> System -> Other System
Japanese Language Kit Updater for System 7.5.1 - Macintosh -> System -> Language Kits
Laser Prep 7.1.2 - Macintosh -> Printing -> LaserWriter
Laser Prep 7.2 - Macintosh -> Printing -> LaserWriter
LaserWriter 300 1.2 - Macintosh -> Printing -> LaserWriter
LaserWriter 8.2.3f - Macintosh -> Printing -> LaserWriter
LaserWriter 8.4 - Macintosh -> Printing -> LaserWriter
LaserWriter for Windows 3.1 v3.0.4 - DOS and Windows -> Printing
LaserWriter for Windows 95 v4.0.4 - DOS and Windows -> Printing
LaserWriter Printing Software 8.3.2 - Macintosh -> Printing -> LaserWriter
LaserWriter Printing Software 8.3.4 - Macintosh -> Printing -> LaserWriter
LaserWriter Pro 810 For Windows - DOS & Windows -> Printing
LaserWriter Pro Energy Star Software - Macintosh -> Printing -> LaserWriter
LaserWriter Select 310 7.0.1 - Macintosh -> Printing -> LaserWriter
LQ AppleTalk ImageWriter 7.0.1 - Macintosh -> Printing -> Other Printing
LW (LaserWriter) SW for Windows 1.0.2 - DOS & Windows -> Printing (older version, .sea file)
LW Select 310 For Windows - DOS & Windows -> Printing (.sea and .exe file formats)
LWSW102.zip (LW SW for Windows 1.0.2) - DOS & Windows -> Printing (older version, zip file)
Mac Drag and Drop 1.1 - Macintosh -> System -> Other System
MacDNS 1.0.3 - Macintosh -> N&C -> ONC
Macintosh Basics 5.0.3 - Macintosh -> Utilities
Macintosh Tutorial - Macintosh -> Utilities
Macitnosh Easy Open 1.1.1 - Macintosh -> System -> Other System
MacPPP 2.5 - Macintosh -> N&C -> ONC
MacsBug 6.5.3 - Macintosh -> Utilities
MacTCP 2.0.4 Update - Macintosh -> N&C -> ONC
MacTCP 2.0.6 Update - Macintosh -> N&C -> ONC
MacTCP Ping 2.0.2 - Macintosh -> Unsupported
MacTCP Token Ring Extension 1.0 - Macintosh -> N&C -> ONC
MacX25 1.2 Patch - Macintosh -> N&C -> ONC
MailLink for PowerTalk INET - Macintosh -> System -> PowerTalk
MailLink for PowerTalk MS - Macintosh -> System -> PowerTalk
MailLink for PowerTalk QM - Macintosh -> System -> PowerTalk
MANUAL.PDF - Newton -> For DOS-Windows -> Other Newton Updates
MegaDial Manual - Macintosh -> N&C -> Apple Telecom
MegaPhone 1.0.2 - Macintosh -> N&C -> Apple Telecom
MegaPhone 1.0.3P - Macintosh -> N&C -> ONC
Mercury ATandT GW 1.0C - Macintosh -> Unsupported
Mercury Envoy GW 1.0C - Macintosh -> Unsupported
Mercury MCI Mail GW 1.0C - Macintosh -> Unsupported
Mexican Spanish TTS - Macintosh -> System -> Speech ->PlainTalk 1.4.1
MIDI Management Tools 2.0.2 - Macintosh -> Unsupported
MODE32 7.5 - Macintosh -> System -> Other System
Modem Enabler 1.0 - Newton -> For MacOS -> MessagePad System Updates

Modem Enabler 1.0.zip - Newton -> For DOS-Windows -> MessagePad System Updates
Monitor Energy Saver 1.0 - Macintosh -> D&P
Monitor Energy Saver 1.1 - Macintosh -> D&P
Mount IDE Drive 1.0 - Macintosh -> System -> Other System
Mouse Basics 4.5 - Macintosh -> Utilities
MoviePlayer 2.1 - Macintosh -> Utilities
MovieShop 1.2.1 - Macintosh -> Unsupported
MP 100 1.3.415333 - Newton -> For MacOS -> MessagePad System Updates
MP 110 1.3.45333 - Newton -> For MacOS -> MessagePad System Updates
MP 120 2.0.516205 - Newton -> For MacOS -> MessagePad System Updates
MP 120 Tour and Handwriting - Newton -> For MacOS -> Other Newton Updates
MP 130 2.0.526205 - Newton -> For MacOS -> MessagePad System Updates
MP345333.EXE - Newton -> For DOS-Windows -> MessagePad System Updates
MP415333.EXE - Newton -> For DOS-Windows -> MessagePad System Updates
MP445333.EXE - Newton -> For DOS-Windows -> MessagePad System Updates
MP516205.ZIP - Newton -> For DOS-Windows -> MessagePad System Updates
MP526205.ZIP - Newton -> For DOS-Windows -> MessagePad System Updates
NBU 1.0 - Newton -> For MacOS -> Other Newton Updates
NBU User's Guide - Newton -> For MacOS -> Other Newton Updates
NBUSINST.EXE - Newton -> For DOS-Windows -> Other Newton Updates
NCK 2.0.3 Update for Windows - Newton -> For MacOS -> Other Newton Updates
NCU 1.0b2 - Macintosh -> Unsupported
Network Access Disk 7.5 - Macintosh -> Utilities
Network Launch Fix 1.0.2 - Macintosh -> N&C -> ONC
Network Software Installer 1.4.4 - Macintosh -> N&C -> Network Software Installer
Network Software Installer ZM-1.4.5 - Macintosh -> N&C -> Network Software Installer
Network Software Installer ZM-1.5 - Macintosh -> N&C -> Network Software Installer
Network Software Installer ZM-1.5.1 - Macintosh -> N&C -> Network Software Installer
Newton System Update 1.0.5 - Newton -> For MacOS -> MessagePad System Updates
Newton System Update 1.1.1 - Newton -> For MacOS -> MessagePad System Updates
NewtonMail Modules 1.0.1 - Newton -> For MacOS -> MessagePad System Updates
NTK 1.5.2b2 Updater - Newton -> For MacOS -> Other Newton Updates
Ofoto Update 2.0.2 Information - Macintosh -> D&P
Open Transport 1.0.8 - Macintosh -> N&C -> Open Transport
Open Transport Manual - Macintosh -> N&C -> Open Transport
OpenDoc 1.1 - Macintosh -> System -> OpenDoc
OT 1.1 Manual - Macintosh -> System -> System 7.5 Update 2.0
OT 1.1.1b8 - Macintosh -> Unsupported
OT 1.1.1b8-Extras - Macintosh ->Unsupported
OT PPP 1.0f1c9 - Macintosh -> Unsupported
OT PPP 1.0f1c9 Net Install - Macintosh -> Unsupported
OT PPP 1.0f1c9-Extras - Macintosh -> Unsupported
Other Printing Software Info (read me) - Macintosh -> Printing -> Other Printing
PANTONE for AppleVision - Macintosh -> Unsupported
PANTONE for Color LW - Macintosh -> Printing -> LaserWriter
PANTONE for Color LW (12/600).exe - DOS & Windows - DOS & Windows -> Printing
PB 150 Update 1.0 - Macintosh -> PowerBook -> Other PB SW
PB 150 Update 1.1 - Macintosh -> PowerBook -> Other PB SW

PB 2300c Update 1.0 - Macintosh -> PowerBook -> Other PB SW
PC Card Software 2.0 - Macintosh -> PowerBook -> Other PB SW
PC Net Exchange 1.0.1 - Macintosh -> N&C -> AppleShare
PC Setup 1.0.2 - DOS & Windows -> DOS Compatibility (For Quadra 610 DOS Compatible)
PC Setup DIMM Patch - Macintosh -> Unsupported
Personal LW NTR For Windows - DOS & Windows -> Printing (.sea and .exe file formats)
Personal LW SC 7.0.1 - Macintosh -> Printing -> LaserWriter
PhotoFlash 2.0 to 2.0.1 Updater - Macintosh -> D&P
PlainTalk 1.2.1 - Macintosh -> System -> Speech ->PlainTalk 1.2.1
PlainTalk 1.3 - Macintosh -> System -> Speech ->PlainTalk 1.3.1
PlainTalk User Guide 1.2.1 - Macintosh -> System -> Speech ->PlainTalk 1.2.1
PlainTalk User Guide 1.3 - Macintosh -> System -> Speech ->PlainTalk 1.3.1
Portable Control Panel 1.3 - Macintosh -> System -> Other System
Portable StyleWriter 1.0.1 - Macintosh -> Printing -> Other Printing
Power Macintosh 7500/8500 Disk Tools - Macintosh -> System -> Other System
Power Macintosh 7500/8500 Install 1 - Macintosh -> System -> Other System
Power Macintosh AV Update 1.0-Bootable Disk - Macintosh -> System -> Other System
Power Macintosh AV Update 1.0-Extension Only - Macintosh -> System -> Other System
PowerBook 150 Enabler 1.1. - Macintosh -> System -> System Enablers
PowerBook 500 Series 1.0.2 - Macintosh -> System -> System Enablers
PowerBook 5300 SW Update - Macintosh -> PowerBook -> PB 5300 SW Update
PowerBook Duo Enabler 1.0 - Macintosh -> System -> System Enablers
PowerBook Duo Enabler 2.0 - Macintosh -> System -> System Enablers
PowerCD Setup 1.0.1 - Macintosh -> D&P
PowerPC Enabler 1.0.2 - Macintosh -> System -> System Enablers
PowerPC Enabler 1.1.1 - Macintosh -> System -> System Enablers
PowerTalk Gateways - Macintosh -> System -> PowerTalk
PowerTalk Guided Tour 1.1 - Macintosh -> System -> PowerTalk
PowerTalk Info - Macintosh -> System -> PowerTalk
PowerTalk Manager 1.5 - Macintosh -> System -> PowerTalk
PowerTalk PPC 1.0.2 - Macintosh -> System -> PowerTalk
PowerTalk PPC 1.0.2 France - Macintosh -> System -> PowerTalk
PowerTalk Solutions Guide - Macintosh -> System -> PowerTalk
PPC Upgrade Enabler 1.0.1 - Macintosh -> System -> System Enablers
Print Monitor 7.0.1 - Macintosh -> Printing -> LaserWriter
Printer Share 1.1.2 - Macintosh -> Printing -> Other Printing
PrintMonitor 7.1 - Macintosh -> Printing -> LaserWriter
PrintMonitor 7.1.2 - Macintosh -> Printing -> Other Printing
PT 1.1.6 - Macintosh -> System -> PowerTalk
PT 1.2.3 - Macintosh -> System -> PowerTalk
PT Mail Folders 1.5 - Macintosh -> Unsupported
PT Mail Reader 1.1 - Macintosh -> System -> PowerTalk
QDGX Spooler Patch 1.0.2 - Macintosh -> Unsupported
QT For Windows 2.1.1 Info - DOS & Windows -> QTW
QuickDraw 3D 1.0.6 - Macintosh -> System -> QuickDraw GX
QuickDraw GX 1.1.3 - Macintosh -> System -> QuickDraw GX
QuickKeys Test Drive - Macintosh -> System -> Speech ->PlainTalk 1.3.1
QuickKeys Test Drive 1.2.1 - Macintosh -> System -> Speech ->PlainTalk 1.2.1
QuickTake For Power Mac 1.0 - Macintosh -> D&P

QuickTime 2.1 - Macintosh -> System -> QuickTime
QuickTime 2.1.1 for Windows 3.1 - DOS & Windows -> QTW
QuickTime 2.1.1 for Windows 95 - DOS & Windows -> QTW
QuickTime 2.5 - Macintosh -> System -> QuickTime
QT WebConferencing 1.0.4b12 - Macintosh -> Unsupported
Rename Rescue 1.0 - Macintosh -> System -> Older System -> For System 7.0.x
Scanner 2.0 (system extension) - Macintosh -> D&P
Scanner 3.0 (system extension) - Macintosh -> D&P
Screen 1.0.6 - Macintosh -> System -> Other System
Security Info - Macintosh -> N&C -> ARA -> Other ARA Software
Serial Switch 1.1 - Macintosh -> System -> Other System
Serial Tool 1.0.2 - Macintosh -> N&C -> Comm Toolbox
SerialDMA 2.0.2 - Macintosh -> N&C -> ONC
Server Remote Control v1.0 - Macintosh -> Utilities
Shrinkit1.1 - Apple II -> Apple II Supplemental
SimpleSound 1.0 - Macintosh -> Utilities
SimpleText 1.3 - Macintosh -> Utilities
Slow SCSI Extension - Macintosh -> Unsupported
SNA*ps 3270 1.1.2 Patch - Macintosh -> N&C -> ONC
Sound Manager 3.1 - Macintosh -> System -> Other System
SpoolLauncher 2.1.1 - Macintosh -> Printing -> Other Printing
SpoolMaster 2.1.1a - Macintosh -> Printing -> Other Printing
SSW 6.0.3 - Macintosh -> System -> Older System -> For System 6.0.x
SSW 6.0.5 - Macintosh -> System -> Older System -> For System 6.0.x
SSW 6.0.8 - Macintosh -> System -> Older System -> For System 6.0.x
SSW 7.0 - Macintosh -> System -> Older System -> For System 7.0.x
SSW 7.0.1 - Macintosh -> System -> Older System -> For System 7.0.x
System 7 Tune-up 1.1.1 - Macintosh -> System -> Older System -> For System 7.0.x
System 7.5 Update 2.0 (14 Disks) - Macintosh -> System -> System 7.5 Update 2.0
Sys75 Upd2.0 Custom Install - Macintosh -> Unsupported
System 7.5.3 Rev 2 - Macintosh -> System -> Older System -> For System 7.5.2 and 7.5.3
System 7.5.5 Update - Macintosh -> System -> System 7.5.5 Update
System Enabler 001 (1.0.1) - Macintosh -> System -> System Enablers
System Enabler 003 (1.1) - Macintosh -> System -> System Enablers
System Enabler 040 (1.1) - Macintosh -> System -> System Enablers
System Enabler 065 (1.2) - Macintosh -> System -> System Enablers
System Enabler 088 (1.2) - Macintosh -> System -> System Enablers
System Enabler 131 (1.0.3) - Macintosh -> System -> System Enablers
System Enabler 401 (1.0.5) - Macintosh -> System -> System Enablers
System Enabler 403 (1.0.2) - Macintosh -> System -> System Enablers
System Enabler 404 (1.0) - Macintosh -> System -> System Enablers
System Enabler 405 (1.0) - Macintosh -> System -> System Enablers
System Enabler 406 1.0 - Macintosh -> System -> System Enablers
System Update 3.0 800K Disk - Macintosh -> System -> Older System -> For System 7.1.x
System Update 3.0.1 1.4MB Disk - Macintosh -> System -> Older System -> For System 7.1.x
Telecom 2.3.3 - Macintosh -> N&C -> Apple Telecom
Telecom 2.3.3 PC Card Modem - Macintosh -> N&C -> Apple Telecom
Telephone Manager (2.0) - Macintosh -> N&C -> ONC
Telephone Manager 1.1.1 - Macintosh -> System -> Other System

Text Tool (1.0.1) - Macintosh -> N&C -> Comm Toolbox
TextEditor (1.3a1) - Macintosh -> N&C -> ONC
The Namer (7.0) - Macintosh -> Printing -> Other Printing
Thread Manager 2.0.1 - Macintosh -> System -> Other System
Tour_Hwi.zip - Newton -> For DOS-Windows -> Other Newton Updates
TTY Tool (1.0.1) - Macintosh -> N&C -> Comm Toolbox
TTYFont (1.0) - Macintosh -> N&C -> Comm Toolbox
TV Setup 1.0.2 - Macintosh -> System -> Other System
Update 2.0 Late Breaking Tips - Macintosh -> System -> System 7.5 Update 2.0
Video Monitor 1.0.1 - Macintosh -> Unsupported
Video SW Install 1.3.2 - Macintosh -> D&P
VideoSync 1.0 - Macintosh -> Unsupported
VideoSynchII - Macintosh -> Unsupported
VT102 Tool (1.0.2) - Macintosh -> N&C -> Comm Toolbox
VT102Font (1.0.1) - Macintosh -> N&C -> Comm Toolbox
Windows 3.1 LaserWriter Printer SW 1.1 - DOS & Windows -> Printing (3 .sea files, 1 large .exe file)
Windows 95 LaserWriter Printer SW - DOS & Windows -> Printing (.sea and .exe file formats)
Windows NPI 2.0 - Newton -> For MacOS -> Other Newton Updates
WINNP12.EXE - Newton -> For DOS-Windows -> Other Newton Updates
WGS Not Supported with System 7.5.5 -> Macintosh -> System -> System 7.5.5 Update
WorldScript Updater 1.1 - Macintosh -> System -> Language Kits
X11 Server Update For A/UX 3.0 - Macintosh -> N&C -> ONC
XMODEM Tool (1.1) - Macintosh -> N&C -> Comm Toolbox
ZM-AppleShare WS (Workstation) 3.6.2 - Macintosh -> N&C -> AppleShare
ZM-LW-LocalTalk Bridge 2.1f2 - Macintosh -> Unsupported -

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US Apple SW Updates Available Online (11/96)

Revised: 11/14/96
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US Apple SW Updates Available Online (11/96)

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TOPIC -----

This document serves as an index to the Domestic Apple Software Updates areas located on, AppleLink, America Online and the Internet. The first part of this article: Article Change History, lists the most recent changes to the Software Updates. The second part is an alphabetical list of the software updates, along with the current location.

Please search the Apple Tech Info Library using the string "Apple Software Updates" for a current list of online services to which Apple Software Updates are posted. (You can also use the special keyword: kol to search for this information and other on line related information in the Apple Tech Info Library.)

DISCUSSION -----

- Article Change History:
14 Nov - Add Newton Toolkit for Windows (beta) NTK_31.ZIP, NTK_95.ZIP, NTK_NT.ZIP, Add Quicktime 2.5 Extras and MoviePlayer2.5
13 Nov - Repost OT 1.1.1-4of4.sea, OT1.1.1-Extras.sea and OT 1.1.1-Net Install.sea
12 Nov - Add Open Transport OT PPP 1.0 and remove OT PPP 1.0flc9
Add NCK203UP
07 Nov - Add Apple Printer Utility and LaserWriter Fax Tuneup 1.0
01 Nov - Add PowerPC Interrup Extension

Key to Location Abbreviations:

AIISP - Apple II Supplemental
ARA - Apple Remote Access
CTB - Comm Toolbox
D-P - Display-Peripherial

LWS - LaserWriter
N-C - Networking-Communications
NCU - Newton Connection Utilities
NSU - Newton System Updates
ONC - Other Networking-Communications
ONU - Other Newton Updates
OPB - Other PowerBook Software
OPS - Other Printing Software
OSS - Other System Software
OLS - Older System Software
OT - Open Transport
PSU - PowerBook System Update
PSW - Printing Software for Windows
PTG - Printing
QTW - QuickTime for Windows
SYS - System
SPE - Speech

The Alphabetical List of USA Apple Software Updates:
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040 VM Update 1.0 - Macintosh -> SYS -> Other System
32-Bit System Enabler 1.0.3 - Macintosh -> SYS -> Other System
5xxx-6xxx Tester 1.0 - Macintosh -> Utilities
630 SCSI Update 1.0 - Macintosh -> SYS -> Other System
8*24 GC Software 7.0.1 - Macintosh -> D-P
950 Color Addition 1.0 - Macintosh -> SYS -> Other System
About PlainTalk 1.4.1 - Macintosh -> SYS -> Speech ->PlainTalk 1.4.1
Adobe Acrobat Reader 2.1 - Macintosh -> Utilities
ADSP 1.5.1 - Macintosh -> N-C -> Comm Toolbox
AMK Spinning Cursor Bug Fix - Macintosh -> Utilities
APD 1.1.3 Update - Macintosh -> Utilities
Apple CD-ROM 5.0.4 - Macintosh -> D-P
Apple Color Printer 1.0 - Macintosh -> PTG -> Other Printing
Apple Color SW Pro CMM 1.0 - Macintosh -> PTG -> Other Printing
Apple DocViewer 1.1.1 - Macintosh -> Utilities
Apple Event Manager 1.0.3 - Macintosh -> SYS -> Other System
Apple Guide Authoring Kit Offer - Macintosh -> Utilities
Apple HD SC Setup 7.3.5 - Macintosh -> Utilities
Apple II SCSI Utilities - Apple II -> Apple II Supplemental
Apple II Startup Disk 2.2 - Macintosh -> N-C -> AppleShare
Apple II System Disk 3.2 - Apple II -> Apple II Supplemental
Apple II Video Overlay Card - Apple II -> Apple II Supplemental
Apple IIGS CD Setup 5.1 - Apple II -> Apple II Supplemental
Apple IIGS System 6.0.1 - Apple II -> Apple IIGS System 6.0.1
Apple Internet Router 3.0.1 Patch - Macintosh -> N-C -> Network Software
Installer
Apple LAN Utility 1.0b4 - Macintosh -> Unsupported
Apple Memory Guide - Macintosh -> Utilities
Apple Menu Options 1.02 - Macintosh -> SYS -> Other System
Apple Modem Tool 1.5.3 - Macintosh -> N-C -> Comm Toolbox
Apple Printer Utility 2.1.1 - Macintosh -> PTG -> LaserWriter
Apple Remote Access 2.0.1 Info - Macintosh -> N-C -> ARA
Apple Spec 9-96 - Macintosh -> Utilities

Apple Spec 9-96v2 - Macintosh -> Utilities
Apple System Profiler 1.0.1 - Macintosh -> Utilities
ApplePhone 1.0.1 - Macintosh -> Unsupported
AppleScan 1.0.2 - Macintosh -> D-P
AppleSearch 1.0.1 Patch - Macintosh -> N-C -> ONC
AppleSearch 1.5.1 Patch - Macintosh -> N-C -> ONC
AppleShare 3.0.3 Patch - Macintosh -> N-C -> AppleShare
AppleShare 4.2.1 to 4.2.2 - Macintosh -> Updater Net-Comm -> AppleShare
AppleShare 4.2 Upgrade Info - Macintosh -> N-C -> AppleShare
AppleShare Setup 1.0.1 - Macintosh -> Utilities
AppleShare Tune-Up 4.0.1 - Macintosh -> N-C -> AppleShare
AppleTalk ADSP Tool 1.0 - Macintosh -> N-C -> Comm Toolbox
AppleTalk Image Writer 7.0.1 - Macintosh -> PTG -> Other Printing
AppleVision Fix 1.1 - Macintosh -> D-P
AppleVision Fix 1.1 - Macintosh -> SYS -> System 7.5 Update 2.0
AppleVision Fix 1.1 Info - Macintosh -> SYS -> Older SYS -> For System 7.5.2 and 7.5.3
AppleVision Software 1.0.2 - Macintosh -> D-P
ARA 1.0 Client Enabler - Macintosh -> N-C -> ARA -> Other ARA Software
ARA 1.0 Original Scripts - Macintosh -> N-C -> ARA -> ARA 1.0 Original Scripts
ARA 1.0 User Scripts - Macintosh -> N-C -> ARA -> ARA 1.0 User Scripts
ARA 2.0 Original Scripts - Macintosh -> N-C -> ARA -> ARA 2.0 Original Scripts
ARA 2.0 User Scripts - Macintosh -> N-C -> ARA -> ARA 2.0 User Scripts
ARA Client 2.1 Updater - Macintosh -> N-C -> ARA -> ARA Updates
ARA MP Server 2.1 Patches - Macintosh -> N-C -> ARA -> ARA Updates
ARA PS 2.1 Updater - Macintosh -> N-C -> ARA -> ARA Updates
AS Custom Settings 1.0 - Macintosh -> Unsupported
ASFU Fixer 1.0.1 - Macintosh -> PTG -> Other Printing
Assistant Toolbox 1.0.1d1 - Macintosh -> Unsupported
At Ease 2.0.3 Update - Macintosh -> SYS -> At Ease
At Ease Update 1.0 - Macintosh -> SYS -> At Ease
At Ease WG 3.0.3 Updater - Macintosh -> SYS -> At Ease
At Ease 3 CDROM Prefs Patch - Macintosh -> SYS -> At Ease
At Ease-IDE Utility Disk 1.0 - Macintosh -> SYS -> At Ease
Audio Volume 1.1 Installer - Macintosh -> SYS -> Other System
AudioVision Installer 1.0.2 - Macintosh -> D-P
AV Serial Extension 1.0 - Macintosh -> SYS -> Other System
AWS 95 Tune-Up 1.0 - Macintosh -> N-C -> ONC
AWS 95 Tune-Up 2.0 - Macintosh -> N-C -> ONC
Backgrounder 1.3 - Macintosh -> PTG -> Other Printing
Backlight Control 1.0 - Macintosh -> Utilities
Basic Color Monitor (1.0) - Macintosh -> D-P
Basic Connectivity Set 1.1.1 - Macintosh -> N-C -> Comm Toolbox
Battery Tools 2.0 - Macintosh -> PowerBook -> Other PB SW
Cache Switch 7.0.1 - Macintosh -> SYS -> Other System
CD-ROM Software 5.1.7 - Macintosh -> D-P
Chinese Lang. Kit Updater - Macintosh -> SYS -> Language Kits
Chooser 7.3 - Macintosh -> PTG -> Other Printing
CISMAIL.ZIP - Newton -> For DOS-Windows -> ONU
Color Classic Update 1.0 - Macintosh -> SYS -> Other System
Color Laser Writer 8.3.2 - Macintosh -> PTG -> LaserWriter
Color StyleWriter 1500 2.2 (3 disk images) - Macintosh -> PTG -> Other Printing
Color StyleWriter 2500 2.2 (3 disk images) - Macintosh -> PTG -> Other Printing

Color SW Pro 1.5.2 - Macintosh -> PTG -> Other Printing
Color SW Pro GX 1.0 - Macintosh -> SYS -> QuickDraw GX
Color SW Pro GX `.0 - Macintosh -> PTG -> Other Printing
Colorsync 2.0 Plug-ins - Macintosh -> Utilities
ColorSync 2.1.1 - Macintosh -> SYS -> Other System
Compatibility Checker 2.0 - Macintosh -> SYS -> Older SYS -> For System 7.1.x
CompuServe Mail for Newton 2.0 - Newton -> For MacOS -> ONU
Cyberdog 1.1 - Macintosh -> SYS -> Net-Comm -> Cyberdog
CPU Energy Saver 1.0.6 - Macintosh -> SYS -> Other System
DART 1.5.2 - Macintosh -> Utilities
Desktop Printing 2.0 - Macintosh -> PTG -> Other Printing
Direct Dialup 1.1.1 - Macintosh -> SYS -> Other System
Direct Dialup Mail 1.1.2 - Macintosh -> SYS -> PowerTalk
Disk Copy 4.2 - Macintosh -> Utilities
Disk First Aid 7.2 - Macintosh -> Utilities
Disk Image Mounter 1.0.1 - Macintosh -> Utilities
Display Card 24AC 1.2 - Macintosh -> D-P
Display Software 2.0.2 - Macintosh -> D-P
Document Converter 1.0.4 - Macintosh -> Utilities
DOS Compatibility 1.5 - DOS & Windows -> DOS Compatibility
Drive Firmware Update 1.2 - Macintosh -> SYS -> Other System
Drive Setup 1.0.5 - Macintosh -> Utilities
Duo Battery Patch 1.0 - Macintosh -> PowerBook -> Other PB SW
EM Sound Update 1.0 - Macintosh -> SYS -> Other System
English Speech Recognition - Macintosh -> SYS -> Speech ->PlainTalk 1.4.1
English Text-to-Speech - Macintosh -> SYS -> Speech ->PlainTalk 1.4.1
Ethernet Built-In 1.0.2 - Macintosh -> N-C -> ONC
Express Modem 1.5.5 - Macintosh -> N-C -> ONC
Finder Scripting Ext 1.2 - Macintosh -> SYS -> Other System
Font Extension 3 1.0.4 - Macintosh -> SYS -> Language Kits -> Font Extension 3 1.0.4
Full MegaPhone Manual - Macintosh -> N-C -> Apple Telecom
GeoPort/Express Modem 3.0 Updater -> Macintosh -> N-C -> Apple Telecom
GlobalFax 2.5.2P Update - Macintosh -> N-C -> ONC
GrayShare Update 1.0 - Macintosh -> PTG -> Other Printing
Graphics Accelerator 1.0.7 - Macintosh -> Unsupported
GX 1.1.3 Net Install - Macintosh -> SYS -> QuickDraw GX
HC 2.3.5 Stacks.sea - Macintosh -> Utilities
HC 2.3.5 Update Installer - Macintosh -> Utilities
HC 2.3.5 Updater - Macintosh -> Utilities
HCIIGS 1.1 - Apple II -> HyperCard IIGS 1.1
HideEworld - Newton -> For MacOS -> ONU
HyperCard Player 2.3.5 - Macintosh -> Utilities
HyperMover.IIGS - Apple II -> HyperCard IIGS
HyperMover.Mac - Apple II -> HyperCard IIGS
HyperScan 2.0.1 - Macintosh -> D-P
Ignore Dialtone 1.0.fc1 - Macintosh -> Unsupported
ImageWriter 7.0.1 - Macintosh -> PTG -> Other Printing
IMF & DT Disk Images - Macintosh -> SYS -> System Enablers
Intelligent Battery Update 1.0.3 - Macintosh -> PowerBook -> Other PB SW
Internal HD Format 1.3 - Macintosh -> Utilities
Internet Router 3.0.1 Patch - Macintosh -> N-C -> ONC
Invisible AWS 95 Fix (elap) - Macintosh -> N-C -> ONC

IP Gateway 1.0.1 Patch - Macintosh -> N-C
IP Gateway 1.0.1 Patch - Macintosh -> N-C -> ONC
ISO 9660 File Access 5.0.2 - Macintosh -> D-P
ISO 9660 File Access 5.0.2 - Macintosh -> SYS -> Other System
Japanese Language Kit Updater for System 7.5.1 - Macintosh -> SYS -> Language Kits
Laser Prep 7.1.2 - Macintosh -> PTG -> LaserWriter
Laser Prep 7.2 - Macintosh -> PTG -> LaserWriter
LaserWriter 300 1.2 - Macintosh -> PTG -> LaserWriter
LaserWriter 8.2.3f - Macintosh -> PTG -> LaserWriter
LaserWriter 3.0.8 for Windows 3.1 (LW Win 3.1 3.0.8) - DOS & Windows -> PTG
LaserWriter 4.1 for Windows 95 (LW Win 95 4.2) - DOS & Windows -> PTG
LaserWriter 8.4.1 - Macintosh -> PTG -> LaserWriter
LaserWriter Fax Tuneup 1.0 - Macintosh -> PTG -> LaserWriter
LaserWriter Printing Software 8.3.2 - Macintosh -> PTG -> LaserWriter
LaserWriter Printing Software 8.3.4 - Macintosh -> PTG -> LaserWriter
LaserWriter Pro 810 For Windows - DOS & Windows -> PTG
LaserWriter Pro Energy Star Software - Macintosh -> PTG -> LaserWriter
LaserWriter Select 310 7.0.1 - Macintosh -> PTG -> LaserWriter
 LQ AppleTalk ImageWriter 7.0.1 - Macintosh -> PTG -> Other Printing
LaserWriter SW for Windows 1.0.2 - DOS & Windows -> PTG (older version,.sea file)
LW Select 310 For Windows - DOS & Windows -> PTG (.sea and .exe file formats)
LWSW102.zip (LW SW for Windows 1.0.2) - DOS & Windows -> PTG (older version, zip file)
Mac Drag and Drop 1.1 - Macintosh -> SYS -> Other System
MacDNS 1.0.3 - Macintosh -> N-C -> ONC
Macintosh Basics 5.0.3 - Macintosh -> Utilities
Macintosh Tutorial - Macintosh -> Utilities
Macitnosh Easy Open 1.1.1 - Macintosh -> SYS -> Other System
MacPPP 2.5 - Macintosh -> N-C -> ONC
MacsBug 6.5.3 - Macintosh -> Utilities
MacTCP 2.0.4 Update - Macintosh -> N-C -> ONC
MacTCP 2.0.6 Update - Macintosh -> N-C -> ONC
MacTCP Ping 2.0.2 - Macintosh -> Unsupported
MacTCP Token Ring Extension 1.0 - Macintosh -> N-C -> ONC
MacX25 1.2 Patch - Macintosh -> N-C -> ONC
MailLink for PowerTalk INET - Macintosh -> SYS -> PowerTalk
MailLink for PowerTalk MS - Macintosh -> SYS -> PowerTalk
MailLink for PowerTalk QM - Macintosh -> SYS -> PowerTalk
MANUAL.PDF - Newton -> For DOS-Windows -> ONU
MegaDial Manual - Macintosh -> N-C -> Apple Telecom
MegaPhone 1.0.2 - Macintosh -> N-C -> Apple Telecom
MegaPhone 1.0.3P - Macintosh -> N-C -> ONC
Mercury ATandT GW 1.0C - Macintosh -> Unsupported
Mercury Envoy GW 1.0C - Macintosh -> Unsupported
Mercury MCI Mail GW 1.0C - Macintosh -> Unsupported
Mexican Spanish TTS - Macintosh -> SYS -> Speech ->PlainTalk 1.4.1
MIDI Management Tools 2.0.2 - Macintosh -> Unsupported
MODE32 7.5 - Macintosh -> SYS -> Other System
Modem Enabler 1.0 - Newton -> For MacOS -> MessagePad System Updates
Modem Enabler 1.0.zip - Newton -> For DOS-Windows -> MessagePad System Updates
Monitor Energy Saver 1.0 - Macintosh -> D-P

Monitor Energy Saver 1.1 - Macintosh -> D-P
Mount IDE Drive 1.0 - Macintosh -> SYS -> Other System
Mouse Basics 4.5 - Macintosh -> Utilities
MoviePlayer 2.5- Macintosh -> Utilities
MovieShop 1.2.1 - Macintosh -> Unsupported
MP 100 1.3.415333 - Newton -> For MacOS -> MessagePad System Updates
MP 110 1.3.45333 - Newton -> For MacOS -> MessagePad System Updates
MP 120 2.0.516263 - Newton -> For MacOS -> MessagePad System Updates
MP 120 Tour and Handwriting - Newton -> For MacOS -> ONU
MP 130 2.0.526205 - Newton -> For MacOS -> MessagePad System Updates
MP345333.EXE - Newton -> For DOS-Windows -> MessagePad System Updates
MP415333.EXE - Newton -> For DOS-Windows -> MessagePad System Updates
MP445333.EXE - Newton -> For DOS-Windows -> MessagePad System Updates
MP516263.ZIP - Newton -> For DOS-Windows -> MessagePad System Updates
MP526205.ZIP - Newton -> For DOS-Windows -> MessagePad System Updates
NBU101EN.ZIP - Newton -> For DOS-Windows -> ONU
NBU User's Guide - Newton -> For MacOS -> ONU
NCK203UP.EXE - Newton -> For MacOS -> ONU
NTK 1.5.2b2 Updater - Newton -> For MacOS -> ONU
Network Access Disk 7.5 - Macintosh -> Utilities
Network Launch Fix 1.0.2 - Macintosh -> N-C -> ONC
Network Software Installer 1.4.4 - Macintosh -> N-C -> Network Software Installer
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Network Software Installer ZM-1.5.1 - Macintosh -> N-C -> Network Software Installer
NCU 1.0b3 - Newton -> For MacOS -> Unsupported
NCU for Windows 1.0b3 - Newton -> For DOS-Windows -> Unsupported
Newton System Update 1.0.5 - Newton -> For MacOS -> MessagePad System Updates
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Newton Toolkit for Windows (beta) NTK_31.ZIP Newton -> For DOS-Windows -> Unsupported
Newton Toolkit for Windows (beta) NTK_95.ZIP Newton -> For DOS-Windows -> Unsupported
Newton Toolkit for Windows (beta) NTK_NT.ZIP Newton -> For DOS-Windows -> Unsupported
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Open Transport Manual - Macintosh -> N-C -> OT
OpenDoc 1.1 - Macintosh -> SYS -> OpenDoc
OT 1.1 Manual - Macintosh -> SYS -> System 7.5 Update 2.0
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OT 1.1.1 Extras - Macintosh - N-C -> Open Transport
OT PPP 1.0 Macintosh - N-C -> Open Transport
OT PPP 1.0 Manual - Macintosh - N-C -> Open Transport
OT PPP 1.0 Net Install - Macintosh - N-C -> Open Transport
OPS Info (read me) - Macintosh -> PTG -> Other Printing
PANTONE for AppleVision - Macintosh -> Unsupported
PANTONE for Color LW - Macintosh -> PTG -> LaserWriter

PANTONE for Color LW (12/600).exe - DOS & Windows - DOS & Windows -> PTG
PB 150 Update 1.0 - Macintosh -> PowerBook -> Other PB SW
PB 150 Update 1.1 - Macintosh -> PowerBook -> Other PB SW
PB 2300c Update 1.0 - Macintosh -> PowerBook -> Other PB SW
PC Card Software 2.0 - Macintosh -> PowerBook -> Other PB SW
PC Net Exchange 1.0.1 - Macintosh -> N-C -> AppleShare
PC Setup 1.0.2 - DOS & Windows -> DOS Compatibility (For Quadra 610 DOS Compatible)
PC Setup DIMM Patch - Macintosh -> Unsupported
Personal LW NTR For Windows - DOS & Windows -> PTG
Personal LW SC 7.0.1 - Macintosh -> PTG -> LaserWriter
PhotoFlash 2.0 to 2.0.1 Updater - Macintosh -> D-P
PlainTalk 1.2.1 - Macintosh -> SYS -> Speech ->PlainTalk 1.2.1
PlainTalk 1.3 - Macintosh -> SYS -> Speech ->PlainTalk 1.3.1
PlainTalk User Guide 1.2.1 - Macintosh -> SYS -> Speech ->PlainTalk 1.2.1
PlainTalk User Guide 1.3 - Macintosh -> SYS -> Speech ->PlainTalk 1.3.1
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Portable StyleWriter 1.0.1 - Macintosh -> PTG -> Other Printing
Power Macintosh 7500/8500 Disk Tools - Macintosh -> SYS -> Other System
Power Macintosh 7500/8500 Install 1 - Macintosh -> SYS -> Other System
Power Macintosh AV Update 1.0-Bootable Disk - Macintosh -> SYS -> Other System
Power Macintosh AV Update 1.0-Extension Only - Macintosh -> SYS -> Other System
PowerBook 150 Enabler 1.1. - Macintosh -> SYS -> System Enablers
PowerBook 500 Series 1.0.2 - Macintosh -> SYS -> System Enablers
PowerBook 5300 SW Update - Macintosh -> PowerBook -> PB 5300 SW Update
PowerBook Duo Enabler 1.0 - Macintosh -> SYS -> System Enablers
PowerBook Duo Enabler 2.0 - Macintosh -> SYS -> System Enablers
PowerCD Setup 1.0.1 - Macintosh -> D-P
PowerPC Enabler 1.0.2 - Macintosh -> SYS -> System Enablers
PowerPC Enabler 1.1.1 - Macintosh -> SYS -> System Enablers
PowerPC Interrupt Extension - Macintosh -> SYS -> Other System
PowerTalk Gateways - Macintosh -> SYS -> PowerTalk
PowerTalk Guided Tour 1.1 - Macintosh -> SYS -> PowerTalk
PowerTalk Info - Macintosh -> SYS -> PowerTalk
PowerTalk Manager 1.5 - Macintosh -> SYS -> PowerTalk
PowerTalk PPC 1.0.2 - Macintosh -> SYS -> PowerTalk
PowerTalk PPC 1.0.2 France - Macintosh -> SYS -> PowerTalk
PowerTalk Solutions Guide - Macintosh -> SYS -> PowerTalk
PPC Upgrade Enabler 1.0.1 - Macintosh -> SYS -> System Enablers
Print Monitor 7.0.1 - Macintosh -> PTG -> LaserWriter
Printer Share 1.1.2 - Macintosh -> PTG -> Other Printing
PrintMonitor 7.1 - Macintosh -> PTG -> LaserWriter
PrintMonitor 7.1.2 - Macintosh -> PTG -> Other Printing
PT 1.1.6 - Macintosh -> SYS -> PowerTalk
PT 1.2.3 - Macintosh -> SYS -> PowerTalk
PT Mail Folders 1.5 - Macintosh -> Unsupported
PT Mail Reader 1.1 - Macintosh -> SYS -> PowerTalk
QDGX Spooler Patch 1.0.2 - Macintosh -> Unsupported
QT For Windows 2.1.1 Info - DOS & Windows -> QTW
QuickDraw 3D 1.0.6 - Macintosh -> SYS -> QuickDraw GX
QuickDraw GX 1.1.3 - Macintosh -> SYS -> QuickDraw GX
QuickKeys Test Drive - Macintosh -> SYS -> Speech ->PlainTalk 1.3.1
QuickKeys Test Drive 1.2.1 - Macintosh -> SYS -> Speech ->PlainTalk 1.2.1

QuickTake For Power Mac 1.0 - Macintosh -> D-P
QuickTime 2.1 - Macintosh -> SYS -> QuickTime
QuickTime 2.1.1 for Windows 3.1 - DOS & Windows -> QTW
QuickTime 2.1.1 for Windows 95 - DOS & Windows -> QTW
QuickTime 2.5 - Macintosh -> SYS -> QuickTime
QuickTime 2.5 Extras - Macintosh -> SYS -> QuickTime
Rename Rescue 1.0 - Macintosh -> SYS -> Older SYS -> For System 7.0.x
Scanner 2.0 (system extension) - Macintosh -> D-P
Scanner 3.0 (system extension) - Macintosh -> D-P
Screen 1.0.6 - Macintosh -> SYS -> Other System
Security Info - Macintosh -> N-C -> ARA -> Other ARA Software
Serial Switch 1.1 - Macintosh -> SYS -> Other System
Serial Tool 1.0.2 - Macintosh -> N-C -> Comm Toolbox
SerialDMA 2.0.2 - Macintosh -> N-C -> ONC
Server Remote Control v1.0 - Macintosh -> Utilities
Shrinkit1.1 - Apple II -> Apple II Supplemental
SimpleSound 1.0 - Macintosh -> Utilities
SimpleText 1.3 - Macintosh -> Utilities
Slow SCSI Extension - Macintosh -> Unsupported
SNA*ps 3270 1.1.2 Patch - Macintosh -> N-C -> ONC
Sound Manager 3.1 - Macintosh -> SYS -> Other System
SpoolLauncher 2.1.1 - Macintosh -> PTG -> Other Printing
SpoolMaster 2.1.1a - Macintosh -> PTG -> Other Printing
SSW 6.0.3 - Macintosh -> SYS -> Older SYS -> For System 6.0.x
SSW 6.0.5 - Macintosh -> SYS -> Older SYS -> For System 6.0.x
SSW 6.0.8 - Macintosh -> SYS -> Older SYS -> For System 6.0.x
SSW 7.0 - Macintosh -> SYS -> Older SYS -> For System 7.0.x
SSW 7.0.1 - Macintosh -> SYS -> Older SYS -> For System 7.0.x
System 7 Tune-up 1.1.1 - Macintosh -> SYS -> Older SYS -> For System 7.0.x
System 7.5 Update 2.0 (14 Disks) - Macintosh -> SYS -> System 7.5 Update 2.0
Sys75 Upd2.0 Custom Install - Macintosh -> Unsupported
System 7.5.3 Rev 2 - Macintosh -> SYS -> Older SYS -> For System 7.5.2 and 7.5.3
System 7.5.5 Update - Macintosh -> SYS -> System 7.5.5 Update
System Enabler 001 (1.0.1) - Macintosh -> SYS -> System Enablers
System Enabler 003 (1.1) - Macintosh -> SYS -> System Enablers
System Enabler 040 (1.1) - Macintosh -> SYS -> System Enablers
System Enabler 065 (1.2) - Macintosh -> SYS -> System Enablers
System Enabler 088 (1.2) - Macintosh -> SYS -> System Enablers
System Enabler 131 (1.0.3) - Macintosh -> SYS -> System Enablers
System Enabler 401 (1.0.5) - Macintosh -> SYS -> System Enablers
System Enabler 403 (1.0.2) - Macintosh -> SYS -> System Enablers
System Enabler 404 (1.0) - Macintosh -> SYS -> System Enablers
System Enabler 405 (1.0) - Macintosh -> SYS -> System Enablers
System Enabler 406 1.0 - Macintosh -> SYS -> System Enablers
System Update 3.0 800K Disk - Macintosh -> SYS -> Older SYS -> For System 7.1.x
System Update 3.0.1 1.4MB Disk -Macintosh -> SYS ->Older SYS-> For System 7.1.x
Telecom 2.3.3 - Macintosh -> N-C -> Apple Telecom
Telecom 2.3.3 PC Card Modem - Macintosh -> N-C -> Apple Telecom
Telephone Manager (2.0) - Macintosh -> N-C -> ONC
Telephone Manager 1.1.1 - Macintosh -> SYS -> Other System
Text Tool (1.0.1) - Macintosh -> N-C -> Comm Toolbox
TextEditor (1.3a1) - Macintosh -> N-C -> ONC

The Namer (7.0) - Macintosh -> PTG -> Other Printing
Thread Manager 2.0.1 - Macintosh -> SYS -> Other System
Tour_Hwi.zip - Newton -> For DOS-Windows -> ONU
TTY Tool (1.0.1) - Macintosh -> N-C -> Comm Toolbox
TTYFont (1.0) - Macintosh -> N-C -> Comm Toolbox
TV Setup 1.0.2 - Macintosh -> SYS -> Other System
Update 2.0 Late Breaking Tips - Macintosh -> SYS -> System 7.5 Update 2.0
Video Monitor 1.0.1 - Macintosh -> Unsupported
Video SW Install 1.3.2 - Macintosh -> D-P
VideoSync 1.0 - Macintosh -> Unsupported
VideoSynchII - Macintosh -> Unsupported
VT102 Tool (1.0.2) - Macintosh -> N-C -> Comm Toolbox
VT102Font (1.0.1) - Macintosh -> N-C -> Comm Toolbox
Windows NPI 2.0 - Newton -> For MacOS -> ONU
WINNP12.EXE - Newton -> For DOS-Windows -> ONU
WGS Not Supported with System 7.5.5 -> Macintosh -> SYS -> System 7.5.5 Update
WorldScript Updater 1.1 - Macintosh -> SYS -> Language Kits
X11 Server Update For A/UX 3.0 - Macintosh -> N-C -> ONC
XMODEM Tool (1.1) - Macintosh -> N-C -> Comm Toolbox
ZM-AppleShare WS (Workstation) 3.6.2 - Macintosh -> N-C -> AppleShare
ZM-LW-LocalTalk Bridge 2.1f2 - Macintosh -> Unsupported -

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US Apple SW Updates Available Online (12/96)

Revised: 12/16/96
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US Apple SW Updates Available Online (12/96)

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TOPIC -----

This document serves as an index to the Domestic Apple Software Updates areas located on, AppleLink, America Online and the Internet. The first part of this article: Article Change History, lists the most recent changes to the Software Updates. The second part is an alphabetical list of the software updates, along with the current location.

Please search the Apple Tech Info Library using the string "Apple Software Updates" for a current list of online services to which Apple Software Updates are posted. (You can also use the special keyword: kol to search for this information and other on line related information in the Apple Tech Info Library.)

DISCUSSION -----

- Article Change History:

14 Dec - Add Disk First Aid 7.2.2
13 Dec - Add Open Transport 1.1.2 (OT 1.1.2)
13 Dec - Add Open Transport 1.1.2 Extras (OT 1.1.2 Extras)
12 Dec - Add Newton Connection Utilities 1.0b4 (NCU 1.0b4.sea)
12 Dec - Add QuickTime TV 1.0.4b19
11 Dec - Add Network Asst. 2.0.1 Updater
10-Dec - Add QuickDraw 3D 1.5 for Windows (QD3D1523.ZIP)
06-Dec - Add At Ease 4.0.1 Updater
03 Dec - Repost Apple Printer Utility 2.1.1.sea
02 Dec - Add Apple Spec 11-96 and Apple Spec App
26 Nov - Add JLK Info (Japanese Language Kit Information)
20 Nov Add Apple Memory Guide 1.3
19 Nov - Add ZyXEL Modem Scripts
18 Nov - Add Modem Script Generator 1.0a1

Key to Location Abbreviations:

AIISP - Apple II Supplemental	
ARA - Apple Remote Access	OPS - Other Printing Software
CTB - Comm Toolbox	OSS - Other System Software
D-P - Display-Peripherial	OLS - Older System Software
LWS - LaserWriter	OT - Open Transport
N-C - Networking-Communications	PSU - PowerBook System Update
NCU - Newton Connection Utilities	PSW - Printing Software for Windows
NSU - Newton System Updates	PTG - Printing
ONC - Other Networking-Communications	QTW - QuickTime for Windows
ONU - Other Newton Updates	SYS - System
OPB - Other PowerBook Software	SPE - Speech

The Alphabetical List of USA Apple Software Updates:

040 VM Update 1.0 - Macintosh -> SYS -> Other System
32-Bit System Enabler 1.0.3 - Macintosh -> SYS -> Other System
5xxx-6xxx Tester 1.0 - Macintosh -> Utilities
630 SCSI Update 1.0 - Macintosh -> SYS -> Other System
8*24 GC Software 7.0.1 - Macintosh -> D-P
950 Color Addition 1.0 - Macintosh -> SYS -> Other System
About PlainTalk 1.4.1 - Macintosh -> SYS -> Speech ->PlainTalk 1.4.1
Adobe Acrobat Reader 2.1 - Macintosh -> Utilities
ADSP 1.5.1 - Macintosh -> N-C -> Comm Toolbox
AMK Spinning Cursor Bug Fix - Macintosh -> Utilities
APD 1.1.3 Update - Macintosh -> Utilities
Apple CD-ROM 5.0.4 - Macintosh -> D-P
Apple Color Printer 1.0 - Macintosh -> PTG -> Other Printing
Apple Color SW Pro CMM 1.0 - Macintosh -> PTG -> Other Printing
Apple DocViewer 1.1.1 - Macintosh -> Utilities
Apple Event Manager 1.0.3 - Macintosh -> SYS -> Other System
Apple Guide Authoring Kit Offer - Macintosh -> Utilities
Apple HD SC Setup 7.3.5 - Macintosh -> Utilities
Apple II SCSI Utilities - Apple II -> Apple II Supplemental
Apple II Startup Disk 2.2 - Macintosh -> N-C -> AppleShare
Apple II System Disk 3.2 - Apple II -> Apple II Supplemental
Apple II Video Overlay Card - Apple II -> Apple II Supplemental
Apple IIGS CD Setup 5.1 - Apple II -> Apple II Supplemental
Apple IIGS System 6.0.1 - Apple II -> Apple IIGS System 6.0.1
Apple Internet Router 3.0.1 Patch - Macintosh -> N-C -> Network Software Installer
Apple LAN Utility 1.0b4 - Macintosh -> Unsupported
Apple Memory Guide 1.3 - Macintosh -> Utilities
Apple Menu Options 1.02 - Macintosh -> SYS -> Other System
Apple Modem Tool 1.5.3 - Macintosh -> N-C -> Comm Toolbox
Apple Printer Utility 2.1.1 - Macintosh -> PTG -> LaserWriter
Apple Remote Access 2.0.1 Info - Macintosh -> N-C -> ARA
Apple Spec 11-96 - Macintosh -> Utilities
Apple Spec App - Macintosh -> Utilities
Apple System Profiler 1.0.1 - Macintosh -> Utilities

ApplePhone 1.0.1 - Macintosh -> Unsupported
AppleScan 1.0.2 - Macintosh -> D-P
AppleSearch 1.0.1 Patch - Macintosh -> N-C -> ONC
AppleSearch 1.5.1 Patch - Macintosh -> N-C -> ONC
AppleShare 3.0.3 Patch - Macintosh -> N-C -> AppleShare
AppleShare 4.2.1 to 4.2.2 - Macintosh -> Updater Net-Comm -> AppleShare
AppleShare 4.2 Upgrade Info - Macintosh -> N-C -> AppleShare
AppleShare Setup 1.0.1 - Macintosh -> Utilities
AppleShare Tune-Up 4.0.1 - Macintosh -> N-C -> AppleShare
AppleTalk ADSP Tool 1.0 - Macintosh -> N-C -> Comm Toolbox
AppleTalk Image Writer 7.0.1 - Macintosh -> PTG -> Other Printing
AppleVision Fix 1.1 - Macintosh -> D-P
AppleVision Fix 1.1 - Macintosh -> SYS -> System 7.5 Update 2.0
AppleVision Fix 1.1 Info - Macintosh -> SYS -> Older SYS -> For System 7.5.2 and 7.5.3
AppleVision Software 1.0.2 - Macintosh -> D-P
ARA 1.0 Client Enabler - Macintosh -> N-C -> ARA -> Other ARA Software
ARA 1.0 Original Scripts - Macintosh -> N-C -> ARA -> ARA 1.0 Original Scripts
ARA 1.0 User Scripts - Macintosh -> N-C -> ARA -> ARA 1.0 User Scripts
ARA 2.0 Original Scripts - Macintosh -> N-C -> ARA -> ARA 2.0 Original Scripts
ARA 2.0 User Scripts - Macintosh -> N-C -> ARA -> ARA 2.0 User Scripts
ARA Client 2.1 Updater - Macintosh -> N-C -> ARA -> ARA Updates
ARA MP Server 2.1 Patches - Macintosh -> N-C -> ARA -> ARA Updates
ARA PS 2.1 Updater - Macintosh -> N-C -> ARA -> ARA Updates
AS Custom Settings 1.0 - Macintosh -> Unsupported
ASFU Fixer 1.0.1 - Macintosh -> PTG -> Other Printing
Assistant Toolbox 1.0.1d1 - Macintosh -> Unsupported
At Ease 2.0.3 Update - Macintosh -> SYS -> At Ease
At Ease 4.0.1 Updater - Macintosh -> SYS -> At Ease
At Ease Update 1.0 - Macintosh -> SYS -> At Ease
At Ease WG 3.0.3 Updater - Macintosh -> SYS -> At Ease
At Ease 3 CDROM Prefs Patch - Macintosh -> SYS -> At Ease
At Ease-IDE Utility Disk 1.0 - Macintosh -> SYS -> At Ease
Audio Volume 1.1 Installer - Macintosh -> SYS -> Other System
AudioVision Installer 1.0.2 - Macintosh -> D-P
AV Serial Extension 1.0 - Macintosh -> SYS -> Other System
AWS 95 Tune-Up 1.0 - Macintosh -> N-C -> ONC
AWS 95 Tune-Up 2.0 - Macintosh -> N-C -> ONC
Backgrounder 1.3 - Macintosh -> PTG -> Other Printing
Backlight Control 1.0 - Macintosh -> Utilities
Basic Color Monitor (1.0) - Macintosh -> D-P
Basic Connectivity Set 1.1.1 - Macintosh -> N-C -> Comm Toolbox
Battery Tools 2.0 - Macintosh -> PowerBook -> Other PB SW
Cache Switch 7.0.1 - Macintosh -> SYS -> Other System
CD-ROM Software 5.1.7 - Macintosh -> D-P
Chinese Lang. Kit Updater - Macintosh -> SYS -> Language Kits
Chooser 7.3 - Macintosh -> PTG -> Other Printing
CISMAIL.ZIP - Newton -> For DOS-Windows -> ONU
Color Classic Update 1.0 - Macintosh -> SYS -> Other System
Color Laser Writer 8.3.2 - Macintosh -> PTG -> LaserWriter
Color StyleWriter 1500 2.2 (3 disk images) - Macintosh -> PTG -> Other Printing
Color StyleWriter 2500 2.2 (3 disk images) - Macintosh -> PTG -> Other Printing
Color SW Pro 1.5.2 - Macintosh -> PTG -> Other Printing

Color SW Pro GX 1.0 - Macintosh -> SYS -> QuickDraw GX
Color SW Pro GX `.0 - Macintosh -> PTG -> Other Printing
Colorsync 2.0 Plug-ins - Macintosh -> Utilities
ColorSync 2.1.1 - Macintosh -> SYS -> Other System
Compatibility Checker 2.0 - Macintosh -> SYS -> Older SYS -> For System 7.1.x
CompuServe Mail for Newton 2.0 - Newton -> For MacOS -> ONU
Cyberdog 1.1 - Macintosh -> SYS -> Net-Comm -> Cyberdog
CPU Energy Saver 1.0.6 - Macintosh -> SYS -> Other System
DART 1.5.2 - Macintosh -> Utilities
Desktop Printing 2.0 - Macintosh -> PTG -> Other Printing
Direct Dialup 1.1.1 - Macintosh -> SYS -> Other System
Direct Dialup Mail 1.1.2 - Macintosh -> SYS -> PowerTalk
Disk Copy 4.2 - Macintosh -> Utilities
Disk First Aid 7.2.2 - Macintosh -> Utilities
Disk Image Mounter 1.0.1 - Macintosh -> Utilities
Display Card 24AC 1.2 - Macintosh -> D-P
Display Software 2.0.2 - Macintosh -> D-P
Document Converter 1.0.4 - Macintosh -> Utilities
DOS Compatibility 1.5 - DOS & Windows -> DOS Compatibility
Drive Firmware Update 1.2 - Macintosh -> SYS -> Other System
Drive Setup 1.0.5 - Macintosh -> Utilities
Duo Battery Patch 1.0 - Macintosh -> PowerBook -> Other PB SW
EM Sound Update 1.0 - Macintosh -> SYS -> Other System
English Speech Recognition - Macintosh -> SYS -> Speech ->PlainTalk 1.4.1
English Text-to-Speech - Macintosh -> SYS -> Speech ->PlainTalk 1.4.1
Ethernet Built-In 1.0.2 - Macintosh -> N-C -> ONC
Express Modem 1.5.5 - Macintosh -> N-C -> ONC
Finder Scripting Ext 1.2 - Macintosh -> SYS -> Other System
Font Extension 3 1.0.4 - Macintosh -> SYS -> Language Kits -> Font Extension 3 1.0.4
Full MegaPhone Manual - Macintosh -> N-C -> Apple Telecom
GeoPort/Express Modem 3.0 Updater -> Macintosh -> N-C -> Apple Telecom
GlobalFax 2.5.2P Update - Macintosh -> N-C -> ONC
GrayShare Update 1.0 - Macintosh -> PTG -> Other Printing
Graphics Accelerator 1.0.7 - Macintosh -> Unsupported
GX 1.1.3 Net Install - Macintosh -> SYS -> QuickDraw GX
HC 2.3.5 Stacks.sea - Macintosh -> Utilities
HC 2.3.5 Update Installer - Macintosh -> Utilities
HC 2.3.5 Updater - Macintosh -> Utilities
HCIIGS 1.1 - Apple II -> HyperCard IIGS 1.1
HideEworld - Newton -> For MacOS -> ONU
HyperCard Player 2.3.5 - Macintosh -> Utilities
HyperMover.IIGS - Apple II -> HyperCard IIGS
HyperMover.Mac - Apple II -> HyperCard IIGS
HyperScan 2.0.1 - Macintosh -> D-P
Ignore Dialtone 1.0.fc1 - Macintosh -> Unsupported
ImageWriter 7.0.1 - Macintosh -> PTG -> Other Printing
IMF & DT Disk Images - Macintosh -> SYS -> System Enablers
Intelligent Battery Update 1.0.3 - Macintosh -> PowerBook -> Other PB SW
Internal HD Format 1.3 - Macintosh -> Utilities
Internet Router 3.0.1 Patch - Macintosh -> N-C -> ONC
Invisible AWS 95 Fix (elap) - Macintosh -> N-C -> ONC
IP Gateway 1.0.1 Patch - Macintosh -> N-C

IP Gateway 1.0.1 Patch - Macintosh -> N-C -> ONC
ISO 9660 File Access 5.0.2 - Macintosh -> D-P
ISO 9660 File Access 5.0.2 - Macintosh -> SYS -> Other System
JLK Info - Macintosh -> SYS -> Language Kits
Laser Prep 7.1.2 - Macintosh -> PTG -> LaserWriter
Laser Prep 7.2 - Macintosh -> PTG -> LaserWriter
LaserWriter 300 1.2 - Macintosh -> PTG -> LaserWriter
LaserWriter 8.2.3f - Macintosh -> PTG -> LaserWriter
LaserWriter 3.0.8 for Windows 3.1 (LW Win 3.1 3.0.8) - DOS & Windows -> PTG
LaserWriter 4.1 for Windows 95 (LW Win 95 4.2) - DOS & Windows -> PTG
LaserWriter 8.4.1 - Macintosh -> PTG -> LaserWriter
LaserWriter Fax Tuneup 1.0 - Macintosh -> PTG -> LaserWriter
LaserWriter Printing Software 8.3.2 - Macintosh -> PTG -> LaserWriter
LaserWriter Printing Software 8.3.4 - Macintosh -> PTG -> LaserWriter
LaserWriter Pro 810 For Windows - DOS & Windows -> PTG
LaserWriter Pro Energy Star Software - Macintosh -> PTG -> LaserWriter
LaserWriter Select 310 7.0.1 - Macintosh -> PTG -> LaserWriter
LQ AppleTalk ImageWriter 7.0.1 - Macintosh -> PTG -> Other Printing
LaserWriter SW for Windows 1.0.2 - DOS & Windows -> PTG (older version,.sea file)
LW Select 310 For Windows - DOS & Windows -> PTG (.sea and .exe file formats)
LWSW102.zip (LW SW for Windows 1.0.2) - DOS & Windows -> PTG (older version, zip file)
Mac Drag and Drop 1.1 - Macintosh -> SYS -> Other System
MacDNS 1.0.3 - Macintosh -> N-C -> ONC
Macintosh Basics 5.0.3 - Macintosh -> Utilities
Macintosh Tutorial - Macintosh -> Utilities
Macitnosh Easy Open 1.1.1 - Macintosh -> SYS -> Other System
MacPPP 2.5 - Macintosh -> N-C -> ONC
MacsBug 6.5.3 - Macintosh -> Utilities
MacTCP 2.0.4 Update - Macintosh -> N-C -> ONC
MacTCP 2.0.6 Update - Macintosh -> N-C -> ONC
MacTCP Ping 2.0.2 - Macintosh -> Unsupported
MacTCP Token Ring Extension 1.0 - Macintosh -> N-C -> ONC
MacX25 1.2 Patch - Macintosh -> N-C -> ONC
MailLink for PowerTalk INET - Macintosh -> SYS -> PowerTalk
MailLink for PowerTalk MS - Macintosh -> SYS -> PowerTalk
MailLink for PowerTalk QM - Macintosh -> SYS -> PowerTalk
MANUAL.PDF - Newton -> For DOS-Windows -> ONU
MegaDial Manual - Macintosh -> N-C -> Apple Telecom
MegaPhone 1.0.2 - Macintosh -> N-C -> Apple Telecom
MegaPhone 1.0.3P - Macintosh -> N-C -> ONC
Mercury ATandT GW 1.0C - Macintosh -> Unsupported
Mercury Envoy GW 1.0C - Macintosh -> Unsupported
Mercury MCI Mail GW 1.0C - Macintosh -> Unsupported
Mexican Spanish TTS - Macintosh -> SYS -> Speech ->PlainTalk 1.4.1
MIDI Management Tools 2.0.2 - Macintosh -> Unsupported
MODE32 7.5 - Macintosh -> SYS -> Other System
Modem Enabler 1.0 - Newton -> For MacOS -> MessagePad System Updates
Modem Enabler 1.0.zip - Newton -> For DOS-Windows -> MessagePad System Updates
Modem Script Generator 1.0a1 -> Macintosh -> Unsupported
Monitor Energy Saver 1.0 - Macintosh -> D-P
Monitor Energy Saver 1.1 - Macintosh -> D-P

Mount IDE Drive 1.0 - Macintosh -> SYS -> Other System
Mouse Basics 4.5 - Macintosh -> Utilities
MoviePlayer 2.5- Macintosh -> Utilities
MovieShop 1.2.1 - Macintosh -> Unsupported
MP 100 1.3.415333 - Newton -> For MacOS -> MessagePad System Updates
MP 110 1.3.45333 - Newton -> For MacOS -> MessagePad System Updates
MP 120 2.0.516263 - Newton -> For MacOS -> MessagePad System Updates
MP 120 Tour and Handwriting - Newton -> For MacOS -> ONU
MP 130 2.0.526205 - Newton -> For MacOS -> MessagePad System Updates
MP345333.EXE - Newton -> For DOS-Windows -> MessagePad System Updates
MP415333.EXE - Newton -> For DOS-Windows -> MessagePad System Updates
MP445333.EXE - Newton -> For DOS-Windows -> MessagePad System Updates
MP516263.ZIP - Newton -> For DOS-Windows -> MessagePad System Updates
MP526205.ZIP - Newton -> For DOS-Windows -> MessagePad System Updates
NBU101EN.ZIP - Newton -> For DOS-Windows -> ONU
NBU User's Guide - Newton -> For MacOS -> ONU
NCK203UP.EXE - Newton -> For MacOS -> ONU
NTK 1.5.2b2 Updater - Newton -> For MacOS -> ONU
Network Access Disk 7.5 - Macintosh -> Utilities
Network Asst. 2.0.1 Updater - - Macintosh -> SYS -> At Ease
Network Launch Fix 1.0.2 - Macintosh -> N-C -> ONC
Network Software Installer 1.4.4 - Macintosh -> N-C -> Network Software Installer
Network Software Installer ZM-1.4.5 - Macintosh -> N-C -> Network Software Installer
Network Software Installer ZM-1.5 - Macintosh -> N-C -> Network Software Installer
Network Software Installer ZM-1.5.1 - Macintosh -> N-C -> Network Software Installer
NCU 1.0b4 - Newton -> For MacOS -> Unsupported
NCU for Windows 1.0b3 - Newton -> For DOS-Windows -> Unsupported
Newton System Update 1.0.5 - Newton -> For MacOS -> MessagePad System Updates
Newton System Update 1.1.1 - Newton -> For MacOS -> MessagePad System Updates
Newton Toolkit for Windows (beta) NTK_31.ZIP Newton -> For DOS-Windows -> Unsupported
Newton Toolkit for Windows (beta) NTK_95.ZIP Newton -> For DOS-Windows -> Unsupported
Newton Toolkit for Windows (beta) NTK_NT.ZIP Newton -> For DOS-Windows -> Unsupported
NewtonMail Modules 1.0.1 - Newton -> For MacOS -> MessagePad System Updates
Ofoto Update 2.0.2 Information - Macintosh -> D-P
Open Transport 1.0.8 - Macintosh -> N-C -> OT
Open Transport Manual - Macintosh -> N-C -> OT
OpenDoc 1.1 - Macintosh -> SYS -> OpenDoc
OT 1.1 Manual - Macintosh -> SYS -> System 7.5 Update 2.0
OT 1.1.1 - Macintosh Macintosh - N-C -> Open Transport
OT 1.1.1 Extras - Macintosh - N-C -> Open Transport
OT 1.1.2 - Macintosh Macintosh - N-C -> Open Transport
OT 1.1.2 Extras - Macintosh - N-C -> Open Transport
OT PPP 1.0 Macintosh - N-C -> Open Transport
OT PPP 1.0 Manual - Macintosh - N-C -> Open Transport
OT PPP 1.0 Net Install - Macintosh - N-C -> Open Transport
OPS Info (read me) - Macintosh -> PTG -> Other Printing

PANTONE for AppleVision - Macintosh -> Unsupported
PANTONE for Color LW - Macintosh -> PTG -> LaserWriter
PANTONE for Color LW (12/600).exe - DOS & Windows - DOS & Windows -> PTG
PB 150 Update 1.0 - Macintosh -> PowerBook -> Other PB SW
PB 150 Update 1.1 - Macintosh -> PowerBook -> Other PB SW
PB 2300c Update 1.0 - Macintosh -> PowerBook -> Other PB SW
PC Card Software 2.0 - Macintosh -> PowerBook -> Other PB SW
PC Net Exchange 1.0.1 - Macintosh -> N-C -> AppleShare
PC Setup 1.0.2 - DOS & Windows -> DOS Compatibility (For Quadra 610 DOS Compatible)
PC Setup DIMM Patch - Macintosh -> Unsupported
Personal LW NTR For Windows - DOS & Windows -> PTG
Personal LW SC 7.0.1 - Macintosh -> PTG -> LaserWriter
PhotoFlash 2.0 to 2.0.1 Updater - Macintosh -> D-P
PlainTalk 1.2.1 - Macintosh -> SYS -> Speech ->PlainTalk 1.2.1
PlainTalk 1.3 - Macintosh -> SYS -> Speech ->PlainTalk 1.3.1
PlainTalk User Guide 1.2.1 - Macintosh -> SYS -> Speech ->PlainTalk 1.2.1
PlainTalk User Guide 1.3 - Macintosh -> SYS -> Speech ->PlainTalk 1.3.1
Portable Control Panel 1.3 - Macintosh -> SYS -> Other System
Portable StyleWriter 1.0.1 - Macintosh -> PTG -> Other Printing
Power Macintosh 7500/8500 Disk Tools - Macintosh -> SYS -> Other System
Power Macintosh 7500/8500 Install 1 - Macintosh -> SYS -> Other System
Power Macintosh AV Update 1.0-Bootable Disk - Macintosh -> SYS -> Other System
Power Macintosh AV Update 1.0-Extension Only - Macintosh -> SYS -> Other System
PowerBook 150 Enabler 1.1. - Macintosh -> SYS -> System Enablers
PowerBook 500 Series 1.0.2 - Macintosh -> SYS -> System Enablers
PowerBook 5300 SW Update - Macintosh -> PowerBook -> PB 5300 SW Update
PowerBook Duo Enabler 1.0 - Macintosh -> SYS -> System Enablers
PowerBook Duo Enabler 2.0 - Macintosh -> SYS -> System Enablers
PowerCD Setup 1.0.1 - Macintosh -> D-P
PowerPC Enabler 1.0.2 - Macintosh -> SYS -> System Enablers
PowerPC Enabler 1.1.1 - Macintosh -> SYS -> System Enablers
PowerPC Interrupt Extension - Macintosh -> SYS -> Other System
PowerTalk Gateways - Macintosh -> SYS -> PowerTalk
PowerTalk Guided Tour 1.1 - Macintosh -> SYS -> PowerTalk
PowerTalk Info - Macintosh -> SYS -> PowerTalk
PowerTalk Manager 1.5 - Macintosh -> SYS -> PowerTalk
PowerTalk PPC 1.0.2 - Macintosh -> SYS -> PowerTalk
PowerTalk PPC 1.0.2 France - Macintosh -> SYS -> PowerTalk
PowerTalk Solutions Guide - Macintosh -> SYS -> PowerTalk
PPC Upgrade Enabler 1.0.1 - Macintosh -> SYS -> System Enablers
Print Monitor 7.0.1 - Macintosh -> PTG -> LaserWriter
Printer Share 1.1.2 - Macintosh -> PTG -> Other Printing
PrintMonitor 7.1 - Macintosh -> PTG -> LaserWriter
PrintMonitor 7.1.2 - Macintosh -> PTG -> Other Printing
PT 1.1.6 - Macintosh -> SYS -> PowerTalk
PT 1.2.3 - Macintosh -> SYS -> PowerTalk
PT Mail Folders 1.5 - Macintosh -> Unsupported
PT Mail Reader 1.1 - Macintosh -> SYS -> PowerTalk
QDGX Spooler Patch 1.0.2 - Macintosh -> Unsupported
QT For Windows 2.1.1 Info - DOS-Windows -> QTW
QD3D1523.ZIP - DOS-Windows -> QuickDraw 3D
QuickDraw 3D 1.0.6 - Macintosh -> SYS -> QuickDraw GX

QuickDraw GX 1.1.3 - Macintosh -> SYS -> QuickDraw GX
QuickKeys Test Drive - Macintosh -> SYS -> Speech ->PlainTalk 1.3.1
QuickKeys Test Drive 1.2.1 - Macintosh -> SYS -> Speech ->PlainTalk 1.2.1
QuickTime 2.1 - Macintosh -> SYS -> QuickTime
QuickTime 2.1.1 for Windows 3.1 - DOS & Windows -> QTW
QuickTime 2.1.1 for Windows 95 - DOS & Windows -> QTW
QuickTime 2.5 - Macintosh -> SYS -> QuickTime
QuickTime 2.5 Extras - Macintosh -> SYS -> QuickTime
QuickTime TV 1.0.4b19 - Macintosh -> Unsupported
Rename Rescue 1.0 - Macintosh -> SYS -> Older SYS -> For System 7.0.x
Scanner 2.0 (system extension) - Macintosh -> D-P
Scanner 3.0 (system extension) - Macintosh -> D-P
Screen 1.0.6 - Macintosh -> SYS -> Other System
Security Info - Macintosh -> N-C -> ARA -> Other ARA Software
Serial Switch 1.1 - Macintosh -> SYS -> Other System
Serial Tool 1.0.2 - Macintosh -> N-C -> Comm Toolbox
SerialDMA 2.0.2 - Macintosh -> N-C -> ONC
Server Remote Control v1.0 - Macintosh -> Utilities
Shrinkit1.1 - Apple II -> Apple II Supplemental
SimpleSound 1.0 - Macintosh -> Utilities
SimpleText 1.3 - Macintosh -> Utilities
Slow SCSI Extension - Macintosh -> Unsupported
SNA*ps 3270 1.1.2 Patch - Macintosh -> N-C -> ONC
Sound Manager 3.1 - Macintosh -> SYS -> Other System
SpoolLauncher 2.1.1 - Macintosh -> PTG -> Other Printing
SpoolMaster 2.1.1a - Macintosh -> PTG -> Other Printing
SSW 6.0.3 - Macintosh -> SYS -> Older SYS -> For System 6.0.x
SSW 6.0.5 - Macintosh -> SYS -> Older SYS -> For System 6.0.x
SSW 6.0.8 - Macintosh -> SYS -> Older SYS -> For System 6.0.x
SSW 7.0 - Macintosh -> SYS -> Older SYS -> For System 7.0.x
SSW 7.0.1 - Macintosh -> SYS -> Older SYS -> For System 7.0.x
System 7 Tune-up 1.1.1 - Macintosh -> SYS -> Older SYS -> For System 7.0.x
System 7.5 Update 2.0 (14 Disks) - Macintosh -> SYS -> System 7.5 Update 2.0
Sys75 Upd2.0 Custom Install - Macintosh -> Unsupported
System 7.5.3 Rev 2 - Macintosh -> SYS -> Older SYS -> For System 7.5.2 and 7.5.3
System 7.5.5 Update - Macintosh -> SYS -> System 7.5.5 Update
System Enabler 001 (1.0.1) - Macintosh -> SYS -> System Enablers
System Enabler 003 (1.1) - Macintosh -> SYS -> System Enablers
System Enabler 040 (1.1) - Macintosh -> SYS -> System Enablers
System Enabler 065 (1.2) - Macintosh -> SYS -> System Enablers
System Enabler 088 (1.2) - Macintosh -> SYS -> System Enablers
System Enabler 131 (1.0.3) - Macintosh -> SYS -> System Enablers
System Enabler 401 (1.0.5) - Macintosh -> SYS -> System Enablers
System Enabler 403 (1.0.2) - Macintosh -> SYS -> System Enablers
System Enabler 404 (1.0) - Macintosh -> SYS -> System Enablers
System Enabler 405 (1.0) - Macintosh -> SYS -> System Enablers
System Enabler 406 1.0 - Macintosh -> SYS -> System Enablers
System Update 3.0 800K Disk - Macintosh -> SYS -> Older SYS -> For System 7.1.x
System Update 3.0.1 1.4MB Disk -Macintosh -> SYS ->Older SYS-> For System 7.1.x
Telecom 2.3.3 - Macintosh -> N-C -> Apple Telecom
Telecom 2.3.3 PC Card Modem - Macintosh -> N-C -> Apple Telecom
Telephone Manager (2.0) - Macintosh -> N-C -> ONC

Telephone Manager 1.1.1 - Macintosh -> SYS -> Other System
Text Tool (1.0.1) - Macintosh -> N-C -> Comm Toolbox
TextEditor (1.3a1) - Macintosh -> N-C -> ONC
The Namer (7.0) - Macintosh -> PTG -> Other Printing
Thread Manager 2.0.1 - Macintosh -> SYS -> Other System
Tour_Hwi.zip - Newton -> For DOS-Windows -> ONU
TTY Tool (1.0.1) - Macintosh -> N-C -> Comm Toolbox
TTYFont (1.0) - Macintosh -> N-C -> Comm Toolbox
TV Setup 1.0.2 - Macintosh -> SYS -> Other System
Update 2.0 Late Breaking Tips - Macintosh -> SYS -> System 7.5 Update 2.0
Video Monitor 1.0.1 - Macintosh -> Unsupported
Video SW Install 1.3.2 - Macintosh -> D-P
VideoSync 1.0 - Macintosh -> Unsupported
VideoSynchII - Macintosh -> Unsupported
VT102 Tool (1.0.2) - Macintosh -> N-C -> Comm Toolbox
VT102Font (1.0.1) - Macintosh -> N-C -> Comm Toolbox
Windows NPI 2.0 - Newton -> For MacOS -> ONU
WINNP12.EXE - Newton -> For DOS-Windows -> ONU
WGS Not Supported with System 7.5.5 -> Macintosh -> SYS -> System 7.5.5 Update
WorldScript Updater 1.1 - Macintosh -> SYS -> Language Kits
X11 Server Update For A/UX 3.0 - Macintosh -> N-C -> ONC
XMODEM Tool (1.1) - Macintosh -> N-C -> Comm Toolbox
ZM-AppleShare WS (Workstation) 3.6.2 - Macintosh -> N-C -> AppleShare
ZM-LW-LocalTalk Bridge 2.1f2 - Macintosh -> Unsupported -
ZyXEL Modem Scripts - Macintosh -> Unsupported -> User Contributed CCLs

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Tech Info Library Article Number:16332

Tech Info Library

Macintosh: Using Third Party IDE Hard Disks (11/96)

Revised: 11/1/96
Security: Everyone

Macintosh: Using Third Party IDE Hard Disks (11/96)

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Article Created: 20 September 1994
Article Reviewed/Updated: 01 November 1996

TOPIC ----------

What solution does Apple support for using a third-party IDE drive to replace the existing IDE drive Macintosh computers? Will Apple HD Formater that comes on the Disk Tools disk format any IDE drive?

DISCUSSION ----------

You can use third-party IDE drives in Apple Products as long as the IDE drive supports the identify command, works at least at PIO mode 2 performance level, and has write caching turned on so that auto-reallocation of new spares is invoked.

Also, the highest PIO mode the Macintosh 630 family, the Macintosh and Performa 580, and the Macintosh Performa and Power Macintosh 5200, 5300, 6200, and 6300 series are capable of supporting is PIO Mode 3. The highest performance setting PIO mode the Macintosh Performa and Power Macintosh 5400 and 6400 series are capable of supporting is PIO Mode 4.

Most importantly, any IDE hard drive that is going to be used on these systems must support Logical Block Addressing (LBA). LBA is the method that drive manufacturers have adopted in order to go beyond the 520 MB DOS-BIOS limit.

Hard drives typically come pre-formatted so you do not need to worry about formatting the drive. The Macintosh system initializes the drive on startup (if it is not already done) so the system software can be installed.

Article Change History:
01 Nov 1996 - Added PIO Mode support info.
28 Oct 1996 - Updated technical information.
06 Feb 1995 - re-classification and minor grammatical changes.

..TIL16335-Macintosh-Using_Third_Party_IDE_Hard_Disks_11-96_(TA32539).pdf

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Tech Info Library Article Number:16335

Tech Info Library

SNA•ps and IBM IN (International Information) System (9/94)

Revised: 9/21/94
Security: Everyone

SNA•ps and IBM IN (International Information) System (9/94)

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Article Created: 21 September 1994

TOPIC -----

I need some information on SNA•ps and IBM IN (International Information System). I want to connect an AppleTalk LAN to a remote IBM IN System with standard IBM EDIFACT in a 3270 environment.

I also want to do mail and file transfer with the host. I'm thinking of using CCMail or WordPerfect Mail for Macintosh, because it's compatible with the mail system on the Host which is based on Memo by Verimation.

Can you suggest a compatible solution?

DISCUSSION -----

There are several solutions from several vendors that can potentially solve your problem. You need to first establish a physical network connection and then select the software to do what you want done.

Note: We are not endorsing any of the products mentioned here. You must evaluate third-party products to best meet your needs.

To connect Macintosh computers to an IBM mainframe remotely, the customer needs to have a SNA•ps Gateway from Wall Data, here is how it works:

Mac clients ----> via AppleTalk ----> SNA•ps Gateway ----> IBM Mainframe.

The SNA•ps Gateway is software running on a Macintosh computer with Mac OS, and talks in two protocols, AppleTalk and SNA.

To have 3270 emulation on a Macintosh, use the SNA•ps 3270 GC (Gateway Client) product in conjuction with a SNA•ps Gateway. For a single user environment use the SNA•ps 3270 product. Both of these products provide file transfer using IND$FILE.

The remote connection between the SNA•ps Gateway and the IBM Mainframe can be accomplished using a pair of WAN bridges or routers that can handle SNA traffic like Cisco, WellFleet, 3Com, CrossCom, Proteon, Andrew, and so on. (Some of these vendors can encapsulate SNA inside TCP/IP.)

3270 emulation on a Macintosh will enable end-users to use the existing Memo mail system on the IBM host. This solution requires an on-line (real-time) connection between the Macintosh and the IBM Mainframe.

However, if you need a Macintosh mail client on your desktop computers, and you want a LAN client/server mail environment, then you might consider Memo LAN from Verimation, Inc. who also provides Memo on the IBM host. Also a client/server mail implementation won't have as much impact on the WAN link's bandwidth as 3270 emulation because mail clients can work off-line.

Here is some information regarding Memo:

Memo is Verimation's client/server business communication system servicing corporate computing users on multiple platforms including MVS, VSE, VM, OS/400, LAN, Windows, OS/2, DOS, and Macintosh. Memo LAN is a full-function E-mail and office automation system that can run either standalone in a LAN configuration or in cooperation with Memo mainframe or Memo AS/400 in a client/server configuration to achieve a true enterprisewide business communication system. Memo LAN features comprehensive messaging, directory and calendar services, workflow facilities, and gateways to other popoular mail systems. The workflow facilities, are incorporated into the calendaring and scheduling services to manage and track all business transactions, work commitments, and personal time. Memo LAN is a message Handling System (MHS)-based Windows application that operates on all major LAN operating systems. Communication can be established to popular mail systems including HP Desk, Profs, SNA Distribution Services (SNADS Dissos, AS/400, and so on), All-in-one, Wang Office, X.400, MS-Mail, and so on, Telex, and fax. Memo application programming interface (API) services provide powerful integration for mail-enabled applications making Memo a complete enterprisewide mail communications system. 800-967-6366

If you are interested in Lotus cc:Mail, the Verimation, Inc. product will enable a Macintosh cc:Mail client to talk to Memo on the IBM mainframes.

Here is the product information for cc:Mail:

Memo/cc:Mail allows users of the Memo enterprisewide E-mail system and users of cc:Mail to exchange messages with one another. Messages can be sent to one or several cc:Mail recipients in the same way as sending a message to another Memo user. Conversely, Memo users can receive messages from a cc:Mail originator. Memo/cc:Mail fully supports the distribution of Memo and non-Memo formats (binary files, graphics, RFT, FFT, and so on) across the gateway. Memo is an enterprisewide client/server business communication system servicing corporate computing users on multiple platforms including MVS, VSE, VM, OS/400, Windows, OS/2, DOS, and Macintosh. Comprehensive features include easy-to-use intuitive user dialog, intelligent forms, bulletin boards, application programming interfaces (API), Electronic Data Interchange (EDI), calendar and resource scheduling, a common look and feel across platforms, and gateways to other mail systems including PROFS, Distributed Office Support System (DISOSS), SNA

Distribution Services (SNADS), X.400, Digital Equipment Corp., HP, Want, MS-Mail, cc:Mail, WordPerfect, Message Handling System (MHS), and so on. 800-967-6366

Another vendor that provides similar service is SoftSwitch. Here is information on them:

SoftSwitch Inc. and its Enterprise Mail Exchange (EMX) technology will enable the company to link E-mail applications with mainframe E-mail backbones and legacy data. 610-640-9600

Support Information Services

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Tech Info Library Article Number:16336

Tech Info Library

System 7.5: Synchronize Folders AppleScript Droplet (10/96)

Revised: 10/23/96
Security: Everyone

System 7.5: "Synchronize Folders" AppleScript Droplet (10/96)

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Article Created: 21 September 1994
Article Reviewed/Updated: 23 October 1996

TOPIC -----

This article describes the AppleScript droplet "Synchronize Folders".

DISCUSSION -----

System 7.5 ships with a "Synchronize Folders" AppleScript droplet located in:

Apple Extras:AppleScript:More Automated Tasks

Here is a description of the Synchronize Folders droplet: This script compares the contents of two folders and synchronizes the contents. Example: If there is a file called "Document 1" in folder A and a file called "Document 2" in folder B the script will copy "Document 1" to folder B and "Document 2" to folder A so that both folders will contain both files. If there are files of the same name in the folders then the file with the later modification date is copied to the other folder.

It's important to note that the "Synchronize Folders" AppleScript droplet only works reliably when synchronizing two folders which do not have any folders within. It should not be used to synchronize folders which have other folders within them.

With the release of System 7.5.3, Synchronize Folders AppleScript automated task handles nested folders properly.

Article Change History:
23 Oct 1996 - Added System 7.5.3 information.
16 Feb 1995 - Reviewed for accuracy and changed keyword.

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Tech Info Library Article Number:16337

Tech Info Library

PowerBook: Color Matching with External Monitor (2/95)

Revised: 2/16/95
Security: Everyone

PowerBook: Color Matching with External Monitor (2/95)

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Article Created: 21 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

Is there a way to see exactly how a presentation I create on my desktop Macintosh will appear when I transfer it to my PowerBook Duo 270c? I have had problems matching certain shades of blue in the past.

DISCUSSION ----------

ColorSync 1.0.5, included with System 7.5, resolves this type of problem because it includes a ColorSync profile for the PowerBook Duo 270c.

ColorSync 1.0.5 is also available everywhere Apple post software updates.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword.

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Tech Info Library Article Number:16338

Tech Info Library

PlainTalk 1.3 & Net Install From Novell Netware (2/95)

Revised: 2/16/95
Security: Everyone

PlainTalk 1.3 & Net Install From Novell Netware (2/95)

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Article Created: 21 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC -----

Can I net install PlainTalk 1.3 from a Novell Netware server?

DISCUSSION -----

No. PlainTalk 1.3 will not "Net Install" from Novell Netware file servers.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

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Tech Info Library Article Number:16340

Tech Info Library

A/UX 3.1: /etc/fstab Corruption (9/94)

Revised: 9/21/94
Security: Everyone

A/UX 3.1: /etc/fstab Corruption (9/94)

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Article Created: 21 September 1994

TOPIC ----------

After reformatting my 2 GB hard drive and reinstalling A/UX 3.1 from the CD, I remembered that I forgot to make a copy of fstab. I then edited fstab with TextEditor, but now things don't work correctly. When I did a cat of /etc/fstab, I got nothing but garbage. What's wrong?

DISCUSSION ----------

After a fresh install of A/UX 3.1 (from the full installer CD, not the Upgrade), /etc/fstab is an AppleDouble file, typed 'TEXT', creator 'iAUX', the A/UX Installer's signature. Since the creator is not 'A/UX' or 'tefi' and the Finder cannot find the Installer application, the icon for /etc/fstab is the unknown (grey) text document. The system behaves correctly as long as /etc/fstab remains an AppleDouble file.

If /etc/fstab is then edited and saved with TeachText, TextEditor or any other Macintosh application, the A/UX file manager will convert it to AppleSingle format, which is not understood by fsck. This occurs because the "TBTRANSLATEUXONLY" environment variable is set (the default), and 'iAUX' is not a creator for which the file manager handles TEXT files specially which are 'DOS ', 'tefi', 'TextEditor', and 'A/UX'.

The problem is not with TextEditor, but with the A/UX file manager's handling of the TEXT file type and creator. This behavior was introduced in A/UX 3.1.

Workaround:

1) Open /etc/fstab with TextEditor (don't use TeachText).

2) Select and copy the contents of /etc/fstab into the cut-and-paste buffer (Command-C).

3) Open a new TextEditor document (Command-N) with a unique name (not

fstab); be sure that the "Save Text Only" button is set in the dialog box (this is the default).

4) Paste the contents of /etc/fstab into the new document.

5) Save the new document and quit TextEditor.

6) From the Finder, drag /etc/fstab to the Trash and empty the Trash.

7) Rename the new document to /etc/fstab.

It won't work to just do a "Save As..."; TextEditor will preserve the incorrect file creator, 'iAUX'.

Support Information Services

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Tech Info Library Article Number:16343

Direction of LaserWriter Driver Software (2/95)

Revised: 2/16/95
Security: Everyone

Direction of LaserWriter Driver Software (2/95)

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Article Created: 22 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

Here are some questions and answers about the future direction of the LaserWriter driver software.

DISCUSSION ----------

Question: Please tell me about the direction of LaserWriter 8.x software. Is Apple really promoting the use of LaserWriter 8.x? If so, why isn't it the standard driver in 7.5?

Answer: Apple is promoting the use of LaserWriter 8.x. LaserWriter 7.2 is included in System 7.5 mainly for compatibility reasons. There are still a few applications that have not been revised to take advantage of LaserWriter 8. Also, LaserWriter 8.2 (which addresses bugs with LaserWriter 8.1.1) was not available when System 7.5 was released, and so LaserWriter 7.2 was included as a "backup" driver.

Question: The Read Me of the LaserWriter 8.1.1 mentioned several compatibility problems. Are these resolved yet? The Read Me of LaserWriter 8.2 doesn't list any problems.

Answer: The majority of compatibility problems listed in the LaserWriter 8.1.1 Read Me need to be resolved in the applications themselves. We recommend that you check with the specific developers to see if they have revised their applications to resolve the problem(s) listed. LaserWriter driver 8.2 includes some bug fixes of its own, but also includes some new features as well (Please refer to the Tech Info Library article "LaserWriter 8.2: Changes to Printer Driver (9/94)").

Question: What if we go to QuickDraw GX? Wouldn't we use the QuickDraw GX driver

exclusively and therefore LaserWriter 8.x is just for temporary use until we go GX? Should our company wait until we decide on the release/roll out of 7.5/GX to make the decision on LaserWriter 8.2?

Answer: In theory you can go with LaserWriter GX exclusively. However, you will not receive all of the benefits of GX printing unless the applications you are using are GX-aware. If you encounter problems or incompatibilities with QuickDraw GX, then you might consider the following two options:

• Try using GX Helper (included as a custom install item in GX) - this option allows non-GX aware applications to turn OFF desktop printing for Apple-only printers, and use LaserWriter 7.2 if it is installed in the Extensions folder. GX Helper is only tested and supported with LaserWriter 7.2, though we have verified that it seems to work with LaserWriter 8.x and 8.xf as well.

• Fall back to LaserWriter driver 8.2 with GX turned OFF.

System 7.5 and QuickDraw GX have both been released and are available in the marketplace.

Question: Why are there two LaserWriter drivers? It seems there will be support, standards, and development difficulties with two LaserWriter driver standards.

Answer: We would suggest trying out QuickDraw GX to determine if it will meet your needs given that the majority of applications are not yet GX-aware. If it does not, LaserWriter driver 8.2 is a very robust release and should provide you with the best overall functionality. In regard to longer-term strategy, the goal is to provide the functionality of both driver platforms into one, LaserWriter GX with printer extensions.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword and format.

Support Information Services

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Tech Info Library Article Number:16345

Tech Info Library

LaserWriter 8.x: Update PPD's When Using PageMaker (9/94)

Revised: 9/22/94
Security: Everyone

LaserWriter 8.x: Update PPD's When Using PageMaker (9/94)

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Article Created: 22 September 1994

TOPIC ----------

My LaserWriter IINTX has an external hard drive attached that contains several PostScript fonts. I am using PageMaker 5.0 with the LaserWriter 8 driver. Why does the LaserWriter IINTX ignore the fonts on the external hard drive and instead download them from my System folder? This adds a significant delay when printing.

DISCUSSION ----------

Even though the fonts are available on an external hard drive PageMaker ignores the fonts until the PPD file has been updated using the Update PPD addition which can be found in the Aldus Additions menu under the Utilities menu bar. The Update PPD addition checks the external hard drive for font information and then appends it into the current PPD file. Once the PPD file is updated with the hard drive font information the printer uses the fonts on the external hard drive instead of downloading them from the system folder. Consult the PageMaker documentation for more information on the PPD Update addition.

Support Information Services

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Tech Info Library Article Number:16347

Tech Info Library

At Ease 2.0.3: Corrects AppleCD 300 Plus Ejection Problem (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0.3: Corrects AppleCD 300 Plus Ejection Problem (8/95)

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Article Created: 21 September 1994
Article Reveiwed/Updated: 14 August 1995

TOPIC ----------

The read me file that comes with the AppleCD 300 Plus drive states:

WARNING: If you shut down your computer before you eject a disc while you are using At Ease, the tray of the CD-ROM drive opens and then closes immediately. If you attempt to remove the disc as the tray opens or closes, you may damage the disc or the tray of the CD-ROM drive. (To remove a disc from the CD-ROM drive after you have shut down your computer: Start up your computer, then choose the Eject command from the Special Menu. Remove the disc and close the tray by pushing it in or pressing the Open/Close button. Then you can shut down your computer again.)

Does this problem occur in At Ease 2.0.3?

DISCUSSION ----------

With At Ease 2.0.3, this is no longer a problem. When a CD-ROM is inserted into an AppleCD 300 Plus, and you choose Shut Down from the Special menu, the CD is left in the drive. You can still choose Eject from the Special menu and the CD is ejected from the AppleCD 300 Plus drive.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword; reviewed and reformatted article.

Support Information Services

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Tech Info Library Article Number:16348

Tech Info Library

Multiple Scan 15 Display: Explanation of Screen Dimensions 9/94

Revised: 9/22/94
Security: Everyone

Multiple Scan 15 Display: Explanation of Screen Dimensions 9/94

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Article Created: 22 September 1994

TOPIC -----

The Multiple Scan 15 manual has measurements for the display that don't correspond to this display. Is the manual wrong?

DISCUSSION -----

This question arises across our entire monitor line. While it may be a bit confusing, the explanation is rather simple.

Since the advent of television in the 1940s, Cathode-ray tubes (CRTs) have been identified by their physical diagonal dimension. For example, a 19-in. television set has a CRT that measures 19-in. diagonally. However, part of the CRT is behind the plastic bezel so it measures something less than 19-in. diagonally when measured from the front of the television set. This method has been adopted not only by the television industry but also by the computer/monitor industry. All monitor vendors use this method and Apple is no different. If the bezel was removed and the Multiple Scan 15 Display CRT was measured diagonally it would indeed measure 15-inches. There is no deception intended--it's just the way it's be done for over fifty years.

Support Information Services

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Tech Info Library Article Number:16349

Tech Info Library

Macintosh: Please Insert the Disk:... Error (11/95)

Revised: 11/20/95
Security: Everyone

Macintosh: Please Insert the Disk:... Error (11/95)

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Article Created: 22 September 1994
Article Reviewed/Updated: 20 November 1995

TOPIC ----------

This article discusses possible causes for receiving the error message "Please Insert the Disk: <Hard Disk>" when shutting down.

This problem can occur on computers with either SCSI or IDE hard drives. The following computers use IDE hard disks:

Macintosh 630 Family computers•
Macintosh LC 580
Macintosh Performa 5200 series computers
Macintosh Performa 5300 series computers
Macintosh Performa 6200 series computers
Macintosh Performa 6300 series computers
Macintosh PowerBook 150 series computers
Macintosh PowerBook 190 series computers
Macintosh PowerBook 2300 series computers
Macintosh PowerBook 5300 series computers
Power Macintosh 5200/75 LC
Power Macintosh 5300/100 LC

• The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

DISCUSSION ----------

Application Specific
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The combination of QuickTime 2.x, an IDE or SCSI hard drive, and various application programs can cause the error message "Please Insert the Disk: <Hard Disk>" to appear when shutting down.

This problem occurs with versions of Virex before 5.06.

Workarounds

There are several workarounds to the problem.

1) Upgrade Virex to version 5.06 or later.

2) Switch from QuickTime 2.x to 1.6.2. However, this negates the advantages of using the advanced features of QuickTime 2.x.

3) Place a floppy disk in the drive or mount a server before shutting down. This is the simplest solution to the problem.

Hard Drive Driver Related
==========

You may also receive this error message if you are using an incompatible driver with System 7.5.1.

Workarounds
---
1) Use Apple Drive Setup 1.0.2 or Apple HD SC Setup 7.3.2, available from online services,to update to the latest version of the Apple's drivers.

2) If you are using a third-party driver, contact the driver vendor for compatibility information.

These articles can help you locate Apple Drive Setup, and Apple HD SC Setup mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
20 Nov 1995 - Added System 7.5.1 and driver information.
10 Jan 1995 - Noted that SCSI based computers can also have the problem.
02 Nov 1994 - Added additional Virex information and reclassified.

Support Information Services

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Tech Info Library Article Number:16351

Tech Info Library

LaserWriter 16/600 PS: Memory Upgrades (10/94)

Revised: 10/6/94
Security: Everyone

LaserWriter 16/600 PS: Memory Upgrades (10/94)

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Article Created: 22 September 1994
Article Reviewed/Updated: 5 October 1994

TOPIC ----------

What are the memory requirments when upgrading the LaserWriter 16/600 PS?

DISCUSSION ----------

The LaserWriter 16/600 contains two 72 pin SIMM sockets which support 4, 8, and 16MB SIMMs. The speed on all SIMMs should be 80ns or faster. The specific configurations supported are listed below.

4 MB SIMM

Configuration: 1 Mbit x 32 bit (One 4 MB bank)
Refresh: 2K or 4K

8 MB SIMM

Configuration: 2 Mbit x 32 bit (Two 4 MB banks)
Refresh: 2K or 4K

16 MB SIMM

Configuration: 4 Mbit x 32 bit (One 16 MB bank)
Refresh: 2K Row (11 bit x 11 bit)

NOTE: 16 MB SIMMs with a 4K Row (10 bit x 12 bit) refresh configuration are not compatible with the LaserWriter 16/600 PS.

These are the supported memory configurations. Pay particular attention to note number 5 below which provides information about specific configurations that are not supported.

SIMM Sockets

Left	Right	Total	Notes
8 MB	--	8 MB	(1)
8 MB	4 MB	12 MB	(2)
8 MB	8 MB	16 MB	
16 MB	8 MB	24 MB	(3)
16 MB	16 MB	32 MB	(4)

Notes:
1) This is the standard configuration shipped from Apple.
2) This is the minimum configuration for enabling PhotoGrade.
3) This configuration requires moving the base 8MB SIMM from the left to the right SIMM socket. Due to space constraints, the left SIMM should always be installed before the right SIMM is installed.
4) This configuration requires removing the standard 8 MB SIMM.
5) Memory configurations of 16+0=16MB and 16+4=20MB are not supported by this product.

Article Change History:
5 Oct 1994 - Changed access

Support Information Services

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Tech Info Library Article Number:16352

Tech Info Library

Color StyleWriter 2400: Ink Tank vs. Ink Cartridge (9/94)

Revised: 9/27/94
Security: Everyone

Color StyleWriter 2400: Ink Tank vs. Ink Cartridge (9/94)

==========

Article Created: 22 September 1994

TOPIC --------------------

What is the difference between an ink cartridge and an ink tank on the Color StyleWriter 2400?

DISCUSSION --------------------

The Color StyleWriter 2400 supports two different ink cartridges depending on the type of printing desired. The High-Performance Ink Cartridge (M3240G/A) is similar in design to the ink cartridge use on the StyleWriter II. It is a one-piece assembly that contains the printhead and a black-only ink container. The printhead used on this cartridge contains 128 nozzles, which is twice the number found on a StyleWriter II cartridge, allowing the printer to print up to 3 pages per minute. When this cartridge runs out of ink the complete ink cartridge must be replaced.

For color printing Apple sells the Color Ink Cartridge (M3328G/A) which consists of a separate printhead assembly, color ink tank, and black ink tank. The color ink tank contains the cyan, magenta, and yellow inks. The black ink tank contains only black ink. Instead of replacing the complete color ink cartridge when one of the colors runs out, the empty ink tank can be replaced. This strategy costs substantially less than replacing the complete ink cartridge with the printhead. The Color Ink Tank is available as M3329G/A, and the Black Ink Tank is available as M3330G/A.

Support Information Services

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Tech Info Library Article Number:16353

Tech Info Library

ARA & Express Fax Software With Express Modem & GeoPort (2/95)

Revised: 2/8/95
Security: Everyone

ARA & Express Fax Software With Express Modem & GeoPort (2/95)

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Article Created: 21 October 1994
Article Reviewed/Updated: 8 February 1995

TOPIC ----------

Will an Express Modem, or GeoPort with the latest Express Modem software and ARA installed, route the incoming calls to the correct application, Faxes to Fax Terminal and data to ARA?

Also if Apple Phone is running, do calls get routed to it, or if Apple Phone is not running but an answering machine and/or telephone is chained off the GeoPort, do voice calls go to it?

DISCUSSION ----------

GeoPort with Fax Software and ARA

Macintosh computers using a GeoPort are capable of auto-answering an incoming call and switching to the appropriate application: ARA, Fax Terminal, or voice to a telephone. With current versions of ARA and the GeoPort with Express Modem software, the telephone signal automatically gets switched to the correct application. There is currently no provision to switch to a "voice" or other data application although this may be possible in the future.

Express Modem with Fax Software and ARA

Macintosh PowerBook and Macintosh 630 family computers with Express modems are also capable of auto-answering an incoming call and switching to the appropriate application: ARA or Fax Terminal.

GeoPort with Apple Phone, Fax Software, and ARA

First, Apple Phone only works with Quadra 660AV and 840AV systems, and it is not currently compatible with any Power Macintosh, PowerBook, or other Macintosh computers. Apple Phone 1.0.1 is not compatible with either ARA Personal 2.0, or

Fax Terminal 1.2 software. You can run only one telecommunications application at a time using the GeoPort telecommunications adapter. Remember the Express Modem software counts as one application, and you can have multiple applications that use this software running at the same time. Apple Phone, which is not modem-based, does not use the Express Modem software, so you have an either/or situation if you want to use Apple Phone software.

Auto-switching to Apple Phone may be possible with future versions but as of October 1994 it is not a feature.

Fax Machine Compatibility

Some fax machines do not send the mandatory fax "calling tone", and therefore are not recognized as a fax when the Fax Arbitrator is active and deciding whether an incoming call is fax or data.

If you are uncertain whether the sending fax machine should work with Fax Terminal and ARA, the calling tone is a one-second beep, followed by a one-second pause, followed by the "phone ring". The beep can actually occur before -- or after -- the phone ring, that is, the sequence can be ring-pause-beep instead. Regardless, this three-second sequence must start as soon as the dialing modem goes off-hook.

The following is specified in the CCITT specification:

"Calling Tone: To indicate a calling non-speech terminal. This signal is mandatory for automatic calling and optional for manual units."

Article Change History:
08 Feb 1995 - Added keyword; made several technical updates.
Support Information Services

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Tech Info Library Article Number:16355

System 7.5: What's New In This Version of PowerTalk (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: What's New In This Version of PowerTalk (2/95)

==========

Article Created: 22 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

Now that System 7.5 has been released, what's new in the version of PowerTalk included with it?

DISCUSSION ----------

PowerTalk 1.1 in System 7.5 contains performance and Human Interface improvements and bug fixes. Here are some of the changes from PowerTalk 1.0 to PowerTalk 1.1:

• AppleGuide has been added for AppleMail and PowerTalk.

• The Key Chain, Personal Catalog, Find in Catalog and an alias to AppleMail are now in the "Mail and Catalogs" sub-folder in the Apple Menu Items folder.

Mailer

• Items can now be dragged from the type-in addressing panel to any place that is valid (for example "To:" field in mailer, personal catalogs, folders).

• The term "Catalogs" in the type-in addressing panel was changed to "Kind".

• A "postmark" symbol is added to the mailer once a letter has been sent.

Mailbox

• The tags dialog was changed to allow multiple tags to be added at once.

• The Mark (Un)Read command was added to the In Tray.

• The "Copy Local" confirmation dialog was removed.

• Out Tray aging of 0 days was made invalid.

• The Problem Alert button was made more visible.

KeyChain

• When the Key Chain is first created, it now appears in the Mail and Catalogs folder in the Apple Menu Items folder rather than on the desktop. The user is free to move the key chain to any location they prefer.

• An option was added in the PowerTalk Setup control panel to have the Key Chain prompt for a password at startup.

• The name of the "PowerTalk Key Chain" was changed to "Key Chain".

• The help dialog was added to the Key Chain window.

Catalog Browser

• When creating new addresses, phone numbers, or dialup service attributes, these attributes are automatically opened after the attribute is created.

• In the Group Info page, the number of members in the group is now shown.

• When a Catalog Folder is dragged and dropped in the Finder, an alert now appears to inform the user that an alias to the Catalog Folder is being created in the Finder.

Digital Signatures

• In the standard digital signature verification dialog, the text "Verification successful" was changed to "The signature is valid."

• The text in the digital signature Finder verify dialog was changed to read "The signature for X is valid" instead of "X was successfully verified." and the sentence "The status of the signature is valid." was removed.

AppleMail

• AppleMail changed from 1.0 to 1.1, the International version.

• The default memory partition for AppleMail was reduced.

• AppleMail can now save a received letter as a Letterhead. The letterhead has the same content as the original letter, but the mailer (To, Subject, Enclosures) is empty.

• The Reply option (All Recipients/Sender Only) in AppleMail was made "sticky", that is, the option that the user selects remains in effect for subsequent replies unless the user changes it.

• The text for the "Close" menu item was changed, depending on whether the "Show options when closing a letter" preference was selected and whether the option

key is held down. Without the option key, if "Show options" is selected, the menu item reads "Close..." and if "Show options" is not selected the menu item reads "Close". With the option key, if "Show options" is selected, the menu item reads "Close without options" and if "Show options" is not selected, the menu item reads "Close with options".

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword and format.

Support Information Services

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Tech Info Library Article Number:16356

Tech Info Library

Duo Type II & Type III Batteries: Included Software (9/94)

Revised: 9/23/94
Security: Everyone

Duo Type II & Type III Batteries: Included Software (9/94)

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Article Created: 23 September 1994

TOPIC --

This article contains some commonly asked questions about batteries and related software for the PowerBook Duos.

DISCUSSION --

Q: IF I PURCHASE A TYPE II OR TYPE III BATTERY, WILL I STILL BE ABLE TO USE MY OLD BATTERIES?
A: Yes. With Type II Software installed, Type I or II batteries will work. With Type III Software installed, Type I, II or III will work.

Q: IF I PURCHASE A NEW BATTERY FOR MY POWERBOOK DUO 210/230, WHAT SOFTWARE WILL I NEED?
A: With each battery purchase, software to enable your PowerBook to use that battery will come with it.

Type II batteries come with three disks; Duos InstallMeFirst, Duos Extras, and Duos Disk Tools. Substitute these for the disks with the same names in the set you already have. Then install this new software. Basically, this will add the PowerBook Duo Enabler (v1.0). If you have an internal modem, it is suggested that you also install the Duo Battery Patch.

Type III batteries come with a disk called Battery Tools. The Read Me file tells you to install the Type III Battery extension. This extension replaces the Duo Battery Patch and the Battery Patch can be removed from the System Folder.

Q: I HAVE A TYPE II BATTERY NOW ALONG WITH AN EXPRESS MODEM. I HAD TO INSTALL THE DUO BATTERY PATCH. IF I PURCHASE A TYPE III BATTERY, WILL I STILL NEED THE PATCH?
A: No. The Type III Battery extension replaces the Duo Battery Patch. The Duo Battery Patch can be removed from the System Folder. Also, the patch was rolled into the PowerBook Duo Enabler (V2.0).

Q: SHOULD I INSTALL THE NEW ENABLER ON MY POWERBOOK DUO 210/230?
A: NO. The PowerBook Duo Enabler (V2.0) will not work with System 7.1. System 7.1.1 or later is required.

Q: IF I UPGRADE TO SYSTEM 7.5, WHAT ENABLERS AND EXTENSIONS SHOULD I USE FOR MY TYPE II OR TYPE III BATTERIES?
A: System 7.5 comes with all of the enablers, patches and extensions needed to run Type II and Type III batteries. Nothing else need be added.

Support Information Services

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Tech Info Library Article Number:16358

Tech Info Library

Apple Media Tool: Running a Project in Windows (9/94)

Revised: 9/23/94
Security: Everyone

Apple Media Tool: Running a Project in Windows (9/94)

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Article Created: 23 September 1994

TOPIC ----------

A customer is getting an error message when trying to run a Media Tool project in Windows. The error reads:

Cannot use media >C:/MOVTEST/MEDIA/TITLE.MOV<! {-2004}

The project contains nothing but a single QuickTime movie. The movie will play with the Movie Player, but the Media Tool project will not launch without returning this error. The project and media was copied from the Macintosh to a Novell server, then to the target PC.

DISCUSSION ----------

There are very specific steps needed to run an Apple Media Tool (AMT) project under Windows. If these steps are followed, it will work correctly. I will outline the steps needed (and which I took to verify proper operation):

Preparation:
Make sure all media files conform to the DOS naming conventions. (eight characters followed by an optional period and three character extension.). Also, make sure the QuickTime movie is saved with the "Make movie self-contained" option from the MoviePlayer (flattened).

Testing Configuration:
Macintosh: 8150 WGS w/1GB hard drive, 24MB RAM, System 7.5, AMT 1.1
PC: Intel 90MHz Pentium, 16MB RAM, 500MB...

Procedure:
1. From the Macintosh, launch AMT. A new map window is displayed.

2. Click the "Creation" tool (looks like a plus sign) and click once in the untitled map window. A new screen is created, titled "screen 1". Double-click the screen to open it.

3. Hit "cmd-y" to add a media element. A Standard File Dialog box opens. Select a QuickTime movie. In this case it was one of the samples that comes on the AMT CD. Double-click it to add it to the project.

4. At the bottom of the Macintosh screen, there are 3 windows titled, respectively from left to right: "Media", "Objects", and "Actions". In the "Media" window, you will now see the QuickTime movie that was added. Drag the QuickTime movie listed to the window "Untitled 1•Screen 1". (The open screen that was created and opened in step 3).

5. At the top of the "Actions" window, click the "Before Display" pop-up menu item and change it to "After Display".

6. Hit "cmd-h" to insert another command in the "Action" window. Click the pop-up menu for the new command, and change it to "Start".

7. Close the "Untitled 1•Screen 1" window.

8. Select "Save as text..." from the file menu. When the Standard File Dialog box comes up, there will be a check box in the bottom left corner labelled "Backup media". In order to make sure everything is included in the project when you move it to a Windows machine, I would suggest checking this box. It will create a "MEDIA" folder/directory whereever you save the file, and copy the QuickTime movie into it, along with some other needed files.

9. Type in a name, leaving the ".k" filename extension in place. Click "Save".

10. Quit AMT and run "RunTime Maker". When the dialog box for RunTime Maker appears, there will be check boxes at the bottom for Macintosh or Windows platforms. Check Windows, uncheck Macintosh.

11. Click the "Make" button, which will open the Standard File Dialog box. Select the project file (the one that ends with the ".k") you created in step 9, and double-click.

12. After a time, RunTime Maker will be finished, and you'll have several new files in the location that the project was saved in. Copy the files that have the PC icon and the "MEDIA" folder/directory to the target DOS machine. From Windows, run the .exe file that was copied over and it will run correctly.

The main point here that is not readily apparent from any documentation that I have is that the "MEDIA" folder must be copied to the target machine and reside in the same directory as the .exe file. (Please note that I call them folders on the Macintosh platform, and directories on the DOS machines - the names are interchangeable when switching platforms). Inside the "MEDIA" directory must reside the QuickTime movie (or any other media that is used). After running RunTime Maker, all the files that RunTime Maker creates, and all the files in the MEDIA directory must be copied to the target machine, making sure the MEDIA directory is where it is supposed to be (again, in the same directory as the .exe file)

Sorry to be so long winded, but by following EXACTLY the steps outlined above,

the project will play consistently on the Windows machine.

Support Information Services

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Tech Info Library Article Number:16359

Tech Info Library

MAE 1.0: Window Resizing Problem And Workaround (4/96)

Revised: 4/8/96
Security: Everyone

MAE 1.0: Window Resizing Problem And Workaround (4/96)

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Article Created: 23 September 1994
Article Reviewed/Updated: 8 April 1996

TOPIC ----------

For some time I've been having problems resizing my MAE window and I cannot think of what else to look for. Below are my environment variables. What am I missing?

```
gaea(55)%env
HOME=/home/admin/worsham
PATH=/usr/openwin/bin:/opt/SUNWspro/bin:/opt/SUNWwabi/bin:/opt/X11R5/bin:/opt
/apple/bin:/opt/ioffice/bin:/opt/tex/bin:/opt/ncar/bin:/bin:/usr/bin:/usr/sbi
n:/usr/ucb:/etc:/usr/lib/nis:/usr/ccs/bin:/usr/ccs/lib:/opt/bin:/usr/ucblib:.
LOGNAME=worsham
HZ=100
TERM=sun-cmd
TZ=US/Eastern
SHELL=/bin/csh
MAIL=/var/mail/worsham
SHLVL=1
PWD=/home/admin/worsham
USER=worsham
HOST=gaea
HOSTTYPE=sun4
XAPPLRESDIR=/usr/openwin/lib/app-defaults:/opt/lib/app-defaults
OPENWINHOME=/usr/openwin
SUNPROHOME=/opt/SUNWspro
WABIHOME=/opt/SUNWwabi
APPLEHOME=/opt/apple
X11R5HOME=/opt/X11R5
TeXHOME=/opt/tex
NCARG_ROOT=/opt/ncar
NCARG_LIB=/opt/ncar/lib
GIS=/opt/grass
GISBASE=/opt/grass/grass.data
```

```
ISLANDHOME=/opt/ioffice
IDL_DIR=/opt/idl
PAGER=more
LD_LIBRARY_PATH=/opt/SUNWspro/lib:/opt/SUNWwabi/lib:/usr/openwin/lib:/usr/ccs
/lib:/usr/ucblib:/usr/lib:/opt/X11R5/lib:/opt/apple/lib
MANPATH=/usr/share/man:/opt/SUNWspro/man:/opt/SUNWwabi/man:/usr/openwin/man:/
opt/tex/man:/opt/ncar/man:/opt/man:/usr/man:/opt/X11R5/man:/opt/ioffice/man:/
opt/apple/man
EDITOR=emacs
TBFILEFORMAT=1
MYBIN=~/bin
MYPROMPT=%
DISPLAY=:0
gaea(56)%groups
staff staff
gaea(57)%
```

DISCUSSION ----------

The MAE 1.0 window resizing issue you've encountered was caused by the environment variable, TBFILEFORMAT, which you set to 1 in your environment variables. This, in turn, caused MAE to create two files, "Finder Preferences" and "Monitors.Preferences" in AppleDouble file format in the System\ Folder/Preferences folder. The "Monitors.Preferences" file, in AppleDouble format, doesn't seem able to update the window size in the Finder properly. Without TBFILEFORMAT being set to 1, which is the default, MAE creates these two files in AppleSingle file format.

We were able to verified this. A SPR (Software Problem Report) will be submitted to MAE Engineering's attention.

We suggest the following to make window resizing work:

1) Login as your own account.

2) Do the command to unset the TBFILEFORMAT:

   for CSH: unsetenv TBFILEFORMAT
   for SH or KSH: unset TBFILEFORMAT

   DO NOT set the TBFILEFORMAT environment variable to 1 in your .login or .profile file.

3) Go to your System\ Folder/Preferences directory and remove the Finder and Monitors Preference files:

   cd System\ Folder/Preferences
   rm Finder\ Preferences Monitors.Preferences

4) Launch mae and resize the window normally.

Article Change History:

08 Apr 1996 - Specified this is MAE 1.0 issue.

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Tech Info Library Article Number:16361

Tech Info Library

WiggleWorks for Macintosh: Description (1/95)

Revised: 1/23/95
Security: Everyone

WiggleWorks for Macintosh: Description (1/95)

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Article Created: 23 September 1994
Article Reviewed/Updated: 23 January 1995

TOPIC ----------

This article describes WiggleWorks for Macintosh.

DISCUSSION ----------

Features

Engaging ways to build reading skills
• Highlights text as the narrator reads it, or lets children read without assistance
• Speaks selected individual words
• Recites text typed in by the child
• Plays back sentences recorded by the child*
• Allows children to create their own word lists

Creative options for promoting writing skills
• Lets children customize the words and pictures of WiggleWorks stories
• Includes a coloring-book version of each story
• Prompts children with ideas for their own stories
• Makes it easy to add words from the word lists

Fun to use
• Holds readers' attention by using different illustrations, narrators, and music styles for each story
• Lets children draw pictures for the WiggleWorks stories or their own writing
• Features the delightful WiggleWorks worm to guide children through activities Access features for children with visual or motor impairment
• Large text
• On-screen keyboard
• Talking buttons
• Spoken feedback of typed letters

- Command selection without pointing

Parent involvement

- Lets you customize the WiggleWorks setup for different reading skill levels
- Offers suggestions for helping your children create their own stories
- Allows you to leave recorded messages*
- Includes ideas for related reading, drawing, singing, and play activities

* Requires a microphone built into or attached to the computer.

WiggleWorks software makes learning to read and write fun. This CD-ROM–based program is unique among electronic books because it includes multiple creative activities that build both reading and writing skills in children ages 3 to 8. And it's so fun that your youngsters will want to use it over and over again. With WiggleWorks, you can get involved with your children's learning as they explore all three engaging books included in each package.

The WiggleWorks series was developed by Scholastic, Inc., one of the most trusted names in educational materials for nearly 75 years. Because it's based on comprehensive educational research, WiggleWorks helps children build the language skills they'll need to succeed in every aspect of school.

To maximize its educational benefits and its ongoing appeal to children, WiggleWorks can be used in a variety of ways. Beginning readers can listen and watch as a narrator reads each book and the computer highlights the text being read. (You can set the reading pace to meet the needs of different children or the progressing abilities of one child.) Beginners can also play with and learn about individual letters of the alphabet. More advanced readers can read the text themselves, with selected words spoken as needed. And children can record and play back their own voices.

WiggleWorks stimulates creativity while it teaches basic skills. Children can write and illustrate their own stories, or modify an existing WiggleWorks book. For even more fun, they can print their stories (in black and white, or in color with a color printer).

Each WiggleWorks CD-ROM features three different books, all with appealing characters and delightful illustrations. Activity cards suggest how you can help children get the most enjoyment and educational benefit from each book. With a microphone, you can also add spoken messages to books, such as activity ideas or words of encouragement.

WiggleWorks: The best learning tools from the classroom, now available from Apple for your own home.

Article Change History:
23 Jan 1995 - Corrected spelling of WiggleWorks.

Support Information Services

..TIL16362-WiggleWorks_for_Macintosh-Description_1-95.pdf

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Tech Info Library Article Number:16362

Tech Info Library

WiggleWorks for Macintosh: Specifications (1/95)

Revised: 1/23/95
Security: Everyone

WiggleWorks for Macintosh: Specifications (1/95)

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Article Created: 23 September 1994
Article Reviewed/Updated: 23 January 1995

TOPIC ----------

This article provides the specifications for WiggleWorks for Macintosh.

DISCUSSION ----------

System requirements

- Apple Macintosh or PowerBook computer with 68020 or later processor, or Apple Power Macintosh computer*
- 4MB of RAM
- System 7
- Hard disk
- 12-inch or larger color monitor
- CD-ROM drive
- Voice recording requires microphone

* WiggleWorks for Windows scheduled for availability in early 1995.

Ordering Information

WiggleWorks for Macintosh, In the U.S., Order No. M3596LL/A
- One CD-ROM disc
- Parent activity cards
- User manual

A classroom version of WiggleWorks is available from Scholastic. It includes 72 different books (in softcover, audio cassette, and optional electronic versions), plus teaching plans, assessment guide, program guide, book rack, software guide, and staff development video. Contact Scholastic, Inc. at +1 (800) 325-6149 for more information.

Article Change History:
23 Jan 1995 - Corrected spelling of WiggleWorks.

Support Information Services

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Tech Info Library Article Number:16363

WiggleWorks Product Brief (1/95)

Revised: 1/23/95
Security: Everyone

WiggleWorks Product Brief (1/95)

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Article Created: 23 September 1994
Article Reviewed/Updated: 23 January 1995

TOPIC ----------

This article is a brief description of WiggleWorks for Macintosh.

DISCUSSION ----------

Product Description

WiggleWorks is an entertaining story collection that uses fun activities to help children learn to read and write.

Prospects

Parents of children ages three to eight.

Key Selling Points

- Helps children learn the basics of reading and writing
- Fun activities expand kids' creativity
- Involves parents
- Lets children work at their own pace.
- Keeps kids' attention for long-term value.

- Helps children learn the basics of reading and writing.
  - Read books. Kids can read a WiggleWorks story themselves, or have the narrator read it for them. They can click on unfamiliar words to hear them read out loud. "My Words" lets children choose words from the stories to build a personal word list. With a microphone, kids can also record themselves reading, then listen to how they sound.
  - Write stories. Kids can use WiggleWorks to write their own stories, which can include words from their own word list and the WiggleWorks word list. The "Story Starters" feature is available if young writers need ideas for beginning their stories. "Paint Tools" lets children

create pictures to accompany their writing.
- Practice the alphabet. Kids can learn to recognize letters by playing with them on WiggleWorks' electronic "magnet board." To coach kids along, their friendly worm host can speak the letters and suggest fun things to do with them.

• Fun activities expand kids' creativity. WiggleWorks helps children become creative writers. their imagination is the only limit to what they can do with it.

To entertain and inspire kids, the WiggleWorks CD includes three books with colorful illustrations and engaging music:
- Peanut Butter Rhino. A story about a happy-go-lucky rhino who yearns for his missing peanut butter sandwich.
- Birds on Stage. Rhymes and riddles about a family of feathered friends.
- Frog's Lunch. A tale about a frog and his rather unfortunate lunch: an innocent fly.

Kids can rewrite and re-illustrate the WiggleWorks stories as much as they like, using existing characters or adding themselves and their friends as characters. They can also write and illustrate their own stories. Their guide for these and other activities is the friendly WiggleWorks worm.

• Involves parents. Each WiggleWorks story comes with a parent activity card that offers ideas for writing stories and for related reading, drawing, singing, and play activities that parents and children can participate in together. With a microphone, parents can also record ideas and words of encouragement for their kids.

• Lets children work at their own pace. With WiggleWorks, kids and their parents are in control of the learning environment. If the exercise is reading, parents can set the pace at which text is highlighted and read by the narrator; they can even customize the settings for different children. WiggleWorks also lets kids choose their own stories and signals them when its time to turn the page. In addition, kids can choose to read to themselves, read outloud, or write their own stories. If the exercise is writing, kids can take all the time they need to develop a story.

• Keeps kids' attention for long-term value. WiggleWorks combines story telling, drawing, reading, and writing activities -- typically found only in individual software packages -- on one convenient CD-ROM disc. This variety means that kids will find exciting new things to do with WiggleWorks every time they use it -- so they'll want to keep using it for a long time. And the customization features enable parents to keep WiggleWorks challenging as kids get older and increase their skills.

Product Details
• Any Apple Macintosh computer with a 68020 or later processor, including Macintosh LC, Macintosh II, Macintosh Performa, Macintosh Centris, Macintosh Quadra, Power Macintosh, and PowerBook computers.

- At least 4 megabytes of memory.
- A 12-inch or larger color display.
- A CD-ROM drive.
- System software version 7.0 or later.
- Recommended: A microphone (for recording children's and parents' voices).

Availability and Localization

- WiggleWorks will be ready for order in late September, 1994. It's presently available in U.S. English.

Article Change History:
23 Jan 1995 - Corrected spelling of WiggleWorks.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16364

Tech Info Library

Macintosh and PCI Card Compatibility (9/94)

Revised: 9/23/94
Security: Everyone

Macintosh and PCI Card Compatibility (9/94)

==========

Article Created: 23 September 1994

TOPIC -----

Will the majority of the Intel machine PCI cards be able to run in Macintosh computers with the proper software driver? Where does Open FirmWare enter the picture?

DISCUSSION -----

Most PCI cards that do not need to be active on boot (video cards would need to be active at bootup, network cards wouldn't) will be able to function in our machines with the proper software driver loaded. Since the PCI standard is well-defined, there shouldn't be a problem with the hardware. So the answer to question #1 is: Yes, it is safe to assume that.

Open Firmware is required for boot registration services - in other words, in order for the card to be recognized before any OS software loads, a PCI card in our machine will have to be Open Firmware compliant. This would apply to cards such as video and hard drive controller cards.

Open Firmware compliant PCI cards are not necessarily the norm at this time, but that is changing. With the push for standards-based hardware and software, and Apple's evangelism of Open Firmware, vendors may see this as an advantage.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16365

Tech Info Library

LaserWriter Driver 8.2 and Unknown PPD Files (9/94)

Revised: 9/26/94
Security: Everyone

LaserWriter Driver 8.2 and Unknown PPD Files (9/94)

==========

Article Created: 26 September 1994

TOPIC ----------

We have just installed LaserWriter driver 8.2, and there are 3 new PPD files in the "Printer Descriptions" folder:

- LaserWriter Pro 400
- LaserWriter Pro 405
- LaserWriter Select 610

Are these new Apple printer models?

DISCUSSION ----------

All of the Apple printers mentioned are sold only in Japan. The LaserWriter Pro 400 and 405 are OEM laser printers, and the LaserWriter Select 610 is the Japanese version of the LaserWriter Select 360. All of these printers have been optimized for Kanji font use. There are no plans to market these printers in the U.S.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16366

Tech Info Library

LaserWriter Fax: Adding a Logo to The Fax Cover Sheet (2/96)

Revised: 2/23/96
Security: Everyone

LaserWriter Fax: Adding a Logo to The Fax Cover Sheet (2/96)

==========

Article Created: 26 September 1994
Article Reviewed/Updated: 23 February 1996

TOPIC ----------

I am using the LaserWriter 8 driver with an Apple printer that has PostScript Fax capability. I would like to create a custom cover page with my company logo on it, but cannot find any information on how to create a custom cover page to use with LaserWriter 8 driver.

DISCUSSION ----------

We have verified the use of custom cover pages with a workaround we received from engineering. There are two necessary files:

- Instructions on creating a custom cover page.
- File to be imported into Adobe Illustrator.

This is a workaround, and it does have limitations. Please look at the "Caveats" section below in the instructions.

NOTE: Using this procedure with a third party printer has not been verified, so it may not work.

Custom Cover Page Workaround Instructions

Creating a custom cover page using Adobe Illustrator 5.0

1) Create a new file using Adobe Illustrator 5.0 by picking "New" from the file menu.

2) Pick "Place Art..." from the File menu.

3) Locate the file named "Custom Cover Page Info.EPS" (included with these instructions) and click the "Place" button to place

it on the page. (A square box will appear that contains all of the standard cover page information - such as: name, company, fax number, notes, and so on).

4) Position the placed art.

5) At this point, you can draw your logo, type your company name, or whatever you want.

NOTE: If you need to import bitmapped images, you must first use a program like Adobe Streamline to convert the images to PostScript line art, and then save the file in Illustrator 88 format WITH an EPS header and NO preview. Pick "Place Art..." again from the File menu of Adobe Illustrator, select the file you just saved and go through the same procedure placing the image where you want on the page.

6) Pick "Save as..." from the File menu.

7) Save the file in Illustrator 88 format with:

- "Preview" set to "None (Include EPSF Header)".
- Be sure that the "Include Placed Images" checkbox is selected.

8) Illustrator will warn you that "Saving this document in older Adobe Illustrator file formats may disable some Illustrator editing features within this document when it is read back in." Click the OK button.

NOTE: If you think that you will want to make modifications to the cover page in the future, you might want to save a separate copy of this file in the latest Illustrator format that you can.

9) The resulting file can now be used by LaserWriter 8f as a custom cover page. When in the Fax Cover Page dialog of LaserWriter 8f, click on the popup field "Cover Page to Use" and select "Change" to locate your cover page.

Caveats

Adobe Illustrator versions:

Only version 5.0 of Adobe Illustrator works with this process. Versions 88, 3.2, or 5.5 DO NOT currently work with the cover page EPS file we have included.

Fonts:

Only printer-resident fonts can be used on a custom cover page.

Placed Images:

Bitmapped images will not work correctly when placed in the custom coverpage. Adobe Streamline must be used to convert bitmaps to PostScript line art for the resulting output to work correctly.

Copy all text between the dashed lines, paste it into a SimpleText document and save it as: "Custom Cover Page Info.EPS" -- it is important to make sure that the file is named identically.

NOTE: If you are knowledgeable in PostScript, the fonts and location of text can be changed by modifying the PostScript in the "Custom Cover Page Info.EPS" file you create in SimpleText.

CAUTION: If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

==========

```
%!PS-Adobe-3.0 EPSF-3.0
%%BoundingBox: 0 0 361 352
%%Creator: (Dan Meader)
%%Title: (Custom Coverpage.EPS)
%%CreationDate: (04/14/94) (11:30 AM)
%%EndComments

15 dict begin

/str4 (    ) def
/tFont /Times-Bold def
/tFontSize 14 def
/tCurLineY 352 tFontSize sub def % must equal(bbox's top margin)-font size
/tCol1X 0 def
/tCol2X 115 def

/CR {/tCurLineY tCurLineY tFontSize sub def} def
/MakeShowable {dup where {exch get 100 string cvs} {pop (Unknown)} ifelse} def

/PrintTimeSent {
     tCol1X tCurLineY moveto (Date: ) show tCol2X tCurLineY moveto
     /TimeSent dup where
     {
          exch get
          dup 1 get str4 cvs show (/) show
          dup 2 get str4 cvs show (/) show
          dup 0 get str4 cvs show ( ) show
          dup 3 get str4 cvs show (:) show
          dup 4 get str4 cvs show (:) show
               5 get str4 cvs show
     }
```

```
     {
          pop (Unknown) show
     } ifelse CR
} def

/PrintCoverNote {
     /CoverNote where
     {
          pop tCol1X tCurLineY moveto (Note:) show CR
          CoverNote {tCol1X tCurLineY moveto show CR} forall
     } if
} def

/ISOLatin1EncodedFont tFont findfont dup length dict begin {def}forall
/Encoding ISOLatin1Encoding def currentdict /FID undef currentdict end
definefont tFontSize scalefont setfont

tCol1X tCurLineY moveto (To:)            show tCol2X tCurLineY moveto
/RecipientName  MakeShowable show CR
tCol1X tCurLineY moveto (Company:)           show tCol2X tCurLineY moveto
/RecipientOrg    MakeShowable show CR
tCol1X tCurLineY moveto (Fax:)                show tCol2X tCurLineY moveto
/CalleePhone    MakeShowable show CR
CR
tCol1X tCurLineY moveto (From:)               show tCol2X tCurLineY moveto
/SenderName     MakeShowable show CR
tCol1X tCurLineY moveto (Company:)           show tCol2X tCurLineY moveto
/SenderOrg       MakeShowable show CR
tCol1X tCurLineY moveto (Fax:)                show tCol2X tCurLineY moveto
/CallerPhone    MakeShowable show CR
tCol1X tCurLineY moveto (Voice:)             show tCol2X tCurLineY moveto
/SenderPhone     MakeShowable show CR
CR
tCol1X tCurLineY moveto (Pages w/o Cover:)   show tCol2X tCurLineY moveto
/nPages         MakeShowable show CR
CR
PrintTimeSent
CR
PrintCoverNote

end

%%EOF
```

==========

Article Change History:
23 Feb 1996 - Updated Step 7 and added additional information.
24 Oct 1995 - Added Postscript code placemarkers.
06 Oct 1995 - Updated title, lowered security.

Copyright 1994-96, Apple Computer, Inc.

..TIL16367-LaserWriter_Fax-Adding_a_Logo_to_The_Fax_Cover_Sheet_2-96_(TA32566).pdf

Tech Info Library Article Number:16367

Tech Info Library

Power Macintosh: Print Monitor Launches Then Quits (3/95)

Revised: 3/3/95
Security: Everyone

Power Macintosh: Print Monitor Launches Then Quits (3/95)

==========

Article Created: 26 September 1994
Article Reviewed/Updated: 03 March 1995

TOPIC ----------

I'm having a problem with my Power Macintosh 8100 (upgraded from a Quadra 800), every time the computer is turned on, the Print Monitor immediately begins launching and quitting over and over again. In order to do a Shut Down, I have to remove Print Monitor from the Extensions folder.

I have reformatted the hard drive, reinstalled system software, and zapped PRAM, none of which helped my problem. What else can I do?

DISCUSSION ----------

This appears to be caused by corrupted Parameter RAM. It appears the system thinks there is something to print, so the Print Monitor is launched. It then determines there is nothing to print, and therefore quits.

While zapping PRAM is a good first step, sometimes it is necessary to disconnect all power from the logic board to completely clear the contents of all circuits. To resolve this probelm, remove the battery for a few minutes then reinstall it and everything should work fine.

This situation could also manifest itself in other members of the Power Macintosh family such as the 6100 and 7100.

Article Change History:
03 Mar 1995 - Noted issue can occur in other Power Macintosh computers.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16368

Tech Info Library

Infrared Receivers: Protocol Used (1/95)

Revised: 2/1/95
Security: Everyone

Infrared Receivers: Protocol Used (1/95)

==========

Article Created: 26 September 1994
Article Reviewed/Updated: 31 January 1995

TOPIC -----

What infrared protocols does the Macintosh TV and Macintosh 630 family work with? I want to use a universal remote control, but I don't know what command set I need.

DISCUSSION -----

Both the Macintosh 630 family and Macintosh TV use the standard Sony command set. A universal remote control that supports the Sony command set can be used to control these devices.

There are no specific infrared receiver (IR) protocols published by Apple Computer, Inc.

Article Change History:
31 Jan 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16369

Tech Info Library

LaserWriter Pro 630: Using Non-PostScript in PS Mode (9/94)

Revised: 9/26/94
Security: Everyone

LaserWriter Pro 630: Using Non-PostScript in PS Mode (9/94)

==========

Article Created: 26 September 1994

TOPIC ----------

I have a LaserWriter Pro 630 connect to a Macintosh using the LocalTalk port. I also have a Sun workstation connected to the printer using the RS-232 port. I want to print both PostScript and non-PostScript files without reconfiguring the printer. Can I do this?

DISCUSSION ----------

This can be done by setting the default mode for both ports to be PostScript and then on a per job basis change the mode to be PCL (text). To change from PostScript to PCL, do the following:

1. Put the thumb-wheel selection switch to #1. This sets up both the RS-232 port and the LocalTalk port to PostScript.

2. Append the following PostScript command to the front of a text file.

   currentfile /LaserJetIIP statusdict /emulate get exec

Note: the command is case sensitive.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16371

Tech Info Library

QuickTime 2.0: Supports Indeo Compression (9/94)

Revised: 9/26/94
Security: Everyone

QuickTime 2.0: Supports Indeo Compression (9/94)

==========

Article Created: 26 September 1994

TOPIC -----

Does QuickTime 2.0 support Intel's Indeo compression format?

DISCUSSION -----

Yes, QuickTime 2.0 does support the Indeo codec. However this is not done through any of the internal codecs. QuickTime is very flexible, and supports additional codecs through external means. This is how QuickTime 2.0 provides this support.

Intel has released the external plug-in codec in the form of an extension. It is available on AppleLink, Intel's FTP site, and various other online services.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16372

Tech Info Library

StyleWriter II: Not supported through Unix (9/94)

Revised: 9/26/94
Security: Everyone

StyleWriter II: Not supported through Unix (9/94)

==========

Article Created: 26 September 1994

TOPIC ----------

I would like to know if it is possible to let an UNIX workstation print on a StyleWriter II that is connected to a Macintosh with the serial port?

I know that it is possible for a PostScript printer with LPRPrint software installed on the Macintosh to do this.

DISCUSSION ----------

You cannot print to the StyleWriter or StyleWriter II from a UNIX workstation. The StyleWriter II is a QuickDraw printer and Unix doesn't support QuickDraw. The application on the UNIX workstation would also needs to have the StyleWriter printer driver and since it doesn't support QuickDraw, this is impossible.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16373

Tech Info Library

UNIX: Printing to a LaserWriter through a Network (9/94)

Revised: 9/26/94
Security: Everyone

UNIX: Printing to a LaserWriter through a Network (9/94)

==========

Article Created: 26 September 1994

TOPIC ----------

This article explains how to print to a PostScript LaserWriter that is on an AppleTalk network.

DISCUSSION ----------

You can print from a Unix workstation to any PostScript AppleTalk printer as long as the printer can be accessed on the AppleTalk network, using the AppleTalk protocol.

In order to use an Apple Postscript printer, not a StyleWriter or any other QuickDraw printer, you need additional software on the UNIX workstation to access the AppleTalk network. On the Unix workstation, you can either buy a commercial product that allows your Unix workstation to print to the AppleTalk network printer, or you can get a free software application called CAP (Columbia Appletalk Protocol) which can be obtained from various internet and online services. You will need to compile this code to use it under your UNIX environment. If you decide to use this application, make sure you get all the patches for it.

One commercial UNIX-based solution that you might look into, is K-Spool by Mt. Xinu. It allows Macintosh computers to spool documents to any serial printers connected to the UNIX host and lets the UNIX host access the LaserWriters attached to the AppleTalk network.

Information Presentation Technologies, Inc. also has products similar to K-Spool and CAP available for VMS and or UNIX operating systems called uShare and Partner. With uShare, printers are available simultaneously to Sun and Macintosh
Partner users. Partner also lets the Sun function as an AFP-to-NFS gateway. Partner and uShare also can act as full Phase 1 and 2 routers, allowing the Sun to serve as a router.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16374

Tech Info Library

AV Macintosh: Blocks at startup or Menus Remain Down (7/96)

Revised: 7/3/96
Security: Everyone

AV Macintosh: Blocks at startup or Menus Remain Down (7/96)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 02 July 1996

TOPIC ----------

I have a Power Macintosh AV computer and I'm getting strange behavior with the pull down menus.

• At startup, small black squares appear on the top of the screen which are evenly spaced apart by about 5 or 6 pixels.

• Menus stay drawn on the screen. For example, choosing the Apple menu and then the Special menu will leave both drawn on the screen.

DISCUSSION ----------

This issue has been reported on Power Macintosh computers running either System Software 7.1.2, or System 7.5. We have also had reports on Quadra AV computers. This issue has been fixed with the release of System Update 7.5 version 1.0, and you should install it.

If you do not have access to System Update 7.5 version 1.0 use the workaround shown below:

1) Open the Monitors control panel.
2) Choose 256 colors or Black & White.
3) Close the Monitors control panel.
4) Re-open the Monitors control panel and reselect the desired color depth.

We have found this problem will reset PRAM after a system crash when the colors are set to millions, and occasionally when switching to NTSC/PAL output on a Power Macintosh AV.

The key to resolving the issue is to have the Monitors control panel update PRAM and the System File.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
02 Jul 1996 - Added Fax Doc word
16 May 1995 - Updated article for System Update 7.5 verson 1.0.
04 Jan 1995 - Noted how and when fix will be implemented.

Support Information Services

Copyright 1994-96, Apple Computer, Inc

Tech Info Library Article Number:16375

Tech Info Library

QuickDraw GX: Can't Disable Manual Feed Alert (5/95)

Revised: 5/24/95
Security: Everyone

QuickDraw GX: Can't Disable Manual Feed Alert (5/95)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 24 May 1995

TOPIC ----------

We have an automatic sheet feeder connected to the manual feed slot of our postscript laser printer, and we are using the LaserWriter GX driver.

Is there a way to turn off the manual feed notification dialogs with LaserWriter GX?

DISCUSSION ----------

Be sure you have installed QuickDraw GX version 1.1.2 or later, and turn off the alerts for manual feed printing on PostScript printers by opening the Printing menu and choose Disable Manual Feed Alerts.

Article Change History:
24 May 1995 - Updated article with new information.
16 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16376

Tech Info Library

System 7.5: Command-Option-Spacebar Application Conflict (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Command-Option-Spacebar Application Conflict (2/95)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

Pressing the Command-Option-Space Bar key sequence is a Finder Shortcut which causes the keyboard control panel under 7.x - 7.5 to switch between different keyboard layouts.

Unfortunately, this same keyboard sequence has been used by some applications for their own features such as: Adobe PhotoShop, Adobe Illustrator, and Quark XPress. Consequently, customers may experience strange behavior from their keyboards after using this keyboard sequence.

Some versions of Adobe PhotoShop and Adobe Illustrator use the Command-Option-Space Bar key sequence to zoom the picture in, while some versions of Quark XPress uses this sequence to get a special space character called em-space (used a lot among professional typographers).

NOTE: Recent versions of these applications may use a different shortcut for zooming and the em-space. Contact the appropriate vendor for more information. To locate a vendor's address and phone number, use the vendor name as a search string.

DISCUSSION ----------

There are a number of issues relative to this function as well as a workaround.

A) An easy install of System 7.5 will install the WorldScript Power Adapter as well as the international keyboard layouts (that is the International Support option under System Software). This will also occur if International Support is selected with a custom install.

B) Since this is part of System Software, it is excluded as an option during Custom Remove.

C) The only way to avoid the International Support option is to do a Custom Install and NOT select it, however, the keyboard sequence will still be present, AND there will be two available alternatives visible in the Keyboard control panel - U.S. and U.S - System 6. Therefore, there will still be problems using Command-Option-Spacebar.

Workaround

Open the system file and remove all the "non-American" keyboard layouts AND U.S. - System 6. (For custom installs without the International Support option selected, just remove U.S. - System 6.) The problem will be solved since "U.S." is the only choice available in the Keyboard control panel. Note that the regular U.S. keyboard layout is not a visible resource in the system file, so there is no risk of accidentally deleting it.

Trade-offs

There are some trade-offs to deleting keyboard layouts. For those who do wish to use non-American keyboard layouts, these options will be gone. Also, a very small number of applications do actually use the U.S. - System 6 keyboard layout. Those whose applications use this keyboard layout should call the application's developer to see if the current version uses the regular "U.S." keyboard layout.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword.
23 Jan 1995 - Added more specific information about which applications may experience the problem.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16378

Tech Info Library

Macintosh 512K/512Ke: Cable Compatibility (7/95)

Revised: 7/6/95
Security: Everyone

Macintosh 512K/512Ke: Cable Compatibility (7/95)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 06 July 1995

TOPIC ----------

This article provides cable compatibility information for Apple computer systems and a variety of Apple peripherals.

The left column lists the peripherals, the right column lists the cable required to connect one of the following computers to it; Macintosh 512K and the 512Ke.

Part numbers which begin with a letter are the finished goods part number, the seven digit numbers are the service part numbers.

DISCUSSION ----------

Peripheral	Cable part number
AppleFax Modem	N/A
Apple Personal Modem Apple Data Modem 2400	M0196/590-0551
Apple Modem 300 Apple Modem 1200	M0170/590-0197
Apple ImageWriter II or II/L Apple ImageWriter LQ	M0196/590-0551 (smoke), LocalTalk optional
Apple ImageWriter Printer Apple ImageWriter 15"	590-0169

LaserWriter, Plus, IInt, IIntx, IIf, IIg LaserWriter Pro 600/630/810 Personal LaserWriter NT, NTR	LocalTalk
Personal LaserWriter LS StyleWriter & StyleWriter II Color StyleWriter/Color StyleWriter Pro	N/A
Apple LaserWriter IIsc Personal LaserWriter SC AppleCD SC Apple Hard Disk 20/40/80 Apple Tape Backup 40SC Apple Scanner Apple Color OneScanner Apple Color Printer	N/A

Article Change History:
06 Jul 1995 - Updated Cable information for ImageWriter I

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16379

..TIL16380-PowerBook_Duo-Cable_Compatibility_7-95_(TA32578).pdf

PowerBook Duo: Cable Compatibility (7/95)

Revised: 7/6/95
Security: Everyone

PowerBook Duo: Cable Compatibility (7/95)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 06 July 1995

TOPIC

This article provides cable compatibility information for Apple computer systems and a variety of Apple peripherals.

The left column lists the peripherals, the right column lists the cable required to connect one of the following computers to it; PowerBook Duo.

Part numbers which begin with a letter are the finished goods part number, the seven digit numbers are the service part numbers.

DISCUSSION

Peripheral	Cable part number
AppleFax Modem Apple Personal Modem Apple Data Modem 2400	M0197/590-0552 (smoke)
Apple Modem 300 Apple Modem 1200	M0170/590-0197 & 590-0553 or 590-0121 & 590-0550
Apple ImageWriter II or II/L Apple ImageWriter LQ	M0197/590-0552 (smoke), LocalTalk optional
Apple ImageWriter Printer Apple ImageWriter 15"	590-0169 & 590-0553
LaserWriter, Plus, IInt, IIntx, IIf, IIg	LocalTalk

LaserWriter Pro 600/630/810 Personal LaserWriter NT, NTR	
Personal LaserWriter LS StyleWriter & StyleWriter II Color StyleWriter/Color StyleWriter Pro	M0197/590-0552 (smoke)
Apple LaserWriter IIsc Personal LaserWriter SC AppleCD SC Apple Hard Disk 20/40/80 Apple Tape Backup 40SC Apple Scanner Apple Color OneScanner Apple Color Printer	M2538LL/A (HDI-30 SCSI cable)•#

LEGEND
• Requries M3503LL/B/658-8032 Cable Terminator
Requires MiniDock

Article Change History:
06 Jul 1995 - Updated ImageWriter cable information

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16380

Tech Info Library

Apple IIc: Cable Compatibility (10/95)

Revised: 10/4/95
Security: Everyone

Apple IIc: Cable Compatibility (10/95)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 3 October 1995

TOPIC ----------

This article provides cable compatibility information for Apple computer systems and a variety of Apple peripherals.

The left column lists the peripherals, the right column lists the cable required to connect the Apple IIc.

Part numbers which begin with a letter are the finished goods part number, the seven digit numbers are the service part numbers.

DISCUSSION ----------

Begin_Table

Peripheral	Cable part number
AppleFax Modem	N/A
Apple Personal Modem Apple Data Modem 2400	A2C4505/590-0554 (smoke)
Apple Modem 300 Apple Modem 1200	A2C0354/590-0121
Apple ImageWriter II or II/L ImageWriter LQ	A2C4505/590-0554 (smoke) or 590-0333 (beige)
Apple ImageWriter Printer	590-0191

Apple ImageWriter 15"	
LaserWriter, Plus, IInt, IIntx, IIf, IIg LaserWriter Pro 600/630/810 Personal LaserWriter NT, NTR	N/A
Personal LaserWriter LS StyleWriter & StyleWriter II Color StyleWriter/Color StyleWriter Pro	N/A
Apple LaserWriter IIsc Personal LaserWriter SC	N/A
AppleCD SC Apple Hard Disk 20/40/80	N/A
Apple Tape Backup 40SC Apple Scanner Apple Color OneScanner Apple Color Printer	N/A

End_Table

Article Change History:
03 Oct 1995 - Updated service part numbers.

Support Information Services

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Tech Info Library Article Number:16381

Tech Info Library

Apple IIc Plus: Cable Compatibility (9/94)

Revised: 9/27/94
Security: Everyone

Apple IIc Plus: Cable Compatibility (9/94)

==========

Article Created: 27 September 1994

TOPIC ----------

This article provides cable compatibility information for Apple computer systems and a variety of Apple peripherals.

The left column lists the peripherals, the right column lists the cable required to connect one of the following computers to it; Apple IIc Plus.

Part numbers which begin with a letter are the finished goods part number, the seven digit numbers are the service part numbers.

DISCUSSION ----------

Peripheral	Cable part number
AppleFax Modem	N/A
Apple Personal Modem Apple Data Modem 2400	M0197/590-0552 (smoke)
Apple Modem 300 Apple Modem 1200	590-0197 & 590-0341
Apple ImageWriter II or II/L ImageWriter LQ	M0197/590-0552
Apple ImageWriter Printer Apple ImageWriter 15"	M0150/590-0169 & 590-0553 or A2C0352/590-0037 & A9M0333/590-0550

LaserWriter, Plus, IInt, IIntx, IIf, IIg LaserWriter Pro 600/630/810 Personal LaserWriter NT, NTR	N/A
Personal LaserWriter LS StyleWriter & StyleWriter II Color StyleWriter/Color StyleWriter Pro	N/A
Apple LaserWriter IIsc Personal LaserWriter SC	N/A
AppleCD SC Apple Hard Disk 20/40/80	N/A
Apple Tape Backup 40SC Apple Scanner Apple Color OneScanner Apple Color Printer	N/A

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16382

Apple II/II+/IIe: Cable Compatibility (9/94)

Revised: 9/27/94
Security: Everyone

Apple II/II+/IIe: Cable Compatibility (9/94)

==========

Article Created: 27 September 1994

TOPIC -----

This article provides cable compatibility information for Apple computer systems and a variety of Apple peripherals.

The left column lists the peripherals, the right column lists the cable required to connect one of the following computers to it; Apple II, Apple II Plus, or the Apple IIe.

Part numbers which begin with a letter are the finished goods part number, the seven digit numbers are the service part numbers.

DISCUSSION -----

Peripheral	Cable part number
AppleFax Modem	N/A
Apple Personal Modem Apple Data Modem 2400	A2C0312/590-0555 (smoke) or A9C0314/590-0556 (w/jumper on Super Serial Card)
Apple Modem 300 Apple Modem 1200	A2C0354/590-0121
Apple ImageWriter II or II/L ImageWriter LQ	A9C0314/590-0556 (smoke) or LocalTalk or A2C0312/590-0555 (w/jumper to modem)

Apple ImageWriter Printer Apple ImageWriter 15"	A2C0352/590-0037
LaserWriter, Plus, IInt, IIntx, IIf, IIg LaserWriter Pro 600/630/810 Personal LaserWriter NT, NTR	LocalTalk (Req. WorkStation Card)
Personal LaserWriter LS StyleWriter & StyleWriter II Color StyleWriter/Color StyleWriter Pro	N/A
Apple LaserWriter IIsc Personal LaserWriter SC	N/A
AppleCD SC Apple Hard Disk 20/40/80	M0206/658-8031 (SCSI System cable)•
Apple Tape Backup 40SC Apple Scanner Apple Color OneScanner Apple Color Printer	N/A

LEGEND
• Requries M3503LL/B/658-8032 Cable Terminator and Apple II SCSI Card.

A9M0320 or A3M0025 w/590-0037 require Super Serial Card BUT A9M0302 or A3M0025 w/590-0037 & 590-0550 doesn't (Buses Built In).

When using an ImageWriter II/LQ with the Apple IIe and cable part number 590-0555, the jumper on the Super Serial Card must be on "Modem".

Support Information Services

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Tech Info Library Article Number:16383

..TIL16384-Apple_IIgs-Cable_Compatibility_10-94_(TA32582).pdf

Tech Info Library

Apple IIgs: Cable Compatibility (10/94)

Revised: 10/27/94
Security: Everyone

Apple IIgs: Cable Compatibility (10/94)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 27 October 1994

TOPIC -----

This article provides cable compatibility information for Apple computer systems and a variety of Apple peripherals.

The left column lists the peripherals, the right column lists the cable required to connect one of the following computers to it; Apple IIgs, or the Apple IIgs upgrade.

Part numbers which begin with a letter are the finished goods part number, the seven digit numbers are the service part numbers.

DISCUSSION -----

Peripheral	Cable part number
AppleFax Modem	N/A
Apple Personal Modem Apple Data Modem 2400	M0197/590-0552 (smoke)
Apple Modem 300 Apple Modem 1200	A2C0354/590-0121% & 590-0550 or 590-0197 & 590-0553
Apple ImageWriter II or II/L Apple ImageWriter LQ	M0197/590-0552 (smoke), LocalTalk optional
Apple ImageWriter Printer	M0150/590-0169 & 590-0553

Apple ImageWriter 15"	or A2C0352*/590-0037 & A9M0333/590-0550
LaserWriter, Plus, IInt, IIntx, IIf, IIg LaserWriter Pro 600/630/810 Personal LaserWriter NT, NTR	LocalTalk
Personal LaserWriter LS StyleWriter & StyleWriter II Color StyleWriter/Color StyleWriter Pro	*
Apple LaserWriter IIsc Personal LaserWriter SC	N/A
AppleCD SC Apple Hard Disk 20/40/80	M0206/658-8031•
Apple Tape Backup 40SC Apple Scanner Apple Color OneScanner Apple Color Printer	N/A

LEGEND
• Requries M3503LL/B/658-8032 Cable Terminator
* The Apple IIgs with GS/OS ver. 6.0 will support the original StyleWriter only.

A9M0320 or A3M0025 w/590-0037 require Super Serial Card BUT A9M0302 or A3M0025 w/590-0037 & 590-0550 doesn't (Buses Built In).

When using an ImageWriter II/LQ with the Apple IIe and cable part number 590-0555, the jumper on the Super Serial Card must be on "Modem".

Article Change History:
27 Oct 1994 - Indicated that StyleWriter is supported by GS/OS ver. 6.0.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16384

Tech Info Library

Macintosh: Cable Compatibility (7/95)

Revised: 7/6/95
Security: Everyone

Macintosh: Cable Compatibility (7/95)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 06 July 1995

TOPIC ----------

This article provides cable compatibility information for Apple computer systems and a variety of Apple peripherals.

The left column lists the peripherals, the right column lists the cable required to connect one of the following computers to it; Macintosh SE, II, IIx, IIsi, IIcx, IIci, IIfx, IIvx/vi, Portable, Classic, Classic II, LC, Quadra, Power Macintosh, and the Macintosh Duo Dock.

Part numbers which begin with a letter are the finished goods part number, the seven digit numbers are the service part numbers.

DISCUSSION ----------

Peripheral	Cable part number
AppleFax Modem Apple Personal Modem Apple Data Modem 2400	M0197/590-0552 (smoke)
Apple Modem 300 Apple Modem 1200	M0170/590-0197 & 590-0553 or 590-0121 & 590-0550
Apple ImageWriter II or II/L Apple ImageWriter LQ	M0197/590-0552 (smoke), LocalTalk optional
Apple ImageWriter Printer Apple ImageWriter 15"	590-0169 & 590-0553

LaserWriter, Plus, LaserWriter IInt, IIntx, IIf, IIg LaserWriter Pro 600/630/810 LaserWriter 16/600 PS Personal LaserWriter NT, NTR Personal LaserWriter 320 LaserWriter Select 360	LocalTalk, Ethernet Optional for IIg, Pro 630, Pro 810, and 16/600 PS
Personal LaserWriter LS Personal LaserWriter 300 LaserWriter Select 300 LaserWriter Select 310 StyleWriter & StyleWriter II StyleWriter 1200 Color StyleWriter/Color StyleWriter Pro Color StyleWriter 2400	M0197/590-0552 (smoke)
Apple LaserWriter IIsc Personal LaserWriter SC AppleCD SC Apple Hard Disk 20/40/80 Apple Tape Backup 40SC Apple Scanner Apple Color OneScanner Apple Color Printer	M0206/658-8031 (SCSI System cable)•

LEGEND

• Requries M3503LL/B/658-8032 Cable Terminator

Article Change History:
06 Jul 1995 - Updated ImageWriter cable information
20 Apr 1995 - New products added.

Support Information Services

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Tech Info Library Article Number:16385

Tech Info Library

PowerBook: Cable Compatibility (8/96)

Revised: 8/26/96
Security: Everyone

PowerBook: Cable Compatibility (8/96)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 26 August 1996

TOPIC ----------

This article provides cable compatibility information for Apple computer systems and a variety of Apple peripherals.

The left column lists the peripherals, the right column lists the cable required to connect all models of the Macintosh PowerBook computers with the exception of the PowerBook 200 and 2300 (Duo) series computers. PowerBook Duo computers may require a MiniDock or Duo Dock to utilize certain peripheral devices.

Part numbers which begin with a letter are finished goods part numbers which can be purchased from an Apple authorized reseller. The seven digit numbers are service part numbers which can only be purchased by an Apple authorized service center.

DISCUSSION ----------

Begin_Table

Peripheral	Cable part number
AppleFax Modem Apple Personal Modem Apple Data Modem 2400	M0197/590-0552 (smoke)
Apple Modem 300 Apple Modem 1200	M0170/590-0197 & 590-0553 or 590-0121 & 590-0550
Apple ImageWriter II or II/L Apple ImageWriter LQ	M0197/590-0552 (smoke) LocalTalk optional
Apple ImageWriter Printer Apple ImageWriter 15"	590-0169 & 590-0553

LaserWriter, Plus, LaserWriter IInt, IIntx, IIf, IIg LaserWriter Pro 600/630/810 LaserWriter 16/600 PS Personal LaserWriter NT, NTR Personal LaserWriter 320 LaserWriter Select 360	LocalTalk, Ethernet Optional for IIg, Pro 630, Pro 810, and 16/600 PS
Personal LaserWriter LS Personal LaserWriter 300 LaserWriter Select 300 LaserWriter Select 310 StyleWriter & StyleWriter II StyleWriter 1200 Color StyleWriter/Color StyleWriter Pro Color StyleWriter 2400	M0197/590-0552 (smoke)
Any Apple (or third-party) SCSI Peripheral device Apple LaserWriter IIsc Personal LaserWriter SC AppleCD SC Apple Hard Disk 20/40/80 Apple Tape Backup 40SC Apple Scanner Apple Color OneScanner Apple Color Printer	M2538LL/A (HDI-30 SCSI cable)•#&

LEGEND

• Requires M3503LL/B/658-8032 Cable Terminator in addition to the SCSI cable
Requires MiniDock or Duo Dock for use with PowerBook 200 and 2300 (Duo) computers
& The M2538LL/A (HDI-30 SCSI cable) is not the same as the M2539LL/A - Apple HDI-30 SCSI Disk Adapter which enables use of the PowerBook 100 as an external hard disk with another Macintosh system.

End_Table

Article Change History:
26 Aug 1996 - Added begin and end table tags.
06 Jul 1995 - Updated ImageWriter I cable information.

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Tech Info Library Article Number:16386

Tech Info Library

Apple LaserWriter 16/600 PS: Description (7/95)

Revised: 7/27/95
Security: Everyone

Apple LaserWriter 16/600 PS: Description (7/95)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 27 July 1995

TOPIC ----------

This article provides a description of the Apple LaserWriter 16/600 PS printer.

DISCUSSION ----------

The Apple LaserWriter 16/600 PS is a high-performance PostScript laser printer that offers a number of advanced capabilities, including exceptional print quality, unrivaled speed, extensive networking compatibility, and flexible expansion options. It’s ideal for work-group users who require superior quality output, have demanding printing needs, and work in organizations with Macintosh, Windows, Novell Netware, or multivendor computing environments.

With its 600-dot-per-inch resolution enhanced with FinePrint technology, in addition to its PhotoGrade support, the Apple LaserWriter 16/600 PS provides the outstanding print quality you need–fast. In fact, the printer features a fast print engine, high-performance RISC processor–based controller, and dedicated input/ output processor, which combine to provide impressive printing speed. This high performance is supported by the Apple LaserWriter 16/600 PS printer’s extensive connec-tivity capabilities, which allow it to be shared easily by users of Macintosh, Power Macintosh, DOS, Windows, and UNIX systems. The Apple LaserWriter 16/600 PS features built-in support for Ethernet networking (through EtherTalk,TCP/IP, or Novell NetWare) as well as a bidirectional parallel port and a LocalTalk port. And all ports stayactive simultaneously, so the Apple LaserWriter 16/600 PS can accept jobs from a variety of computers without the users having to change a single setting. To support this extensive connectivity, the printer features automatic port, protocol, and emulation switching (between the PostScript Level 2 and PCL 5 languages).

In addition to its outstanding print capabilities, the Apple LaserWriter 16/600 PS printer offers yet another way to communicate -through fax transmission. When you add the user-installable Fax Card, you can use the printer to exchange faxes with any Group III or PostScript fax machine, from both Macintosh and Windows

computers. Faxes that you receive are printed on plain paper at up to 600-dots-per-inch resolution, offering print quality far better than that of most dedicated fax machines or other fax card solutions. And this convenient fax send-and-receive capability is accessible to anyone's computer on the network, making it yet another way in which the Apple LaserWriter 16/600 PS makes superior functionality an economical proposition.

Features

- Excellent print quality
  - Offers 600-dpi resolution, enhanced with built-in FinePrint technology for precise, smooth text and line art
  - Includes built-in support for PhotoGrade gray-scale image enhancement (requires an additional 4MB of RAM)
  - Provides a choice of 64 scalable TrueType fonts for printing in any size and in a wide variety of styles

- High performance
  - Comes with 8MB of RAM, expandable up to 32MB
  - Includes a powerful RISC processor: the 25-MHz AMD 29030
  - Features a dedicated I/O processor
  - Prints an impressive 16 pages per minute (A4), which makes it the fastest printer in its price range. Prints 17 pages per minute letter size.

- Robust networking and multiplatform compatibility
  - Supports any LocalTalk network
  - Provides built-in support for Novell NetWare IPX, EtherTalk, and TCP/IP Ethernet networks
  - Includes a parallel port for bidirectional parallel communications
  - Provides automatic emulation, protocol, and port switching
  - Allows simultaneous connection to Macintosh, DOS, Windows, and UNIX computing environments

- Expandability
  - Supports optional large-capacity internal and external hard disk drives for additional font storage
  - Offers optional Fax Card, which lets your printer send and receive both Group III and PostScript faxes
  - Lets you expand its paper-handling capabilities with an optional 500-sheet feeder and 75-envelope feeder
  - Complies with EPA's Energy Star guidelines for energy-efficient operation

Article Change History:
27 Jul 1995 - Corrected misspellings; reviewed.

Support Information Services

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Tech Info Library Article Number:16387

Tech Info Library

Color StyleWriter 2400: Description (12/95)

Revised: 12/11/95
Security: Everyone

Color StyleWriter 2400: Description (12/95)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 11 December 1995

TOPIC ----------

This article gives a description of the Apple Color StyleWriter 2400 printer.

DISCUSSION ----------

The Apple Color StyleWriter 2400 is an affordable ink-jet printer that provides high-performance color and black-and-white printing. It's ideal for home, education, and small-business users who require convenient, superior quality color capability.

Whether you use the Color StyleWriter 2400 to print your household budget or your child's latest art project, a class handout, or customer presentation, you'll appreciate the quality and convenience of this printer's fast-drying, water-resistant ink. And you'll find the Apple Color StyleWriter 2400 equally convenient to own. It's extremely simple to set up and features a compact, attractive design that fits easily into any work space. In addition, the Apple Color StyleWriter 2400 provides economical energy efficiency through its automatic power on/off control, complying with the EPA's Energy Star energy-conservation guidelines.

The Apple Color StyleWriter 2400 features impressive 360- by 360-dots-per-inch resolution for color and black-and-white printing. Its speed is also impressive; the Apple Color StyleWriter 2400 prints up to 3 pages per minute for black and white and up to 0.3 page per minute for color. And it provides fast data transfer over a variety of networks through Apple's ColorShare software, allowing you to share your color printer with others on a LocalTalk, EtherTalk, or TokenTalk network. Or you can choose to add the optional LocalTalk module, for direct connection to a LocalTalk network.

Through its integrated ColorSync software, the Apple Color StyleWriter 2400 provides excellent print quality and superior color matching.

So if you want great print quality and color capability–and a pleasingly low price tag–the Apple Color StyleWriter 2400 is the printer for you.

Features

- Outstanding print quality
- Offers 360- by 360-dpi resolution for text in crisp, sharp, black-and-white and vibrant color printing. The revision B model offers a 720- by 360-dpi black-and-white printing mode.
- Takes advantage of ColorSync color-matching technology to ensure accurate color matching from screen to printer
- Provides a choice of 64 scalable TrueType fonts for printing in any size and in a wide variety of styles

- Convenience
- Features an extremely compact, attractive design
- Includes everything needed to print: interface cable, ink cartridges, ink tanks, and sample media kit
- Prints on a wide range of media, including plain paper, transparencies, glossy and premium paper, and back-print film
- Comes with ColorShare technology to enable printer sharing over a variety of networks
- Supports optional LocalTalk module, making it easy to add the printer directly to a LocalTalk network
- Complies with the EPA's Energy Star guidelines for energy-efficient operation

Article Change History:
11 Dec 1995 - Added Rev. B information.
27 Jul 1995 - Corrected minor typographical error.

Support Information Services

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Tech Info Library Article Number:16388

ARA MultiPort Server and ISDN (3/95)

Revised: 3/1/95
Security: Everyone

ARA MultiPort Server and ISDN (3/95)

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Article Created: 27 September 1994
Article Reviewed/Updated: 1 March 1995

TOPIC ----------

How do I configure the Apple Remote Access (ARA) MultiPort Server for ISDN. I have an ISDN drop that I have been using with different routers, but I would like to use it with the ARA MultiPort Server.

The ARA MultiPort Server Read Me mentions the Hayes ISDN Adapter. Could you tell me how to configure this product for ISDN, what specific hardware and software is required, what speeds will the ARA MultiPort Server support with ISDN, and so on?

DISCUSSION ----------

The ISDN capabilities of the ARA MultiPort Server are fairly limited. As of September, 1994 the only way to utilize an ISDN link is to purchase an ISDN terminal adapter from Hayes. This device looks like a standard modem to the ARA MultiPort Server, it is an async to ISDN converter. You connect this device to one of the ARA MultiPort Server ports and use the Hayes ISDN Terminal adapter script included with ARA. The Hayes ISDN Terminal Adapter and ARA CCL script are fully supported by Hayes. Users should contact Hayes for any pre-sales, configuration, or user related questions regarding the product.

The MultiPort Server throughput has been tested to 14.4 Kbps per port with all 16 ports populated. We are unsure whether a 16 port configuration would offer reliable connections or meet performance expectations at speeds greater than 14.4 Kbps per port.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Here are some of the Hayes' ISDN System Adapter specifications:

• Date announced: 1991

- Compatibility: Stand alone
- Line access standard: Basic Rate Interface (2B+D)
- Reference point: S/T Interface
- Physical interfaces supported: RS-232C; V.35; RJ-11
- Rate adaption standard: V.120
- Central Office switch supported: AT&T 5ESS; Northern Telecom

Article Change History:
01 Mar 1995 - Reviewed and made minor corrections.

Support Information Services

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Tech Info Library Article Number:16389

Tech Info Library

A/UX or AWS 95: File System Full, Error Recovery (11/96)

Revised: 11/7/96
Security: Everyone

A/UX or AWS 95: File System Full, Error Recovery (11/96)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 7 November 1996

TOPIC ----------

My Apple Workgroup Server (AWS) 95 locks up during startup. In looking at the error messages that come up, it appears that I have run out of disk space. What do I need to do?

DISCUSSION ----------

The server may crash because it has ran out of disk space on the root partition. A/UX needs less than 250K to startup. Once started, if you do anything that creates files, you will lock up if you run out of space.

Follow these steps to fix this problem after crashing:

Step 1
Restart the server and sign on as root user, when the "cancel" button appears after the A/UX launch, click it which will take you to the startup shell. You should then see the "startup#" prompt.

Step 2
Perform a manual file system check (fsck). At the prompt, type the following UNIX command:

fsck -y /dev/default

It may take several minutes to complete the check. Upon completion of fsck, if you see a message that says "FILE SYSTEM WAS MODIFIED" it is recommended that you run fsck again using the same command. You want fsck to make a complete check without making any changes.

Step 3

Usually the easiest thing to remove, if this is the first time you've had this problem, is the /FILES file. This file lists all of the files installed on the system; it is not normally needed, and takes about 600K of disk space. Use this command:

```
rm FILES
```

Step 4
Sometimes the desktop files can grow too large over time, and by rebuilding them, hard disk space can be recovered. Type the following commands to delete and then rebuild the desktop files:

```
cd "/mac/sys/System Folder"
rm "Desktop DB"
rm "Desktop DF"
rm "%Desktop DB"
rm "%Desktop DF"
launch
```

You will then see A/UX startup. Rebuilding the desktop may take some time, depending on the amount of local disk space attached.

NOTE: If the steps above do NOT provide you with enough free hard disk space, repeat steps 1 and 2 above and then continue with step 5 below (skipping steps 3 and 4).

Step 5
Change to the "\ Documentation" directory by typing the command:

```
cd /\ Documentation
```

Step 6
List the contents of the "\ Documentation" directory in long format by typing the command to see what the directory contains:

```
ls -l
```

Step 7
By default, there are usually 2 to 4 MB of DocViewer documents that can be removed if desired. Things you should expect to see include DocViewer guide, Tuning Server Performance, Apple Share Pro guide, and so on. Some of the files will end in ".idx".

Step 8
To remove the files you decide are no longer necessary type the command:

```
rm -ir .
```

This will do an interactive rm on everything in the "\ Documentation" directory, asking if you want to delete on each file. Just type a "y" for each file that you want to delete.

Step 9
To launch A/UX type the following command:

```
launch
```

The above steps usually clears enough space for the server to function. You need to continue looking for other files to clear hard disk space from the "/" partition. Often administrators will put shared folders on the "/" partition, within / Shared Data.

Step 10
Other places to look for files to delete:

```
/ Applications
/lost+found
/tmp
```

If you think this condition can happen again, you may want to create a 500K file located in the "/" directory, and name it something like "FREE.TO.DELETE" in case this happens again.

The "/ Documentation" and "/ Applications" directories are the best places to look for files to delete, because they usually contain files you can remove to free hard disk space. The files removed from these directories should be reinstallable from either the A/UX install disks, or from original application disks.

Article Change History:
07 Nov 1996 - Added command to Step 3.
24 Mar 1995 - Change title for clarity and updated format.
09 Jan 1995 - Changed title to better reflect article.

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Tech Info Library Article Number:16390

Tech Info Library

Quadra 630: Can't Run Applications from Netware Server (5/95)

Revised: 5/23/95
Security: Everyone

Quadra 630: Can't Run Applications from Netware Server (5/95)

==========

Article Created: 27 September 1994
Article Reviewed/Updated: 23 May 1995

TOPIC ----------

I'm running a Quadra 630 with a clean installation of System 7.1, and I can't launch some Macintosh applications residing on a Novell Netware server. When I try to launch an application I get a floating point error and the system crashes. Turning off the Cache control panel seems to fix this problem. What's wrong?

DISCUSSION ----------

We recommend installing the latest system software, System 7.5 and System 7.5 Update version 1.0. We have not seen the issue you describe with this system software.

If you have System 7.1, we recommend installing System Update 3.0 which should take care of this issue also.

Article Change History:
23 May 1995 - Updated article for System 7.5 with Update version 1.0.

Support Information Services

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Tech Info Library Article Number:16391

Tech Info Library

Power Macintosh: AV Sound options (9/94)

Revised: 9/28/94
Security: Everyone

Power Macintosh: AV Sound options (9/94)

==========

Article Created: 28 September 1994

TOPIC ----------

I don't hear a difference on 22 kHz and 44 kHz with Sound Out on audio CDs Why?

DISCUSSION ----------

The Sound control panel can only adjust the output quality of the sound chip on the Macintosh logic board. The Macintosh cannot control or change the output of the CD Player.

The Rate pop-up menu in the Sound Out options changes the maximum frequency the playback device produces. In most cases, this is the sound chip on the Macintosh.

Changing Output Sample Rates

It is important to remember the following when changing sample rates:

- Increasing the sample rate slows performance

- Setting the Sound Out sample rate higher than a sound was recorded provides no additional benefits. However, it hampers performance.

- The sound out sample setting for 'Built In' setting does not affect devices hooked up to input ports of the computer unless the device has a sound device driver and can be adjusted by the computer. For example, some MIDI devices may show up in the 'Source' choice window.

It is important to also remember that CD audio is routed from the CD player to the Sound Output port based on the playthrough option. Selecting Playthrough in the Sound IN Options bypasses the Sound Chip on the CPU. Once you select Playthrough, changing the sample rate has no affect.

When using the CD Audio Player application, the playback rate is always 44 kHz,

since the sound is coming straight from the CD player.

Capturing Audio

If you are capturing CD audio using a program like Fusion Recorder, the sound out sample option will be a factor. Fusion Recorder will 'take over' the sound settings so that you can not access them through the Sound Control Panel. They must be set within Fusion Recorder. The application is modifying the same settings that the Sound Control Panel adjust and more. Fusion Recorder tells the Macintosh's Sound Manager to route sound from the selected input source through the sound chip during recording or monitoring.

When recording with Fusion Recorder, adjust the sound settings to match the sample rate you want to capture. When choosing a sample rate, remember that the size of the file is based on the quality of the recording. Capturing audio at 44 kHz, produces a much larger file than one captured using 22 kHz.

Fusion Recorder does not have a playthrough option, so any sound you hear using the application is played at the sample rate the recording is done at which could be either 22 kHz or 44 kHz. The application is designed this way so you can 'monitor' the quality of the sound being recorded based on your sound settings. A playthrough option would not give an accurate representation of the sound being recorded.

Sound digitizing applications override the Sound control panel settings. So if you are listening to a CD using a sound application like Fusion Recorder, you may not hear the full quality of the sound.

Support Information Services

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Tech Info Library Article Number:16399

Tech Info Library

System 7.1.2 & 7.5: NFS/Share & Easy Open Conflicts (2/95)

Revised: 2/13/95
Security: Everyone

System 7.1.2 & 7.5: NFS/Share & Easy Open Conflicts (2/95)

==========

Article Created: 28 September 1994
Article Reviewed/Updated: 13 February 1995

TOPIC ----------

Why are the desktops on our Macintosh computers getting rebuilt, under System 7.1.2 or 7.5, every time we mount a server using the InterCon NFS/Share product. It seems to use that this should not be happening every time we mount the same server. This problem did not occur when we used System 7.1 and only started with System 7.1.2 and now System 7.5.

DISCUSSION ----------

Yes, with the default settings, I am able to reproduce the problem on a Power Macintosh 8100/80AV with System 7.5 and NFS/Share 1.3.5.

According to InterCon Technical Staff, the problem was caused by Macintosh Easy Open which has "Automatic document translation" turned ON by default in System 7.5. You will see the following dialog after opening NFS/Share in the Chooser, and it then disappears quickly:

"The system keeps a record of all preferences you've indicated. Are you sure you want to delete these and select new preferences for your translation?"

InterCon is aware of the problem, and it is a high priority in their list of fixes. They hope to have a fix in the near future (either in a new release of software or a patch).

In the meanwhile, we tested the following workaround to the problem:

- Turn "Automatic document translation" OFF in the Macintosh Easy Open CDEV in System 7.5 or 7.1.2

- In NFS/Share Chooser, after Logging In but before mounting an NFS server do the following:

```
select a "Volume To Mount"
go to "Edit..." to edit the mount point
check ON "Maintain Desktop Info"
"Save" the edit
do "Mount"
```

- It will rebuild the desktop the first time the volume is mounted. Since you have saves with "Maintain Desktop Info", your Macintosh won't rebuild the desktop the next time you mount this volume.

Article Change History:
13 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16400

Tech Info Library

ARA 2.0 MultiPort Server: A/ROSE Extension Is Necessary (9/94)

Revised: 9/28/94
Security: Everyone

ARA 2.0 MultiPort Server: A/ROSE Extension Is Necessary (9/94)

==========

Article Created: 28 September 1994

TOPIC ----------

My Apple Remote Access 2.0 MultiPort Server comes up fine but I cannot configure my Serial card. What is wrong?

DISCUSSION ----------

You do not have the A/ROSE extension installed. A/ROSE is the Apple Real-Time Operating System, and It's used to download the Remote Access Server software into memory on the Apple Serial NB Card. The serial card has its own 68000 CPU to off load the communication task from the Macintosh computer's CPU.

Support Information Services

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Tech Info Library Article Number:16402

Tech Info Library

Macintosh: Responds to Third-Party Remote Controls (2/96)

Revised: 2/6/96
Security: Everyone

Macintosh: Responds to Third-Party Remote Controls (2/96)

==========

Article Created: 29 September 1994
Article Reviewed/Updated: 6 February 1996

TOPIC ----------

Why is it that when I use my Sony remote control to turn on my Sony television, it also turns on my Macintosh computer?

DISCUSSION ----------

The ability to control your computer with other brands of remote controls was an intentional part of the design plan for many Macintosh computers. It allows you to easily use universal remote control units with your computer.

The following computers have a built-in infared sensor which allow them to be controlled remotely:

• The Macintosh 630CD family: Macintosh LC 630, Quadra 630, Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, and Performa 640.

• The Macintosh 5200CD family: Macintosh 5200/75 LC, Performa 5200, Performa 5210, Performa 5215, and Performa 5220.

• The Macintosh 6200CD family: Performa 6200, Performa 6214, Performa 6216, Performa 6218, Performa 6220, and Performa 6230.

• The Macintosh Performa 5300CD and Power Macintosh 5300/100 LC

• The Macintosh Performa 6300CD series: Performa 6300 and 6290

If you do not want to control your computer with other brands of remote controls, you can work around this feature in one of the following ways:

• Remove the "Video Startup" system extension. This will disable all remote functions, except for the ability to turn the Macintosh on.

- Disconnect or cover up the infrared sensor on the front of the computer.

- Place the computer farther from the television being controlled.

Article Change History:
06 Feb 1996 - Added additional computers.
25 Jan 1996 - Added additional computers.

Support Information Services

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Tech Info Library Article Number:16404

Tech Info Library

Macintosh: Sound Capabilities (9/94)

Revised: 9/29/94
Security: Everyone

Macintosh: Sound Capabilities (9/94)

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Article Created: 29 September 1994

TOPIC ----------

The following article provides information on a variety of topics relating to audio and the Macintosh.

DISCUSSION ----------

COMMON AUDIO TERMS

DIGITIZING SOUND (aka, SAMPLING)
Several thousand times per second, a number representing the current amplitude of the sound wave is recorded.

DIGITAL SOUND
Sound recorded in the above manner.

11KHZ, 22KHZ, 44KHZ SOUND
Refers to how many times per second information is recorded for a sound (11,000, 22,000, and 44,000 respectively). Most Macintosh computers can output at 22KHz, though some output at 44KHz. Audio CD's are played at 44KHz.

8-BIT, 16-BIT SOUND
Refers to the bit depth (how many different numbers are in the "sound palette" to form a sound). See separate section below about 8-bit vs. 16-bit sound.

STEREO SOUND
The ability to send DIFFERENT sound information simultaneously to both the left and right channels. Sending the same sound to two speakers is not stereo; it is dual-channel mono.

STEREO CAPABILITIES OF DIFFERENT MACINTOSH MODELS

Mac Plus, SE, Classic
8-bit mono sound to one channel (you'll hear only one side with stereo headphones, unless you use an adapter)

Performa 200, Performa 400-467 (not 47x), Classic II, LC II
Mixed 8-bit mono sound to both channels (you'll hear sound out of both sides with stereo headphones, but the sound won't be true stereo)

Performa 475, 476, LC 475, Quadra 605
Stereo 8-bit sound, including true stereo from non-audio CD's (connected externally). Audio CD's require external speakers, enhanced Apple Sound Chip supports stereo.

Performa 5xx, 63x, LC 5xx, 630, Quadra 630
Stereo 8-bit sound, including true stereo from audio and non-audio CD's (Enhanced Apple Sound Chip supports stereo).

Performa 600, 600CD except Mac IIvx
Mixed 8-bit mono sound to both channels, except true stereo from audio CD's (No ASIC to support stereo from software)

IMPORTANT NOTES:

1) Stereo is the ability to send DIFFERENT sound information simultaneously to both the left and right channels. Sending the same sound to two speakers is NOT stereo; it is dual-channel mono.
2) "Stereo sound" in the chart above means that the Macintosh SUPPORTS stereo sound, NOT that all sounds that are played are automatically stereo. Stereo sound requires that the application software generates the stereo sound for the Macintosh to play.
3) All AUDIO CD's play at 16-bit stereo, regardless of which Macintosh they're connected to. (If the CD-ROM drive is external, you'll need external speakers to hear audio CD's.)
4) For a NON-audio CD (or software on the hard drive) to play sound in either stereo or at 16-bits, two things are required:
   A- The application software must generate stereo or 16-bit sound (rare).
   B- The Macintosh it is played on must support stereo or 16-bit sound. (Recent Macintosh models support stereo; only AV, Power Macintosh, and PowerBook 500 series computers support 16-bit sound.)
5) All the Macintosh computers in the chart above can play sound sampled as high as 22KHz (except for audio CD's which play at 44KHz).

8-BIT VS. 16-BIT SOUND

8-bit or 16-bit sound refers to the "depth" of the sound (e.g., how many different possible numbers are in the "sound palette" to form a sound). Most Macintosh computers output 8-bit sound, though some support 16-bit. Audio CD's are 16-bit.

8-bit: 256 different numbers can be used to form a sound.

16-bit: 65,536 different numbers can be used to form a sound.

Software CD-ROMs could have stereo 8- or 16-bit sound files at any sampling rate (11KHz, 22KHz, 44KHz), but most of them are 8-bit mono 22KHz since that's what most Macintosh computers can play. Sound Manager 3.0 is capable of converting 16-bit audio to 8-bit audio on machines that don’t support 16-bit audio output.

Among desktop Macintosh computers, only the 660AV, 840AV, and Power Macintosh models have 16-bit audio input and output capability because of the AT&T DSP3210 hardware circuitry and the 16-bit Singer codec circuitry in the AVs. The Audio Waveform Amplifier and Converter (AWAC) chip in the Power Macintosh performs the same 16-bit I/O functionality. The PowerBook 500 series computers support 16-bit stereo output, but only mono input.

HOW AUDIO CD'S WORK ON THE MACINTOSH

All audio CD's play at 44KHz, 16-bits, and stereo, whether in a stereo system (compact disc player) or computer CD-ROM drive.

On Macintosh computers with internal CD-ROM drives, the AppleCD Audio Player program controls the CD player, and the CD player sends the sound directly to the speaker port, bypassing the logic board. This is why you can play audio CD's with no computer performance degradation, and why you get 44KHz, 16-bit, stereo output, even if your Macintosh can't play sounds from software with that quality.

For Macintosh computers with external CD-ROM drives, external speakers are required to hear audio CD's. This is because the sound from audio CD's is not sent to the computer through the SCSI cable as data, but rather the sound is sent directly to the speaker output port of the CD-ROM drive.

SOUND QUALITY & SIGNAL-TO-ERROR RATIO

In digital audio, the main measurement of maximum expressible amplitude to error ratio is called Signal-to-Error (S/E) ratio. This expressible amplitude is also referred to as the "maximum signal" of the recorded sound. The error is what is perceived as noise. The S/E ratio specification of a digital system is closely related to the Signal-to-Noise (S/N) ratio of an analog system, although it is not identical in nature due to differences between digital and analog methods.

The S/E ratio can be expressed specifically by calculating first a maximum signal value, second an error value, and finally creating their ratio. Although there are intervening steps in the math, the final formula to use when calculating the strength of the audio signal above the noise (distortion or error) level looks like this:

$$6.02 * n + 1.76 \text{ dB}$$

Where n is equal to the number of bits in the sample. The following results are

approximate signal above noise ratios for a various number of bits in a sample. Generally, the calculated results will be slightly
higher than the measured results. Also, specific implementations of hardware will affect the actual measured ratios in a downward fashion.

16-bit samples (number in audio CDs)	= 98 dB
12-bit samples	= 86 dB
8-bit samples (most Macintosh sound)	= 48 dB

To relate the quality of these digital recordings to analog recordings, think of the 8-bit recordings as inexpensive cassette recorders with inexpensive tape. The 12-bit recordings correlate to high quality cassette recorders with noise reduction and metal tape. The 16-bit recordings equate to professional studio reel-to-reel tape recorders with noise reduction and professional tape at high tape speeds.

Support Information Services

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Tech Info Library Article Number:16405

Tech Info Library

Performa 6100 Series: Specifications (8/95)

Revised: 8/21/95
Security: Everyone

Performa 6100 Series: Specifications (8/95)

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Article Created: 29 September 1994
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

This article gives the technical specifications for the Macintosh Performa 6100 series computer.

The following computers are in the Macintosh Performa 6100 series: Performa 6110, Performa 6112, Performa 6115, Performa 6117, and Performa 6118.

NOTE:
Because of differences in bundling and configuration, the Macintosh Performa 6116CD is not included in this article. See the article titled "Macintosh Performa 6116CD: Technical Specifications" for information about the Macintosh Performa 6116CD.

DISCUSSION ----------

Microprocessor

- 60-MHz PowerPC 601 RISC Processor

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB of RAM standard, expandable to 72 MB
- 2 SIMM slots (1 pair)
- 80 ns (nanosecond) SIMMs or faster
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size. For example, you should install two 8 MB SIMMs in first two adjoining slots.
- Possible RAM configurations are 8, 16, 24, 40 and 72 MB.
- L2 Cache Slot for Optional 256K Macintosh Cache Card

RAM note: All 8MM RAM configurations come with 8MB of RAM soldered onto the logic board

Form Factor

• Modular desktop enclosure (similar to Quadra 610, 660av enclosure)

Disk Drives

• One Built-in Apple SuperDrive 1.4 MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, MS-DOS, OS/2, and ProDOS disks.
• Support for one internal one-third, 5.25-inch height SCSI devices, one of which may be used for removable media, such as an internal CD-ROM drive.
• One internal one-third height hard disk (250, 350, and 500 MB depending on model)
• Internal Apple CD-ROM drive; AppleCD 300i drive
• Optional external SCSI hard disk drive (many capacities available)

Video Display

• Comes with Apple Multiple Scan 15 Display: 15-inch RGB Color Monitor color display, maximum 832-pixel by 624-pixel resolution with Performa 6100 series computer, 0.28-mm dot pitch, noninterlaced. Includes built-in Stereo speakers.
• DRAM based video: 16 bit on 14-inch monitors, 8 bit on 16-inch monitors. DRAM based video is not expandable. (The table below details support for specific monitors.)
• VRAM based video: No VRAM video support or expansion.

Begin_Table

Monitor:	Resolution:	Colors or Grays:
12-inch Color	512 by 384	thousands
12-inch Monochrome	640 by 480	256
13-inch or 14-inch Color or VGA	640 by 480	thousands
15-inch Portrait Monochrome	640 by 870	256
16-inch Color	832 by 624	256
Multiple Scan 15 Display	640 by 480	thousands
Multiple Scan 15 Display	832 by 624	256

Note: Built-in video (HDI-45 with 640K DRAM support) doesn't support any monitor with a resolution greater than 832 by 624. To use a larger monitor (19-inch, 20-inch, or 21-inch), a third-party video card or the AV card must be used.

End_Table

Interfaces

• One internal Nubus 90 PDS slot. Support block transfers to and from main memory, 2x block transfers card to card. There is a NUBUS adapter for the

Power Macintosh 6100. A NuBus card Requires an adapter card & bracket. There is only one slot, so it supports one PDS card OR one NuBus card.
- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices.
- One AAUI-15 Ethernet connector.
- Two serial (RS-232/RS-422) ports.
  (1 Printer/LocalTalk, 1 Modem, both support GeoPort)
- SCSI interface for connecting up to a total of seven SCSI devices.
- Sound output port for stereo compact disc audio and stereo computer-generated sound.
- Sound input port for stereo sound input (supports 16-bit stereo audio)
- One AV Display Connector supports the Apple AudioVision 14 Display. The bundled Video Adapter Cable (Part #M2681LL/A) allows you to connect a monitor with a standard DB-15 connector to your Power Macintosh built-in video.
- One internal 601 PDS (processor direct slot)
- One internal L2 (Level 2) cache slot

Audio System

- 16-bit stereo in and out
- Sample rates of 48, 44.1, 24, 22.05 kilohertz (kHz)
- Input line level: 1 volt peak-to-peak
- Output line level: 1 volt peak-to-peak
- Input SNR (signal-to-noise ratio): 82 decibels (dB) with no audible discrete tones
- Output SNR: 85 dB with no audible discrete tones
- Bandwidth: 20 Hz-20 kHz (+/- 2 dB) at 44.100 kHz sample rate
- THD+N (Total harmonic distortion plus noise): Less than 0.05 percent; measured 20 Hz-20kHz with a 1-Vrms sine wave input.

Networking

- Built-in Ethernet
- Serial port for AppleTalk
- Integrated GeoPort telecommunications architecture for data, fax, and voice connectivity.

Keyboard

- Several Apple Desktop Bus keyboards with numeric key pads available.

Mouse

- Apple Desktop Bus Mouse II; mechanical tracking, optical shaft, or contact encoding.

Clock/Calendar

- CMOS custom chip with long-life lithium battery.

Apple PlainTalk Microphone (optional)

- The microphone is unidirectional and optimized for use with speech recognition.

Disability Access

- Easy Access, and visible beep included with system software. These built-in features and third-party options provide alternative input and output tools for people with disabilities.

Modem

- Comes with TelePort/Gold II for Performa from Global Village Communications: 14,400-bps send and receive fax and 14,400-bps send and receive data.

Begin Table

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured
- Frequency: 50 to 60 hertz, single phase
- Power Supply Output Rating (Power available for internal devices)
  - Continuous output 86W

- A/C Line Input (Power drawn by the Power Macintosh 6100/60)
  - Maximum continuous 132W
  - Peak input 201W

End_Table

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 milliamps (a maximum of three Apple Desktop Bus devices is recommended)
- Mouse draws 10 milliamps.
- Keyboard draws 25 to 80 milliamps, depending on the keyboard model used.

Size and Weight

Main unit

- Height: 3.4 inches (8.5 cm)
- Width: 16.3 inches (41.5 cm)
- Depth: 15.6 inches (39.7 cm)
- Weight*: 14.0 pounds (6.4 kg)

*Weight varies based on internal devices installed

Mouse

- Height 1.3 inches (33 mm)
- Width 2.4 inches (61.7 mm)
- Depth 4.2 inches (107.3 mm)

• Weight 4 ounces (0.10 kg)

Operating Environment

• Operating temperature: 50 degrees to 104 degrees F
(10 degrees to 40 degrees C)
• Storage temperature: -40 degrees to 116.6 degrees F
(-40 degrees to 47 degrees C)
• Relative humidity: 5% to 95% noncondensing
• Maximum altitude: 10,000 ft. (3,048m)

System Software

System 7.5 operating system software preinstalled

Article Change History:
14 Aug 1995 - Added formatting for improved viewing on the Internet.
24 Jul 1995 - Added note about Performa 6116CD
12 Dec 1994 - Reviewed for technical accuracy for top 20 keyword.

Support Information Services

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Tech Info Library Article Number:16406

Tech Info Library

PlainTalk Jack: Requires 3.5 mm Plug (9/94)

Revised: 9/29/94
Security: Everyone

PlainTalk Jack: Requires 3.5 mm Plug (9/94)

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Article Created: 29 September 1994

TOPIC ----------

I am having problems using an audio cable from my stereo into my Power Macintosh computer. I cannot get a consistent signal, I sometimes have to wiggle the cable in order to hear the audio. I have tried several cables, but all of them do the same thing.

DISCUSSION ----------

The PlainTalk sound input mini-jack is a standard 3.5 mm diameter. The symptoms you describe occur if you use 1/8-in connectors instead of 3.5 mm connectors.

The difference is that the 1/8-in. plug is .125-in. in diameter, and the 3.5 mm jack is .139-in. (0.014-in. bigger). When a 1/8-in. plug is used, it is prone to cutting out and having excessive noise on the audio line.

To prevent this, you should use a 3.5 mm connector instead of 1/8-in.

Support Information Services

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Tech Info Library Article Number:16407

Tech Info Library

MacTCP Ping Does Not Work On Loopback Address (9/94)

Revised: 9/29/94
Security: Everyone

MacTCP Ping Does Not Work On Loopback Address (9/94)

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Article Created: 29 September 1994

TOPIC ----------

I am trying to ping my own IP address with MacTCP Ping but get no response. My IP address and configuration are just fine though!

DISCUSSION ----------

MacTCP Ping does not support the loopback address 127.0.0.1 or your own IP address. You will only be able to ping your address if you acquire that address from a DDP-IP gateway such as a FastPath via the EtherTalk icon in MacTCP. If you have an address assigned using the Ethernet or Token Ring icon you will not be able to ping your own address successfully.

Support Information Services

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Tech Info Library Article Number:16411

Tech Info Library

What is catsearchd in A/UX (9/94)

Revised: 9/29/94
Security: Everyone

What is catsearchd in A/UX (9/94)

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Article Created: 29 September 1994

TOPIC ----------

This article describes catsearchd an A/UX system process.

DISCUSSION ----------

In A/UX, catsearchd is a system process that maintains a cache of file system information, which increases the performance of catalog searches made from the Macintosh environment or from an AppleShare client.
Memory requirements for catsearchd is approximately 200 bytes for each file it caches information for. By default catsearchd caches information for all mounted UNIX partitions, but can be directed to only cache information below a given directory.

The memory requirements of catsearchd should be accounted for when determining the sizes of each of the various caches in the system. The following formula should be used:

Catsearchd memory = 200 bytes * (# of files in effected part of the file system)

- Tuning catsearchd
  To tune catsearchd the /etc/inittab entry for catsearchd can be modified as followed:

  1) Add the option -f <path> to tell catsearchd to only cache information for files which exist in or below the directory specified by <path>.

  2) Add the option -m <x>k to tell catsearchd how much memory must be installed on the system for catsearchd to run. For example, if -m 2048k is specified and the machine has 16 Megabytes of memory installed catsearchd will not be executed at system startup time.

For a complete description of catsearchd see UNIX man page catsearch(1M).

..TIL16412-What_is_catsearchd_in_A-UX_9-94_(TA32608).pdf

Support Information Services

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Tech Info Library Article Number:16412

Tech Info Library

Select 310: Doesn't Support QuickDraw GX Helper (2/95)

Revised: 2/16/95
Security: Everyone

Select 310: Doesn't Support QuickDraw GX Helper (2/95)

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Article Created: 29 September 1994
Article Reviewed/Updated: 16 February 1995

TOPIC -----

I'm not able to turn off desktop printing when using QuickDraw GX with our LaserWriter Select 310. We get a message saying "...GX couldn't find a compatible driver to use with the desktop printer LaserWriter GX, choose another desktop printer." Is there any way to disable desktop printing when using a LaserWriter Select 310?

DISCUSSION -----

It is not possible to turn OFF desktop printing for the LaserWriter Select 310 using QuickDraw GX Helper. For Apple PostScript printers, QuickDraw GX Helper only works with the network printers that use the standard LaserWriter driver (LaserWriter 7.x, 8.x). QuickDraw GX Helper first looks for the type and creator of LaserWriter 7.x in the Extensions folder. If it does not find LaserWriter 7.x, then it looks for LaserWriter 8.x next. If neither are available, then GX Helper displays the error message "...GX couldn't find a compatible driver to use...".

The only workaround is to restart your computer with QuickDraw GX disabled, and choose the original LaserWriter Select 310 driver in the chooser.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

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Tech Info Library Article Number:16414

Tech Info Library

Macintosh LC 575: Proper Way to Awaken Dimmed Display (9/94)

Revised: 9/29/94
Security: Everyone

Macintosh LC 575: Proper Way to Awaken Dimmed Display (9/94)

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Article Created: 29 September 1994

TOPIC ----------

I set the Screen control panel on my Macintosh LC 575 to dim the screen to save energy. I press the mouse button (without moving the mouse or touching the keyboard) to wake up the computer and it freezes up.

The mouse still moves and keyboard commands work, however I cannot use the mouse to select anything, it's as if the mouse button has been disabled.

What's causing this or how can I workaround it?

DISCUSSION ----------

It is best to awaken the computer by moving the mouse or pressing a key on the keyboard rather than pressing the mouse button.

Support Information Services

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Tech Info Library Article Number:16415

Tech Info Library

Reading ProDOS Diskettes on a Power Macintosh (9/94)

Revised: 9/29/94
Security: Everyone

Reading ProDOS Diskettes on a Power Macintosh (9/94)

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Article Created: 29 September 1994

TOPIC ----------

I am trying to read ProDOS disks from my Apple II on my Power Macintosh, but I am getting the message, "This disk is Unreadable, do you want to initialize?". I thought that my Power Macintosh floppy drive is supposed to be able to read ProDOS disks. How can I read these disks?

DISCUSSION ----------

Power Macintosh users that would like to read ProDOS disks have the following solutions:

1) Install Macintosh PC Exchange 2.0 or later.

   Macintosh PC Exchange software version 1.0.4 or 1.0.5 was included with System Software 7.1.2 for Power Macintosh. Macintosh PC Exchange allows users to easily read, write, and format PC-compatible disks. However, these versions of Macintosh PC Exchange do NOT allow users to read, write, or format ProDOS disks. In June, 1994, Apple announced Macintosh PC Exchange 2.0. In addition to formatting, reading, and writing DOS, and OS/2 disks, Macintosh PC Exchange 2.0 can format and use DOS formatted SCSI hard disks and removable media, such as Bernoulli and SyQuest cartridges and floptical drives. It can also format and use Apple II ProDOS floppy disks.

2) Upgrade to Macintosh System Software 7.5.

   When System Software 7.5 was announced in July, 1994, Macintosh PC Exchange 2.0 was integrated into the system software.

3) Apple File Exchange Utility version 7.0.

   Macintosh users have been able to read DOS and ProDOS disks using the Apple File Exchange utility since Macintosh System Software 6.0 shipped

in 1988. Apple File Exchange has been part of the Macintosh System Software through System 7 Pro. Since Macintosh PC Exchange 2.0 provides users the ability to read, write and format PC-compatible and ProDOS disks, Apple has discontinued development of Apple File Exchange. Although Apple File Exchange 7.0 may work with the Power Macintosh series, it was not fully tested by Apple and is therefore not supported on PowerPC processor based Macintosh systems.

Support Information Services

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Tech Info Library Article Number:16416

Tech Info Library

QuickDraw GX: Differentiating Various Font Types (8/95)

Revised: 8/7/95
Security: Everyone

QuickDraw GX: Differentiating Various Font Types (8/95)

==========

Article Created: 30 September 1994
Article Reviewed/Updated: 7 August 1995

TOPIC ----------

How do you identify which font suitcases contain scalable postscript fonts and which contain scalable TrueType fonts when using QuickDraw GX?

DISCUSSION ----------

When using QuickDraw GX, all fonts (including TrueType and PostScript) are stored in suitcase files inside the Fonts folder. On opening a suitcase with either TrueType, or PostScript fonts, you should see two types of fonts files listed -- bitmapped and scalable.

You can identify the different fonts by comparing the icons for the files. A bitmap font file has an icon with one "A" on it, while a scalable font file has an icon with three superimposed "A"s on it. A scalable font can be either a PostScript font or a TrueType font.

Unfortunately, from the Finder, there is no easy way to tell if a particular scalable font is TrueType or PostScript. The Finder lists both types of scalable fonts as "font".

There are two ways to tell the difference. One way is to open a copy of the font suitcase using ResEdit. Open the SFNT resource. The first four characters are typ1 if the font resource contains PostScript data; otherwise, it is a TrueType font.

A second way to determine whether the font is a PostScript font is to enable ATM GX (via the ATM GX Control Panel) and open the font in question. If the text on the screen is not smooth, it is a PostScript font.

This article was published in the "Information Alley":
Volume II, Issue 2, Page 14

Article Change History:
07 Aug 1995 - Made minor corrections.
18 May 1995 - Minor updates; added Info Alley information.
16 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

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Tech Info Library Article Number:16418

Tech Info Library

Express Modem 1.5.4 Posting Read Me (9/94)

Revised: 9/30/94
Security: Everyone

Express Modem 1.5.4 Posting Read Me (9/94)

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Article Created: 30 September 1994

TOPIC --

This article is the Express Modem 1.5.4 posting Read Me file.

DISCUSSION --

Name: Express Modem
Version: 1.5.4
Date Released: September 29, 1994
Description: Provides System 7.5 compatibility, replaces all earlier versions of the Express Modem software.
Who should use it: See Read Me information below.

The enclosed file is a self-extracting archive of a Disk Copy 1440K disk image. To use, download, double-click the downloaded file (this decompresses it), and use Disk Copy to create a disk.

Disk Copy can be found in the Utilities folder posted here.

Please Note:

- Express Modem 1.5.4 includes a "Fax Terminal 7.5 compatibility" extension which corrects a problem discovered using System 7.5 with earlier versions of the Express Modem software where unsent faxes could cause a crash at startup.

- Power Macintosh customers using an external GeoPort Telecom Adapter should use GeoPort For Power Macintosh software (not Express Modem 1.5.4).

- Macintosh 660AV/840AV customers using an external GeoPort Telecom Adapter should use GeoPort for 660AV/840AV software (not Express Modem 1.5.4).

- The Express Modem II Card is only available outside of the U.S.

Files found on Express Modem Disk:

File Name	Version #
Fax Terminal 7.5 compatibility	1.0
AppleLink US Access	
Express Modem 14400	1.0
Express Modem ARA 2.0	1.0
Express Modem AT Cmds	1.5.2
Express Modem CCL	1.0
Express Modem Read Me	1.5.3
Express Modem Tool	1.5.3
Express Modem	1.5.3
Fax Cover	1.5.2
Fax Extension	1.5.2
Fax Sender	1.5.2
Fax Terminal	1.5.2
Fax Viewer	1.5.2
Installer Script	1.5.4
Installer	3.4
My first fax	
PowerBook Setup	7.3
PowerBook	7.3.1
Sample	
Standard	
System Enabler 131	

Read Me for Express Modem

This Express Modem software can be run on the following machines with their respective modem cards:

- PowerBook 160, 165, 165c, 180, 180c using an internal Apple PowerBook 14.4 Modem Card.

- PowerBook Duo 210, 230, 250, 270c, 280, 280c using an internal Apple PowerBook Duo 14.4 Modem.

- PowerBook 520, 520c, 540, 540c using an internal Apple PowerBook Express Modem II Card.

- LC 575, Macintosh 630 using an internal Macintosh Express Fax/Modem.

- The Express Fax software also allows you to send faxes with PowerBook models 100, 140, 145, 150 and 170 when used with the Apple PowerBook Fax/Data Modem.

WARNINGS:

- Preferred CCL scripts for AppleTalk Remote Access:
  - ARA 1.0: "Express Modem 14400"

- ARA 2.0: "Express Modem ARA 2.0" (in "Modem Documents" folder in installer disk)

- Fax V.17 (High Speed) reception:
  Some fax machines may not work well with the high-speed (V.17) fax capabilities of Express Modem. If you find you are having problems sending or receiving a fax, try turning off the V.17 option in the Fax Terminal Preferences dialog.

Support Information Services

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Tech Info Library Article Number:16420

Using At Ease 2.0.3 Update ReadMe File (8/95)

Revised: 8/28/95
Security: Everyone

Using At Ease 2.0.3 Update ReadMe File (8/95)

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Article Created: 30 September 1994
Article Reviewed/Updated: 28 August 1995

TOPIC ----------

This article is the Using At Ease 2.0.3 Update Read Me file.

DISCUSSION ----------

This update lists important changes in version 2.0.3 of At Ease and adds information about new features. The update addresses the following topics:

- Installing and upgrading At Ease 2.0.3
- New features
- Using At Ease 2.0.3 with System 7.5
- Using At Ease 2.0.3 for Workgroups
- Tips for using At Ease 2.0.3

For additional information, consult the At Ease 2.0 Owner's Guide or the At Ease 2.0 for Workgroups Administrator's Guide.

INSTALLING AND UPGRADING AT EASE 2.0.3

The following sections give you important information about installing At Ease 2.0.3 and upgrading to At Ease 2.0.3.

Do you have the original At Ease disks?

If you have the original disks for At Ease 2.0.3 or At Ease 2.0.3 for Workgroups, use the Installer program that came with the software to place At Ease and Mouse Practice on your hard disk. See the At Ease 2.0 Owner's Guide or the At Ease 2.0 for Workgroups Administrator's Guide for installation instructions.

If you have problems installing At Ease on 2-megabyte (MB) systems, you can make more memory available by temporarily turning off all extensions. To do so, restart your computer and hold down the Shift key while it is starting up.

Do you have the At Ease 2.0.3 Updater disk?

If you have the At Ease 2.0.3 Updater disk for At Ease 2.0.3 and At Ease 2.0.3 for Workgroups, use the Updater program on that disk to update your earlier version of At Ease to At Ease 2.0.3 or At Ease 2.0.3 for Workgroups.

Upgrading from At Ease 1.0 to At Ease 2.0.3

If you have At Ease version 1.0, you must first obtain and install At Ease version 2.0 or 2.0.1 before you can install and use At Ease 2.0.3 using the At Ease 2.0.3 Updater disk. Once you have installed version 2.0 or 2.0.1, open the At Ease Setup program.

If you created a password in At Ease 1.0, you are asked to enter it as the administrator's password when you open the program. If you have At Ease for Workgroups, a new setup called "At Ease 1.0" appears in the setup list, along with a new user also called "At Ease 1.0." You can rename the user or the setup if you wish. Then turn on At Ease and restart your Macintosh.

When you restart with At Ease turned on, all items that appeared on the At Ease 1.0 Items panel appear on the At Ease 2.0 or 2.0.1 Items panel. You can use the At Ease Setup program to remove items. Initially, the user panel is empty; as users create new items, buttons for these items will appear on the panel.

Now that you have installed At Ease version 2.0 or 2.0.1 on your system, follow the instructions in the next section, "Upgrading from At Ease 2.0 or 2.0.1 to At Ease 2.0.3."

Upgrading from At Ease 2.0 or 2.0.1 to At Ease 2.0.3

If you have At Ease version 2.0 or 2.0.1 on your hard disk, it is automatically upgraded to At Ease 2.0.3 when you use the Updater program that came with version 2.0.3.

To update to At Ease 2.0.3:

Step 1
Turn on your Macintosh.

Step 2
Insert the At Ease 2.0.3 Updater disk.

Step 3
Double-click the Updater icon. After a few moments, the Updater shows you this screen:

Step 4
Click Begin. Some At Ease files are automatically updated.

Step 5
A screen then appears asking you to locate At Ease Setup. Select the At Ease Setup program, then click Update.

After a few moments, updating is complete. You are now ready to use At Ease 2.0.3 or At Ease 2.0.3 for Workgroups.

NOTE: You cannot use an earlier version of At Ease once you've updated to At Ease 2.0.3. The earlier version won't be able to read the preferences file created by At Ease 2.0.3. If you attempt to install and then use an earlier version after installing At Ease 2.0.3, a window appears telling you to contact the administrator, and then your computer shuts down. In order to use At Ease, you must install the At Ease 2.0.3 program again.

Removing At Ease permanently from your hard disk

To remove At Ease from your hard disk, use the Installer program that came with the At Ease software. Follow the instructions for removing At Ease in the At Ease 2.0 Owner's Guide or the At Ease 2.0 for Workgroups Administrator's Guide.

Do not remove At Ease by dragging the files to the Trash; if you do, you may not be able to restart your Macintosh.

NEW FEATURES

Creating buttons for file servers

The administrator can create At Ease buttons for file servers so that individual users or particular setups can have direct access to file servers. If you have At Ease 2.0.3, a button is created for an individual user. If you have At Ease 2.0.3 for Workgroups, a button is created for a particular setup. The administrator must connect to the file server before he or she can create a button for it in At Ease.

Once the administrator creates the button, a user or a particular setup is able to use that server. In most cases, a user must be registered to use a server and is required to enter his or her name and password after connecting to the file server (by clicking the server button). However, some servers do allow guest access.

To create an At Ease button for a file server you are connected to:

Step 1
Open the At Ease Setup program.
• If At Ease is already open, choose Go To At Ease Setup from the Special menu.
• If you are in the Finder, double-click the At Ease Setup program to open it.

Step 2
Type the administrator password and click OK.

Step 3

If you have At Ease 2.0.3 for Workgroups:
• Select a setup and click Open.
• Then go to step 5.

Step 4
If you have At Ease 2.0.3:
• Select a user and click Open.
• Then click Next.

Step 5
Click the Find Items button. The Find Items screen appears.

Step 6
Type all or part of the name of the file server in the upper box.

Step 7
Click the Find button. A list of items appears on the left, showing all items whose names contain the text you typed, including any file servers you are connected to.

Step 8
Click the file server and click the Add button. The selected file server now appears on the right. To select more than one item in the list, hold down the Shift key while you click the names of the items.

Step 9
When you have finished searching and adding items, click OK.

Step 10
If you have At Ease 2.0.3 for Workgroups, click OK. Then go to Step 12.

Step 11
If you have At Ease 2.0.3:
• Click Next.
• Click Next once more, then click Done.

Step 12
Choose Quit from the File menu to leave the At Ease Setup program.

Choosing application preferences

Some application programs need to access special files that come with the application. Sometimes these files may not be available to a user or setup, because of file or folder restrictions placed on a user or setup.

For example, The Writing Center comes with a set of pictures that are in the Pictures Folder. To use these pictures, The Writing Center application program must have access to that folder. A setup or user may not have access to that folder, however, and therefore would not be able to see or use these pictures because of security features within the At Ease program.

The administrator can now allow an application to bypass a setup or a user's folder and open and save these special files anywhere, such as in the

application's folder or in the System Folder. In most cases, this enables programs to run more smoothly.

This feature is normally turned on. The administrator may want to turn it off for a particular application if it is not running properly with this feature turned on.

To change the application preferences:

Step 1
Choose Go To At Ease Setup from the Special menu.

Step 2
Type the administrator password and click OK.

Step 3
Choose Application Preferences from the Options menu. The Set Application Preferences window appears.

Step 4
Click the desired application. Information appears in the Application Preferences window at the bottom.

Step 5
If you wish, click the checkboxes to change the settings. For most applications, the default setting is for both checkboxes to be active (marked with an X).

Step 6
Repeat steps 4 and 5 for each desired application. When you are finished setting application preferences, click OK.

Step 7
Choose Quit from the File menu to leave the At Ease Setup program.

Changing the administrator's password

The administrator now must type his or her old password before changing the administrator password. The administrator is the only user who can change this password.

Step 1
Choose Go To At Ease Setup from the Special menu.

Step 2
Choose Administrator Password from the Options menu. The Administrator Password screen appears.

Step 3
Type your old password in the upper box. Then type your new password in the middle and lower boxes. You can type up to 15 characters. As you type, dots (•••) appear in place of the text so that anyone nearby will be unable to see what password you have typed. Be sure to choose a password that only you would know.

Step 4
If you wish, click inside the lower box and type a clue that will help you remember your new password. You can type up to 63 characters. The clue will appear each time you are asked to provide the administrator password. As with the password itself, be sure to choose a clue that only you will recognize.

Step 5
Click OK. In the future you will need to provide the administrator password before you can use the At Ease Setup program. You can change the password at any time—but only after entering the original password.

Step 6
Choose Quit from the File menu to leave the At Ease Setup program.

Sharing files while using the computer for other work

You can share files on your computer in At Ease while you are doing other work, such as writing a document. If file sharing is turned on, it starts when the computer starts up and stops when the computer is shut down.

Using ClarisWorks

A printing problem in versions 2.0 and 2.0.1 of At Ease has been fixed. You can now print and view entire pages of ClarisWorks documents in At Ease 2.0.3 and At Ease 2.0.3 for Workgroups.

USING AT EASE 2.0.3 WITH SYSTEM 7.5

At Ease 2.0.3 and At Ease 2.0.3 for Workgroups are compatible with System 7.5. However, some control panels and other features of System 7.5 may work differently while At Ease is running. This section provides information on these differences. Please refer to the Macintosh Guide, available in the Guide menu (marked with a question mark icon on the right of the menu bar), for more information on these topics.

AppleScript

Scripts written using AppleScript can be launched by At Ease. However, scripts that require the Finder will not run properly.

Extensions Manager

You cannot change the settings in this control panel while At Ease 2.0.3 is running.

Find File

When At Ease 2.0.3 or At Ease 2.0.3 for Workgroups is open, Find File does not allow you to open or print items that are found.

General Controls control panel

• Documents: This option can control where the Documents folder is created on your computer. At Ease always tries to open or save a document in the user's folder, within the At Ease Documents folder, regardless of the settings in the Documents option.

• If At Ease is running and you have not changed the Documents option, At Ease creates the Documents folder on the startup disk. If At Ease is not running and you select the Documents folder radio button, the Documents folder is created on the desktop.

• Launcher: The Launcher does not work with At Ease 2.0.3 and if it is set to open at startup, it will not do so.

Macintosh Easy Open (version 1.1 or later)

If you attempt to open a document without the application program that created it and Macintosh Easy Open is active, a dialog box asks if you want to open the document with another program. The only programs displayed are those made available to the user in the At Ease Setup program.

PowerTalk

You can now receive PowerTalk mail in the background while you are in At Ease. However, to read or write mail, you must be in the Finder.

QuickDraw GX

At Ease now supports printing from QuickDraw GX. However, once you start a print job you cannot log out of At Ease or go to the Finder until the printing is completed. If QuickDraw GX is installed, print jobs that are stopped cannot be restarted within At Ease. The user or the administrator must go to the Finder to restart a print job.

• Printer menu: When the user has access to the Chooser and QuickDraw GX is active, a new menu appears in At Ease called "Printer." This menu contains all desktop printers that have been created, with a checkmark next to the currently selected printer. To select a different printer, simply choose its name.

• Printer Status command: To view the status of the currently selected printer, choose Printer Status from the Printer menu. Print jobs started by your computer are displayed. A pop-up menu allows you to view the status of other printers.

Shutdown Items folder

The Shutdown Items folder is located within the System Folder. All items in this folder are started when you choose the Shut Down command from the Special menu to shut down your computer.

USING AT EASE 2.0.3 FOR WORKGROUPS
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Security in At Ease for Workgroups

Several new security options are included with At Ease 2.0.3 for Workgroups. These include the ability to prevent users from disconnecting from file servers and the option of remembering the file servers that a user is connected to at login. The Lock Startup Volume option has also changed.

In addition, changes have been made in At Ease 2.0.3 and At Ease 2.0.3 for Workgroups to better ensure that the administrator's password cannot be easily obtained. These new and changed features are described next.

Preventing users from disconnecting from AppleShare volumes

When this option is active (marked with an X), the administrator's password is required to disconnect from file servers. This allows the administrator to decide whether a file server should be disconnected and prevents unauthorized users from disconnecting file servers. This option also ensures that connected file servers are always available.

Remembering user's AppleShare volumes at login

When this option is active (marked with an X), if you connect to a file server while in At Ease, you are reconnected to that file server when you log in to At Ease again. When this option is not active (the checkbox is blank), file servers that are set in the Chooser to open at start up will now be available to all users. If you connected to a file server while in At Ease, and then quit At Ease, the next time you log in to At Ease, you are not automatically reconnected to the file server you were connected to earlier.

Locking the startup disk

When you choose this option, At Ease locks your startup disk by installing security software on it. This security software cannot be installed on hard disks that have been initialized by driver software that is not compatible with At Ease 2.0.3 for Workgroups.

If At Ease detects an incompatible hard disk, the Lock Startup Volume checkbox is dimmed. Contact the publisher of the driver software to see if a compatible version is available. The At Ease security software cannot be installed on any hard disk partitioned with A/UX.

• Updating disk drivers: If you need to update the driver software for a locked disk, first choose Security from the Options menu in the Setup program and click the Lock Startup Volume checkbox to remove the X.

• Changing the startup disk: If you lock the startup volume, do not change the startup disk selected in the Startup Disk control panel. If you change the startup disk, your At Ease startup volume will not appear on the desktop when you restart the computer, and you will not be able to reselect it from within the Startup Disk control panel.

• Virtual memory: If you have more than one hard disk, the Lock Startup Volume

security feature may not protect the startup disk when virtual memory is turned on. Turn off virtual memory on your startup disk if you want to use this security feature.

For more information on security features, see Chapter 5 of the At Ease 2.0 For Workgroups Administrator's Guide.

To change the security options:

Step 1
Choose Go To At Ease Setup for Workgroups from the Special menu.

Step 2
Type the administrator password and click OK.

Step 3
Choose Security from the Options menu. The Security window appears.

Step 4
Click the checkboxes to change preferences.

Step 5
When you are finished changing the settings, click OK.

Step 6
Choose Quit from the File menu to leave the At Ease Setup for Workgroups program.

If you forget the administrator password

If you forget the At Ease administrator password, follow the instructions below instead of those in the manual.

NOTE: If your startup disk is locked, you'll first need to run the Unlock program on the At Ease 2.0.3 Utilities disk to unlock the startup disk. Consult the At Ease 2.0 for Workgroups Administrator's Guide for information about the Unlock program.

Step 1
Start up your computer from another startup disk. You can use any disk that has system software on it. (See the manual that came with your computer for instructions on choosing a startup disk.) If your computer came with a floppy disk called Disk Tools, you can use this disk.

Step 2
Open the System Folder of your usual startup disk.

Step 3
Open the At Ease Items folder inside your System Folder.

Step 4
Drag the At Ease Preferences file to the Trash.

Step 5
Hold down the Option key while you choose Empty Trash from the Special menu.

Step 6
Restart from your usual startup disk.

Step 7
Open the At Ease Setup for Workgroups application. If you are using an AppleShare file server as the At Ease disk, your setups may not appear until you reset the At Ease disk to this file server.

Step 8
If necessary, reconnect to the file server and use the At Ease Disk command to reselect the server. Make sure you use the information on the server instead of replacing it with the information on the startup disk.

Step 9
Choose Administrator Password from the Options menu.

Step 10
In the middle and lower boxes, type a new password. Then click OK. You can type up to 15 characters. As you type, dots (•••) appear in place of the text so that anyone nearby will be unable to see what password you have typed. Be sure to choose a password that only you would know.

Step 11
If you wish, click inside the lower box and type a clue that will help you remember your new password. You can type up to 63 characters. The clue will appear each time you are asked to provide the administrator password. As with the password itself, be sure to choose a clue that only you will recognize.

Step 12
Click OK. In the future you will need to provide the administrator password before you can use the At Ease Setup program. You can change the password at any time—but only after entering the original password.

Step 13
Choose Security from the Options menu.

Step 14
If you wish, turn on the following options. Then click OK.
• Allow remote administration
• Lock startup volume

Step 15
Turn At Ease back on by clicking the On button.

Step 16
Choose Quit from the File menu to leave the At Ease for Workgroups program.

Using At Ease with a file server

If you have an AppleTalk network of At Ease computers, you can set up an At Ease

disk on an AppleShare file server. This allows you to make changes in one place for all connected At Ease computers, and allows users to store documents on the file server so they can access them from any computer on the network.

To set up an At Ease disk on a file server, follow these steps:

Step 1
Install At Ease on all the networked computers but not on the file server. Don't install At Ease on the file server itself. You must use the Finder on this Macintosh.

Step 2
Set up the At Ease disk on the server as described in Chapter 4 of the At Ease 2.0 for Workgroups Administrator's Guide.

Step 3
Perform the Update Computers procedure as described in Chapter 6 of the At Ease 2.0 for Workgroups Administrator's Guide. You need to update computers only once. All future changes made to At Ease will automatically be seen by any At Ease Macintosh configured to use this server. (The update does not take effect on a remote computer until the computer is restarted or returned to the Login screen.)

Step 4
When you use At Ease for Workgroups, keep in mind the following cautions:
• There can be no more than 1000 total users for all setups.

• Every At Ease computer is set up using the same AppleShare account. That account must be permitted to read and write to the Documents folder on the At Ease disk.

• You cannot run the At Ease Setup program from more than one Macintosh concurrently.

TIPS FOR USING AT EASE 2.0.3

• Do not move the Finder from your System Folder. (At Ease may not work properly if the Finder is not present.)

• Application programs that you install are not automatically placed on the At Ease Items panel. Use the At Ease Setup program to give users access to these programs.

• When adding items for a setup, the Add Applications button does not add any Apple II application programs. Use the Find Items button to add these application programs.

• If an At Ease user saves a document in a folder other than his or her own user folder (or floppy disk), the document will not appear on the user's panel.

• When using the Copy To Floppy or Copy From Floppy command, clicking Stop does

not interrupt copying of the file in progress, but stops copying after it has been completed. If additional files were selected, they are not copied.

• Do not run an installer program for another program from within At Ease. To use an installer, first turn At Ease off and return to the Finder.

• Make sure that virtual memory is turned off when you are using the Speak Button Names option.

• Turn on Balloon Help to get more information about items in At Ease or At Ease Setup. (For instructions on turning on Balloon Help, see the At Ease 2.0 Quick Reference Card or the At Ease 2.0 for Workgroups Quick Reference Card.)

• If you are using A/UX, make sure that all At Ease users share the same A/UX login user name.

• If you are running At Ease 2.0.3 for Workgroups and you use Adobe Type Manager (ATM), turn it off on the computers you are updating. Then restart these computers before using the Update Computers feature of the At Ease Setup program. Turn ATM back on after you finish updating the computers, then restart the computers.

Article Change History:
28 Aug 1995 - Added keyword.
16 Feb 1995 - Changed keyword and format.
13 Dec 1994 - Reviewed for accuracy.

Support Information Services

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Tech Info Library Article Number:16421

Tech Info Library

CD-ROM: CD+G and CD+MM Disc formats (10/94)

Revised: 10/3/94
Security: Everyone

CD-ROM: CD+G and CD+MM Disc formats (10/94)

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Article Created: 3 October 1994

TOPIC ----------

I noticed that the AppleCD 300 CD-ROM drive supports the CD+G format. I tried using a CD+G CD-ROM, but I couldn't notice anything different from a standard audio format. Am I doing something wrong? Also, does the AppleCD 300 drive support the CD+MM CD-ROM discs?

DISCUSSION ----------

The CD+G format (audio + graphics), is an extension of the Compact Disc Digital Audio (CDDA) standard. It is supported by the AppleCD 300 CD-ROM, but without software to view the graphics on the disks, it acts like a standard audio CD-ROM. One application available on most online services is CD+G Player.

With the exception of Karoke CDs, the CD+G disc format never got full support from either record companies or the public. A majority of the pop CD+G discs came out in 1989 or 1990.

The CD+MM format (Audio + Multimedia) is not fully defined yet, so there isn't a standard for these discs. They can be Macintosh, Windows, or CD-I only, or they can be cross-platform. It is up to the developer of the disc to determine what platform they are going to support. These CD-ROM discs should also contain the platform requirements on the shipping box.

Support Information Services

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Tech Info Library Article Number:16423

Tech Info Library

Apple Phone: Known Issues (10/94)

Revised: 10/3/94
Security: Everyone

Apple Phone: Known Issues (10/94)

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Article Created: 3 October 1994

TOPIC ----------

This article details known issues with Apple Phone when used with a Quadra AV and GeoPort Telecom Adapter.

DISCUSSION ----------

Apple Phone is an example program and Apple doesn't support it. The Macintosh AV team created the program to show capabilities of the AV technology.

Apple doesn't intend to do any further work to this example program.

The following is a list of issues a user may encounter when using the Apple Phone Application:

- Apple Phone is preset to answer the phone after 4 rings. This setting can not be changed.

- If you are using an Audiovision Display, you may experience feedback when using the built in microphone at the top of the display. The workaround is to use the included PlainTalk microphone by disconnecting the monitor's microphone cable and attaching the PlainTalk microphone and experimenting with placement.

- Apple Phone keeps recording a phone message one or two minutes after the caller hangs up.

- Sometimes ApplePhone hangs up on the caller after five seconds (fixed in Apple Phone 1.0.1).

- Apple Phone only works through the left channel sound channel.

- Apple Phone is not operational when speech is turned on. Turn speech off in the Speech Setup Control Panel.

- If you play a CD using CD Remote or the Apple Audio CD Player, launching Apple Phone causes the sound volume to change significantly. The user can pause the audio CD while launching Apple Phone to avoid the problem.

- Apple Phone only works with the Centris/Quadra 660AV and Quadra 840AV.

Support Information Services

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Tech Info Library Article Number:16425

Tech Info Library

PowerBook: Leaving Battery in Charger for Extended Time (4/95)

Revised: 4/25/95
Security: Everyone

PowerBook: Leaving Battery in Charger for Extended Time (4/95)

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Article Created: 03 October 1994
Article Reviewed/Updated: 25 April 1995

TOPIC ----------

What is the effect of leaving PowerBook batteries in our dual-battery charger. A customer has a 180c and often leaves batteries in the charger for extended periods of time.

DISCUSSION ----------

It wasn't mentioned if the charger was powered on or not, here is some information concerning both situations.

The manual has the following note:
To preserve a battery's charge, don't leave it in the recharger if the power adapter is not plugged into an electrical outlet.

Leaving a battery in an unpowered recharger would drain the battery. Leaving it in an unpowered charger for an extended period of time could discharge the battery to a point where damage to the battery could occur.

Leaving a battery in a powered charger for extended periods of time will not be a problem. There are three steps in the charging process.

First a bulk charge is done if the battery voltage is below a certain level. After the bulk charge, the voltage applied to the battery is reduced to finish the recharging process. The charger then switches over to a trickle mode which is used to maintain the full charge to the battery.

Do not leave the power adapter in the PowerBook if it is not plugged into an electrical outlet.

Leaving a battery in the PowerBook with the power adaptor plugged into the electrical outlet for extended periods of time will not be a problem.

Article Change History:
25 Apr 1995 - More information added on leaving the PowerBook plugged in.

Support Information Services

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Tech Info Library Article Number:16426

Tech Info Library

Macintosh 630 Family: Supports Video Cards Through PDS (10/94)

Revised: 10/3/94
Security: Everyone

Macintosh 630 Family: Supports Video Cards Through PDS (10/94)

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Article Created: 3 October 1994

TOPIC ----------

Is it possible to add a video card to the Macintosh 630 family computer in order to support a larger monitor and to get more colors?

DISCUSSION ----------

The Macintosh 630 family computers, have three unique internal expansion slots.
• One 114-pin LC compatible PDS slot
• One 112-pin communication port for modem and ethernet
• One 60-pin video-in Slot for real-time video display and capture

The communications and video-in Slot are reserved for Apple products, the LC compatible PDS slot is open for third party development.

Video cards made for the LC PDS should work fine, however you should verify compatibility with the video card manufacturer.

To verify that a particular third-party product is compatible with a specific Macintosh, we recommend you check with the supplier of that product.

For additional information on third party compatibility with the Macintosh 630 family, search the TIL for the article: "Macintosh 630 Family: PDS Compatibility"

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Support Information Services

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Tech Info Library Article Number:16427

Tech Info Library

Portable StyleWriter: How to Charge the Batteries (2/95)

Revised: 2/13/95
Security: Everyone

Portable StyleWriter: How to Charge the Batteries (2/95)

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Article Created: 3 October 1994
Article Reviewed/Updated: 7 February 1995

TOPIC ----------

Is there a special method for charging the Portable StyleWriter battery? Putting it into the Portable StyleWriter battery compartment and connecting the printer to the AC adapter does not seem to charge it no matter how long I leave it plugged in.

DISCUSSION ----------

Follow these steps to place the Portable StyleWriter into battery charging mode:

1) Ensure that the power adapter is plugged into a wall outlet and into the printer.

2) Check that the battery switch is in the "1" position (versus the "0" position) on the back of the printer.

3) Turn on the printer with the Power button while holding down the On Line button.

4) When the first beep sounds, release the Power button.

5) When the second beep sounds, release the On Line button.

The POWER LED begins flashing, indicating that the printer has entered the battery charging mode.

The battery charging voltage is 14.8 volts DC. The printer controller checks the battery voltage every two minutes during the charging process, which normally takes about 10 hours. When the charging is complete the printer automatically stops charging and turns itself off. If the battery voltage is less than 6 volts DC at any time during the charging process, the battery is either

over-discharged or defective, at which time the controller alternately flashes the POWER and ERROR LEDs to indicate a charging problem. The POWER LED flashes when the battery needs recharging.

Article Change History:
07 Feb 1995 - Added additional information; added keyword.

Support Information Services

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Tech Info Library Article Number:16429

Tech Info Library

LaserWriter Select Printers: Fuser Temperature (10/94)

Revised: 10/3/94
Security: Everyone

LaserWriter Select Printers: Fuser Temperature (10/94)

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Article Created: 3 October 1994

TOPIC ----------

What is the fuser temperature of the LaserWriter Select 300/310/360? I am trying to use some special labels that may be damaged if the temperature exceeds 410 degrees.

DISCUSSION ----------

The fusing temperatures for the LaserWriter Select printers are as follows:

LaserWriter Select 300/310

Paper Size	Fusing Temperature (Max)
A4, Letter, Legal	320°F (160°C)
Post Card, COM-10, Monarch, C5, DL	331°F (166°C)

LaserWriter Select 360

Paper Size	Fusing Temperature (Max)
A4, Letter, Legal	331°F (166°C)
Post Card, COM-10, Monarch, C5, DL	361°F (183°C)

Support Information Services

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Tech Info Library Article Number:16430

Tech Info Library

Apple Remote Access: Geoport Settings on 660AV or 840AV (10/94)

Revised: 10/3/94
Security: Everyone

Apple Remote Access: Geoport Settings on 660AV or 840AV (10/94)

==========

Article Created: 3 October 1994

TOPIC ----------

I am having trouble getting Apple Remote Access to work with Geoport on a Macintosh Quadra 660AV or 840AV.

DISCUSSION ----------

If you encounter problems with ARA and Geoport check the following settings:

• Express Modem Control Panel
  - Turn Express Modem switch ON
  - Modem Port is set to use External Modem

• Speech Setup Control Panel
  - Turn Speech recognition OFF

• Remote Access Setup Control Panel
  - Modem type is set to GeoPort Telecom
  - Port is set to GeoPort

• Sound Control Panel
  - Sound out - 24KHz

If, after checking all of these settings, it still does not work, do the following:

1) Remove Serial Port Arbitrator from the Extensions folder
2) Turn virtual memory off
3) Turn file sharing off
4) Zap PRAM (Command-option-P-R at startup)

Support Information Services

..TIL16431-Apple_Remote_Access-Geoport_Settings_on_660AV_or_840AV_10-94_(TA32623).p

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Tech Info Library Article Number:16431

Tech Info Library

System 7.5: Anomaly Deleting Notes From Note Pad (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Anomaly Deleting Notes From Note Pad (2/95)

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Article Created: 04 October 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

I want to delete a page from my System 7.5 Note Pad. I show the page I want deleted and selected Delete from the File menu. A dialog box appears with Cancel and Delete as selections, Delete is the default (outlined in bold). However, when I hit the return or enter key, cancel is selected instead. Why is this?

DISCUSSION ----------

There is an anomaly with the default selection. To delete the note users must click on the Delete button with the mouse.

Article Change History:
16 Feb 1995 - Reviewed for accuracy and changed keyword.

Support Information Services

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Tech Info Library Article Number:16432

Tech Info Library

Restricting PowerShare Catalog Access (10/94)

Revised: 10/4/94
Security: Everyone

Restricting PowerShare Catalog Access (10/94)

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Article Created: 4 October 1994

TOPIC ----------

Can A PowerShare catalog be created which includes more than one organization, but prevents one organization from browsing another's catalog data or sending mail to users in another organization? We tried changing access privileges for the Users and Groups folder but got our server into a state where users could not log into their PowerShare accounts.

DISCUSSION ----------

This can be accomplished using PowerShare's access privileges. The effect of changing privileges is not well documented and should be approached with caution. (Be sure to test before deployment.)

The following example shows how to protect one organization's catalog data from another organization in the same PowerShare system:

1) Open PowerShare Admin and with the Catalog Server selected in the System Monitor window, select Show Catalog from the Window menu.

2) Create a new folder for each organization.

3) Select the newly created folders one at a time and restrict access by selecting Access Privileges under the Catalog menu and then selecting Folder Members from the pull down menu next to See Records.

4) Populate each folder with users belonging to the corresponding organization. Note that original user records reside in these folders. Aliases to these records will automatically be created in the Users and Groups folder.

With this configuration users will find they will only have access to records in their own organization in the PowerShare browser. They will see names of people outside their organization in the Users and Groups folder but cannot open those

business cards or send them mail since they lack the necessary privileges.

Support Information Services

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Tech Info Library Article Number:16435

Tech Info Library

LaserWriter Select 360: Using MicroPrint on Other Printers 5/95

Revised: 5/19/95
Security: Everyone

LaserWriter Select 360: Using MicroPrint on Other Printers 5/95

==========

Article Created: 4 October 1994
Article Reviewed/Updated: 16 May 1995

TOPIC ----------

I noticed that Apple is selling MicroPrint for the LaserWriter Select 360 printer. Can this software be used with other LocalTalk printers? How about the LaserWriter Bridge software that is bundled with the LaserWriter Select 360?

DISCUSSION ----------

MicroPrint is being sold by Apple, and is designed for the LaserWriter Select 360. This version of is a slightly modified version of a product being sold by Sonic Systems. Apple's version of MicroPrint was not tested with other Apple LaserWriter printers. It might work with other LocalTalk printers, but Apple has not tested it with any printers other than the LaserWriter Select 360.

Apple also bundles the LaserWriter Bridge software with every LaserWriter Select 360 being sold. This software is also slightly modified from the version Sonic Systems sells. Every copy of the LaserWriter Bridge software is licensed by Apple from Sonic Systems. It is licensed for only the LaserWriter Select 360, so legally it cannot be used with other LocalTalk printers.

Support

Use this informtion if you need support on either the LaserWriter Bridge or or MicroPrint:

- LaserWriter Bridge

  All support is handled by Apple -- 800-SOS-APPL.

- MicroPrint

  All support is handled by Sonic Systems.

Note: If you connect MicroPrint to a LocalTalk printer other than the LaserWriter Select 360 and have problems, Sonic Systems would like to know about it.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

This article was published in the "Information Alley":
Volume I, Issue 13, Page 19

Article Change History:
16 May 1995 - Added vendor and Info Alley references; removed address.
07 Feb 1995 - Added keyword and made several technical updates.
14 Oct 1994 - Clarified discussion.

Support Information Services

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Tech Info Library Article Number:16437

Tech Info Library

QuickDraw GX: How to Remove (2/97)

Revised: 2/15/97
Security: Everyone

QuickDraw GX: How to Remove (2/97)

==========

Article Created: 05 October 1994
Article Reviewed/Updated: 15 February 1997

TOPIC ----------

This article describes the steps necessary to remove QuickDraw GX.

DISCUSSION ----------

When you installed Mac OS 7.5.x or 7.6, you may have also installed all the extras, including QuickDraw GX. If you decide at some point that QuickDraw GX is not something you need or want to use, you can easily remove it from your system.

The QuickDraw GX Installer has an easy to use remove feature that removes the components of QuickDraw GX. After removing GX, it may be necessary to restore some fonts that QuickDraw GX converted.

Follow these steps for the removal procedure:

Step 1:
Quit any open applications or desk accessories.

Step 2:
Locate the QuickDraw GX Installer on either the QuickDraw GX Install floppy disk, or System Software CD-ROM disc, look in the QuickDraw GX folder on the CD.

NOTE: On Mac OS 7.6 CD-ROM, the QuickDraw GX folder is located inside the Software Installers folder.

Step 3:
Launch the Installer.

Step 4:
When you see the Installer's Welcome screen, click continue.

Step 5:
Open the pop-up menu (which says Easy Install) and choose Custom Remove.

Step 6:
Click on the check boxes for the components you want to remove.

Step 7:
Click on remove.

The installer removes the selected components. However, any PostScript fonts that were present in the System Folder before the QuickDraw GX installation no longer work properly because QuickDraw GX placed them in suitcases that standard System Software does not recognize.

Copies of the old fonts were placed in a folder called Archived Type 1 Fonts in the System Folder. Open this folder and copy all of the fonts to the Fonts folder within the System Folder. If prompted to replace any existing fonts, go ahead and replace them.

If you converted any Postscript fonts using the Type 1 Enabler application, you need to reinstall the fonts from original diskettes as that application does not place copies in the archive folder.

Finally, if you used Adobe Type Manager, you should also reinstall that application as it may have been removed when QuickDraw GX was installed.

This article was published in the "Information Alley":
Volume II, Issue 1, Page 14

Article Change History:
15 Feb 1997 - Updated the article for Mac OS 7.6.
03 May 1995 - Added keyword; made minor technical udpates.
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.

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Tech Info Library Article Number:16439

Tech Info Library

QuickDraw GX: Hewlett Packard Drivers Available (3/95)

Revised: 3/13/95
Security: Everyone

QuickDraw GX: Hewlett Packard Drivers Available (3/95)

==========

Article Created: 5 October 1994
ARticle Reviewed/Updated: 13 March 1995

TOPIC ----------

Are any third parties providing QuickDraw GX compatible drivers for their products?

DISCUSSION ----------

Hewlett-Packard (HP) plans to support the QuickDraw GX graphics model for the Macintosh computer with software drivers developed for the HP LaserJet, DeskJet, and DeskWriter printer families. QuickDraw GX-savvy drivers are currently available for the following printers:

DeskWriter
DeskWriter C
DeskWriter 510
DeskWriter 550C
DeskWriter 520
DeskWriter 560C

QuickDraw GX is supported in the DeskWriter printers by the use of DeskWriter GX software (DWGX 1.0).

The fastest way to get a QuickDraw GX printer driver is from one of several electronic online services. These include:

CompuServe: HP Peripherals forum (GO HPPER)
Library 9
Internet: ftp-boi.external.hp.com
IP address - 192.6.71.2
Name - Anonymous
Password - Send User Identification
Files are listed on the sites as: DW60.sea or DWGX10.HQX
HP Download

Service: 1-208-344-1691 Parity: N Data Bits: 8 Stop Bits: 1

If you would like to receive a disk with the QuickDraw GX printer driver contact the HP Software Distribution (Fulfillment) Center in your area. A nominal charge for materials and shipping applies.

The Tech Info Library article titled "Locating Vendor Information" can help you search for the address and phone number(s) of a particular vendor, in this case, Hewlett Packard.

Article Change History:
13 Mar 1995 - Removed HP information about AppleLink. Added version number of the DeskWriter GX driver.
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16441

QuickDraw GX Helper: Known Issues (7/95)

Revised: 7/17/95
Security: Everyone

QuickDraw GX Helper: Known Issues (7/95)

==========

Article Created: 4 October 1994
Article Reviewed/Updated: 17 July 1995

TOPIC ----------

This article describes some known issues with the QuickDraw GX Helper.

DISCUSSION ----------

How it works

QuickDraw GX Helper is a system extension that lets you disable QuickDraw GX desktop printers. It gives you the option to select what type of printing to use from the Apple menu. The setting is preserved by applications and is stored in the QuickDraw GX Helper preferences file in the Preferences folder.

When desktop printers are inactive, the Macintosh Operating System does not use the QuickDraw GX printer driver. All printing calls are routed to the non-QuickDraw GX printer driver.

Installation

QuickDraw GX Helper is not installed as part of the Easy install option of QuickDraw GX. You must use the Custom install option and specifically choose QuickDraw GX Utilities.

QuickDraw GX Helper requires that the old print driver and the QuickDraw GX equivalent print driver both be in the Extensions folder. For example, if you are using a LaserWriter, both the drivers LaserWriter and LaserWriter GX must be in the Extensions folder.

Incompatible with Fax Modems and Non-Apple printers

QuickDraw GX Helper only works with equivalent Apple-brand printer drivers that are in the Extensions folder. For LaserWriter GX, it uses LaserWriter driver v7.2 as this was the only version tested with GX Helper. GX Helper is not

compatible with any third-party printer devices.

Postscript Fonts

QuickDraw GX Helper enables a non-GX printer driver, so you must re-install the PostScript font files into the Fonts folder. These are listed in the Finder as PostScript Font when you view the files by kind. This is necessary because the older printer drivers have not been updated to support the QuickDraw GX font suitcase format (created by the GX installer) that places PostScript fonts in a suitcase.

Both the PostScript font file and the new GX compatible suitcases can be present in the Fonts folder at the same time. The only performance penalty is extra disk space being used by duplicate font data. You can find the older PostScript font files in either the "Archived Type 1 Fonts" folder in the System folder or on the original fonts disk. Note that the screen font does not need to be copied back to the Fonts folder.

Using With the LaserWriter 8 driver

You cannot use the GX helper with both the LaserWriter 8 and LaserWriter (version 7.5) printer drivers installed in the Extensions folder. This is because the QuickDraw GX helper first looks in the Extensions folder for a Chooser Extension with the type and creator of the LaserWriter 7.5 driver. If it is not found, then it looks for a Chooser Extension with the type and creator of the LaserWriter 8 driver. If it first finds the LaserWriter 7.5 driver, it does not continue to look for the LaserWriter 8 driver. The workaround is to keep only one of the LaserWriter drivers in the Extensions folder at a time. You can use the Extensions Manager in System 7.5 to disable the appropriate driver.

Using with the LaserWriter Select 310

The QuickDraw GX Helper does not allow switching back to the LaserWriter Select 310 driver. Under QuickDraw GX, you must use the LaserWriter GX driver configured for serial output with a LaserWriter Select 310 printer. GX Helper is set up only to look for the older network LaserWriter drivers (LaserWriter 7.x or LaserWriter 8.x). It does not find the LaserWriter 310 driver. Renaming the LaserWriter 310 driver to LaserWriter does not solve the problem since QuickDraw GX Helper uses the Finder's type/creator information to locate a driver.

Article Change History:
17 Jul 1995 - Added information about screen fonts.
07 Apr 1995 - Made minor technical updates.
14 Feb 1995 - Updated keyword; reworded how helper checks type/creator.

Support Information Services

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Tech Info Library Article Number:16445

Tech Info Library

QuickTake Camera: Third Party Close-up Kit Available (4/95)

Revised: 4/21/95
Security: Everyone

QuickTake Camera: Third Party Close-up Kit Available (4/95)

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Article Created: 4 October 1994
Article Reviewed/Updated: 21 April 1995

TOPIC ----------

Are there any close-up or telephoto kits available for the Quicktake 100 and 150 cameras?

DISCUSSION ----------

Micro World sells several different close-up lens adapters for both QuickTake cameras consisting of the following three lenses:

Copy Area	Depth of Field
8.0"x10.0"	5.0"
4.5"x5.5"	1.5"
2.0"x2.5"	0.5"

The lens system can be purchased with a special copy stand that aids taking pictures of small objects and existing photographs by maintaining a stable camera mount and the proper depth of field.

Creating a telephoto lens for the QuickTake camera is a more difficult process because the depth of field is not known, and it is significantly more difficult to aim the camera at the subject because there is no visual aiming feedback. I am not aware of any companies that have a telephoto lens system on the market.

Kaidan Systems also sells close-up lens for the QuickTake 100 and QuickTae 150 camera.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
21 Apr 1995 - Added Kaidan System to the article.
09 Mar 1995 - Added additional information on close-up lenses.

Support Information Services

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Tech Info Library Article Number:16446

Tech Info Library

LaserWriter Pro 810: LaserJet IIP Initialization string (10/94)

Revised: 10/5/94
Security: Everyone

LaserWriter Pro 810: LaserJet IIP Initialization string (10/94)

==========

Article Created: 4 October 1994

TOPIC ----------

What is the printer initialization string (reset string) for HP II emulation on a LaserWriter Pro 810?

DISCUSSION ----------

The "Reset Escape Command" used typically for controlling manual feed printouts is "<ESC> E". It is possible that this is not supported in the LaserWriter Pro 810's emulation of the HP LaserJet IIP. Ifthis escape sequence to implement manual feed and it is not working, then we would suggest using the following escape sequence:

<esc>&l#h

<esc> = escape character
l = lowercase L
# = refer to following values
---
0 - source current (default)
1 - upper tray
2 - manual feed
4 - lower tray
5 - middle tray

Thus, to perform a manual feed job the escape sequence needed is: <esc>&l2h

In terms of what is and is not supported by the LaserWriter Pro 810's HP LaserJet IIP emulation, the following list below (taken from the LaserWriter IIf/IIg's documentation) should provide a general outline:

The LaserJet IIP emulator contained in the LaserWriter allows you to print just about anything you can print on the LaserJet IIP, with these differences:

• The LaserJet IIP omits characters that overlap the left margin of the paper, but the emulator prints the portion of the character that does not extend into the margin.

• The LaserJet IIP allows you to insert commands to halt printing so that you can insert paper or envelopes manually. The emulator interprets those commands as form feeds.

• Applications that produce justified text with the LaserJet IIP versions of Helvetica (Helv) and Times Roman (Tms Rmn) fonts may generate slightly ragged output on the emulator.

• While the LaserJet IIP prints characters in the closest available point size and pitch for each font, the emulator scales the font to the specified size.

• The line printer font, which is 16.67-pitch Courier, appears with a height of 7.2 points when printed with the emulator, rather than 8.5 points as printed by the LaserJet IIP.

• The Control-C and Control-T key combinations, which you can normally use to interrupt printing or query the status of the LaserJet IIP, cannot be used with the emulator.

• The emulator does not print nine characters from the LaserJet IIP Roman-8 symbol set. These characters are shown in the following table.

Decimal codes: 176, 179, 227, 228, 240, 241, 247, 248, and 254.

Support Information Services

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Tech Info Library Article Number:16447

Tech Info Library

Multiple Scan Display: Foot Lamberts and Luminace Ratings 10/94

Revised: 10/5/94
Security: Everyone

Multiple Scan Display: Foot Lamberts and Luminace Ratings 10/94

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Article Created: 4 October 1994

TOPIC ----------

What are the Foot Lamberts or Luminace ratings for the Multiple Scan 17 and Multiple Scan 20 monitors?

DISCUSSION ----------

Both displays support:
- Minimum center luminance = 25fL

Multiple Scan 17 Display maximum brightness:
- Active image 300 X 225 mm shall not exceed 50fL.

Multiple Scan 20 Display maximum brightness:
- Active image 360 X 270 mm shall not exceed 37fL.

Support Information Services

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Tech Info Library Article Number:16448

Tech Info Library

Workgroup Server 95: Blank SCSI ID Positions (10/94)

Revised: 10/6/94
Security: Everyone

Workgroup Server 95: Blank SCSI ID Positions (10/94)

==========

Article Created: 06 October 1994

TOPIC ----------

The SCSI address thumbwheel on the internal hard drive carriers inside the Apple Workgroup Server 95 have two blank positions.

Is it possible to have the server/drive work properly with the address set to a blank? What do these blank positions do?

DISCUSSION ----------

The thumbwheel controls 4 bits (numbered 0 through 3). The hard drive only uses the first 3 bits to set the SCSI ID. The thumbwheel switches used on these drives still register a valid binary output even for the settings that are blank (they represent 8 and 9, for the curious).

Because the SCSI ID is set by bits 0, 1, and 2 (bit 3 is ignored), the two blank positions still represent valid (although useless and duplicate) SCSI ID's. See chart below.

Thumbwheel settings and their corresponding bit positions:

Thumbwheel Setting	Binary value Bits: 3 2 1 0	
6	0,1,1,0	<--- SCSI address 6
7	0,1,1,1	<--- Obvious conflict with the CPU
8	1,0,0,0	<--- First blank position
9	1,0,0,1	<--- Second blank position

As the chart shows, thumbwheel setting 8 would equal SCSI ID 0 and 9 would be ID 1. To avoid confusion it is best not to set the SCSI ID switch to a blank value.

..TIL16449-Workgroup_Server_95-Blank_SCSI_ID_Positions_10-94_(TA32637).pdf

Support Information Services

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Tech Info Library Article Number:16449

Tech Info Library

Workgroup Server 95: Recreating MacPartition (10/94)

Revised: 10/6/94
Security: Everyone

Workgroup Server 95: Recreating MacPartition (10/94)

==========

Article Created: 06 October 1994

TOPIC -----

When a user is doing custom partitioning on a Workgroup Server 95 startup drive and they delete the MacPartition, they can encounter a problem.

DISCUSSION -----

It seems that HDSC Setup on the A/UX installers gets confused when there is a Mac Partition that is deleted. HDSC Setup doesn't give you the option of creating a replacement MacPartition until you remove and recreate the Apple disk driver at the top of the disk map.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16450

Tech Info Library

Workgroup Servers: Causes of Stuck DAT Tapes (10/94)

Revised: 10/6/94
Security: Everyone

Workgroup Servers: Causes of Stuck DAT Tapes (10/94)

==========

Article Created: 06 October 1994

TOPIC ----------

What are some causes of stuck MRS DAT tapes in Workgroup Servers?

DISCUSSION ----------

If a customer has a tape stuck in a DAT drive, first make sure the indicator lights on the drive are not indicating an error condition:

Left (Cassette) Light	Right (Drive) Light	Meaning
Green	Pulsing Green/Amber	Media Wear
Amber	Amber	High humidity/SCSI termination problem
Pulsing Amber	Amber	Self-Test Failure

In some Workgroup Server 95 systems, tapes could not be ejected because of misalignment between the DAT drive and the front bezel. This manufacturing problem should no longer be occurring, and would only be relevant for new Workgroup Server 95 systems with tapes not ejecting.

A tape could be stuck because it is broken (no tension on the tape). It is unusual for this to happen but when it does, it's usually a fault of the mechanism not seating the tape all the way before starting the drive motors.

There are 2 fingers that contact each hub to make sure the tape does not unravel while in storage or out of the drive. When you insert a tape into the DAT drive, there are 2 covers that are moved (one covering the hub holes and one covering the tape surface). Upon insertion into the drive, the mechanism makes the covers open fully, thereby retracting the interposing fingers from the hub teeth.

If the fingers aren't pulled away from the teeth before the motors attempts to retension the tape, then the tape snags and most likely snaps. If you suspect

this may be the problem, follow these steps:

1) Power down the server
2) Detach the SCSI connection to the DAT drive
3) Power up the server
4) Press in on the tape cartridge while depressing the eject button.

The other possible fault of DAT drives is the failure of the sensing mechanism to sense the end of tape. If this happens on EVERY tape that is inserted, then it's likely a hardware issue; if it's occasional, it may be a stiff cartridge not seating all the way in the mechanism or a faulty mechanism.

One final thing to check is how long a tape has been in use. The MRS tapes have a lifespan of about 50-60 hours of use, and should be replaced after that point.

Support Information Services

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Tech Info Library Article Number:16451

Ethernet: Could Not Switch to EtherTalk Error (1/96)

Revised: 3/19/97
Security: Everyone

Ethernet: "Could Not Switch to EtherTalk" Error (1/96)

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Article Created: 06 October 1994
Article Reviewed/Updated: 4 January 1996

TOPIC ----------

When I go to the Network control panel and click on EtherTalk, I get the message "Could not switch to EtherTalk due to an error. Your connection will be reset to LocalTalk." What causes this problem?

DISCUSSION ----------

The error can be caused by hardware or software. If the error message is immediate, the problem is likely with the EtherTalk software on your computer. Missing or corrupted software is the likely culprit, reinstalling the Ethernet software or system software should cure the problem.

If the error message comes back 3 to 8 seconds later, the problem is with the Ethernet network. During this time, the computer is trying to verify the network connection.

The switch to Ethernet can fail for several reasons:

- An inactive Ethernet connection (inactive network).
- AppleTalk is not activated through the Chooser (may require zapping PRAM).
- Network cabling problems such as a loose or malfunctioning transceiver, improper hub port configuration (10BaseT only), or a bad cable.
- The appropriate resources and/or drivers may not be present. Run either Network Software Installer or a custom install of EtherTalk software from the System Software installer.
- The System file may be corrupt. Delete the System file only and reinstall.
- You may have an incompatible 3rd party hard disk driver.

Try zapping PRAM first to resolve the problem. Disconnect and then reconnect the transceiver or network cable from the computer. Also check if network

maintenance was performed, it is possible for Ethernet connections to be disturbed in a wiring closet which could impact your connection.

Apple Ethernet CS Thin Coax Card

If you have the Apple Ethernet CS Thin Coax Card (M2708Z/A) installed in your computers communications slot, you must use Network Software Installer (NSI) 1.5.1 or later for the latest EtherTalk drivers.

NOTE: Keep a copy of the latest NSI present in case you need to re-install system software. NSI 1.5.1 or later must also be re-installed after a clean system softer installation.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
04 Jan 1996 - Added other possible corrective measures.
14 Nov 1995 - Added Apple Ethernet CS Thin Coax Card and NSI 1.5.1.
11 Oct 1994 - Documented additional causes for problem.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16452

Tech Info Library

AWS 95 or A/UX: /etc/macgetty Is Not Executable (11/94)

Revised: 11/15/94
Security: Everyone

AWS 95 or A/UX: "/etc/macgetty" Is Not Executable (11/94)

==========

Article Created: 6 October 1994
Article Reviewed/Updated: 15 November 1994

TOPIC ----------

What should I look for if I reboot an AWS 95 or A/UX system and get the following message, "/etc/macgetty is not executable; launching getty instead."

DISCUSSION ----------

This error means that A/UX is not able to give you a Macintosh screen display. It is caused by a permissions problem that is preventing macgetty from running on startup. To determine the cause of the problem follow the steps outlined below.

1) The command:

```
ls -l /etc/macgetty
```

Should display the following line of information:

```
-rwxr-x---  root sys    (the permissions for owner and group)
```

If the permissions for macgetty are not set as shown above, use the following A/UX commands to set them correctly:

```
chmod 750 /etc/macgetty       (will change the permissions)
chown root /etc/macgetty      (will change the ownership)
chgrp sys /etc/macgetty       (will change the group)
```

2) If you notice in Step 1 above that both owner and group are set to root, issue the command

```
ls -l /etc
```

This command will give you a listing of the permissions for all the

files in the /etc directory. If you notice that every file is set with root ownership and root group-ship, it is probably time to reinstall the core A/UX. The only way to tell how many files and directories are messed up is to mount the installation CD and check all the files against those on the CD. This problem is often the vestige of someone having changed permissions on a folder from the File menu's "UNIX Permissions ..." choice and having checked the "Make all currently enclosed directories..." option.

3) If the file permissions seem to be set correctly, try the command:

```
su sys
```

This will set you to be the super user. If that fails with a line like "can't execute /bin/sh", issue the commands:

```
cd /
ls -la
```

Verify that the entries for "/etc" and ".." (which is "/" itself) are set to:

```
drwxrwxr-x    bin  sys      for /etc
drwxr-xr-x    root root     for ..
```

As long as they are listed as "d" for directory, you can use the commands:

```
chmod 775 /etc
chown bin /etc
chgrp sys /etc
```

This will set /etc to the correct permissions. Then use the commands:

```
chmod 755 /
chown root /
chgrp root /
```

This will set the "/" directory to the correct permissions.

4) If permissions for /etc and "/" seem to be correct, check /bin/su and /bin/sh. The directory listings for these files should be as follows:

```
-rwsr-xr-x   1   root    root       56652 Mar 24  1993 /bin/su
-rwxr-xr-x   2   bin     bin        40068 Mar 24  1993 /bin/sh
```

You can now log out and reboot A/UX. A/UX should start normally.

Article Change History:
15 Nov 1994 - Added item number 4.

Support Information Services

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Tech Info Library Article Number:16453

Tech Info Library

Creating Visible AppleShare PDS Files (10/94)

Revised: 10/6/94
Security: Everyone

Creating Visible AppleShare PDS Files (10/94)

==========

Article Created: 6 October 1994

TOPIC ----------

Is there a way to have AppleShare create a visible PDS file?

DISCUSSION ----------

To force the AppleShare PDS files for volumes to be created in the System Folder: Preferences: File Server folder instead of invisible on the volume, create a folder on the volume called AppleShare PDS. When AppleShare tries to create the PDS file on the volume it won't be able to. It will then create a visible 'volume name PDF' file in the File Server folder. It will now be easier to back up and keep track of the permissions files.

Support Information Services

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Tech Info Library Article Number:16454

Tech Info Library

TITLE

Apple Remote Access: Error Codes

Article ID: 16456
Created: 10/6/94
Modified: 10/12/98

TOPIC

This article lists Apple Remote Access' (ARA) error codes.

DISCUSSION

USERS & GROUPS DATABASE

---

1 ugUserAlreadyExists
2 ugGroupAlreadyExists
3 ugULInfoRecNotCreated
4 ugNoMoreUGs
5 ugUserNotFound
6 ugGroupNotFound
7 ugNotAUser
8 ugNotAGroup
9 ugTooManyGroups
10 ugNotaMember
11 ugNoMoreUsers
12 ugNoMoreGroups
13 ugBadParamErr
14 ugUserAlreadyAMember
15 ugAPrmryGroupExists
16 ugServerRunning
17 ugAdminRunning
18 ugNotBtree
19 ugBadKey
20 ugDskFull
21 ugBadUID
22 ugInvalidPasswd
23 ugEOF
24 ugBOF
25 ugUserConnected
26 ugNoMoreEirs
27 ugEirNotFound
28 ugEirInternalErr

---

97 ugFSRunning
98 ugDefNameErr
99 ugFatalError

NETSHARE MANAGER

-5808 ERR_ZONEBUFBADSIZE
-5809 ERR_CONNECTTIMEDOUT
-5810 ERR_CONNECTUSERTIMEDOUT
-5811 ERR_BADPARAMETER

-5812 ERR_NOMULTINODE
-5813 ERR_ATALKNOTACTIVE
-5814 ERR_NOCALLBACKSUPPORT
-5815 ERR_NOTOPENEDBYTHISPB
-5816 ERR_NOGLOBALS
-5817 ERR_NOSMARTBUFFER
-5818 ERR_BADATALKVERS
-5819 ERR_VLD8_CALLBACK
-5820 ERR_VLD8_BADVERSION
-5821 ERR_VLD8_BADUSER
-5822 ERR_VLD8_BADPASSWORD
-5823 ERR_VLD8_BADLINK
-5824 ERR_VLD8_NOCALLBACKALLOWED
-5825 ERR_VLD8_ALLCBSERVERSBUSY - All of the Callback Clients are in use
-5826 ERR_VLD8_GUESTNOTALLOWED
-5827 ERR_VLD8_SERVERISIMPOSTER
-5828 ERR_VLD8_LOGINNOTENABLED
-5829 ERR_REMOTEPORTALREADYEXISTS
-5830 ERR_OPENNOTALLOWED
-5831 ERR_NOUSERSANDGROUPS
-5832 ERR_PORTSHUTDOWN
-5833 ERR_PORTDOESNOTEXIST
-5834 ERR_PWNEEDEDFORENABLE
-5835 ERR_DAMAGED - The ARA file has been modified
-5836 ERR_NETCONFIGCHANGED

----- tasn-all errors below this point are new as of 2.0 ------

-5837 ERR_NOSUPPORT_ATREMOTE
-5838 ERR_CANTCHANGEPW
-5839 ERR_VLD8_INVALIDAUTHMETHOD
-5840 ERR_VLD8_CONTINUE
-5841 ERR_PWCHANGECANCEL
-5842 ERR_EXTAUTH_MODULE_NOTFOUND - Client does not have a needed securtiy module
-5843 ERR_EXTAUTH_MODULE_BADVERSION - Incorrect version of a securtiy module
-5844 ERR_EXTAUTH_MODULE_BADRESULT - Client has returned some error in the result field
-5845 ERR_EXTAUTH_MODULE_REJECT_USER - Module is rejecting this user

LINKTOOL MANAGER

-5901 ERR_LTM_LISTENER_ID_IN_USE - Specified Listener identifier is in use
-5902 ERR_LTM_NO_LISTENER - Listener of specified type is not available
-5903 ERR_LTM_RESOURCE_NOT_REGISTERED - Listener of specified type is not available
-5904 ERR_LTM_PORT_NOT_CLAIMED - claim request failed because to port is busy
-5905 ERR_LTM_COMMAND_NOT_ALLOWED - LTM command not allowed on specified port
-5906 ERR_LTM_BAD_VERSION - connect failed due to incompatible LTM versions
-5907 ERR_LTM_ARBITRATION_TIMEOUT - Time out during the listener arbitration.
-5908 ERR_LTM_KODE_NOT_FOUND - kode resource not found in specified file fail.
-5910 ERR_LTM_RESOURCE_CLAIMED - call failed because resource is already claimed
-5911 ERR_LTM_PORT_RESOURCES_CLAIMED - Port's resources are already claimed
-5912 ERR_LTM_RESOURCE_NOT_CLAIMED - call failed because the resource was unclaimed
-5913 ERR_LTM_PORT_RESOURCES_NOT_CLAIMED - The LTM port's resources are NOT claimed.
-5914 ERR_LTM_PORT_UNCLAIMED - LTM listen port unclaimed
-5915 ERR_LTM_CONNECTION_REFUSED - LTM listener refused connect request
-5916 ERR_LTM_CLAIM_ABORTED - LTM claim call aborted due to LTM_ARB_CLAIM_CANCEL call
-5917 ERR_LTM_END_OF_PORT_LIST - End of open port list reached in current port status session
-5918 ERR_LTM_NOT_CONNECTED - Not connected.
-5919 ERR_LTM_CONNECTION_ABORTED - Connection request aborted
-5920 ERR_LTM_BAD_LENGTH - Length of write request exceeds maximum.
-5921 ERR_LTM_BAD_PARAMETER - Bad parameter.
-5922 ERR_LTM_COMMAND_IN_PROGRESS - Command already in progress.
-5923 ERR_LTM_CONNECTED - Connection established.
-5924 ERR_LTM_CONNECT_CANCELED - Connection request canceled.
-5925 ERR_LTM_CONNECT_TIMEDOUT - Connection time out.

-5926 ERR_LTM_NO_DEFAULTS - Could not get default info...
-5927 ERR_LTM_GOOD_BYE - The driver is going away in a rude fashion
-5928 ERR_LTM_BAD_CHECKSUM - Bad checksum in framer
-5929 ERR_LTM_BAD_PROTOCOL - Bad protocol type in PPP frame
-5930 ERR_LTM_BAD_FRAME - Bad PPP frame

AR2

-6051 ERR_MNP_NEGOTIATION_FAILURE - Connection parameter negotiation failure
-6052 ERR_MNP_CONNECT_TIME_OUT - Connect request (acceptor mode) timed out
-6053 ERR_MNP_NOT_CONNECTED - Not connected
-6054 ERR_MNP_ABORTED - Request aborted by disconnect request
-6055 ERR_MNP_ATTENTION_DISABLED - Link attention service is not enabled
-6056 ERR_MNP_CONNECT_RETRY_LIMIT - Connect (initiator mode) request retry limit reached.
-6057 ERR_MNP_COMMAND_IN_PROGRESS - Command already in progress.
-6058 ERR_MNP_ALREADY_CONNECTED - Connection already established.
-6059 ERR_MNP_INCOMPATIBLE_PROT_LVL - Connection failed due to incompatible protocol levels
-6060 ERR_MNP_HANDSHAKE_FAILURE - Connection handshake failed.

MODEM CCL

-6000 cclErr_AbortMatchRead - internal error used to abort match read
-6006 cclErr - CCL error base
-6007 cclErr_CloseError - There is at least one script open
-6008 cclErr_ScriptCancelled - Script Canceled
-6009 cclErr_TooManyLines - Script contains too many lines
-6010 cclErr_ScriptTooBig - Script contains too many characters
-6011 cclErr_NotInitialized - CCL has not been initialized
-6012 cclErr_CancelInProgress - Cancel in progress.
-6013 cclErr_PlayInProgress - Play command already in progress.
-6014 cclErr_ExitOK - Exit with no error.
-6015 cclErr_BadLabel - Label out of range.
-6016 cclErr_BadCommand - Bad command.
-6017 cclErr_EndOfScriptErr - End of script reached, expecting Exit.
-6018 cclErr_MatchStrIndxErr - Match string index is out of bounds.
-6019 cclErr_ModemErr - Modem error, modem not responding.
-6020 cclErr_NoDialTone - No dial tone.
-6021 cclErr_NoCarrierErr - No carrier.
-6022 cclErr_LineBusyErr - Line busy.
-6023 cclErr_NoAnswerErr - No answer.
-6024 cclErr_NoOriginateLabel - No @ORIGINATE label
-6025 cclErr_NoAnswerLabel - No @ANSWER label
-6026 cclErr_NoHangUpLabel - No @HANGUP label

ARA 3.0 Scripting

-7102 - Remote Access did not load properly at system startup
-7103 - Remote Access could not set up a port
-7104 - Remote Access is out of memory
-7105 - The requested action is not supported
-7106 - One or more resources are missing from Remote Access installed files
-7107 - The Remote Access Connections file is not compatible with the installed version of Remote Access
-7108 - An action requiring a connection was requested when there was no connection
-7109 - The connection attempt or established connection was terminated by the user
-7112 - An unexpected error with no useful information has occurred
-7113 - One or more of the installed Remote Access files is damaged
-7114 - The requested action could not be performed because Remote Access was busy
-7115 - The Remote Access logical port is in an unknown state
-7116 - The Remote Access logical port is in an invalid state
-7117 - The Remote Access logical port has detected an invalid serial protocol
-7118 - Login is disabled for the given user
-7120 - The server administrator requires the user to enter a password

-7122 - Remote Access could not initialize Open Transport
-7123 - The requested action could not be performed because Remote Access is not fully initialized yet
-7124 - TCP/IP is inactive and can not be loaded
-7125 - TCP/IP is not yet configured
-7126 - PPP is not selected as the TCP/IP interface in the current TCP/IP configuration
-7128 - The requested PPP protocol was rejected by the PPP peer
-7129 - User authentication failed
-7130 - PPP negotiation failed
-7131 - Connection was lost unexpectedly
-7132 - The remote side disconnected unexpectedly
-7133 - The remote side is not responding
-7151 - The Remote Access log file is not open
-7152 - The Remote Access log file is already open
-7153 - The Remote Access log entry could not be retrieved
-7155 - Remote Access cannot locate the active System Folder
-7156 - Remote Access cannot locate its Preferences folder
-7157 - There is a preexisting file using a Remote Access type or creator
-7158 - There is a preexisting folder using a Remote Access folder name and location
-7159 - The Remote Access Connections file is not open
-7161 - An unknown control protocol type was received
-7162 - Remote Access received a packet with an invalid length
-7163 - Remote Access received a negotiable option with an invalid value
-7164 - Remote Access received a negotiable option with invalid flags
-7165 - Remote Access ran out of memory while negotiating with the peer
-7169 - Remote Access encountered an error with no useful information
-7170 - Remote Access is in an invalid state
-7180 - The user canceled the password entry dialog
-7181 - The user did not respond to the password entry dialog in time
-7182 - An unknown serial port was referenced
-7183 - The Remote Access logical port is not configured
-7184 - No AppleTalk servicesÕ endpoints are available
-7185 - The modem script ASK or manual dialing dialog was canceled by the user

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EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

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Document Information
Product Area: Apple Software; Communications-Networking
Category: Apple Remote Access (ARA)
Sub Category: General Topics

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Tech Info Library

PowerTalk: Duplicate Keychains (12/94)

Revised: 12/14/94
Security: Everyone

PowerTalk: Duplicate Keychains (12/94)

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Article Created: 6 October 1994
Article Reviewed/Updated: 14 December 1994

TOPIC ----------

When I delete PowerTalk Setup Preferences and restart my Macintosh, I end up having duplicate PowerTalk Keychains on the desktop.

DISCUSSION ----------

This arises when the PowerTalk Keychain has been renamed. Deleting the PowerTalk Setup Preferences file (which contains stored information on the key chain, preferred personal catalog, I'm at, PMSAMs, and a part of the Mailbox preferences), and restarting forces creation of a new PowerTalk Keychain. Normally this means replacement of the pre-existing desktop file with the same name.

The existence of more than one PowerTalk Keychain file on the desktop has no adverse effect. This file is merely a template for display of the Keychain information, and you will find that the duplicates contain identical information.

To remove the duplicate, just drag it to the Trash icon and empty the trash.

Article Change History:
14 Dec 1994 - Added information stored in the PowerTalk Setup Preferences file.

Support Information Services

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Tech Info Library Article Number:16458

Tech Info Library

PowerTalk and Windows NTAS Server (10/94)

Revised: 10/7/94
Security: Everyone

PowerTalk and Windows NTAS Server (10/94)

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Article Created: 7 October 1994

TOPIC -----

Windows NTAS server does not show up, nor can be added, to a PowerTalk catalog.

DISCUSSION -----

Microsoft NTAS version 3.1 sends an NBP Lookup reply that contains a an invalid number in the "enumerator" field (254 in our case), apparently the PowerTalk catalog manager is dropping this reply packet. However, the NTAS server will show up in the Chooser which seems to knows it's an invalid number, and sets it to 1.

The fix is to install the "Microsoft Windows NT 3.1 US Service Pack 2", available from the Microsoft Download Service (MSD). You can also call Microsoft concerning this collection of patches.

To locate Microsoft Corporation's address and phone number, use the vendor name as a search string. For technical and product support phone numbers, please refer to the Apple Tech Info Library article: "Microsoft Technical Support"

Support Information Services

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Tech Info Library Article Number:16459

Tech Info Library

Power Macintosh: SoftWindows Modem Port Arbitration (10/94)

Revised: 10/7/94
Security: Everyone

Power Macintosh: SoftWindows Modem Port Arbitration (10/94)

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Article Created: 7 October 1994

TOPIC ----------

SoftWindows locks the modem port for its own use, so other Macintosh applications cannot use the modem port.

DISCUSSION ----------

When you start up SoftWindows there is a pull down menu titled "SETUP". Under this menu you can elect to either use, or not use the communications port. The work around is to turn the communications port off.

When Insignia wrote SoftWindows they set out to deliver a DOS emulator, and DOS emulation does include port arbitration, so they didn't develop code in their emulator to share ports with a Macintosh computer. It's an inconvenience, but they feel by allowing the user to manually turn the communications port on and off is the best they could do.

Support Information Services

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Tech Info Library Article Number:16460

Tech Info Library

System 7.5: Desktop Printer Opens Applications To Print (3/95)

Revised: 3/6/95
Security: Everyone

System 7.5: Desktop Printer Opens Applications To Print (3/95)

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Article Created: 10 October 1994
Article Reviewed/Updated: 6 March 1995

TOPIC ----------

I have an Excel 5.0 document that I want to print using the desktop printer in System 7.5. When I drag the document to the desktop printer, it launches the application. Why is this? I thought the desktop printer did not have to launch the application to print the document.

DISCUSSION ----------

In System 7.5, when you drag a document to the desktop printer, it launches the application that created the document. This is because the only way to print a document is from within the application. There is, however, a special kind of print file that can be opened and displayed without needing the fonts or application with which it was created.

Portable Digital Documents (PDDs)

This special print file is called a Portable Digital Document (PDD). A PDD file may be dragged to a desktop printer and printed directly, without the original application or "PDD application" having to be opened.

QuickDraw GX

QuickDraw GX introduced a new type of printing from the Finder -- dragging files to a desktop printer. This feature was made backwards compatible witn non-QuickDraw GX aware applications, but they behave differently.

To avoid launching an application when printing to a desktop printer, save the files in a PDD file format. Create a PDD desktop printer then print to it, or save the file from the application in a PDD file format.

Article Change History:

06 Mar 1995 - Added keyword; updated GX explanation.
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16464

Tech Info Library

Personal LW LS: Print Faster With LaserWriter 300 Driver (10/94)

Revised: 10/10/94
Security: Everyone

Personal LW LS: Print Faster With LaserWriter 300 Driver (10/94)

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Article Created: 10 October 1994

TOPIC ----------

Printing seems to be faster when printing to a Personal LaserWriter LS using the original Personal LaserWriter LS driver as opposed to using the LaserWriter 300 v1.2 driver. Is there any information on why printing is slower with the PLW 300 driver verses the LS driver? Are there any other things we can try to make printing faster with the newer driver?

DISCUSSION ----------

The main difference between the two drivers is the ability of the LaserWriter 300 driver to print grayscale images. It is normally takes longer to print a grayscale image as opposed to a black & white image. If the LaserWriter 300 driver is set to black & white in the Print dialog, our tests showed it to be slightly faster than the Personal LaserWriter LS driver. Here are the results of our tests:

Configuration

Power Macintosh 7100
Personal LaserWriter LS
System Software 7.1.2
MacWrite II

Test Results (in sec.)

	TEXT	TEXT and Graphics
PLW LS driver	0:42	0:55
LW 300 v1.2 driver (gray)	0:41	1:48
LW 300 v1.2 driver (b&w)	0:41	0:43

Support Information Services

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Tech Info Library Article Number:16465

Tech Info Library

Text to Speech on an AV Macintosh (10/94)

Revised: 10/10/94
Security: Everyone

Text to Speech on an AV Macintosh (10/94)

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Article Created: 10 October 1994

TOPIC ----------

If you have an AV Macintosh, you may want to use its capabilities in processing speech and sound. This article describes how to use your computer to generate spoken documents from typed ones.

DISCUSSION ----------

An exciting Technology available in the AV machines is Text-to-speech. Text-to-speech lets text in applications be “spoken” by the computer. Solutions for this technology include proof reading without the user focusing on the computer and storage of many hours of “voice” (text takes up 1,000 times less space than even the lowest quality digitized speech).

The version of TeachText (7.2) on the hard drive of the Quadra 840 AV and 660 AV and the Centris 660 AV supports the PlainTalk Text-to-Speech feature. Other applications may not yet support this feature, but are expected to add it in the future where it may be useful.

Speech Recognition, or, the ability of the computer to respond to spoken commands, does not need to be active, however the PlainTalk Software, which includes the voices, must be installed for this to work.

The Speech Manager

The Speech Manager lets users switch voices within applications. Any selected text can be spoken back by selecting the appropriate command from the Edit menu and users can direct an appropriately designed application to change between voices in a body of text to create a dialog effect.

Steps to Follow

Follow these steps to convert text to speech (these steps use an example Read Me

file):

STEP	ACTION
1	Launch TeachText 7.2 and notice the Voices sub-menu under the File menu. This lets you change voices between spoken selections without having to open the Speech Setup Control Panel (the default voice is Female Voice, Compressed).
2	Close the untitled window.
3	Open the Read Me document from the File menu.
4	If no text is selected, you can issue the Speak All menu command (Command-H) and the entire text is read back. If you select a portion of text, the menu changes to say Speak Selection and just that is read back. Even though some ReadMe files are not editable (so users don't change them) and therefore do not let portions of text be selected, TeachText lets the user select Speak All and have the contents of the ReadMe spoken back. To stop speech in the middle of speaking back, select Stop Speaking from the File menu.

If your applications do not have an option for Text-to-speech, you may want to check with the application developer about plans to integrate Text-to-speech into the application.

Support Information Services

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Tech Info Library Article Number:16466

Tech Info Library

System 7.5: DOS Mounter Compatibility (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: DOS Mounter Compatibility (2/95)

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Article Created: 10 October 1994
Article Reviewed/Updated: 14 February 1995

TOPIC -----

In the documentation we recommend against using Dayna Communications' DOS Mounter with System 7.5. However, my customer has site licensed DOS Mounter.

Is this recommendation against using it for technical reasons or because we ship 7.5 with Macintosh PC Exchange?

DISCUSSION -----

After checking all bug reports and checking with Dayna Communications, I have not been able to discover a reason why you would not be able to use DOS Mounter with System 7.5.

Please be advised, though, that Macintosh PC Exchange has been tested by Apple, and is KNOWN to work, whereas with DOS Mounter, we just have not seen any problems or problem reports. Since Macintosh PC Exchange is shipped with System 7.5, it remains the recommended solution.

Article Change History:
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16468

Tech Info Library

System 7.5: 8•24GC Card Compatibility (12/95)

Revised: 12/8/95
Security: Everyone

System 7.5: 8•24GC Card Compatibility (12/95)

==========

Article Created: 10 October 1994
Article Reviewed/Updated: 8 December 1995

TOPIC ----------

I have a Macintosh IIci, 20MB of RAM, and an 8•24 GC card.

I have upgraded from System Software 7.1 to 7.5. The computer has been running fine, but since upgrading, I get a bus error when starting up. If I use the Extensions Manager to turn off everything but the 8•24 GC software, I still get a bus error.

DISCUSSION ----------

The 8•24 GC video card's acceleration software is incompatible with System Software 7.5, when 32-bit addressing is turned on.

There are a couple of ways to use the 8•24 GC card with System 7.5 installed on your Macintosh computer. The first is to turn off 32-bit addressing. This may not be an ideal solution if the Macintosh has more than 8 MB of RAM installed.

The second choice is to remove the 8•24 GC control panel file. The video card and the Macintosh are functional after removing this control panel. However, you cannot use the accelerated graphics feature when the control panel is removed.

Article Change History:
08 Dec 1995 - Made minor grammatical corrections.
16 May 1995 - Reclassified.

Support Information Services

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Tech Info Library Article Number:16469

DOS Compatibility Card: General Troubleshooting Tips (5/95)

Revised: 5/31/95
Security: Everyone

DOS Compatibility Card: General Troubleshooting Tips (5/95)

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Article Created: 10 October 1994
Article Reviewed/Updated: 31 May 1995

TOPIC ----------

This article provides troubleshooting tips for the DOS Compatibility Card.

DISCUSSION ----------

Switching Between Operating Systems

With the DOS Compatibility Card you can easily switch between the MS-DOS and Mac OS without disturbing the applications running in either partition – there is no need to restart each time or close active applications.

Once you set the PC Setup Control Panel to ON (and restart once to "activate" it), you switch between operating systems by pressing the "hot key" sequence defined in the PC Setup window. The default sequence is Command-Return.

When you press Command-Return, your system immediately switches from the current operating system to the alternate operating system. Your keyboard and mouse work with the currently active operating system.

Troubleshooting Tip

- MS-DOS appears to "lock-up" or "freeze", but the Mac OS works properly.

If you are using a single monitor and your monitor darkens when you switch from the Mac OS to MS-DOS, but you do not get the DOS prompt or any other visual signal that MS-DOS is operating, you need to check the video cable. The DOS Compatibility Card video cable has four connectors on it. One of the connectors plugs into the DOS Compatibility Card, one of the connectors is for a MS-DOS game port, one connector is for a VGA monitor, and the other connector is for a standard Macintosh monitor. If this cable is not connected properly, it will

appear that when you switch to MS-DOS, it freezes. Refer to your DOS Compatibility Card User's Guide for instructions on properly installing the video cable.

Using Your Macintosh Mouse In MS-DOS

A mouse driver is automatically installed when you use MS-Windows.

Troubleshooting Tip

- The Macintosh mouse doesn't work in MS-DOS applications.

You must install a compatible mouse driver in MS-DOS to get the mouse to work when you are not in MS-Windows. You can use a Microsoft-compatible mouse driver on you Macintosh mouse. Two mouse drivers found on most on-line services that work properly are DRVR624.ZIP and MOUSE701.ZIP. The Tech Info Library articles titled "Pwr Mac DOS Compatibility Card: Mouse Driver for MS-DOS" and "DOS Compatibility Card: Doesn't Include DOS Mouse Driver" contain complete instructions on installing a compatible mouse driver.

Whether or not other peripherals attached to your system work in DOS depends on your particular system hardware configuration.

Copying Between Operating Systems

You can easily copy a variety of information (such as text and graphics) between operating systems. Read your "Macintosh DOS Compatibility Card User's Guide" for a complete description of the types of information you can copy. You can, for example, create a graphic using a graphics tool in one operating system, and then copy and paste it into a document in the other operating system.

Troubleshooting Tip

- Some items you copy are not copied between the Mac OS and MS-Windows

If an application, such as Adobe PageMaker, uses a custom clipboard, you will not be able to copy and paste between the Mac OS and MS-Windows. The Tech Info Library article "DOS Compatibility Card: Cannot Convert Custom Clipboards" provides full details on this problem.

Using Separate Monitors

If you use separate monitors for DOS and Macintosh, when you press Command-Return while in the Macintosh operating system, your Macintosh screen dims, active applications continue unaffected, and your DOS monitor becomes active.

When you press Command-Return again, your Macintosh screen brightens and your

keyboard and mouse again interface with the Macintosh monitor. Your DOS screen does not dim and any DOS applications you started continue running.

Using a Single Monitor

If you use a single monitor for both operating systems, when you press Command-Return, your current desktop (open folders, active windows, etc.) is saved and replaced by the desktop you are switching to.

As with multiple monitors, active applications continue running even though you cannot see them on your desktop. When you switch back, the saved desktop redisplays, showing any new information (such as a completed process that you began before switching).

Article Change History:
31 May 1995 - Added troubleshooting tips and retitled article.

Support Information Services

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Tech Info Library Article Number:16470

Tech Info Library

StyleWriter Pro: Paper Choice and Dialog Box Settings (10/94)

Revised: 10/10/94
Security: Everyone

StyleWriter Pro: Paper Choice and Dialog Box Settings (10/94)

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Article Created: 10 October 1994

TOPIC ----------

The Color StyleWriter Pro printer is the first color ink jet printer offered by Apple for home use. This printer can provide you with vivid color images. This article provides ideas to help you get the most out of your Color StyleWriter Pro.

DISCUSSION ----------

Paper Choice

You may not be getting the most out of your Color StyleWriter Pro if you use standard photocopier or laser paper. Standard paper absorbs the ink and the final output looks a bit dull. But there is a way to get much brighter images from your printer.

Use a special type of paper designed for a color ink jet printer. Most large paper outlets carry this type of paper in packages of 250 sheets. You can also find smaller packages at some of the larger computer stores that sell the Color StyleWriter Pro or the Hewlett-Packard color DeskWriter. The color ink jet paper has one side coated with a clay based substance that doesn’t let the paper absorb the ink.

Print Dialog Box Settings

Paper Type

Select the Paper Type that matches the type of paper you use. The choices are: Plain, Coated, Back Print, and Transparencies.

Print Quality

There are three settings that effect the output quality. Use Best for the highest quality output with little or no banding. Use Normal for high quality with some banding and increased speed. Use Draft for the greatest speed possible.

Halftone Options

The halftone options are available by clicking on the color button:

- The Halftone option determines how the printer blends the four ink colors to create different color combinations.

- The Pattern option works well for charts and graphs.

- The Scatter option works well for photographic images.

ColorSync

The ColorSync software makes colors look the way you expect no matter what device you use to view them – Monitor, printer, or scanner. After turning on ColorSync, choose the option from the pop-up menu that best describes your document:

- Photographic – for complex picture with subtle tones
- Business Graphic – when matching the vibrancy of the color is more important than matching the exact hue
- Spot Colors – when you’re using color calibrated equipment

You may want to experiment with these options to get the best results.

Support Information Services

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Tech Info Library Article Number:16471

TITLE

Mac OS: Troubleshooting Startup Issues

Article ID: 16473
Created: 10/10/94
Modified: 1/13/00

TOPIC

This article describes typical startup issues and provides a list of suggested actions based on the issue for Macintosh computers that came with a floppy disk drive.

DISCUSSION

Use the following table to determine what is wrong when you have trouble starting up your Macintosh computer. Follow the steps listed in the PROCEDURE column. If the RESULT column indicates a possible issue, the ACTION column indicates which topic under Troubleshooting Actions (following the table) describes how to correct (or isolate) the issue.

Here are possible issues this table can help isolate:

- system hangs at startup or during use
- flashing question mark on a floppy disk displays at startup
- "sad Macintosh" displays at startup
- system crashes (bomb or no indicator) at random times or with different applications

Troubleshooting Table

STEP	PROCEDURE	RESULT	ACTION
1	Disable extensions: Restart the computer while pressing the Shift key.	If the computer starts up without loading extensions, then you have a probable extension conflict. If not, go to Step 2.	See: Troubleshooting Extensions
2	Startup from Disk Tools: Restart the computer by booting from the Disk Tools floppy disk or startup CD.	If the computer restarts from floppy disk or CD, you may have corrupt system software or a hard drive issue. If not, go to Step 3.	See: Troubleshooting Tools
3	Disconnect external devices: Disconnect all external devices (such as SCSI devices, printers, network cables, extra monitors, and so on).	If the computer starts up with no external devices attached, you have a possible out-of-date driver or a SCSI ID or software conflict. If not, go to Step 4.	See: Troubleshooting Peripherals
4	Reset PRAM: Press Command-Option-P-R during startup to zero out the information the machine maintains on ports, devices, Finder, and network settings.	If the computer starts up after resetting PRAM, then there was most likely corrupt information in the Parameter RAM on your machine. If not, go to Step 5.	See: What's in PRAM?
5	Update the hard disk driver software.	If the computer starts up after reinstalling the hard disk driver, then either the hard disk driver software was out of date, or corrupted. If the computer still does not start up properly, go to Step 6.	Use either Apple HDSC Setup or Drive Setup to reinstall the hard disk driver software.

6	Perform a clean installation: Follow the steps in the TIL to perform a clean installation of system software.	If the computer starts up after a clean installation, then one of the files you added to the System Folder, or one of the old system files was corrupt. If not, go to Step 7.	Carefully go through the Storage folder you created during the clean installation; look for fonts, extensions, control panels that you might need and put them back where they belong.
7	Last steps to try: - Try other disk utilities. - Reformat the drive and restore from recent backup. - Contact vendors of third-party hardware or software you use.	If the computer starts up after trying these efforts, then you have successfully corrected the issue and are ready to work. If your machine still does not start up, there is most likely a hardware issue.	Make regular backups in case you have trouble again. (But do not destroy the backup you restored in this step.) Contact your local Apple-authorized service provider to isolate and correct your issue.

Troubleshooting Actions
These actions, and the preceding procedures, may help you resolve a number of common issues, from damaged or missing files, to extension incompatibilities, to SCSI termination issues. If you have any third-party (non-Apple) devices or software, please adhere to the recommendations of the manufacturer if they differ from the more general instructions presented here.

As a precaution, you should back up important files regularly to minimize the risk of data loss.

Troubleshooting Extensions

Extensions load into memory at system startup time, and actually change the way the operating system works. When they are incompatible with the version of the system software you run, corrupt, or conflicting with one another, they can cause unexpected results.

Extensions are sometimes also called INITs; they are usually in the Extensions Folder or the Control Panels folder within the System Folder. Sometimes they are at the root level of the System Folder itself. As they load into memory at system start-up time, their icons usually appear on the bottom of the screen.

To troubleshoot extensions, follow these steps:

1. Restart with the Shift key pressed, until you see the box with the message Welcome to Macintosh -- Extensions Off. If the issue goes away, then continue these steps to determine which of the extensions are causing the issue.

2. Restarting with extensions off also disables file sharing and virtual memory. Use the Memory control panel to turn virtual memory, 32-bit, and Memory Manager **off** and to turn the Disk Cache down to 96K or below. Use the Sharing Set Up control panels to turn File Sharing **off**. Restart. If issues do not go away, continue with these steps.

3. If you are running System 7.0 through 7.1.2:

A. Check your Extensions folder, your Control Panels folder, and the root level of your System Folder for non-Apple chooser and system extensions and control panels (such as virus protection, screen savers, compression utilities, and so on.).

B. Drag these outside of your System Folder (make a new folder for them named Disabled Extensions).

C. Restart. If the issue goes away, then you have succeeded in removing the issue extensions. Continue with Step D. Otherwise, check through your System Folder again for extensions you may have overlooked.

D. To determine which of the extensions you removed was causing the issue, drag the extensions one at a time onto the icon of your closed System Folder. The system puts them where they belong. Restart after each addition. When the issue returns, you will know that it is the last extension you dragged to the System Folder. Remove it and restart. Check its version number for compatibility. Try reinstalling it from original floppy disks, or contact the software vendor.

* If you are running System 7.5.x or later:

A. Restart the computer and press the Space bar until the Extensions Manager control panel opens.

B. Use the pull-down menu in the Extensions Manager to choose "All Off". Close the Extensions Manager window by clicking on the close box in the upper left corner.

C. Try to recreate the failure. If the failure does not reappear, then you have an extension conflict. Go to Step D. If the failure still occurs, go to the Clean Installation Procedure

D. Restart the Macintosh computer and press the Space bar until the Extensions Manager control panel opens. Turn on groups of extensions and control panels by clicking to the left of each item to put a check mark by the item. Close the Extensions Manager control panel using the close box in the upper left corner. Try to recreate the failure.

E. Repeat Step D until you have recreated the failure and isolated the conflict to a single extension or group of extensions. Check the version number of the conflicting item or items for compatibility. Try reinstalling from original floppy disks, or contact the software vendor.

4. If you are still unable to find the culprit, perform a clean installation by following the steps outlined in the appropriate article found in the Tech Info Library Article, search "clean install."

Using Disk Tools

The Disk Tools Disk that comes with the system software includes a System Folder, Disk First Aid, and, depending on your version of system software, one of these utilities:

- Apple HD SC Setup
- Apple Internal HD Format
- Drive Setup

When you are having trouble starting up the Macintosh computer from the hard drive, first start up from the Disk Tools Disk. This way you can repair any issues on the hard drive (which you cannot do when it is the startup drive). Insert the floppy disk or CD-ROM disc into the floppy or CD-ROM drive and turn on your Macintosh. The Disk Tools Disk icon displays in the upper right corner, and the hard disk icon should display below it.

Disk First Aid

Use Disk First Aid to check the internal hard disk for directory issues. Simply launch Disk First Aid, highlight the drive icon for the applicable hard drive, and click Verify. (On older versions of Disk First Aid click Drive until the selected drive is your internal hard disk, then click Open and Start.) If Disk First Aid finds issues it cannot repair, you may want to try other third-party disk utilities to correct the issue. However, if you cannot repair the disk, you need to reformat it. Make sure you have a backup of your data before reformatting. If you don't have a backup, you may want to take your drive to a Service Provider that specializes in hard disk recovery.

Apple HD SC Setup

Apple HD SC Setup is a disk formatting utility for Apple hard disks. If you have a third-party hard disk in your Macintosh, you get the message that Drive Selection Failed when you launch Apple HD SC Setup. In this case, use the third-party disk formatting utility that came with your drive, or contact the vendor of the drive. To use Apple HD SC Setup on an Apple hard disk, launch the utility and click the Update button to reinstall the hard disk drivers. You can also use the Test button to test the hard disk, and Initialize to reformat.

Internal HD Format

This utility enables you to reformat an IDE hard drive found in Macintosh 630 series and Power Macintosh 5200/5300 series computers.

Drive Setup

This utility enables you to test; partition; install hard disk drivers; and reformat SCSI hard drives, IDE hard drives and some third-party removable hard drives. Drive Setup only works on Power Macintosh computers or computers with a 68LC040 processor and an IDE hard drive.

Note: Initializing erases all data on your hard disk. Ensure you have a backup before doing this.

Troubleshooting Peripherals

If you were experiencing issues that went away when you disconnected the peripherals, follow these guidelines:

SCSI Devices

If you have SCSI devices connected to your Macintosh, make sure that you have followed the vendor's instructions for installation. Specifically, check:

- Termination - SCSI chains should be terminated at the beginning and end of the SCSI chain. The internal hard disk (if any) is considered the beginning of the chain, and has terminating resistors. Whatever device is last in your chain should also be terminated. Check the manuals that came with the devices to discover if they are internally terminated. If not, the last device needs an external terminator. Devices in the middle of the chain should not be terminated. Again, check the manuals or contact the vendor.
- Unique SCSI ID - Each device on the SCSI chain requires a unique ID number between 0 and 7. ID 0 is generally used on internal hard disks; ID 7 is reserved for the Macintosh itself. If your computer has a built-in CD-ROM drive, it is usually set at SCSI ID 3. This leaves numbers 1,2,4,5, and 6, available to assign to your external devices. Consult the manuals that came with your devices to

determine how to set their ID numbers.

- High-quality SCSI cables - Use high-quality cables, the shorter the better (three feet or less). When chaining more than one external SCSI device, try to use the same brand of cable.
- Starting up - External SCSI devices should be powered on, one at a time, before starting up the computer. When shutting down, shut down the Macintosh first. Once the Macintosh has powered down (the screen goes dark or you get a dialog box telling you that it is OK to turn the computer off) then turn off each device, if desired. Never connect or disconnect SCSI cables when any device is turned on. Do not start up the computer with a SCSI device turned off, unless the manufacturer specifically says in the manual that this is acceptable.

Network Connections

If you have issues starting up the Macintosh computer with a network connector attached (such as a LocalTalk connector box), there may be issues on the network, or with the connector itself. This usually occurs at the Welcome to Macintosh screen when the computer freezes. First, swap out the connector with a known-good one; if issues persist, consult with your network administrator.

Apple Desktop Bus (ADB) Devices

If you are experiencing issues starting up when an ADB device, such as a mouse or tablet, is connected, first make sure the connections are snug. Try another ADB port, if the computer has more than one. If you are still having issues, contact the device vendor.

What is in PRAM?

Parameter random-access memory (PRAM) is a small amount of memory continually powered by a lithium battery to retain its contents even when the computer is shut down. PRAM maintains information such as background color, default video selection, network information, serial port information, and default highlight color.

The Macintosh 128K, Macintosh 512K, and Macintosh 512KE contain 20 bytes of parameter RAM (PRAM). These 20 bytes of PRAM are documented on pages II-369 to II-371 of "Inside Macintosh Volume II". The rest of the computers in the Macintosh family have 256 bytes of PRAM (except for the Macintosh Portable which has 128 bytes). Most of the information stored in PRAM is not documented in any technical manual.

Even though you may not know what in PRAM is causing issues on your machine, resetting this information can often be an important troubleshooting step. Particularly when serial devices are connected to the machine, or when networking software is in use.

After resetting PRAM, your environment may be a bit different; you should reconfigure it to your liking. Resetting the PRAM resets your Macintosh computer to the factory defaults, so anything you have customized (like background or highlight color) is reset, the alert sound may be different, and AppleTalk will most likely be turned off. Use the control panels to set the computer back to the way it was before the PRAM was reset.

EXTENDED Information - Apple Internal Use - Service Providers and Support Professional

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Document Information
Product Area: Mac OS System Software
Category: General OS
Sub Category: Troubleshooting

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Tech Info Library

System 7.x: Troubleshooting Startup Problems (9/95)

Revised: 2/17/97
Security: Everyone

System 7.x: Troubleshooting Startup Problems (9/95)

==========

Article Created: 10 October 1994
Article Reviewed/Updated: 7 September 1995

TOPIC ----------

This article describes typical startup problems and provides a list of suggested actions, based on the problem.

DISCUSSION ----------

Use the following table to determine what is wrong when you have trouble starting up your Macintosh computer. Do the steps listed in the PROCEDURE column. If the RESULT column indicates a possible problem, the ACTION column indicates which topic under Troubleshooting Actions (following the table) describes how to correct (or isolate) the problem.

Here are possible problems this table can help isolate:

- System hangs at start-up or during use
- Flashing question mark on a floppy disk displays at start-up
- Sad Macintosh displays at start-up
- System crashes (bomb or no indicator) at random times or with different applications

Begin_Table

Troubleshooting Table
==========

STEP	PROCEDURE	RESULT	ACTION
1	Disable Extensions -- Restart your computer and hold down the SHIFT key.	If your machine starts up without loading extensions then you have a probable extension conflict.	See: Troubleshooting Extensions

		If not, go to Step 2.	
2	Boot from Disk Tools -- Restart your computer by booting from the Disk Tools floppy disk.	If your machine restarts from floppy disk, you may have corrupt system software or a hard drive problem. If not, go to Step 3.	See: Using Disk Tools
3	Disconnect External Devices -- Disconnect all external devices (such as SCSI devices, printers, network cables, extra monitors, etc.)	If your machine starts up with no external devices attached, you have a possible out-of date driver or a SCSI ID or software con-flict. If not, go to Step 4.	See: Troubleshooting Peripherals
4	Reset PRAM -- Press and hold Command-Option-p-r during startup to zero out the information the machine maintains on ports, devices, Finder and network settings.	If your machine starts up after resetting PRAM, then there was most likely corrupt information in the Parameter RAM on your machine. If not, go to Step 5.	See: What's in PRAM?
5	Perform a Clean Install -- Follow the steps in the TIL or in Vol. I Issue 1 of the "Information Alley" to perform a clean install of system software.	If your machine starts up after a clean install, then one of the files you added to your System Folder, or one of your old system files was corrupt. If not, go to Step 6.	Carefully go through the Storage folder you created during the clean install; look for fonts, extensions, control panels, that you might need and put them back where they belong.
6	Last steps to try: • Try other disk utilities • Reformat the drive and reinstall a the recent backup • Contact vendors of Third Party hardware or software you use.	If your machine starts up after trying these efforts, then you have successfully corrected problem and are ready to work. If your machine still does not start up, there is most likely a hardware problem.	Make regular backups in case you have trouble again. (But do not destroy the backup you restored in this step.) Contact your local Service Provider to isolate and correct your problem.

End_Table

Troubleshooting Actions

These actions, and the preceding procedures, may help you resolve a number of common problems, from damaged or missing files, to extension incompatibilities, to SCSI termination problems. If you have any third-party (non-Apple) devices or software, please adhere to the recommendations of the manufacturer if they differ from the more general instructions presented here.

As a precaution, you should back up important files regularly to minimize the risk of data loss.

Troubleshooting Extensions

Extensions load into memory at system startup time, and actually change the way the operating system works. When they are incompatible with the version of the system software you run, corrupt, or conflicting with one another, they can cause unexpected results.

Extensions are sometimes also called INITs; they are usually in the Extensions Folder or the Control Panels folder within your System Folder. Sometimes they are at the root level of the System Folder itself. As they load into memory at system start-up time, their icons usually appear on the bottom of your screen. To troubleshoot extensions, follow these steps:

Step 1

Restart with your SHIFT key down, until you see the box with the message Welcome to Macintosh –- Extensions Off. If the problem goes away, then continue these steps to determine which of your extensions are causing the problem.

Step 2

Restarting with extensions off also disables file sharing and virtual memory. Use the Memory Control Panel to turn Virtual Memory, 32-bit, and Memory Manager OFF and to turn the Disk Cache down to 96K or below. Use the Sharing Set Up control panels to turn File Sharing OFF. Restart. If problems do not go away, continue with these steps.

Step 3

•If you are running System 7.0 through 7.1.2:
A. Check your Extensions Folder, your Control Panels Folder, and the root level of your System Folder for non-Apple chooser and system extensions and control panels (such as virus protection, screen savers, compression utilities, etc.).
B. Drag these outside of your System Folder (make a new folder for them named Disabled Extensions).
C. Restart. If the problem goes away, then you have succeeded in removing the problem extensions. Continue with Step D. Otherwise, check through your System Folder again for extensions you may have overlooked.
D. To determine which of the extensions you removed was causing the problem, drag the extensions one at a time onto the icon of your closed System Folder. The system puts them where they belong. Restart after each addition. When the

problem returns, you will know that it is the last extension you dragged to the System Folder. Remove it and restart. Check its version number for compatibility. Try reinstalling it from original floppies, or contact the software vendor.

•If you are running System 7.5.x
A. Restart your Macintosh and hold down the Space Bar until the Extensions Manager control panel opens.
B. Use the pull down menu in the Extensions Manager to choose "All Off"
Close the Extensions Manager window by clicking on the close box in the upper left corner.
C. Try to recreate the failure. If the failure does not reappear, then you have an extension conflict. Go to Step D. If the failure still occurs, go to the Clean Install Procedure
D. Restart your Macintosh Computer and hold down the Space Bar until the Extensions Manager control panel opens. Turn on groups of extensions and control panels by clicking to the left of each item to put a check mark by the item. Close the Extensions Manager control panel using the close box in the upper left corner. Try to recreate the failure.
E. Repeat Step D until you have recreated the failure and isolated the conflict to a single extension or group of extensions. Check the version number of the conflicting item or items for compatibility. Try reinstalling from original floppies, or contact the software vendor.

Step 4

If you are still unable to find the culprit, do a Clean Install by following the steps outlined in the TIL or in Volume I, Issue 1 of the "Information Alley".

Using Disk Tools
==========
The Disk Tools Disk that comes with your system software includes a System Folder, Disk First Aid and depending on your version of system software one of these utilities:

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• Drive Setup

When you are having trouble starting up your Macintosh from the hard drive, you should start up from the Disk Tools Disk. This way you can repair any problems on the hard drive (which you cannot do when it is your startup drive). Insert the disk into the floppy drive and turn on your Macintosh. The Disk Tools Disk icon displays in the upper right corner, and your hard disk icon should display below it.

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• High-quality SCSI cables -- Use high-quality cables, the shorter the better (three feet or less). When chaining more than one external SCSI device, try to use the same brand of cable.

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After resetting PRAM, your environment may be a bit different; you should "re-customize" it to your liking. Resetting the PRAM resets your Macintosh to the factory defaults, so anything you have customized (like background or highlight color) is reset, your alert sound may be different, and AppleTalk will most likely be turned off. Use your control panels to set your Macintosh back to the way it was before the PRAM was reset.

Article Change History:
07 Sep 1995 - Corrected minor typo.
29 Aug 1995 - Added System 7.5.2 troubleshooting information.
17 Aug 1995 - Reformatted to make more readible on the World Wide Web.

Support Information Services

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Tech Info Library Article Number:16473

Tech Info Library

PhotoFlash Version 2.0 Introduced (5/96)

Revised: 6/10/96
Security: Everyone

PhotoFlash Version 2.0 Introduced (5/96)

==========

Article Created: 10 October 1994
Article Reviewed/Updated: 10 Jun 1996

TOPIC ----------

This article describes some of the new features in PhotoFlash 2.0.

DISCUSSION ----------

Apple announced availability of Version 2.0 of Apple PhotoFlash, a digital photo cataloging and enhancement tool that quickly and easily enables computer users to add digital photos to their documents. Apple PhotoFlash 2.0 has, in a single application, been optimized for the increased performance of Power Macintosh personal computers, while being fully compatible with Macintosh systems based on the Motorola 680x0 processor. Version 2.0 of Apple PhotoFlash also supports several key components in Apple's new operating system, Macintosh System 7.5.

This enhanced version of Apple PhotoFlash now opens and saves individual catalogs of image "thumbnails" for easy photo organization and searching. With Apple PhotoFlash 2.0, it is now possible to search for photos by their similarity to an image or a sketch made by the user, as well as to adjust the color of your photos. The support for Macintosh Drag and Drop enables photos to be easily moved between catalogs and into applications supporting Macintosh System 7.5. In addition, the integration of Apple PhotoFlash 2.0 with Aldus PageMaker 5.0, QuarkXPress 3.2 and 3.3, Aldus Persuasion 3.0, Microsoft Word 6.0 and Claris FileMaker Pro 2.1, enables digital photos to be placed into documents in a single-step. Extensions are included for Aldus PageMaker and QuarkXPress that enable image editing and placement to be easily initiated from within those page layout applications.

Apple PhotoFlash 2.0 continues to support Apple's AppleScript scripting technology by making scripts easier to record and play, and includes ready-to-run scripts to automate common tasks. In addition, the new version of Apple PhotoFlash continues to enable users to directly control and automate the Apple QuickTake 100 camera using AppleScript from within the PhotoFlash application, which enables further customization for vertical solutions.

Apple PhotoFlash 2.0 will come bundled with a Visual Symbols Sampler Photo CD, which contains a library of 140 everyday objects whose symbolic meaning makes them useful to enhance visual communication in a variety of documents.

System Requirements:
- Macintosh, Power Macintosh, Macintosh Performa or PowerBook computer with a 68020, 68030, 68040, or PowerPC processor.
- 8 MB of RAM (3.5 MB of application RAM).
- Any version of the System 7 operating system.

Availability:
- Apple PhotoFlash 2.0, is available in the United States through software resellers and Apple authorized resellers, as well as through the Apple Volume Licensing Program.
- Customers who purchased Apple PhotoFlash 1.0 or Apple PhotoFlash 1.1 between August 3, 1994 and December 3, 1994 can receive an upgrade for only the cost of shipping and handling by submitting an order form and proof of purchase that is a dated, itemized sales invoice showing the purchase of Apple PhotoFlash 1.0 or Apple PhotoFlash 1.1 between these dates.

Apple plans to introduce international English and French versions of Apple PhotoFlash 2.0 later in 1994 and a Kanji version in 1995.

The Tech Info Library article titled "Locating Vendor Information" can help you search for the Apple Order Center's phone number.

Article Change History:
10 Jun 1996 - Updated upgrade information.
27 May 1996 - Updated for technical accuracy.

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Tech Info Library Article Number:16474

Tech Info Library

A/UX 3.x.x and Apple Shared Library Manager (10/94)

Revised: 10/10/94
Security: Everyone

A/UX 3.x.x and Apple Shared Library Manager (10/94)

==========

Article Created: 10 October 1994

TOPIC -----

Can you tell me if the Apple Shared Library Manager (ASLM) runs on an A/UX machine?

DISCUSSION -----

According to Apple Shared Library Manager 1.1 Release Notes, the ASLM 1.1 should work with A/UX 3.x.x. However, it is not officially supported. Here is the note:

"ASLM 1.1 does not officially support A/UX, but it should work without any problem. However, you will need to do a Custom Install in order to install under A/UX. Choose "ASLM for System 7.0 and 7.0.1" from the Custom Install when installing under A/UX."

Support Information Services

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Tech Info Library Article Number:16475

Tech Info Library

System 7.5: Stickies and Color (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: Stickies and Color (2/95)

==========

Article Created: 10 October 1994
Article Reviewed/Updated: 14 February 1995

TOPIC -----

All the notes in the Stickies desk accessory appear in grey scale. They used to display in color, what changed?

DISCUSSION -----

Stickies in System 7.5 appear in color as long as your Monitors Control Panel is set to 256 colors or higher. When it is set to 16 colors or lower, Stickies appear in various shades of grey.

Article Change History:
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16477

Tech Info Library

Performa: File Locking Explanation (10/94)

Revised: 10/10/94
Security: Everyone

Performa: File Locking Explanation (10/94)

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Article Created: 10 October 1994

TOPIC ----------

This article describes the different ways that you can lock files on a Macintosh Perform a computer.

DISCUSSION ----------

The Macintosh Operating System provides some protection from accidentally throwing away important files. The Macintosh Performa computers provide additional protection for the System and Application folders.

Types of File Locking
==========

There are two ways to lock files in the System folder and the Application folder:

- Performa Control Panel
- Using Get Info

Performa Control Panel

All Macintosh Performa computers that have System software version 7.1P3 or later have the Performa control panel. (System 7.5 uses the general Control Panel to perform the same functions.) The Performa control panel lets you protect the System folder and the Application folder by “locking” files. This lets files go into the two folders, but they cannot be moved out of the folders or thrown away.

This is different from other methods of locking files. When files are locked from the Finder, you can still move them around, but you cannot totally remove them without a warning and without either unlocking them or holding down the Option key while choosing Empty Trash from the Special menu.

If System folder protection and/or Application folder protection is turned on in the Performa control panel, then when files in those folders are viewed by any view other than icon or small icon, a lock appears in the listing.
If you choose Get Info on a file that is locked from the Finder, an X appears in the Locked box. If you remove the X, the lock disappears from the file listing. However, the file is still locked. This is because the Performa control panel still has the folder protected.

Using System and Application folder protection is the easiest method of locking every item in those folders. The only disadvantage of using this method is that you cannot lock individual files. However, if you want to lock certain files, you can use the Using Get Info method.

Using Get Info

The other method of locking items on a Macintosh Performa computer, is using the Get Info from the Finder - This method lets you select files you want to lock from anywhere on your hard disk or floppy disks, not just the System folder and Application folder.

Troubleshooting Tips

SYMPTOM	SOLUTION
You cannot remove an item from the System or Application folder, because it is locked.	Turn off System Folder and/or Application Folder protection in the Performa control panel. Or, from the Finder, highlight the item and choose Get Info from the File menu (Command-i). Remove the X in the Locked box.
X removed from Locked box in Get Info, but the item still cannot be moved or trashed.	Open the Performa control panel and turn off System or Application folder protection.

Support Information Services

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Tech Info Library Article Number:16478

Tech Info Library

I/O Card Slots: Descriptions (3/95)

Revised: 3/16/95
Security: Everyone

I/O Card Slots: Descriptions (3/95)

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Article Created: 11 October 1994
Article Reviewed/Updated: 16 March 1995

TOPIC ----------

This article reviews the basic features of popular card slot standards in the Macintosh and Intel computer architectures.

DISCUSSION ----------

NuBus
=====

A standard designed by Texas Instruments; later updated to NuBus90. It features self-configuration and bus-mastering on a 32 data bit card. Bus-mastering means a card can take control of the bus, which allows for multi-processor computing. The card self configures using on-board ROM (Read Only Memory).

The card slot is a one-piece socket (female) connector with two rows of pins. The card has a plug (male) connector that plugs into the socket. This slot type is not compatible with any other slot standard.

Bus Clock - 10MHz (20MHz, card to card only using NuBus90)
Data Path - 32 Bits (often limited to 24 bits for OS compatibility with
older Macintosh computers)
Max data transfer rate - 10 MB/sec, 37 MB/sec with Burst Mode

ISA-Industry Standard Architecture
==========

The basic, most popular card slot in Intel-powered machines. First introduced in the IBM-AT as an improvement over the 8-bit slots in the IBM-XT. The ISA card slot looks something like a two part socket. The left part is the same as the original IBM-XT slot with an additional slot to the right for the new AT signals.

Bus Clock - 8.33 MHz standard (faster available from some vendors)
Data Path - 16 Bits
Max data transfer rate - 8.33 MB/sec

EISA-Extended Industry Standard Architecture
==========

This is the next generation of the IBM-AT card slot. Two new standards emerged around this time, EISA and MCA. EISA provides a 32 bit data path and bus-mastering capability. Its data transfer rate is further increased by 32 bit DMA transfer and burst cycles. It is fully compatible with ISA cards as well. Cards auto-configure themselves using the EISA configuration utility. The slot is the same size and shape as an ISA slot but has a "two tiered" row of contacts for a total of 188.

Bus Clock - 8.33 MHz standard
Data Path - 32 Bits
Max data transfer rate - 33 MB/sec (using all optional EISA features)

MCA-MicroChannel
==========

This is the next generation of the IBM-AT card slot from IBM. Two new standards emerged around this time, EISA and MCA. MCA provides a 32-bit data path and bus-mastering capability with priorities. Its data transfer rate is further increased by 32-bit DMA transfer and burst mode. Cards auto-configure themselves using a configuration utility. It does not differ radically from the EISA standard in capability as implemented in CISC based computers, although the card slot is incompatible. RISC systems from IBM (RS6000) have additional hardware signals on the card slot, which enables much faster data transfers. These slots are not compatible with any previous card slot standard.

There are different formats of the MCA card slot depending on the vendor’s implementation of various slot extensions. The extensions are associated with the number of bits enabled for data transfer. There is an 8, 16, and 32 bit variety of a card with additional extensions for video expansion and matched memory expansion.

Bus Clock - 10 MHz standard
Data Path - 32 Bits
Max data transfer rate - 20 MB/sec, (160 MB/sec in RS6000 machines)

PCI-Peripheral Component Interconnect
==========

This is one of two card slot standards that implement the Local Bus standard (the other is VL Bus). PCI was developed by Intel as the next generation beyond MCA and EISA. It operates with 32 data bits at a faster clock rate than previous standards. A 64 data-bit expansion to the standard is planned. This card

multiplexes the address and data lines on the card for fewer pins at a slight speed penalty. PCI card slots are similar to MCA slots and are not compatible with other slots. These cards are auto configured by the BIOS of the host system.

Bus Clock - 33 MHz standard
Data Path - 32 Bits
Max data transfer rate - 66 MB/sec, 120 MB/sec with Burst Mode

VL Bus
======

The product of the VESA standard committee. The VL Bus is an alternative implementation of the Local Bus standard. It features 32-bit data transfer (with a planned upgrade to 64) at the CPU clock speed (maximum 66MHz). The boards typically run at a maximum of 40MHz. VL Bus cards can be designed as Local Bus Masters or Local Bus Targets. Local Bus Masters can take control of the bus.

This card slot is a standard ISA slot with an additional, in-line socket that contains the VL Bus signals. This makes this slot ISA (and EISA) compatible. A VL Bus machine typically has up to three VL Bus slots in it. These cards are auto configured by the BIOS of the host system.

Bus Clock - CPU clock speed with a 66MHz maximum. Typical design is 40MHz Data Path - 32 Bits
Max data transfer rate - 66 MB/sec, 120 MB/sec with Burst Mode (@33MHz)

Article Change History:
16 Mar 1995 - Corrected name of PCI bus.
08 Feb 1995 - Added keyword; made several technical updates.

Support Information Services

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Tech Info Library Article Number:16479

Tech Info Library

Apple II Software: Current Versions (10/94)

Revised: 10/11/94
Security: Everyone

Apple II Software: Current Versions (10/94)

==========

Article Created: 7 December 1992

TOPIC --

The table below lists current SHIPPING Apple software products for the Apple II and provides for each:

Version The current version number.
Notes Additional information

DISCUSSION --

Product	Version	Notes
Apple Access II	1.3.1	For Apple II
Apple II System	3.2	For Apple II systems
Apple IIGS System	6.0.1	For Apple IIGS only.
Apple IIe Card Software	2.2.1	For Macintosh computers using IIe card.
Aristotle	xxx	For Apple II
HyperMover	1.1	HyperCard IIGS

Support Information Services

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Tech Info Library Article Number:16480

Tech Info Library

Keyboard Layouts: Availability and Installation (1/96)

Revised: 1/26/96
Security: Everyone

Keyboard Layouts: Availability and Installation (1/96)

==========

Article Created: 11 October 1994
Article Reviewed/Updated: 26 January 1996

TOPIC ----------

I noticed I have several foreign keyboard layouts in my Keyboard control panel. Does a foreign keyboard plugged into my computer work with the proper keyboard layout selected? Where can I get international keyboard layouts?

DISCUSSION ----------

If you have System Software 7.x you can attach a Roman Language keyboard and use the Keyboard control panel to select the keyboard layout that matches that keyboard.

The keyboard layout tells the computer which characters are assigned to which keys on the keyboard. You can see the different layouts by choosing the Keyboard Control Panel and selecting the Keyboard Layout of your choice. You can also toggle through the installed keyboard layouts without opening the Keyboard control panel by pressing command-option-space bar. You can view the newly selected Keyboard Layout by choosing the Key Caps Desk Accessory located in the Apple Menu.

In countries where two or more languages are used frequently, such as in Switzerland, the system software also includes a Keyboard menu, which you can use to switch rapidly from one layout to another.

The following keyboard layouts are included with System Software 7.5.x:

- Australian
- British
- Danish
- Danish Mac Plus
- Dutch
- Finnish
- Flemish

- French
- French - numerical
- French Canadian
- German
- ISO Canadian
- Italian
- Norwegian
- Spanish
- Swedish
- Swiss French
- Swiss German
- U.S.
- U.S. - System 6

The following keyboard layouts are posted online:

- Australian
- British
- Canadian - CSA
- Canadian - ISO
- Canadian French
- Danish
- Danish Mac Plus
- Dutch
- Espanol
- Espanol ISO
- Finnish
- Flemish
- French
- French - numerical
- German
- Italian
- Norwegian
- Swedish
- Swiss French
- Swiss German

To install new keyboard layout files:

Step 1

Quit all open applications.

Step 2

Drag the desired keyboard layouts into the System file (it looks like a suitcase when you are viewing by icon) which is located in the System Folder.

Step 3

Restart your computer.

Step 4

You can now go to Keyboards under Control Panels and choose the desired keyboard layout.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" - Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" - Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
26 Jan 1996 - Added online availability information.
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16481

Tech Info Library

Retrospect: Get Info & Retrospect Log Inconsistent (10/94)

Revised: 10/11/94
Security: Everyone

Retrospect: Get Info & Retrospect Log Inconsistent (10/94)

==========

Article Created: 11 October 1994

TOPIC ----------

After doing a full backup of my hard drive with Retrospect, the Retrospect log shows fewer files and less data than what is shown on my hard drive by the Get Info command. What happened?

DISCUSSION ----------

The Finder's Get Info command totals the number of files and folders within the item you are "Getting Info" on. When you Get Info on a hard disk, the result will include System files that aren't normally backed up. These files can include AppleShare PDS, Desktop DB, Desktop DF, Desktop Folder, and Trash Folder.

Retrospect records only the files it backs up and does not count folders as items. Since Retrospect ignores some system related files and only backs up data files, this would account for the discrepancy.

The Finder also adds up the total disk space allocated for folders, while Retrospect totals only the amount of data it saves. There will almost always be a discrepancy because of ignored files such as Desktop DB & DF. Also, these files look larger to the Finder than they actually are.

Example:

The test hard disk contained only one file.

Get Info on the file indicated that it was 24K on disk (22K used).
Get Info on the RAM Disk indicated that there were 5 items on the drive.

Here is what the Retrospect log looked like:

7/29/94 12:36:49 PM: Copying Hard Disk
7/29/94 12:36:54 PM: Comparing Hard Disk

```
7/29/94 12:36:54 PM: Execution completed successfully
     Completed: 1 files, 22 KB
     Performance: 0.2 MB/minute (0.2 copy, 0.0 compare)
     Duration: 00:00:05
```

You can check to be sure that all the data (as opposed to every last bit of information on the drive) is safe by using the Reports:Files command in the Retrospect directory. Retrospect stores the folder information with the files as they are saved. Therefore, folders and data files can both be restored from a backup.

Support Information Services

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Tech Info Library Article Number:16483

Tech Info Library

Silly Noisy House: Sound Issue (8/95)

Revised: 8/14/95
Security: Everyone

Silly Noisy House: Sound Issue (8/95)

==========

Article Created: 11 October 1994
Article Reviewed/Updated: 14 August 1995

TOPIC -----

I'm not getting any sound when I launch A Silly Noisy House from my Early Childhood Connections At Ease folder. The program plays fine, and I can navigate through the various rooms in the house, but I get no sound. All other sounds play fine from all other programs and CD-ROMs. Also, if I go to the Finder and launch A Silly Noisy House from the CD-ROM, the sound works fine.

DISCUSSION -----

Some 500 Early Childhood Connections bundles shipped with the wrong version of the Silly Noisy House CD-ROM. They have received the LS55 version and the Early Childhood Connections package installs the LS25 version of the Silly Noisy House software on the hard drive. You can confirm the CD version by looking on the Silly Noisy House CD on the left side in the red field above the title.

When you click on the custom Silly Noisy House icon on the custom Early Childhood Connections At Ease folder, At Ease launches the old version of the Silly Noisy House software from the hard drive which is not compatible with the LS55 CD.

RESOLUTION:

The Apple Assistance Center can send SNH/ECC patch disk (1-800-SOS-APPL). This disk includes instructions for replacing the At Ease Customizer file in the At Ease items folder and replacing the Silly Noisy House application folder on the hard drive with the Silly Noisy House application folder from the LS55 CD. Once this operation is completed, the new At Ease Customizer file will launch the new software from the hard drive which will work with the new cd fine.

SNH/ECC patch disk ReadMe:

The enclosed file is used to fix a problem with A Silly Noisy House CD version

LS55 and Early Childhood Connections software bundle. In order to use this version of the Silly Noisy House CD and Early Childhood Connections you must replace two components of the Early Childhood Connections software package.

Under the File menu choose Print to print this file.

Part A: Replace the Silly Noisy House folder on your hard drive

- With your Macintosh turned on, insert the Silly Noisy House CD-ROM.
- If you are in At Ease, under special choose "Go to Finder".
- Once in the Finder double-click on your Macintosh hard drive.
- Drag the folder "Silly Noisy House" from your Macintosh hard drive to the trash can.
- Under special choose Empty Trash.
- Click the close box in the upper left hand corner of your Macintosh hard drive window.
- Double click on the Silly Noisy House CD icon on the right hand side of the screen.
- Drag the "Silly Noisy House" folder from the CD-ROM to the hard drive icon in the upper right corner of your screen. When the hard drive icon becomes dark, let go of the mouse button. Now watch as your Macintosh copies the new folder.
- Drag the Silly Noisy House CD-ROM icon to the trash can to eject it.

Part B: Replace the At Ease Customizer file

- Double-click on your hard drive to open it.
- Double-click on the "System Folder."
- Double-click on the "At Ease Items" folder.
- Drag the "At Ease Customizer" icon to the trash.
- Drag the "At Ease Customizer" icon from this floppy disk to the "At Ease Items" folder to replace the file you just trashed.
- Go back to At Ease and under the Special menu, choose Restart.
- Under "Special", choose "Empty Trash"
- Now Silly Noisy House and Early Childhood Connections are ready to use.

NOTE: If you have to reinstall the entire Early Childhood Connections software bundle from the Early Childhood Connections backup CD, you will have to repeat Part A of this procedure once the reinstallation of Early Childhood Connections is complete.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword; reviewed and reformatted article.

Support Information Services

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Tech Info Library Article Number:16484

Tech Info Library

System 7.5: Use DOS Mounter or PC Exchange? (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: Use DOS Mounter or PC Exchange? (2/95)

==========

Article Created: 10 October 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

Is there a reason that I cannot use DOS Mounter with System 7.5? Does PC Exchange offer any additional benefits over DOS Mounter?

DISCUSSION ----------

Dyna Communications says that DOS Mounter is System 7.5 compatible. However, Macintosh PC Exchange has been tested by Apple, and is known to work fine with System 7.5. With DOS Mounter, we just have not seen any problems or problem reports. Since Macintosh PC Exchange is now bundled with System 7.5, there is no additional cost involved.

Macintosh PC Exchange 2.02 has the same feature set as DOS Mounter, so there are no additional benefits other than cost.

Article Change History:
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16485

Tech Info Library

Apple OneScanner: Connecting to PC w/o Accessory Kit (10/94)

Revised: 5/24/95
Security: Everyone

Apple OneScanner: Connecting to PC w/o Accessory Kit (10/94)

==========

Article Created: 11 October 1994

TOPIC ----------

I have an Apple OneScanner, and want to connect it to my MS-DOS computer. The Windows Accessory kit is not available, so what type of SCSI card should I use? Also how do I obtain the Window drivers for this Scanner?

DISCUSSION ----------

Any adaptec SCSI adapter (or compatible) will work - the Adaptec 1540 or 1542 SCSI controllers are good choices. The software that we ship with the OneScanner for Windows is called Ofoto and is available from Light Source. These would be the best choices, as they've been tested with the scanner.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Support Information Services

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Tech Info Library Article Number:16486

Tech Info Library

LaserWriter Select 310: Uses PCL4 Escape Sequences (10/94)

Revised: 5/24/95
Security: Everyone

LaserWriter Select 310: Uses PCL4 Escape Sequences (10/94)

==========

Article Created: 11 October 1994

TOPIC ----------

I am using a LaserWriter Select 310 with my custom MS-DOS application on a MS-DOS computer. The programmer who wrote the application is requesting the hex printing code for the LaserWriter Select 310, so it can be added as a selection in the application. Are these hex codes available?

DISCUSSION ----------

The LaserWriter Select 310 uses PostScript and PCL4 for printing. The hex codes the programmer wants are probably the PCL4 escape sequences. Escape sequences are typically used with PCL or dot matrix printers.

Where to Find PCL4 Escape Sequences

- The User's Guide for the Select 310 has some information.
- Numerous books available for programming LaserWriters and Hewlett-Packard printers, which we emulate via PCL4.
- Hewlett-Packard publishes a manual for programming in PCL

Another option available to the programmer is to use PostScript instead of PCL.

Support Information Services

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Tech Info Library Article Number:16487

Tech Info Library

QuickDraw GX: X appears through icon at Startup (10/94)

Revised: 10/11/94
Security: Everyone

QuickDraw GX: X appears through icon at Startup (10/94)

==========

Article Created: 11 October 1994

TOPIC ----------

Why is there an 'X' through the Quickdraw GX icon at startup and a message that states the 'graphic component of QuickDraw GX is missing' ?

DISCUSSION ----------

Usually, the load order of extensions has changed though the use of a third party extensions manager, or some of the QuickDraw GX components have been renamed.

If the ColorSync extension loads after the QuickDraw GX extension, then this message appears.

To correct this problem, change the load order of the extensions back to factory default.

Support Information Services

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Tech Info Library Article Number:16488

Tech Info Library

AppleShare, ARA, Personal File Sharing and TOPS (10/94)

Revised: 10/11/94
Security: Everyone

AppleShare, ARA, Personal File Sharing and TOPS (10/94)

==========

Article Created: 11 October 1994

TOPIC -----

Occasionally, users will report problems with using AppleShare or Personal File Sharing such as:

- Inability to start file sharing.
- Errors installing Apple Remote Access.
- Inability to launch or configure Apple Remote Access.
- System bombs when opening Chooser or when selecting AppleShare in Chooser.

DISCUSSION -----

If AppleShare users running on older Macintosh computers report these types of problems, check to see if TOPS has ever been in use in the environment. TOPS was a popular pre-System 7 way of setting up an ad-hoc network with distributed file sharing.

Unfortunately, when Apple finished AFP, TOPS was not compliant. Remnants of TOPS software left in the System Folder can cause Macintosh computers running System 7 to behave abnormally.

TOPS can be completely removed by two means only -- 'De-install' from the TOPS master installation diskette (unknowable results in System 7), or by a clean system install (preferred). This is because the TOPS installer put AFP non-compliant resources into the System file directly. Installing System 7 over the top of System 6 will not eliminate these resources, and the compatibility checker doesn't report them.

We have seen more than a few situations where TOPS was the culprit causing unexpected crashes of servers and workstations, inability to run File Sharing, or inability to use AppleShare once installed.

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Tech Info Library Article Number:16489

Tech Info Library

AWS 95: Obtaining SCSI Disk Drive Information (10/94)

Revised: 10/11/94
Security: Everyone

AWS 95: Obtaining SCSI Disk Drive Information (10/94)

==========

Article Created: 11 October 1994

TOPIC ----------

How can I obtain more information about SCSI disk drives attached to my Workgroup Server 95?

DISCUSSION ----------

When an A/UX based computer boots, it produces many boot messages including a complete scan of the SCSI chain and what kind of drives it sees. This information is available in an alternate screen on the command console. After the machine boots, pull down the "Window" menu and select the "A/UX System Console" screen. Scrolling up in the list will show you these boot messages and SCSI chain info.

Support Information Services

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Tech Info Library Article Number:16490

Tech Info Library

AWS 95: Run Level Error When Booting A/UX (10/94)

Revised: 10/11/94
Security: Everyone

AWS 95: Run Level Error When Booting A/UX (10/94)

==========

Article Created: 11 October 1994

TOPIC ----------

When booting a Workgroup Server 95 I get a prompt saying:

"Enter run level: 0, 1, 2..."

Any response, except for "0" which brings up the single user mode of A/UX, ends up hanging the computer.

DISCUSSION ----------

The inittab file has been damaged. It needs to be replaced with a backup copy. If a backup does not exist you can copy it from the A/UX cd using the following command in the startup shell:

```
cp <scsi id of cd>,0,0/etc/inittab   /etc/inittab
```

Note: One way this condition can be triggered is by editing inittab with TextEditor.

Support Information Services

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Tech Info Library Article Number:16491

Tech Info Library

Backing Up the AppleShare PDS File (12/95)

Revised: 12/19/95
Security: Everyone

Backing Up the AppleShare PDS File (12/95)

==========

Article Created: 11 October 1994
Article Reviewed/Updated: 19 December 1995

TOPIC ----------

Can you provide details about how AppleShare keeps track of access privileges (file permissions) and how to backup and troubleshoot problems with privileges?

DISCUSSION ----------

Retrospect by Dantz Development Corporation will maintain information about file access privileges when you perform a backup, provided the AppleShare file server software is running during the backup and during the restore. However, you cannot restore the file access privileges only. You must restore all the shared data to correctly restore the access privileges. This can be time-consuming and often causes loss of data that was created since the last backup. Here are some alternatives that may help you avoid loss of access privileges.

There are two files to be aware of when dealing with AppleShare access privileges:

- The AppleShare PDS file, which maintains access privileges to folders, is an invisible file located at the root level of the volume being shared.
- The Users & Groups Data File, which maintains user specific information like User Names, Group Names, and Passwords, is visible and is located in the Preferences folder inside the System Folder of the server.

It is possible that the AppleShare PDS file could be accidentally reset after a clean system install. This could happen if you don't restore the old Users & Groups Data File to the root level of the new System Folder before launching AppleShare Admin. The AppleShare PDS file might also be damaged (a sign of this is the AppleShare File Server never finishes "starting up"). You can make a backup of AppleShare PDS and keep it on a floppy. To do this:

1) Using a disk utility such as ResEdit or Norton Disk Tools, locate the

AppleShare PDS file at the root level of a shared volume (except for CD's).
2) Make it visible.
3) Drag copy the AppleShare PDS file to a floppy disk.

Keep this backup in a safe place in the event you have to use it to recover from a problem. As a safety measure, don't forget to make the AppleShare PDS file on the hard disk invisible again after you make the backup copy.

IMPORTANT: Whenever you make changes to your Users & Groups Data File (add or delete users), make a new backup of the AppleShare PDS file afterwards. This will keep these two files "in sync" with each other.

In the event of a reset or damaged AppleShare PDS file, to restore the backup to the server:

1) Quit the AppleShare Admin and File Server applications.
2) Make the AppleShare PDS file visible by using a disk utility program.
3) Drag the AppleShare PDS file at the root level of the volume to another folder or to the trash.
4) Insert the floppy disk that contains the AppleShare PDS backup.
5) Drag the backup AppleShare PDS file from the floppy disk to the root level of the shared volume.
6) Launch the AppleShare Admin program.

Any folders created on the shared volume since making the AppleShare PDS backup will inherit the privileges of their parent folder. Any new folders shared as separate volumes since the backup was made will need to be reshared.

If your Users & Groups Data File and AppleShare PDS file have gotten out of sync (for example, you made changes to Users & Groups without making a new backup of the PDS file), you may get errors when trying to look at or change folder privileges with AppleShare Admin. For example, if the PDS file indicates that a certain user is the owner of a folder, and that user has since been deleted, you'll get errors. However, logging in to the file server from a workstation as Administrator appears to reset privileges to those folders. You can later change them from within the Admin program.

Article Change History:
19 Dec 1995 - Made correction for accuracy.

Support Information Services

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Tech Info Library Article Number:16492

Tech Info Library

Installer MAE 4.0: Brief Description (10/94)

Revised: 10/11/94
Security: Everyone

Installer MAE 4.0: Brief Description (10/94)

==========

Article Created: 11 October 1994

TOPIC ----------

This article provides a brief description of the Installer MAE 4.0.

DISCUSSION ----------

Installer MAE 4.0 is a UNIX-savvy installer that comes with MAE. It normally lives in the appledir/Tools directory. The problem with most installers is they look at the root filesystem to determine free disk space. However, with UNIX the root filesystem often does not have very much free space. Installer MAE 4.0 is a little smarter about determining free space.

Support Information Services

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Tech Info Library Article Number:16493

Tech Info Library

MAE 2.0: HP Floppy, SCSI CD-ROM, and SCSI Floppy Drives (5/96)

Revised: 5/13/96
Security: Everyone

MAE 2.0: HP Floppy, SCSI CD-ROM, and SCSI Floppy Drives (5/96)

==========

Article Created: 11 October 1994
Article Reviewed/Updated: 13 May 1996

TOPIC ----------

This article describes adding floppy, SCSI, and SCSI floppy devices on a Hewlett Packard (HP) workstation running HP-UX 9.0 & 10.0 for Macintosh Application Environment (MAE).

DISCUSSION ----------

SCSI CD-ROM
==========

To add devices to be used by MAE, you may have to edit the file macdisks.HP-UX. Entries for SCSI drives have the format:

```
  scsiX:[fixed|removable]:[ro|rw]:</dev/path>
```

X in scsiX represents the SCSI device number, which can often be found by looking at the back of the SCSI device. On HP-UX, you can also run sam, and by examining "Disks and File Systems" and then entering "CD-ROM, Floppy and Hard Disk", look at the CD-ROM's device name and number.

Example SCSI entry:

```
  scsi4:removable:ro:/dev/dsk/c201d4s0  (hp-ux 9.0.x)
  scsi4:removable:ro:/dev/dsk/c0t2d0    (hp-ux 10.x)
```

Alternatively, once you know the SCSI device number, you can simply change an entry to "default," and the next time you launch MAE, the "default" will be converted into the defaults for a CD-ROM at the given SCSI address on HP-UX.

Example of the use of "default"

```
  scsi4:default
```

Devices marked "ignore" WILL NOT be checked by MAE. You will not be able to read a CD in a CD-ROM drive if the entry for that SCSI device number is "ignore"

If you have other types of SCSI devices, you would like to use with MAE, you may wish to change read-only ("ro") to read-write ("rw"), and/or change "removable" to "fixed" if the device does not support ejecting the media.

This is what the entries for SCSI disks in the macdisks.HP-UX file look like:

```
  scsi0:ignore
  scsi1:ignore
  scsi2:ignore
  scsi3:ignore
  scsi4:ignore
  scsi5:ignore
  scsi6:ignore
```

Floppies (non-SCSI)

Entries for floppy drives have the format:

```
  floppyX:[ro|rw]:</dev/path>
```

Configuring floppy devices is similar to configuring SCSI devices, except floppy devices generally do not have SCSI ID numbers. You simply need to enable the drive by entering whether the drive is read-only or read-write, and providing the path name.

Since HP's floppy device naming scheme varies by model, the floppy0 entry has been set to "default," and will be determined upon the first launching of MAE. Furthermore, since HP systems normally only have one floppy drive, only the floppy0 entry has been enabled.

For example:

```
  floppy0:default
```

This entry will be converted, depending on HP workstation model, into either:

```
  floppy0:rw:/dev/rfloppy/c201d0s0  (hp-ux 9.0.x)
or
  floppy0:rw:/dev/rfloppy/c20Ad1s0  (hp-ux 9.0.x)

AND
  floppy0:rw:/dev/rfloppy/c0t0d0
```

This is what the entries for floppy disks in the macdisks.HP-UX file look like:

```
  floppy0:default
  floppy1:ignore
```

SCSI Floppy Drives

MAE can use a SCSI floppy drive with HP-UX as follows:

Item 1

Verify that HP-UX utilizes the drive as SCSI floppy and not generic SCSI. You can verify this with the 'ioscan -f' command. Your output should look similar to the following:

```
disk  2.0.1.1.0  scsifloppy ok(0x800101)  ok  TEAC  FC-1   HF   00 (hp-ux
9.0.x)

disk  2/0/1.0.0  sflop CLAIMED DEVICE  TEAC FC-1  HF   07  (hp-ux 10.x)
```

The SCSI drive must scan as 'scsifloppy' for the SCSI address utilized by that drive. If it does not, verify that the scsifloppy driver has been installed into the kernel, and that you have the required patches for your level of HP-UX. In addition, the chosen SCSI address cannot conflict with any other devices.

Also, ensure that you are using the proper device files with the drive. For example, the following entries were created in /dev/floppy and /dev/rfloppy respectively using 'mknod':

```
brw-rw-rw-   1 root   sys    23 0x201100 Jun 27 18:03 c201d1s0
crw-rw-rw-   1 bin    bin    106 0x201100 Jun 28 10:28 c201d1s0(hp-ux 9.x)

brw-rw-rw-   1 root   sys    23 0x201100 Jun 27 18:03 c0t1d0
crw-rw-rw-   1 bin    bin    106 0x201100 Jun 28 10:28 c0t1d0 (hp-ux 10.x)
```

Note that read and write permission is granted to all users.

Item 2

In the file 'macdisks.HPUX' (located in the Preferences folder for each user), add an entry similar to the following prior to starting MAE (or relaunch MAE after changing it if MAE is running):

```
floppy0:rw:/dev/rfloppy/c201d1s0  (hp-ux 9.0.x)
floppy0:rw:/dev/rfloppy/c0t1d0    (hp-ux 10.x)
```

The exact entry will depend upon the SCSI address utilized by the drive. In all of the examples above, SCSI address = 1 is shown. Do NOT put an entry into the SCSI section of this file -- it must be entered as a floppy drive. If you already have a floppy drive as 'floppy0', you can put the SCSI floppy as 'floppy1' instead.

NOTE: Apple tested with an ISA 1015S drive that required an upgrade from the vendor before it would be recognized by HP-UX as 'scsifloppy.' MAE will NOT be

able to use the drive until HP-UX recognizes the unit as a SCSI floppy drive. We also discovered that our unit did not work if SCSI address = 0 was utilized.

Article Change History:
13 May 1996 - Complete rewrite of article.
08 Feb 1996 - Included SCSI Floppy Drive information.
10 Aug 1995 - Changed title to better reflect the article.

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Tech Info Library Article Number:16494

Tech Info Library

Color StyleWriter 2400 & 2500: Paper Types Explained (6/96)

Revised: 6/14/96
Security: Everyone

Color StyleWriter 2400 & 2500: Paper Types Explained (6/96)

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Article Created: 11 October 1994
Article Reviewed/Updated: 12 June 1996

TOPIC ----------

The Color StyleWriter 2400 provides options for using different types of paper. What are the advantages of using each of the different types of paper?

DISCUSSION ----------

The following information is from the Color StyleWriter 2400 User's Guide (pages 35-37) and the Apple product listing. This guide is intended to assist you in choosing the print material that will suit your particular needs.

Choosing print materials for the StyleWriter 2400

Plain paper

Use plain paper for everyday printing.

- Print quality may vary depending on the manufacturer of the paper. If you're not happy with one kind of paper, try a different brand. For consistent results, use one of the special papers designed for the Color StyleWriter 2400 printer.

- You can use any plain paper, including plain copier paper. Paper weight can range from 16 to 24 pounds, though 20-pound paper is recommended.

- Don't use erasable typing paper, damaged or wrinkled paper, stapled paper, or multipart forms ("Carbonless carbons").

- Plain paper almost always has one side that is better for printing than the other. See the package label to determine which side is better, and load that side so that it faces you.

Premium coated paper

Use premium coated paper for exceptional print quality — for example, for a final draft, a colorful notice, or the master copy of a presentation. Colors appear richer and more vibrant on such paper.

- Use only coated paper designed for use with the Color StyleWriter 2400.

- One side of the paper is a little whiter than the other and is better for printing. See the package label on the coated paper to determine which side is better, and load that side so that it faces you.

Premium Plus Coated Paper

Use Premium Plus Coated Paper for exceptional image quality - for example, when printing a photographic picture. Images look smoother on such paper.

- Use only Apple's Premium Plus Coated Paper designed for use with the Color StyleWriter 2500 printer mechanism and the printer's inks.

- One side of the paper is a little whiter than the other and is better for printing. See the package label on the coated paper to determine which side is better, load that side so that it faces you.

Glossy paper

Use glossy paper for the highest print quality you can get on opaque paper — for example, for color proofs.

- Use only glossy paper designed for use with the Color StyleWriter 2400.

- When loading a stack of glossy paper into the sheet feeder, put a single sheet of plain paper at the back of the stack to prevent misfeeding.

Back-print film

Use back-print film for the highest print quality of all—for example, for digitized photographs or important client presentations. Back-print film has a shiny surface and works exceptionally well when displayed by backlighting.

- Use only back-print film designed for use with the Color StyleWriter 2400.

- Load back-print film so that the chalky side faces you.

- When loading a stack of back-print film into the sheet feeder, put a single sheet of plain paper at the back of the stack to prevent misfeeding.

- In the Print dialog box, be sure to select Back Print as the paper type.

- The printer automatically reverses the image and prints it on the film's chalky side to that the image looks correct when viewed from the shiny

side.

Transparencies

Use transparencies when you want to present your document on an overhead projector.

- Use only transparencies designed for use with the Color StyleWriter 2400. These special transparencies have a sheet of paper attached to them; leave the paper attached until after printing.

- Load the transparencies so that the shiny side faces you and the edge where the paper and the transparencies are attached points downward.

Apple Printing Materials for Color StyleWriter 2400, Color StyleWriter Pro, and Apple Color Printer
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Begin_Table

Paper Type	Part Number	Quantity
A4 size Back Print Film	M2954G/A	
A4 size Glossy Paper	M3656G/A	
A4 size Premium Coated Paper	M2951G/A	(200/pk)
A4 size Premium Plus Paper	M4791G/A	
A4 size Transparency Film	M1959G/A	(20/pk)
Legal size Coated Paper (81/2 x 14)	T0548G/A	(200/pk)
Letter size Back Print Film	M2953G/A	(20/pk)
Letter size Glossy Paper	M3149G/A*	(50/pk)
Letter size Glossy Paper	M3655G/A	
Letter size Premium Coated Paper	M2952G/A	(200/pk)
Letter size Premium Plus Paper	M4792G/A	
Letter size Transparency Film	M2658G/A	(20/pk)

End_Table

Notes:
* - M3149G/A was replaced by M3655G/A

Article Change History:
06 Jun 1996 - Updated to show obsolete part numbers.
04 Jun 1996 - Added Premium Plus Paper. Added part numbers.
05 Dec 1994 - Updated Apple Printing Materials section.

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Tech Info Library Article Number:16496

Tech Info Library

LaserWriter Pro 630: Buffer not cleared using PCL (10/94)

Revised: 10/11/94
Security: Everyone

LaserWriter Pro 630: Buffer not cleared using PCL (10/94)

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Article Created: 11 October 1994

TOPIC ----------

I have a LaserWriter Pro 630 connected to a MS-DOS computer using the parallel port, and attached to an AppleTalk network using the EtherTalk port. The parallel port is configured for the PCL4 language.

When the MS-DOS computer is turned off, the LaserWriter Pro 630 prints blank pages. Can the problem be generated by a wrong pinout of the cable? Or is there anyway to fix this problem?

DISCUSSION ----------

When using the PCL mode, if a small document (less than one page) is sent to the printer and it doesn't fill the buffer, or the program doesn't send the proper end-of-file, the job sits in the printer buffer. It stays in the buffer until an end-of-file is sent or until something causes the printer to flush the buffer - such as shutting off the computer. This could be the problem since it is very common MS-DOS computers. Most MS-DOS based printers, such as Hewlett-Packard printers, have a front panel form-feed button that you can press to flush the buffer. This clears the buffer, but you still a blank page.

Another possibility is a bad cable. If the pinouts are off, or the cable continuity is marginal, you get symptoms like you described.

Workaround

First try a different cable. If that doesn't take care of the problem, then the application isn't sending an end-of-file or the buffer isn't getting full on the last print job. If the problem is due to the print buffer, then there is nothing you can do other than to turn off the printer, or get the blank pages.

Support Information Services

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Tech Info Library Article Number:16497

Tech Info Library

Apple Fax on Demand Service (1/95)

Revised: 1/23/95
Security: Everyone

Apple Fax on Demand Service (1/95)

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Article Created: 11 October 1994
Article Reviewed/Updated: 23 January 1995

TOPIC ----------

Apple Computer offers a “Fax on Demand” service called Apple Fax. This service is available 24 hours a day, 7 days a week. Product literature as well as technical support information is available through this service free of charge. Over 200 outgoing fax lines assure you of receiving the latest product information direct to your fax machine within minutes.

DISCUSSION ----------

You can access the Apple Fax system directly by calling 1-800-505-0171. When you call, you are given the option of having one of two catalogs faxed to you:

- Product Literature Catalog
- Technical Support Catalog

If you already know the document number, you may request a specific document.

Product Literature Catalog

The product literature catalog contains the document numbers needed to request product literature sheets, also known as spec sheets, of Apple’s current line of shipping and announced products.

Technical Support Catalog

The technical support catalog is a five-page catalog containing document numbers of available technical support documentation created by the Apple Assistance Center. Here is a list of topics in the catalog:

- HyperCard

- Macintosh Fonts and Desk Accessories
- Macintosh Operating Systems
- Macintosh Quadra
- Macintosh Software Troubleshooting
- Networking
- Newton
- Performa
- PowerBook
- Power Macintosh
- QuickTime
- Miscellaneous

Over 90 documents are currently available. The catalog includes a short abstract on each document, helping you to find the technical information you need. The documents are written in a concise, easy to read, step by step format.

Access to Apple Fax can also be obtained through Apple’s automated Interactive systems at 1-800-SOS-APPL. During long queue times, you are given the option of transferring to Apple Fax, where an answer to your question may already be available.

Article Change History:
23 Jan 1995 - Added Miscellaneous category.

Support Information Services

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Tech Info Library Article Number:16499

Tech Info Library

Apple Scanners: General Description (3/95)

Revised: 3/17/95
Security: Everyone

Apple Scanners: General Description (3/95)

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Article Created: 11 October 1994
Article Reviewed/Updated: 17 March 1995

TOPIC ----------

Apple Computer offers three types of scanners to use with your Macintosh computer. These are:

- Apple Scanner
- Apple OneScanner
- Apple Color OneScanner

There is also a variety of software packages and options that you can use with these scanners. This article describes these scanners and the available software.

DISCUSSION ----------

The Scanners/Software

The Apple Scanner

The Apple Scanner is a single pass black and white scanner with up to four-bit gray scale (16 levels of gray) capability. (The number of passes is only important when discussing color scanners). It uses a program called AppleScan to capture the images. AppleScan 1.0, when used with Scanner driver 1.0 or 2.0, only works with System 6. To get this scanner to work with System 7, you need AppleScan 1.0.2 and Scanner version 2.0 or 3.0.

The OneScanner

This scanner is an eight-bit gray scale (256 levels of gray) scanner. Apple bundles software from Light Source, Inc., called Ofoto 1.1, which is standalone gray scale scanner software.

Gray scale images won't print properly with older LaserWriter drivers, so confirm LaserWriter driver 6.0.1 or later is installed in the system folder. Ofoto also requires system software version 6.0.7 or later and 32-bit QuickDraw, which is built into System 7. It is fully compatible with System 7 or later. Ofoto is not available as a separate product from Apple. There are two Ofoto upgrade kits available from Light Source, Inc. – one version works only with the Apple Scanner; the other version works with all scanners.

Ofoto 1.1 incorporates support for QuickTime image compression abilities. This lets you compress and decompress still image files and save them as much smaller files. The QuickTime system software extension is included with the new software. Other enhancements include the addition of an auto "sharpen" command, a simplified calibration process, and improved access to the "image-type" control.

Support for QuickTime compression/decompression abilities significantly reduces the file sizes of scanned images as much as 10 times. QuickTime provides various compression choices, including the Joint Photographic Experts Group (JPEG) industry standard method of image compression. QuickTime also makes the opening and decompression of compressed files saved in the standard PICT format automatic to all Macintosh applications. The other enhancements refine the user interface of the scanning software and improve the quality of scanned images.

HyperScan is a HyperCard stack that is bundled with the Apple Scanners specifically for users who create HyperCard stacks. It provides 1-bit (black and white) images for on-screen use. Note that HyperScan is only for use with Apple Scanners, and does not support third party scanners.

Color OneScanner

The color OneScanner is a single pass 24-bit color (16 million colors) scanner that includes Ofoto 2.0 and HyperScan 2.0. Ofoto 2.0 supports all Macintosh computers with a 68020 or higher CPU. If you own a Macintosh Classic, SE, Plus, or PowerBook 100 computer, you need a special version of Ofoto. Please call Light Source at 1-415-461-3030 for your copy.

Installation
==========

Some of the files on the Ofoto 2.0 disks are compressed and must be expanded before you can use them. Files whose names end in .cmp cannot be drag-installed. You must use the Installer to install Ofoto 2.0 on your hard disk.

To use Ofoto 2.0 with the Apple Color OneScanner, you should have at least 10 MB of hard disk space available before installation.
Be sure to turn off any virus-checking programs and start with extensions off before attempting to install the software.

Reinstallation

Before reinstalling Ofoto 2.0, you should throw away the existing Ofoto Folder, located in the Preferences folder (in the System Folder).
Throwing away this Folder also throws away all custom calibrations and templates

and files you have created.

System Memory

Ofoto 2.0 software requires a system with a minimum of 4 MB of Random Access Memory (RAM). If you plan to use QuickTime to compress files, you need a system with a minimum of 6 MB of RAM available.

System Version

If you are using System 7.0.1, you must have System 7 Tune-Up 1.1.1 installed as well. From the Finder choose "About This Macintosh" from the Apple Menu. If you see a bullet (•) character following the system software version number, Tune-Up 1.1.1 has been installed. If you are using System 7.0 or later, you should be using Scanner driver version 2.0 or later for the grayscale scanners and version 3.0 for the color scanner.

Ofoto 2.0 Application Memory

The minimum memory partition size for Ofoto 2.0 is 1536K. Increasing the memory partition size (in the Get Info window) improves performance, especially in processing color images. While Apple has no specific recommendation, you may want to experiment with other settings, for example, 4096K (4 MB).

To Start

Turn on the scanner and wait until it is fully powered on, then start up the computer. When the computer is ready, double click on the appropriate software icon. If the scanner is properly connected the software launches. If you get "Scanner is not responding" check the scanner's green ready light (on), SCSI cabling/ID/termination, and ensure the proper scanner driver is in the Extensions folder of your System folder. If there are other SCSI devices on the bus, remove them and connect the scanner with a terminator and see if you can scan. If everything seems OK, try reinstalling the Scanner (Ofoto) software. If you still have no luck, try a clean system install, and again reinstall the Scanner software.

Scanned Images

You should be aware of the file size of scanned images. Can your computer work with it? Do you have enough RAM? Is your CPU powerful enough to modify it? Can your printer print it? Here is an example of scan sizes. You may note that none of these sizes are scanned at 300 dpi. (In PhotoShop V2.5 an 8.5 X 11 300 dpi color scan takes 24.6 megabytes of memory).

All Pre scans (8.5" x 14") – 3.1 MB

Apple Color Printer color final scans (scan dpi of 135):

SOURCE	SCAN SIZE
8" x 10"	8.6 MB
4" x 6"	2.6 MB
3" x 5"	1.7 MB

LaserWriter llg gray scale final scans (scan dpi of 150):

	SCAN SIZE	
SOURCE	BEST	FASTER
8" x 10"	10.6 MB	3.6 MB
4" x 6"	3.2 MB	1.1 MB
3" x 5"	2.0 MB	700K

Linotronic 300 gray scale final scans (scan dpi of 200):

	SCAN SIZE	
SOURCE	BEST	FASTER
8" x 10"	18.8 MB	6.3 MB
4" x 6"	5.7 MB	1.9 MB
3" x 5"	3.6 MB	1.2 MB

Scanned File Format

TIFF

Tagged Image File Format (TIFF) images are bit-mapped and support 24-bit color. The information stored is application dependent.

PICT

PlCTure (PICT) format originally used to transfer object oriented graphics. The original PICT only allowed eight colors, thus the making of PICT2. Because of its versatility PICT2 replaced PICT as the standard Macintosh QuickDraw format and uses the PICT name. PICT2 supports 24-bit color.

EPS

Encapsulated PostScript (EPS) files created on the Macintosh are a combination of PostScript code and PICT files. The PICT portion displays on your screen; the PostScript code "displays" the image on a PostScript printer. EPS images created on MS-DOS or other computer platforms do not always contain a screen image in the EPS file. Most MS-DOS programs use TIFF files instead of PICT files to display images on the screen.

Compression Formats

GIF

Graphics Interchange Format (GIF) images are created by CompuServe for compression of graphic files and ease of download from electronic info boards. GIF only supports 256 colors (8 bit).

JPEG

Joint Photographic Experts Group (JPEG) images are also created by CompuServe but the compression saves 24 bits and requires QuickTime to function.

Editing a Scanned Image

Once you have scanned an image into a disk file, you can use a graphic art package, such as the following, to modify the image or even to save it to a different format (such as EPS to TIFF).

Adobe PhotoShop – Used for a variety of tasks, including photo editing and manipulating high-resolution scanned images such as those used for magazine or video production.

Fractal Design Painter – Can make a scanned photo look like a watercolor or oil painting. It can even give an image the "look" of a particular artist, such as Van Gogh.

Digital Darkroom – Use for photo retouch of scanned photos.

SuperPaint – Lets you add additional graphics to a scanned image (such as adding text and positional arrows to a computer hardware image.

Article Change History:
17 Mar 1995 - Corrected product name.

Support Information Services

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Tech Info Library Article Number:16500

Apple Media Tool Version 1.1: FAQ (12/95)

Revised: 12/1/95
Security: Everyone

Apple Media Tool Version 1.1: FAQ (12/95)

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Article Created: 11 October 1994
Article Reviewed/Updated: 1 December 1995

TOPIC ----------

This article contains frequently asked questions (FAQ) specific to the cross-platform capability of the Apple Media Tool.

DISCUSSION ----------

Question: What are the system requirements for Microsoft Windows-compatible computers that are running Apple Media Kit runtime modules?

Answer: Here are the system requirements:

- Pentium- or 486-based Windows-compatible computer with Windows 3.1
- QuickTime for Windows
- Audio (or sound) card
- Windows-compatible video board capable of displaying at least 256 colors on a 640 by 480 pixel monitor
- CD-ROM player (if distributed on CD-ROM)
- Sufficient memory to display the desired runtime module

Question: Although the literature states that Apple supports the creation of mixed mode and Windows-only CDs with the Apple Media Tool, I have heard and read that there are known problems with being able to read such CDs in the Windows environment. Is there any additional information on this?

Answer: While some people have had problems creating mixed mode CD-ROMs, other companies have had good success. It depends on how much time they are willing to spend on development and testing. The most common reason for problems is that the media files are in the wrong formats or don't conform to the eight character restriction of DOS.

A good example of a mixed-mode disc is the "Forever Growing Garden" developed by

a company called Arborescence located in San Francisco. The CD is distributed by Media Vision.

Question: My Windows runtime does not work. What could be wrong?

Answer: Although it is difficult to determine, the most common reason for this problem is that the media files are not in the right format. Media files must be converted using the converters supplied with the Apple Media Tool. Sounds must be converted into the WAV format (not "snd" or AIFF). Backgrounds saved in the PICT format (not Photoshop's native format). QuickTime movies must be "cross-platform" and "flat".

The second most common reason for problems like this is a failure for media files to conform to DOS naming conventions. You must change the file names (if necessary) and use the "Replace Media" menu command in the Apple Media Tool before doing the Save As Text command in the Apple Media Tool. If you change the names afterward (or the file names change when converted to your DOS machine), the runtime looks for the wrong file name. It cannot know what name to look for on the Windows platform because there is not a 1:1 correspondence between Macintosh file names and DOS file names.

We recommend that you convert the file formats and the file names during development and test the Macintosh version of your runtime thoroughly. When you move your project to your Windows machine, you should test all your movies to verify they work properly with QuickTime for Windows.

Question: My QuickTime movies do not work with QuickTime for Windows (QTW). I thought that all QuickTime movies work on both platforms. What is wrong?

Answer: Not all movies that work with QuickTime for Macintosh automatically work with QTW. Some aspects of QuickTime movies do not translate to other platforms. For instance:

• Macintosh movies can "point" to other movies such that a "QuickTime movie" can actually consist solely of frames from other movie files. Removing these "pointers" makes a movie "self-contained".

• Macintosh movies can store important data in Macintosh "resources", a component of files that exist only on the Macintosh platform. Moving all important data into the non-resource area makes a movie "cross-platform".

NOTE: Removing all pointers and changing resources is referred to as "flattening" a movie.

Check all the movies to make sure they are converted to the necessary "self-contained" and "cross-platform" QuickTime formats. You can do this using Adobe Premier or Video Fusion. To verify that you did it right, you should open the movies in the QuickTime for Windows "Movie Player" program (which comes with QuickTime for Windows) and see if they work. If your movies do not open properly

in the Windows "Movie Player" program, then the movies are not in the correct format.

Question: For text that is part of a project created on the Macintosh using the Apple Media Tool and then compiled to run on Windows, are those fonts compiled as part of the project, or does the project rely on the Windows system fonts?

Answer: As with most font handling for all applications, if you don't have the corresponding font on the PC, a default font is used instead. You can use the PC version of StyleEdit (STYLEDIT.EXE) to look at your text on the PC and find a close match if you don't have the corresponding font. Another alternative is to create a picture, and font substitution won't be an issue.

Question: Can you compile twice (once for Macintosh and once for Windows) but use one copy of the data on a Mixed "Hybrid" Mode CD-ROM (Mac HFS and ISO 9660). Could you describe the logistics of producing the Mixed Mode CD specifically as to what data can be used in both worlds and what would have to be put on the disk twice?

Answer: You must contact specific CD-ROM makers to get details of their own software, hardware, and logistics. At least one company who makes CD-ROM-maker hardware/software estimated that the "overhead" for making a hybrid CD (compared to making the CD-ROM just for Macintosh-HFS) is less than one megabyte. All the "extra" data you would need would be the four windows files ending with .EXE, .KW1, .KW2, and .KW3 (and possibly a .INI file). The logistics vary depending on the manufacturer of the CD-ROM-maker hardware/software.

Question: When I run the runtime application on my PC, it quits after saying that transparency does not work on my Windows machine. I have even tried several video cards. What is wrong?

Answer: Use Runtime maker 1.1 and be sure to follow the instructions enclosed with it regarding copying the .INI file in the Runtime Maker folder to your PC runtime folder. If you use the AMT Programming Environment, be sure to include these lines in your PROGRAM.INI file:

```
[video]
transparency=bitmap
```

If you have renamed your PC runtime MYPROJ.EXE, then you must change the name of your .INI file to MYPROJ.INI file and put it in the same directory.

Article Change History:
01 Dec 1995 - Changed title and added keyword.
01 Mar 1995 - Changed title to reflect new product name.

Support Information Services

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Tech Info Library Article Number:16501

Tech Info Library

Macintosh and Windows NT Server (5/96)

Revised: 5/9/96
Security: Everyone

Macintosh and Windows NT Server (5/96)

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Article Created: 12 October 1994
Article Reviewed/Updated: 9 May 1996

TOPIC ----------

1) Is it possible to connect an Macintosh LC 475 or LC II to any Apple or Non Apple Token Ring Board (for example, Apple Token Ring 4/16 NB, or Token Ring NB/c cards)? In general is there a solution similar to the Ethernet NB card for the LC series?

2) In an installation with one Windows NT Server, PCs on Ethernet running Workgroup for Windows, one Power Macintosh on Ethernet, one Quadra 800 on Ethernet, and two LC III computers on LocalTalk (will not upgrade to Ethernet) -- I am looking for a general connectivity solution in the following areas:

• Is there an AppleTalk solution for a Windows NT Advanced Server?

DISCUSSION ----------

1) Asanté makes a Token Ring card for the LC series of computers. Contact Asante to determine if their product fits your specific needs.

2) Windows NT Advanced Server includes Macintosh AFP support as a separately installed module. It is not installed during the standard Windows NT Server installation but can be added later from the original installation media. This Macintosh support includes AFP, AppleTalk routing and printing support.

The Macintosh support software is NOT included in the Windows NT Workstation software.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

..TIL16503-Macintosh_and_Windows_NT_Server_5-96.pdf

Article Change History:
09 May 1996 - Updated answer number 2.
27 Nov 1995 - Added keyword.
05 May 1995 - Made minor corrections.

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Tech Info Library Article Number:16503

Tech Info Library

PC Exchange: Reading DOS Formatted SyQuest Cartridges (10/94)

Revised: 10/12/94
Security: Everyone

PC Exchange: Reading DOS Formatted SyQuest Cartridges (10/94)

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Article Created: 12 October 1994

TOPIC ----------

I can't read DOS formatted SyQuest media using Macintosh PC Exchange 2.0.1. What's wrong?

DISCUSSION ----------

There are several points to be aware of when using SyQuest drives, Macintosh PC Exchange, and DOS formatted cartridges together. They are listed in order of importance. Also, check the Tech Info Library for several articles discussing Macintosh PC Exchange and removable media drives.

1) Make sure the third party driver for the SyQuest drive isn't loading on the Macintosh, this will typically be an init or extension. Also, the driver that's written to a separate partition on the drive (when using it with a Macintosh) will need to be deleted. Do this by formatting on a DOS computer.

2) Use the latest version of Macintosh PC Exchange.

3) If the drive has been used on a Macintosh, then taken to a DOS computer and formatted, it's possible there are still driver fragments causing problems when you try it again on a Macintosh. To avoid this, use the formatting software that came with the DOS version of the drive to low-level format the drive. Note that there is a difference between low-level formatting and using the DOS format command -- make sure you low-level format the drive.

   WARNING: Low-level formatting a drive will erase all data, with no chance of recovering it. Be sure to backup data first, or use this procedure on new or blank disks only.

General how-to for cross-platform use of SyQuest drive. (This will assume a standard SyQuest drive using SQPREP on a DOS computer and Macintosh PC Exchange

on a Macintosh computer.)

1) Make sure both drives work in their respective computers.

2) Load the proper drivers on the DOS platform. These drivers will typically be two drivers in the config.sys file. The first one will be an APSI API (sometimes referred to as an ASPI Manager/SCSI controller driver), the 2nd one will be a driver to control the SyQuest driver. For the first driver, we're using "aspi2dos.sys" and for the 2nd driver, we're using "aspidisk.sys".

3) Make sure NO Macintosh SyQuest drivers are loaded on the Macintosh.

4) Format a cartridge using SQPREP on the DOS computer.

5) When done with SQPREP, for thoroughness also format the drive using the DOS "format" command.

6) Insert the cartridge into the Macintosh drive and restart the computer. If you are asked to initialize the disk after restarting answer "No", go to Macintosh PC Exchange Control Panel, click options, make sure a check mark is by the SyQuest drive. Close everything and restart.

Support Information Services

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Tech Info Library Article Number:16504

Tech Info Library

AppleScript: Dates and Times Explained (10/94)

Revised: 10/12/94
Security: Everyone

AppleScript: Dates and Times Explained (10/94)

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Article Created: 12 October 1994

TOPIC -----

Questions about coercing dates to string:

1) First, if we're trying to pluck the weekday out of a date as string, I can't use:

```
  copy "9-Oct-94" to shortDate
  copy (weekday of date shortDate) as string to dayOweek
```

get error "can't make Monday into a string"

2) Second, it seems confused about what class things are:

"class of (date shortDate)" returns "date"

"class of (weekday of date shortDate)" returns "class"

```
 copy "9-Oct-94" to shortDate
 copy date shortDate to longDate
 copy weekday of longdate to Mydate
 "display dialog (class of MyDate)" returns "pcls" but
 "class of MyDate" returns "class
```

DISCUSSION -----

Dates can be difficult objects to work with in AppleScript.

With regards to the listed problems:

1.) AppleScript will display interpreted values with the script editor. To do extraction of strings on dates, get the whole date value converted as a string and then extract words of that string to get the date elements. The following is a working AppleScript example.

```
get current date
copy the result to today
copy today as string to DateString
-- "Monday, October 10, 1994 12:05:51 PM"

display dialog "Today is " & word 1 of DateString
display dialog "This month is " & word 2 of DateString
display dialog "This is day " & word 3 of DateString & " of  month " & word 2
of DateString
display dialog "The year is " & word 4 of DateString

set hr to word 5 of DateString
set mn to word 6 of DateString
set sc to word 7 of DateString
set AMPM to word 8 of DateString

display dialog "The time is " & hr & ":" & mn & ":" & sc & " " & AMPM
```

2.) What you see in the script editor log window is often an interpretation of AppleScript's internal representation of the data. While AppleScript may be representing something internally as an index or a number, it displays something more meaningful for the observer to interpret. What you are seeing is an example of this. Attempts to display class representations will show you the four character AppleScript internal types.

Using the following AppleScript fragment, you can compile a table of some of the AppleScript internal types.

```
(*
set x to "A" -- string
set x to 1 -- integer
set x to 1.5 -- real
set x to current date -- date
set x to false -- boolean
set x to {1, 2, "A"} -- list
set x to {text returned:"text entered", button returned:"OK"} -- record
set x to application -- class
*)

set x to {1, 2, "A"} -- list
display dialog (class of x)
get class of x
```

AppleScript expression	Internal type	Interpreted by Script Editor
"A"	TEXT	string
1	long	integer
1.5	doub	real
current date	Idt	date
true or false	bool	boolean
{1,2,"A"}	list	list
{fnm:"Doug",lnm:Korns"}	reco	record

application pcls class

Support Information Services

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Tech Info Library Article Number:16505

Tech Info Library

MacTest Pro: Can't Run RAM Test (10/94)

Revised: 10/12/94
Security: Everyone

MacTest Pro: Can't Run RAM Test (10/94)

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Article Created: 12 October 1994

If I run MacTest Pro on a Power Macintosh the RAM test is grayed out. How can I get the RAM test to work on a Power Macintosh?

DISCUSSION ----------

AppleTalk must be disabled in the Chooser before running the RAM test in MacTest Pro. This is the most common cause of the RAM test being grayed out. Disable AppleTalk and run the tests again.

Support Information Services

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Tech Info Library Article Number:16506

ISA and VESA Bus PC: Printing to LaserWriter Select (10/94)

Revised: 10/13/94
Security: Everyone

ISA and VESA Bus PC: Printing to LaserWriter Select (10/94)

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Article Created: 13 October 1994

TOPIC ----------

Our customer has connected a LaserWriter Select 310 to an IBM compatible PC with ISA controller. He can print using the windows drivers no problem. As soon as he hooks the printer up to an IBM compatible PC with VESA LOCALBUS controller, the printer doesn't work.

The circuitry inside of the parallel port is mapped identically to any other parallel port on any other IBM PC. The only difference is the speed of the Bus timing. VESA is at 33MHz and ISA is at 8MHz. He can connect the printer to any other non VESA computer and it will work.

He can connect an HP, a Brother, or any other non-Apple printer, and it will work.

DISCUSSION ----------

The following discussion assumes all troubleshooting such as clean boot, trying to print from DOS, etc. has yielded negative results.

Printing does not interact with the expansion bus in any way. I suspect the problem is in the type of parallel port being used. Some computers are equipped with what is commonly referred to as a bi-directional or EPP parallel port. We have seen problems with these type of ports due to the non-standard pinout of these ports.

Sometimes it is possible to make the printer work by using a different cable with these ports - not all cables have all pins connected and by disconnecting some of the non-standard pins the printer can be made to work. This is a somewhat hit and miss proposition, so it is usually better to get another parallel port (since you can buy one for less than 20 dollars, it's a cost effective solution)

Some bi-directional or EPP ports have an option to turn off that functionality.

Check the documentation to determine if that's an option.

Support Information Services

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Tech Info Library Article Number:16507

Tech Info Library

PowerBook Duo 270c: Display Luminance Values (10/94)

Revised: 10/13/94
Security: Everyone

PowerBook Duo 270c: Display Luminance Values (10/94)

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Article Created: 13 October 1994

TOPIC ----------

Is there a screen luminance measurement we can do with a light meeter on the active matrix displays used in the PowerBook Duo 270c?

DISCUSSION ----------

The specification for the brightness of the 270c display is between 14.5 and 20.5 Foot Lamberts

1) Make the measurements from a blank SimpleText document. This will provide you with a white background.

2) Turn the brightness up to the maximum.

3) Allow the display to warm up for approximately 10 minutes before taking a measurement.

The readings that I measured were:
Sekonic; Model 246 Measured between 10 to 12 on the red scale.
Sekonic; Model 248 Measured approximately 10.

Theses readings are within the specification. The light meters use a different scale then Foot Lamberts so the readings of 10 to 12 are within spec.

These Sekonic light meters are available in the Service Price Pages. Order part # 076-0310. The Sekonic Model 246 is the current model that Apple ships.

Support Information Services

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Tech Info Library Article Number:16509

Display Enabler Overview (8/95)

Revised: 8/10/95
Security: Everyone

Display Enabler Overview (8/95)

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Article Created: 13 October 1994
Article Reviewed/Updated: 10 August 1995

TOPIC -----

What is the Display Enabler?

DISCUSSION -----

Display Enabler is a system extension that comes with the software for Apple's new Multiple Scan Displays. Unlike previous Apple monitors, the Multiple Scan Displays are capable of displaying several different standard screen resolutions.

Whereas before the Macintosh 16" Color Monitor only displayed the Macintosh resolution of 832x624, the Multiple Scan 17 Display is able to display 640x480, 832x624, and 1024x768, among others. The resolutions that the Multiple Scan Displays are capable of depend on the model of display, and the computer to which the monitor is attached.

The Display Enabler allows some Macintosh computers to switch between different available screen resolutions, without having to restart. All Power Macintosh computers and all Macintosh 630 series computers have this function built into their ROMs, and do not need this software installed to take advantage of resolution switching. Once a desired resolution has been chosen, the Display Enabler may relocate some of the desktop icons, so they appear where you expect to find them.

Article Change History:
10 August 1995 - Added information on computers with Display Enabler built-in.

Support Information Services

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Tech Info Library Article Number:16510

Tech Info Library

External Apple Hard Drives from LaCie: Software (4/95)

Revised: 4/3/95
Security: Everyone

External Apple Hard Drives from LaCie: Software (4/95)

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Article Created: 13 October 1994
Article Reviewed/Updated: 03 April 1995

TOPIC ----------

What software is installed on the Apple external hard drives manufactured by LaCie, Ltd.?

DISCUSSION ----------

Apple external hard drives manufactured by LaCie, Ltd., ship with the following pre-installed software:

- Apple HD SC Setup v.7.2
- Disk First Aid v.7.1.1
- Safe & Sound v.1.01 (Central Point)
- Central Point Backup v.2.0a
- DiskDoubler v.3.7.7i (Symantec)

These units come in 160MB, 230MB, 500MB, and 1GB configurations.

Additionally, these units utilize Quantum hard drive mechanisms and Apple ROMs, and ship with the following:

- 1 external pass-through terminator
- 1 standard high-quality SCSI cable
- Silverlining Utilities diskette

The Silverlining utilities are not currently pre-installed on the hard drive, but come on diskette.

The Silverlining hard disk driver is pre-installed on the hard drive, as is Apple's driver. Though Apple's driver is the default driver, the Silverlining software (and only this software) can be used to engage the Silverlining driver in a process termed a "friendly takeover." Until the Silverlining software is used in this manner, however, the unit will remain an Apple drive and will

continue to appear so to Apple HD SC Setup.

Article Change History:
03 Apr 1995 - Corrected wording of Silverlining.

Support Information Services

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Tech Info Library Article Number:16514

Tech Info Library

HyperCard 2.2: Tech Tips (8/95)

Revised: 8/14/95
Security: Everyone

HyperCard 2.2: Tech Tips (8/95)

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Article Created: 13 October 1994
Article Reviewed/Updated: 14 August 1995

TOPIC --

Here are some Tech Tips for HyperCard 2.2.

DISCUSSION --

Common Problems and their resolutions for HyperCard 2.2

1. If you're having problems installing HyperCard using the installer then simply drag the files to a folder on your hard disk and install the fonts if necessary.

2. If you get a message that certain fonts are not installed, it's because HyperCard looks for specific bitmapped sizes of fonts; if only Truetype fonts are installed, simply ignore the message or install the bitmapped fonts.

3. If you cannot make changes to a stack, then possibly the stack has been created by an earlier version of HyperCard, and needs to be converted; make a copy of the stack first, then select "Convert Stack" under the File menu. Once you convert a stack, you can't go back.

Another possibility is that the userlevel is set too low for the types of changes you want to make; check this in HyperCard Preferences, or set userlevel via the Message Box. If you can't change the userlevel, make sure you don't have HyperCard Player or other copies of HyperCard on your hard drive.

Another possibility is that the stack has been protected using the "Protect Stack..." command under the file menu. If you don't see "Protect Stack..." under the file menu, hold down the command key while selecting "File." If a password has been set, you will be prompted for it before the "Protect Stack..." options appear. If you don't know the password, you're out of luck. There's no "Apple" way to recover from a lost password.

4. Importing/Exporting Text: The address stacks have import and export scripts built into it. The import works only on other Address Stacks (the ones that came with HyperCard). Export allows you to export data to text file.

To import or export text to or from other stacks, customers will need to write a script. You may contact our scripting support group at 1-800-950-2442 for help writing your script. This is a fee based service.

5. When adding Color Tools to a stack or creating a standalone application in HyperCard you will need to increase the allocated memory to HyperCard using “Get Info” under the File Menu. 2 MB should be enough.

6. If your visual effects have stopped working, this is because you've turned on Color Tools which has it's own visual effects. Either turn off Color Tools or consider using their visual effects (which are quite good and flexible).

7. If your color stacks seem to be running slower here are several ways you can improve performance:
- On the OpenCard message, set both lockmessages and lockrecent to true.
- Consider designing a single color background image rather than colorizing lots of individual objects.
- Increasing your memory partition might be helpful

8. The HyperCard 2.2 standalone application builder is not supported on 68000-based Macintosh systems. This means you can't create a standalone application on a Macintosh Plus, SE, Classic, Macintosh Portable, or PowerBook 100 computers. Although you can run HyperCard 2.2 standalone applications on these computers.

9. People with monitors that display less than 16 colors can't use the Color Tools stack. On one-bit monitors, the Color Tools stack will show a card that lists its requirements, but it doesn't do this for monitors that are not in B&W mode -- so you may have problems running the stack without realizing why.

Here are the requirements for using the Color Tools stack:
• At least 2 MB of RAM allocated to HyperCard
• 32-Bit QuickDraw (included as a part of System 7 or later)
• A monitor capable of showing 16 or more colors or shades of gray

Also, when using Color Tools 1.0 with HyperCard 2.2, if you select Open Color Tools from the Color menu, and before the palette is drawn click on the desktop, and then later go back to HyperCard, you will get Color menus but no palette. The workaround is to close Color Tools and reopen it.

Article Change History:
14 Aug 1995 - Reformatted, reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16515

System 7.5 Tech Tips: Customers Hear on Hold (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5 Tech Tips: Customers Hear on Hold (2/95)

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Article Created: 13 October 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

These are the Tech Tips that customers calling in with a System 7.5 question hear while on hold.

DISCUSSION ----------

Tech Tip 1:System 7.5 Installer problems

If you are following the System 7.5 upgrade guide, attempting to update the hard drive with Apple HD SC setup and are unable to locate a suitable SCSI device, you may have used a non-Apple formatting utility for your hard drive. If you have been using a previous version of System 7, you can safely skip this step and continue on with the installation of System 7.5. If you have been running System 6 or earlier, you should check with the vendor of either your hard drive or your hard drive's formatting utility and verify compatibility.

If you have attempted to install System 7.5 and the installer fails with an error stating that your hard drive was left untouched, turn off the Macintosh, insert the Disk Tools diskette that came with System 7.5 into the floppy drive of the Macintosh and turn the Macintosh on. When the desktop appears, open your hard drive's icon (not disk tools), and open the System Folder on the hard drive. Locate the suitcase file in the Hard drive's System Folder called "System" and move it to the trash. At this point, run the System 7.5 installer again. Please note that sounds you may have recorded will be lost and if you had been running System 7.0.1 or earlier, you will need to reinstall your bitmap and TrueType fonts. If the installer fails again, follow the clean install procedure outlined in appendix B of the System 7.5 upgrade guide. Additional information about clean installs follows shortly.

If you have successfully installed System 7.5 and your Macintosh does not start up properly, or behaves erratically, you probably have an incompatible system extension or control panel. If you have not yet done so, run the Safe Install

utility located on the Before you Install diskette or in the Before You Install folder of the Installation folder on the System 7.5 CD-ROM. The Safe Install utility scans your System Folder and identifies items that are or may be incompatible with System 7.5. Safe Install then offers to move the questionable items from your System Folder to another folder on your hard drive where they will not cause problems. The Safe Install utility also generates a report of the items it removed and tries to refer you to their manufacturer for upgrades or verification of compatibility. Additionally, the System 7.5 Extensions Manager can be used to troubleshoot conflicting control panels and system extensions. If you continue to have problems with System 7.5 after Safe Install has removed questionable items from the System Folder, restart your Macintosh while holding down the space bar on the keyboard. Holding down the space bar while the Macintosh is starting up causes the System 7.5 Extension Manager to appear. Once the Extension Manager appears, select the "Sets" pop up menu on the right side of the window and choose the "System 7.5 Only" option and then close the Extension Manager’s window. This causes your Macintosh to start up with only the extensions and control panels that System 7.5 installed, thereby eliminating any conflicts among non-7.5 control panels and extensions. For further information on using the Extension Manager, please see Appendix C of the System 7.5 Upgrade Guide.

If you have successfully installed System 7.5 and your Macintosh does not start up properly, or behaves erratically, and you have already tried troubleshooting your System Extensions and Control Panels, you may want to try a Clean Install of the System software.

A clean install of the System software disables the existing System folder on your hard drive and renames it to "Previous System Folder", then the installer places a new System folder with only items from System 7.5 on your hard drive. A Clean install is useful for resolving conflicts among different pieces of software and for replacing damaged System software. The System 7.5 Installer has a clean install option that you can invoke by launching the installer, dismissing the "Welcome to the 7.5 Installer" dialog box and holding down the Shift, Command, and K keys simultaneously. (The Command key is the one with the Apple and Cloverleaf symbol.) Next, select the "Install New System Folder" option and click OK. Please keep in mind that the new System Folder placed on your hard drive by the clean install procedure contains only items from System 7.5. All other items such as fonts, extensions, Control Panels, and preference files that you or other installers placed in the system folder are located in the "Previous System Folder". Generally, these items are unusable unless you move them from the Previous System Folder to the new System folder. Before doing so, it is critical that you ensure that the erratic behavior you experienced before the clean install is no longer present. Also, as you move items from the previous System folder to the new System folder, only move items that are not already in the new System folder. If you attempt to replace an item, the Macintosh warns you. For further information on performing a clean install of System 7.5, please see Appendix B of the System 7.5 Upgrade Guide.

Tech Tip 2: QuickDraw GX

If you have installed QuickDraw GX, and you have a non-Apple printer, Fax modem or other output device, you need to contact the vendor of the output device and

get a QuickDraw GX compatible driver. In the meantime, you can turn off QuickDraw GX with the extensions manager located in the Control Panels folder under the Apple Menu. This gives you access to the same output capabilities you had before installing System 7.5. If you have already disabled QuickDraw GX and are having trouble with printing fonts that are bit mapped, move the type 1 postscript fonts from the "Archived Type 1 Fonts" folder to the Fonts folder. Both of these folders are located within the System folder.

If you do not have a QuickDraw GX driver for your Apple Printer or Fax modem, there are two things to be aware of. First, some Apple printers work with another printer's QuickDraw GX driver. Second, some Apple QuickDraw GX drivers were not ready to ship with 7.5 and should be available shortly.

The following is a list of Apple Printers that work with other Apple QuickDraw GX drivers"

• For an Apple ImageWriter, ImageWriter II or ImageWriter 15, use the ImageWriter GX driver.

• For a Personal LaserWriter LS or LaserWriter Select 300, or Personal LaserWriter 300, use the LaserWriter 300 GX driver.

• For a Personal LaserWriter SC, use the LaserWriter II SC GX driver.

• For a StyleWriter or a StyleWriter II, use the StyleWriter GX driver.

• For a LaserWriter Select 310, use the LaserWriter GX driver and Connect via Serial and not LocalTalk.

Here is a list of the Apple QuickDraw GX drivers are not yet ready and their expected release date, we apologize for this inconvenience:

• For the Color StyleWriter Pro, a QuickDraw GX driver should be available in early 1995.

• For users of Apple Express Fax modems or GeoPorts, QuickDraw GX drivers should be available by the end of 1994.

Article Change History:
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.
13 Jan 1995 - Made corrections to application name appearing in article.

Support Information Services

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Tech Info Library Article Number:16517

Tech Info Library

LaserWriter 16/600 PS: Energy Star Compliant (10/95)

Revised: 10/13/94
Security: Everyone

LaserWriter 16/600 PS: Energy Star Compliant (10/95)

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Article Created: 13 October 1994

TOPIC ----------

Is the LaserWriter 16/600 PS Energy Star compliant? If so, can the time-delay before the printer enters the energy saving mode be adjusted?

DISCUSSION ----------

The LaserWriter 16/600 PS is Energy Star compliant. The LaserWriter 16/600 PS ships with a new Apple Printer Utility program that can be used to change the time delay before the printer enters the energy saving mode. The default time is 1 hour, but the other choices are 15 minutes, 30 minutes, 2 hours, and 4 hours. The majority of energy savings occurs because the fuser bulb is shut down while the printer is in the energy saving mode.

Support Information Services

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Tech Info Library Article Number:16520

Tech Info Library

LaserWriters: Ethernet Printing With Windows 3.1.1 (3/95)

Revised: 3/15/95
Security: Everyone

LaserWriters: Ethernet Printing With Windows 3.1.1 (3/95)

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Article Created: 13 October 1994
Article Reviewed/Updated: 14 March 1995

TOPIC -----

I have connected a LaserWriter Pro 810 to a MS-DOS computer running Windows for Workgroups. When I try to use Ethernet to print, it will not print. The printer does work printing from a Macintosh using EtherTalk. Can I print using Ethernet on the PC?

DISCUSSION -----

You cannot use the ethernet port on the printer when printing from Windows for Workgroups. The printer has to be physically connected to a computer using either the serial or parallel port. This problem is related to the way Windows for Workgroups operates. The problem is not just a LaserWriter Pro 810 problem, it pertains to any printer that has Ethernet capabilities.

Workaround

Farallon, a third-party company, provides a solution using PhoneNet Talk PC. Farallon's software supports their LocalTalk card and other popular DOS Ethernet boards. For additional information on this product, please contact Farallon.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
14 Mar 1995 - Added Workaround.

Support Information Services

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Tech Info Library Article Number:16521

Tech Info Library

LW 16/600 PS & 12/600 PS: Bi-directional Parallel Ports (6/95)

Revised: 6/30/95
Security: Everyone

LW 16/600 PS & 12/600 PS: Bi-directional Parallel Ports (6/95)

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Article Created: 13 October 1994
Article Reviewed/Updated: 30 June 1995

TOPIC ----------

The spec sheets for the LaserWriter 16/600 PS and the Color LaserWriter 12/600 PS indicate that they have a bi-directional parallel port. What does that mean?

DISCUSSION ----------

The LaserWriter 16/600 PS and the Color LaserWriter 12/600 PS contain a bi-directional port that conforms to the recently released IEEE1284 standard. On the LaserWriter 16/600 PS this is a standard 25-pin parallel connector, but on the Color LaserWriter 12/600 PS this is a mini 25-pin connector.

In addition to its bi-directional mode, the parallel port can operate unidirectionally at reduced performance with the original Centronics parallel capabilities. One advantage of the bi-directional capability is that the printer can send printer status information back to the driver. The older Centronics standard parallel port was uni-directional which left it up to the user to monitor the printer for paper jams, paper out, and error conditions.

Using the bi-directional capabilities requires a specially wired parallel cable*, bi-directional parallel port on the CPU, and driver support. Although bi-directional parallel ports are included with an increasing number of high-end Windows based systems, there are still very few applications that utilize its features. This will probably change when Windows 95 is released.

*Note: The Apple Bi-directional Parallel cable (M4235ZM/A) can be used with the Color LaserWriter 12/600 PS ONLY. Apple does not supply a bi-directional parallel cable for use with the LaserWriter 16/600 PS.

Article Change History:
30 Jun 1995 - Added Color LaserWriter 12/600 PS information

Support Information Services

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Tech Info Library Article Number:16522

AppleTalk Connection for Macintosh 1.1 (10/94)

Revised: 10/13/94
Security: Everyone

AppleTalk Connection for Macintosh 1.1 (10/94)

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Article Created: 13 October 1994

TOPIC -----

AppleTalk Connection for Macintosh provides the newest version of Apple's signature networking software for Macintosh computers.

DISCUSSION -----

AppleTalk Connection includes the AppleTalk transport stack, along with updated software drivers for LocalTalk, Ethernet, and Token Ring. AppleTalk Connection also includes support for SNMP, the industry-standard Simple Network Management Protocol. With MacSNMP, networked Macintosh computers can be managed from a variety of available SNMP-consoles.

With AppleTalk Connection installed, users have a complete foundation for network printing and file sharing, as well as for collaborative and client-server functions such as electronic mail and database service. AppleTalk's unique Name Binding Protocol allows quick and easy access to network resources such as printers and servers by means of user-designated names.

Since it's introduction in 1984, AppleTalk has become a widely successful networking standard, with over ten million nodes worldwide. Suitable for both large and small organizations, AppleTalk remains the easiest networking system in the industry to use. AppleTalk software has been implemented on nearly every major hardware, OS, and NOS platform in the industry, including Microsoft DOS, Windows and Windows NT, Novell Netware, and IBM OS/2, as well as many UNIX systems.

Apple also offers AppleTalk Administration for Macintosh, a product that provides comprehensive documentation and utilities for centralized management of the MacSNMP software.

Available through all Apple retail channels, AppleTalk Connection for Macintosh can be purchased as a single-user package or through a convenient and economical multi-user license extension.

FEATURES

Connectivity

- Supports multiple concurrent AppleTalk services
- Supports concurrent use of multiple protocols
- AppleTalk and other protocols can share the same Ethernet or Token Ring interface
- Works with all current Macintosh computers, including Power Macintosh

Naming & Directory Services

- Provides dynamic, distributed name service
- Provides easy access to network resources using descriptive names
- Provides attributes for remote service identification

Network Management

- Provides network and system information from Macintosh computers over an AppleTalk network
- Allows administrator to preconfigure and lock the SNMP software (requires AppleTalk Administration for Macintosh)
- Built-in AppleTalk, Network, and Macintosh agents for complete management data availability
- Extensible architecture allows for additional agents and transports from Apple and third parties
- Allows access to SNMP management information over both TCP/IP and AppleTalk protocols when combined with the TCP/IP Connection for Macintosh

Other Features

- Integrated drivers support all Apple cards and on-board networking, with defined datalink interfaces for third-party cards

TECHNICAL SPECIFICATIONS

AppleTalk Details

Automatic Addressing

AppleTalk devices automatically negotiate among themselves to acquire a unique address; users don't need to learn how to set addresses. Network managers control addressing at the workgroup level, by assigning network number ranges. This significantly reduces the effort required to configure and support AppleTalk as compared to other protocols.

Dynamic Naming

AppleTalk network services are located and selected by descriptive names from a dynamic, distributed directory service. Devices may be grouped into logical zones to allow easier access to resources in large internetworks.

Dynamic Routing

AppleTalk network routers can discover locally attached networks, other routers, and other internetwork destinations, without extensive manual configuration. AppleTalk routing dynamically adapts to changes in internetwork connectivity. In the event of a communications failure, an alternate network route will

automatically be adopted.

MacSNMP Details

The SNMP agents included in AppleTalk Connection for Macintosh support the following Management Information Base (MIB) definitions:

- The LLAP, AARP, ATPort, DDP, NBP, and ATEcho groups of the AppleTalk MIB (RFC 1243).
- The System, Interfaces, and SNMP groups of the TCP/IP MIB-II (RFC 1213).
- The Macintosh System MIB.

MacSNMP supports multiple network transports. To manage Macintosh computers using TCP/IP protocols, you need TCP/IP Connection for Macintosh.

System Requirements

- A Macintosh Plus or later model Macintosh computer with the appropriate datalink such as built-in LocalTalk or Ethernet, or a networking card such as the Apple Ethernet NB Card, Apple Ethernet LC Card, or the Apple Token Ring 4/16 NB Card, or compatible card.
- A 1.44 MB floppy disk drive such as the Apple SuperDrive.
- To use the AppleTalk software, you need System 6 (6.0.5 or later) or System 7 and at least 2 MB of RAM.
- To use the MacSNMP software, you need System 7 or later (4 MB of RAM recommended). You also need an SNMP Console that supports AppleTalk, such as those available from Neon Software (LANSurveyor) or Intercon (WatchTower).

ORDERING AND LICENSING INFORMATION

AppleTalk Connection for Macintosh
Single-user package (Order No. M8069Z/B)
- AppleTalk protocol stack
- Datalink drivers
- MacSNMP Client
- Macintosh, AppleTalk, Network agents and MIBs
- AppleTalk Connection Installation and User's Guide
  20-user license extension (Order No. M8065Z/B). License extension contains no software.

AppleTalk Administration for Macintosh
Single-user package (Order No. M8066Z/B)
- Complete AppleTalk Connection for Macintosh
- MacSNMP Admin (SNMP configuration) software
- About AppleTalk Administration
- AppleTalk Connection Installation and User's Guide
- MacSNMP Administrator's Guide
- Planning and Managing AppleTalk Networks

TCP/IP Connection for Macintosh
Single-user package (Order No. M8113Z/B)
- TCP/IP protocol stack

- Datalink drivers
- MacSNMP Client
- Macintosh, TCP/IP, and Network agents and MIBs
- TCP/IP Connection Installation and User's Guide
  20-user license extension (Order No. M8115Z/B). License extension contains no software.

MacSNMP Developer's Kit
Available on the Essentials•Tools•Objects (E.T.O.) CD-ROM from APDA.
(Order No. M0895LL)

Support Information Services

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Tech Info Library Article Number:16523

Tech Info Library

AppleTalk 1.1 and TCP/IP 2.0.4 Connection for Macintosh (10/94)

Revised: 10/13/94
Security: Everyone

AppleTalk 1.1 and TCP/IP 2.0.4 Connection for Macintosh (10/94)

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Article Created: 13 October 1994

TOPIC ----------

This article describes AppleTalk Connection for Macintosh 1.1 and TCP/IP Connection for Macintosh 2.0.4.

DISCUSSION ----------

AppleTalk Connection and AppleTalk Administration for Macintosh Version 1.1 of AppleTalk Connection for Macintosh provides the newest version of Apple's signature networking software for Apple Macintosh computers. AppleTalk remains the easiest networking system in the industry to use and has become a networking standard for Macintosh connectivity, with over 10 million nodes worldwide. The new AppleTalk Connection includes the latest version of AppleTalk (Version 58.1.4), Network Software Installer (Version 1.4.5), MacSNMP (Version 1.1), and Apple Shared Library Manager (Version 1.1.2). The updated components increase networking performance, improve support for the new Power Macintosh computers and enhance compatibility with the industry standard Simple Network Management Protocol (SNMP).

Version 1.1 of AppleTalk Administration for Macintosh, which includes all of the components of AppleTalk Connection for Macintosh (Version 1.1), also provides comprehensive documentation and utilities for centralized management of the MacSNMP software. It includes Management Information Bases (MIBs) enabling network administrators to monitor variables implemented in the MacSNMP client software using existing SNMP-based network management consoles.

TCP/IP Connection and TCP/IP Administration for Macintosh Version 2.0.4 of TCP/IP Connection for Macintosh provides standard support for all Macintosh-based TCP/IP network applications and includes a full protocol implementation, a Domain Name Resolver, support for Hosts files, and a testing/diagnostic application. The new TCP/IP Connection includes the latest version of MacTCP (Version 2.0.4), Network Software Installer (Version 1.4.5), MacSNMP (Version 1.1), and Apple Shared Library Manager (Version 1.1.2). Version 2.0.4 of MacTCP improves performance and features a number of enhancements to

the Domain Name Resolver, programming interfaces, and interoperability with certain UNIX hosts.

Version 2.0.4 of TCP/IP Administration for Macintosh, which includes all of the components of TCP/IP Connection for Macintosh (Version 2.0.4), also provides comprehensive documentation and utilities for centralized management of TCP/IP and MacSNMP software. The product includes MacTCP configuration tools that give a network administrator the choice of controlling all configuration parameters or assigning configuration authority to users.

System 7.5 and TCP/IP

Apple has added the MacTCP software that is one component of TCP/IP Connection for Macintosh (Version 2.0.4) to its new operating system, Macintosh System 7.5. Macintosh System 7.5 includes MacTCP, with support for LocalTalk, Ethernet and Token Ring. Apple recommends the TCP/IP Connection for Macintosh product to customers for its network management capabilities and documentation. Customers who are interested in SNMP support, TCP/IP user documentation, and administrative utilities should consider TCP/IP Connection for Macintosh and TCP/IP Administration for Macintosh.

Availability

AppleTalk Connection for Macintosh (Version 1.1), AppleTalk Administration for Macintosh (Version 1.1), TCP/IP Connection for Macintosh (Version 2.0.4) and TCP/IP Administration for Macintosh (Version 2.0.4) are available now through resellers authorized to sell AppleSoft products.

Support Information Services

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Tech Info Library Article Number:16524

Tech Info Library

LaserWriter 16/600 PS: Version of TCP/IP Used (10/94)

Revised: 10/13/94
Security: Everyone

LaserWriter 16/600 PS: Version of TCP/IP Used (10/94)

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Article Created: 13 October 1994

TOPIC ----------

I plan to use TCP/IP and want to know what queue system the LaserWriter Pro 16/600 PS is using: FTP, BSD, IP Net or some own?

DISCUSSION ----------

The TCP/IP "spooling system" the LaserWriter Pro 16/600 PS supports is the BSD Remote LPD (which is generic to most Unix systems).

Support Information Services

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Tech Info Library Article Number:16525

Tech Info Library

LaserWriter 16/600 PS: Laser Engine Used (10/94)

Revised: 10/13/94
Security: Everyone

LaserWriter 16/600 PS: Laser Engine Used (10/94)

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Article Created: 13 October 1994

TOPIC ----------

The LaserWriter 16/600 PS specification sheet states that it uses a "true laser engine". Please provide more specific information on the type of print engine used.

DISCUSSION ----------

The LaserWriter Pro 16/600 PS is based on a Canon P430 laser print engine. The overall design is very similar to the one used in the LaserWriter Pro 630, however the performance has been improved significantly to 17 US Letter pages-per-minute.

Support Information Services

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Tech Info Library Article Number:16526

Tech Info Library

LaserWriter Pro 810: Changing Page Size & Trays in PCL (2/95)

Revised: 2/21/95
Security: Everyone

LaserWriter Pro 810: Changing Page Size & Trays in PCL (2/95)

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Article Created: 13 October 1994
Article Reviewed/Updated: 21 February 1995

TOPIC ----------

What are the PCL escape codes to change paper trays on the LaserWriter Pro 810. Also, is there a way to select page size instead of specific paper trays in PCL?

DISCUSSION ----------

Changing Paper Trays

The HP PCL escape code sequence for selecting paper trays on the LaserWriter Pro 810 follows below. Before sending the PCL code to the printer, the printer control panel "Paper Source" setting must have the asterisk on "Tray 3". In other words, set the paper source for Tray 3.

<esc>&l#h

where <esc> = escape character
where l = lower case L
where # = paper tray selection below

1 - upper tray
4 - middle tray
5 - lower tray

For example, if you want to use the paper in the lower tray, you would use the following escape code:

<esc>&l5h

Changing Page Size

The HP PCL escape command for selecting the page size is:

<esc>&l#A

<esc> = escape character
l = lower case L
# = refers to the following page sizes:
. 2 - letter
. 3 - legal
. 1 - executive
. 26 - A4
. 80 - Monarch Envelope
. 81 - Comm. 10 Envelope

For example, if you wanted to print on a legal-sized page you would send:

<esc>&l3A

Article Change History:
20 Feb 1995 - Added additional information to Paper Trays section.
20 Oct 1994 - Added page size to the discussion.

Support Information Services

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Tech Info Library Article Number:16528

Tech Info Library

TCP/IP Connection for Macintosh 2.0.4 (6/95)

Revised: 2/17/97
Security: Everyone

TCP/IP Connection for Macintosh 2.0.4 (6/95)

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Article Created: 13 October 1994
Article Reviewed/Updated: 14 June 1995

TOPIC ----------

TCP/IP Connection for Macintosh provides the software needed to connect your Macintosh to TCP/IP networks.

DISCUSSION ----------

Included with TCP/IP Connection is the latest version of the MacTCP transport stack, along with updated software drivers for LocalTalk, Ethernet, and TokenRing. Since TCP/IP Connection includes support for the industry-standard Simple Network Management Protocol (SNMP), networked Macintosh computers can be managed from a variety of available TCP/IP-based SNMP consoles, including those based on UNIX operating systems.

TCP/IP Connection provides the standard interface for all Macintosh-based TCP/IP network applications, such as ftp, Telnet, NFS and others. The software includes a full protocol implementation (MacTCP), a Domain Name Resolver, support for Hosts files, and a testing-diagnostic application (MacTCP Ping).

Apple also offers TCP/IP Administration for Macintosh, a product that provides comprehensive documentation and utilities for centralized management of TCP/IP and MacSNMP software. MacTCP configuration tools, available with TCP/IP Administration for Macintosh, give a network administrator the choice of controlling all configuration parameters or assigning configuration authority to users.

Available through all Apple retail channels, TCP/IP Connection for Macintosh can be purchased as a single-user package. Volume licensing is available through a convenient and economical multi-user license extension, as well as through Apple's volume-licensing program.

FEATURES

Connectivity
- Supports multiple concurrent TCP/IP services
- Supports concurrent use of multiple protocols such as TCP/IP, AppleTalk, DECnet, and IPX
- TCP/IP and other protocols can share the same Ethernet or TokenRing interface
- Works with all current Macintosh computers, including Power Macintosh

Naming & Directory Services
- Provides domain name resolver services to applications
- Supports local Hosts file entries

Network Management
- Provides network and system information from Macintosh computers over an TCP/IP network
- Alows the network administrator to pre-configure and lock MacTCP and MacSNMP software (requires TCP/IP Administration for Macintosh)
- Provides built-in TCP/IP, Network, and Macintosh agents for complete management data availability
- Allows for additional agents and transports from Apple and third parties
- Allows access to SNMP management information over both AppleTalk and TCP/IP protocols when combined with AppleTalk Connection for Macintosh

Other Features
- Provides a single, standard system-level implementation of TCP/IP for all Macintosh systems and all TCP/IP applications for Macintosh

TECHNICAL SPECIFICATIONS

TCP/IP Details

MacTCP implements the following protocols:
- IP (RFCs 971, 894; MIL-STD 1777)
- UDP (RFC 768)
- TCP (RFC 793, MIL-STD 1778)
- ARP (RFC 826)
- RARP (RFC 903)
- ICMP (RFC 792)
- BootP (RFCs 951,1048)
- RIP (RFC 1058)
- DNS (RFCs 1034, 1035)

MacTCP complies with:
- Internet Subnetting (RFC 950)
- Internet Assigned Numbers (RFC 1340)
- Requirements for Internet Hosts - Communications Layers (RFC 1122)
- Standard for the Transmission of IP Datagrams over IEEE 802 Networks (RFC 1042)

MacSNMP Details

The SNMP agents included in TCP/IP Connection for Macintosh support Management Information Base (MIB) definitions:

• TCP/IP MIB-II (RFC 1213);
• The Macintosh System MIB.
MacSNMP supports multiple network transports. To manage Macintosh computers using AppleTalk protocols, you need AppleTalk Connection for Macintosh.

Network Requirements

• LocalTalk connections also require a router with AppleTalk to TCP/IP (DDP-IP) gateway support, such as the Shiva Corporation FastPath or the Cayman System's GatorBox.

System Requirements

• A Macintosh Plus or later model Macintosh computer with the appropriate datalink such as built-in LocalTalk or Ethernet, or a networking card such as the Apple Ethernet NB Card, Apple Ethernet LC Card, or the Apple TokenRing 4/16 NB Card, or compatible card.
• A 1.44 MB floppy disk drive such as the Apple SuperDrive.
• To use the TCP/IP software, you need System 6 (6.0.5 or later) or System 7 and at least 2 MB of RAM.
• To use the MacSNMP software, you need System 7 or later (4 MB of RAM recommended). You also need an SNMP Console that supports TCP/IP, such as those available from IBM, Sun, and Hewlett-Packard.

ORDERING & LICENSING INFORMATION

TCP/IP Connection for Macintosh
Single-user package (Order No. M8113Z/B)
• TCP/IP protocol stack
• Datalink drivers
• MacSNMP Client
• Macintosh, TCP/IP, and Network agents and MIBs
• TCP/IP Connection Installation and User's Guide
20-user license extension (Order No. M8115Z/B). This license extension contains no software.

TCP/IP Administration for Macintosh
Single-user package (Order No. M8114Z/B)
• Complete TCP/IP Connection for Macintosh product
• MacTCP Admin software
• MacSNMP Admin (SNMP configuration) software
• TCP/IP Administration: Overview and Installation
• TCP/IP Connection Installation and User's Guide
• MacTCP Administrator's Guide
• MacSNMP Administrator's Guide

AppleTalk Connection for Macintosh
Single-user package (Order No. M8069Z/B)
• AppleTalk protocol stack
• Datalink drivers
• MacSNMP Client
• Macintosh, AppleTalk, and Network agents and MIBs
• AppleTalk Connection Installation and User's Guide

20-user license extension (Order No. M8065Z/B). This license extension contains no software.

TCP/IP Connection Large Volume Licenses and Software Maintenance Agreements. Details are available from your authorized Apple sales representative.

Article Change History:
14 Jun 1995 - Added keyword.

Support Information Services

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Tech Info Library Article Number:16529

Tech Info Library

PhotoFlash 2.0: Description (10/94)

Revised: 5/7/96
Security: Everyone

PhotoFlash 2.0: Description (10/94)

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Article Created: 13 October 1994

TOPIC ----------

This article describes PhotoFlash 2.0.

DISCUSSION ----------

Apple PhotoFlash software quickly and easily catalogs and enhances digital photos, then places them into documents for high-impact results. The package consists of three key components: catalog windows that simplify organization and selection of images; unique photo-preparation tools that enhance images; and direct links that make it easy for users to place images into popular page-layout, presentation, and word processing applications. It also features scripting capabilities, enabling you to save time by automating routine imaging tasks.

The catalog window in PhotoFlash makes it easy to organize and find photos—as well as to place them quickly—by examining or searching on thumbnails (small previews) of images that have been saved in industry-standard file formats. Catalog windows also provide a direct link to other applications, so you can simply "drag and drop" or select a script to place one or more images into page-layout or other applications.

PhotoFlash includes optimized tools to enhance images immediately, with advanced options available for finer control. You can adjust the color or brightness and contrast of photos; remove scratches and dust from pictures; straighten scans; and quickly sharpen, blur, resize, rotate, and crop images.

Because it supports AppleScript, PhotoFlash allows you to record scripts to automate tasks, as well as to link PhotoFlash to other software applications for streamlined work-flow. Using single-button scripts that are included with the product, you can automatically place photos into documents created with applications such as Aldus PageMaker, QuarkXPress, Aldus Persuasion, Microsoft Word, and Claris FileMaker Pro. In addition, the integrated script recorder makes automating repetitive tasks a snap, even for people with no scripting

experience.

So if you use your computer to work with photographic images—whether you're a professional publisher or just beginning to work with pictures—PhotoFlash can make your life a whole lot easier.

Features

Ease of use

- Lets you add color or black-and-white photos to documents quickly and easily
- Enables you to organize and browse through thumbnails of photos stored on your computer
- Includes integrated scripts that automatically place photos in documents with just a click of the mouse
- Offers unique photo-enhancement tools for removing scratches and dust, adjusting the exposure, and more

Efficient design

- Uses memory efficiently, so you can run PhotoFlash simultaneously with your page-layout, presentation, and word processing applications
- Comes with integrated image-compression capabilities, so your files take up less space on your hard disk, and your data-trans-mission costs are lower when you send files
- Provides highest performance possible in a single application that is PowerPC native and optimized for 68k

Compatibility

- Works with images created using a digital camera or a scanner
- Is optimized for use with the Apple QuickTake 100 camera
- Is well-suited for use with images from Kodak Photo CDs and clip-art volumes
- Supports a number of industry-standard formats, including PICT, TIFF, JPEG, Kodak Photo CD, EPS, DCS, and Adobe Photoshop
- Supports Adobe Photoshop plug-in modules for acquisition from supporting scanners, opening and saving additional file formats, and special effects
- Allows automatic placement of photos into the following applications:
  - QuarkXPress 3.2
  - Aldus PageMaker 5.0
  - Aldus Persuasion 3.0
  - Microsoft Word 6.0
  - Claris FileMaker Pro 2.1
  - Applications that support Macintosh Drag and Drop

Scriptability

- Features full scriptability, allowing you to automate repetitive tasks and to link PhotoFlash with other applications

Technical Specifications

PhotoFlash catalog

- View images by thumbnails in catalog window

- Display filenames
- Enter caption text
- Create and open as many catalogs as needed
- Create catalogs for individual projects or for any folder, volume CD, or remote server
- Save disk space through JPEG compression of thumbnails for smaller catalog files
- Search on caption text and filenames
- Find photos similar to the current selection, using Search For Similar Images
- Find photos similar to a sketch, using Search By Sketch
- Put search results into a new catalog
- Drag to rearrange thumbnails within a catalog
- Drag and drop thumbnails between catalogs and other applications
- Batch-process photos by selecting multiple thumbnails in a catalog
- Work with PICT, TIFF, EPS, DCS, JPEG, Photoshop, and Photo CD file formats

PhotoFlash photo-enhancement tools

- Automatic DeDust and DeScratch tools quickly remove dust and scratches from images
- Sharpen and Blur tools increase or decrease the focus of the photo
- Crop tool quickly removes the area of the photo that will not be used
- Rotate/Straighten tools correct crooked scans and adjust the angle of photos
- Resize function allows adjustment from 1% to 4,000%
- Flip function flips photo horizontally or vertically
- Zoom function allows scaling from 1.6% to 6,400% for detail work and easier viewing of large images
- Balance Exposure feature corrects poorly exposed originals
- Brightness/Contrast feature corrects the overall tone of a photo for best results on display or paper
- Adjust Colors corrects the color balance of photos
- Number of Colors feature adjusts photos from 2 to 256 grays or up to 16 million colors
- A variety of selection tools allow precise selection within the photo for enhancement or correction
- Full preview capability lets you view the enhancement before applying it
- Integrated JPEG compression saves valuable disk space when saving your images
- Photoshop plug-in support for scanner control, file formats, and filters

Direct links to page-layout and other programs

- Place in QuarkXPress script automatically places the current photo(s) onto a QuarkXPress page; PhotoFlash sizes the photo to fit inside the selected frame on the page
- QuarkXPress Xtension enables PhotoFlash to be launched and any selected photo(s) to be opened for editing
- Place in PageMaker script automatically places the current photo(s) onto a PageMaker page at 100% of current size
- PageMaker Addition enables PhotoFlash to be launched and any selected photo(s) to be opened for editing
- Place in Persuasion script automatically places the current photo(s)

onto the current presentation slide at 100% of size
- Place in Word 6 script automatically places the current photo(s) onto a Word document; PhotoFlash sizes the photo to fit inside the selected frame in the document
- Place in FileMaker Pro script automatically places the current photo(s) into the current database record; PhotoFlash sizes the photo to fit inside the first image field in the record
- Additional links can be created to other scriptable applications by writing a simple script
- You can also drag and drop photos from PhotoFlash into documents created in applications that support Macintosh Drag and Drop

Automation and scripting support
- Supports AppleScript, Frontier, and QuicKeys scripting systems
- Features an integrated script recorder that can record any action and save it as a single-button script (recorded scripts can be added to a hierarchical menu or a floating scripts palette for easy access)
- Includes the Automatic Folder—a configurable folder you can use for automatic unattended batch processing of images by simply dropping the images into the folder
- Includes the QuickTime and AppleScript system extensions, along with the AppleScript editor for script customization
- Provides exclusive control of the Apple QuickTake 100 digital camera with automation of common tasks such as taking a picture and downloading all photos from the camera to a hard disk drive

System requirements
- Any Apple Macintosh, Macintosh Performa, Power Macintosh, or PowerBook computer with a 68020 microprocessor or later
- At least 8MB of RAM (3.5MB of available RAM)
- Macintosh system software version 7.0 or later

Ordering Information

PhotoFlash 2.0
Order No. M2739LL/C (in the United States)
Order No. M2739Z/C (outside the United States)
- PhotoFlash software on 1.4MB floppy disks
- Automated scripts for use with QuarkXPress, Aldus PageMaker, Aldus Persuasion, Microsoft Word, and Claris FileMaker Pro, as well as scripts for automating PhotoFlash functions
- Automated scripts for controlling the Apple QuickTake 100 digital camera
- Photo CD sampler of royalty-free stock photos
- AppleScript and QuickTime system extensions
- User's guide and tutorial

Optional accessories
- PhotoFlash can be accelerated by PhotoFlash-compatible accelerator cards, including the ThunderStorm and Thunder ll series from SuperMac Technology and Charger series from DayStar Digital.

Support Information Services

..TIL16530-PhotoFlash_2-0-Description_10-94_(TA32718).pdf

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Tech Info Library Article Number:16530

Tech Info Library

Power Macintosh Upgrade Card: Installing after System 7.5 (2/95)

Revised: 2/27/95
Security: Everyone

Power Macintosh Upgrade Card: Installing after System 7.5 (2/95)

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Article Created: 14 October 1994
Article Reviewed/Updated: 27 February 1995

TOPIC ----------

This article describes how to update system software AFTER the upgrade card has been installed in a Macintosh already using System 7.5.

DISCUSSION ----------

If you are installing the Power Macintosh Upgrade Card into a Macintosh that already has System 7.5 installed, you need to update the system software to have resources required to run in '601' mode.

Follow these steps:

Step 1:
Perform a custom install of System 7.5 by running the installer, choosing Custom Install from the pop-up menu, and installing only the Power Macintosh Card control panel.

Step 2:
Quit the installer and use the installed control panel to turn ON the Power Macintosh Upgrade Card.

Step 3:
Shut Down the computer. This is always necessary when turning the card on or off.

Step 4:
Startup with the Disk Tools disk if using the CD version of System 7.5; otherwise, startup with the Install 1 disk of System 7.5.

Step 5:
Run the Install program off the CD or the Install 1 disk and perform an Easy Install over the existing system on the hard drive used as the startup disk.

Step 6:
If necessary, also reinstall QuickDraw GX and PowerTalk. It is required that the upgrade card be turned ON when installing GX so the native version is installed.

At this point, your system should be operational in either 601 or 68040 processor mode. The System 7.5 Easy Install only installs resources necessary to run on the Macintosh it is installed on UNLESS a custom install was performed with the choice "System Software for any Macintosh". Following the above steps adds the necessary resources because the installer sees that an upgrade card is installed.

Article Change History:
27 Feb 1995 - Revised title slightly.
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.
16 Dec 1994 - Clarified instruction step number 4.

Support Information Services

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Tech Info Library Article Number:16531

Tech Info Library

Apple IP Gateway: Description, Features, Specifications (5/96)

Revised: 5/29/96
Security: Everyone

Apple IP Gateway: Description, Features, Specifications (5/96)

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Article Created: 14 October 1994
Article Reviewed/Updated: 28 May 1996

TOPIC ----------

This article provides a description, lists features, and technical specifications of the Apple IP Gateway.

DISCUSSION ----------

With the Apple IP Gateway, Macintosh users with Apple Remote Access (ARA), LocalTalk, or other AppleTalk network connection can connect easily to an Ethernet-based TCP/IP network to use the full range of Internet Protocol (IP) services. These include the vast array of Internet services such as Telnet, File Transfer Protocol (FTP), Gopher, World Wide Web, and Wide Area Information Servers (WAIS).

Note: The Apple IP Gateway wwill not run on Open Transport or on PCI Macintosh.

Acting as a translator between AppleTalk and TCP/IP networks, the Apple IP Gateway allows data to move between the networks easily and transparently. It can be used in many ways—depending on the particular needs of the individual or organization. As a stand-alone product, it allows AppleTalk-networked Macintosh computers to connect to an IP network and access any of its services. In conjunction with the Apple Internet Router software, it provides IP access to any Macintosh computer on any AppleTalk network that is part of the router's network. And with an Apple Remote Access Personal or MultiPort Server, it provides ARA clients with remote access to IP and AppleTalk services—just as if there were a local connection.

Administration is simple. Dynamic addressing allows network administrators to use a single MacTCP configuration for all IP users. The IP Gateway automatically assigns new IP addresses whenever workgroup members change location, providing access for PowerBook users whether they're in the office, at home, or on the road. And users don't have to change MacTCP settings as they move between IP subnets. In addition, the IP Gateway makes it easier for administrators to

control access through Internet firewalls. Firewall administrators don't have to add and delete user-specific IP addresses continually as a network grows; the single Ethernet address of the IP Gateway provides access for all approved IP Gateway users.

To keep the network secure, the IP Gateway allows network administrators to restrict IP access to specific AppleTalk networks. This gives administrators tight control and allows them to easily track service use. Plus, the gateway enables the monitoring of network activity and errors, keeping administrators up to date on network status. The IP Gateway even has built-in support for the Simple Network Management Protocol (SNMP), so it can be easily monitored by any SNMP-based management station.

Apple is committed to leading the way in offering connectivity to other networking protocols. Reflecting this commitment, the Apple IP Gateway provides an easy, affordable, and secure way for AppleTalk users to take advantage of the vast resources available on IP networks.

Features

Outstanding information access

- Lets mobile, remote, and local AppleTalk network users access Ethernet-based TCP/IP services, such as the Internet— even if the user's AppleTalk network does not directly support IP
- Provides access to Ethernet-based TCP/IP services such as SMTP-based electronic mail, Telnet, FTP, and NFS on UNIX hosts

Flexible configuration

- In conjunction with the Apple Internet Router software, provides IP access to any Macintosh computer that is part of the router's internet
- In conjunction with an Apple Remote Access server, provides IP access to remote or mobile users
- Can be used as a stand-alone product

Ease of setup, use, and administration

- Lets users transparently access TCP/IP and Internet resources
- Allows a single MacTCP configuration for all IP users, eliminating the need for individual IP addresses
- Simplifies the maintenance of Internet firewalls; only one Ethernet address needs to be updated
- Enables network administrators to monitor gateway activity visually

Increased security

- Reduces the chance of entry from external networks through dynamic address assignment
- IP access can be restricted to specific AppleTalk networks

Expandable

- Supports multiple Apple IP Gateways in a single AppleTalk zone
- Supports unlimited users with additional Apple IP Gateways
- Increases performance by distributing users across multiple gateways in the same AppleTalk zone

Technical Details

The following is an overview of Apple IP Gateway functions:

Setting up the gateway

- A Gateway Manager application allows you to set up and control the gateway
- A range of automatically assigned (dynamic) IP addresses can be configured
- A range of manually assigned (static) IP addresses can be configured

Monitoring the gateway

- The Gateway Information window provides the following statistics:
  - The number of automatic addresses available for assignment
  - The number of automatic addresses already assigned
  - The number of connected users
  - The current level of network activity
  - The current level of invalid or illegal packets received by the gateway
- An SNMP-based management station provides both monitoring and configuration information

Establishing gateway security

- Prevent unauthorized use of the Gateway Manager by setting a password
- Control the AppleTalk networks that the Apple IP Gateway will accept clients from by using the Network Restrictions feature in Gateway Setup

System requirements

- Any Workgroup Server running system software version 7.1 or later, or any Power Macintosh computer, or any Macintosh or PowerBook computer with a 68020 processor or later. The Apple IP Gateway can run concurrently with Apple Remote Access, the Apple Internet Router, and other AppleTalk services.
- At least 4 MB of RAM
- System software version 7.1 or later
- A hard disk drive
- An Ethernet connection to an IP network
- Client computers require MacTCP client software

Note: It will also work with clients running Open Transport's TCP/IP control panel.

Internet requirements

- For Internet services, your site must be connected to the Internet. If you have an Internet connection and Macintosh computers on AppleTalk connections that do not support IP, the gateway provides the IP connection to the existing Internet services.

Ordering Information

Apple IP Gateway
Order No. M3562Z/A

- Apple IP Gateway Installer (two disks)

- Apple Network Software Installer
- Apple IP Gateway Administrator's Guide

Article Change History:
28 May 1996 - Added references to Open Transport and PCI machines.
03 May 1995 - Removed information on special offer which has expired.
09 Dec 1994 - Corrected for technical accuracy.

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Tech Info Library Article Number:16532

Tech Info Library

Internet and Online Services Jargon List (4/97)

Revised: 4/3/97
Security: Everyone

Internet and Online Services Jargon List (4/97)

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Article Created: 14 October 1994
Article Reviewed/Updated: 02 April 1997

TOPIC -----

This article is a list of common terms and phrases used when discussing online services.

DISCUSSION -----

General

Apple Software Updates

Area on various online services and the Internet that contains the entire library of free Apple software updates.

* America Online - keyword: applecomputer

* CompuServe - GO APLSUP

* Internet -
  - Worldwide Web: http://www.info.apple.com/swupdates
  - ftp: ftp://ftp.info.apple.com

Chats

"Live" online discussions. Chats can be one on one or involve many people.

Discussion boards

Areas where online customers can post messages for public viewing. Responses to the posted information can usually be posted publicly, or sent privately to the person that originally posted the message.

GIF Files

One of the standard formats for images transported through online services and the Internet. GIF stands for Graphics Interchange Format and was developed by CompuServe.

Sysop (System Operator)

The person responsible for an online offering.

Technical Information Library (TIL)

Apple Computer's official technical database, on the Worldwide Web at: <http://til.info.apple.com/>

CompuServe

Conference Room

A private area where people meet to exchange information one on one or with many people.

Forum

The initial starting point for an area on CompuServe. Similar to a home page on the World Wide Web. (See: Internet, World Wide Web). The CompuServe Apple forum is comprised of 17 libraries, Message/Discussion board, and conference rooms.

GO Words

Let customers go directly to a desired location on the service without having to navigate through multiple directories or levels.

Library

An information base within a forum on CompuServe. A Library can contain binary files, GIF images (see GIF), or text-based information.

Searchable Database

Database of text documents. Customers can perform Boolean (AND/OR/NOT) searches on these areas. The Apple Technical Information Library is a searchable database.

Internet

Cross-Post

See Post.

Electronic Mail (e-mail)

A system whereby a computer user can exchange messages with other computer users (or groups of users) via a communications network. An example of a common Internet e-mail address is: alley@apple.com.

File Transfer Protocol (FTP)

A protocol that lets a user on one host access, and transfer files to and from, another host over a network. Also, FTP is usually the name of the program the user invokes to execute the protocol. It is defined in STD 9, RFC 959. Guest access on an ftp site is referred to as anonymous access.

Flame

A strong opinion and/or criticism of something, usually as a frank inflammatory statement, in an e-mail message. It is common to precede a flame with an indication of pending fire (such as FLAME ON!). A flame frequently contains profanity or derogatory statements. Flames are a sociological phenomenon of Usenet (see Usenet), where individuals may feel more bold at responding in an overly emotional manner than they would if they were speaking face to face. Flame Wars occur when people start flaming other people for flaming when they should not have.

Flame War

See Flame.

Frequently Asked Questions (FAQ)

Most newsgroups (see Newsgroup) in Usenet (see Usenet) maintain a FAQ that is available to individuals who access the newsgroup for the first time. The FAQ typically includes the most common questions and answers, along with facts and trivia about the newsgroup, and netiquette (see Netiquette) guidelines for the group (such as what should and should not be posted - see Post).

Gopher

A distributed information service that makes available hierarchical collections of information across the Internet.

Gopher uses a simple protocol that allows a single Gopher client to access information from any accessible Gopher server, providing the user with a single "Gopher space" of information.

Public domain versions of the client and server are available. This protocol was the forerunner of the World Wide Web.

Home Page

The starting point for a person or entity publishing through the World Wide Web. A home page has a similar meaning to a forum (see Forum) on CompuServe.

Internet

The Internet is a worldwide network of computer networks. It is comprised of thousands of separately administered networks of many sizes and types. Each of these networks is comprised of as many as tens of thousands of computers; the total number of individual users of the Internet is in the millions. This high level of connectivity fosters an unparalleled degree of communication, collaboration, resource sharing, and information access. One of the most commonly recognized areas of the Internet is Usenet (see Usenet).

HTTP

The server side of the World Wide Web. The Macintosh server is MacHTTP. The UNIX server is HTTPd.

Killfile

A file an individual establishes on their local computer to watch for posts (see Post) that the individual does not want to receive. A killfile may watch for posts from a specific individual (in other words, a specific address) or for the occurrence of certain words in a topic line (such as to eliminate all posts in a thread (see Thread) in which the individual is not interested.

List Server (listserv mailing list)

A list of e-mail addresses (see Electronic Mail), used by a mail reflector, to forward messages to groups of people. Generally, a mailing list is used to discuss a certain set of topics, and different mailing lists discuss different topics. A mailing list may be moderated. This means that messages sent to the list are actually sent to a moderator who determines whether or not to send the messages on to everyone else. Requests to subscribe to, or leave (unsubscribe from), a mailing list should always be sent to the list's -request address.

For example, this address is for the IETF mailing list: ietf-request@cnri.reston.va.us).

Netiquette

The written or unwritten guidelines of behavior in a newsgroup (see Newsgroup) or on the Internet as a whole. Netiquette rules for a newsgroup may include what is considered an acceptable and unacceptable topic for a post (see Post), whether or not flames (see Flame) are allowed, and whether or not profanity is used in the newsgroup. Some newsgroups have strict netiquette guidelines while others have none.

Newsgroup

A delineated area in Usenet (see Usenet) in which people discuss a particular topic or topic area. Newsgroups are identified by a descriptive path name, such as: comp.sys.mac.graphics (computers/systems/macintosh/graphics), and rec.scuba (recreation/scuba). Unlike e-mail (see Electronic Mail), a post (see Post) in a newsgroup is available for anyone in the newsgroup to read.

Path

The string that identifies how a specific system is connected to an Internet server. For example, the path for an Apple employee in Austin, Texas might be john_smith@austin.apple.com. The server path is the part of the string after the "at" sign (@); each server in the path is separated by a period (.) and the last part of the path generally identifies the type of the address (such as 'com' for 'company' and 'edu' for an educational facility, and 'gov' for government). Path is also used to identify the different newsgroups in Usenet (see Newsgroup and Usenet).

Post

A single response in a newsgroup (see Newsgroup). A post is generally an introduction of a new question or comment about the newsgroup's topic, or it is a response to a previous post (see Thread). A post generally includes a topic line that identifies what the post is about (for example, "How do I download a graphic?" or "New graphic program that works great" might be topic lines for posts in the comp.sys.mac. graphics newsgroup). A post should not violate a newsgroup's netiquette (see Netiquette). When a post is addressed to several newsgroups, it is said to be Cross-Posted.

Serial Line IP (SLIP)

A protocol used to run IP (Internet Protocol) over serial lines, such as telephone circuits or RS-232 cables, interconnecting two systems. SLIP is defined in RFC 1055.

Spam

A term commonly used when referring to a post (see Post) that is inappropriately cross-posted to many (or even all) newsgroups (see Newsgroup). A spam is often an advertisement for goods or services or even a political or religious message.

Subscribe

See List Server.

TCP/IP Protocol Suite (the language of the Internet)

Transmission Control Protocol over Internet Protocol. This is a common shorthand that refers to the suite of transport and application protocols which runs over IP.

Thread

A series of newsgroup posts (see Newsgroup and Post) that pertain to the same comment or question (or to other comments and questions about an original post). Each subsequent post is part of that post's thread. A thread frequently maintains the same title, or a variation of the title, as the original post (for example, "RE: How do I download a graphic?" or "In response to downloading a

graphic" might be responses to an original post about downloading graphics).

Unsubscribe

See List Server.

Usenet

An area of the Internet that includes many different newsgroups (see Newsgroup). Usenet is what many people think of when they think of the Internet.

Wide Area Information Servers (WAIS)

A distributed information service that offers simple natural language input, indexed searching for fast retrieval, and a "relevance feedback" mechanism that lets the results of initial searches influence future searches. Public domain implementations are available.

World Wide Web (WWW or W3)

A hypertext-based, distributed information system created by researchers at CERN in Switzerland. Users may create, edit, or browse hypertext documents. The clients and servers are freely available.

Internet Related Tools

Anarchie

Anarchie is a shareware agent that is able to find software titles you request by probing the Internet, then downloading them for you.

Eudora

Eudora is a popular shareware program for viewing, editing, and sending e-mail across the Internet.

Fetch

Fetch is the client software for accessing ftp sites on the Internet. Ftp sites are used for viewing software archives and downloading files.

MacTCP

MacTCP is a control panel that allows your Macintosh to speak TCP/IP and operate on the Internet.

MacWeb

MacWeb is a World Wide Web client used for browsing www pages on the Internet. This client is similar to NCSA Mosaic.

Mosaic (NCSA Mosaic)

A World Wide Web client for the Macintosh. This client is similar to MacWeb. The latest version is 1.0.3.

Turbo Gopher

Turbo Gopher is the gopher client for Macintosh. Turbo Gopher is the product of the University on Minnesota (the Golden Gophers).

Universal Resource Locator (URL)

A standard addressing scheme for locating services on the Internet. The URL for Apple's World Wide Web site is: http://www.info.apple.com

Some definitions are from the "Internet Users' Glossary", by Gary Scott Malkin and Tracy LaQuey Parker.

Article Change History:
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LaserWriter 8.2: Non-U.S. Printers PPD Files Included (10/94)

Revised: 10/14/94
Security: Everyone

LaserWriter 8.2: Non-U.S. Printers PPD Files Included (10/94)

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Article Created: 14 October 1994

TOPIC --------------------

After I installed the LaserWriter 8.2 software, I noticed some printers in the PPD file area that I have never heard of before. What are these printers?

DISCUSSION --------------------

After installing the LaserWriter 8.2 software the following printers appear in your PPD file area:

- LaserWriter Pro 400
- LaserWriter Pro 405
- LaserWriter Select 610

These printers are only sold in Japan.

Support Information Services

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Tech Info Library Article Number:16535

Multimedia Glossary: A - F (1 of 3) (10/94)

Revised: 10/14/94
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Multimedia Glossary: A - F (1 of 3) (10/94)

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Article Created: 14 October 1994

TOPIC ----------

This article is one of three articles that contain definitions of multimedia terms.

DISCUSSION ----------

A/B roll editing

Editing from two source VCRs to a third VCR. This allows for transition effects like dissolves from one source tape to another.

Aliasing

A term used to describe the unpleasant jaggy appearance of unfiltered angled lines. Aliasing is the "beating" effects caused by sampling frequencies being too low to faithfully reproduce an image. There are several types of aliasing that can affect a video image which include temporal aliasing (e.g. wagon wheel spokes apparently reversing) and raster scan aliasing (e.g. flickering effects on sharp horizontal lines).

Analog Video

A video signal that represents an infinite number of smooth gradations between given video levels. By contrast, a digital video signal assigns a number for each level. The Macintosh video board converts computer-created (or digital) video to an analog signal for output to a monitor.

Analog Recording

The common form of magnetic recording where the recorded wave-form signal maintains the shape of the original wave-form signal. An example of this is a video tape.

Animatic

A limited animation used to work out film or video sequences. It consists of artwork shot on film or videotape and edited to serve as an on screen storyboard. Animatics are often used to plan out film sequences without incurring the expense of the actual shoot.

ANSI

Acronym for American National Standards Institute, which sets standards for many technical fields.

Anti-aliasing

Anti-aliasing is the manipulation of the edges of an image, graphic or text, to make them appear smoother to the eye. On close inspection, anti-aliased edges appear blurred, but at normal viewing distance, the apparent smoothing is dramatic. Anti-aliasing is important when working with high quality graphics for television use. See aliasing.

Aspect Ratio

The ratio of an image's width to its height. For example, a standard video display has an aspect ratio of 4:3.

Assemble Editing

Adding new material to the end of a previously recorded portion of a videotape that involves writing a completely new signal (including the control track) onto the tape. Performing an assemble edit in the middle of an existing program will introduce an undesirable glitch on the tape caused by an abrupt change in the sync information of the video signal. Compare insert editing.

Asynchronous

Not synchronized by a mutual timing signal or clock. Compare synchronous.

Audio Effects Board

The audio effects board is like the switcher, and acts as the main router and mixer for source audio. Here audio levels are adjusted, mixed, and filtered. Usually audio effects are kept to a basic level in a video editing session. More complex audio work is usually performed with a digital audio workstation.

Authoring System

Software that helps developers design interactive applications, titles, or courseware more easily than with conventional programming language

Auto-assemble

If all the editing decisions are made off-line, and the EDL is loaded into the CMX the actual editing is automatic, executing one event after another. This is

called auto-assemble mode. During auto-assembly, the editor monitors video and audio levels, but does not need to control each edit. Loading the EDL into the CMS is typically done manually, however, some Macintosh programs can create CMX disks. The EDL generated by computer based editing systems like the Digital F/X and Avid Media Composer are usually perfectly accurate, therefore, they make auto-assembly a breeze since the opportunity for errors in entering the EDL by hand are eliminated.

Backtiming

Method of calculating the in point by subtracting the edit duration from the known outpoint.

Badge
---
a symbol in the corner of a QuickTime movie window which is pressed to bring the standard QuickTime movie controller into view.

Bandwidth

The frequency range of a video signal, measured in MHz. The bandwidth is directly related to horizontal resolution—the higher number of picture elements defined, the higher the frequency required. The bandwidth describes "how much" information is being transferred. The bandwidth of the Macintosh II video signal can be as high as 33MHz, depending on screen size. By comparison, the bandwidth of broadcast television is 4MHz. High resolution images can be displayed on low resolution monitors, with an obvious loss in quality.

Black Level

The level of the video signal that corresponds to the maximum limits of the black areas of the picture.

Black, Black Burst

In video production, black refers to a composite video signal which has composite sync, reference burst, and a black video signal. Used for genlock purposes.

Blanking

The portion of the video signal that is off, or black, during the retrace interval of the scan. Blanking occurs between each horizontal line and during the vertical retrace between each field.

Blanking is important in broadcast production situations since there are strict FCC rules defining the blanking periods. Not all video products for the Macintosh conform to this aspect of the NTSC broadcast standard. Discuss this issue with vendors if broadcast quality is required.

Related to composite sync, this signal has both horizontal and vertical components and is at its negative level whenever video is to be blanked or turned off.

Blanking Level

The level of a video signal that separates the range that contains the picture information from the range that contains the synchronizing information. The level of the front and back porches is 0 IRE units.

BNC Connector

A connector typically used with professional video equipment for connecting cables that carry the video signal. Compare RCA connector and XLR connector.

Brightness

(1) The luminance of the video signal, or the level of brightness on the scale from black to maximum white. One of the three determinants (with hue and saturation) of the color of an image, and the only one of the three that affects a monochrome image.

(2) The brightness of a monitor or video projector measured in lumens. See luminance.

Broadcast Quality

An NTSC composite video signal conforming to FCC rules concerning signal properties like video and sync levels, timing and blanking. Devices providing NTSC signals do not necessarily meet FCC broadcast standards. This is important if the video signal or videotape being recorded is going to be used in a broadcast situation.

Bump-up

Making a copy from one recording medium onto a second medium which is more suitable for post-production purposes due to it's higher bandwidth and/or timecode capability. For example, material shot on Hi8 is usually "bumped-up" to 3/4" SP or Betacam SP for editing purposes since these formats feature higher resolution, less generation loss, a more robust tape, timecode, better frame-accuracy and faster shuttle speeds.

CAV

Acronym for Component Analog Video.

CCITT

Abbreviation for Consultative Committee on International Telegraphy and Telephony; an international committee that sets standards and makes recommendations for international communication.

CG

Acronym for Character Generator.

CGI

Acronym for Computer Graphic Imagery.

Character Generator

A character generator (CG) is a video device found in on-line editing suites used for titles and credits. A CG is simply a high-end word processor for video with a wide variety of fonts and sizes available. The most common character generator is the Chyron.

Chroma

The color information contained in a video signal, consisting of hue (phase angle) and saturation (amplitude of the color subcarrier).

Chroma Keying

The process of overlaying one video signal over another, the areas of overlay being defined by a specific range of chrominance. For this process to work, the chrominance must have sufficient resolution, or bandwidth. Composite video does not have sufficient bandwidth for acceptable quality chroma keying, therefore analog chroma keyers typically use component sources.

Chrominance

The color part of a signal, relating to the hue and saturation but not to the luminance (brightness) of the signal. Any colored signal has both chrominance and luminance.

Clean List (Clean EDL)

An EDL which does not contain any overlapping or redundant edits. Typically during the off-line editing process changes are made which result in edits that overlap or become redundant. Most computer-based editing systems can clean an EDL automatically. Compare dirty list.

Clip

Small QuickTime Movie. Also used to mean a segment of a larger movie, defined by an in point and an outpoint, usually containing a single scene or take.

Clipping

The process of cutting off the peaks of either the white or the black portions of a video signal.

CMX

The most commonly used editing computer. The EDL is loaded into it and it executes the edits and effects by controlling all of the required video machines. Actually, it may not control all of them. Certain operations may need to be done manually. Most editing computers use the CMX language, which has

become an industry standard.

Color Bars

See NTSC color bars.

Color Burst

A portion of the composite video signal used for decoding its color information. Burst is several cycles of 3.58 MHz pulses recorded during the horizontal blanking interval and used to establish phase relationships for determining the hue. The color oscillator of a color television receiver is phase locked to the color burst.

Color Correction

A process in which the coloring in a video image is altered by electronic means.

Color Subcarrier

The 3.58 MHz signal which carries color information. This signal is superimposed on the luminance level. Amplitude of the color sub-carrier represents saturation and phase angle represents hue.

Compelling Conveyance

To use appropriate content and data type to communicate with maximum impact on an audience.

Component Video

A term given to a recording system which does not require NTSC encoding of RGB signals, but uses a means of recording and routing the luminance and color signals separately. This method does not reduce bandwidth nor compromise the RGB components and results in images of higher resolution and better color quality than composite video. Though designed for high end television production, similar recording methods have recently become available to the consumer market. See S-VHS and Hi8. Compare composite video.

Composite Blanking
---
see blanking.

Composite Sync

A signal consisting of horizontal sync pulses, vertical sync pulses, and equalizing pulses only, with a no-signal reference level.

Composite Video

A composite video signal is one in which the luminance, chrominance and sync information have been combined into a single signal using one of the coding

standards: NTSC, PAL, SECAM, etc. This is the form the signal must take before it can be broadcast or recorded by standard means. Until recently, most monitors and projectors have accepted only composite video signals, although many now available accept RGB. See NTSC. Compare component video.

Compositing

Combining two or more video or electronic images into a single frame or display.

Conforming

The process of doing the final editing of a video using an off-line edited master as a guide.

Continuous Branching
---
a program that enables the user to modify the presentation at any point rather than at specific branch points.

Contrast

The range of light and dark values in a picture or the ratio between the maximum and the minimum brightness values.

Controller

Portion of the QuickTime Movie Playback window with which you interactively control the direction and rate of playback.

Control Track

The portion along the length of a video tape on which sync control information is placed and used to control the playback of the video signal.

Control Track Editing

Editing videotape with equipment that reads the control track information in order to synchronize the editing between two decks. Frame accuracy is not certain as the VTRs can go slightly out of sync during pre-roll. Compare time code editing.

control-L

See LANC.

Convergence
---
(1) The beam-position accuracy of the red, green, and blue beams of a color monitor or projector. Color systems require exact accuracy of beams, both for position and speed, to properly produce the desired colors from their phosphors.

(2) The adjustment of the red, green, and blue electron beams in a monitor or video projector to align the red, green and blue images.

Cross Color

A defect characteristic of NTSC composite video that manifests itself as spurious rainbow patterns on highly textured objects like the one found on a striped shirt or tweed jacket. Cross-color defect is attributed to the make-up of the signal which mixes the high luminance and chrominance information in the same composite baseband spectrum. Johnny Carson used to wear ties with designs specifically designed to create this effect.

Cross Luminance

A defect characteristic of NTSC composite video that appears as a dot pattern crawling up or hanging on the edges of color areas. This is a result of the signal structure where the color information leaks into the luminance signal. Also referred to as dot crawl.

Decoder

A device used to recover the component signals from a composite (encoded) source. Decoders are used in displays and in various processing hardware where component signals are required from a composite source.

Delay Line

A device designed to delay the video signal for a specific length of time. Required when switching between different types of devices or cameras with significantly different cable lengths.

Demodulate

To recover the information being transmitted by a modulated signal. For example, a conventional TV receiver demodulates an incoming broadcast signal to convert it into the luminance and chrominance information displayed by the CRT and the sound emitted by the speaker. Compare modulate.

Demodulator

A device which strip the video and audio signals from the carrier frequency.

Desktop Viewing
---
the ability to use the computer screen to view the output of a project of in interpersonal and corporate communication.

Dessimation

The loss of lines of data in a movie window as the size of the frame is reduced. Lack of data for certain lines causes undesirable artifacts during movie playback.

Device Interface

A converter box which separates the RGB and sync signals in order to display computer graphics on an RGB video monitor. Vendors include Covid and Extron. Differential gain (DG) and differential phase (DP).

The distortion characteristics of the chrominance signal expressed as a numerical value which indicates to what degree the amplitude (differential gain as a percentage) and phase (differential phase in degrees) are distorted from the beginning and end of one horizontal scanning line.

Digital Audio Workstations

Computer-based systems for editing and manipulating digital audio. The audio can be synchronized with video for video post-production applications. Some common systems based on the Macintosh include Dyaxis, Pro Tools, Synclavier, and Dawn.

Digital Disk Recorder

A recorder much like a videotape recorder which uses large digital disk memories instead of tape. They can record and play back in single frame steps (with no pre-roll, since there is no tape involved), at variable speeds or at 30 fps. Digital disk recorders are available as both component and composite machines. Very, very, expensive.

Digital disk recorders can usually mix an incoming video signal with a stored one and record the net result simultaneously. Since everything is digital, this mix can be performed repeatedly, producing layer upon layer of moving images.

Digital Video

A video signal represented by binary numbers describing a finite set of colors and luminance levels. In accordance with "CCIR 601," the international digital video standard for sampling, the conversion from analog to digital suffers virtually no loss.

With current technology, the cost of using digital video to represent the range of levels and colors easily handled by analog videotape is prohibitive. Digital video requires more bandwidth than analog video to produce the same results, unless fancy compression techniques are used. As digital memory capacity and processing speeds become more economical, digital video will eclipse analog video. Standards such as QuickTime, DVI, MPEG, and JPEG for video make digital manipulation of video information possible on today's personal computers. Note: consumer "digital" televisions and camcorders use the term to refer to the use of digital frame buffers for effects or signal processing. The output of these buffers is still converted back into analog signals for display and storage.

Digital Video Effects (DVEs)

A real-time frame buffer that can zoom in and out, reposition, and freeze frame in real time. Some can also warp video frames into trapezoids, cylinders, and spheres to create a variety of special effects. Common trade names include ADO,

Encore, Mirage, and Pinnacle.

DIN

Acronym for Deutsche Industrie Normal, a European standards organization.

Dirty List (Dirty EDL)

An EDL containing overlapping or redundant edits. See and compare clean list.

Dither Pattern

The matrix of color or gray-scale values used to represent colors gray shades in a display system with a limited color palette.

Dithering

A technique for alternating the values of adjacent dots or pixels to create the effect of intermediate values. In printing color or displaying color on a computer screen, the technique of making adjacent dots or pixels different colors to give the illusion of a third color. For example, a printed field of alternating cyan and yellow dots appears to be green. Dithering can give the effect of shades of gray on a black-and-white display, or more colors on a color display.

Dot Crawl

See cross luminance.

Dot Pitch

A measure of the distance between dots on the screen. The closer the dots, the sharper and clearer the image.

Dot Space

The horizontal distance between dot centers. This distance depends on the character pitch in effect.

Drop-out

Missing information from magnetic tape caused by dust, lack of oxide, etc. Especially noticeable with a format such as Hi8 which packs a tremendous amount of information onto a tiny and fragile tape.

Dubbing

Making a copy from one recording medium to another. See bump-up.

Duration

The length or persistence of a signal in time. Compare frequency.

Dynamic Tracking

The ability for a video head to "bend" back and forth enough to find an adjacent track and follow it. This allows true freeze-frame rather than only freeze-field display. It also allows for variable speed playback, including playing in reverse, which otherwise is not possible.

EBU

European Broadcasting Union.

Edit Decision Lists (EDL)

The Edit Decision List, or EDL, is the data controlling the editing computer during an on-line session. It lists "in-points" and "out-points" for both the source playback decks and the record deck. These "events" can be for video, audio, or both. The EDL may control all sources, various effects machines (for fades and dissolves, for example) and the record deck. An EDL may be created manually after the off-line editing is complete or it may be generated by the edit controller used in more sophisticated off-line systems. Computer based editing systems including the Digital F/X and Avid Media Composer will automatically generate an EDL. See off-line, on-line.

Effects

Effects involve any manipulation or processing of the video or audio signal. Though they are often used for gratuitous gimmickry, they can also be used for valid functional and aesthetic design purposes. Video effects seem to change annually, and are heavily technology-driven. Since they sometimes cannot be simulated in an off-line environment, the best way to prepare to use them is to look over the free demos available from various video facilities and vendors. Off-line systems like the Avid Media Composer allow you to preview most of the standard video effects.

EIA

Electronic Industries Association. The organization which determines recommended audio and video standards in the United States.

EIA sync
---
see RS-170.

Encoded video

The encoded video signal is formed by starting with an RGB signal from the color television camera. This RGB signal is then processed through an encoder, known as the I and Q encoder, which converts the RGB into a composite NTSC signal. The encoded signal has all of the elements of the composite video signal: sync, burst, chroma, and luminance.

Encoder

A device which transforms NTSC timed red, green and blue signals into a single NTSC composite signal combining luminance, chrominance, and sync information. Compare decoder.

ENG

Acronym for Electronic News Gathering.

Equalizer
----
(1) Equipment designed to compensate for loss and delay frequency effects within a system.

(2) A component, or circuit, which allows for the adjustment of a signal across a given band

FCC

Federal Communications Commission. A federal bureau that regulates radio and television broadcast standards. FCC regulations carry the force of law.

Field

One complete vertical scan of the picture, containing 262.5 lines. Two fields make up a complete television frame; the lines of field 1 are vertically interlaced with field 2 for 525 lines of resolution in the NTSC standard.
In many respects, a video signal is best conceptualized as 60 separate images per second. When video is recorded from a video camera, each field represents an independent sample of time. This becomes apparent when video-originated material on a videodisc is still framed, one may see flutter: two different images shot 1/60 of a second apart from each other on the same screen.

Film

While videotape is simple in structure but requires complex machines for recording, film is complex in structure but requires simple recording machines. Film cameras are simple and elegant machines, and when you think about it, the film itself is the recorder.

Film is often used in the production of video for a variety of reasons, including the high image quality of film transferred to video and the ability to record film at any frame rate the camera allows. There are no technical requirements for a particular frame rate as there are with video, each film frame is simply exposed to light, then advanced. Many film cameras have variable frame-rate capabilities—a concept totally foreign to video.

Film Chain

A device used to transfer film to video. They are still used by some TV stations to broadcast programming distributed on 16mm film. See telecine.

First Generation

The first time the signal is recorded on tape, that tape is called a first generation tape. Each time the tape is dubbed, a generation is added. See generation loss.

Fotovix

The brand-name of a device available from Tamron which provides a relatively inexpensive way to transfer still 35mm film slides and negatives to video.

Frame

The total area of the picture which is scanned while the picture signal is not blanked. A complete NTSC TV picture consisting of two fields; a total scanning of all 525 lines of the raster area; occurs every 1/30 of a second. In other countries where PAL and SECAM are the video standard, a frame consists of 625 lines at 25 frame/sec.

Frame Grabber

A device allowing the real time capture of a single frame of video in a temporary buffer for manipulation or conversion to selected computer file formats. Some frame grabbers have buffers large enough to store several complete frames, allowing rapid capture of a number of images. The distinction between a frame grabber and a digitizer is that a digitizer captures a sequence of complete frames, and therefore must employ some form of compression and/or acceleration in order to operate in real-time.

Frames

NTSC video plays at 30 frames per second, and each video frame consists of two half-frames called fields. A field consists of every other horizontal line. When the video image is created on a TV set, the little scanning dot of light first scans across the topmost horizontal line, line 1. Rather than scanning along line 2 next, it scans line 3, then line 5, and so on. When it gets to the bottom (in half of the 1/30 second frame time), it begins at the top again but on line 2, then line 4, and so on. This technique is called interlace, and it was invented because most people see a flickering image if television is scanned sequentially at 30 fps.

Frequency

The number of complete cycles transmitted per second. Frequency is usually expressed in hertz (cycles per second), kilohertz (kilocycles per second), or megahertz (megacycles per second). In acoustics, frequency of vibration determines musical pitch. Compare duration.

Support Information Services

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Tech Info Library

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Multimedia Glossary: G - RS (2 of 3) (1/96)

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Article Created: 14 October 1994
Article Reviewed/Updated: 3 January 1996

TOPIC ----------

This article is one of three articles that contain definitions of multimedia terms.

DISCUSSION ----------

Gamut

The range of voltages allowed for a video signal, or a component of a video signal. Signal voltages outside of the range (exceeding the gamut) may lead to clipping, crosstalk, or other distortions.

Gate Weave

An artifact of poor registration either during the film-to-tape transfer process or the actual filming that manifests itself as a weaving back and forth of the film image. See registration.

GBR

The same signals as RGB. The sequence is often rearranged to indicate the mechanical sequence of the connectors in the SMPTE standard.

Generation Loss

With analog video formats extensive efforts are made to keep generations to a minimum since each successive generation will exhibit some loss of image quality in the form of noise and other artifacts. This characteristic varies from format to format. For example, 1-inch Type C exhibits almost imperceptible loss up to 4 generations while VHS shows considerable degradation each generation. With digital formats such as D-1 and D-2, however, this requirement is no longer necessary, since each copy can potentially be very close to perfect. This is

important for applications such as compositing which require images to be dubbed several times.

Generations

The number of times a video clip is copied or processed. See generation loss.

Genlock

The capability to synchronize video signals from one device with those of another video source. This is required when mixing signals together as in overlaying computer graphics on an image from a camera, VCR or videodisc player to prevent screen flicker or rolling.

Genlocking a Macintosh requires changing its video scan rate, switching the video into an NTSC timed interlaced image which can then be synchronized with the other video source. This requires either an encoder box attached to a video card which supports genlock or a scan converter.

Genlock is a process of sync generator locking. This is usually performed by introducing a composite video signal from a master source to the subject sync generator. The generator to be locked has circuits to isolate vertical drive, horizontal drive and subcarrier. The process then involves locking the subject sync generator to the master subcarrier, horizontal, and vertical drives so that the result is that both sync generators are running at the same frequency and phase.

Ghost

A shadowy or weak image in the received picture, offset either to the right or to the left of the primary image. It is the result of transmission conditions where secondary signals are created and received earlier or later than the primary signal caused by a reflected RF signal.

Gray Scale

A series of tones which range from true black to true white, it is usually expressed in 10 steps in video applications.

HDTV

High Definition Television. Still, limited to some very high-end applications. The FCC is close to establishing a broadcast standard for HDTV. The SMPTE has proposed a high definition television production standard consisting of 1125 lines, 2:1 interlace, 60 Hz field (30 frames/sec), a 16:9 aspect ratio and 30 MHz RGB and luminance bandwidth.

Hertz (Hz)

The unit of frequency of vibration or oscillation, defined as the number of cycles per second. Named for the physicist Heinrich Hertz.

Horizontal Blanking

The blanking signal that is produced at the end of each scanning line.

Horizontal Blanking Interval

The time between the display of the rightmost pixel on one line and the leftmost pixel on the next line.

Horizontal Drive

See horizontal sync.

Horizontal Resolution

The smallest increment of a television picture that can be discerned in the horizontal plane. This increment is dependent upon the video bandwidth and is measured in frequency or lines.

Horizontal Scan Frequency

The frequency at which horizontal sync pulses start the horizontal retrace for each line. A high frequency is needed for a non-interlaced scan. The horizontal sync frequency for a color Macintosh connected to the 13-in. RGB display is 35 KHz, while the NTSC frequency is 15.75 KHz. Projection of high resolution non-interlaced Macintosh color video requires projectors capable of 35 KHz horizontal sync frequency.

Horizontal Sync

A signal created and used to synchronize the horizontal scan of a video signal, often combined with vertical sync into a composite sync. This signal is derived by dividing sub-carrier by 227.5 and then doing some pulse shaping. The signal is used by monitors and cameras to determine the start of each horizontal line. See horizontal scan frequency.

House Sync

A common sync signal generated by a sync generator and fed to all video devices in an editing facility in order to synchronize the devices. See sync.

Hue

---

(1) The distinction between colors. Red, blue, green, yellow, etc. are hues. White, black, and gray are not considered hues. The dimension of color that is referred to a scale of perceptions ranging from red through yellow, green, blue back to red.

(2) The color tint of a video image. The color of an analog video signal is determined by three factors: hue, saturation and luminance. In a composite video signal, the hue is determined by the phase relationship to the color burst.

IEEE

The Institute of Electrical and Electronic Engineers, an organization which sets many of the standards in the electronic industry.

Interactivity

An open-loop control where a programmed system is directed by its user through mutual and simultaneously activity where either can interrupt the other without crashing the operation, where there is limited ability to anticipate, no default path and there is the impression of an infinite database.

In Point/Out Point

The first and last frames of a selected portion of a large clip. Frame notation (00:00:00:00= hours:minutes:seconds:frame) is the used to designate an in point and an out point.

Interlace

An NTSC 525 line frame which is separated into two sequential scans, or fields, of 262.5 lines each. Field one scans the odd numbered lines and field two scans the even numbered lines creating two interlaced images per frame. The process results in 60 fields per second and is used to reduce the flickering which is apparent when the eye is presented with 30 images per second. In standard video, odd-numbered lines are drawn first. Most computer displays are not interlaced.

IRE scale, IRE units

A unit used for the measurement of video levels. The scale used for the graticule on a waveform monitor. 140 IRE represents 1.000 volts, 100 IRE represents 0.714 volts, while 1 IRE represents 0.007 volts.

ISO

Acronym for International Standards Organization.

Jitter

Small and rapid variations in a wave form due to mechanical disturbances, changes in the characteristics of components, supply voltages, imperfect synchronizing signals, circuits, etc.

Kelvin

Also expressed as Kelvin or K, the unit of measurement of the temperature of light In color recording, light temperature affects the color values of the lights and the scene that they illuminate.

Keying

The process of replacing part of one television image with video from another image. See chroma keying and insert keying.

Kilohertz (KHz)

One thousand hertz, or cycles per second. See Hertz.

LANC

A protocol defined by Sony which permits the external control of video devices and access to status information from the device. Also referred to as Control-L. See VISCA, Vbox.

Legal Signal

A video signal in which each component does not exceed the specified gamut for the given format. Compare valid signal.

Light Valve Projector

A video projector design with very high light output. An example of a projector using this technology is the Talaria from General Electric.

Longitudinal Time Code (LTC)

Longitudinal time code (LTC) is recorded as an audio signal on the address track or one of the audio tracks of a video tape. It may also be recorded on a track of audio tape. LTC can be read at high tape shuttle speeds, allowing time code readers to stay "in-sync" during rewind or fast forward. Unfortunately, LTC cannot be read at very slow shuttle speeds (such as when you are "crawling" the tape frame by frame) or in pause. See SMPTE time code, compare vertical interval time code.

Looping

A term indicating that a high impedance device has been permanently connected in parallel to a video source.

LTC

See longitudinal time code.

Luminance

The aspect of the video signal carrying information about the brightness of an image.

Macintosh Video

Typically refers to the signal produced by a Macintosh 8•24 display card or Quadra built-in video. Although several scan rates and resolutions are supported, when connected to the 13-in. RGB monitor the display resolution is 640 x 480 pixels with a 67.7 Hz scan rate.

Matte
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(1) A film term sometimes used in video production work to denote a keyed

effect, an insert of video signal information keyed from one source into a second video signal.

(2) A opaque piece of art or a model that leaves a selected area unexposed to be filled on a subsequent pass or in composite. Also referred to as a mask.

Mavica

The name-brand of a popular still video camera sold by Sony, See still video cameras.

Megahertz (MHz)

One million hertz, or cycles per second. See Hertz.

Metal Particle Tape

Videotape using iron in its pure metallic form, instead of as an oxide. Offers improved frequency response and wider dynamic range than traditional oxide formulations.

MIDI

Acronym for Musical Instrument Digital Interface. A standard communications protocol used by electronic music equipment allowing device control from personal computers. MIDI has moved into the audio and video realm for mixing and editing.

MIDI Time Code

A time code system allowing timed device control through MIDI protocols. It has become more important in video post production as more and more people are working with personal computer based systems. Compare SMPTE time code.

Modulate

To modify or alter a signal so as to transmit information. For example, conventional broadcast television transmits the video image by modulating the amplitude and frequency of a carrier signal. Compare demodulate.

Moire

Optical disturbance caused by interference of similar frequencies. The wavy effect produced by the convergence of lines. It usually appears as a curving of the lines in the horizontal wedges of a test pattern. It is a natural optical effect when converging lines in a television picture are nearly parallel to the scanning lines. Compare aliasing.

Monitor

A particular type of television that receives a composite and/or component video signal (as opposed to an RF signal) directly from a VCR, camera, or separate TV tuner for high quality picture reproduction. Does not contain a channel

selector. Compare television receiver.

Monochrome Signal

A single color video signal; usually a black and white signal or, sometimes, the luminance portion of a composite or component color signal.

Motion Control Photography

A system for using computers to precisely control camera movements so that different elements of a shot can later be composited in a natural and believable way.

Movie

Movie (in QuickTime) refers to all dynamic ata, such as sound, video and animation. The QuickTime movie file format is a container for this timebased data

Multiscan

A term taken by a particular manufacturer often used to refer to any multisync device. See multisync.

Multisync Monitors (and Projectors)

Video displays which accept a wide variety of horizontal and vertical timings, from NTSC to computer video signals. Multisync monitors and projectors will often automatically adjust to the appropriate timing. Since the horizontal frequency range varies among different models, product specifications should be checked to assure a monitor or projector will support the Macintosh connected to it. Multisync monitors manufactured by Apple are called Mulitple Scan Displays.

Neutral Colors

The range of gray levels, from black to white, but without color. For neutral areas in the image the RGB signals will all be equal, in color difference formats the color difference signals will be zero.

NTSC
---
(1) Abbreviation for National Television Standards Committee, which standardized the NTSC color broadcasting system which is used today in the in the US, Japan and elsewhere.

(2) The standard video format defined by the NTSC, also called composite because it combines all the video information, including color, into a single signal. See NTSC composite.

NTSC Color Bars

A pattern generated by an NTSC generator consisting of eight equal width color bars. Colors are white (75%), black (7.5% set-up level), 75% saturated pure

colors red, green, and blue, and 75% saturated hues of yellow, cyan, and magenta. (Mixtures of two colors in 1:1 ratio without third color).

NTSC Composite

A video signal standard proposed by the National Television Standards Committee of the Electronics Industries Association and adopted by the FCC for broadcast television in the United States. The signal is a composite video signal of 525 lines, interlaced, 60 fields per second (30 frames per second) with a bandwidth limited to 4 MHz so that it will fit into a 6 MHz broadcast television channel without interfering with adjacent channels. NTSC is also the standard system for Japan.

The standard was created to allow color television signals to be compatible with existing monochrome (black and white) television. The restriction of compatibility with the earlier technology results in compromises in color image quality. The NTSC composite signal format is required for video recording except with devices which support component video.

Though there are 525 scan lines, more than 40 lines are blanked during vertical retrace periods. Overscanning and poorly adjusted televisions reduce the number of visible lines further, leaving viewers around 360 lines of video information in a normal television picture.

Macintosh video can be converted to NTSC composite using an encoder or scan converter. When using an encoder with a Macintosh video card there is an unavoidable reduction in image quality and single pixel lines, for instance, will flicker (unless the video card supports convolution) due to the interlaced nature of the NTSC signal. Images intended for NTSC use should be designed according to the limitations of the format, unless a more expensive scan converter is being used. See encoder and scan converter.

NTSC RGB

Interlaced red, green, and blue video signals timed to NTSC standards. Refers to three monochrome signals representing the primary colors of the image. This is a superior signal format to composite video which is one signal encoded from the three signals. An NTSC RGB signal differs from a component video signal which consists of Y, R-Y, and B-Y signals.

Off-line, Off-line Editing

The preliminary or rough edit usually done on a low-cost editing system using videocassette work tapes. In an increasing number of situations random-access non-linear editing system using digitized video or laserdiscs are being used for off-line editing. Allows editors to make decisions and gain necessary approvals before making the more expensive and demanding on-line edit.
Since the actual edit session in a professional video facility is very expensive, it is always best to make all editing decisions in advance. This is called off-line editing or off-lining. See window dubs, on-line, special effects.

On-line, On-line Editing

The final edit of a video using original master tapes to produce the finished piece. An on-line edit suite usually has a full range of high-end video devices (switcher, TBCs, DVE, character generator, etc.) which would normally be too expensive to use during an off-line edit session.

The on-line session is where the actual editing and effects take place. It occurs in an edit suite with a professional editor (known as the on-line editor). Again, the more prepared you are, the better since "things happen." It is very easy to go way over your budget estimate for an off-line edit if your EDL contains little surprises like a mislabeled in-point. Computer based editing systems like the Digital F/X and Avid Media Composer automatically generate EDLs which are very accurate, reducing on-line time considerably. See CMX, special effects, window-dubs. Compare off-line.

Opticals

Visual effects produced optically using an optical printer that contains one camera head and several projectors. The projectors are precisely aligned in order to produce multiple exposures in exact registration on the film in the camera head. Rapidly being replaced with special high-resolution video devices for all but feature applications.

Overscan

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(1) The television picture beyond area of normal screen size.

(2) A method by which the video image is scanned beyond the normal viewing area of the screen. Compare underscan.

Paintbox

Paintbox is the trade name for a device made by Quantel, however, it is geneneally used to describe a digital video paint program capable of drawing and shading images from scratch or from digitized video frames. The Paintbox creates only still images, but sequences of animated images can be made from the still images by loading frame by frame onto a Harry or equivalent.

PAL

Phase Alternative Line system. The television broadcast standard for most of western Europe. Based on the 50 Hz power system, it displays 625 lines interlaced at 50 fields per second (25 frames per second). By reversing the relative phase of the color signal components on alternate scanning lines, this system avoids the color distortion that appears in NTSC reception. PAL is not compatible with NTSC or SECAM, though conversion between the standards is possible. Video products to be used in Europe require compatibility with PAL standards.

Pedestal

See blanking level.

Period

The time elapsed during one complete cycle of a wave.

Phase
---
(1) A stage in a periodic process; a point in a cycle.
(2) The relationship between two periodic signals or processes.
(3) The amount by which the cycles of one wave precede or lag behind the cycles of another wave of the same frequency.
(4) Some fraction of a wave cycle (measured from a fixed point on the wave).

Posters

A single frame of a QuickTime movie that is designated as a static substitute for the movie's video data. The poster is typically the frame that would be printed if a movie was pasted into a document.

Pre-roll

Almost all videotape decks need a running start to get up to speed. This is called pre-roll, and varies between machines from about 3 to 10 seconds. This means that for every edit, source and record decks must first stop, count backward the exact number of frames required for pre-roll, begin playing simultaneously, then at the precise edit point begin recording. It is a mechanical and electronic marvel that video editing can be frame-accurate at all. See sync.

Primary Colors

Colors, usually three, which are combined to produce the full range of other colors within the limits of a color system. All non-primary colors are mixtures of two or more of the primary colors. In television, the primary colors are a specific set of red, green and blue.

Pulse

A current or voltage which changes abruptly from one value to another and back to the original value in a finite length of time. Used to describe one particular variation in a series of wave motions.

Pulse Distribution Amplifier

An amplifier designed to boost the strength of the sync as well as other control signals to the proper level for distribution to a number of cameras, special effects generators, or other equipment.

QuickTime

An operating system software extension for dynamic media such as sound, video and animation for Macintosh computers. The QuickTime standard file format is a "movie". QuickTime is also available for MS Window computers and FM-Towns (in Japan).

Radio-Frequency (RF) Modulator

A device that makes your television set work as a monitor. See modulator.

Rank

The brand-name of a device used for film-to-video transfer. See telecine.

Raster

The rectangular, repeating pattern of lines scanned in a video monitor or camera pickup tube creating the video image. The scan is a continuous cycle regardless of the image content.

RCA Connector

A connector typically used for audio and video signals, with some professional equipment and most consumer equipment. Compare BNC connector, XLR connector.

RCA Connector

A connector typically used for cabling in both audio and video applications.

Registration
---
(1) An adjustment associated with color monitors and projectors to ensure that the three electron beams (the three primary colors) are hitting the proper color dots/stripes on the phosphor screen, A similar adjustment exists on color tube cameras.

(2) The alignment of film frame-by-frame in a camera, projector or telecine. Good registration is critical in order to eliminate gate weave. See gate-weave.

Resolution

A measure that shows to what extent details can be distinguished on the TV screen. Generally called horizontal resolution when referring to a video image. It can be evaluated by establishing the limit to which lines can be distinguished on a test pattern with the naked eye. A broader frequency band of the video signal permits a higher resolution.

Macintosh video has a bandwidth of 30 MHz, resolving color images at 640 pixels by 480 pixels. This exceeds the capabilities of an NTSC composite signal.

RF

Radio Frequency refers to a composite video signal superimposed on a very high (radio) frequency capable of being broadcast through the atmosphere. Standard television sets receive these signals, separate the composite signal from the RF, and then decode and display the composite signal.

Until recently, television sets were designed to receive only RF signals, which

were applied to their antenna terminals. VCRs, videodisc players and some computers provide RF signals for use with televisions. The process of mixing composite video with RF, only to have it removed again by the television, further degrades the image quality.

RGB

Red, Green, Blue. Refers to three monochrome signals representing the primary colors of the image. RGB signals are provided on individual outputs with composite sync available either on a fourth output or combined with the green signal. RGB signals can be interlaced (timed to NTSC standards) or non interlaced (at higher sync frequencies).

RGB Monitor

A type of color monitor that receives separate signals for each color (red, green, and blue). See also composite video.

RGB, RGB Format, RGB System

Red, Green, and Blue. The basic parallel component set, in which a signal is used for each primary color; or the related equipment or interconnect formats or standards. The same signals may also be called GBR as a reminder of the mechanical sequence of connections in the SMPTE interconnect standard. See RGB component. Compare component video.

Rise Time

The time taken for a signal to make a transition from one state to another; usually measured between the 10% and 90% completion points of the transition. Shorter, or faster rise times require more bandwidth in a transmission channel.

Rotoscope

A camera set up that projects live-action film one frame at a time onto a surface so that an animator can trace complicated movements. The completed animation film exactly matches the motion of the original action.

RS-170

The EIA (Electronics Industries Association) standard that defines the timing of broadcast video in the United States, Japan, and several other markets. It specifies a 15.75-KHz horizontal and a 60-Hz vertical interlaced scan frequency as well as other aspects of the composite signal such as voltage, sync levels and timing of blanking.

Interlacing is the process by which two fields, called scan lines, are interleaved on the screen. Due to the limitations of video devices at the time the standard was being set in 1957, the speed of broadcast signals and picture tubes required the image to be displayed in parts.

The solution allowed the partial update of video pictures to remain unnoticed to the viewer. An RS-170 video frame contains 525 lines and is displayed 60 times

per second—for a total of 15,750 lines, or 15.75 KHz. Of these lines, only the odd or even lines are displayed with each frame. A total of 60 frames per second allows 30 frames per second, or a 30-Hz update of each line.
Like the RS-343 standard, RS-170 is strictly a timing specification for monochrome video signals. By combining three such signals to control individual red, green, and blue sweep circuits, you can create a full-color system. The RS-170 mode is available with the Macintosh video card as a way for VCRs and large screen projectors, not capable of high-frequency scans, to interface with the Macintosh. Compare RS-343, RS-170A, RS-170 RGB.

RS-170A

Twenty years after the drafting of RS-170, the EIA video signal standard proposal RS-170A evolved into what is known today as the NTSC composite video signal. RS-170A specifies timing of scans (essentially the same as RS-170: 15.732 KHz horizontal and 59.94 Hz vertical) and blanking as well as the 3.58 MHz burst required to decode the color signals. As adopted by the FCC for broadcast use, the standards are precisely adhered to and carry the force of law. For non-broadcast use, EIA standards are merely recommendations and are not enforced. Specifications referring to RS-170A do not necessarily mean the signals are broadcast standard. RS-170 RGB, RS-170.

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TOPIC ----------

This article is one of three articles that contain definitions of multimedia terms.

DISCUSSION ----------

RS-170 RGB

Refers to RGB signals timed to RS-170 specifications. Since the red, green and blue signals are actually individual monochrome signals representing their respective colors, RS-170 RGB merely refers to three black and white signals sharing one sync signal which is either provided separately as a fourth signal or (usually) combined with the green signal. Compare RS-170A, RS-170.

RS-343

An EIA (Electronics Industries Association) standard for non-broadcast high resolution monochrome video, specifying a 60 Hz non-interlaced scan with a composite sync signal with timings that produce a non-interlace (progressive) scan at 675 to 1023 lines.
While the Macintosh version of the RS-343 signal varies somewhat, it essentially follows the guidelines necessary for connection to RS-343 display devices. Therefore, with a display adapter (available from Covid , Extron, or Inline) the Mac can drive a RS-343 device (i.e. video projector or large monitor).

The major differences between Macintosh video and the RS-343 standard are: a separate TTL level composite sync signal on pin 3, the separate video lines used to produce RGB color, a vertical scan rate of 66.67 Hz to reduce screen flicker, and a voltage white level of 1 volt for its red and blue signals and 1.3 volts on its green signal. RS-343 provides for a 60-Hz signal but has been changed to 66.67 Hz on the Macintosh video card to prevent the screen flicker which is visible at 60 Hz. The inclusion of the analog composite sync found on pin 5 of

the video card connector, called the green signal, allows for monochrome composite video.

S-Video

A consumer form of component video (Y/C) used primarily with Hi8 and S-VHS equipment.

Safe Title Area
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80 percent of the TV screen, from the center of the screen; that area of the display screen (and therefore of the camera scanning area) which will reproduce legible title credits no matter how poorly adjusted the monitor or receiver may be.

SC Phase

The phase of the color subcarrier.

Scan Converter

A device that changes the scan rate of a video signal and may also convert it from non-interlaced to interlaced mode. A scan converter allows computer graphics to be recorded on videotape or displayed on a standard video monitor.

Scan Rate

The scan rate is the time it takes the electron gun to move across one line of the screen or repeat one entire screen. These values are known as the horizontal and vertical scan rates, respectively. The number of times a screen is redrawn each second. Computer display scan rates differ from standard video scan rates.

Scanning

The rapid movement of the election beam in a pickup device of a camera or in the CRT of a television receiver. It is formatted in a line-for-line manner across the photo sensitive surface which produces or reproduces the video picture.

SECAM

Systeme Couleur Avec Memoire. The television broadcast standard for France, the USSR and various eastern European countries. Like PAL, SECAM is based on a 50 Hz power system, but it utilizes a different encoding process and displays 819 lines interlaced at 50 fields per second. The color information is transmitted sequentially (R-Y followed by B-Y, etc.) for each line and conveyed by a frequency modulated subcarrier that avoids the distortion arising during NTSC transmission. SECAM is not compatible with NTSC or PAL, although conversion between the standards is possible.

Serial Device Control

Most professional video equipment can be controlled via an RS-232 serial port. The protocols used for controlling these devices varies from vendor to vendor,

however, Sony's protocol is supported by most editing systems.

Signal-to-noise Ratio (S/N)

An S/N ratio can be given for the luminance signal, chrominance signal, and audio signal. The S/N ratio is the ratio of noise to actual total signal, and it shows how much higher the signal level is than the level of noise. It is expressed in decibels (dB), and the bigger the value is, the more crisp and clear the picture and sound will be during playback.

SMPTE

Society of Motion Picture and Television Engineers, pronounced "simptee." An organization which studies and proposes standards for the film and television industry.

SMPTE Format, SMPTE Standard

In component video these terms refer to the SMPTE standards for parallel analog component video interconnection. The SMPTE has standardized both RGB and Y, Pr, Pb color difference systems (a version of Y, B-Y, R-Y).

SMPTE Timecode

A coding scheme standardized by the Society of Motion Picture and Television Engineers (SMPTE). Frame accuracy is achieved through timecode, a method of coding a unique "stamp" on each frame. Timecode consists of four numbers representing hours, minutes, seconds, and frames, for example, 23:59:59:29. Since color video actually runs at 29.97 fps rather than 30 fps, two kinds of timecode have evolved: drop fame and non-drop frame. Drop-frame timecode literally drops certain agreed-upon numbers to compensate for the 0.03 fps discrepancy. Drop-frame timecode allows a 30:00:00:00 tape to really be 30 minutes long, which is critical in broadcast applications. For non-broadcast applications it tends to do nothing but create problems, and non-drop-frame timecode is usually preferred.

Most of the low-end videotape formats, like VHS and Video 8 do not have timecode. They can count frame pulses on the tape, but are not frame-accurate. Sony has introduced "8mm timecode" in order to support more accurate editing applications with Hi8.

There are two basic techniques used to record SMPTE time code on videotape, see longitudinal time code (LTC) and vertical interval time code (VITC).

Snow
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(1) Random noise on the display screen, often resulting from dirty videotape heads.
(2) TV signal breakup caused by weak or no video reception.

Sound Digitizer

A device for recording natural sounds and voices and storing them as computer

files. Once digitized, the audio can be easily edited or used to create various effects. On the low-end there are products like the Farallon MacRecorder or Apple's built-in capability on some Macintosh models. With the AudioMedia card or Pro Tools interface from DigiDesign, CD-quality sound digitizing is possible with the Macintosh.

Split Screen

A special effect utilizing two or more video sources so that two or more scenes are visible simultaneously on each part of the screen. Often used to make window-dubs of multi-camera shoots.
A useful means for comparing two sources simultaneously. Permits a fast visual check of the phase and sync timing between two inputs.

Staircase

A pattern generated by the NTSC generator, consisting of equal width luminance steps of 0, +20, +40, +60, +80, and + 100 IEEE units and a constant amplitude chroma signal at color burst phase. Chroma amplitude is selectable at 20 IEEE units (low stairs) or 40 IEEE units (high stairs). The staircase pattern is useful for checking linearity of luminance and chroma gain, differential gain, and differential phase.

Standard, Interconnect Standard

The specific signal configuration, reference pulses, voltage levels, etc. which describe the input/output requirements for a particular type of equipment. Some standards have been established by professional groups or government bodies (such as SMPTE or EBU). Others are determined by equipment vendors.

Still Video Cameras

Still video cameras are cameras that look like something in-between a still and a video camera. The Sony Mavica records on a two-inch disk that holds 25 frames or 50 fields on flexible disks which are erasable and reusable. The encoding is analog component, but with less bandwidth (and therefore a noticeably lower quality image).

Electronic still photography has been used for "electronic journalism," where images are shot in the field and sent by modem from any available phone. These cameras have already begun to replace still picture film cameras for many applications which do not require the high resolution and image quality of 35mm still picture film.

Storyboard

A series of panels of pictures (usually sketches) designed to show how a production will look. Comic books are essentially storyboards.

Sub-carrier

A 3.58 MHz signal modulated by color signals and combined with luminance signals to produce an NTSC composite video signal.

Subcarrier (SC, 3.58, 3.58CW)

This is the basic signal in all NTSC sync signals. It is a continuous sine wave, usually generated and distributed at 2 volts in amplitude, and having a frequency of 3.58 MHz. Subcarrier is usually divided down from a primary crystal running at 14.32 MHz, and that divided by 4 is 3.58. All other synchronizing signals are directly divided down from the subcarrier.

Subcarrier Phase Shifter

Special circuitry designed to control the phase relationships of the two portions of the encoded color signal so that they maintain their correct relationship during recording transmission and reproduction.

Switcher, Video Switcher

The switcher is the central router and mixer of video source material in an on-line suite. Switchers are generally analog devices, and are capable of performing analog effects as well as switching incoming channels. These effects include fades and dissolves, wipes and borders, and keys (opaque overlays based on replacing black or a particular color). In earlier days this was called the "special effects generator" or SEG.

Sync

(1) Short for synchronous. Refers to signals used to synchronize the horizontal and vertical scans of a video signal. This signal is derived from a composite or combination of horizontal and vertical drives, with some slightly narrowed and delayed pulses as well as the addition of equalizing pulses. When used, is usually accompanied by subcarrier.

Synchronization Of Video Tape Recorders

In order for any mixing or editing of video signals to occur, all source and record decks must be in sync with each other, running at exactly the same speed and in identical phase. You can picture the process as being similar to transferring goods between high-speed trains running alongside each other. In editing facilities, all decks are fed a common sync signal, called "house sync." See pre-roll.

Without synchronization, each individual transport would all run at slightly different rates. Analog tape transports, being mechanical, have small fluctuations in tape speed called "wow and flutter". The capstans on tape machines can slip over time as well, also generating changes in tape speed. With disk-based systems there is no mechanical transport and no tape. Instead, the playback and record speeds are controlled by quartz crystal oscillators. However, no two oscillators are exactly the same, and an oscillator's frequency can vary with time and temperature. What all this means is that any two transports, even when started at exactly the same time, will begin to drift apart over time and the audio on the different systems will eventually drift out of sync.

Synchronization is achieved in these systems by constantly checking to see the current SMPTE frame, and adjusting the playback speed to keep all devices locked. In analog systems, this is achieved by automated motor speed control. In digital systems it is achieved by adjusting the playback sample rate. See sync, SMPTE time code.

Synchronous

Able to perform two or more processes at the same time, such as sending and receiving data, by means of a mutual timing signal or clock. Compare asynchronous.

Synchronous Transmission

A transmission process that uses a clocking signal to ensure an integral number of unit (time) intervals between any two characters. Compare asynchronous transmission.

Telecine
---
(1) A device which consists of a projector without the lens and a video camera aimed directly at the illuminated film to record it. A telecine projector incorporates a five-bladed shutter splitting the film into 1/120 second flashes and resulting in two exposures of film for each video field. Since these would not necessarily be of the same film frame, the video fields would often have two different images superimposed. This can cause problems with videodisc still framing.
(2) A Rank or Bosch. These are the highest-quality devices for film-to-video transfer. Unlike a telecine projector, they do not use a lens. Instead, a dot of light on one side of the film and a light sensor on the other side is used to scan the film. The Rank uses a small picture tube as the source of the dot of light. This is called a flying-spot scanner. The Bosch uses a one-dimensional CCD array. Both the Rank and the Bosch produce excellent results. The Rank has the advantage of changing the scanning size electronically, allowing control over the size and position of the film area being scanned. Both of these machines have highly developed methods of color correction, allowing very selective work. For example, a single shade of color in a particular area of the picture can be changed without affecting anything else.

Television Receiver

A device capable of accepting video signals broadcast as RF. Also capable of producing a demodulated video signal output from a off-air input signal. Compare monitor.

Television Set

A display device capable of receiving broadcast video signals (such as commercial television broadcasts) by means of an antenna. Compare RGB monitor.

Test Pattern

An optical guide for television camera reference alignment.

Time Base Corrector (TBC)

A time base corrector, or TBC, is a device which corrects the timing irregularities that occur during VTR playback.

Since synchronization between videotape decks is so important, it is imperative that all decks perform at precisely the same speed. Speeds always vary, at least slightly, due to VCR velocity errors and tape stretch. TBCs are essential for any kind of multiple mixing of input from videotape source decks, including wipes, dissolves, and overlays. Each source deck must have its own TBC, and each must be synchronized to "house sync."

TBCs are also used simply to "clean up" the timing of a recorded video signal. These TBCs act like black boxes, taking in unstable video and putting out stable video. Because they work alone, without house sync, they are often called standalone TBCs.

Time Base Stability

The maintenance of the scanning process to very close tolerances. See time based corrector.

Time Code

See SMPTE time code.

Time Code Editing

By recording a sequential time code along with the video and audio material, you can obtain a precise reference for editing. Each frame has its own number or code which tells the time in hours, minutes, and seconds, and includes a frame number. The industry standard code is called SMPTE time-code . Time code permit very fast and accurate editing. Automatic editing is possible using an edit controller. See EDL, edit controller. Compare control track editing.

Timecode, 8mm

8mm timecode is a proprietary form of timecode used by Sony with some of their Hi8 products. Compatibility problems in time-code editing environments is solved by using a third-party device made by Horita that converts the timecode from the Sony EVO-9850 and EVO-9800 editing decks to standard SMPTE time code.

Title Generator

A black and white camera that is used to shoot titles which are electronically superimposed on the video picture while shooting or during editing. Title color can be selected and changed independently. A more sophisticated device know as a character generator (CG) can generate titles directly.

Track

A grouping of homogeneous data within a movie file. Typical track types might

include video, sound, transitional effects, closed caption text, MIDI data, etc.

Tracking

The angle and speed at which the tape passes the video heads.

Transcoder

A device used to convert from one video component set to another. For example, to dub a Hi8 tape to Betacam SP with the highest possible results, you would need to use a transcoding TBC which includes a transcoder capable of converting the Hi8 (Y/C) signal to the Betacam SP component (Y, R-Y, B-Y) signal.

TTL RGB

A type of video monitor that can accept only a limited number of digital values and display only a correspondingly limited number of colors. Compare analog RGB.

Underscan

A mode available on professional video monitors which decreases the raster size H and V so that all four edges of the picture are visible on the monitor. Allows viewing of skew and tracking which would not be visible in normal (overscanned) mode. Also helpful when aligning test charts to be certain they touch all four corners of the raster.

Valid Signal

A video signal which will remain legal when transcoded to any other format. Signals which are not valid will be processed without problems in their current format, but problems may be encountered if the signal is transcoded to a different format. For example, the Macintosh will let you generate highly saturated colors which may be legal in the RGB domain, however, when converted to composite video will exceed the NTSC specifications. A valid signal is always legal, but a legal signal is not necessarily valid.

Vbox

The Vbox is a an interface device which can be connected to a personal computer via an RS-232 serial interface. Through the Vbox the computer can control LANC (also called Control-L) compatible video devices. The Vbox translates the VISCA commands from the computer into Sony's LANC protocol. Up to 7 Vboxes can be daisy-chained from one serial port. See LANC, VISCA.

VCR

Video Cassette Recorder. See VTR.

Vectorscope

A round oscilloscope used to analyze and align the amplitude and phase of the

color video signal.

Vertical Blanking

See vertical interval.

Vertical Interval

The period of time during which the scan is retraced from the bottom of the screen back to the top. The picture is blanked during this part of the scan. The vertical interval period contains sync pulses and in broadcast use, can contain network information, test signals and closed captioning signals.

Vertical Interval Time Code (VITC)

VITC is recorded within the video signal, each timecode stamp is recorded between the video frames, during the vertical blanking interval. VITC cannot be recorded on audio tracks. With VITC, video devices can capture the timecode from the video deck when it's paused or in "crawl" mode, however, most synchronizers cannot read VITC at speeds exceeding about ten times playback speed, preventing slaved machines from maintaining synchronization during rewind and fast forward. See SMPTE time code, compare longitudinal time code.

Vertical Retrace

The return of the electron beam to the top of a television picture tube screen or a camera pickup device target at the completion of the field scan.

Vertical Scan Frequency

The frequency of the vertical sync pulses, or the frequency of the vertical scan. NTSC vertical scan frequency is 59.9 Hz. The Macintosh video vertical scan frequency is 67.7 Hz.

Vertical Sync

A pulse used to trigger the vertical retrace of a scanning electron gun from the bottom of a frame back to the top.

Vertical Sync Pulse

A portion of the vertical blanking interval which is made up of blanking level and six pulses (92% duty cycle at -40 IRE units) at twice the horizontal sync pulse repetition rate. Synchronizes vertical scan of television receiver to composite video signal. Starts each frame at same vertical position (sequential fields are offset 1/2 line to achieve interlaced scan.

Video
---
(1) A means for reproducing moving visual images by representing them with an analog electronic signal. The images are decomposed into a series of horizontal scan lines. In this way the signal can be stored, transmitted and reproduced. See rasterization, field, frame.

(2) Referring to the NTSC composite video standard. This is a widespread standard such that the "video in" of one machine is compatible with the "video out" of another.
(3) There are various standards which define this signal, see RS-170, RS-170A, NTSC, PAL, SECAM, RGB, CAV.

Video Distribution Amplifier

A special amplifier for strengthening the video signal so that it can be supplied to a number of video monitors or other devices at the same time.

Video Editing

Editing is the process of selecting the frames and arranging them on the edit master videotape. In professional applications usually edits must be frame accurate. For example. When mastering a laserdisc frame accuracy absolutely essential, especially when single frame elements are involved. See off-line, on-line, et al.

Video Format

A standard determining how a video signal is recorded onto videotape. These include 1-inch Type C, 3/4" U-Matic, 3/4" U-Matic SP, Betacam, Betacam SP, M-II, D-1, D-2, D-3, VHS, Hi8, Video 8, Beta, and S-VHS.

Video Monitor

A display device that can receive video signals by direct connection only and cannot receive broadcast signals such as commercial television; it can be connected directly to the computer. Compare television set.

Video Recording

Any image, still or moving, can be converted into a video signal, most often through a video camera. Then the video signal can be recorded. By far the most common method of recording video is on videotape.

Video Signal

A dynamic signal which represents the varying levels of a video image but does not contain the sync pulses for its display. The video signal can be combined with sync pulses into a composite signal.

Video Waveform

The pictorial display on a waveform monitor (a special oscilloscope) of the various components of the video signal, used to check the integrity of the signal and signal components.

Videocassette

A self-contained video module played on a specially designed video tape recorder; similar in design to an audio cassette; houses two reels (supply and

take-up) with the tape running between them but connected to both.

Videodisc

A double-sided optical disc capable of storing and playing back full-motion video. Videodisc has come to refer to all video media that are disc-shaped, regardless of whether they are optical or magnetic, digital or analog.

Videotape

A magnetic medium capable of storing an electronic signal and consisting of backing, binder, and coating. The coating usually consists of iron oxide, however, metal particle or metal evaporated coatings are also used.

Videotape Formats

Videotape equipment ranges in price from $250 for a bargain-basement VHS deck to over $200,000 for a digital component deck. Nevertheless, both produce the same 525-line, 30-frame-per-second image. The differences lie in visual quality, generation loss characteristics and in control capabilities.

VISCA

Acronym for Video System Control Architecture. VISCA is a device control language designed for synchronized control of multiple video devices. The protocol is device and platform independent. See LANC, V-Box.

VITC

See Vertical Interval Time Code.

VTR

Video Tape Recorder. An electro-mechanical device capable of recording, storing, and reproducing an electronic signal which contains audio, video, and control information. The term VTR includes reel-to-reel and cassette type (VCR) recorders.

Waveform
---
(1) The shape of a wave (a graph of a wave's amplitude over time).
(2) Slang for waveform monitor.

Waveform Monitor

An oscilloscope used to display the video waveform.

Wavelength

The horizontal extent of one complete cycle of a wave.

Window Dubs

The trick to off-lining is to always have access to the timecode for all of the source material. If the source medium is of professional quality, like Betacam SP, then viewing the material is expensive and complex. But it is also unnecessary: the material can be transferred to a more accessible medium, like 3/4-inch or VHS tape, with the timecode "burned in" on the picture, usually near the bottom. This is called a window dub. Each video frame is marked permanently with the exact timecode number. The advantage this offers is the ability to see the timecode on a VCR without a timecode reader. This assures frame accuracy during off-lining. Window-dubs are the video equivalent of workprints in film.

Wipe

A visual transition between images during which the edge of one image moves across the screen revealing the next image.

Wow and Flutter

Small fluctuations in tape speed. Wow is a gradually occurring change; flutter is a rapidly occurring change. A widely used specification in analog audio and videotape recorders.

XLR Connector

A connector with three conductors used in professional audio applications, typically with a balanced signal. Compare RCA connector and BNC connector.

Y, C1, C2

A generalized set of CAV signals: Y is the luminance signal, C1 is the 1st color difference signal and C2 is the 2nd color difference signal.

Y, I, Q

The set of CAV signals specified for the NTSC system: Y is the luminance signal, I is the 1st color difference signal and Q is the 2nd color difference signal.

Y, Pb, Pr

A version of component video (Y, R-Y, B-Y) specified for the SMPTE analog component standard .

Y, R-Y, B-Y

The general set of CAV signals used in the PAL system as well as for some encoder and most decoder applications in NTSC systems; Y is the luminance signal, R-Y is the 1st color difference signal and B-Y is the 2nd color difference signal.

Y, U, V

The luminance and color difference components for PAL systems; simply the Y, B-Y, R-Y components with new names. The derivation from RGB is identical.

Y/C Delay

Lag of timing between the luminance (Y) and chrominance (C) signals.

Article Change History:
03 Jan 1996 - Rearranged parts 2 and 3 of this series due to file size.

Support Information Services

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Tech Info Library Article Number:16538

Tech Info Library

PowerBook 540c: No Contrast Adjustment at 640X400 (10/94)

Revised: 10/17/94
Security: Everyone

PowerBook 540c: No Contrast Adjustment at 640X400 (10/94)

==========

Article Created: 17 October 1994

TOPIC -----

When set the screen of my PowerBook 540c is set to 640x400 at thousands of colors (16 bit), the contrast button is disabled. Is this normal?

DISCUSSION -----

The contrast button is disabled when the 540c is set to 16 bit color. This is normal behavior. The reason that contrast is disabled is because all of the available video memory is used to support thousands of colors and there is no additional memory available to support contrast.

Contrast on the LCD of the 540c uses an off screen color table. Users cycle through the off screen table when they adjust contrast. Since there is no memory to create the off screen table the contrast can not be adjusted.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16539

Tech Info Library

LaserWriter 16/600 PS: Using the Fax With Pathworks

Revised: 10/17/94
Security: Everyone

LaserWriter 16/600 PS: Using the Fax With Pathworks

==========

Article Created: 17 October 1994

TOPIC ----------

Does the FAX option work for PC users using LANMAN queues (PathWorks and NTAS)?

DISCUSSION ----------

The fax option for the LaserWriter 16/600 PS is the same implementation as our previous PostScript fax printers (LaserWriter Select 360f and the LaserWriter Pro 810f). We have verified the functionality of PostScript fax for the NT Advanced Server. PostScript Fax also works for PathWorks, however, only with the standard LaserWriter 8.x drivers and selecting "fax" as the destination. Using the LaserWriter 8.xf fax drivers seem to cause problems with the PathWorks print queue. When printing from the client Macintosh, you must manually select the corresponding fax PPD in order to utilize the printer's fax capability.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16541

Tech Info Library

LaserWriter 16/600 PS: Alternatives to Serial Support (10/94)

Revised: 10/17/94
Security: Everyone

LaserWriter 16/600 PS: Alternatives to Serial Support (10/94)

==========

Article Created: 14 October 1994

TOPIC ----------

Although the LaserWriter 16/600 PS has a localtalk port, it lacks support for serial communications. Our printing environment requires the ability to print using DEC LAT. LAT support is included on the LW Pro 810, and was achieved with other LaserWriters by connecting a DEC Terminal Server to the serial port of the LaserWriter.

Although serial support is not currently included, is it possible for Apple to add such support through a patch or ROM upgrade?

DISCUSSION ----------

Serial and LAT support were considered for the LaserWriter 16/600 PS, but were not included for performance reason, as well as accounting for a relatively small share of the market. There are some viable alternatives that allow the DEC computers to communicate with the LaserWriter 16/600 PS:

- The cleanest and best solution would be to obtain a TCP/IP stack for the DEC computers and connect them using Ethernet to the LaserWriter 16/600 PS. Apparently, there are many stacks available, some of which are quite reliable and fast.

- Connect to the LaserWriter 16/600 PS using PathWorks.

- Obtain a serial to parallel converter.

- Obtain a LAT box from DEC which connects to ethernet, and provides a parallel output port.

Support Information Services

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Tech Info Library Article Number:16542

Tech Info Library

LaserWriter 16/600 PS: Should Be Compatible with Win95 (10/94)

Revised: 10/17/94
Security: Everyone

LaserWriter 16/600 PS: Should Be Compatible with Win95 (10/94)

==========

Article Created: 14 October 1994

TOPIC ----------

Support for Win 3.1 & NT is listed for the LaserWriter 16/600 PS, obviously Win95 is not shipping but do you know if print drivers need to be rewritten or should they work ok.

DISCUSSION ----------

When Win95 ships, it will ship with a new PostScript driver that utilizes PPD files, and not the old style .WPD files required by Windows. This means that the LaserWriter 16/600 PPD file, as well as other Apple PPD files, will work with the new Win95 PostScript driver.

Support Information Services

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Tech Info Library Article Number:16543

Tech Info Library

PrintMonitor: Blinking Icon Trouble Shooting (10/94)

Revised: 10/18/94
Security: Everyone

PrintMonitor: Blinking Icon Trouble Shooting (10/94)

==========

Article Created: 18 October 1994

TOPIC ----------

My PrintMonitor icon keeps blinking, what's wrong?

DISCUSSION ----------

PrintMonitor (the Notification Manager) will flash an Icon when an error occurs or as a signal when to feed paper manually, if you have configured PrintMonitor via its Preferences to do so.

When PrintMonitor signals you, typically you'd open PrintMonitor and perform the directions given in the dialog or note any error state it alerts you to. By addressing the situation this should stop the flashing icon until you print again.

Check your PrintMonitor Preferences to see what you have set by launching PrintMonitor, then selecting Preferences in the File menu. The likely reason why the PrintMonitor icon flashes is due to your settings.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16552

Tech Info Library

Mode32:Installing on Multiple System 7.5 Machines (10/94)

Revised: 10/18/94
Security: Everyone

Mode32:Installing on Multiple System 7.5 Machines (10/94)

==========

Article Created: 18 October 1994

TOPIC -----

We have thousands of Macintosh IIcx machines that we have upgraded to System 7.5, and want to install Mode32 on them as well, but we have run into a problem:

The current installer from Connectix prompts the user to register MODE32 as shareware (fill out your name, etc. and submit to Connectix via modem), and it does NOT remove Apple 32-bit System Enabler.

Will Apple or Connectix make an installer that will do the following:

- Install MODE32 v. 7.5 (extension)
- Remove MODE32 v 1.2 and earlier if present (control panel)
- Remove 32-Bit System Enabler if present

DISCUSSION -----

Connectix has no plans to change their installer and Apple will not be providing any kind of installer for Mode32, but there is a workaround.

You could use AppleScript to accomplish what you need by following these steps:

1. Install Mode32 on one system.
2. Copy the Mode32 extension from that system to a floppy or server. There are no other dependencies (i.e. no System file resources installed).
3. Use an AppleScript, like the one below to install Mode32.

```
tell application "Finder"

 -- Delete Apple's "32-Bit System Enabler", if found.

if exists file "32-Bit System Enabler" in extensions folder then
```

```
   delete file "32-Bit System Enabler" in extensions folder
   end if

    -- Delete earlier versions of Mode32, if found.

   if exists file "MODE32" in control panels folder then
   delete file "MODE32" in control panels folder
      end if

    -- Delete current version of Mode32, if found.

   if exists file "MODE32" in extensions folder then
   delete file "MODE32" in extensions folder
      end if

    -- Install Mode32 extension from floppy (could just as easily be a
        server)
    -- No registration dialog to deal with.

   if exists file "MODE32" in disk "MODE32 Installation Disk" then
    copy file "MODE32" in disk "MODE32 Installation Disk" to extensions
    folder
   end if

      empty trash

    restart

   end tell
```

Connectix Tech Support will fully support installing Mode32 in this way.

A more thorough script could check file validity by looking for possible variations on the filename (if "Mode32" had been renamed "Mode32 v1.2" for example), file version, file type, etc.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16553

Tech Info Library

Apple Media Tool: PICT Files in Sequence Problem (10/94)

Revised: 10/26/94
Security: Everyone

Apple Media Tool: PICT Files in Sequence Problem (10/94)

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Article Created: 18 October 1994
Article Reviewed/Updated: October 26, 1994

TOPIC ----------

I have a series of PICT files that I want to appear in sequence, one after another. The duration of each PICT is set to the same length, but when the project is run, it only displays the first and last PICTs, disregarding the timing set in the "Duration" option. It appears that the duration clock for all objects is started when the clock is started for the first PICT.

DISCUSSION ----------

Screens may not run properly unless you close the screen window before running. Always run tests from the Map window with all Screen windows closed.

Article Change History:
Oct 26, 1994 - Changed the wording of discussion.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16554

Tech Info Library

At Ease: Windows NT Needs Newer AppleTalk Protocol Stack (8/95)

Revised: 8/14/95
Security: Everyone

At Ease: Windows NT Needs Newer AppleTalk Protocol Stack (8/95)

==========

Article Created: 18 October 1994
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

I am using At Ease 2.0.3 for Workgroups on a network that is using a Windows NTserver. When I try to gather applications or documents off the NTserver, my Macintosh freezes. I can gather applications and documents from a Macintosh server without any problems. What causes this?

DISCUSSION ----------

While I have not been able to duplicate the problem here, there are two specific suggestions I can make.

- Run the latest version of Windows NT. If you are running version 3.1, at the MINIMUM download the US Service Package from the Microsoft Download Service. This package consists of eight disks and is similar to what Apple calls a System Update. It is important to get this because there are fixes to the AppleTalk protocol stack.

  The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

- The preferred solution would be to upgrade to version 3.5 of Windows NT Server. This version is vastly superior to 3.1, with speed gains in almost every service. In addition, the AppleTalk protocol stack is implemented correctly, making it more robust.

I have successfully connected to and gathered applications and documents from a Windows NT version 3.5 server with At Ease 2.0.3. I have launched applications from the server, edited documents, and saved to the NT server all without a problem. Since Microsoft does not typically make system updates widely known, it's probable that you have version 3.1 without any patches. Again, it is preferable to upgrade to version 3.5 of Windows NT.

Article Change History:
14 Aug 1995 - Corrected minor typo.
08 Aug 1995 - Added keyword; reviewed and reformatted article.

Support Information Services

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Tech Info Library Article Number:16555

Tech Info Library

Retrospect Remote Control Panel Security Issue (2/95)

Revised: 2/7/95
Security: Everyone

Retrospect Remote Control Panel Security Issue (2/95)

==========

Article Created: 18 October 1994
Article Reviewed/Updated: 7 February 1995

TOPIC ----------

This article describes a security issue where the Retrospect Remote Control Panel has been installed in your system, and Remote has not been configured by the backup server administrator.

DISCUSSION ----------

When you install the Retrospect Remote Control Panel and restart, Remote is activated and waits for the server to download a security code and serial number. If the server does not do this, anyone with a copy of Retrospect and a set of serial numbers can initialize your system, backup your hard drive to theirs, and then de-initialize your system without you noticing.

Once a Remote Control Panel has been initialized with a serial number, this is not a problem. This security issue only exists if you install the Remote Control Panel in your system and don’t initialize it. Either disable the Control Panel or get it initialized by your backup administrator.

Follow these steps to see if your system is set up correctly:

1) Open the Control Panels from the Apple menu. If the Remote control panel is not present (it is the last file listed when viewed by name), it was not installed and this issue does not affect you.

2) If the Remote control panel is present, open it by double clicking. If you see "A/C xxx-xxx-xxxx" (where the "x characters" represent the serial number) in the bottom third of the Retrospect Remote window, then no one can re-initialize your Remote control panel, unless your security password is guessed. Your password is set by the backup server administrator when the serial number is downloaded. Check with the administrator to find out whether your password is good or bad.

3) If the Remote control panel is present, and it shows something other than what is described in Step 2, then drag the Remote control panel out of your Control Panels folder onto the desktop and restart your Macintosh. This removes the security hole. Also contact your backup server administrator.

Also, while you have it open, check to see when the last time your backup was preformed. If it has been a while, check with your administrator to find out why.

If you have a copy of Remote in your Control Panels folder, and you are not being backed up by Retrospect, you should remove it. There is no reason to have it installed unless it is being used to backup your system. If you are using it, and it is configured properly there is no security problem. Users who just install Remote into the Control Panels folder, or had it installed for them and forget it, are at risk.

Article Change History:
07 Feb 1995 - Added keyword; made several updates to article.

Support Information Services

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Tech Info Library Article Number:16556

System 7.5: Install Problems on IIsi (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: Install Problems on IIsi (2/95)

==========

Article Created: 19 October 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

I am trying to install System 7.5 on my Macintosh IIsi and the install 3 disk is skipped during the installation. After installation, I am missing all of my Control Panels and Apple Menus. Find is the older, System 7.1 Find, not the new 7.5 version. What is going on here and how do I install System 7.5 on my Macintosh?

DISCUSSION ----------

There is a known problem in the System 7.5 installer script that skips some of the software resources. Most of these resources are included on the System 7.5 "Install 3" disk. This disk includes the Control Panels, Apple Menu items, and some printer drivers. The problem appears to happen only on Macintosh IIsi computers running previous versions of System 7 (System 7.0, 7.0.1, 7.1, or 7 Pro) that were originally installed using the custom install for Macintosh IIsi. The problem does not happen if the original System 7 System Folder was installed using the universal install for any Macintosh.

To avoid this problem on the Macintosh IIsi do one of the following:

Clean Install System 7.5

Clean Install System 7.5 by pressing the Command-Shift-K keys in System 7.5's installer. This gives you the option to install a new System Folder rather than update the existing System Folder.

Custom Install Control Panels

Custom install Control Panels, Apple Menus, and any printer device drivers after the installation is complete.

Article Change History:
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.
20 Dec 1994 - Clarified information on what is missing.
18 Nov 1994 - Added specifics about Find.

Support Information Services

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Tech Info Library Article Number:16557

Tech Info Library

System 7.5: International Systems Described (3/95)

Revised: 3/3/95
Security: Everyone

System 7.5: International Systems Described (3/95)

==========

Article Created: 19 October 1994
Article Reviewed/Updated: 03 March 1995

TOPIC ----------

This article describes the differences between U.S. Domestic System Software 7.5 and international versions. There appears to be some confusion about the following System 7.5 versions:

- The generic (Z) international version
- The British (UK) version
- The Chinese version
- The Japanese version
- The French version
- The German version
- The Italian version
- The Spanish version
- The Israeli and Arabic versions

DISCUSSION ----------

Z International Version of System Software 7.5
==========

The Z version is very close to the B (British) version except that:

- Date, Time, Keyboard, and Number formats are set to Australian
- The trash is really named Trash (instead of Wastebasket)

Differences Between B (British) and US Versions of System Software 7.5
==========

The British version of System 7.5 contains the following:

- British spellings: colour (color), wastebasket (trash), grey (gray),

customise (customize), initialise (initialize), dialogue (dialog) ...
plus a certain number of alternately-phrased sentences.

- For all printers, the default paper format is set to A4 (instead of Letter US)

- The default keyboard is set to British

- Date, Time, and Number formats are set to British

Localized Versions

The following versions are localized: all the strings, alerts, dialogs, menus, and so on use the local language. Some of these versions (Japanese, Chinese, Hebrew, and Arabic) contain some specific fonts and input methods:

- The Chinese version of System 7.5
- The Japanese version of System 7.5
- The French version of System 7.5
- The German version of System 7.5
- The Italian version of System 7.5
- The Spanish version of System 7.5
- The Israeli and Arabic versions of System 7.5

Differences between the U.S. System + Japanese Language Kit and the Japanese System:

U.S. System + Japanese Language Kit

This is a U.S. system that has the ability to display, print, and edit both Roman and Japanese text (as long as you use an application that supports WorldScript).

Japanese System

This is a fully translated version of the system software. All dialogs, menus, and so on are in Japanese. Like the first U.S. System + Japanese Language Kit, you can print, display, and edit both Roman and Japanese text.

The Japanese System Software is designed for the Japanese market where most people speak only Japanese. The Japanese Language Kit is designed for the U.S. market, for people who use English as their primary language, but want to be able to write or receive documents in Japanese, English, or both languages combined. A language kit can be installed onto any localized system software, such as Spanish, French, Italian, or even Arabic.

Article Change History:
03 Mar 1995 - Reviewed and updated; added keyword.
14 Feb 1995 - Updated keyword; reviewed for accuracy; reformatted for clarity.

..TIL16558-System_7-5-International_Systems_Described_3-95_(TA32737).pdf

Support Information Services

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Tech Info Library Article Number:16558

Tech Info Library

RAM Disk: Cannot Create With Less Than 4 MB RAM (7/95)

Revised: 7/6/95
Security: Everyone

RAM Disk: Cannot Create With Less Than 4 MB RAM (7/95)

==========

Article Created: 19 October 1994
Article Reviewed/Updated: 06 July 1995

TOPIC ----------

I cannot turn on my RAM disk since I upgraded to System 7.5. What is wrong? I am using Memory control panel 7.1.3

DISCUSSION ----------

With the 7.1.3 Memory control panel, the RAM disk cannot be turned on with less than 4 MB of RAM. When you open the control panel, the RAM disk option appears briefly and then disappears. At least 6 MB of RAM is required to use a RAM disk. This behavior is different than previous Memory control panels.

Article Change History:
06 Jul 1995 - Corrected capitalization errors.
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16559

MODE32 v.7.5: Incompatible With Launcher (5/95)

Revised: 5/25/95
Security: Everyone

MODE32 v.7.5: Incompatible With Launcher (5/95)

==========

Article Created: 19 October 1994
Article Reviewed/Updated: 25 May 1995

TOPIC ----------

The Launcher does not work with Connectix's Mode32 v7.5 on the following CPUs:

- Macintosh II
- Macintosh IIx
- Macintosh IIcx
- Macintosh SE/30

When the Launcher is opened, the window is empty. Turning off Mode32 lets the Launcher show all of its items.

DISCUSSION ----------

This problem has be resolved by the System 7.5 Update 1.0.

These articles can help you locate the software update mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates.

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
25 May 1995 - Added information about System 7.5 Update 1.0.
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.
02 Feb 1995 - Removed invalid workaround information.

Support Information Services

..TIL16561-MODE32_v-7-5-Incompatible_With_Launcher_5-95_(TA32740).pdf

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Tech Info Library Article Number:16561

Apple Presentation System: Screen Squeeze Known Issues (6/96)

Revised: 6/25/96
Security: Everyone

Apple Presentation System: Screen Squeeze Known Issues (6/96)

==========

Article Created: 19 October 1994
Article Reviewed/Updated: 25 June 1996

TOPIC ----------

This article discusses known issues Screen Squeeze has when used with various Macintosh computers. Screen Squeeze is a control panel that comes with the Apple Presentation System (M2895LL/A).

DISCUSSION ----------

Bus Error on LCII
==========

The Apple Presentation System (M2895LL/A) when used on a Macintosh LCII computer, is incompatible with v2.1 of the Screen Squeeze control panel. When the Screen Squeeze control panel loads a bus error occurs.

The problem is with v2.1 of the Screen Squeeze control panel, which comes with the Apple Presentation System. Focus Enhancements Technical Support is aware of the problem suggests replacing the Screen Squeeze Control Panel v2.1 with v2.0, or replacing v2.1 with v2.2.

The following information is from Focus Enhancements:

2.1 of Screen Squeeze requires the presence of the Display Manager. It is automatically installed on any Macintosh running System 7.5, or if the Display Enabler extension is installed. If someone experiences a startup crash with v2.1, they either need to replace it with v2.0 (they function the same), install the Display Enabler, or replace v2.0 with v2.2 of Screen Squeeze.

Blurry Image on Power Macintosh LC5200
==========

The image on Macintosh 5200, 6200, and 5300 series computers may appear blurry or out of focus on the computer display, and thus on the television.

Focus Enhancements has released Screen Squeeze 3.0d11, which provides compatibility with Performa and Power Macintosh 5xxx/6xxx systems. It is NOT available from Apple, but can be obtained by contacting Focus Enhancements.

Screen Squeeze Version History
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2.0: rewritten as cdev (control panel)
2.1: resolved conflict with Display Manager and System 7.5
2.2: resolved issue requiring the presence of Display Manager
3.0dll: resolved issue with 5xxx/6xxx systems.

The Apple Presentation System is the same as the Focus L-TV Portable Pro product. Technical Support for the Apple Presentation System is handled by Focus Enhancements.

Article Change History:
25 Jun 1996 - Added information on version 3.0dll.
30 Jan 1996 - Expanded blurry image explanation.
06 Dec 1995 - Corrected part number.

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Tech Info Library Article Number:16563

Tech Info Library

DOS Compatibility Card: W/ the Multiple Scan 15 Display (3/95)

Revised: 3/30/95
Security: Everyone

DOS Compatibility Card: W/ the Multiple Scan 15 Display (3/95)

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Article Created: 19 October 1994
Article Reviewed/Updated: 30 March 1995

TOPIC ----------

Could you tell me what sense codes and pin grounding I need to do to make a DOS Compatibility Card force the Multiple Scan 15 Display into a 16-in. mode on the Mac OS side and 800x600 on the DOS/Windows side? I was previously told that grounding pins 4 and 10 would work, so I built an adapter. I did get 800x600 to sync on the Windows side, but the MacOS side is unable to sync with that sense code.

DISCUSSION ----------

On the DOS side, you can select super VGA (800x600) by simply entering the Windows environment (provided you have the driver installed). On the Macintosh side you must boot-up with a cable or adapter that provides the 16" resolution (832x624). The sense code for this resolution is:

pins 4 and 10 tied together--but not grounded!
pin 7 has no connection.

An adapter for this configuration (832x624) can be purchased from Enhanced Cable Technology.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Article Change History:
30 Mar 1995 - Corrected name of Mac OS.
22 Nov 1994 - Reviewed for technical accuracy and reclassified.

Support Information Services

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..TIL16564-DOS_Compatibility_Card-W-the_Multiple_Scan_15_Display_3-95_(TA32743).pdf

Tech Info Library Article Number:16564

Tech Info Library

QuickDraw GX: Printer Sharing Between GX & Non-GX Users (7/95)

Revised: 7/27/95
Security: Everyone

QuickDraw GX: Printer Sharing Between GX & Non-GX Users (7/95)

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Article Created: 19 October 1994
Article Reviewed/Updated: 27 July 1995

TOPIC ----------

I am using the Color StyleWriter 2400 with the QuickDraw GX driver and the standard driver. Neither driver seems to let someone using the opposite driver access the printer when it is shared. Why is this option NOT available?

When using ColorShare to share the printer. QuickDraw GX users do not have access to the printer. It seems that the printer should be visible to QuickDraw GX users if they select the AppleTalk option from the Chooser.

Can you share between QuickDraw GX and non-QuickDraw GX computers? If you can what are the system requirements of the non-QuickDraw GX computer? How is sharing setup if possible? We have tried to share the printer from QuickDraw GX to non-QuickDraw GX and were unsuccessful. I was also told that if you click on the printer icon, you can choose "Share Printer" from the Printing menu. However, this option is not there.

DISCUSSION ----------

Sharing printers between QuickDraw GX and non-QuickDraw GX systems is not really possible. The "not really" is primarily because of the third point below (describing a shared PostScript network printer).

* Share this Printer Option Not in Printing Menu

The option of Share this printer is NOT located in the Printing menu. When you select a desktop printer, the sharing option is located in the File menu. You share a desktop printer just as you would any other volume or folder: by selecting the printer icon, then choosing Sharing from the File menu, and checking the Share this item box.

* Shared QuickDraw Serial Printer Options

When a QuickDraw serial printer is shared, the option Non-QuickDraw GX systems may also use this printer is grayed out. This is because the previous implementation of print sharing with PrinterShare (also known as GrayShare/ColorShare) is not compatible with QuickDraw GX. They utilize different techniques for sharing and also provide different functionality. QuickDraw printer, all clients MUST have QuickDraw GX installed, and Server must be selected in the popup field on the right side of the Chooser's window.

* Shared PostScript Network Printer Options

When a PostScript network printer is shared, the option Non-QuickDraw GX systems may also use this printer is available and works EXACTLY as the Bypass option in the AppleShare PrintServer. This lets all clients (QuickDraw GX and non-QuickDraw GX) see the printer and print to it WITHOUT having to go through the QuickDraw GX system that has captured it. For non-QuickDraw GX clients, they can directly see the printer in the Chooser. For QuickDraw GX clients, they can see the printer if they select AppleTalk in the popup field on the right side of the Chooser’s window.

* Summary

In summary, when a printer is "Shared" by the QuickDraw GX computer that has captured it, to print to that printer the client Macintosh computers MUST have QuickDraw GX installed. The only slight exception to this is when a PostScript network printer is captured and the Non-QuickDraw GX systems may also use this printer option is enabled, both QuickDraw GX and non-QuickDraw GX clients can see and use the printer.

NOTE: In this case, there is no way to require non-QuickDraw GX users to have a name and password. This is because the QuickDraw GX "server" is being bypassed. There are no plans to support name/password security for non-QuickDraw GX systems due to the differences in "print sharing" architectures between QuickDraw GX and non-QuickDraw GX systems.

This article was published in the "Information Alley":
Volume I, Issue 17, Page 5 and updated in
Volume II, Issue 7, Page 16

Article Change History:
27 Jul 1995 - Updated from Info Alley.
17 Jul 1995 - Rewritten for clarity.
16 May 1995 - Added Info Alley reference information.

Support Information Services

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Tech Info Library Article Number:16566

Tech Info Library

Bailey's Book House: Error Message After Printing (10/94)

Revised: 10/19/94
Security: Everyone

Bailey's Book House: Error Message After Printing (10/94)

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Article Created: 19 October 1994

TOPIC ----------

After I successfully print from Bailey's Book House, then I go to another screen, the computer gives me an error message, or sometimes freezes. What causes this?

DISCUSSION ----------

Baily's Book House is included in the Early Childhood Connections, bundle sold by Apple.

There are some known printing issues that the Edmark Corporation is aware of in certain version of Baily's Book House. Check the version of Bailey's Book House, if it is older than 1.0.2, call the Edmark Corporation for an upgrade.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Support Information Services

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Tech Info Library Article Number:16567

Tech Info Library

LaserWriter 16/600 PS: Read Me file (8/95)

Revised: 8/22/95
Security: Everyone

LaserWriter 16/600 PS: Read Me file (8/95)

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Article Created: 19 October 1994
Article Review/Updated: 22 August 1995

TOPIC ----------

This article contains the Read Me file that comes with the LaserWriter 16/600 PS printer.

DISCUSSION ----------

Information About LaserWriter 8 Printer Driver Version 8.2

This document contains some important reminders and some information that is not in the manual that comes with your printer. You may want to print this document and keep it for future reference.

The software on this disk includes version 8.2 of the Apple LaserWriter 8 printer driver, which works with many Apple LaserWriter printers. This document includes information about the software, as well as about several of the printers.

Installing the Printer Driver Software

The manual that comes with your printer contains detailed installation instructions. You cannot install the software and fonts by dragging their icons; you must use the Installer program as described in the printer manual.

Please note: before installing the printer software, you should restart your system with all Extensions turned off. To do this, hold down the Shift key while you restart your computer.

The Installer does not remove versions of the LaserWriter printer driver that are older than version 8.0. You may remove these files from your System Folder if you no longer need them.

The Installer does remove older versions of the LaserWriter 8 driver (for

example, LaserWriter 8.0) and replaces the PPD files for Apple LaserWriter printers with the latest versions.

When you choose Easy Install, the Installer places the following files in the System Folder on your hard disk. LaserWriter 8 and LaserWriter GX are placed in the Extensions folder. The PPD files which are used by LaserWriter 8 are in a folder called Printer Descriptions also located in the Extensions folder. TrueType fonts are installed in the Fonts folder if you have System 7.1 or later; they are installed in the System file if you have System 7.0. The Apple Printer Utility and LaserWriter Utility are placed in the System Folder.

Please note: if the Installer is unable to remove old files from your hard disk, it will terminate the installation procedure. If this happens, please remove old copies of the LaserWriter 8 driver and the PPD files. Then move your Fonts folder from the System Folder to the desktop. Run the installer again. Once completed, move the fonts from the Fonts folder on the desktop back to the new Fonts folder in your System Folder.

About PPD Files

The LaserWriter 8 driver uses PostScript Printer Description (PPD) files to determine the characteristics of the printers it uses. PPD files contain information about individual PostScript printers. For example, PPD files describe the paper-handling capabilities of printers: the number of paper trays, their capacity, and the paper sizes they handle.

To take full advantage of your printer’s features, click the Setup button in the Chooser when selecting your printer for the first time, or after installing an additional option. This procedure causes the LaserWriter driver to query the printer for its characteristics and associate a particular PPD file with the printer.

About Creating EPS Files

You can create an Encapsulated PostScript (EPS) file in many application programs by clicking File in the Print dialog box, then clicking Save. When you create an EPS file, note the following:

- Creating EPS files with the All option selected in the Font Inclusion pop-up menu in the EPS dialog box can result in very large files. If you include all fonts in an EPS file and save the file with the Unlimited Downloadable Fonts option selected, an extremely large file may be created.

- If you create an EPS file with no fonts included and open the document, fonts in the document appear on your screen, but Courier may be substituted when you print.

- When you create EPS files with preview information included, other applications that create their own PostScript code may not display the EPS file accurately on the screen.

About the LaserWriter Utility and the Apple Printer Utility

Installing the LaserWriter 8 driver and printer software places the Apple Printer Utility program in your System Folder. The Apple Printer Utility program is designed to work with the LaserWriter 16/600 PS printer and succeeding releases of new printers.

To configure and work with previously released LaserWriter models, use the LaserWriter Utility that came with your printer. The LaserWriter Utility is also provided on your printer software disks. You can install the LaserWriter Utility on your computer’s hard disk by using the Custom install option of the Installer.

Using the LaserWriter 8 Driver With LaserWriter Printers

When using the LaserWriter 8 driver, you should be aware of the following situations. Some happen with all LaserWriter printers, and others happen only with specific models.

All LaserWriter Printers

- The LaserWriter 8 driver allows some printers to print using a larger imageable print area on the page. If your printer does so, you may find that text in some documents reflows or is clipped to fit the new imageable area. To maintain your document format when printing to different printer models, deselect the Larger Print Area option in the Page Setup Options dialog box.

- Some older printers with small amounts of memory will not print documents containing large numbers of fonts unless the Unlimited Downloadable Fonts option is selected in the Page Setup Options dialog box. If a document using multiple fonts doesn't print using the LaserWriter 8 driver, try selecting Unlimited Downloadable Fonts in the Page Setup Options dialog box and print again.

- Printing multiple documents with the Finder may not work if the documents have been created by different application programs.

- If you encounter a time-out (PostScript error -8993) when printing multiple copies of large and complex documents in the background, print the documents one at a time or select foreground printing to avoid this problem.

LaserWriter IIg and IIf

- When you select paper sources from the First From and Remaining From pop-up menus in the Print dialog box, selecting Manual Feed for either source sets the driver to print the first page from the manual feed tray.

- The US Legal paper size has been changed on some LaserWriter IIf/IIg printers to be more compatible with other Apple LaserWriter printers. If your legal-sized documents no longer fit on the page, select Larger Print Area in the Page Setup Options dialog box.

- Some form-printing applications cannot print forms using the Layout settings in the Page Setup dialog box.

LaserWriter IINT and IINTX

- If you select both the Smooth Graphics and the Invert Image options in the Page Setup Options dialog box, a PostScript error results.

- Do not use the B5 tray to print envelopes on a LaserWriter IINT. Use the letter tray instead.

LaserWriter Pro 600 and 630

- You cannot use Auto Select as the Paper Source in the Print dialog box to print envelopes from the optional envelope feeder.

- When you print at a resolution of 600 dots per inch (dpi), bitmapped images may appear with lines across the image.

LaserWriter Pro 810

- With some graphics applications, bitmapped graphics will be reduced by 25% in size when printed with the Precision Bitmap Alignment option in the Page Setup Options dialog box.

- When you create a PostScript file with a LaserWriter Pro 810 selected as the printer and send the file to a printer that uses PostScript Level 1, a PostScript error will occur.

LaserWriter 16/600 PS

- If Tray Switching is turned on and you have installed the optional 500-sheet feeder, and it contains the same paper size as the 250-sheet feeder, you should set up the driver to use the 500-sheet feeder as the preferred paper source for optimal printing performance. See Chapter 5 in the manual that came with your printer for instructions on selecting the 500-sheet feeder as the preferred paper source.

Using the LaserWriter 8 Driver With the Kanji System

To print Japanese characters using KanjiTalk or the Japanese Language Kit, your system must have WorldScript II version 7.1.1 or later.

Using the LaserWriter 8 Driver With Application Programs

Some application programs do not yet take advantage of the new features of the LaserWriter 8 driver or have small incompatibilities that result in printing problems. If you experience problems with a program, contact the publisher of the program. In some cases a newer version of the program may be available.

The following list describes some special cases that you should be aware of when

working with some application programs. (There may be other problems with these programs, or with other programs, not mentioned in this document.)

- With many applications, you cannot use the Flip Horizontal, Flip Vertical, landscape page orientation, and Layout option in the Page Setup dialog box in combination.

Aldus Freehand 4.0

- Documents do not print correctly when you choose a page layout from the Layout pop-up menu in the Page Setup dialog box.
- EPS files created using the LaserWriter 8 driver from within Freehand cannot be used in other programs.

Aldus PageMaker 5.0

- Rotated graphics may not print correctly when you hold down the Option key and click Print in the Print dialog box.
- You cannot print legal-size documents from the paper cassette of the Personal LaserWriter 320; print such documents by selecting Manual Feed or by holding down the Option key and clicking Print in the Print dialog box.

Aldus SuperPaint 3.5

- Rotated or filled polygons print as solid gray objects.
- Gradient fills may not print when copied into other programs.

Canvas 3.5

- When you select the Substitute Fonts option in the Page Setup Options dialog box, text may be incorrectly spaced if fonts Geneva, New York or Monaco are used.

CricketDraw III 2.01

- When you choose a page layout from the Layout pop-up menu in the Page Setup dialog box, underlined TrueType fonts may not print.

CricketPresents 2.1

- You cannot import an EPS file created with the LaserWriter 8 driver when it has been saved without preview information.

FileMaker Pro 2.1

- When you choose a page layout from the Layout pop-up menu in the Page Setup dialog box, documents that contain EPS graphics may appear clipped when printed.

Informed Manager 1.4

- When you select the Unlimited Downloadable Fonts option, some graphic

elements may shift or disappear when printed.

Lotus 1-2-3 1.1

- Text printed with the Outline or Shadow text style appears filled with gray.

MacDraft 3.01 and earlier versions

- When you print using the Cut Marks option, a PostScript error results.

Microsoft PowerPoint 3.0

- Polygons and ovals filled with gradients and without a border line may shift locations on the page when printed.

Microsoft Works 3.0

- Printing documents that have rotated objects with rounded corners results in a PostScript error.

Painter 2.0

- When you print using the Invert option, images do not print inverted correctly.

PixelPaint Pro 3.0

- When printing using the Invert option, images do not print inverted correctly.

QuarkXPress 3.3

- Be sure to use the PPDs provided with QuarkXPress when you choose a page layout from the Layout pop-up menu in the Page Setup dialog box.

RagTime 3.2

- You cannot print documents that contain PICT or TIFF files.

ReadySetGo! 6.0

- Use ReadySetGo! version 6.0 with the LaserWriter 8 printer driver; earlier versions will not work.
- You cannot print documents that use pen patterns.

Studio/8 & Studio/32

- When creating an EPS file with these programs and the LaserWriter 8 driver, you must select the QuickDraw Printer option.

WordPerfect 3.0

- When you select the Unlimited Downloadable Fonts option and print rotated text in Watermark, the entire document rotates when printed.

How to Get Updated Printer Software

If you need to update your printer software and you have an AppleLink account, you can obtain the latest versions of the LaserWriter 8 software from AppleLink.

The latest LaserWriter 8 software is also available from Apple’s ftp site on the Internet.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
22 Aug 1995 - Made minor corrections.

Support Information Services

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Tech Info Library Article Number:16568

Tech Info Library

Multi-platform and Multi-protocol Network Questions (7/95)

Revised: 7/18/95
Security: Everyone

Multi-platform and Multi-protocol Network Questions (7/95)

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Article Created: 21 October 1994
Article Reviewed/Updated: 18 July 1995

TOPIC ----------

We have an AS/400 with dumb terminals, an AppleTalk network of 32 Macintosh computers on two 12 port Star Controllers, and a Novell network. We want to integrate the three networks into one internet.

Our network environment is described below:

Ethernet connects the AS/400 to a two port router. Port 1 of the router contains four or five 10BaseT hubs connected predominantly to DOS/Windows workstations and a Novell 3.12 Server. There also may be several Macintosh computers on these hubs. The DOS/Windows computers will connect to the Novell Server and create sessions on the AS/400. They may occasionally access an AppleShare Volume, FileMaker Server, or print to a LaserWriter.

PORT 2 of the router connects to a Macintosh functioning as a SNA•ps gateway connected to the AS/400 through a Token Ring NB Card with 4 MB memory, then connects four or five 10BaseT hubs which predominantly support Macintosh computers and LaserWriters connected directly with Ethernet, or with EtherPrint for the older LocalTalk LaserWriters. Some DOS/Windows workstations are connected here, but most activity is AppleShare File Sharing and FileMaker Servers access. The Macintosh computers may occasionally access the AS/400 through the Gateway, or access the Novell Server.

The router's goal is to isolate most single platform traffic. Anything crossing the router will hopefully be minimal and only when necessary.

The Macintosh computers need to be able to connect to the Novell Server, SNA•ps gateway, AppleShare and FileMaker Servers, and LaserWriter Printers through Ethernet. Our main concerns are multi-platform/multi-protocol issues which raise several questions.

Question 1

Management of the hubs will likely be with SNMP, which may also have Mac Agents and DOS agents accessed through TCP/IP. Will this be a problem?

Question 2

A separate vendor is configuring the Novell Server with a Mac NLM and Ethernet Driver for 802.2 Ethernet. Is standard Apple EtherTalk Phase 2 (802.3 from my understanding) going to be happy with this when connecting and communicating with the Novell Server?

Does Macintosh Novell software install a separate Ethernet 802.2 driver on the Macintosh client just for the Novell functions? Will this separate driver coexist without conflicting with AppleTalk Phase 2 being used for other AppleTalk functions and for using the SNA•ps gateway?

This 802.2 versus 802.3 is a major issue. We would like the change over done in a weekend. Many Macintosh computers are IIsi models and therefore will not have a two Ethernet card solution option. We need to get everything working together on one Single Ethernet card in every Macintosh. We want to have straightforward AppleTalk Phase 2 using the Network Software Installer for Ethernet drivers on Macintosh computers to keep maintenance or re-installation very simple. But the Novell Server has to work with 802.2 Ethernet. Our understanding is that the SNA•ps clients communicate to the gateway just fine on Phase 2 Ethernet 802.3, so the major potential conflict appears to be with Novell and Ethernet 802.2.

Question 3

Do Macintosh computers dynamically assign network numbers, including EtherTalk? How will we make sure that the Ethernet addresses on every node, including the DOS machines, are unique, and how can we change the DOS Ethernet addresses if necessary?

Question 4

In order for the DOS/Windows workstations to mount AppleShare volumes, how do we get AppleTalk on them with the appropriate Ethernet 802.3 driver if they are being loaded with 802.2 drivers for the sake of more efficient Novell Server operation?

Queston 5

What cable will connect the Apple Token Ring NB card to an IBM 8228 MAU and then the AS/400?

Question 6

What order of magnitude in performance would be seen if the 34 Macintosh computers and 42 PCs were put on Token Ring instead of Ethernet?

What order of magnitude in maintenance and configuration would be seen if the 34 Macintosh computers and 42 PCs were put on Token Ring instead of Ethernet?

DISCUSSION ----------

Answer to Question 1

EtherTalk Phase 2 uses the SNAP protocol, which is loaded on the Novell server by specifying "ETHERNET_SNAP" in a line in the autoexec.ncf file. This protocol, as with most protocols Novell supports, can peacefully coexist with any other protocols loaded. There will be no conflict.

Answer to Question 2

When using a Macintosh on a Novell network, there are no drivers loaded onto the Macintosh other than the standard network drivers that are loaded during an "Easy Install" of system software. No Novell drivers are required. As you can see, there will be no conflict between the Novell Network and the Macintosh network because there is nothing to conflict.

The Macintosh never used, nor will ever use 802.3. Ethernet 802.3 was used by Novell Netware software before 802.2 was officially sanctioned by the IEEE 802 committee. Novell Netware 2.x and 3.1 defaulted to 802.3, however, with the advent of Novell Netware 3.12 and 4.x, the default is Ethernet 802.2.

Answer to Question 3

Concerning network addresses. The Macintosh dynamically assigns it's network NODE address on startup, not network numbers, which are different. Network numbers are assigned to a cable segment and are used for routing purposes. The manner in which the Macintosh assigns itself a node address is simply by asking if anyone else has that address. Conflicts are VERY rare and if a node address is found to be in use, the Macintosh will try a different node address and check again. DOS node addresses are burned into ROM on the network interface card (NIC). There are utilities that will allow you to change a node address on certain cards, but the necessity to do so is purely for administration reasons, for example wanting consecutive addresses. If this is not a requirement for your network, changing the DOS NIC addresses shouldn't be needed. Also, since this functionality is dependent on the NIC used, you must determine (via the documentation) whether or not the NIC supports changeable node addresses.

Answer to Question 4

The Macintosh computers on the network you described should have no problem communicating with any of the servers as far as we can see. You have not described anything out of the ordinary as far as connectivity goes. Below is a list of vendors we know of that provide DOS/Windows to Macintosh connectivity:

• Farallon Computing - PhoneNet PC product.

Farallon's PhoneNet PC enables IBM PCs or compatibles to connect to an AppleTalk network so they can share files, printers, and other AppleTalk services. PhoneNet PC provides client-side file services for PC users who wish to access files on Macintosh and other AFP-compliant servers. Access to PostScript printers and LocalTalk-equipped ImageWriters is also supported. PhoneNet PC can run concurrently with other networks, including NetWare and TCP/IP.

• Coactive Computing - Coactive Connector Release 1.0 product.

Coactive Connector provides file and print sharing among DOS, Windows, and Macintosh computers. The elegance of providing the necessary hardware in a simple external parallel port adapter sets Coactive Connector apart from other network products. It eases installation and minimizes maintenance.

• Miramar Systems - Personal MACLAN Connect product.

Personal MACLAN allows a PC running Windows 3.0 or higher to function as a file and PostScript printer server for Macintoshes. Personal MACLAN is fully compliant with the AppleTalk Filing Protocol and includes a file extension mapping feature that lets Macintosh users see files created on a PC with the same Macintosh application.

To locate a vendor's address and phone number, use the vendor name as a search string.

Answer to Question 5

Standard IBM type 1 cabling should work fine with the Apple Token Ring NB card and the IBM 8228 MAU.

Answer to Question 6

As for what numbers to put on performance gains in relation to Token Ring vs. Ethernet: A good rule of thumb is that Token Ring will be faster on high load networks, but will only give marginal performance increases on a well designed medium load Ethernet network.

As for maintenance and configuration concerns with Token Ring or Ethernet: In a well-designed network, the load on the network administrator should be similar between the two. For a good discussion on network design, try "Planning and Managing AppleTalk Networks" from Addison-Wesley (it's an Apple book). This will give you an overview of network planning, and point you in the right direction for further reading.

Article Change History:
18 Jul 1995 - Corrected spelling and update format.

Support Information Services

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Tech Info Library Article Number:16572

Tech Info Library

PowerShare: Calculating Users and Adding Servers (2/95)

Revised: 2/9/95
Security: Everyone

PowerShare: Calculating Users and Adding Servers (2/95)

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Article Created: 21 October 1994
Article Reviewed/Updated: 9 February 1995

TOPIC ----------

This article describes how to calculate the number of users per PowerShare Mail Server.

DISCUSSION ----------

The PowerShare Mail Server has no logical limitation to the number of users per server. However, the existing Macintosh file system does impose some limitations; that is 2 GB, or 4 GB with System 7.5, maximum hard drive volume size. You may run only one copy of the PowerShare Mail Server per Macintosh accessing only one hard drive partition.

Here is a formula we recommend for sizing a server:

• (Average number of messages received per day + Average number of messages sent per day)

• Times the Average size of each message in kilobytes

• Times the Number of days users can leave mail in their mailboxes without deleting

• Divide the answer into the available hard disk storage in kilobytes

For example:

. 200 + 300 = 500
. 500 x 1000 bytes (approximately 1K) = 500,000
. 500,000 x 10 = 5,000,000
. 100 MB (100,000,000) / 5,000,000 = 20

This means that the example Mail Server can support 20 users (maximum -- you

should allow an extra 10MB for "housekeeping"). If you have more users than this, you can reduce the number of days a mail message is allowed to remain on the server, add another Macintosh Mail Server, or increase the amount of storage available for messages.

If you decide you need an additional Mail Server to support more users, or there is limited free disk space on the PowerShare Mail Server, you can create another Mail Server on another computer and use it to store user queues. Because it is not possible to have more than one PowerShare Mail Server running on a Macintosh at the same time, you need to set up another server elsewhere on your network. This Macintosh must meet the basic PowerShare system requirements:

• At least one Macintosh computer (using a 68020 or later processor) with a hard disk.

• A minimum of 4 MB of memory for each installed PowerShare server.

• If both the PowerShare catalog server and the PowerShare Mail Server are installed on the same computer you require at least 8 MB.

• The PowerShare Server system requires system software version 7.1.1 or later. (The PowerShare Installer installs System 7.1.1 if it is needed.)

Setting up an additional Mail Server:

Step1:
Install the PowerShare software on the Macintosh where the new server will reside. On restart, the PowerShare Easy Setup application starts and displays a dialog box informing you that the Easy Setup application requires some information to set up the PowerShare System.

Step 2:
Click the Later button in the dialog box.

Step 3:
Open the PowerShare Server Folder and double-click on the PowerShare Mail Server application to start it. A dialog box appears, prompting you for an administrator name and password and asking you to select a PowerShare System to join.

Step 4:
Choose a PowerShare System from the pop-up menu at the top of the window. If the System you want to join is not listed in the menu, choose Other. The PowerShare Admin application begins searching for available catalogs on the network, displaying a dialog box that indicates that a search is in progress.

Depending on the size of the network, the search can take from a few seconds to several minutes. Click Cancel to terminate the search. When all PowerShare Systems have been located, a dialog box appears listing the names of the available PowerShare Systems.

Step 5:
Click the PowerShare system you want to use, then click OK. You are returned to

the dialog box, where you must now supply an administrator name and password.

Step 6:
In the appropriate fields, type the administrator name and password that was specified when the PowerShare System was set up.

Step 7:
When the information is complete, click OK. When your identity is authenticated, a dialog box appears prompting you for a name for new Mail Server record. The new server must have a unique name.

Step 8:
In the Server Name field, type a descriptive name.

Step 9:
Click New. The new PowerShare Mail Server starts up. The new server name is registered for use on the network and a status window appears, displaying information about the server's operation.

Because the Mail Server is brand new, no users are served by it. You can now begin assigning the Mail Server to users. Take time to plan the assignment, so management of the servers is easier. You might want to divide users by department, floor, geographic location, job function, or alphabetically.

Article Change History:
09 Feb 1995 - Added keyword; added information from other article; updated.

Support Information Services

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Tech Info Library Article Number:16573

Apple RAID Software Version 1.0.1 Read Me (11/94)

Revised: 11/17/94
Security: Everyone

Apple RAID Software Version 1.0.1 Read Me (11/94)

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Article Created: 21 October 1994
Article Reviewed/Updated: 17 November 1994

TOPIC ----------

This article is the Apple RAID 1.0.1 ReadMe file.

DISCUSSION ----------

Apple RAID Software Read Me

This document contains important additions to the Apple RAID Administrator's Guide. The Read Me includes the following sections:

- Locating the Apple RAID Software Files on Your Startup Disk
- Initializing Disks With Apple RAID
- Initializing Apple RAID Disks With Other Disk Utilities
- Back Up Your Data
- Extra Disk for Faster Recoveries
- Apple RAID and Third-Party SCSI Cards
- Apple RAID and Virtual Memory
- Deleting Volumes With Apple RAID
- Mirror Failures During Finder Operations
- Handling Spontaneous Mirror Failures
- Using Thousands or Millions of Colors
- Choose Screen Savers Carefully
- Using Apple HD SC Setup With Apple RAID
- Failures During Retrospect Backups
- Restoring Volumes With Retrospect
- Using the Microsoft Mail Backup Utility With Apple RAID
- Slow Startup With 2-Gigabyte Drives
- Use Shielded SCSI Cables
- Remove Switched-Off Devices From the SCSI Bus
- Do Not Use SCSI-1 Devices in a SCSI Bus Containing SCSI-2 Devices
- Rebuilding Mirrored Volumes While Running AppleShare
- Installing a Driver While Rebuilding a Mirrored Volume

- Restarting Stalled Rebuilds
- Dealing with Rebuild Failures

Locating the Apple RAID Software Files on Your Startup Disk

The Apple RAID Software program is installed in the Apple Menu Items folder in the System Folder on the startup disk. The Apple RAID Monitor is installed in the Extensions folder in the System Folder on the startup disk. The Apple RAID Software Read Me (this document) and the SimpleText text-processing program are installed in an Apple RAID folder in the top-most directory of your startup disk.

Initializing Disks With Apple RAID

Initializing a Disk and Using the Finder

Do not initialize a disk while it is in active use by the Finder, such as during a copy. Wait until the Finder operation has completed or, if possible, click the Cancel button in the progress dialog box.

Losing Power During Initialization

If a disk loses power while you are initializing it, your server might crash immediately, and your server might also crash upon startup until the disk is properly initialized. If you experience these problems, start up your server with the offending disk switched off. Switch the disk on while the Finder is active and initialize the disk with a non–Apple RAID disk utility. If the initialization is successful, reinitialize the disk with Apple RAID.

Initializing Apple RAID Disks With Other Disk Utilities

Delete or unmount the Apple RAID volumes before reinitializing an Apple RAID–formatted disk with Apple HD SC Setup or a third-party disk utility. Non-Apple RAID disk utilities may not be able to unmount Apple RAID volumes during initialization.

Back Up Your Data

Apple RAID mirrored volumes will not protect you from all types of data loss. Equipment theft or natural disasters such as fire or flooding, for example, can result in data loss. Therefore, make sure you continue to back up all your data, including data residing in Apple RAID mirrored or striped volumes.

Extra Disk for Faster Recoveries

An extra disk that is initialized for Apple RAID, connected to the server, and switched on will reduce the time required to recover an Apple RAID volume from a failed disk. Having such an extra disk on hand is a recommendation and not a requirement for using Apple RAID.

Apple RAID and Third-Party SCSI Cards

Apple RAID supports built-in SCSI buses only; it has not been tested with third-party SCSI accelerator cards. You may experience difficulties if Apple RAID is installed on a server with a third-party SCSI card.

Apple RAID and Virtual Memory

Apple RAID makes extensive use of direct memory access and may not work with virtual memory turned on. Make sure that virtual memory is turned off on your server.

Deleting Volumes With Apple RAID

Do not delete a volume that is in active use by the Finder, such as during a copy. Wait until the Finder operation has completed or, if possible, click the Cancel button in the progress dialog box.

Mirror Failures During Finder Operations

If a mirror failure occurs during a Finder operation, allow the operation to complete before rebuilding the mirror. When rebuilding the mirror be sure to set the rebuild rate slide bar to less than 75% of maximum.

Handling Spontaneous Mirror Failures

Sometimes a mirrored volume may fail for no apparent reason. The volume will rebuild with no problem and disk test utilities will show no defects. In most cases the disk that failed will develop a media failure within a few weeks. If a disk begins to cause spontaneous mirror failures, consider replacing the disk before it fails completely.

Using Thousands or Millions of Colors

Using thousands or millions of colors on a server may degrade performance and cause problems with Apple RAID. If you experience problems creating new volumes with Apple RAID, make sure that your server is set to 256 colors or less in the Monitors control panel. You can also try an alternative method for creating new volumes: instead of Shift-clicking disks in the Disks column and dragging them to the Volumes column in the Setup window, use the Apple RAID menu commands for creating a new volume, as explained in Chapter 3 of the Apple RAID Administrator's Guide.

Choose Screen Savers Carefully

There are many screen savers that can be used to prevent screen burn-in on Workgroup Servers. Some screen savers are quite elaborate and perform many complex calculations to draw a single picture on the screen. Since the calculations require significant amounts of CPU time, the more complex screen savers will reduce the performance of your Workgroup Server. Choose the screen saver that interferes the least with your Workgroup Server.

Some screen savers or their modules are not compatible with Apple RAID and can cause your Workgroup Server to crash or hang. Before purchasing or using a screen saver, check with the screen saver's manufacturer to determine if the

screen saver will work properly with your Workgroup Server.

Using Apple HD SC Setup With Apple RAID

A message indicates an Apple RAID disk has no initialized volumes

When scanning for disks in the Apple HD SC Setup program, Apple RAID–initialized disks might display the message, "This disk contains no initialized Macintosh volumes." The current version of Apple HD SC Setup does not recognize Apple RAID mirrored or striped volumes and will display the above message if the disk does not contain an Apple RAID standard (HFS) volume.

Updating the driver on Apple RAID–formatted disks

Apple HD SC Setup version 7.3 allows you to update the driver on any Apple disk, including disks formatted with Apple RAID. Regardless of the instructions for installing new versions of system software, do not update Apple RAID–formatted disks with Apple HD SC Setup. Use the Install Driver command of the current version of Apple RAID or contact your support representative for a driver that supports new system software releases.

If the driver of an Apple RAID–formatted disk is updated with Apple HD SC Setup, it can be repaired if the Apple RAID partition map is intact. Start the Apple RAID program, select the disk, and choose "Install Driver" from the Disk menu. If this option is not enabled, the Apple RAID partition map has been damaged and no recovery is possible; you need to reinitialize the disk.

Failures During Retrospect Backups

If you are using Retrospect to back up files and receive either a mirror failure or a damaged catalog file error, try turning off Snapshot mode in Retrospect.

Restoring Volumes With Retrospect

The Retrospect backup software allows you to select the option "Restore Entire Disk." This option overwrites all files on the destination volume, including the invisible file that contains the Apple RAID icons. Next time you start up the server, the Apple RAID volume icon will appear as a generic document icon.

To recover the Apple RAID mirrored, striped, or standard volume icons:

1) Select an Apple RAID volume of the same type (mirrored, striped, or standard).

2) Choose Get Info from the File menu and click on the icon.

3) Choose copy from the Edit menu.

4) Select the Apple RAID volume with the missing icon and choose Get Info from the File menu.

5) Click on the generic document icon and choose Paste from the Edit menu.

The icon will be restored.

Using the Microsoft Mail Backup Utility With Apple RAID

Due to the way in which the Microsoft Mail Backup Utility shuts down the system, the automatic backup feature of Microsoft Mail causes mirrored volumes to become out of sync. The best way to back up your Microsoft Mail Server is to follow the instructions for a manual backup in the Microsoft Mail documentation.

Slow Startup With 2-Gigabyte Drives

Some 2-gigabyte disks take a long time to reach full speed. Apple RAID will wait for such disks to spin up, which may increase the time it takes to start up your server if a 2-gigabyte drive is attached.

Use Shielded SCSI Cables

Make sure all SCSI cables are shielded. You might experience I/O errors when adding additional disks to the SCSI chain if the cables aren't shielded. A shielded SCSI cable is thicker and stiffer than an unshielded SCSI cable. Check with the manufacturer if you're unsure whether the cable is shielded. All Apple SCSI cables are shielded.

Remove Switched-Off Devices From the SCSI Bus

Apple recommends that you remove SCSI devices that are switched off from the SCSI bus. Make sure all SCSI devices are switched on and remove them if they aren't. This avoids signal strength problems for the remaining devices on the bus.

Do Not Use SCSI-1 Devices in a SCSI Bus Containing SCSI-2 Devices

Older disks, usually under 200 megabytes in size, cause trouble when connected to a SCSI bus containing SCSI-2 devices. Most older disks are only SCSI-1–compliant and are not always compatible with a bus using SCSI-2 devices.

Rebuilding Mirrored Volumes While Running AppleShare

When rebuilding a failed or out-of-sync mirrored volume while AppleShare is running, set the AppleShare Remote User Activity slide bar to less than 50%. If AppleShare is under particularly heavy use, set the slide bar to an even smaller percentage of the processor's time. These settings ensure that Apple RAID will receive the necessary processing time to perform the rebuild. (See your AppleShare documentation for details about setting the Remote User Activity slide bar.)

Installing a Driver While Rebuilding a Mirrored Volume

Apple recommends that you do not update the Apple RAID driver on a disk on which a mirrored volume is currently being rebuilt.

Restarting Stalled Rebuilds

If there appears to be no disk activity during a rebuild, the rebuild may be stalled. Restarting the system should cause the rebuild to continue.

Dealing with Rebuild Failures

If a rebuild failure occurs check that all devices on the SCSI bus are properly attached, terminated, and powered on. Retry the rebuild with the rebuild rate slide bar set to less than 75% of maximum.

Article Change History:
17 Nov 1994 - Updated article to release Read Me File.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16574

Tech Info Library

Coactive Computing (10/94)

Revised: 10/21/94
Security: Everyone

Coactive Computing (10/94)

==========

Article Created: 21 October 1994

Coactive Computing

1301 Shoreway Road
Belmont, CA 94002

415-802-1080

Company Profile:
Provides file and print sharing among DOS, Windows, and Macintosh computers.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16575

Tech Info Library

PowerBook: Apple Modem Compatibility Between Models (4/95)

Revised: 4/3/95
Security: Everyone

PowerBook: Apple Modem Compatibility Between Models (4/95)

==========

Article Created: 21 October 1994
Article Reviewed/Updated: 03 April 1995

TOPIC ----------

This article provides information on compatibility of Apple modems between the differing PowerBook models.

DISCUSSION ----------

PowerBook Duo

The Apple modem that ships with the PowerBook Duo 210 and 230 is the Duo Express Modem. It isn't compatible with the 100 or 500 series PowerBook computers due to physical differences between the computers.

PowerBook 160, 165, 165c, 180, and 180c

The Apple modem that ships with these PowerBook models is the Express Modem. This modem isn't compatible with the PowerBook 100, 140, 145, 145B, 150 or 170.

PowerBook 140, 145, 145B, and 170

The Apple modem that ships with these PowerBook models is the PowerBook Fax/Data Modem. This modem is also compatible with the PowerBook 150, 160, 165, 165c, 180, and 180c

Article Change History:
03 Apr 1995 - Minor corrections about Express Modem.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16576

Tech Info Library

GX Helper: Why You Can't Disable Desktop Printing (2/95)

Revised: 2/14/95
Security: Everyone

GX Helper: Why You Can't Disable Desktop Printing (2/95)

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Article Created: 21 October 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

I noticed after installing GX Helper that I do not have the option to disable Desktop Printing in some applications. Why is this?

DISCUSSION ----------

The option to turn off Desktop printing in the newest versions of Excel (4.0) and Word (6.0) or other recent applications may not appear.

These applications are "GX-friendly" and can utilize the QuickDraw GX printer drivers. Because of this, GX Helper does not let you disable Desktop Printing.

Article Change History:
14 Feb 1995 - Updated keyword; reviewed for technical accurcy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16577

Tech Info Library

Macintosh Tutorial: Not Enough Memory Error Resolution (5/95)

Revised: 5/16/95
Security: Everyone

Macintosh Tutorial: Not Enough Memory Error Resolution (5/95)

==========

Article Created: 21 October 1994
Article Reviewed/Updated: 16 May 1995

TOPIC ----------

Whenever I launch Macintosh Tutorial Part 1 from the balloon menu on a Power Macintosh, I get the error, "Not enough memory to run Macro Media Player."

DISCUSSION ----------

There are two solutions to the "Not enough memory to run Macro Media Player" error when launching Macintosh Tutorial Part 1 from the balloon menu:

Use Fewer Colors

Open the Monitors control panel and switch to 256 or fewer colors.

Increase Memory Allocation

Open the "Tutorial Items" folder inside the Extensions folder and increase the memory allocation of the "Macintosh Tutorial Part 1" application from 2048K to 3000K.

Article Change History:
16 May 1995 - Made minor technical updates.

Support Information Services

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Tech Info Library Article Number:16578

Tech Info Library

System 7.5: Alarm Clock DA Not Included (3/95)

Revised: 3/6/95
Security: Everyone

System 7.5: Alarm Clock DA Not Included (3/95)

==========

Article Created: 21 October 1994
Article Reviewed/Updated: 6 March 1995

TOPIC ----------

I noticed that System 7.5 does not include the Alarm Clock DA. Does the one from System 7 work?

DISCUSSION ----------

Yes, the Alarm Clock DA from System 7.x works with System 7.5. If you install System 7.5 on a Macintosh that is already running System 7, without first disabling the current system folder, the System 7.5 Installer leaves the Alarm Clock DA in the Apple Menu Items folder. It functions just as it did under System 7.

A clean install of System 7.5 does not install the Alarm Clock DA because it is not included with System 7.5. If you want to continue to use the Alarm Clock DA with System 7.5 and you have done a clean install, you must put it in the Apple Menu Items folder manually from your previous System 7 system folder or from the original System 7 diskettes.

Article Change History:
06 Mar 1995 - Added keyword; minor technical updates.
21 Feb 1995 - Reworded discussion for clarification.
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16579

Tech Info Library

AWS 95: Using tar with DAT Tape Drive (10/96)

Revised: 10/15/96
Security: Everyone

AWS 95: Using tar with DAT Tape Drive (10/96)

==========

Article Created: 21 October 1994
Article Reviewed/Updated: 15 October 1996

TOPIC ----------

We have an Apple Workgroup Server (AWS) 95 and we're trying to tar and untar files from the built-in 4mm DAT tape drive. We are using the command tar -cvf /dev/rmt/tc2 <filename> to tar a file to a new tape, which gives us a tape write error. We verified that the record lock tab on the cassette was in place. We also have a tar-ed file on another DAT tape and when trying to read that file we get a tape read error also. What's wrong?

DISCUSSION ----------

The problem is the tar command being used. The A/UX tc driver has to be accessed in 8K blocks, therefore you must specify the blocking factor as part of the tar command.

Begin_Table

The command you used needs to be modified from

```
tar -cvf /dev/rmt/tc2 <filename>
```

to

```
tar -cvfb /dev/rmt/tc2 16 <filename>
```

To read the tar archive created, the command also needs to contain the specification for the block size

```
tar -tvfb /dev/rmt/tc2 16     (To list the contents of the tar archive)

tar -xvfb /dev/rmt/tc2 16     (To extract the contents of the tar
                               archive)
```

```
  tar -tvfb /dev/rmt/tc2 16 <filename>  (To extract an specific file from
                                         the contents of the tar archive)
```

If the customer is trying to perform backups from UNIX, any of the following commands will also work. Keep in mind that none of them utilize the hardware compression abilities of the 4MM DAT drive, which is the reason we use the compress command as part of the examples.

The following command can be used create a backup of the root file system:

```
  dump.bsd 0bsf 8k 2000m /dev/rmt/tc2 /dev/dsk/c0d0s0
```

The following command is used to restore the backup:

```
  restore -xyvbf 8k /dev/rmt/tc2


  find . -print | cpio -ocv | tcb > /dev/rmt/tc2     (to create archive)
  tcb < /dev/rmt/tc2 | cpio -icv                     (to read archive)

  find . -print | cpio -oc | compress | tcb > /dev/rmt/tc2  (to create
                                                            archive)
  tcb < /dev/rmt/tc2 | compress -d | cpio -icv       (to read archive)

  tar -cvf - . | dd of=/dev/rmt/tc2 obs=8kx40        (to create archive)
  dd if=/dev/rmt/tc2 ibs=8kx40  |  tar -xvf -        (to read archive)

  tar -cvf - / | tcb > /dev/rmt/tc2                  (to create archive)
  tcb < /dev/rmt/tc2 |  tar -xvf -                   (to read archive)

End_Table


Article Change History:
15 Oct 1996 - Changed distribution status.
```

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Tech Info Library Article Number:16580

Tech Info Library

Ethernet 10T/5 Workgroup Hub: Description & Tech Specs (2/95)

Revised: 2/15/95
Security: Everyone

Ethernet 10T/5 Workgroup Hub: Description & Tech Specs (2/95)

==========

Article Created: 21 October 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

This article provides a description and the technical specifications of the Apple Ethernet 10T/5 Workgroup Hub.

DISCUSSION ----------

The Apple Ethernet 10T/5 Workgroup Hub provides a simple and cost effective way to build efficient, high performance networks for small to medium size workgroups. It also offers a convenient means of extending existing 10Base-T Ethernet networks.

A compact, five-port, mobile hub, the Apple Ethernet 10T/5 Workgroup Hub is designed to let you easily connect five devices (including Macintosh and other desktop computers, note-book computers, and printers) to form a 10Base-T Ethernet network. Each workgroup hub comes with four RJ-45 connectors and an Apple Ethernet Port that can be connected to any Power Macintosh computer, most Macintosh Quadra and Macintosh Centris models, the PowerBook 500 series, and the LaserWriter Pro 630 and LaserWriter IIg printers. The Workgroup Hub can also be used to extend your network by an additional four devices from a single Ethernet access point (like a wall plate) when used in a structured 10Base-T environment.

Designed for flexibility and ease of expansion, the Apple Ethernet 10T/5 Workgroup Hub comes with an expansion adapter, which allows you to connect one Workgroup Hub to another (up to a recommended maximum of four) to build larger networks as your networking needs grow. The expansion adapter connector eliminates the headache of getting special cables and allows you to use any standard Category 3 or Category 5 twisted-pair cabling.

If you want to set up or expand a network, but don't want to spend a lot of time -- and money -- in the process, the Apple Ethernet 10T/5 Workgroup Hub is the answer.

Features

Ease of Use

- Requires no configuration -- just plug it in

- Lets you easily create, expand, administer, and troubleshoot your network

Flexibility

- Enables five users to connect directly to the hub with 10Base-T industry-standard cabling to form convenient, ad hoc networks

- Allows four additional users to connect to an existing industry-standard, 10Base-T Ethernet network

- Supports the connection of multiple hubs (a maximum of four is recommended) to build larger networks or extend current configurations

- Supports a variety of hosts, including any Macintosh computer or LaserWriter with a built-in Apple Ethernet port (AAUI) or an Apple Ethernet card that has an AAUI interface such as the Apple Ethernet NB, LC or CS AAUI Card.

Compatibility

- Complies with IEEE 802.3 standards

- Supports all popular networking protocols and software, including AppleTalk, TCP/IP, IPX, DECnet, and Mac IPX, and Apple Internet Router and SNA•ps 3270 and 5250 client software

- Can be used by all devices that have a 10Base-T Ethernet interface, including Macintosh computer, laser printers, notebook computers, and DOS or Windows personal computers from various manufacturers

- Easily integrates into multi-vendor 10Base-T Ethernet networks (independent of CPU or network operating system)

Performance

- Allows users to optimize network configurations for maximum flexibility and performance

- Provides full Ethernet data rates and excellent reliability through the point-to-point nature of 10Base-T networks

Technical Specifications

Connectors

• Four RJ-45 connectors for attaching to 10Base-T, Ethernet twisted-pair cabling

• One Apple Ethernet Port (AAUI) connector for attaching to a Macintosh host or LaserWriter printer with an Apple Ethernet Port

Transmit/receive data rate

• 10 megabit-per-second maximum data rate

Diagnostic displays

• Four LED indicators display Ethernet status (Link) and data transmission (one per port)

Environmental requirements

• Operating temperature: 50 to 104 degrees F (10 to 40 degrees C)

• Humidity: 20% to 95% noncondensing

Power dissipation

• Maximum 1.9 W, average 1.5W

System Requirements

• One available built-in Apple Ethernet port in a Macintosh; or a built-in Ethernet port on an Apple LaserWriter printer; or an Apple Ethernet NB Card, Apple Ethernet LC Card, or Apple Ethernet CS AAUI card to use as a Macintosh host

• Industry-standard 10Base-T Ethernet twisted-pair cabling (Category 3 or 5 specifications)

Ordering Information
==========

Apple Ethernet 10T/5 Workgroup Hub
Order No. M3351Z/A
• Apple Ethernet 10T/5 Workgroup Hub
• Workgroup Hub Expansion Adapter
• User's guide
• Limited warranty

Apple Ethernet Twisted-Pair
Cable–3 Meter
Order No. M3348Z/A

Apple Ethernet Twisted-Pair

Cable–7 Meter
Order No. M3349Z/A

Apple Ethernet Twisted-Pair
Cable–15 Meter
Order No. M3350Z/A

Apple Ethernet 10T/5 Workgroup Hub Power Adapter (Optional)
Order No. M2851LL/A
Apple Ethernet 10T/5 Workgroup Hub Power Adapter (also works with the QuickTake 100)

Article Change History:
15 Feb 1995 - Added Ethernet Hub Order information and changed format.

Support Information Services

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Tech Info Library Article Number:16581

A/UX 3.0 Manual: DNS Domain Name Definition in A/UX 3.1 (10/94)

Revised: 10/21/94
Security: Everyone

A/UX 3.0 Manual: DNS Domain Name Definition in A/UX 3.1 (10/94)

==========

Article Created: 21 October 1994

TOPIC -----

The instructions in the A/UX 3.0 manual for configuring sendmail are out of date. See page 9-4 of the "Setting up network Mail" of Network Admin manual. It says the aux.mc file should contain the following line:

define(DOMAIN, 'DDaux.apple.com')

However, A/UX 3.1 doesn't contain this line, instead it contains the line:

DOMAIN(apple-aux)dnl

What do I do?

DISCUSSION -----

Your observation regarding the DNS Domain Name definition for the A/UX 3.0 manual on Page# 9-4 is correct, it states that users need to modify the following line:

define(DOMAIN, 'DDaux.apple.com')

This line is only available in A/UX 3.0, and is found in the "/usr/lib/sendmail.conf/cf/aux.mc" file. It does not apply for A/UX 3.1.

In A/UX 3.1, the line for "define(DOMAIN, 'DDaux.apple.com')" does not exist in "/usr/lib/sendmail.conf/cf/aux.mc". A/UX 3.1 has the line "DOMAIN(apple-aux)dnl". The word "DOMAIN" is a pre-defined Macro in A/UX 3.1.

We substitute a pre-defined Macro for "define(DOMAIN, 'DDaux.apple.com')" in A/UX v3.0. With A/UX 3.1, we add the "domain" subdirectory right below "/usr/lib/sendmail.conf" directory hierarchy.

Users should modify the "/usr/lib/sendmail.conf/domain/apple-aux.m4" file, more

specifically, substitute their own DNS domain name with "aux.apple.com" in the following example:

DDaux.apple.com

Support Information Services

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Tech Info Library Article Number:16582

Tech Info Library

LaserWriter Pro: Cycle the Power After Installing Trays (10/94)

Revised: 10/24/94
Security: Everyone

LaserWriter Pro: Cycle the Power After Installing Trays (10/94)

==========

Article Created: 20 October 1994

TOPIC ----------

After adding the evelope feeder to a LaserWriter 16/600 PS, I could not get the printer to print to the envelope feeder. Everytime I tried printing, it pulled paper from the multi-purpose tray. I made sure that I had the LaserWriter 8.x software configured for an envelope feeder. How can I print to the envelope feeder?

DISCUSSION ----------

In order for the LaserWriter Pro 600/630 or the LaserWriter 16/600 PS printers to print to the envelope feeder, you have to cycle the power on the printer after installing the envelope feeder.

Check the startup test page and verify that it indicates that the envelope feeder is installed. If not, power off the printer, reseat the connection to the feeder, and power it back up. Once the printer recognizes the feeder, you can use the Auto Configure to list the feeder as installed.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16585

Tech Info Library

QuickDraw GX: Printing Problems With the StyleWriter II (2/95)

Revised: 2/7/95
Security: Everyone

QuickDraw GX: Printing Problems With the StyleWriter II (2/95)

==========

Article Created: 24 October 1994
Article Reviewed/Updated: 7 February 1995

TOPIC ----------

After Installing QuickDraw GX, when I try to print to my StyleWriter II printer, an error occurs. The error message reports that the Macintosh computer is unable to print through the printer port, and to check connections and try again. Why?

DISCUSSION ----------

We were unable to reproduce the exact problem, but we did find a couple of minor problems with the StyleWriter GX drivers. These most likely also apply to other QuickDraw GX serial drivers.

- If the printer port is being used to print to the StyleWriter II, then AppleTalk MUST be OFF. If EtherTalk is selected in the Network Control Panel, then AppleTalk can be ON.

- If AppleTalk is ON, and turned OFF to allow for printing, error messages still appear stating to "..check connections". To correct this problem, either turn the StyleWriter II off and on again, or restarting the Macintosh.

Article Change History:
07 Feb 1995 - Added keyword. Made minor technical updates.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16586

Tech Info Library

System 7.5: Using With Original LaserWriter (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Using With Original LaserWriter (2/95)

==========

Article Created: 24 October 1994
Article Reviewed/Updated: 16 February 1995

TOPIC -----

I am using System 7.5 and getting PostScript errors when printing from SimpleText to an original LaserWriter (v23.0). Which LaserWriter driver version should I be using?

DISCUSSION -----

We have seen some problems when trying to print to an original LaserWriter (ROM revision 23.0) using LaserWriter 8.1.1 (as well as some older driver versions). Our suggestion is to use the LaserWriter 8.2 driver. The new driver is available through online services to which Apple publishes software updates.

You are probably getting PostScript errors because of the limited amount of memory in the original LaserWriters. If the problems still occur after upgrading to LaserWriter 8.2, then we suggest:

• Try using only the fonts available in the LaserWriter's ROM; not TrueType or Type 1.

• Enable "Unlimited Downloadable Fonts" in the options dialog of Page Setup.

Article Change History:
16 Feb 1995 - Updated and added keyword; made minor technical updates.

Support Information Services

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Tech Info Library Article Number:16589

Tech Info Library

Quadra/LC/Performa 630:Retrospect Crash/Patch 10/94)

Revised: 10/25/94
Security: Everyone

Quadra/LC/Performa 630:Retrospect Crash/Patch 10/94)

==========

Article Created: 24 October 1994

TOPIC -----

Customers who run Retrospect Remote from Dantz Development on a Quadra/LC/Performa 630 series computer, will experience a system error that causes the computer to freeze when backing up to an external SCSI drive.

DISCUSSION -----

Apple has recently released the “630 SCSI Update” which corrects this problem.

The 630 SCSI Update is available from online services, and the Internet.

The READ ME Follows:

630 SCSI Update (1.0)

Copyright 1994 Apple Computer, Inc.

Name: 630 SCSI Update
Version: 1.0
Date Released: September 29, 1994
Who should use it: Macintosh LC630, Quadra 630, Performa 630 series computers.
Description : The 630 SCSI Update extension corrects a problem involving large block SCSI transfers (commonly used by backup programs when backing up data to SCSI DAT Tape drives) where the system may hang. To use this extension drag it on top of your System Folder. It will be automatically placed into your Extensions folder. Reboot your Macintosh.

Please Note: The name of this extension should be "630 SCSI Update".

Support Information Services

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..TIL16592-Quadra-LC-Performa_630-Retrospect_Crash-Patch_10-94_(TA32771).pdf

Tech Info Library Article Number:16592

Tech Info Library

System 7.x Aliases: Overview and Recommendations (2/95)

Revised: 2/14/95
Security: Everyone

System 7.x Aliases: Overview and Recommendations (2/95)

==========

Article Created: 24 October 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

This article provides a description of how aliases work in System 7.x (including System 7.5) and provides recommendations for using them.

DISCUSSION ----------

An alias is a pointer to an icon. The icon can be anything: a document, application, INIT, folder, disk, file server -- even another alias. A file can have an infinite number of aliases. Aliases let you refer to documents, folders, and applications with minimal impact on disk space, but with maximum convenience of location.

An alias is a small file that "remembers" the location of the original file, rather than containing the same data as the original. An alias file is typically 1K or 2K.

Once an alias is created, either the alias or the original may be moved to another location, although the original must stay on the same volume it was on when the alias was created. The name of the alias is always in italic and has the same icon as the original file. You may change the name of the alias without affecting the original file. When you wish to open the original, double-click the alias and the system responds as if you had double-clicked the original.

Where You Can Place Aliases

When making more than one alias of a file/application, you can place them in a variety of locations for convenient opening, such as the Apple Menu folder in your System folder and the folder containing the application used to create the file.

By placing an alias of files, applications, sounds, QuickTime movies, and so on in the Startup Items folder in your System Folder, these items are automatically

launched at startup. If you don’t want them to load, just hold down the Shift key at startup.

Connecting to a File Server

To quickly connect to a File Server over a network, make an alias of the File Server while you are connected to it and drag the alias to some convenient place on your hard drive. For example, place the alias in the Apple Menu Items folder in your System folder and you can then access the File Server directly from the Apple Menu.

Removable Media

Aliases let you locate files on removable media such as floppy disks, CD-ROM discs, or removable cartridges. All you have to do is make an alias of the file(s) on the removable media and place the alias on your hard disk. When you double-click on the file's alias, you are asked for the disk by name that contains the original file. This also works with compression software used in archiving files to floppy disks.

Using Aliases With Remote Access

To create an alias over an Apple Remote Access connection, select the alias icon of the remote, mounted hard drive. Choose Get Info from the File menu, then click the Locked checkbox. If you do not lock the alias, the alias can be converted to call the wrong Apple Remote Access server or to try to access the service across your local network.

Aliases and Upgrading Systems

If you upgrade an existing Macintosh (such as from a Quadra 700 to a Quadra 800) and name the new machine the same name as the old machine, the existing aliases continue to work. They continue to work, as long as the machine and the volume are named the same on the Quadra 800 as they were on the Quadra 700.

The explanation of how aliases work is a little bit longer. The first step in resolving the alias is to identify the volume on which the target resides. Thus, the alias stores some volume mounting information, such as the server and zone information. The zone name and the server name must be the same in order for the alias manager to successfully resolve the alias. Additionally, if the volume is not a local volume (as is the case in this situation), the volume name must be the same.

Once the correct volume is found, there are a number of ways that the alias manager can resolve an alias. One piece of information that it uses is the file (or directory) ID. Using this, if the file moves somewhere else on the volume, the alias is able to locate it. Additionally, the alias manager uses the location and file name to resolve an alias.

When an alias is created, the file ID of the actual file, is saved within the alias record. When you then copy the actual file to another location (such as to a new drive), the file ID of the "new", copied application is different than the original application’s file ID. The alias record still contains the original

application's file ID. If the alias manager fails to resolve the alias by using the file ID, it attempts to use the relative path name to resolve the alias. As long as the path to the file remains the same, the alias is able to be resolved.

Once an alias is used, the alias record is updated with any information that had changed. For example, if the file ID had changed (because it was a copy of the original), once the alias is used, the new file ID is stored with the alias. After that, the file can be moved around, and the alias is still able to find it.

The bottom line is, you can copy an entire hard drive from one system to another (such as the Quadra 700 to the Quadra 800). As long as you name the machine the same in Sharing Setup, name the volume the same, and do not move any of the files (or applications) that have aliases to them, at least until all of the aliases are used, and updated, everything should work correctly.

If An Alias Fails to Work

If you open an alias and nothing happens, or you see a message reporting that the original file is not available, it means that the alias is damaged, or the original was removed. Aliases are not removed when the original icon is removed.

First, try to locate the original of the alias using the Find Original button in the Info box of the alias (or you can use the Find command). If the original still exists and the alias does not work, remove the defective alias then select the original and make another alias of it.

If you cannot locate the original file, it may have been deleted (file or folder) or unmounted (volume); or there may be a break in the network, and the alias has been left pointing to a location that contains nothing.

Article Change History:
14 Feb 1995 - Updated keyword.
08 Feb 1995 - Added keyword; combined several articles; updated for System 7.5.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16593

Tech Info Library

Power Macintosh Upgrade Card: Software Installation (10/94)

Revised: 10/25/94
Security: Everyone

Power Macintosh Upgrade Card: Software Installation (10/94)

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Article Created: 24 October 1994

TOPIC -----

I installed a Power Macintosh Upgrade Card in my Macintosh and did an Easy Install of the System Software, but the Power Macintosh Card Control Panel did not get installed.

DISCUSSION -----

There is no way for the Installer or any software to detect the presence of the Power Macintosh Upgrade Card through any gestalt calls or hardware detection, unless it is turned on and active during the time of the install.

You must be running a version of System 7.1.2 or System 7.5 that already has the Power Macintosh Upgrade Card software installed and active for an Easy Install to place Power Macintosh files in the target System Folder.

If the Power Macintosh Upgrade Card software is not already present to activate the card, then a Custom Install must be selected to force the associated Power Macintosh files to be installed.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16594

Tech Info Library

Apple Printer Utility: Re-open After Changing Zones (11/95)

Revised: 11/20/95
Security: Everyone

Apple Printer Utility: Re-open After Changing Zones (11/95)

==========

Article Created: 24 October 1994
Article Reviewed/Updated: 17 November 1995

TOPIC ----------

I have noticed inconsistent results with the LaserWriter 16/600 PS when attempting to change the AppleTalk zone within which the printer resides.

After selecting a new zone, and pressing the "send" button, the zone actually changed only about 50% of the time.

DISCUSSION ----------

When opening a printer in the "Printer Selector" window, the current printer zone selected remains constant throughout ANY changes made in Printer Information, Printer Preferences, Job Defaults, and Configure Communication (including "Printer's Network") options of the printer's window. Thus, if the zone is being changed, then you MUST close the printer's window after changing the zone, and open a new printer window by selecting the printer in its new zone before making any further changes to the printer.

This is the only option in the original Apple Printer Utility that behaves in this manner. This issue was fixed in the Apple Printer Utility 2.0 posted online.

These articles can help you locate the Apple Printer Utility 2.0 mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
17 Nov 1995 - Added updated software availability information.

Support Information Services

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Tech Info Library Article Number:16595

Tech Info Library

GeoPort Adaptor & Multiple-Line Analog Telephone Lines (10/94)

Revised: 10/24/94
Security: Everyone

GeoPort Adaptor & Multiple-Line Analog Telephone Lines (10/94)

==========

Article Created: 24 October 1994

TOPIC -----

Does the GeoPort Telecom Adaptor work on multiple-line analog telephone lines? We have heard that of the four wires inside a typical phone cable (Yellow-Red-Green-Black), the GeoPort uses the red and green pair and doesn't use the yellow and black pair.

Please provide some general information about this and we also have the following specific questions:

1) Does the GeoPort, like other personal computer modems on the market today, NOT support multiple-line analog phone lines?

2) In case a multiple-line analog phone line is custom-wired so the GeoPort always accesses the pair of wires it CAN run on, does the GeoPort in fact use the red and green pair?

DISCUSSION -----

An analog line into a building from a typical phone company is an RJ-11 public switched telephone network two-wire scheme, a tip and ring lead. These lines carry voice or data over the local loop into central office of the regional phone company that supplies the switching equipment, signaling equipment, and batteries for telephone operation, and then on to it's receiving end. Apple's GeoPort is like any other modem on the market today, it conforms to the same electrical standards used by the modem industry enabling it to communicate over public switched lines.

The GeoPort uses only a pair of the four wires. The GeoPort Telecom Adaptor is only wired for pins 2 and 3 (red/green) of the phone connector.

As for the GeoPort working on a multiple-line analog phone line: If the multiple-line analog phone line uses the telephone company standard, four conductor RJ-11 wiring, pins 2 and 3 (red/green) will be the wire pair a GeoPort

will use. Pins 1 and 4 (yellow/black) will have to be switched to pins 2 and 3 for operation with a GeoPort Adaptor.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16596

Tech Info Library

System 7.5: Grayed Out Items in General Control Panel (1/97)

Revised: 1/25/97
Security: Everyone

System 7.5: Grayed Out Items in General Control Panel (1/97)

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Article Created: 24 October 1994
Article Reviewed/Updated: 25 January 1997

TOPIC ----------

In the General Controls Control Panel, the option to enable Folder Protection is grayed out, why can't I set that option?

DISCUSSION ----------

System 7.5

These options will be grayed out if File Sharing is active. To use these functions, File Sharing must be turned off. If you set Folder Protection while File Sharing is off, and later turn it on, the Folder Protection feature will be disabled. You can have either File Sharing or Folder Protection, not both.

System 7.5.3

With System 7.5 Version 7.5.3, if folder protection is turned on for both the System and Applications folder, these folders cannot be renamed because of the protection feature as expected. If File Sharing is now turned on, the folder protection options in the General Controls control panel become grayed out. However, the System and Applications folders cannot be renamed as if folder protection had not been turned off.

By opening the General Controls control panel, which shows folder protection boxes grayed and indicate folder protection is off, and closing the control panel, you can now rename the protected folders indicating folder protection is now off.

It appears that turning on File Sharing does not actually turn off folder protection, if it had previously been turned on. However, because File Sharing is on, opening and closing the General Controls control panel turns it off because the buttons are disabled.

Article Change History:
25 Jan 1997 - Added System 7.5.3 information.

Copyright 1994-97, Apple Computer, Inc

Tech Info Library Article Number:16597

Tech Info Library

Macintosh 630 family: Three Methods for Zapping PRAM (10/94)

Revised: 10/24/94
Security: Everyone

Macintosh 630 family: Three Methods for Zapping PRAM (10/94)

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Article Created: 24 October 1994

TOPIC ----------

I need to fully clear the PRAM in my Macintosh 630 family computer, is there any other process other than holding down the Command-Option-P-R keys at startup?

DISCUSSION ----------

There are three ways to zap PRAM on the Macintosh 630 family computers.

Command-Option-P-R still zaps most of it, but there is also a red button near the SCSI connector on the logic board that needs to be pressed whenever the logic board is removed or replaced. The instructions for the User Installable Video Cards all say to press it just before the board goes back in the chassis.

Lastly, one could remove the battery for ten minutes then reinstall it.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16598

Tech Info Library

2.1 GB Hard Drive: Pin Configurations (11/94)

Revised: 11/22/94
Security: Everyone

2.1 GB Hard Drive: Pin Configurations (11/94)

==========

Article Created: 26 October 1994
Article Reviewed/Updated: 22 November 1994

TOPIC ----------

What are the exact function of 22 pin as well as the 4 pin connectors located on the Seagate 2.1 GB hard drive?

DISCUSSION ----------

Connector J4 consists of 11 sets of pins numbered 11 to 1 from bottom to top; they are arranged horizontally in this article for readability only. Pins are jumpered in a horizontal fashion.

The pin configuration and setup configuration are as follows:

pins	11	10	9	8	7	6	5	4	3	2	1
SCSI id = 0	0	0	0	0	0	0	0	0	0	0	0
SCSI id = 1	0	0	x	0	0	0	0	0	0	0	0
SCSI id = 2	0	x	0	0	0	0	0	0	0	0	0
SCSI id = 3	0	x	x	0	0	0	0	0	0	0	0
SCSI id = 4	x	0	0	0	0	0	0	0	0	0	0
SCSI id = 5	x	0	x	0	0	0	0	0	0	0	0
SCSI id = 6	x	x	0	0	0	0	0	0	0	0	0
SCSI id = 7	x	x	x	0	0	0	0	0	0	0	0
reserved	0	0	0	x	0	0	0	0	0	0	0
Parity disable	0	0	0	0	x	0	0	0	0	0	0
enable motor start	0	0	0	0	0	x	0	0	0	0	0
delay motor start	0	0	0	0	0	0	x	0	0	0	0
write protect	0	0	0	0	0	0	0	x	0	0	0
remote LED connector	0	0	0	0	0	0	0	0	x	0	0
reserved	0	0	0	0	0	0	0	0	0	x	0
spindle sync. cable	0	0	0	0	0	0	0	0	0	0	0

Connector J01 consists of 4 pins arranged as follows:

Pin 3 . . Pin 1

J01   . . Pin 2

The various configurations are as follows:

Term power from drive	Pins 1 & 2
Term. power from SCSI bus	pins J01 & 2
Term. power to SCSI bus	pins 1 & 3
Term. power to SCSi bus & drive	pins 1 & 3, 2 & J01

Article Change History:
22 Nov 1994 - Corrected layout description of connector J4.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16599

Tech Info Library

AppleDesign Powered Speakers II: Specifications (8/96)

Revised: 8/2/96
Security: Everyone

AppleDesign Powered Speakers II: Specifications (8/96)

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Article Created: 25 October 1994
Article Reviewed/Updated: 2 August 1996

TOPIC -----

This article contains the technical specifications of the AppleDesign Powered Speakers II.

DISCUSSION -----

Speaker Type

• Full-range, tuned-port, bass-reflex system

Output

• Maximum sound-pressure level (SPL) 90 dB at 0.5 m at 200 Hz
• Frequency Range: 150 Hz to 20 kHz
• Power 14 W

Maximum Input Voltage

• 2 volts peak-to-peak

Interfaces

• One stereo computer-sound input port
• One stereo CD/audio input port
• One stereo headphone output port

Control

• Volume on front panel

Power Supply Output

- 12 volts DC

Electrical Requirements

- Line voltage: 100 to 240 volts, depending on the power-supply module
- Frequency: 50 or 60 Hz
- Power: 24 W (maximum)

Size and Weight

- Height: 6.8 in. (175 mm)
- Width: 4.13 in. (107 mm)
- Depth: 3.94 in. (101 mm)
- Weight: 1.34 lb. (612 g)

System Requirements

- Any Apple Macintosh, Macintosh Performa, PowerBook, Power Macintosh, or Windows-based personal computer; CD or cassette player; or television that supports sound output.

Ordering Information

M3261LL/A
- Main (powered) speaker with amplifier and satellite speaker in slate color
- Power-supply module (120-volt input)
- Computer cable (with 3.5-mm miniplugs)
- CD stereo cable (3.5-mm miniplug to dual RCA jacks)
- Attached, insulated, dual-strand speaker-to-speaker cable with miniplug connectors
- User's guide
- Limited warranty

M2668LL/A
- Identical to M3261LL/A, but platinum in color to match Macintosh computers

Article Change History:
02 Aug 1996 - Article Reviewed.
03 Jan 1995 - Article reviewed.

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Tech Info Library Article Number:16600

Tech Info Library

LaserWriter 16/600 PS: Fax Can Use Print Spooler (10/94)

Revised: 10/25/94
Security: Everyone

LaserWriter 16/600 PS: Fax Can Use Print Spooler (10/94)

==========

Article Created: 24 October 1994

TOPIC ----------

Can the Apple LaserWriter 16/600 PS have faxes spooled to it using the AppleShare Print Server?

DISCUSSION ----------

Yes, you can spool fax jobs through an AppleShare Print Server just as you spool other print jobs. However, when Choosing an AppleShare Print Server as the "target" instead of the printer, you'll need to manually select the PPD:

1) Open the Chooser
2) Select the target server
3) Select "Setup"
4) Choose "Select PPD"
5) Select the LaserWriter 16/600 PS Fax PPD

You have to manually select the PPD because queries to the printer don't get routed through the spooler. Because of this, the print driver doesn't know what type of printer the job is sent to unless you manually select the printer.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16603

Quadra 630 and AppleShare Are Compatible (4/95)

Revised: 4/19/95
Security: Everyone

Quadra 630 and AppleShare Are Compatible (4/95)

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Article Created: 25 October 1994
Article Reviewed/Updated: 19 April 1995

TOPIC ----------

Is there a compatibility problem with the Quadra 630 computer running AppleShare 4.0.2?

DISCUSSION ----------

As of April, 1995 the Quadra 630 has been qualified to be an AppleShare 4.0.2 host, running Mac OS 7.1 or greater.

If your Quadra 630 running AppleShare has crashing problems, these crashes may be caused by SCSI problems that may be fixed with the 630 SCSI Update.

These articles can help you locate the 630 SCSI Update software update mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
19 Apr 1995 - Revised article with compatibility information.
22 Dec 1994 - Added 630 SCSI Update to article.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16604

Tech Info Library

3270 Terminal Emulator with Netware Gateway (10/94)

Revised: 10/25/94
Security: Everyone

3270 Terminal Emulator with Netware Gateway (10/94)

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Article Created: 25 October 1994

TOPIC ----------

I am looking for a 3270 terminal emulator with the following features:

- Functionally equivalence.
- A nice interface and bug free.
- Support for Netware SAA 1.3 gateway (not the SNA•ps Gateway).
- Support for APA graphics.

Plus the other standard features such as keyboard remapping, light pen support, IND$FILE Xfer.

DISCUSSION ----------

We have found two software packages that may be of interest. To be sure, we suggest calling the companies to verify the software package will do what you want.

A good resource is Redgate's, "Macintosh Product Registry," to research solutions.

The following companies may have software that meets your requirements. To locate a vendor's address and phone number, use the vendor name as a search string.

- Attachmate Corp. in Bellevue, Washington.

- Wall Data, Inc. in Kirkland, Washington.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16605

Tech Info Library

PowerBook, SCSI Manager 4.3, and FWB Driver Problem (10/94)

Revised: 10/26/94
Security: Everyone

PowerBook, SCSI Manager 4.3, and FWB Driver Problem (10/94)

==========

Article Created: 26 October 1994

TOPIC ----------

I'm experiencing crashes when using a PowerBook attached to a Power Macintosh as a SCSI disk. I have System Software 7.5 installed, and all of my hard disks are formatted with FWB, Inc.'s Hard Disk Toolkit.

Sometimes when I try copying a file to the PowerBook's hard disk, I crash. Why does this happen, and is there a work around?

DISCUSSION ----------

The problem you are having is the result of the combination of features in the FWB driver, SCSI Manager 4.3, and PowerBook computers.

The technical circumstances appear to be as follows: Some SCSI hard disks, such as those in PowerBook computers, have the ability to "disconnect" from the SCSI bus. This allows them to do other things, such as shutting down to save power. When the PowerBook is being used, the hard disk can start and stop running as needed to save power. When the PowerBook is used in SCSI disk mode, the hard disk should remain active.

The FWB driver software is able to take advantage of the "disconnect" feature of these hard disks. When the FWB driver is installed, the ability to disconnect from the SCSI bus is enabled, as a default setting.

"Desktop" Macintosh computers didn't previously have the ability to disconnect hard disks from the SCSI bus as a normal part of the system software. However, SCSI Manager 4.3 does have support for this ability. SCSI Manager 4.3 is now able to detect that a hard disk has the ability to disconnect, and it may allow the hard disk to disconnect from the SCSI bus.

FWB's work around is to reinstall the driver with the "Allow Disconnect" feature turned off. The work around for this can be found in the "Read Me" file that came with FWB Hard Disk Toolkit v1.6. The details of the work around vary,

depending on whether you are using the regular Hard Disk Toolkit or the "Personal Edition."

The details from FWB on how to do this are as follows:

For the regular product, you should run the "HDT Primer" application and choose "Configure Driver" from the "Driver" menu. The user can then disable the "Allow Disconnect" option.

For the "Personal Edition", users should hold down the Shift, Control, Option, and Command keys while clicking on the File menu of FWB's application. The user should then choose the "Update Driver" menu option. A dialog box called "Driver Configuration Parameters" will appear on the screen. At the bottom of the dialog box, there is a check box with no words next to it. Disabling this check box disables the "Allow Disconnect" functionality.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16606

Tech Info Library

LaserWriter: No Local Printing After Using ARA (2/95)

Revised: 2/9/95
Security: Everyone

LaserWriter: No Local Printing After Using ARA (2/95)

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Article Created: 25 October 1994
Article Reviewed/Updated: 9 February 1995

TOPIC ----------

There is a problem with a local LaserWriter appearing in the incorrect zone after dialing into a remote network with ARA 2.0. After initiating an ARA connection, the local printer appears in the Chooser to be in the remote zone (zone a), even though it is not actually in any zone. After selecting a remote printer and then terminating the ARA connection, the local printer still shows up in zone a. The Printer appears in the Chooser, but gives the error that it "cannot be found" when a job is sent.

DISCUSSION ----------

The problem is related to a known problem with the Chooser. The problem typically appears when attempting to connect to LaserWriters on AppleTalk networks that have no zone name; that is, those that have no routers attached. This problem could affect any Macintosh that had previously used printing services on an Ethernet network having zones.

What actually happens is the Chooser does not properly update the zone name stored in the driver when selecting a LaserWriter on a LocalTalk network with no zone name. You can verify this by looking at the 'PAPA' -8192 resource in the LaserWriter driver.

This problem is fixed in System 7.5. If you encounter this problem, you should upgrade to System 7.5.

Other than upgrading to System 7.5 you could:

• Keep two copies of the LaserWriter driver in the Extensions folder, one named "LocalLaser" and the other named "EtherLaser". Select the LocalTalk/Ethernet printer on the network having no zones with the “LocalLaser” printer driver and the other printer with the "EtherLaser" driver.

- Replace the LaserWriter driver every time the problem occurs.
- Add a router to the network that currently has none.

Article Change History:
09 Feb 1995 - Added keyword; made several technical updates.

Support Information Services

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Tech Info Library Article Number:16607

Tech Info Library

System 7.5 Scrapbook: Out of Memory Messages (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5 Scrapbook: Out of Memory Messages (2/95)

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Article Created: 25 October 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

After upgrading to System 7.5, I have noticed that the items I used to paste in the Scrapbook give me errors. I get multiple out of memory messages. Is the Scrapbook different in System 7.5?

DISCUSSION ----------

The Scrapbook in System 7.5 was re-written to provide greater functionality. Two of the new features are: support for drag and drop clippings, and the ability to resize. It was also rewritten as an application under System 7.5 rather than a desk accessory, which means that a certain amount of memory can be allocated for the Scrapbook application using the Get Info command in the Finder.

If you get multiple out of memory messages when opening the Scrapbook, then increase the preferred memory allocation 100-200K using the Get Info command (use the search string change program memory in Apple Guide for more information).

Article Change History:
16 Feb 1995 - Updated keyword.
09 Feb 1995 - Added keyword; made minor technical updates.

Support Information Services

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Tech Info Library Article Number:16608

Tech Info Library

PowerPC: Information on New Microprocessors (10/94)

Revised: 10/26/94
Security: Everyone

PowerPC: Information on New Microprocessors (10/94)

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Article Created: 26 October 1994

TOPIC ----------

Is there any information on future PowerPC microprocessors and availability?

DISCUSSION ----------

(October 17th 1994) Motorola and IBM announced today that the first 64-bit PowerPC processor - the 620 has hit first silicon. It is expected to begin general sampling in the second quarter of 1995 with general availability set for the second half of 1995.

The chip will initially ship running at 133MHz and the companies have taken the unusual step of specifying a maximum clock-speed design point: 150MHz. At 130MHz the estimated SPECint92 for the processor is 225 and the SPECfp 300. These results are for 32-bit code and the companies say that they would not expect to see a significant speed increase under the 64-bit mode. The single-chip processor contains 7 million processors, though a good proportion of these are used in the 64kB cache; split evenly between data and instructions.

Die size is 17.1mm x 18.2mm and programmers will be able to keep their toes warm in the long, dark winter evenings since the thing dissipates a toasty 30W at 133MHz.

Perhaps the most surprising thing about the processor is the lack of a radical design change. It looks very much like an evolution of the 604. For example the 620 has exactly the same number of functional units as the 604 - three integer units (one for complex math) one floating point unit, a branch unit and a load/store unit. The chip can fetch and dispatch up to 4 instructions per cycle. A little of the 620's extra speed comes from a slightly faster transistor design, but most comes from the extra cache and a general clean-up of the functional units. The L2 cache controller has also come on-board the processor and the designers have allowed for a massive cache capacity

configurable from 1MB to 128MB. There has also been a substantial design push to enhance multiprocessor support, with a new method of decoupling processing from the need to check cache-coherency on other processors. All in all, the designers say that this is a chip designed for fast transaction processing in mind.

Meanwhile IBM has announced availability and pricing for its 100MHz PowerPC 601, 100MHz PowerPC 604 and 66 and 80MHz PowerPC 603 microprocessors.

The 604 is sampling now and the company says it expects to begin full production in December.

Support Information Services

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Tech Info Library Article Number:16610

Tech Info Library

System 7.5: PowerCD Needs Its Own Driver (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: PowerCD Needs Its Own Driver (2/95)

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Article Created: 27 October 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

Since installing System 7.5, audio and data CDs inserted in my Apple PowerCD no longer mount on the desktop. If I open the AppleCD Audio Player, I get a message that no CD player could be detected.

Does System 7.5 have any support for the Apple PowerCD? Are they any compatibility issues associated with any version of the software bundled with the Apple PowerCD and System 7.5

DISCUSSION ----------

System Software 7.5 does not include any drivers for the Apple PowerCD player. The PowerCD player comes with its own software, which must be reinstalled if a clean installation of System 7.5 is performed. If you use the System 7.5 installer to update an existing System Folder that already contains the PowerCD software, it should not need to be reinstalled.

We are not aware of any compatibility issues with the PowerCD software and System 7.5. We tested PowerCD Setup version 1.0.1 with System 7.5, and were not able to find any problems.

The CD-ROM software that comes with System 7.5 is the same software that comes with other Apple CD-ROM drives. The Apple PowerCD has never been compatible with this software -- a design decision made during the development of the PowerCD player. Since this software was not compatible with the PowerCD player, it was not able to recognize CD-ROMs or audio CDs that were in the PowerCD player.

Article Change History:
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.
Support Information Services

..TIL16611-System_7-5-PowerCD_Needs_Its_Own_Driver_2-95_(TA32792).pdf

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Tech Info Library Article Number:16611

Tech Info Library

MAE 1.0a Patch Installer Script: CleanUpExit Problem (10/94)

Revised: 10/27/94
Security: Everyone

MAE 1.0a Patch Installer Script: CleanUpExit Problem (10/94)

==========

Article Created: 27 October 1994

TOPIC -----

While installing the MAE 1.0a Patch, I had a problem and canceled out of the install. I found that the installer script didn't correctly restore MAE to it's previous state. What's wrong?

DISCUSSION -----

There is a bug in the MAE 1.0a Patch system folder update script. The CleanUpExit function in the script improperly moves "MAE Enabler.SAVE" to "Finder" instead of moving "Finder.SAVE" to "Finder".

You can correct this by manually renaming (mv) "Finder.SAVE" to "Finder". The only time this problem occurs is when something goes wrong with the update process, which should seldom happen.

The following shows the errant portion of the install script:

```
  ## CleanUpExit ##
  function CleanUpExit
  {
!     /bin/mv "$sysfol_dir/MAE Enabler.SAVE" "$sysfol_dir/Finder"
      /bin/mv "$sysfol_dir/MAE Enabler.SAVE" "$sysfol_dir/MAE Enabler"
      exit 1
  }
```

The following shows what it should be:

```
  ## CleanUpExit ##
  function CleanUpExit
  {
!     /bin/mv "$sysfol_dir/Finder.SAVE" "$sysfol_dir/Finder"
      /bin/mv "$sysfol_dir/MAE Enabler.SAVE" "$sysfol_dir/MAE Enabler"
      exit 1
```

```
  }
```

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16612

Tech Info Library

LaserWriter Pro 630: Requires LaserWriter 7.2 or Greater (10/94)

Revised: 10/27/94
Security: Everyone

LaserWriter Pro 630: Requires LaserWriter 7.2 or Greater (10/94)

==========

Article Created: October 26, 1994

TOPIC ----------

I am using LaserWriter driver version 7.1.2 that came with System Software 7.1 to print to a LaserWriter Pro 630. When I select 'Print Window' or 'Print Desktop' nothing ever prints. The lights on the printer continue to blink until the printer is turned off and on again.

DISCUSSION ----------

The printer is experiencing a processing error. When printing to the LaserWriter Pro 630 on an Ethertalk network, the Macintosh should have version 8 of the LaserWriter driver, or version 7.2 supplied with the printer. Processing errors like this are common when using LaserWriter driver 7.1.2.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16613

Tech Info Library

Macintosh 630 Family: IDE Drive-Asynchronous Support (3/95)

Revised: 3/17/95
Security: Everyone

Macintosh 630 Family: IDE Drive-Asynchronous Support (3/95)

==========

Article Created: 26 October 1994
Article Reviewed/Updated: 17 March 1995

TOPIC -----

Does the IDE drive in the Macintosh 630 family support asynchronous transfers?

DISCUSSION -----

Disk drives can be either synchronous or asynchronous depending on the driver used. The driver determines if a drive will use asynchronous or synchronous communications. The IDE driver on the 630 family supports asynchronous communications. In general, Performa computers with 68040 processors running System Software 7.5, or Performa Computers with PowerPC processors, can support asynchronous drive communications.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Article Change History:
17 Mar 1995 - Corrected PowerPC wording.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16614

System 7.5 & QuickDraw GX: Finder:error type 11 (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5 & QuickDraw GX: "Finder:error type 11" (2/95)

==========

Article Created: 27 October 1994
Article Updated/Reviewed: 14 February 1995

TOPIC ----------

My System crashed, and now I am getting the error: "Finder:error type 11" whenever I start the system. If I remove QuickDraw GX, I do not get the error. I have reinstalled my System Software, reset the PRAM, and run Disk First Aid, and still get the error whenever I have QuickDraw GX installed.

DISCUSSION ----------

Try throwing away the Desktop Printer icon. This icon contains settings that could have gotten corrupted when your system crashed.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16616

Tech Info Library

PowerBook 500 Series: PowerPort 500 Error on Startup (5/95)

Revised: 5/19/95
Security: Everyone

PowerBook 500 Series: PowerPort 500 Error on Startup (5/95)

==========

Article Created: 27 October, 1994
Article Reviewed/Updated: 3 May 1995

TOPIC ----------

There appears to be an issue with the Global Village Modem Software installed in the PowerBook 500 Series computers that are running System 7.5.

DISCUSSION ----------

You may encounter the following messages:

• This Macintosh may not have been shut down properly

• Incoming Fax cannot be received because internal modem could not be identified. To identify the modem open up PowerPort control panel hold down option key and click on PowerPort text.

The PowerBook then freezes.

To fix this problem

Step 1:
Restart holding down the Space Bar to open Extensions Manager.

Step 2:
Disable the PowerPort 500 control panel by removing the check mark.

Step 3:
Close the Extensions Manager window to complete the start up process.

Step 4:
Open the General Controls panel and turn off the shutdown warning.

Step 5:
Open the Extensions Manager control panel, turn the PowerPort 500 control panel

back on, and restart.

If this does not solve the problem, restart with extensions off, and remove the following items from the System Folder:

- Queue Temp and GlobalFax Preferences files from the GlobalFax Personal folder
- GlobalFax Files and GlobalFax Personal folders
- PowerPort 500 control panel

Then reinstall the Global Village software from original disks. Move the GlobalFax addresses into your new folder. You may also want to save the Fax log, the cover sheets and received Faxes.

You should also be sure that the Apple Express Modem or Fax software is not installed as this may conflict with the Global Village modem.

This article was published in the "Information Alley":
Volume II, Issue 1, Page 8

Article Change History:
03 May 1995 - Added keyword; made minor technical updates.
31 Mar 1995 - Reviewed for technical accuracy.
07 Feb 1995 - Corrected article to only refer to System 7.5.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16617

Tech Info Library

LaserWriter: Wrong Screen Frequency Causes Negative Image 10/94

Revised: 10/27/94
Security: Everyone

LaserWriter: Wrong Screen Frequency Causes Negative Image 10/94

==========

Article Created: 27 October 1994

TOPIC -----

We are printing to a LaserWriter IINTX using Quark Xpress, and our photographed images are printing "negative" like images. Printing to a LaserWriter IINT has the same result. Our document printed fine on a previous LaserWriter printer.

DISCUSSION -----

The reason you are getting a "negative" image is that you are probably setting too high a screen frequency (Lines Per Inch) for your document. The higher the lpi, the lower the number of grays. When selecting a Quark PDF or Apple PPD file for the LaserWriter IINTX, the default lpi (lines per inch or screen frequency) setting is 150. With 150 lpi, you can only get about five levels of grays. What you need to do is to click the checkbox "Use PDF screen values" in Page Setup which sets the lpi to a lesser value (60), and allows for a greater number of grays.

Something you might want to remember is that Page Setup settings are stored with the document, so if the printer was working with a previous document, it probably had a "correct" lpi setting.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16619

Tech Info Library

System 7.5: Some Multiple Scan Displays Show One Size (3/95)

Revised: 3/6/95
Security: Everyone

System 7.5: Some Multiple Scan Displays Show One Size (3/95)

==========

Article Created: 27 Oct 1994
Article Reviewed/Updated: 6 March 1995

TOPIC ----------

I just installed Sytem 7.5 on my Macintosh Quadra 840AV, and now my Multiple Scan Display only lets me use a screen resolution of 640x480. Before I installed System 7.5 I could switch resolutions. How can get additional resolutions with System 7.5?

DISCUSSION ----------

The problem you are seeing is due to additional portions of the Display Enabler functionality added to System 7.5. If you use the Display Enabler with System 7.1, you have the same problem.

Workaround

Hold down the Option key while clicking on the Options button in the Monitors control panel. Holding down the Option key forces the Macintosh to display all available resolutions.

This problem only occurs on Macintosh Centris/Quadra 660AV and Quadra 840AV computers.

Article Change History:
06 Mar 1995 - Added keyword; minor updates.
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.
09 Dec 1994 - Clarified the topic question.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16622

Tech Info Library

LaserWriter Fax: Transmission rate supported (10/94)

Revised: 10/27/94
Security: Everyone

LaserWriter Fax: Transmission rate supported (10/94)

==========

Article Created: 27 Oct 1994

TOPIC ----------

What is the send baud rate supported by the LaserWriter Select 360 and LaserWriter 16/600 PS printers?

DISCUSSION ----------

The fax send/receive transmission rate for the PostScript Fax Option cards are 9600 baud; however, sophisticated PostScript Level 2 compression routines enable faxes transmissions to achieve an effective higher throughput when faxing another PostScript capable fax machine. Whenever faxing another PostScript capable fax machine, select the PostScript file fax option for optimal throughput. This also prints the fax out at the target printer's resolution, such as 600 DPI on the LaserWriter Select 360f.

You can also choose from two fax raster standards, Fine for sending CCITT Fax Group 3 high resolution (200x200) rasterized images, and standard (100x200) for standard rasterized images.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16623

Tech Info Library

LaserWriter: Must Download Latin 2 Character Set (10/94)

Revised: 10/27/94
Security: Everyone

LaserWriter: Must Download Latin 2 Character Set (10/94)

==========

Article Created: 27 Oct 1994

TOPIC ----------

I am trying to figure out how to print my Latin 2 characters and accents from the DOS side of my DOS Compatibility Card to my LaserWriter IINT. I understand that I need to use some kind of "download" program to do this. How do I do this?

DISCUSSION ----------

The problem is that the LaserWriter IINT printer does not support the Latin 2 symbol set, so it has to be downloaded to the printer.

There are several ways you can proceed. The easiest is to download the proper font from the Macintosh side and then print from the DOS side using the serial connection on the printer. This method requires you to use PostScript as your printing language.

1) Download the font in the Macintosh environment using the LaserWriter Utility.

2) Switch to MS-DOS, make sure the font is loaded in the application, and print as normal.

If you purchase PostScript fonts for Windows, they usually come with a utility to download the font.

Non-PostScript Program

If you are not using a PostScript capable program on the MS-DOS side, it is a little more difficult. You need to reformat the document on the Macintosh side (if possible) and print using a Macintosh program.

Support Information Services

..TIL16624-LaserWriter-Must_Download_Latin_2_Character_Set_10-94_(TA32804).pdf

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16624

Tech Info Library

LaserWriter 16/600 PS: No Interchangeable Parts (10/94)

Revised: 10/27/94
Security: Everyone

LaserWriter 16/600 PS: No Interchangeable Parts (10/94)

==========

Article Created: 27 Oct 1994

TOPIC ----------

Can I use the paper tray from the LaserWriter 600/630 on the LaserWriter 16/600 PS printer?

DISCUSSION ----------

The trays and sheet feeders for the LaserWriter 600/630 are not compatible with the LaserWriter 16/600 PS. However, the accessories for the LaserWriter 16/600 PS are backward compatible to the LaserWriter 600/630.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16625

Tech Info Library

LaserWriter 16/600 PS: No Upgrade From LaserWriter 600/630 10/94

Revised: 10/27/94
Security: Everyone

LaserWriter 16/600 PS: No Upgrade From LaserWriter 600/630 10/94

==========

Article Created: 27 Oct 1994

TOPIC ----------

Can I upgrade my LaserWriter Pro 630 to the LaserWriter 16/600 PS printer?

DISCUSSION ----------

There are no options to upgrade the LaserWriter Pro 600/630 to the LaserWriter 16/600 PS printer.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16626

Tech Info Library

Apple Hard Drives: Termination Requirements (10/94)

Revised: 10/28/94
Security: Everyone

Apple Hard Drives: Termination Requirements (10/94)

==========

Article Created: 28 October 1994

TOPIC -----

Hard drives or DAT drives may need to have the termination resistors removed or made inoperative on certain configurations of multiple drive systems or WorkGroup Servers. Below is a brief description of termination requirements for the different systems or WorkGroup Servers.

DISCUSSION -----

Computer Model	Termination Requirement
Quadra/Centris 660 AV Quadra/Centris 610 Power Macintosh 6100/60 Workgroup Server 60 Workgroup Server 6150	Hard Drive needs termination
Macintosh IIvx, IIvi Quadra/Centris 650 Power Macintosh 7100/66	Hard Drive needs termination
Quadra 800/840 AV	Last drive in line needs termination. Remove termination from all other drives installed, including DAT.
Power Macintosh 8100/80 Workgroup Server 8150	Has two internal cables: 1) Internal/external cable requires that all drives have no termination. Remove termination from all internal drives (termination is on cable) 2) The internal channel cable (max 1 drive only) requires termination.
Quadra 900	Remove termination from all internal

Quadra 950 drives (termination is on cable).
Workgroup Server 95
Workgroup Server 9150

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16628

Tech Info Library

Macintosh 630 family: Trouble Setting Date and Time (10/94)

Revised: 10/28/94
Security: Everyone

Macintosh 630 family: Trouble Setting Date and Time (10/94)

==========

Article Created: 28 October 1994

TOPIC --------------------

I am not able to get the date and time properly set on my Quadra 630. I have tried it with extensions off and it made no difference.

DISCUSSION --------------------

If you have trouble setting the date and time on a Quadra 630, the red reset button on the logic board needs to be pressed. This button resets the logic board.

Because of the possibility of damage to the logic board, this operation needs to be done by an authorized service provider.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16629

Tech Info Library

MicroMac Technology, Inc.

Revised: 10/28/94
Security: Everyone

MicroMac Technology, Inc.

==========

Article Created: 28 October 1994

MicroMac Technology, Inc., hardware and software, specializing in accelerator cards for the Macintosh.

MicroMac Technology, Inc.
27121 Aliso Creek Rd., Ste. 125
Aliso Viejo, CA 92656

714-362-1000
714-362-5428 (fax)

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16630

AWS 95: Disappearing MacPartition (10/94)

Revised: 10/28/94
Security: Everyone

AWS 95: Disappearing MacPartition (10/94)

==========

Article Created: 28 October 1994

TOPIC ----------

I have two relatively new Apple Workgroup Server (AWS) 95 computers. I believe each has the last version of the software, including the patches that have been released. Both have been in action for about 30 to 60 days. For some unknown reason, the they no longer show the MacPartition after launching A/UX.

The computers startup normally, showing the MacPartition and auto-launch A/UX startup. Both computers launch A/UX, the finder, and auto-launch AppleShare file and print services as expected. However, the MacPartition never mounts on the desktop once UNIX is launched, and is no longer visible from the finder.

If we then run HD Setup and update the drivers on the MacPartition, the MacPartition mounts upon quitting HD Setup. After one restart, the MacPartition will again disappear.

We tried erasing the MacPartition and reinstalling the software that is normally there, but it did not solve the problem. Any suggestions?

DISCUSSION ----------

You must have had the "Password Checking" enabled in A/UX 3.1 Startup.

In A/UX 3.1 it has been reported that if the "Password Checking" was turned ON in A/UX Startup, the MacPartition (in AWS 95 boot volume) will be hidden from all users, including the root super-user. This symptom has been submitted as an enhancement request since AWS 95 A/UX 3.1 was released.

This behavior has been changed with the release of the AWS 95 Tune-Up 2.0, which is expected to be released in the next couple of weeks.

The only workaround, until AWS 95 Tune-Up 2.0, is to disable "Password Checking" in A/UX StartUp.

..TIL16631-AWS_95-Disappearing_MacPartition_10-94_(TA32811).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16631

Tech Info Library

LaserWriter 8.x: Cover Page Printed With Every Document (10/94)

Revised: 10/28/94
Security: Everyone

LaserWriter 8.x: Cover Page Printed With Every Document (10/94)

==========

Article Created: 28 October 1994

TOPIC -----

Whenever I print a document an extra page is printed with information that resembles the following:

```
  User          John Doe
  Application   Print Monitor
  Document      README- System 7
  Date          Sat. Oct 22 94
  Time
  Printer       LaserWriter 16/600 PS"
```

Why is this page printed and how can I turn it off?

DISCUSSION -----

The LaserWriter 8 driver allows you to specify whether or not to print a cover page with each print job.

Modifying the Settings
---
1) Select 'print'

2) Press the 'options' button
   The top option determines whether there should be a cover page, and whether it should print before or after the print job.

3) Select 'none' and the cover page no longer prints

The buttons are sticky so they remember the settings from the previous print job.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16633

Tech Info Library

Quadra 840AV: Unusual Ethernet Address (10/94)

Revised: 10/31/94
Security: Everyone

Quadra 840AV: Unusual Ethernet Address (10/94)

==========

Article Created: 31 October 1994

TOPIC ----------

By Option-clicking on the Ethernet icon in the MacTCP Control Panel, I am getting the Ethernet hardware address of my Quadra 840AV. The address I get back is nothing like everyone else's which starts with 08.

Is this number correct, or invalid? It seems exceptionally high. If this number is invalid, what should I do?

DISCUSSION ----------

Apple provides a mechanism that allows the physical Ethernet address of a card or system to be different than the physical Ethernet address built in to the Ethernet card or Macintosh logic board.

The "aa 00 04" is registered for use by DECnet nodes. TSSnet from Thursby Software Systems changes the physical Ethernet address by adding an 'eadr' resource to the System file. Inside this resource is 6 bytes that make the physical address that is to be used.

If the customer is not using DECNet software and wants to change back to the real physical Ethernet address, they can remove the 'eadr' resource from the System file or delete the System Folder and reinstall.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16634

Tech Info Library

Softkey International (2/95)

Revised: 2/20/95
Security: Everyone

Softkey International (2/95)

==========

Article Created: 31 October 1994
Article Reviewed/Updated: 20 February 1995

Softkey International
---
450 Franklin Road
Suite 100
Marietta, GA 30067

Phone: (404) 428-0008 (Technical Support)
. (800) 826-0706 (Customer Service)

Company Profile: Softkey International purchased several companies and combined them into one company. The companies purchased are WordStar International, Power Up!, Spinnaker, and Software Marketing.

Softkey makes several software products for the Macintosh, and Windows/DOS platform.

Article Change History:
20 Feb 1995 - Added Customer Service number.

Support Information Services

Copyright 1994-95, Apple Computer, Inc

Tech Info Library Article Number:16636

Tech Info Library

Apple Presentation System: Specifications (7/95)

Revised: 7/31/95
Security: Everyone

Apple Presentation System: Specifications (7/95)

==========

Article Created: 31 October 1994
Article Reviewed/Updated: 31 July 1995

TOPIC ----------

This article gives specifications for the Apple Presentation System.

DISCUSSION ----------

Technical Specifications

• Macintosh Computer Compatibility:
. Any PowerBook with VGA video, Macintosh LC, Performa 400-600 models,
. Centris, Quadra, or other Macintosh system equipped with video out.

• Television Compatibility:
. Works with any television monitor any size. For a television receiver,
. RF Modulator required (not included).

• Color Models and Resolution:
. 1, 2, 4, 16, 256, 32,768, or 16,777,216 colors

• User-Definable Options:
. Flicker reduction, stabilize mode, horizontal squeeze, and vertical
. shift.

• Video Output:
. - Composite NTSC or PAL color video 1 volt p-p. 75 ohm "VCR Style"
. RCA connector
. - S-Video connector

• Screen Format:
. NTSC compatible video

• Software Included:
. Proprietary Screen Squeeze software for optional underscan mode with

. Macintosh computers. Ensures entire picture visible on television or
. videotape.

• Power Supply:
. Maximum consumption: 9 volt DC, 800 mA

Modes of Operation

• Presentation Mode: Mirrors image on the Macintosh monitor.
• Television Only Mode: Only a television is connected.
• Video Record Mode: VCR is connected instead of a Television. Enables
. recording of computer images onto videotape.

Packing List

L•TV Portable Pro box
User's Guide
Video input cable (DB15-DB15)
S-Video cable
Composite video cable
Screen Squeeze software
Adjustment tool
Power supply
Reg card
Interactive Multimedia

System Requirements

The Apple Presentation System works with any Macintosh computer with a DB-15 video out connection.

Support

The Apple Presentation System is supported by Focus Enhancements.
The Interactive Multimedia CD is supported by IMC.

All specifications provided by Focus Enhancements.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
31 Jul 1995 - Added keyword.
15 Nov 1994 - Corrected packing list.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16637

Tech Info Library

LaserWriter Select 360: Prints Extra Information Page (10/94)

Revised: 10/31/94
Security: Everyone

LaserWriter Select 360: Prints Extra Information Page (10/94)

==========

Article Created: 31 October 1994

TOPIC ----------

When sending print jobs to my LaserWriter Select 360, I always receive an extra page with the following information printed on it:

User "User Name"
Application Print Monitrp
Document PS OHPH
Date Sat. Oct 22 94
Time 10:00 AM
Printer LaserWriter Select 360"

What is this page and can I disable it?

DISCUSSION ----------

The LaserWriter 8 and later drivers let users specify whether a cover page is or isn't printed with each print job. The information you provided in your request indicates that the cover page feature is turned on. Once selected the buttons will remember a setting from the previous print job.

To modify the settings, select print from the File Menu within any application, and click the Options button. The very top option determines whether there should be a cover page, and whether it should print before or after a print job. Click the None radio button and cover pages will no longer print.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16638

Tech Info Library

MAE: Floating Point (Math) Coprocessor Support (10/94)

Revised: 10/31/94
Security: Everyone

MAE: Floating Point (Math) Coprocessor Support (10/94)

==========

Article Created: 31 October 1994

TOPIC ----------

Does MAE support applications that require a math coprocessor? If not, can I use SoftwareFPU to use those applications?

DISCUSSION ----------

No, MAE emulates a Motorola 68LC040 processor, and does NOT support applications requiring a Floating Point (math) Coprocessor (FPU). Also, SoftwareFPU does not work under MAE.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16639

Tech Info Library

System 7.5 and Long Startup Times (4/95)

Revised: 4/7/95
Security: Everyone

System 7.5 and Long Startup Times (4/95)

==========

Article Created: 31 October 1994
Article Reviewed/Updated: 7 April 1995

TOPIC ----------

User complains that "bootup is too long" after installing System 7.5 -- that it takes a long time for their Macintosh running System 7.5 to restart? This article describes two areas to check for possible situations that could slow down your computer.

DISCUSSION ----------

Building of the Apple Menu Submenus

When using System 7.5 and the Apple Menu Options control panel with Submenus turned on, there can be a noticeable delay as the Finder launches. What is happening is the building of the Apple menu hierarchical pop up menus. Depending on how many folders are present under the Apple menu, the delay before the Finder is ready for operation may be very noticeable. Including an alias to the hard drive itself, which allows for hierarchical navigation of the disk file system, causes the longest delay for the Finder to fully examine the disk’s folder organization down to five levels.

Try turning off the Submenu option in the Apple Menu Options control panel to see if this is what is causing the delay. Removal of an alias to a hard drive is another option to try. As another alternative, you can try the many commercial utilities such as Now Menus, HAM, and MenuExtend, or shareware products like BeHierarchic, MenuChoice, and so on that support hierarchical Apple menus. These third party products offer different features from Apple Menu Options and have different approaches when they build, update, and cache the pop up menus.

Personal File Sharing

Check to see if you are running Personal File Sharing. Personal File Sharing initialization takes place in parallel with the initial availability of the Finder, but can be noticed by the sound of disk activity after the Finder is

ready to use. Initialization of File Sharing can depend on the number of items shared and the complexity of access privileges.

Occasionally, the integrity of the AppleShare PDS file can become corrupted, causing long initialization and a lot of disk activity. Deletion of the AppleShare PDS file and recreation of the access privileges restores the integrity of the file and shortens File Sharing startup time.

As the file is invisible, you must delete it with ResEdit or a third-party utility that can view invisible files. Use the utility to make the PDS file visible on the desktop so that it can be trashed from the Finder.

Article Change History:
07 Apr 1995 - Made minor technical updates.
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16642

Tech Info Library

Macintosh Performa: System 7.5 Installation Problems (5/95)

Revised: 5/19/95
Security: Everyone

Macintosh Performa: System 7.5 Installation Problems (5/95)

==========

Article Created: 31 October 1994
Article Reviewed/Updated: 18 May 1995

TOPIC ----------

I am trying to install System 7.5 on my Macintosh Performa computer, but it fails the installation. Each time I try the installation, I get a generic error message saying it cannot install System 7.5 on my hard drive.

DISCUSSION ----------

You may have a folder lock conflict.

Prior to System 7.5, the Macintosh Performa computers used a slightly modified version of System 7.x. One of the additional control panels is the Performa Control Panel. It provides folder protection by locking the folder so items cannot be accidentally removed. Only the System folder and the Application folder can be locked using the Performa control panel.

Before you can install System 7.5, you have to turn off System folder protection in the Performa control panel. Under System 7.5, you can turn System and application folder protection off and on using the General control panel.

This article was published in the "Information Alley":
Volume II, Issue 2, Page 19

Article Change History:
18 May 1995 - Minor updates; added Info Alley information.
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16644

Tech Info Library

Newton: Types of Memory & Memory Errors (11/94)

Revised: 4/21/97
Security: Everyone

Newton: Types of Memory & Memory Errors (11/94)

==========

Article Created: 31 October 1994
Article Reviewed/Updated: 22 November 1994

TOPIC -----

This article describes the different types of memory on the Newton MessagePad, how to get the most out of your existing memory, and memory related errors.

DISCUSSION -----

The Newton has two kinds of memory, system memory and user storage. System memory is analogous to the RAM memory in a desktop computer, user storage to the storage space on a disk drive. The memory space reported in the Memory Preferences window is for user storage. There are shareware packages that measure system memory (heap space), but it is not displayed by the Newton system software. This system memory is further broken down into different uses, but we won't expand on what they are in this discussion. It is in the system memory that programs actually run and store the intermediate data that they create. Permanent data, as well as the packages themselves are stored in the user storage.

When an out-of-memory-restart error occurs, the Newton runs out of system memory. That is, some part of the system or a package made a request to use system memory and that request failed due to insufficient memory. The machine was unable to proceed without the memory so it did the only thing that it could, offer to reset the Newton MessagePad. In simple terms, it offered to wipe the slate clean and start again. Tapping reset in the error dialog has the same effect on system memory as opening the battery door and pressing reset.

Normally there is enough system memory to go around. For instance, many members of the PIE (Personal Interactive Electronics) division have been running MessagePad 110's since product launch and never gotten an out-of-memory-restart error. But, each time you load a package, either by downloading, or by inserting a PCMCIA card, that package is "installed". Installation integrates the package into the Newton. It uses some small amount of system memory to do this. Install enough packages, and the Newton MessagePad runs out of system memory. If this

were the only cause of out-of-memory-restart errors, the problem would rarely occur. Installing a package takes up only a few hundred bytes. Installing hundreds of packages would be required to run out of memory this way.

Removing the PCMCIA card or removing the software from the card or the internal user storage removes not only the package, but also the integration information, thereby freeing up the same small amount of system memory.

Packages can do other things to make permanent use of system memory. They can create objects and then leave references to those objects around so the system can't get rid of them. Resetting the Newton removes all these objects and references until a package creates them again. It is this "garbage data" left around by packages that contributes to memory problems. There are packages that leave around 20K bytes or more of data each.

Why does this limitation exist?

On a desktop computer whenever you close or quit an application, the information for that application is eliminated and the memory space reclaimed. Only when many applications are run simultaneously does a system run out of memory . You can attempt to run one application that asks for more memory than is available, but this is a less common case. Most applications know how to live within their own memory allocation. The system only has problems when several of them are run simultaneously.

It is this issue of running simultaneously that we need to address. Not enough has been said about the Newton MessagePad architecture in the press or in the developer manuals. The Newton MessagePad is a new and different kind of platform. It has distinct advantages that are not possible with older machines (operating systems). It also has limitations, some of which are imposed by the new architecture.

Consider a Macintosh or a Windows computer. A typical user has 8 to 32 megabytes of RAM and at least 120 megabytes of disk. However, there are still many Mac Plus computers out there with 1 Meg of RAM and a 20 Meg disk. These arguments apply to them too, it's just a matter of scale. When running a program on this type of machine, memory is allocated to the program when it is loaded from the disk, perhaps a data file is loaded from the disk, and the program's function is performed. Afterward the program and the data are flushed from the RAM and the memory is reused to run the next program. When the program is not running, it's dead. It can't receive messages, it can't respond to changes in its files, it can't communicate.

Consider the size of that machine. There will be a day when 8 megabytes of RAM, 120 megabytes of disk and the power to run them will fit in the palm of your hand and cost less than $600, but that day has not arrived yet.

The Newton MessagePad architecture is targeted at machines you can hold in your hand for less than $600 today. That means that the storage of the machine must be compressed in space and cost (not to mention battery power requirements). It is this compression that led to Apple's creation of NewtonScript, an interpreted language that is far more memory efficient than C or C++.

The Newton MessagePad architecture is also targeted at being a personal assistant. As an assistant, all of its functions should be available all the time. Even more importantly, it has an object oriented database, called "soups", rather than files so that Newton functions and packages have access to all the data. Cross functional (inter-package) access to data is allowed and even encouraged.

Even when it's not "running", a Newton package can respond to changes in its soups, it can respond to incoming data from modem, network, IR, or even messages from other packages.

Newton packages can access the data in another package's soup. A fax editor package can make use of the Names soup for its address book. It can get its data from the NotePad, or from an e-mail message. A Contact Manager package can make use of the Names soup to look up contact information. It can schedule items into the To Do list, or the Calendar. Apple calls this Newton Intelligence.

There are single applications on desktop computers that integrate these sorts of cross functions. These "all in one" applications exist because desktop machines have not yet learned how to have the separate applications work together. As a result, you can't have your favorite address book program communicate with your favorite calendar program to create a contact manager function. The two programs don't talk to one another.

Newton packages need to always be active in some way. When a package is loaded into the Newton, the package tells the system about itself and its soups. It prepares itself and the system to deal with its soup data and messages it might receive. This causes the package to take up system memory even though the user has not opened it. Again, only a very small amount of memory is used up for this capability.

Not every package on the Newton, including those from Apple, has yet to exploit all of the Newton's advantages. That is why it is important to get this message out. Developers need to create packages that make use of Newton Intelligence. A package which duplicates the information in another package's soup is wasting storage space. In a sense, a package that duplicates the function of another package is also wasting space. Packages should work together, use one another's soups, and only provide the new functions that don't already exist.

Users who load packages that leave "garbage data" around will eventually see out-of-memory-restart messages. The way to minimize this problem by not loading packages that require a lot of permanent system memory. Watch out for these packages and put them on a separate card. Run these packages by themselves. When you are through running them, the Newton MessagePad should be reset. This is an extreme measure, and only applicable if you are getting a lot of out-of-memory-restart errors.

Here is another strategy. When you identify a particular package or combination of packages that causes out-of-memory-restart errors, break up that particular combination. "Break up" means don't have that combination installed simultaneously. If you install lots of packages internally, move some of them to cards that aren't normally loaded in the Newton MessagePad. If a couple of packages are suspected of causing problems, then move them to separate cards so

that they are not loaded at the same time. Remove packages that have little or marginal value.

As developers learn more about the Newton MessagePad, fewer packages will waste space. Even now, the Newton performs well for the majority of customers. It offers users and developers features that electronic products have not had available before. Apple hopes more developers will take advantage of the unique Newton architecture and build products that make efficient use of existing soups and Newton functions. This will lead to a powerful integrated Newton system.

Questions & Answers

Q: How can customers identify packages that use more system memory?

A: There are various shareware packages that measure system memory (heap space). Users with access to one of these packages can measure the amount of system memory a package uses by measuring the system memory just before and just after running the package the first time. The amount that the system memory goes down is the amount used by the package. If the amount is more than one or two kilobytes then that package is using more memory than it should.

Users who don't have access to a package that measures system memory, will have to infer which packages are causing problems. When out-of-memory-restart errors are frequent, the installed combination of packages is straining the Newton. Try to break up that combination until the errors stop. It's sort of like tracking down conflicting extensions on the Macintosh or conflicting memory resident applications on the MS-DOS PC.

Q. Is removing install scripts with a soup editor such as RemoveIt, StewPot, or Souper a good or bad idea to increase system memory?

A. It's a bad idea. The install script may contain code that the package needs while running. The package authors need to be the ones to modify a package to use less system memory. It's not a good idea to try and second guess the authors of the package.

Article Change History:
22 Nov 1994 - Renamed article.
07 Nov 1994 - Titled changed to reflect article.

Support Information Services

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Tech Info Library Article Number:16645

Tech Info Library

HyperCard 2.2: Can't Access Tool Palette (10/94)

Revised: 11/1/94
Security: Everyone

HyperCard 2.2: Can't Access Tool Palette (10/94)

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Article Created: 31 October 1994

TOPIC ----------

I am using HyperCard 2.2 on my Macintosh Quadra 630 and I want to access the Tools palette by hitting option-tab. I get the message that the Apple Video Player cannot find the appropriate hardware to activate.

DISCUSSION ----------

The option-tab key combination to access the Tools palette in HyperCard 2.2 is also the same default key combination to turn on the Apple Video Player.

The Macintosh Quadra 630 does not come with the Apple Presentation System or the Apple Video/TV System pre-installed, so the Apple Video player application cannot startup.

To avoid this error message do the following:
1) open the Apple Video Player
2) access the Setup menu
3) select Hot Keys
4) change the key combination to activate the Apple Video Player
   to something other than option-tab.

The next time option-tab is used to access the Tools palette in HyperCard, the Tools palette will be activated, not the Apple Video Player application.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16647

AppleScript: Some Control Panels are Scriptable (11/94)

Revised: 11/1/94
Security: Everyone

AppleScript: Some Control Panels are Scriptable (11/94)

==========

Article Created: 1 November 1994

TOPIC -----

I want to write a script that will toggle "Show Desktop in Background" feature of 7.5 General Control Panels.

DISCUSSION -----

The Scriptable Finder should be looked upon as a first release of product whose capabilities will increase and improve.

Control Panels are a special class of Finder objects, not applications. Currently, the General Control Panel has no scripting capability. Applications such as Desktop Patterns can be implemented with their own scripting capability. A few Control Panel such as the Views control panel have some scriptable features, and to a limited extent, so do Sharing Setup and Users & Groups. Monitors settings have been addressed through Scripting Additions.

Since Control Panels are Finder entities, their scripting definition have to be embedded into the Finder's Dictionary. The current presence of scriptability of a Control Panel function is certainly related to the probable frequency of use. For example, how often does one change the Date & Time or set the names or colors on Labels as opposed to changing a folder view or starting file sharing? Likewise, it probably would not offer a lot of additional functionality to be able to script the MacTCP Control Panel.

With respect to toggling "Show Desktop in Background", AppleScript does not provide that option. Like your Mouse Speed, this function falls in the category of a user setting it once and leaving it that way.

The many setting within Control Panels is where other OSA compliant extensions, like QuicKeys or Frontier, can step in and assist. QuicKeys and Frontier use a different model of scripting and each has weaknesses and strengths compared to AppleScript. A strength of QuicKeys is that it can script almost any application, desk accessory, or Control Panel, whether they are

AppleScript-aware or not.

Support Information Services

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Tech Info Library Article Number:16648

Tech Info Library

PC MultiMedia Kit: Manual Install of Sound Card SW (11/94)

Revised: 11/1/94
Security: Everyone

PC MultiMedia Kit: Manual Install of Sound Card SW (11/94)

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Article Created: 1 November 1994

TOPIC ----------

The following are the instructions for installing the Sound Card software for the PC MultiMedia Kit.

DISCUSSION ----------

Here are the steps for a manual install:

1) Make sure you are at the c:\ prompt, insert Spectrum disk into the drive
2) Type in "xcopy x: c:\spectrum<cr>" where "x" is the drive the Spectrum floppy is in.
3) If the c:\spectrum directory does not exist, the system will ask you if c:\spectrum is supposed to be a file or a directory. Hit "d" for directory, and the files from the Spectrum disk will be copied to the newly created Spectrum directory on the c: drive.
4) After the copy is completed, type "cd c:\spectrum<cr>". You are now in the Spectrum directory.
5) Type "lharc e programs.lzh<cr>". If it asks you if you want to overwrite any files, answer yes.
6) Edit the config.sys file by typing in "edit c:\config.sys<cr>". Add the following two lines:
   device=c:\spectrum\mvsound.sys d:x q:y s:1,220,1,5 M:0 J:0
   device=c:\spectrum\tslcdr.sys d:/mvcd001
   (where "x" = the DMA channel desired and "y" = the IRQ desired)
   hit <alt>F, then "x", then hit <cr>. Alt-F pulls down the "file" menu, "x" is for ext, and <cr> answers yes to save the file.
7) MAKE SURE YOU BACK UP THE SYSTEM.INI FILE BEFORE DOING THIS!
   Type "edit c:\windows\system.ini<cr>" to add the proper lines to the system.ini file if also installing the software for Windows.
8) Add the following to the system.ini file:
   Under the [386Enh] section:
   device=vpasd.386
   dmabuffersize=64

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      Under the [mci] section
      mixer=mcimixer.drv

      Under the [drivers] section
      Wave=mvproaud.drv
      MIDI1=mvproaud.drv
      Aux=mvproaud.drv
      MIDI2=opl3.drv
      Mixer=mvmixer.drv
      midi=opl3.drv

    Add the following sections at the end of the system.ini file, include the
    lines listed under the section headings:

    [mvproaud.drv]
    dma=x          (where "x" = the DMA channels set in the config.sys file)
    irq=y          (where "y" = the IRQ set in the config.sys file)

    [opl3.drv]
    drumchannel=10
    patchfile=(none)

    [Multimedia.Setup]
    audio=mvproaud.drv,0,0,0

 9) Reboot the machine.  If it hangs, then boot to floppy and change the
    values for "d" and/or "q" in the "mvsound.sys" line.  The best thing to
    do again is to get a diagnostic program to tell you which DMA/IRQ
    channels are available, so you don't have to keep trying different
    combinations. The install program is NOT reliable enough to determine
    free DMA/IRQ channels 100% of the time.  Manually loading the software
    as described above will work almost all of the time.
10) After a successful boot, type "cd c:\spectrum<cr>" then type "playfile
    testdma.wav<cr>". This will test the sound card. If you hear sound
    (assuming the speakers are connected correctly), then everything is set
    up correctly and working properly. If you don't hear sound, check for
    possible DMA and/or IRQ conflict.

If you have tried a DMA/IRQ combination that you know is free and the machine
still hangs, its possible you have either a corrupted driver or an old driver.

The "mvsound.sys" line is the sound card device driver.
The "tslcdr.sys" line is the cdrom device driver.  Notice that you MUST add
"mscdex.exe" to the autoexec.bat file to be able to access the CD-ROM drive. See
the DOS documentation for information on mscdex.exe

Some things to watch out for:
1. Incompatible device drivers or tsrs. If the sound card device driver
   hangs the machine and you know it's set to a valid DMA/IRQ combination
   AND you know the driver to be good, eliminate other driver/tsr conflicts
   by loading the spectrum device driver by itself.
2. Board conflicts: If the machine is loaded with expansion boards (modem,
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network card, SCSI card, etc...) it could be that you DON'T have any DMA or IRQs left! Be sure you KNOW what all boards in the system are set to, so you can avoid conflicts.

3. Corrupted drivers.

Support Information Services

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Tech Info Library Article Number:16649

Tech Info Library

System 7.5: Problems with Video Mirroring (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: Problems with Video Mirroring (2/95)

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Article Created: 1 November 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

Ever since I installed System 7.5 on my PowerBook, I have been experiencing system crashes when I try to use Video Mirroring. The crash always occurs when I select a menu item from the Label menu in the Finder.

DISCUSSION ----------

This behavior seems to only occur under the following conditions:

- System Software 7.5 is installed.
- Video mirroring is enabled.
- 32-bit addressing is disabled.

It appears that the problem does not occur when 32-bit addressing is turned on. Check to see that 32-bit addressing is turned on when using the video mirroring functionality. Doing this should keep the problem from reoccurring.

Article Change History:
14 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16650

Tech Info Library

Color StyleWriter 2400: Cartridge Missing Error (11/94)

Revised: 11/1/94
Security: Everyone

Color StyleWriter 2400: Cartridge Missing Error (11/94)

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Article Created: 1 November 1994

TOPIC ----------

I am trying to print using my Color StyleWriter 2400, but I get an error message that the cartridge is missing or not installed correctly. I have verified that the cartridge is installed properly, and I can print a test page, I just can't print anything from my Macintosh.

DISCUSSION ----------

If you are using a LocalTalk cable instead of a serial cable, this error message appears. Unless you purchased the LocalTalk option, you should be using a Peripheral 8 cable, not a LocalTalk cable with the Color StyleWriter 2400.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16651

Tech Info Library

Color StyleWriter Pro: Vertical Lines Not Always Straight 11/94

Revised: 11/1/94
Security: Everyone

Color StyleWriter Pro: Vertical Lines Not Always Straight 11/94

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Article Created: 1 November 1994

TOPIC ----------

I have a Color StyleWriter Pro and looking very closely at the output, vertical lines don't appear perfectly straight. Every 1/4-in. or so, the line seems to "notch" over. The line looks like 1/4-in. line segments joined together to form the line. This only occurs with vertical lines.

Why this is happeining?

DISCUSSION ----------

The seperation in the line segment is due to the print head being slightly tilted. You can think of the print head as having four parallel columns, each mapping to one of the CYMK colors, and each having 64 nozzles situated vertically. The nozzles, however, are not perfectly straight up and down but on a line that is slightly off from the 90-degree plane. Each column is around 1/4-in. in length, so to draw a vertical line all of the 64 nozzles fire (using the appropriate color) with each pass of the print head. So, the starting point of the top nozzle is slightly off from the dot left by the bottom nozzle's previous pass. This is what you are seeing.

In terms of getting a perfectly straight vertical line, we have found that using "BEST" mode shows very little trace of this problem.

Support Information Services

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Tech Info Library Article Number:16652

Tech Info Library

LocalTalk: Using with Windows NT (11/94)

Revised: 11/16/94
Security: Everyone

LocalTalk: Using with Windows NT (11/94)

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Article Created: 1 November 1994
Article Reviewed/Updated: 16 November 1994

TOPIC ----------

Can I connect to an AppleTalk network from a Windows NT server? Can I use a LocalTalk cabling system? Are there any sources that document how to connect to a Macintosh network from a Windows NT server?

DISCUSSION ----------

With the installation of a Daystar Digita LocalTalk PC card, you can access WindowsNT Server volumes using LocalTalk. This option is available under the "Services for Macintosh" portion of the Windows NT Advanced Server 3.1 or Windows NT Server 3.5 products.

With a LocalTalk PC card and ethernet card installed, the Windows NT Server product can also serve as a router between ethernet and localtalk.

For Windows NT support over Ethernet, install the Macintosh services from within Windows NT. The Windows NT documentation explains how to install the Macintosh services portion of Windows NT. If you find that the documentation does not give you the information you need, Windows NT Unleashed published by SAMS Publishing is available.

Article Change History:
16 Nov 1994 - Added additional information on using LocalTalk.

Support Information Services

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Tech Info Library Article Number:16654

Tech Info Library

LaserWriter GX Driver: Problems with GX-Savvy Apps (4/96)

Revised: 4/15/96
Security: Everyone

LaserWriter GX Driver: Problems with GX-Savvy Apps (4/96)

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Article Created: 1 November 1994
Article Reviewed/Updated: 15 April 1996

TOPIC ----------

There are inconsistencies with the Page Setup options in LaserWriter GX when using GX-savvy applications. For example, the 300 and 600 dpi (dots per inch) settings do not seem to print correctly. Page Setup always comes up with 300 dpi as the default resolution instead of the resolution to which the printer has been set using the LaserWriter Utility. Also, Balloon Help reports incorrect information when pointing to the 300 and 600 dpi buttons.

DISCUSSION ----------

Resolution

This issue has been resolved in QuickDraw GX 1.1.x. In order to use QuickDraw GX 1.1 (or later), you must have at least System 7.5 installed. Apple recommends that you always use the latest version of QuickDraw GX, which is available from the online services.

Workaround

If you are using a version of QuickDraw GX that is earlier than 1.1, you can follow the instructions below as a workaround.

The names of the 300 and 600 dpi buttons are reversed. The first button marked 600 dpi actually has the functionality of 300 dpi, and the 300 dpi button the functionality for 600 dpi. Balloon Help actually reports the correct information about the buttons' functionality. Unfortunately, the checkboxes for PhotoGrade and FinePrint are tied to the incorrect buttons so the workarounds are not as easy as selecting the opposite buttons.

LaserWriter Pro 630 and LaserWriter Select 360

Steps to selecting DPI, PhotoGrade, and FinePrint:

To print at 300 dpi

Select the 600 dpi button.

	To enable...	Select...
.	PhotoGrade	300 dpi and check PhotoGrade. Reselect 600 dpi.
.		NOTE: The LaserWriter Select 360 does not support PhotoGrade printing.
.	FinePrint	300 dpi and check FinePrint. Reselect 600 dpi.

To print at 600 dpi

Select the 300 dpi button. Ignore the FinePrint and PhotoGrade buttons. The LaserWriter Pro 630 and LaserWriter Select 360 printers automatically disable FinePrint and/or PhotoGrade at 600 dpi.

The default dpi is always 600 dpi. Again, the 300 dpi button is selected, which in reality is 600 dpi. The default dpi is always 600 dpi in any application, regardless of the printer's dpi setting. LaserWriter 8.x drivers default automatically to Printer’s Default, which uses the printer’s dpi setting. At the present time, LaserWriter GX does not have this option.

LaserWriter Pro 16/600 PS and LaserWriter Pro 810

The LaserWriter Pro 16/600 PS and the LaserWriter Pro 810, display different Page Setup options.

LaserWriter Pro 16/600 PS

The LaserWriter Pro 16/600 PS only provides the ability to enable/disable FinePrint and PhotoGrade since it can print at 600 dpi, with or without these options enabled.

LaserWriter Pro 810

The LaserWriter Pro 810 does not have FinePrint or PhotoGrade so there are no checkboxes for them. The only buttons displayed are for 400 or 800 dpi instead of 300 and 600 dpi.

You only see these problems using the Page Setup options with GX-savvy applications such as the Finder, Microsoft Word 6.0, and SimpleText. Non-GX-savvy applications display the "old-style" Page Setup dialogs and options.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" - Lists online services for free Apple

software updates.

• "Obtaining Apple Product Support in the USA" - Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
15 Apr 1996 - Updated technical information.
06 Mar 1995 - Added keyword; made minor technical updates.
10 Nov 1994 - Added note that LW Select 360 not supporting PhotoGrade.

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Tech Info Library Article Number:16655

Tech Info Library

MAE and Personal LaserWriter NTR (11/94)

Revised: 11/1/94
Security: Everyone

MAE and Personal LaserWriter NTR (11/94)

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Article Created: 1 November 1994

TOPIC ----------

I'm having a problem with MAE (Macintosh Application Environment) which is installed on a HP 9000 running HP-UX. I connected an Apple Personal LaserWriter NTR to the HP computer's parallel port. I don't have problems printing on the LaserWriter NTR from UNIX, but I can't print from MAE. When I try to print, the printer receives the print job, but the output is the postscript code text. I have checked to make sure the print configuration is correct. What am I doing wrong?

DISCUSSION ----------

We were unable to reproduce your problem. We printed from MAE v1.0 to an Apple Personal LaserWriter NTR attached through the parallel port of our HP 715 running HP/UX 9.0.3. Here is what we tried:

- Print from UNIX, without MAE running, printed "/etc/hosts", which worked fine.

- Printed from MS Word 5.0 from within MAE v1.0, printed a 30K Postscript Document, which worked fine.

We suggest you try the following:

1) Please double check, using SAM (System Administration Manager), to make sure the re-configured UNIX Kernel has added the parallel NTR printer. Since you reported that UNIX is printing, we assume the configuration is correct.

   Note: SAM is an HP/UX utility for system administrators to configure the HP PA-RISC workstation.

2) When configuring the printer under MAE, use the Chooser and set the printer PPD for Apple Personal LaserWriter NTR. Also, the user (UID)

for the person configuring the print environment under MAE, should be the same user (UID) for the person running MAE.

3) Down load the MAE patch 1.0a from "ftp.support.apple.com", and install the patch following the instructions provided.

Support Information Services

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Tech Info Library Article Number:16656

Tech Info Library

MAE 1.0a Patch Error: Patch Cannot Be Applied (11/94)

Revised: 11/1/94
Security: Everyone

MAE 1.0a Patch Error: Patch Cannot Be Applied (11/94)

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Article Created: 1 November 1994

TOPIC ----------

When installing the MAE 1.0a patch on my system, I got the following error:

This patch cannot be applied because your copy of MAE is invalid, or you have already applied this patch, or a newer patch. Please correct the above problems and rerun the patch program.

What's going on?

DISCUSSION ----------

Check the version of MAE currently installed on your system by launching MAE with the -version option:

~appledir/bin/mae -version

Either the MAE 1.0a patch was already installed, or you have a newer version of MAE which the patch cannot update.

Support Information Services

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Tech Info Library Article Number:16657

Tech Info Library

Apple IIgs: Failure of Internal Self Diagnostics (11/94)

Revised: 11/2/94
Security: Everyone

Apple IIgs: Failure of Internal Self Diagnostics (11/94)

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Article Created: 02 November 1994

TOPIC ----------

I initiated the self test (Command-Option-Shift-Reset) on my ROM 03 Apple IIgs and it failed. The computer seems to work fine though. A friend has a ROM 01 computer and it passes each time.

Is there something wrong with my computer?

DISCUSSION ----------

The internal self test is not a valid indicator of the health of your computer. In ROM 03 computers, the self test will fail with regularity.

If your computer is functioning normally, you should have no cause for concern. If there are abnormalities in its operation, it would be best to take it to an authorized service provider who can run disk based diagnostics to better determine the problem.

Support Information Services

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Tech Info Library Article Number:16658

Power Macintosh 8100/110: Description (11/94)

Revised: 11/2/94
Security: Everyone

Power Macintosh 8100/110: Description (11/94)

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Article Created: 02 November 1994

TOPIC ----------

The Power Macintosh 8100/110 is the highest performance Macintosh incorporating the PowerPC 601 RISC processor.

DISCUSSION ----------

Overview

The Apple Power Macintosh 8100/110 computer sets a new Macintosh speed and performance standard, which is tremendous news for publishers, engineers, and multimedia professionals.

This computer runs virtually all Macintosh applications. In addition, it runs applications accelerated for Power Macintosh computers at two to six times the speed of previous Macintosh computers.

The 8100/110 computer can also run MS-DOS and Windows applications using SoftWindows software, available from Insignia Systems.

The Power Macintosh 8100/110 based on the PowerPC 601 microprocessor co-developed by Apple, IBM, and Motorola. The Power Macintosh 8100/110 runs at a breathtaking 110 megahertz.

The 8100/110 computer supports all Apple and most third-party displays, including monochrome, color, VGA, and SVGA. It will support up to 16.7 million colors on Apple color displays of up to 17 inches. With the addition of 2 megabytes of VRAM (to total 4 megabytes), the 8100/80 and 8100/110 support 16.7 million colors on displays of up to 21 inches.

The Power Macintosh 8100/110 computer is easy to expand because it includes three NuBus slots. The Power Macintosh 8100/110 also provide GeoPort telecommunications, which allows you to integrate it with telephone services.

..TIL16661-Power_Macintosh_8100-110-Description_11-94.pdf

The Power Macintosh 8100/110 computer is designed to meet the most demanding power, speed, and expandability requirements of publishing, engineering, and multimedia customers.

Power and Speed

- 110-MHz PowerPC 601 RISC Processor
- Integrated floating-point unit and 32k cache

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 16 MB of RAM standard, expandable to 264 MB
- 8 SIMM slots
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size AND speed. For example, you should install two 8 MB SIMMs in first two adjoining slots.
- Possible RAM configurations are 8 MB, 40 MB, 72 MB, 136 MB and 264 MB.
- 80 ns SIMMs or faster
- L2 Cache Slot with preinstalled Macintosh Cache Card

Display

- New AV Display Connector supports the Apple AudioVision 14 Display. A Video Adapter Cable (Part #M2681LL/A) is available as an option to allow connecting an additional monitor with a standard DB-15 connector to your Power Macintosh built-in video.
- Works with all Apple monitors as well as third-party displays including VGA and SVGA.
- 2 MB of VRAM standard, upgradeable to 4 MB on the PDS card with standard DB-15 monitor connector

Expansion

- Eight built-in ports to support a wide range of peripherals
- One 601 PDS (Processor Direct Slot)
- Three NuBus 90 Slots for additional expansion cards
- Optional internal CD-ROM drive (such as AppleCD 300i Plus)

System software

- System 7.5 for Power Macintosh with multitasking, file sharing, QuickTime, Balloon Help, TrueType, and more

Networking

- Built-in AppleTalk networking
- File sharing without a dedicated server
- On-board Ethernet networking

Compatibility

• Reads Macintosh, MS-DOS, and OS/2 floppy disk formats

What's in the box:

Each unit includes a power cord, keyboard cable, mouse, microphone, and system software.

System software includes System 7.5 for Power Macintosh, Color Macintosh Basics, AppleScript 1.1, QuickTime 2.0, and HyperCard Runtime 2.2.

System software shipped on a bootable CD-ROM, the "Install Me First CD" which can double as a rescue disk.

Documentation included with the Power Macintosh 8100/80:

• Power Macintosh Getting Started
• Technical Information
• Macintosh Reference
• AppleCD 300i Plus User's Guide

Configurations and Ordering Information:

Power Macintosh 8100/110*

• Power Macintosh 8100/110 computer with 16MB of RAM, 2MB of VRAM, a built-in 1.4MB Apple SuperDrive floppy disk drive, an internal 2GB hard disk drive, an internal AppleCD 300i Plus CD-ROM drive, and a PlainTalk microphone:
  Order No. M3561LL/A

• Power Macintosh GeoPort Telecom Adapter
  Order No. M3127LL/A

• DRAM upgrades: All models of the Power Macintosh 8100 have eight DRAM SIMM slots (Single In-line Memory Module). SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs (16MB and 32MB SIMMs available through third-party vendors).
  - 4MB (1-4MB SIMM)
    Order No. M1507LL/A
  - 8MB (1-8MB SIMM)
    Order No. M1508LL/A

• Power Macintosh 8100 VRAM upgrade kit (Part M1311LL/A)
  Adding VRAM increases the number of colors which can be displayed on large monitors. For example, adding VRAM to the Power Macintosh 8100/80 increases the number of colors which can be viewed on a 21-inch monitor from 32,000 to over 16.7 million. The kit upgrades the standard 2MB VRAM to 4MB VRAM.

• Video Adapter Cable (Part M2681LL/A)
  This cable allows you to connect a monitor with a standard DB-15 connector to your Power Macintosh built-in video. You can use it if you want to connect an additional display (other than the Apple AudioVision 14) to your computer.

Support Information Services

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Tech Info Library Article Number:16661

Tech Info Library

Power Macintosh 8100/110: Technical Specifications (11/94)

Revised: 11/2/94
Security: Everyone

Power Macintosh 8100/110: Technical Specifications (11/94)

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Article Created: 02 November 1994

TOPIC -----

This article gives the technical specifications for the Power Macintosh 8100/110 computer.

DISCUSSION -----

Microprocessor

- 110-MHz PowerPC 601 RISC Processor

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 16 MB of RAM standard, expandable to 264 MB
- 8 SIMM slots (4 pairs)
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size. For example, you should install two 8 MB SIMMs in first two adjoining slots, and two 4 MB SIMMs in the remaining two slots for a 32 MB machine.
- Possible RAM configurations are 16 MB, 24 MB, 32 MB, 40 MB, 48 MB, 56 MB, 64 MB, 72 MB, 80 MB, 96 MB, 104 MB, 120 MB, 136 MB, 168 MB, 200 MB, 216 MB and 264 MB.
- 80 ns SIMMs or faster
- 256k Level 2 Cache SIMM

RAM note: The 16MB configuration has 8MB soldered to the logic board and two 4MB SIMMs installed.

Form Factor

- Desktop Mini Tower (similiar to Power Macintosh 8100/80 case)

Disk Drives

- One Built-in Apple SuperDrive 1.4 MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, MS-DOS, and OS/2 disks.
- Support for three internal SCSI devices, one of which may be used for a one-half height, 5.25-inch removable media drive, such as an internal CD-ROM drive.
- One internal hard disk (2 GB)
- Internal Apple CD-ROM drive (see above)
- Optional external SCSI hard disk drive (many capacities available)

Video Display

- DRAM based video: 16 bit on 14-inch monitors, 8 bit on 16-inch monitors
- VRAM based video: 2MB: 24 bit on 16-inch monitors, 16 bit on 21-inch monitors. 4MB: 24 bit on 21-inch monitors

Monitor:	Resolution:	2 MB VRAM:	4 MB VRAM:
12-inch Color	512 by 384	millions	millions
12-inch Monochrome	640 by 480	256	256
13-inch or 14-inch Color or VGA	640 by 480	millions	millions
13-inch Color	640 by 400	millions	millions
15-inch Portrait Monochrome	640 by 870	256	256
16-inch Color	832 by 624	thousands	millions
19-inch Color	1024 by 768	thousands	millions
21-inch Color	1152 by 870	thousands	millions
SuperVGA	800 by 600	thousands	millions

Interfaces

- Three internal NuBus 90 slots, support block transfers to and from main memory, 2x block transfers card to card.
- One Apple Desktop Bus (ADB) port, supporting a keyboard, mouse, and other devices.
- One AAUI-15 Ethernet connector.
- Two serial (RS-232/RS-422) ports. (Printer & Modem/GeoPort)
- SCSI interface for connecting up to a total of seven SCSI devices.
- Sound-out port for stereo playback from CDs or Macintosh audio applications
- Stereo sound-input port (supports 16-bit stereo audio)
- One AV Display Connector supports the Apple AudioVision 14 Display.
- The available Video Adapter Cable (Part #M2681LL/A) allows you to connect a monitor with a standard DB-15 connector to your Power Macintosh built-in video.
- One internal 601 PDS (processor direct slot)
- One internal L2 (Level 2) cache slot

Networking

- Built-in Ethernet
- Serial port for AppleTalk
- Integrated GeoPort telecommunications architecture for data, fax, and

voice connectivity.

Keyboard

- Several Apple Desktop Bus keyboards with numeric keypads available.

Mouse

- Apple Desktop Bus Mouse II; mechanical tracking, optical shaft, or contact encoding.

Clock/Calendar

- Custom integrated circuit with long-life lithium battery.

Apple PlainTalk Microphone

- The microphone is unidirectional and optimized for use with speech recognition. (Microphone bundled with all AV units sold in the USA, available as a separate item outside the USA.)

Disability Access

- Easy Access, and visible beep included with system software. These built-in features and third-party options provide alternative input and output tools for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured
- Frequency: 50 to 60 hertz, single phase
- Power Supply Output Rating (Power available for internal devices)
  - Continuous output 200W

- A/C Line Input (Power drawn by the Power Macintosh 8100/110)
  - Maximum continuous 298W
  - Peak input 453W

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 milliamps (a maximum of three Apple Desktop Bus devices is recommended)
- Mouse draws 10 milliamps.
- Keyboard draws 25 to 80 milliamps, depending on the keyboard model used.

Size and Weight

Main unit

- Height 14.25 inches (46.2 cm)
- Width 7.75 inches (19.6 cm)
- Depth 16 inches (40.5 cm)
- Weight 24 lb. (16.7 kg) varies with disk drive options installed

Mouse

- Height 1.3 inches (33 mm)
- Width 2.4 inches (61.7 mm)
- Depth 4.2 inches (107.3 mm)
- Weight 4 ounces (0.10 kg)

Operating Environment

- Operating temperature: 50° to 104° F (10° to 40° C)
- Storage temperature: -40° to 116.6° F (-40° to 47° C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 ft. (3,048m)

System Software Requirements

Requires System 7.5 or later and the accompanying System Enabler.

Support Information Services

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Tech Info Library Article Number:16662

Tech Info Library

Global Village Fax Extension Loads Slow at Startup (11/94)

Revised: 11/2/94
Security: Everyone

Global Village Fax Extension Loads Slow at Startup (11/94)

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Article Created: 2 November 1994

TOPIC --------------------

My Global Village Fax Extension is taking an excessive amount of time to load at startup. Why is that happening?

DISCUSSION --------------------

At startup, the Fax Extension is accounting for each received Fax document stored in the Received Faxes folder, (it's path is System Folder, Global Fax Files, Received Faxes). If you keep a large number of received Faxes and don't delete them, the Fax extension takes longer to load.

We advise you to delete or move as many of the received Faxes as possible to another location on your hard drive. If you need to view a relocated Fax later, you will nave to move the Fax back into the Received Faxes folder.

Support Information Services

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Tech Info Library Article Number:16663

Tech Info Library

MAE Printing Tips (11/94)

Revised: 11/2/94
Security: Everyone

MAE Printing Tips (11/94)

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Article Created: 2 November 1994

TOPIC ----------

I'm having trouble getting my postscript printer to print reliably under MAE. What should I do?

DISCUSSION ----------

While developing MAE, we couldn't test on all possible PostScript printers. Also, many older PostScript printers have very little memory (for example, the original Apple LaserWriter, only had 1 MB of RAM) and it is difficult to print complicated documents on them. Note that a Macintosh computer communicates directly with the printer, so it can optimize the manner in which postscript is fed into the printer and thereby limit the memory needed to print. Since MAE's LprWriter uses the underlying UNIX print spooler, direct communication with the printer doesn't occur. So it is possible for a printer to print a complex document from a Macintosh but unable to print the same document from MAE.

We will be updating LprWriter in the next version of MAE, which may help with some of these difficulties.

Other tips:

1) The LprWriter driver generates Level 1 PostScript, which should print on any "real" PostScript printer that has enough memory. (Some companies didn't license a PostScript interpreter from Adobe, they wrote their own, and often they have problems.)

2) It is very important to specify the correct PPD file for the printer. The PPD file contains information about resident fonts, memory size, page sizes, and so on. If an incorrect PPD is specified, you may have problems printing.

3) If the PPD file for a printer isn't shipped with MAE, you can try and

get it directly from the printer manufacturer, or from Adobe. Adobe, the creator of PostScript maintains archives of PPD files, and technical papers about PostScript. These are available on the Internet. You can contact their ftp server, ftp.adobe.com (130.248.1.4). The login is "anonymous", and you should use your e-mail address as the password. PPD files are in the directory:

/pub/adobe/PPD/mac

Note that all spaces in PPD filenames have been replaced with tildes (~), to make it easier to retrieve the files. After downloading a PPD from this directory, change all tildes in the filename to spaces.

Or you can send mail to their e-mail server:

ps-file-server@adobe.com

Send an e-mail message with just the word "help" in the subject for instructions on how to use the e-mail server.

Support Information Services

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Tech Info Library Article Number:16664

Tech Info Library

AWS 95: Workaround for Date Corruption Problem (11/94)

Revised: 11/2/94
Security: Everyone

AWS 95: Workaround for Date Corruption Problem (11/94)

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Article Created: 2 November 1994

TOPIC ----------

I'm experiencing a problem with my Apple Workgroup Server (AWS) 95 and Retrospect where the date gets changed to the year 2017. Is there any known workaround until this problem is really fixed?

DISCUSSION ----------

This problem is fixed with Tune-up 2.0, and we recommend installing it.

You may also try the following:

1) Reset the system clock (General cp will work for this).

2) Delete Retrospect scripts and rebuild them. You may need to delete the entire Retrospect folder (/mac/sys/System Folder/Preferences /Retrospect). The problem is not with Retrospect, but if Retrospect runs subsequent to the date shift, the script files are tainted by the wrong date.

3) You may want to resave any files with 2017 dates. Retrospect still backs them up, but the date information is still disconcerting in the Finder.

Support Information Services

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Tech Info Library Article Number:16665

Tech Info Library

ImageWriter LQ: No Best Quality With QuickDraw GX (11/94)

Revised: 11/2/94
Security: Everyone

ImageWriter LQ: No Best Quality With QuickDraw GX (11/94)

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Article Created: 2 November 1994

TOPIC -----

I am using the QuickDraw GX printer driver with my ImageWriter LQ. When I print using QuickDraw GX Savvy applications, like SimpleText or Microsoft Word 6.0, and using Best quality my documents don't look as good as when I am using the non-QuickDraw GX printer driver. Why?

DISCUSSION -----

The ImageWriter LQ GX driver, when used with GX-savvy applications, doesn't support the Best quality option. The selection is available, but it does not work. Engineering is aware of this problem and will release a new ImageWriter LQ GX driver in a future release of QuickDraw GX.

The current workarounds are to disable GX, use GX Helper, or use a non-GX-saavy application in order for the regular ImageWriter LQ print dialog to appear.

Support Information Services

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Tech Info Library Article Number:16666

Tech Info Library

Video Mirroring: Use External Monitor as Main Monitor (11/94)

Revised: 11/2/94
Security: Everyone

Video Mirroring: Use External Monitor as Main Monitor (11/94)

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Article Created: 2 November 1994

TOPIC ----------

When I use my presentation software, such as Astound, PowerPoint, or Persuasion, in the video mirroring mode, images on my external monitor appear blurry. How can I correct this?

DISCUSSION ----------

Most presentation programs write pixel information directly to the monitor. Because of the way video mirroring works, you have to make the external monitor the main monitor. This is done in the Monitors control panel.

Setting External Monitor To Main Monitor
---

1) Open Monitors control panel
2) Set external monitor to main monitor by dragging the miniature menu
   menu bar to the image of the external monitor.

Note: You have to change the monitor before you turn on video mirroring.

Support Information Services

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Tech Info Library Article Number:16667

Tech Info Library

LaserWriter 16/600 PS: Custom Install NetWare Utilities (11/94)

Revised: 5/24/95
Security: Everyone

LaserWriter 16/600 PS: Custom Install NetWare Utilities (11/94)

==========

Article Created: 2 November 1994

TOPIC ----------

This article discusses an error in LaserWriter 16/600 PS User's Guide.

DISCUSSION ----------

The LaserWriter 16/600 PS User's Guide states that the Window utilities LWPMAN and LWFORM are installed as part of the Express Installation. This is incorrect. These utilities are installed only when you select Network Utilities from the Custom Installation menu of the Installer.

These utilities are used to set NetWare parameters, so the default network configuration doesn't require them.

More about the Utilities

LWPMAN is only needed if the NetWare administrator wants to change anything about the printer's default PSERVER or RPRINTER configuration (for example, change the NetWare printer name, add a password, or change the queue scan time for the printer). LWFORM is only needed if the NetWare administrator wants to use NetWare Forms.

Support Information Services

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Tech Info Library Article Number:16668

Tech Info Library

LaserWriter 16/600 PS: Output Filtering Not Supported (11/94)

Revised: 11/2/94
Security: Everyone

LaserWriter 16/600 PS: Output Filtering Not Supported (11/94)

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Article Created: 2 November 1994

TOPIC ----------

I have several LaserWriter 16/600 PS printers that I want to use with our UNIX workstations. I have setup the LaserWriter as a remote host using TCP/IP, but cannot get it filtering set up on it. I want to be able to have different print queues on the printer, so people printing can pick letter, or legal size trays depending on the queue they print to. How can I define different queues on this printer?

DISCUSSION ----------

Since the LaserWriter 16/600 PS printer is used as a remote printing queue on the TCP/IP network, output filtering is not supported by the remote LPD protocol. This is common in most UNIX remote LPD implementations. Usually, output filtering is supported using a local direct connected printer. So, using a direct connection, you can have output filtering printcap entry in your system.

Some options available to you is to add PostScript code to documents in order to change paper trays. This could also be accomplished using a shell script to control the printing.

Support Information Services

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Tech Info Library Article Number:16669

Tech Info Library

Power Macintosh 8100/110: Must Use System 7.5 (11/94)

Revised: 11/14/94
Security: Everyone

Power Macintosh 8100/110: Must Use System 7.5 (11/94)

==========

Article Created: 03 November 1994
Article Reviewed/Updated: 14 November 1994

TOPIC ----------

Is it possible to run System 7.1.2 (the Power Macintosh version) on the new Power Macintosh 8100/110?

DISCUSSION ----------

No, the Power Macintosh 8100/110 requires System 7.5. Below is some information on the possible side effects of running older system software on the 8100/110.

Q. If the new PPC Enabler is named the same as the old Enabler (PowerPC Enabler), what happens if you install it in the 7.1.2 system folder along with the old enabler?
A. You will get a System Error.

Q. What are the symptoms/results if you try to boot a Power Macintosh 8100/110 with System 7.1.2?
A. You will get an error message that says that the System Software is too old to run on this machine.

Q. What are the symptoms/results if you try to boot a Power Macintosh 8100/110 with the original System 7.5?
A. You will get an error message that says that the System Software is too old to run on this machine.

Q. If the new PPC enabler is installed in an original Power Macintosh, will it run?
A. It will work because the enabler will not be used. It will use the generic System 7.5 code to run the system.

Q. What will the revised version of System 7.5 be named?
A. It will still be called System 7.5. Since this is a superset of the existing 7.5, it won't be necessary to revise the version number.

Q. What items have been changed in System 7.5 for support of the Power Macintosh 8100/110?
A. Finder
PowerPC Finder Update
PowerPC Enabler
HD SC Setup

Q. Is this version backwards compatible with all computers that use System 7.5?
A. Yes, EXCEPT you cannot boot older Power Macintosh computers with the Power Macintosh 8100/110 Disk Tools disk. It requires the System 7.5 Disk Tools disk. On older machines, you get a "this machine needs newer software to boot..." message, which is the correct behavior.

Article Change History:
14 Nov 1994 - Revised wording in Discussion.

Support Information Services

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Tech Info Library Article Number:16672

Tech Info Library

Power Macintosh 8100/110: PowerPC Microprocessor Cooling (11/94)

Revised: 11/8/94
Security: Everyone

Power Macintosh 8100/110: PowerPC Microprocessor Cooling (11/94)

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Article Created: 03 November 1994
Article Reviewed/Updated: 08 November 1994

TOPIC ----------

Does the PowerPC microprocessor used in the Power Macintosh 8100/110 create more heat inside the enclosure and if so, how is the additional heat being dissipated?

DISCUSSION ----------

Yes, the 110 megahertz version of the PowerPC microprocessor does generate more heat. We have incorporated a technology based on the Peltier effect to cool the processor.

The Peltier cooling effect is achieved by using a thermoelectric cooler that provides the absorption or generation of heat as a current passes through a junction of two dissimilar materials. Electrons passing across the junction absorb or give up an amount of energy equal to the transport energy and the energy difference between the disimilar-materials conduction bands.

This thermoelectric heatsink is a solid-state device that performs the same cooling functions as freon-based compression or absorption refrigeratiors, but in miniature. The benefits of using this type of device are its small size, high reliability, precision temperature control capability, DC operation, and minimal electrical noise. The Peltier device attaches directly to the microprocessor's heatsink and plugs into the logic board.

Article Change History:
08 Nov 1994 - Clarified that 110 Mhz processor generates more heat.

Support Information Services

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Tech Info Library Article Number:16673

Tech Info Library

Power Macintosh 8100/110: Differences From 8100/80 (1/95)

Revised: 1/19/95
Security: Everyone

Power Macintosh 8100/110: Differences From 8100/80 (1/95)

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Article Created: 03 November 1994
Article Reviewed/Updated: 19 January 1995

TOPIC ----------

What are the specific differences between the Power Macintosh 8100/80 and the Power Macintosh 8100/110?

DISCUSSION ----------

The differences are as follows:

- New logic board with PowerPC 601 microprocessor running at 110MHz.
- Configuration: 16MB DRAM, 256K L2 cache, 2GB hard drive, CD-ROM, System Software 7.5 (updated Finder and PowerPC Enabler version 1.1.1).

Specific Logic Board differences:

- PowerPC 601 microprocessor running at 110MHz.
- Clock chip (CPU bus clock rate is 36.6667 MHz).
- New Thermoelectric Heatsink (Peltier device) added to microprocessor
- ROM change (memory setup, box flags) .
- BART21 controller (burst transactions for specific slots, burst read transactions by NuBus masters).
- Combo of ROM/BART21 allows: support for addressing minor slot space 1-E, major slots 8-E.
- 30% performance gain above Power Macintosh 8100/80.

SOFTWARE:

- LocalTalk driver changed to not rely on the CURIO's enhanced LocalTalk mode.
- System Software release:
  System ver. same as 7.5
  Finder ver. 7.1.5
  Enabler ver 1.1.1

PPC Update (revised)
Finder Update (revised)
HD SC Setup (revised)

IN BOX (Accessory Kit) changes:

• Plaintalk Microphone added
• Apple Macintosh CD
• Technical Information booklet for Power Macintosh 8100/110.

Article Change History:
19 Jan 1995 - Updated Enabler version to 1.1.1.

Support Information Services

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Tech Info Library Article Number:16674

Tech Info Library

Power Macintosh 8100/110: NuBus Changes and Improvements (11/94)

Revised: 11/3/94
Security: Everyone

Power Macintosh 8100/110: NuBus Changes and Improvements (11/94)

==========

Article Created: 03 November 1994

TOPIC ----------

Have there been any changes to the NuBus technology or controller chip used in the Power Macintosh 8100/110?

DISCUSSION ----------

The following changes have been implemented in the BART21 controller chip:

BART4 would not allow NuBus Master cards to perform burst reads of main memory (burst writes were fine) unless the bus frequency was a multiple of 40MHz. BART21 corrects this problem.

BART4 would only enable bursting to a slot when the burst enables for all slots were set. BART21 provides burst enable on a slot-by-slot basis.

BART4 only provided access to slots 9-E (and software couldn't take advantage of slot 9 support). BART21 adds standard slot spaces for slots 1-8, and superslot space for slot 8.

Support Information Services

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Tech Info Library Article Number:16675

Tech Info Library

PowerBook 500 series: Measuring AC Adapter Output (11/94)

Revised: 11/3/94
Security: Everyone

PowerBook 500 series: Measuring AC Adapter Output (11/94)

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Article Created: 03 November 1994

TOPIC ----------

Is there any way to measure a PowerBook 500 series computer AC adapter with a multimeter to determine if it is a good AC adapter or not?

DISCUSSION ----------

To test the AC adapter for the 500 Series PowerBook computers, service providers would need to use test leads for their digital volt meter that have narrow test probes. Adapters are available to clip onto the ends of test probes that would allow the test probe to fit inside of the holes on the AC adapter connectors.

The front of the connector has four holes labeled 1 thru 4. The outer metel shield is ground. All measurements should be made with the negative or common lead of the volt meter connected/touching the outer shield. Use the positive test probe and check for the following DC voltages.

Connector #	Signal Name	DC Voltage
1	VBATT	16.4 V to 16.6V
2	VMAIN	16.4 V to 16.6V
3	GND	0V
4	GND Sense	0V

Support Information Services

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Tech Info Library Article Number:16680

Tech Info Library

System 7.1: ! In File Name When Copying to DOS (11/94)

Revised: 11/3/94
Security: Everyone

System 7.1: "!" In File Name When Copying to DOS (11/94)

==========

Article Created: 03 November 1994

TOPIC ----------

Our customer has a Quadra 950 running System 7.1, with an external CD-ROM drive attached. He also has a DOS machine with a Farallon PhoneNET PC card connected to the Quadra 950.

When he logs onto the Quadra 950's shared CD-ROM drive from the DOS machine and copies files from the CD to the DOS machine, the file names are preceded with an exclamation mark "!".

DISCUSSION ----------

The ISO 9660 standard defines a filename format that includes a version number. DOS file formats do not use this version number and limit the filename to the 8.3 (xxxxxxxx.xxx) format. AppleShare passes these version numbers along to the DOS machine, which cause the name to be longer than the 8.3 format. This causes the complete filename to be truncated, and an exclamation point prefixed to the name.

Your customer can upgrade to CD-ROM Setup version 5.0. Since the majority of applications don't require strict adherence to the ISO 9660 filename format specification, CD-ROM Setup version 5.0 stopped passing file version numbers, thus preserving the filename length.

Support Information Services

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Tech Info Library Article Number:16681

Tech Info Library

MAE Printing: HP UNIX to LaserWriter II, IINT (11/94)

Revised: 11/3/94
Security: Everyone

MAE Printing: HP UNIX to LaserWriter II, IINT (11/94)

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Article Created: 3 November 1994

TOPIC ----------

I purchased MAE and installed it on my Hewlett Packard (HP) Apollo 735 workstation. I also have two Apple LaserWriters, a LaserWriter II and LaserWriter IINT. I'm experiencing difficulties in printing from MAE to both LaserWriters. I haven't been able to print from the UNIX workstation yet either.

Is there any information you can provide that will help?

DISCUSSION ----------

To print from an HP workstation running HP-UX through it's serial port to Apple's LaserWriter II, IINT, and IINTX, follow the three steps below. For example purposes only we used a LaserWriter IINTX, for a LaserWriter II or IINT, the procedure would be identical.

1) Be certain the DIP switches are set properly for the LaserWriter IINTX.

   While the LaserWriter IINTX is off, set the printers DIP switches to:

   1 UP
   2 DOWN
   3 UP
   4 UP
   5 UP
   6 DOWN

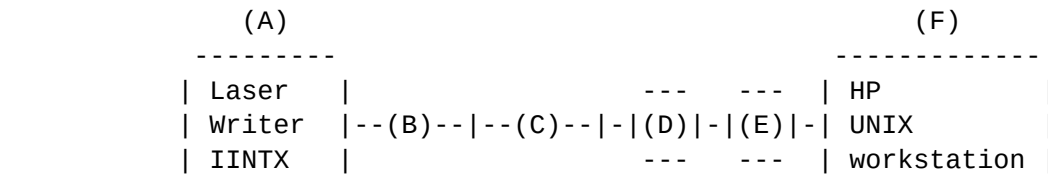
   These switch settings place the LaserWriter IINTX in:

   PostScript Batch Mode
   RS-232 9600 bps
   RS-422 9600 bps
   7 data bits

No parity
1 stop bit
DTR/DSR handshake

2) Be certain you have the correct hardware cables:

Connect an Apple 25 pin serial cable, 590-0037, to an Apple modem eliminator, 590-0166. Connect one end (of the serial cable/modem eliminator segment) to the 25 pin serial port of the LaserWriter IINTX. To the other end (of the serial cable/modem eliminator segment) connect a female to female gender changer (RS-232c), then a male DB-25 to female DB-9 adapter, and finally to the male DB-9, RS-232, connector on the HP UNIX workstation. The following illustration to help you visualize this connection:



A) Female DB-25, Apple LaserWriter IINTX
B) Apple 25 pin serial cable 590-0037
C) Apple modem eliminator 590-0166
D) Female to female gender changer (RS-232c)
E) Male DB-25 to female DB-9 adapter
F) Male DB-9, HP UNIX workstation (RS-232)

3) Use SAM (System Administration Manager, a HP-UX utility for system administrators to configure the HP PA-RISC workstation) to configure the RS-232 serial printer:

Launch SAM at the workstation, to configure the local RS-232 serial printer, and use "laserjet" as the printer choice.

Test the printer connection with a Poscript file, send a Poscript job to the printer. Here is a sample Poscript job we used to test the printer:

```
**********Copy below
%! Adobe-Postscript
/Helvetica findfont 30 scalefont
setfont 50 50 moveto
(Ed Garcia: How are you, fella!) show
showpage
^D
**********Copy above
```

Also, before you can print from MAE, printing from your UNIX workstation has to work first.

..TIL16682-MAE_Printing-HP_UNIX_to_LaserWriter_II_IINT_11-94_(TA32853).pdf

Support Information Services

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Tech Info Library Article Number:16682

Tech Info Library

MacODBC on New Mac OS SDK (Software Developer's Kit) CD (4/95)

Revised: 4/18/95
Security: Everyone

MacODBC on New Mac OS SDK (Software Developer's Kit) CD (4/95)

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Article Created: 3 November 1994
Article Reviewed/Updated: 18 April 1995

TOPIC ----------

This article describes the announcement of the Mac OS SDK (Software Developer's Kit) CD.

DISCUSSION ----------

Apple Computer, Inc. has announced the availability of the Mac OS SDK CD, which combines most of our existing software developer kits for the Mac OS onto one convenient, low-price CD.

I'm pleased to announce that MacODBC 1.0.1, the latest release of Apple's ODBC functionality for the Macintosh, is included on this CD, with an automatic redistribution license for the ODBC client software. This means that with the purchase of the Mac OS SDK, no separate ODBC distribution license is necessary. As a bonus, current Apple Partners will receive an automatic subscription to the Mac OS SDK -- and therefore an automatic redistribution license for ODBC and many other system software components.

The updated ODBC SDK has also been posted to Apple's anonymous FTP site. Now available are the full, install-able disk images as shipped on the Mac OS SDK, as well as the Adobe Acrobat-readable image of the ODBC Developer's Reference. (Note that there is no redistribution license available for the files retrieved from ftp.info.apple.com.)

MacODBC can be found on ftp.info.apple.com via the path:
ftp.info.apple.com
Apple.Support.Area
Developer_Services
System_Software_Extensions

For those of you who have previously downloaded MacODBC 1.0, the only change from 1.0 to 1.0.1 was a fix in the installer script, which was not posted to the

ftp site. MacODBC 1.0.1 is functionally equivalent to 1.0.

For those of you who have previously downloaded MacODBC 1.0, the only change from 1.0 to 1.0.1 was a fix in the installer script, which was not posted to the ftp site. MacODBC 1.0.1 is functionally equivalent to 1.0.

ODBC Program Manager
AppleSoft Development Products Group
Apple Computer, Inc.

Monday, October 31, 1994

Apple Announces Mac OS Software Developer's Kit (SDK)

Responding to developer requests, Apple today announced availability of a software developer's kit that combines most of its existing software developer's kits into one convenient -- and very affordable -- package. For U.S. $299, developers can purchase an annual subscription to the new Mac OS SDK, which is available on a CD-ROM and includes quarterly updates.

Another important benefit of the Mac OS SDK is its streamlined approach to software licensing. Subscribers automatically will be able to redistribute certain system extension files and libraries with programs they develop that require these components. Previously, many developers would have had to secure additional licenses from Apple before shipping their product.

According to the vice president of AppleSoft marketing, "Apple recognizes the pressure developers have to keep overhead low and productivity high, and is committed to delivering quality products and services at competitive prices to relieve this pressure. The Mac OS SDK is only one example of this commitment, and follows recent decisions to increase the scope of our developer support services and reduce prices for our core development tools. We will continue to explore new ways to maximize the level of satisfaction for our valued Macintosh developers."

With a subscription to the Mac OS SDK, developers will receive a disc each quarter that contains the most recent versions of almost all of Apple's system-software extensions, making it convenient to track these most recent extension releases and incorporate support for them into applications. In addition to the system-software extensions, the Mac OS SDK includes programming interfaces and libraries, sample code, and technical documentation. The software developer's kits in this collection were previously available individually for a total of approximately U.S. $2000.

A senior principal engineer of Farallon Computing, Inc., said, "Convenience is what I really like about the Mac OS SDK. I no longer have to be concerned about tracking down each new Mac OS system extension and related programming information -- they arrive automatically on a single CD. This should help boost the productivity of all Macintosh programmers."

Product Contents

The initial release of Mac OS SDK includes SDKs for the following software extensions:

Apple Guide
Apple Open Collaboration Environment (AOCE)
Apple Remote Access
Apple Remote Access Modem
Apple Shared Library Manager
AppleScript
AppleSearch
AppleShare API
AppleTalk Wide Area
ColorSync
Communications Toolbox
Control Strip
Designing PCI Cards & Drivers
File System Manager
Installer
Macintosh Drag and Drop
Macintosh Easy Open
MacODBC
MacOSI Connection
MacSNMP
MacTCP
MacX.400
MacX25
MIDI Management Tools
Network Software Installer
Open Transport
PlainTalk
QuickDraw GX
QuickTime
Sound Manager
Telephone Manager
Thread Manager
XTND

Availability

Members worldwide of Apple's Partners Program will receive one subscription to the Mac OS SDK without charge as one of the benefits of the program. For other developers, subscriptions to the Mac OS SDK are available immediately through APDA , Apple's source for development tools and related programming products. APDA publishes the APDA Tools Catalog which describes hundreds of Apple and third-party products. Developers should contact APDA using the following address or phone numbers.

Article Change History:
18 Apr 1995 - Made correction of typographical errors.
17 Feb 1995 - Added new information about location on the internet.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16683

Tech Info Library

Language Kits: Resellers for Related Products (3/95)

Revised: 3/1/95
Security: Everyone

Language Kits: Resellers for Related Products (3/95)

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Article Created: 4 November 1994
Article Reviewed/Updated: 1 March 1995

TOPIC ----------

The following is a list of resellers who provide products related to the Apple Japanese Language Kit and Chinese Language Kit.

DISCUSSION ----------

CALIFORNIA

Computer Selection/Connecting Point
201 Mission Street
San Francisco, CA 94105
Dave Pinkham, Charles Hyland
(415) 543-9888; fax: (415) 777-1177
ALink: M32

Computer Selection Bus. Ctr/Connecting Point
2001 Middlefield Road
Redwood City, CA 94063
Scott Grossman
(415) 368-8828 fax: (415) 368-8803
ALink M32

Future Now
699 Corporate Point, suite 200
Culver City, CA 90230
Mike Uesugi
(310) 215-0300 ext. 127
fax: (310) 215-9666
ALink: R6781

DGM Resources Corp (VAR)

584 Castro Street, #399
San Francisco, CA 94114
(415) 252-1980
D’Wayne Gilmore
(General business apps)

Crossover Systems (VAR)
2856 W. Valley Blvd., #A
Alhambra, CA 91803
(818) 282-3899
Bryan A. Sato

Rikei Corp of America (VAR)
Vallco Park Financial Center
10051 North Wolfe Rd., SW1, Ste 290
Cupertino, CA 95014
(408) 257-7943; fax: 408-257-9001
(WAN solutions, DEC connect.)
Yoshi Honda
ALink: Rikei.RD

CCIC/System Pacifica
605 Addison Street, Suite A
Berkeley, CA 94710
510/843-5626
Izumi Nara
Scot Campbell

Nova Associates
2550 9th Street, suite 207 A
Berkeley, CA 94710
tel: 510/548-6682
fax: 510/548-6689
AppleLink: NOVA.KANJI
Toshia Hotei

NORTHWEST

Computer Stores NW
700 NE Multnomah, Ste 190
Portland, OR 97232
Bill May
(503) 238-1200
ALink: M6431

Computer Stores NW/Connecting Point
6406 Roosevelt Way NorthEast
Seattle, WA 98115
Philip Abinante, Charlotte Platnick
(206) 522-0220; fax: (206) 522-1159
ALink: M2733, R2733

Omni International
316 Westlake Ave. North
Seattle, WA 98109
Larry Owens
206/628-2924

MIDWEST

AC Computer/MicroAge
600 4th Street, 225 Terra Centre
Sioux City, Iowa 51101
Greg Axelson
(712) 279-8722; fax: (712) 279-8724
ALink: M1367

Graham Bell Industries, Inc./MicroAge
2475 Crowne Point Drive
Cincinnati, OH 45241
Jim Rhoades, Jim Barrie, Todd Graham
(513) 772-7753; (800) 582-5505; fax: (513) 772-0368
ALink: M1179

Graham Bell Industries, Inc./MicroAge
133 South Pennsylvania Ave
Indianapolis, IN 46204
Keith Callahan, Mike Hall
(317) 634-8202; fax: (317) 634-0400
ALink: M4024

AC3 Midwest Inc./MicroAge
413 East Huron Street
Ann Arbor, MI 48104
Rick Weir
(313) 994-6344

Alliance Computers/MicroAge
128 Skokie Valley Road
Highland Park, IL 60035
Keith Wagner
(708) 831-0535
Steve Feldman, Susan Takami
(708) 831-1192; fax: (708) 831-0689
ALink: M1578

Lingua Media
112 North Third Street
Suite 304
Minneapolis, MN 55401-1651
Kristine Wagner
(612) 612-349-6440; fax (612) 339-3557

Mac Center of America

148 Rockhurst Rd.
Bolingbrook, IL 60440
Stephen A. DeFreeuw
708/972-0915

NORTHEAST

Byte Shop/MicroAge
1732 Sunrise Highway
Merrick, NY 11566
Hank Tucker, Takashi Shimazu
(516) 379-2983; fax: (516) 379-2820
ALink: M375

Custom Computer Specialist/Connecting Point
1775 Express Drive North
Hauppaugh, NY 11788
Bob Schechter, Steve Manilla
(516) 582-6699 ext. 232; fax: (516) 582-6012
ALink: M3060

Language Engineering Corp.
385 Concord Avenue
Belmont, MA 02178
Glen Akers
617/489-4000 fax: 617/489-3850

Telecomet
245 Park Avenue, 24th Floor
New York, NY 10167
Shirley Parcon
212/297-1000 fax: 212/687-3118

Tomio Creations (VAR)
2050 Center Avenue, Suite 625
Fort Lee, NY 07024
(201) 461-3010
Tomio Maeda
Link: TOMIO
(Fashion design, textile, DB)

Computer Applications of America (VAR)
Rockefeller Plaza, Suite 3236
New York, NY 10112
(212) 541-8351; fax: (212) 541-8350
Doug Boltson
ALink: CAC.AMERICA

NDK International, Inc. (VAR)
1121 Avenue of the Americas, 41st Fl.
NY, NY 10036
(212) 704-6884

Bryan E. Leonard

Syscom (VAR)
45 Broadway, 6th Fl
NY, NY 10006
(212) 797-9131
Naoki Aoyama

Marubeni America
200 Park Avenue
New York, NY 10166
Hitoshi Nagai
(212) 599-3750; fax: (212) 599-7101
ALink: V0852

Mr. Sterling Beardsley
President
Harmony Sound, Inc.
1167 York Ave.
New York, NY 10021
212/319-5439 (fax)
212/751-9188
AppleLink: M329

Pennsylvania House Limited
Brant Avenue Box 266
Inglmar, PA 15127
Martin Smith
412/367-7234
412/344-2253
fax: 412/344-3716
Link: PAHOUSELTD

SOUTHEAST

Connecting Point
2485 East North Street
Greenville, SC 29615
Carl Krezdorn
(803) 268-0461
Laurie Slattery
(803) 292-7071; fax: (803) 268-0461

Computer Source/Connecting Point
5775 Glenridge Drive, NE Bldg B, #300
Atlanta, GA 3032
Ron Seitz
(404) 253-3100
Jack Bornstein
(404) 952-0337; Fax: (404) 256-6054
ALink: C4081

Amano (VAR)
P.O. Box 3211
Chapel Hill, NC 27515
(919) 493-0264
Taka Amano

HAWAII

Connecting Point
1613 Nuuanu Avenue, #10A
Honolulu, HI   96817
Michael Klein
(808) 535-0900
Ruriko Inouye
(808) 523-0040; fax: (808) 531-5244
ALink: M6451

Bezier International
1103 9th Avenue, #204
Honolulu, HI 96816
(808) 733-2002; fax: (808) 733-2011
Yasuko Hacking

CPU, Inc. (VAR)
1210 Queen St., Suite 5
Honolulu, HI 96814
(808) 535-0900 fax: (808) 591-0094
Aaron Hara

Article Change History:
01 Mar 1995 - Updated article to include Chinese Language Kit.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16684

Tech Info Library

LaserWriter Pro 630: PDS Connector Jumper Information (11/94)

Revised: 11/4/94
Security: Everyone

LaserWriter Pro 630: PDS Connector Jumper Information (11/94)

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Article Created: 27 October 1994

TOPIC ----------

I noticed a small jumper on the large, white PDS connector on the LaserWriter Pro 630 I/O board. What is this jumper for?

DISCUSSION ----------

Shortly after the LaserWriter Pro I/O controller board production began, engineering discovered that the cache had not been enabled. An orange jumper was added to the first 5,000 boards produced tying the cache enable signal (J13-A40) to +5 volts DC (J13-A37) on the PDS connector. The board layout that requires the jumper can be identified by the numbers 820-0371-01 printed next to the PDS connector.

The number 01 indicates that it is the first revision board.

It enables a RAM cache on the board providing a performance gain of approximately 13%. Removing the jumper would result in a corresponding drop in performance.

Later revisions of the board have the cache enabled on the board itself. In order to prevent potential problems with customers forced to remove the jumper when adding an accelerator card to the PDS connector, potential third party PDS card developers were advised to short the pins on all of their board designs to eliminate the possibly of impacting printer performance.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16688

Tech Info Library

Connectix Desktop Utilities: License and Use Information (1/95)

Revised: 1/16/95
Security: Everyone

Connectix Desktop Utilities: License and Use Information (1/95)

==========

Article Created: 04 November 1994
Article Reviewed/Updated: 16 January 1995

TOPIC ----------

What exactly is CDU that came pre-installed on my Power Macintosh 8100/110? Can I use it on other computers I own?

DISCUSSION ----------

CDU (Connectix Desktop Utilities) is bundled with the Power Macintosh 8100/110, 7100/80 and 8100/100 and is licensed for use only on those systems. You can purchase additional copies for other computers you own.

CDU provides EPA Energy Star compliance for those computers by allowing the monitor to be dimmed automatically after a user definable period of idle time. Additionally, it can be set to power off the entire system after a user definable period of idle time.

A backup diskette for CDU can be obtained from Connectix by calling them at 1-800-950-5880. There is a nominal shipping charge for the disk.

This software is supported by 800-SOS-APPL but is limited to installation or removal and the functionality of the Energy Star features. All other questions should be directed to Connectix directly.

Article Change History:
16 Jan 1995 - Updated for new Power Macintosh systems.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16689

Tech Info Library

LaserWriter 8.2: Faxes Instead of Printing (3/95)

Revised: 3/3/95
Security: Everyone

LaserWriter 8.2: Faxes Instead of Printing (3/95)

==========

Article Created: 4 November 1994
Article Reviewed/Updated: 3 March 1995

TOPIC ----------

I installed the LaserWriter 8.2 driver, and I'm still having a problem with "sticky destination" as I had with the 8.1.1 driver. I tested a Fax, then printed from SimpleText, and printed "print card" from HyperCard 2.2.

The SimpleText documents Faxed and then printed properly. The HyperCard document Faxed and did not print. If I force the print dialogue box to come up, then I can select print, and the card prints correctly. However anytime I bypasses the standard print dialogue box in HyperCard (such as when printing a card, a field, and so on) the document is sent to the recipient of the last Fax destination sent from the LaserWriter select 360. This is the identical situation I was experiencing with LaserWriter 8.1.1 drivers.

The LaserWriter 8.2 driver documentation states specifically that this "sticky destinations" problem was corrected, even when the application bypasses the standard print dialogue box. This does not appear to be the case with HyperCard 2.2 at least. It's defaulting to FAX when it should be automatically be resetting itself back to the printer.

DISCUSSION ----------

These problems are related to a known issue with some applications that do not follow the Print Manager guidelines, more specifically, with the PrJobMerge call. Print jobs not being printed are being faxed to the last person you sent a fax.

The LaserWriter driver v8.2 resolves many instances with it's "non-sticky" destination field, however, there are still some cases where applications cause the problem, not the driver. It is the application's responsibility to set the correct printing destination for each of the documents. This is performed using the Print Manager call "PrJobMerge". PrJobMerge is a print routine that applies information specified by a user in the Print dialog, to all documents selected

from the Finder. Our guess is that the application is not using, or incorrectly using, PrJobMerge.

A new version of the LaserWriter 8.2 printer driver will be posted shortly to online services. The new version is LaserWriter 8.2.2. Howerver, this is an application-related issue which the driver is working around.

Article Change History:
03 Mar 1995 - Added information on 8.2.2 and changed title.
14 Dec 1994 - Added additional information on PrJobMerge.
01 Dec 1994 - Added information on "patch".

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16693

Tech Info Library

AppleMail: Performance Problems (4/95)

Revised: 4/10/95
Security: Everyone

AppleMail: Performance Problems (4/95)

==========

Article Created: 4 November 1994
Article Reviewed/Updated: 10 April 1995

TOPIC ----------

When using AppleMail I am seeing a slow down in performance. When I launch AppleMail the menus are slow, tabbing from one field to another is also slow. I don't have these performance problems in other programs.

I have over 40 Font families installed, and I removed QuickDraw GX but that didn't help. What's wrong?

DISCUSSION ----------

There is a problem in versions of AppleMail prior to version 1.1.2 of AppleMail. If the Fonts folder in your System Folder contains a large number of fonts earlier versions of AppleMail function slowly.

To increase the performance of AppleMail, you need to update the version of AppleMail to version 1.1.2. AppleMail 1.1.2 is part of System 7.5 Update 1.0.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
10 Apr 1995 - Added information on AppleMail 1.1.2.

Support Information Services

..TIL16695-AppleMail-Performance_Problems_4-95_(TA32865).pdf

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16695

Tech Info Library

Macintosh: Shortcut Does Not Prevent Hard Disk Mounting (2/95)

Revised: 2/10/95
Security: Everyone

Macintosh: Shortcut Does Not Prevent Hard Disk Mounting (2/95)

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Article Created: 7 November 1994
Article Reviewed/Updated: 10 February 1995

TOPIC ----------

Sometimes when I try to bypass the mounting of the hard disk using the Command-Shift-Option-Delete keyboard combination it still mounts. Why?

For support troubleshooting, sometimes it is necessary to disable the mounting of the internal hard drive. In most cases, you can bypass the mounting of the hard disk using the Command-Shift-Option-Delete keyboard combination.

DISCUSSION ----------

(Command)-Shift-Option-Delete (CSOD) actually prevents the default boot drive, the drive selected in the Startup Disk control panel, from loading its driver. This should prevent the drive from mounting, but there is a patch that can affect this process.

The CSOD key sequence was originally implemented so corrupt drivers could be replaced on the drive. It is possible for the driver to become corrupt, so even if the drive is not the boot drive, mounting it may cause the Macintosh to crash. Without being able to prevent the driver from loading and the drive from mounting, the only way to replace the driver is to remove the power cord from the drive before booting and reconnect it once the Macintosh has booted. This is difficult to do with internal drives.

When Apple started producing faster computers with bigger hard drives, some of the larger hard drives took longer to spin up. This caused the drives not to mount during the boot process. A patch was placed in System 7.0.1 and later that corrected this problem.

This patch maintains a list of which SCSI IDs have drives connected in Parameter RAM (PRAM). The patch is utilized later in the boot process. First it checks to see which SCSI IDs have drives attached. If it finds an ID that has a drive, but the driver is not installed, the patch loads the driver and mounts the drive.

So, the CSOD shortcut prevents the driver from loading and the drive from mounting, but the patch loads the driver and the drive mounts anyway.

If you really do not want the drive to mount, you can reset PRAM (Command-Option-p-r) and use the CSOD in the same boot. (Release the Command-Option-p-r key sequence after you hear the chime and immediately hold down the CSOD key sequence).

This process works because the list of drives is cleared when PRAM is reset. The hard disk only mounts when the computer is restarted and the CSOD shortcut is not used.

NOTE: This process does not work with the Quadra 700.

Article Change History:
10 Feb 1995 - Added keyword; made several technical updates.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16697

Tech Info Library

AELC: Change ClarisWorks Mem Allocation for Grady Profile 11/94

Revised: 11/7/94
Security: Everyone

AELC: Change ClarisWorks Mem Allocation for Grady Profile 11/94

==========

Article Created: 7 November 1994

TOPIC ----------

When I try to print from Grady Profile I get the message that there is not enough memory to launch the program to print the report. I have 4 megabytes of memory on my Macintosh. What is causing this?

DISCUSSION ----------

The Grady Profile application program that comes with the Apple Early Learning Connection (AELC), only checks the preferred memory size of ClarisWorks (the application it uses). On a Macintosh computer with limited memory, this causes the Grady Profile application to display the not enough memory message. To correct this, change the preferred memory of ClarisWorks to 1100 K.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16698

Tech Info Library

QuickTake: Can Use PowerBook 100 Series AC Adaptor (12/96)

Revised: 12/9/96
Security: Everyone

QuickTake: Can Use PowerBook 100 Series AC Adaptor (12/96)

==========

Article Created: 4 November 1994
Article Reviewed/Updated: 9 December 1996

TOPIC ----------

Can I use a PowerBook AC power adaptor with the QuickTake 100 or QuickTake 150 Camera?

DISCUSSION ----------

The electrical specifications of the AC Line Adapter for the QuickTake 100 Camera and QuickTake 150 Camera is 4.5VDC/1.75A to 8.0VDC/1A.

The QuickTake 100 and QuickTake 150 work with any PowerBook 100 series AC adaptor. This includes models:

- M5140
- M5651
- M5652
- M4662
- APS-17adp

Article Change History:
09 Dec 1996 - Added M4662 power adapter.
28 Jun 1996 - Added QuickTake 150
11 Nov 1994 - Added PowerBook AC adapter model numbers.

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Tech Info Library Article Number:16700

Tech Info Library

Excel Files: Macintosh, Windows, MAE, & Windows/UNIX (11/94)

Revised: 11/7/94
Security: Everyone

Excel Files: Macintosh, Windows, MAE, & Windows/UNIX (11/94)

==========

Article Created: 7 November 1994

TOPIC ----------

This article describes sharing Excel files among Macintosh, Windows, MAE, and Windows/UNIX.

DISCUSSION ----------

If you sometimes need to move Excel spreadsheets among those different platforms, the multiple layers of emulation can get tricky. You can carry floppy disks between a Macintosh and a SPARCstation running MAE, share files between MAE and Wabi, and carry floppies to a PC running Windows.

To make Macintosh Excel recognize an Excel file created on Windows set the type/creator with a utility like some drag and drop auto typer, or ResEdit. Making Windows Excel recognize an Excel file created on Macintosh is harder. Macintosh Excel has a translator to open Windows Excel files, but there is no option to save in Windows Excel format. Also, Windows Excel lacks options to either open or to save in Macintosh Excel format. But Windows Excel can successfully read the Macintosh files if the first block of the file is deleted. To do this use the following UNIX command:

```
dd if=mac.xls of=win.xls skip=1
```

Other methods of moving files, like PC Exchange, may avoid the problem by automatically invoking the proper translators.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16701

Tech Info Library

Excel 5.0 and DataViz MacLink Plus Problem (10/95)

Revised: 10/24/95
Security: Everyone

Excel 5.0 and DataViz MacLink Plus Problem (10/95)

==========

Article Created: 7 November 1994
Article Reviewed/Updated: 24 October 1995

TOPIC ----------

I am using Excel 5.0 and System 7.5. I launch Excel and save the data as a Microsoft Workbook data file. While Excel is still open, I double click on the data file to open it, when DataViz kicks in and reports "the application cannot be found, would you like an alternative program". It seems like the following is happening:

Excel does not seem to know it is already opened, so then DataViz translators launch they do not recognize the new Workbook data files. Does DataViz have updated translators for Excel 5.0 Workbook files, or is it possible to setup the existing DataViz MacLink Plus translators to read Workbook data files?

When I uncheck the box for show only recommended choices, I get the whole hard drive, which defeats the benefit of DataViz translators.

I can use File open and then search to open the data file, but it does not want to work that way.

DISCUSSION ----------

Without Easy Open installed, whenever you double-click on a file, your Macintosh tries to find an application with a matching "signature". If there is one, the application is opened and the file is blindly given to that application to be opened. If there is no matching signature, a message appears telling you the application could not be found (sometimes with an additional option to open the file using TeachText).

With Easy Open installed, every time you double-click on a file, Easy Open searches certain resources located inside your applications with a matching "signature" as well as Easy Open's translation components to insure that the application can open that file.

Due to the sequence in which Easy Open searches, the combination of any version of Easy Open with Excel 5.0 and MacLinkPlus for Easy Open 7.5 (which is aware of Excel 4.0 but not Excel 5.0) causes Easy Open to not allow Excel 5.0 open its own document. This is not a bug in any of these individual components, but a problem with how these components interact when they are not aware of each other.

Workarounds

Short Term Solution

Turn Macintosh Easy Open off. Macintosh Easy Open is located in the Control Panels folder.

Long Term Solution

Use MacLinkPlus for Easy Open 7.52p1 (RD-MLP-EASYOPEN). This can be obtained by contacting DataViz technical support.

OR...

Use MacLinkPlus version 8.00 or higher.

OR...

Upgrade to Microsoft Excel 5.0a which fixed the problem.

The Tech Info Library article titled "Locating Vendor Information" can help you search for DataViz Inc.'s address and phone number.

Article Change History:
24 Oct 1995 - Corrected minor typo.

Support Information Services

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Tech Info Library Article Number:16702

Tech Info Library

AppleSearch 1.5 Quick Reference (11/94)

Revised: 11/7/94
Security: Everyone

AppleSearch 1.5 Quick Reference (11/94)

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Article Created: 7 November 1994

TOPIC -----

This article is an AppleSearch 1.5 quick reference.

DISCUSSION -----

Overview

- Full-text search and retrieval
- Search results are ranked based on relevance to search criteria
- WAIS gateway feature enables searches on the Internet
- Scheduled searches automatically deliver new or changed information

Server

Hardware
AppleSearch server runs on a Power Macintosh, or any Macintosh computer with a 68040 processor, including Apple Workgroup Server, Quadra, Centris, and some Performa and PowerBook models

System Software
- Requires System 7.0 or later
- Compatible with System 7 Pro and System 7.5
- Requires Macintosh File Sharing or one of these versions of AppleShare:
  - AppleShare Pro (on an Apple Workgroup Server 95)
  - AppleShare 4.0.2
  - AppleShare 3.0.2 or 3.0.3
- Requires MacTCP 2.0.6 (included with Installer)

Network Connections
- Requires AppleTalk connection to client
- Requires IP connection to the Internet for WAIS gateway to operate. This connection can be native IP or "IPTalk" (IP encapsulated in AppleTalk) through a gateway.

- AppleTalk connection and IP connection may or may not be the same physical network

Disk Space

- Occupied by index files: 1-2 times the text size of all information sources combined
- Used temporarily by the indexing process: an amount equal to the text size of the largest information source
- Index and temporary files may be put on any locally-attached drives

Memory

- Memory partition size of 3500K required for server software; 4000K recommended. 4000K supports up to 10 local information sources. Each information source beyond 10 requires an additional 100K.
- An additional 1000K is used transparently by the WAIS gateway.

Operations

- Program linking must be started on the server.
- Program linking must be enabled for each AppleSearch user.
- Local information sources must be shared via AppleShare or File Sharing. Access is controlled by Users & Groups.
- AppleSearch users can be registered users or guests.
- A server can support up to 50 simultaneously connected users.

Text Translation

The AppleSearch server uses XTND translators to extract text from the files in its information sources. The following DataViz XTND translators are included with the AppleSearch product:

- MacWrite versions 4.5, 5.0, and II
- WordPerfect for Macintosh versions 1.0, 2.0, and 2.1
- Microsoft Word for Macintosh versions 3.0, 4.0, 5.0, and 5.1
- Microsoft Works (word processing) versions 2.0 and 3.0
- FrameMaker MIF versions 2.0 and 3.0
- PageMaker version 4.0
- Ragtime version 3.1
- AppleWorks
- WriteNow versions 2.0 and 3.0
- Nisus version 3.0
- PICT (text extraction only)
- Excel (tab text only, no formula)
- Microsoft Word for Windows versions 1.0 and 2.0
- WordPerfect for Windows version 5.1

Stop Words

Stop words are conjunctions, pronouns, and other words that are not meaningful in a search. These are filtered out during indexing and are not used in any search. The list of stop words is contained in the editable text file "AppleSearch Stopwords," which is in the AppleSearch folder inside the Preferences folder. Examples of stop words are "and," "by," "in," "there," and "with."

Client

Hardware

AppleSearch client requires Macintosh Plus or better, with 4 MB of memory and a hard disk

System Software

Client requires System 7.0 or later

Network Connections

- Requires AppleTalk connection to server
- Client may be connected to one server at a time, and to any number of information sources on that server
- User may choose to be automatically connected to a server upon system startup
- User remains connected to the server upon quitting the client application if any scheduled searches are pending

Searching

Search requests, called "reporters," can be written in natural language—the user's own words, phrases, sentences or key words—or they may use search operators. When search requests use natural language, AppleSearch translates them into Boolean operations by inserting an implied "or" between all the words (except stop words).

Search requests are not case-sensitive and should not use punctuation, since some punctuation marks are taken as adjacency operators.

Saved reporters reside on the server and may be exported to other users.

Search results are ranked according to their relevance to the user's search criteria, using these parameters: frequency of query words, matches on rare words, proximity of query words, and co-occurrence of multiple query words.

Relevance ranking makes natural language searches effective by sorting out what may be a large number of documents returned by the search. The user can concentrate on the highest-ranked documents instead of needing to narrow down the search by respecifying the search criteria.

Using "stemming," AppleSearch finds the root word of a query word, and all words that can be formed from the root word.

Search expressions are evaluated left to right, and follow this order of precedence:

1) Wild characters, wild strings, and word expansion

? = single wild character, for example, s?ste? finds system, sister, and so on.

* = wild string, for example, micro* finds microbe, microbiology, micron,and so on.

! = word expansion, causes search to also return articles containing most common co-occurring words.

2) Parentheses

3) Proximity operators

W/n = within n words
Hyphen (-), period (.), apostrophe ('), comma (,) and "adj" are all equivalent adjacency operators, which allow a user to find a specific phrase.

4) Boolean operators

or An article will match the search criteria if either of the terms separated by "or" occurs in the article.
and An article will match if the terms separated by "and" both occur in the article.
not An article will match only if the term preceding "not" occurs in the article, but the term following "not" does not occur.

Note: This list of operators applies to local information sources. For a list of operators applicable to WAIS searches, please refer to the AppleSearch Interface to WAIS section in this card.

Scheduled Searches

Scheduled searches automatically deliver new or changed information to a user's hard disk at a predetermined time, in the form of a newspaper-like "update." An update contains any articles from the information source that match the search criteria and were added or changed between the last delivery of the update (or the creation of the reporter) and the most recent indexing.

To receive the update, the user must be connected at the time of the scheduled search. If the user is not connected, the update will not be delivered and any new information will appear in the next update.

Scheduled searches may be done only by registered users, not by guests.

In the case of WAIS databases, scheduled searches can only be carried out on databases that support date information.

AppleSearch Interface to WAIS

AppleSearch uses the WAIS Directory Servers file to find directory servers on the Internet. Using information from them, it builds and maintains the WAIS Data File. WAIS Directory Servers is an editable text file which lists the following servers by default:

210@wais.com
210@quake.think.com
210@cnidr.org

WAIS Searches

Searching WAIS databases is similar to searching local information

sources in AppleSearch. All WAIS databases support the "or" operator. In addition, some WAIS databases support the following AppleSearch operators:

- Boolean operators "and," and "not"
- Wild string (*)
- Parentheses
- Adjacency ("ADJ" in upper case only). In WAIS, this will locate words not only directly adjacent to each other, but near each other as well. The closer the words, the higher the relevance score.

Scheduled Searches

Similar to scheduled searches of local information sources in AppleSearch, but applicable only to WAIS databases that support date information.

Custom Databases

Databases that are not listed in the directory server can be added by specifying the name of the database, port ID, and IP address or host name in the WAIS Custom Databases file. The custom databases will be available after the next scan for new sources.

Support Information Services

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Tech Info Library Article Number:16704

Apple IP Gateway Quick Reference (5/96)

Revised: 5/28/96
Security: Everyone

Apple IP Gateway Quick Reference (5/96)

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Article Created: 7 November 1994
Article Reviewed/Updated: 28 May 1996

TOPIC ----------

This article is a quick reference on the Apple IP Gateway.

DISCUSSION ----------

Overview

- Lets mobile, remote, and local AppleTalk network users access Ethernet-based TCP/IP services, such as the Internet — even if the AppleTalk network does not directly support IP.
- Translates packets between TCP/IP and IP encapsulated in AppleTalk (IP network and AppleTalk network may or may not be the same physical network).
- Can be used as a stand-alone product or in conjunction with Apple Internet Router or Apple Remote Access server.
- Is an IP forwarder, not an IP router.
- Can be configured as an IP address server.
- Allows IP access to be restricted to specific AppleTalk networks.

Hardware and Software

- Runs on Workgroup Servers (except the Apple Workgroup Server 95), Power Macintosh, or Macintosh or PowerBook with a 68020 or later processor.
- Requires at least 4MB of RAM and a hard disk.
- Requires System 7.1 or later.
- Requires MacTCP 2.0.4 or later (included with Gateway Installer).
- Requires an Ethernet connection to IP network.

Note: The Apple IP Gateway will not run on Open Transport or PCI machines.

Gateway Setup

MacTCP Configuration
This section covers MacTCP configuration for a Macintosh running the IP Gateway. Configuring the client is covered later in this document.

- Select the Ethernet port in the MacTCP Control Panel that is connected to the IP network. "EtherTalk" is not used in this case because that refers to IP encapsulated in AppleTalk. Here you are configuring the IP network connection, which is native IP.
- Enter the Gateway's manual address in the IP Address box.
- Click "More…" to get to the next dialog box.
- Under Obtain Address, select Manually.
- Enter the Domain Name Server information specified by the network manager.
- Set the subnet mask to the value specified by the network manager.
- In the Gateway Address box, enter the IP address of the subnet's IP router.

Gateway Configuration
- Select Automatic addressing if the gateway will assign IP addresses to clients. Select Manual addressing if each client has a fixed address. Select Both if both methods apply.
- Each mode can support up to 253 contiguous addresses. Enter the number of addresses and the first address in the range for each method that will be used.
- Specify whether or not to activate the gateway at Macintosh startup.
- Specify whether or not to impose network restrictions.
- Network Restrictions can be used to restrict access to the IP network from certain AppleTalk networks.
- Use the radio buttons to specify whether you are allowing or denying access to listed networks.
- Enter the beginning and ending numbers of each AppleTalk network range to be included.

Monitoring

- Upper section of Gateway Information window shows the following:
  - Number of automatic addresses available and assigned.
  - Number of users connected (both automatic and fixed addresses).
  - Relative levels of network activity and network errors.
- Lower section lists addresses and usage statistics of connected users.
- Table can be sorted by any field by clicking on heading.

Client Setup

Hardware and Software
- Requires Macintosh Plus or later with at least 2MB RAM
- Requires System 6.0.5 or later
- Requires AppleTalk version 57.0 or later

Note it will also work with clients running Open Transport's TCP/IP control panel.

MacTCP Configuration

- Select in the MacTCP Control Panel the AppleTalk port being used (EtherTalk, TokenTalk, LocalTalk, or Remote Only), which specifies that IP will be encapsulated in AppleTalk.
- In the pop-up menu, select the zone where the IP Gateway resides.
- Click "More…" to get to the next dialog box.
- Enter the Domain Name Server information obtained from the network manager.
- If automatic addressing is being used, select Server under Obtain Address.
- If manual addressing is being used, follow these steps:
  - Select Manually under Obtain Address
  - Set the subnet mask as specified by the network manager
  - In the Gateway Address box, enter the IP address of this subnet's IP router.

Article Change History:
28 May 1996 - Updated reference to Open Transport and PCI machines.
03 Nov 1995 - Corrected the Gateway Setup, MacTCP Configuration section.
09 Dec 1994 - Made correction for technical accuracy.

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Tech Info Library Article Number:16705

Newton MessagePad: Infrared Specifications (11/94)

Revised: 11/8/94
Security: Everyone

Newton MessagePad: Infrared Specifications (11/94)

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Article Created: 8 November 1994

TOPIC --------------------

What protocol scheme is used on the Newton MessagePad? I want to develop an application that uses the Infrared beam.

DISCUSSION --------------------

The following documents the general scheme used for Newton MessagePad units built for the United States:

Communication Scheme: Bi-directional half-duplex

Modulation Type: Amplitude shift keying (ASK)
carrier = space, no carrier = mark

Carrier: Infrared (900-1050 nm), 1000nm peak sensitivity

Transmission Rate: 38,400 bps(max), under SW control, fall back to
19,200 bps when error rate becomes too high.
(Sharp module specified to 19.2)

Transmission Modulation Frequency: 500kHz & 38 kHz

Receive Modulation Frequency: 500kHz only

Communication Range: 8 cm - 1 meter @ 19.2 kbps

Emission directional cone +/- 13 degrees

Receive directional cone +/- 13 degrees

Support Information Services

..TIL16710-Newton_MessagePad-Infrared_Specifications_11-94_(TA32882).pdf

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Tech Info Library Article Number:16710

Tech Info Library

Apple RAID: Software Overview (3/95)

Revised: 3/17/95
Security: Everyone

Apple RAID: Software Overview (3/95)

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Article Created: 8 November 1994
Article Reviewed/Updated: 17 March 1995

TOPIC ----------

This article provides an overview of Apple RAID (Redundant Array of Independent Disks) software.

DISCUSSION ----------

Overview

RAID is a method of using multiple disk drives and multiple SCSI buses to increase the reliability and/or performance of disk subsystems. There are several RAID levels available in the commercial market today. The most well known RAID levels are from 0 through 5, but other levels are emerging. Each level has its unique set of features and appropriate uses. Apple RAID Software provides RAID levels 0 and 1 (described later in this article), and was designed specifically for PowerPC-based Workgroup Servers, and provides three main features for the PowerPC-based Workgroup Servers:

- Reliability: improve server fault tolerance (RAID 1, mirroring).
- Performance: increase system performance (RAID 0, striping).
- Ease of Use: Simple graphical interface, with drag & drop features.

The Apple RAID software has three main parts:

- Apple RAID Monitor extension
- Apple RAID Driver
- Apple RAID Application

Apple RAID Monitor extension

The Apple RAID monitor is loaded at startup and monitors the condition of Apple RAID formatted disks. If a failed disk is detected, the monitor extension

receives an error notification from the disk and notifies the user on the server’s local desktop. (Currently, remote notification of failed disks in not available in this version of Apple RAID.)

Apple RAID Driver

The Apple RAID Driver has two main parts:

• One part is loaded with the system software at startup and acts as the interface between an application's request for data and the SCSI Manager.

• The other part is loaded onto each disk formatted by Apple RAID and interprets commands from the SCSI manager and a disk’s SCSI firmware.

For example, when an application writes data to a mirrored volume, the Apple RAID Driver converts this command into two identical write commands for the SCSI Manager, one write command to each of the two disks with partitions for the mirrored volume. If the application is reading from a striped volume, the Apple RAID Driver reconnects the data stripes from each disk into the appropriate form for the requesting application.

At the disk level, the Apple RAID Driver monitors the status of each disk and reports various error conditions to the Apple RAID application.

Apple RAID Application

The Apple RAID application is the main interface as seen by users. It provides information about the type and location of connected hard disks, the created RAID volumes, and provides users the ability to create, manage, and repair volumes.

Apple RAID currently does not support SCSI/NuBus cards for additional SCSI buses, and actively attempts to turn off disk caching for connected disks. Also, Apple RAID checks to see if the system was shut down in a controlled fashion and if a mirrored volume is "out-of-sync".

Article Change History:
17 Mar 1995 - Corrected PowerPC wording.
14 Feb 1995 - Added keyword; made minor technical updates.

Support Information Services

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Tech Info Library Article Number:16712

Tech Info Library

Apple RAID: Disk Compatibility (11/94)

Revised: 11/8/94
Security: Everyone

Apple RAID: Disk Compatibility (11/94)

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Article Created: 8 November 1994

TOPIC ----------

This article provides disk compatibility for Apple Raid (Redundant Array of Independent Disks) and third-party hard drives needing to support SCSI-2 and SCSI Manager 4.3.

DISCUSSION ----------

A major requirement for Apple RAID is its ability to work seamlessly with a large number of third-party disk drives. This requirement exists because Apple RAID requires at least two disk to create a mirrored or striped volume. Because not all configurations of the PowerPC-based Workgroup Servers are configured with two disk, customers will turn to third-party disk resellers for additional disk capacity.

A design goal for Apple RAID is to be compatible with disks which support the advanced SCSI-2 features of Apple's SCSI Manager 4.3 (currently on the AV Macintosh and all PowerPC-based computers). Particular SCSI-2 features which are used by Apple RAID include disconnect/reconnect, and SCSI DMA. As these and other SCSI-2 features are not available in all disk drives, it is recommended that Apple RAID customers only use recently manufactured disk drives (1990 or later) of 200 MB and larger. These are general guidelines, as Apple cannot control firmware changes by non-Apple supplied disk drives. Apple recommends that customers check with their third-party disk supplier to be sure their disks work with Apple RAID.

Support Information Services

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Tech Info Library Article Number:16714

Tech Info Library

Apple RAID: RAID 1 Mirroring and RAID 0 Striping (2/95)

Revised: 2/14/95
Security: Everyone

Apple RAID: RAID 1 Mirroring and RAID 0 Striping (2/95)

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Article Created: 8 November 1994
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

This article describes RAID 1 - Mirroring and RAID 0 - Striping.

DISCUSSION ----------

RAID 1 - Mirroring

Because reliability and data integrity are main concerns for server administrators, Apple RAID implements RAID 1, commonly referred to as mirroring. This implementation of RAID 1 occurs at the partition level rather than mirroring a complete disk drive. This lets you create multiple partitions on the same set of physical disks, and therefore, use those disks for different types of data needs.

To create a mirrored volume, Apple RAID creates duplicate copies of information on two equally sized partitions on two separate physical disks. During a write operation, the identical information is put on both disks. For read operations, all data is taken from the "primary" disk. If either disk fails, the other disk continues to process I/O, and all reads and writes occur on the surviving disk.

This feature provides a significant increase in a system's overall fault tolerance. An additional benefit of mirroring with Apple RAID is support for disk duplexing - where the mirrored disks are connected to different SCSI controllers and are attached to the host system with physically separate cables. This feature tolerates not only a disk failure, but also a failure of a SCSI controller or a cabling system. This capability is known as SFT II (System Fault Tolerance) in NetWare.

Apple RAID also provides the system administrator protection against data on two mirrored disks from becoming different or "out-of-sync". If there is a power failure between writes to disks containing a mirrored volume, it is possible (but unlikely) that different information could exist on the two mirrored

partitions. This might occur if the system was not shutdown in a controlled manner (that is; not using the Special/Shut Down command).

If something like this occurs, then after a restart, the user is warned that the mirrored volume may be "out-of-sync". Under these conditions, the system software cannot conclusively determine which disk (if either) may have incorrect data.

If this warning appears, Apple RAID lets users either "resync" the two disks, or split the mirrored volume into two separate HFS volumes, and manually determine which disk has the best information. From here, users can recreate a mirrored volume from the HFS volume with the best information. The detection recovery options for "out-of-sync" mirrored volumes is a significant benefit to customers requiring a high data integrity.

In summary, Apple RAID software's implementation of RAID 1, or mirroring, is very flexible and provides you with broad protection against disk failures.

RAID 0 - Striping

A second benefit of Apple RAID is potentially increased system performance through disk striping. A striped volume is created by spreading data across multiple disks (up to four) and multiple SCSI buses (up to two on the Workgroup Server 8150 and 9150). Instead of an I/O transaction occurring sequentially on one disk spindle, as with a normal HFS volume, striping allows for parallel access to disks in a striped volume. This may result in faster I/O transactions and/or greater data throughput. However, many factors effect the performance of a striped volume including:

- Type of disk drives.
- Software application being used.
- Size of the I/O transaction (in bytes or blocks).

For example, a graphics/imaging customer who consistently moves large sequential files (10+ MB), would configure their striped volume differently than a database user who may require many small I/O transactions (about 8 KB per I/O).

Apple RAID gives you the ability to control the size of each I/O transaction with a parameter called "Stripe Unit Size". There has been little investigation into optimizing the performance of a striped volume for different applications.

Refer to the following publications for additional information about RAID technology:

"RAID: An Introduction to Redundant Array of Independent Disks" by: Apple Computer, World Wide Performance Systems, May 1994.

"The RAID Book: A Source Book for RAID Technology" by: The RAID Advisory Board, Lino Lakes MN, June 1993, 1st Edition.

Article Change History:
14 Feb 1995 - Added keyword; made minor technical updates.

..TIL16716-Apple_RAID-RAID_1_Mirroring_and_RAID_0_Striping_2-95_(TA32886).pdf

Support Information Services

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Tech Info Library Article Number:16716

Tech Info Library

Apple RAID: Hardware and Software Setup (11/94)

Revised: 11/8/94
Security: Everyone

Apple RAID: Hardware and Software Setup (11/94)

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Article Created: 8 November 1994

TOPIC ----------

This article describes how to install Apple RAID (Redundant Array of Independent Disks) onto your PowerPC-based Workgroup Server server. You need to install Apple RAID onto your system so that Apple RAID can do its job.

DISCUSSION ----------

System Requirements

To use Apple RAID software, you must have:

- A PowerPC-based Apple Workgroup Server.
- Macintosh System Software Version 7.1.2.
- Disk drives with a minimum of 200 MB of storage.
- Disk drives attached through the built-in SCSI ports (Apple RAID doesn't support third-party SCSI bus channels).

The Apple RAID drivers use approximately 400K of RAM. Be sure your system has adequate RAM to serve this additional demand.

About Disk Drives

It's important to check on the compatibility of your hard disks before storing valuable data on them with Apple RAID. If a disk you which to use follows the Macintosh SCSI interface standards, and is made by a reliable vendor, it should work properly with Apple RAID. However, if you are unsure if a disk is compatible, contact the manufacturer of the disk and ask if the product has any known problems using the Apple RAID format.

IMPORTANT: Disk drives with under 200 MB of data storage are not supported by Apple RAID.

Installing Apple Raid Software

You must install the Apple RAID software program on your startup disk. The Apple RAID Installer places these files on your startup disk:

- Apple RAID Software program in the Apple menu folder on the System folder.

- System extension file, called Apple RAID Monitor, in the Extensions folder.

- Apple RAID folder in the topmost directory of your startup disk, which contains the Apple RAID Read Me and the SimpleText text processing program.

If you will be creating Apple RAID volumes on your startup disk, you'll need to initialize you startup disk with Apple RAID by following the instructions in "Initializing Your Startup Disk" before you install the Apple RAID program.

Initializing Your Startup Disk (optional)

Follow this procedure if you want to initialize your startup disk with Apple RAID. You will then be ready to create mirrored, striped, and standard Macintosh volumes on the startup disk.

1) Use the Apple RAID Planning Sheet to decide how you will apply Apple RAID to your system. Good planning speeds up the task of adding Apple RAID to a server.

2) BACK UP YOUR FILES.
   The Apple RAID disk initialization erases all data on the disk. Make sure that you have backed up all your files on another disk or other media.

3) Start up the server from the Apple RAID CD-ROM disc.
   Insert the CD-ROM disc and hold down the C key while restarting the server. This assures that the system software starts up from the CD-ROM.

4) Double click Apple RAID on the Apple RAID CD to start the program.

5) Select your server's startup disk and initialize it.

   WARNING: Be sure you have backed up your data as initialization will erase all data on the disk.

   Click OK when asked if you want to erase all the data on the disk. When initialization is complete, you'll notice that the volume has disappeared from the Volume column. The Initialize command removes the volume that was there.

6) Select you startup disk in the Disks column and choose New from the Volume menu.
   The Create New Volume dialog box appears, with your selection

highlighted.

Shortcut: Click a disk in the Disk column and drag it to an unoccupied area in the Volumes column. When you release the mouse button, the Create New Volume dialog box appears.

7) Select the Volume type Standard Macintosh HFS.

8) Set the size of your startup volume by entering a number in the Volume Size box.
This box is preset with the maximum available space on the disk. For your startup volume, it's a good idea to take the current size of your system folder and double it to allow space for future additions of fonts, system extensions, and so on.

9) Click OK to create a standard Macintosh volume.
The process typically takes less than a minute. When the process is complete, an icon for the volume displays on the desktop and an entry for the new volume appears in the Volume column in the Setup window.

10) Re-install your system software into the Apple RAID volume you just created.
Use the appropriate System Software Installer on your Apple RAID CD-ROM, or re-install your system files from your backup copy in order to preserve any customizations you've made to your system files.

Your new Apple RAID volume is now the startup volume.

11) Restore other files into your new RAID volume that you want to reside there.
You are ready to install the Apple RAID Software program.

NOTE: You have created an Apple RAID initialized standard Macintosh volume for your startup volume. This is the simplest means to installing Apple RAID on a RAID initialized disk. However, you may want to apply the protection of a mirrored volume to your startup volume. You can do this at any time, without shutting down or restarting your server, by using the Create Mirrored Volume command. For instructions, see "Mirroring a Standard Volume" in "Apple RAID Software User's Guide". A mirrored volume requires two disks initialized with Apple RAID.

Installing The Apple RAID Program

1) Insert the Apple RAID Software CD-ROM disc into the CD-ROM drive.

2) Start the Apple RAID Installer.

3) Select your startup disk and click install.

4) Click Restart to restart the server.
After restarting your server, the Apple RAID program can be found in the Apple menu.

..TIL16717-Apple_RAID-Hardware_and_Software_Setup_11-94_(TA32887).pdf

Support Information Services

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Tech Info Library Article Number:16717

Tech Info Library

Apple RAID: Disks Must Be Formatted by Apple RAID (11/94)

Revised: 11/8/94
Security: Everyone

Apple RAID: Disks Must Be Formatted by Apple RAID (11/94)

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Article Created: 8 November 1994

TOPIC ----------

This article describes the need to format all hard drives to be used with Apple RAID with Apple RAID software rather that HDSC Setup.

DISCUSSION ----------

To use a disk with Apple RAID, a disk must first be formatted by Apple RAID. This is because the size of the Apple RAID driver is substantially larger then the driver created by HDSC Setup. Because there is not enough space allocated at the beginning of a disk (given the current factory formatting for Apple disks), disks which are to be used by Apple RAID must be reformatted to make this additional space at the beginning of each disk.

Disks which have been formatted by Apple RAID are distinguished from non-Apple RAID formatted disks by using a different icon in the disk column of the Apple RAID setup window. For users who desire to use the Apple supplied disks with their PowerPC-based Workgroup Servers in a RAID array, each disk must be reformatted, and all System SW, applications and data will need to be reinstalled. Recommendations for how to do this will be included in the Apple RAID Users Manual.

WARNING: Formatting a hard disk will erase all data, be sure to backup any drive before formatting it.

Support Information Services

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Tech Info Library Article Number:16718

Tech Info Library

MacX25: Servers Cannot Communicate (11/94)

Revised: 11/8/94
Security: Everyone

MacX25: Servers Cannot Communicate (11/94)

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Article Created: 8 November 1994

TOPIC ----------

I've installed MacX25 software on two Macintosh IIX 8/80 computers. These MacX25 servers are located in two different countries (Italy and Germany), and cannot communicate with one another.

The MacX25 servers will communicate with other X.25 hosts, but cannot call one another. A special X.25 trace tool returns the following error:

Call connect failed
CLR DTE O CALL CLEARED, REMOTE DTE ORIGINATED FOR REASON 140
RETURN CODE= 0X0281=641, STATUS CODE= 0X8000=

On the Admin Log of MacX.25 appears:
Server "Dres MI" incoming call to addr "xxx" refused
call originated from address "xxx"

I tried to use and modify different parameter a file for MacX25. I have checked every setting with a technician from SPRINT.

DISCUSSION ----------

The Diagnostic code decimal 140 error is "Call with Incorrect Source Address", referring to the Network User ID or source address/DNIC. This means your calling gateway's address or address format is incorrect. The CUG number, if required, may also be incorrect.

Since you are attempting to log into another MacX25 server, that MacX25 server MUST be set up to receive calls! A MacX25 server by itself won't answer incoming calls.

- You'll need to be running the Apple Internet Router (AIR) AppleTalk/X.25 Wide Area Extension, or some other application on that server that makes MacX25 library calls to enable it to receive calls. If you are running

the AIR X.25 Wide Area Extension, you'll need to set the port configuration to receive calls.

- You'll need to configure that receiving server's parameter file: open the parameter file, select Channel Allocation, select either two-way or incoming channels.

To imbed your local MacX25 server's X.25 address, launch ResEdit, open and edit the resource Xadd with your DNIC.

There are sometimes slight variations in addressee conventions used on private PDNs, such as you may need to precede the DNIC with an ASCII character, perhaps a 1 or 0. Since your calls on the public PDN work, but your calls on the point-to-point line do not, you'll want to inquire about any special calling/receiving conventions at some point required by that one PDN's "switch".

Support Information Services

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Tech Info Library Article Number:16719

System 7.5: Default Open & Save Dialog Box Directory (5/95)

Revised: 5/19/95
Security: Everyone

System 7.5: Default Open & Save Dialog Box Directory (5/95)

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Article Created: 9 November 1994
Article Reviewed/Updated: 19 May 1995

TOPIC ----------

My customer has installed System 7.5 and noticed some differences in the default directory when he goes to Open files inside his programs.

Most of the time when he goes to open a file, the Open dialog box gives him as a default directory the directory where he last opened a file. However, sometimes when he goes to open a file, the Open dialog defaults to the root directory of his boot volume (not the directory where his programs are or the root directory of the partition where his programs are). He did not see this behavior under System 7.1.

DISCUSSION ----------

Have the customer check the General Controls panel. There is a setting there for Documents that controls the behavior of the open/save dialogs.

There are 3 choices in the Documents section (bottom right corner of window):

Folder which contains the application

If you want the old behavior, select the Folder that contains the Application. It then opens all the time.

Last folder used in the Application

If you set this option to "Last folder...", when you open a file the Open dialog box gives you as a default directory the directory where you last opened a file. If set for "Last Folder..." and the application has not yet been launched, it has no last folder and defaults to the root of the hard drive.

Documents Folder

This option, when selected, will automatically default to the directory of the "Documents" folder on the desktop when saving or opening documents.

Article Change History:
19 May 1995 - Added information about Documents folder option.
06 Mar 1995 - Added keyword; minor technical updates.
16 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16721

Tech Info Library

Macintosh Processor Upgrade: Description (4/97)

Revised: 4/8/97
Security: Everyone

Macintosh Processor Upgrade: Description (4/97)

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Article Created: 09 November 1994
Article Reviewed/Updated: 8 April 1997

TOPIC ----------

The following is a description of the Macintosh Processor Upgrade. (Note that the card has been discontinued.)

DISCUSSION ----------

The Macintosh Processor Upgrade is a card that upgrades some 68040 systems to the PowerPC microprocessor. It is available for the Macintosh Quadra 605, Macintosh LC 475, Performa 47x, Macintosh LC 57x, Performa 57x, Macintosh LC 580, Performa 58x, Macintosh LC 630, Macintosh Quadra 630, and Performa 630 series of computers. Note that the Macintosh Processor Upgrade does not support speech recognition. The Macintosh Processor Upgrade must be installed by an Apple authorized service provider as installation requires a CPU extraction tool. Once installed, the upgrade occupies the LC-PDS slot of your Macintosh computer.

Featuring a PowerPC 601 microprocessor running at either 50MHz or 66MHz (the upgrade runs at double the speed of the computer's existing microprocessor), the upgrade card is expected to boost performance up to two to four times on existing Macintosh models when running applications optimized for Power Macintosh. Applications employing floating point functions, such as graphics programs, may enjoy a performance boost of up to 10 times.

This new upgrade includes 256K of cache, and lets you switch back and forth between the PowerPC 601 and 68040/68LC040 processors upon restart.

Features of Macintosh Processor Upgrade

Power and speed

• Includes PowerPC 601 microprocessor with floating-point processor and 32K cache.
• PowerPC chip runs at double the processor speed of your Macintosh computer
• Includes 256K level-2 cache

Compatibility

• Macintosh System 7.5 (included)
• On-board Power Macintosh ROM
• Runs programs written for Power Macintosh
• Runs Macintosh programs
• Runs MS-DOS and Windows programs (with third-party SoftWindows software)

Article Change History:
08 Apr 1997 - Updated with availability information.
28 Jul 1995 - Made minor technical change.
10 Feb 1995 - Added keyword; made several minor technical updates.

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Tech Info Library Article Number:16722

Tech Info Library

Revised - AWS 95 Tune-Up 2.0 README (5/96)

Revised: 5/27/96
Security: Everyone

Revised - AWS 95 Tune-Up 2.0 README (5/96)

==========

Article Created: 9 November 1994
Article Reviewed/Updated: 27 May 1996

TOPIC ----------

This article is the revised Apple Workgroup Server (AWS) 95 Tune-Up 2.0 Read Me.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

DISCUSSION ----------

AWS 95 Tune-Up (2.0)
==========

The enclosed file is self-extracting archive containing a Disk Copy 1440K disk image.

To use, download, double-click on the file to expand it and use Disk Copy to create the disk.

Disk Copy can be found in the Utilities folder posted here.

ABOUT THE APPLE WORKGROUP SERVER 95 TUNE-UP

To get the maximum performance and minimize problems with your server, it is important to install the Apple Workgroup Server 95 Tune-Up. This update tells you how to install the tune-up software, lists the files affected by the changes to the server software, describes in more detail the improvements provided by the tune-up, and lists changes of interest to developers.

Tune-up Installation Procedure

The tune-up Installer automatically installs the software that you need to take advantage of the enhancements.

The Apple Workgroup Server 95 Tune-Up updates the A/UX operating system from version 3.1 to 3.1.1. The installation process doesn't affect any of the current kernel parameter settings.

Before You Begin

Before you begin the installation, be sure to back up all files and notify users that you will be shutting down the server in order to install the tune-up software. During the installation process, the system quits all programs running on the server; you must restart the server to complete the installation.

To perform the installation, you must be logged in to the server as "root". If your server is set up with the default configuration for file and print services, and the Autologin feature is enabled, you should be logged in as "root" automatically when you start the server. If your server is configured as a database server, you must log in as "root" by means of the Login dialog box.

Installing the Tune-Up Software

Make sure that you are logged in as "root" and then follow these steps:

1) Insert the disk you have just created.

   If the CommandShell application is the active application, the system displays this message: "This is a Macintosh disk. What do you want to use it as?" If this message appears, click the button labeled "Macintosh."

2) Double-click the Installer icon.

   This message appears: "You can only install the AWS 95 Tune-Up on the root volume, '/.' Please click Switch Disk to choose this disk."

3) Click Switch Disk until '/' is selected.

4) Click the Install button.

5) Click Continue to automatically quit all other running applications.

   The tune-up installation begins, and the system displays a progress bar and status messages during the process.

   The kernel is reconfigured; this process may take several minutes. After your server has loaded all of the appropriate tune-up software,

the message "Installation successful" appears.

6) Click the Restart button to complete the installation.

NOTE: If you routinely back up the server's system files (for example, to tape), you should make a new backup after performing the installation, as the system files will have been upgraded.

ReadMe for the Apple Workgroup Server 95

Tune-up 2.0

This document describes changes made to the latest release of the Apple Workgroup Server 95 system software, A/UX 3.1. You must be running A/UX 3.1 to install this software. If you are running an earlier version, call the Apple Order Center to order the AWS 95 Software Upgrade. After installing A/UX 3.1, then you can install this Tune-Up.

Notes on Installing the Tune-up

Installation takes approximately 5 minutes. The installer's on-screen messages will guide you through the installation process. You will be required to restart your system after the installation has completed, so be sure to prepare any clients ahead of time for a service interruption.

IMPROVEMENTS

Application support

- Use of Timbuktu Pro's v1.0.x TCP/IP connection method no longer causes the A/UX Macintosh environment to hang.
- A problem which caused AppleSearch indexing to fail under heavy load has been corrected.
- Color Central no longer hangs under heavy load.
- BeHierarchic and NowMenus no longer cause hangs or crashes of the Mac environment.

AppleTalk

- Routerless nets where the systems have unique network numbers but identical node numbers will no longer experience dropped packets which lead to major performance degradation.
- The ADSP stack now correctly completes a read request when no data is available on a half closed session. Previously, the read request was queued which could cause applications utilizing ADSP to hang.

A/UX File Manager

- The volume backup time is now correctly maintained for the virtual UNIX volume, `/'.
- The File Manager supports file names beginning with the bullet

character, `•'. However, these characters were translated into dot, `.', on the UNIX filesystem to avoid a problem with the Finder interpreting files beginning with dot as drivers. A new environment variable, TBSEEDOTS, now prevents this translation. It is NOT set by default.
- Remote NFS filesystems having a space in their name no longer cause the File Manager to become confused.
- Unrecoverable disk read errors no longer cause the entire Mac environment to crash.
- Random failures during Finder copies and saving from applications to the server have been eliminated.
- The performance when extending the resource fork of an AppleSingle file on the UNIX filesystem has been improved dramatically. Currently if this occurred during a save of a large file (via an arbitrary application), it could take up to 3 times longer to save the file than normal. There should now be no measurable difference between a normal save and one that happens to extend the resource fork.
- A problem that caused save's from applications to fail with the message, 'File couldn't be saved because it couldn't be found' has been eliminated.
- The creator of the file /etc/fstab has been changed to TextEditor's signature.
- A 'find' of file or folder names that contain accented vowels (or other diacriticals) now works properly.

A/UX Kernel
- The A/UX kernel no longer panics if more than four Ethernet interfaces are installed.
- The console emulator no longer hangs if you stop <CTRL-S> the output.
- A kernel bus error, which could occur under heavy file I/O, has been corrected.
- Certain I/O operations no longer cause the kernel fault handler to panic the system.
- The FIONREAD ioctl no longer causes the system to hang when issued from a background process.
- A problem which caused the kernel's asynchronous I/O data structures to become corrupted has been fixed.
- NFS now maps client user IDs greater than 65533 to the anonymous user, "nobody".

UNIX Printing
- Lpr(1) now prints correctly via AppleTalk to the LaserWriter 810.
- The lpr(1) back-end utility for PostScript printing is now enscript(1). Therefore, lpr(1) now supports eight-bit characters and the Grave character, `, on all LaserWriters.

UNIX File Locking
- A problem which prevented the lock daemon from detecting contention between a process running on the server and a process running on the client has been corrected.
- The lock daemon, rpc.lockd, no longer fails after a connection timeout with the status monitor on another machine.
- Previously, on a system with NFS configured, some signals were ignored while a process was waiting on a lock.

- The lock daemon now supports version 3 of the lock protocol for PC-NFS clients.

Other UNIX Utilities

- The shutdown(1m) command no longer complains about RPC port mapper failures.
- The default rotational delay set by newfs(1m) is now zero microseconds.
- Previously, if you aborted an FTP connection to stop a transfer, the A/UX FTP server would shut down the control connection and the session would be lost.
- The 'cron' daemon no longer crashes after running 17576 jobs.
- The status daemon, rpc.statd, will now continue to operate when it cannot re-establish connections with other servers after a crash.

Of Interest to Developers

- The pap_write routine in the PAP server library now functions correctly.
- A process which blocks SIGALRM and then calls the sleep(3) function, no longer sleeps forever.
- The POSIX library, /lib/libposix.a, now includes versions of the lstat and fstat system calls which reference the POSIX-compliant stat structure.
- The strftime routine no longer hangs when called.
- For improved security, the gethostbyaddr routine now cross-checks information in the host databases.

Miscellaneous

- Under A/UX 3.1, if Password Checking is turned on in A/UX Startup, the MacPartition (boot volume) is hidden from all users, including the super-user. This has been corrected; the super-user (root) can always see the MacPartition.
- The new 250 MB, 500 MB, and 2 GB SCSI drives are now listed in /etc/disktab.
- The system date spontaneously changing to sometime in 2017 has been eliminated, along with the problem of Retrospect scripts calculating next execution times for a date and time in 2017.
- A system crash/hang could occur when using a remote client to open a FileMaker database that was represented by an 'alias', but that did not exist. This has been eliminated.
- The 'catsearchd' now uses roughly 15% less memory and finishes the initial scan at system startup in approximately 20% less time.

Important Note

It is important to note that for those who had installed/replaced other versions of TCP/IP daemons (most available from Internet) to provide more advanced Internet service that A/UX does not support, these customized daemons will be affected by the AWS 95 Tune_Up 2.0 since the Tune-Up 2.0 willo verwrite them. Further more, since these customized daemons may use different databases, the newly installed versions may not function correctly.

For this, these customers MUST re-install their customized daemons after installing the Tune-Up 2.0.

The TCP/IP daemons which are updated by the Tune-Up 2.0 are: inetd, in.ftpd, in.tftpd, in.remshd, and in.rlogind.

Here is the description of the changes to the TCP/IP daemons:

inetd

If inetd died, it left unbindable ports, requiring the system to be rebooted. Inetd now sets the REUSE socket option, so inetd can simply be restarted. Inetd now also caatches SIGHUP and re-reads its database, /etc/servers.

in.telnetd, in,ftpd, in,tftpd, in.remshd, in.rlogind

For improved security, the gethostbyaddr routine now cross-checks information in the host databases. These binaaries had to be re-0linked since the gethostbyaddr routine is not the sshared library.

in.ftpd (in addition to the gethostbyaddr change)

Previously, if you aborted an FTP connection to stop a transfer, the A/UX FTP server would shut down the control connection and the session would be lost.

In addition, it was discovered that larger buffer sizes could increase FTP transfer rates by as much as 20%.

Files Changed or Added by The Upgrade

• Files Changed or Added on the / Volume:

etc/catsearchd
etc/config.d/newunix
etc/cron
etc/disktab
etc/fs/ufs/mkfs
etc/fstab
etc/in.rlogind
etc/in.remshd
etc/inetd
etc/install.d/boot.d/ac
etc/install.d/boot.d/adsp
etc/install.d/boot.d/as
etc/install.d/boot.d/elap
etc/install.d/boot.d/nfs
etc/install.d/boot.d/ufs
etc/install.d/boot.d/svfs
etc/macgetty
etc/mount
etc/rpc.lockd
etc/rpc.statd
etc/RELEASE_ID
etc/shutdown

```
lib/libposix.a
lib/libc.a:gethostent.o
lib/libc.a:tempnam.o
lib/libc.a:tmpnam.o
lib/libc.a:mntent.o
lib/libc.a:strftime.o
lib/libc_s.a:gethostent.o
lib/libc_s.a:tempnam.o
lib/libc_s.a:tmpnam.o
lib/libc_s.a:mntent.o
lib/libc_s.a:strftime.o
mac/lib/Patches/Patch.067C
unix
usr/bin/atprint
usr/bin/enscript
usr/etc/in.ftpd
usr/etc/in.telnetd
usr/etc/in.tftpd
usr/lib/libat.a
usr/lib/libpaps.a
usr/lib/ps/enscript
usr/lib/sendmail
usr/spool/lpd/AppleTalk/ifilter
usr/spool/lpd/AppleTalk/nfilter
usr/spool/lpd/AppleTalk/ofilter
```

The Tech Info Library article titled "Locating Vendor Information" can help you search for the Apple Order Center's phone number.

Article Change History:
27 May 1996 - Updated for technical accuracy. Revised format.
13 May 1996 - Updated Timbuktu version numbers.

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Tech Info Library Article Number:16723

Tech Info Library

Drive Termination for Workgroup Servers (11/94)

Revised: 11/9/94
Security: Everyone

Drive Termination for Workgroup Servers (11/94)

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Article Created: 9 November 1994

TOPIC ----------

This article describes drive termination for Workgroup Servers and shows what resistors to remove to disable it.

DISCUSSION ----------

Hard Drive or DAT drives may need to have the termination resistors removed or made inoperative on certain configurations of multiple drive systems or Workgroup Servers. Below is a brief description of termination requirements for the different systems or Workgroup Servers. Refer to the graphics below for termination locations on the various drives.

CPU	Enclosure	Termination
660 AV/Centris 660AV Q610 / Centris 610 PM 6100 W/S 60 W/S 6150	All use the QFC enclosure	Hard Drive needs Termination
IIVX, II VI Q650 / Centris 650 PM 7100	All use the Lego enclosure	Hard Drive needs Termination
Q800, Q800 AV	Uses one type of the of the Frigidaire enclosure	Last drive in line needs Termination. Remove termination from all other drives installed, including DAT
PM 8100 W/S 8150	Uses one type of the Frigidaire enclosure	Has two internal cables: 1)Internal/external cable requires that all drives

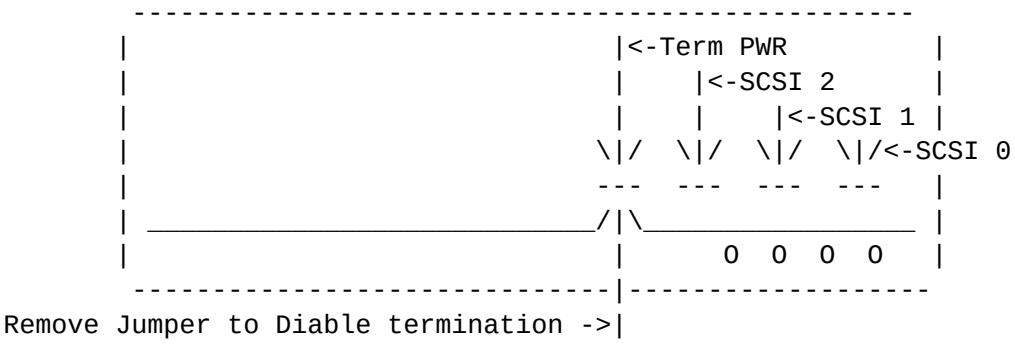
have no termination.Remove termination from all internal drives (termination is on cable)

2)The internal channel cable (max 1 drive only) requires termination

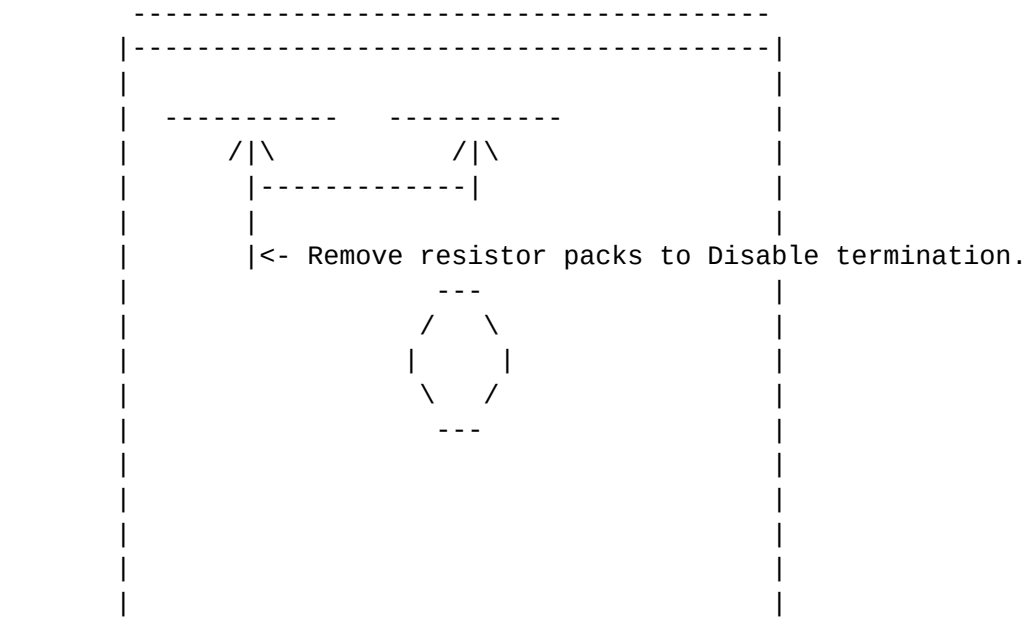
Q900
Q950
W/S 95
W/S 9150

Remove termination from all internal drives (termination is on cable)

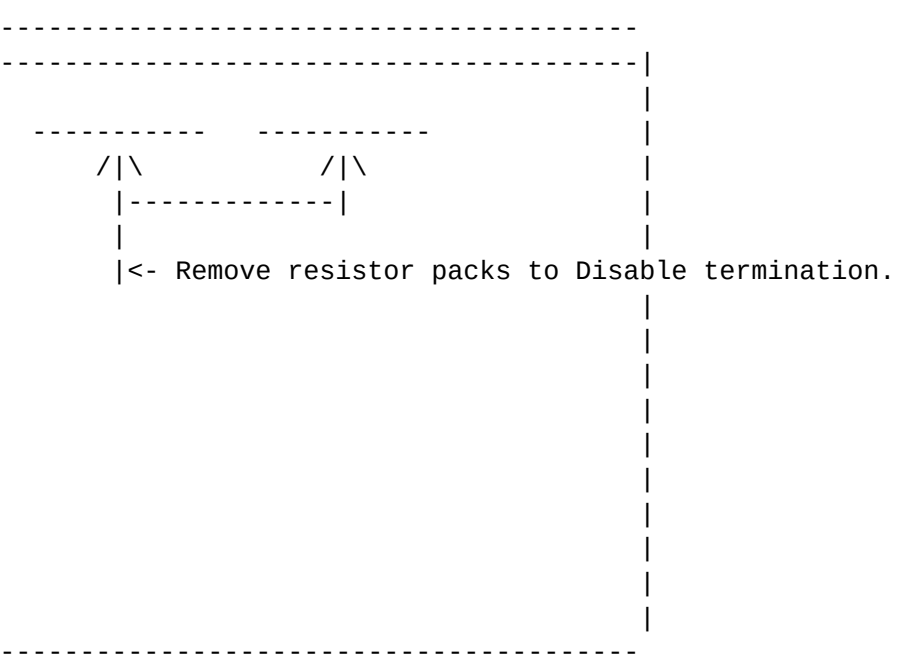
HP DAT Drive



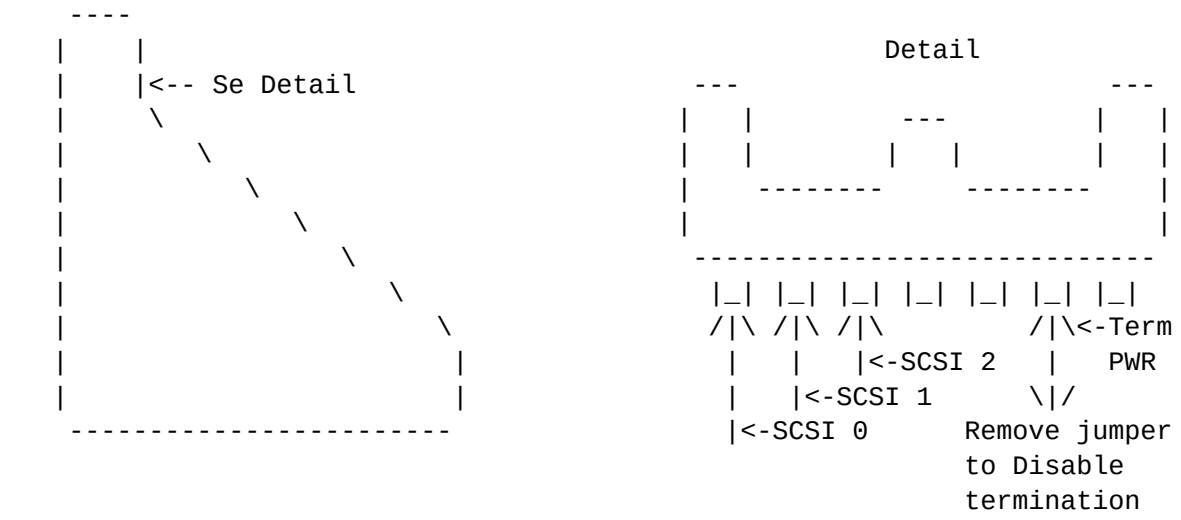
Conner Drives



Quantum Drives



IBM Drives



Support Information Services

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Tech Info Library Article Number:16724

Tech Info Library

A/UX: Does Not Support 1024 Sector Drive Formats (11/94)

Revised: 11/10/94
Security: Everyone

A/UX: Does Not Support 1024 Sector Drive Formats (11/94)

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Article Created: 10 November 1994

TOPIC ----------

Our customer has a Workgroup Server 95 and is trying to use two Magneto Optical drive mechanisms, one a HP-1300T, and the other a Microtek Genesis 650.

He says he can use a 512 sector formatted drive but cannot mount a 1024 sector formatted drive. He is running A/UX 3.1 and both (the 512 and 1024 sector drive) are preformatted for HFS. The problem is that it never mounts the 1024 sector unit. The customer says that he has contacted both vendors and they say that the 1024 sector unit should work.

Any Ideas why this would not work and are these units supposed to work?

DISCUSSION ----------

A/UX does not support read/write media formatted with a 1024 sector size. It only supports media formatted with a 512 sector size. Unfortunately, there is no patch or workaround to allow the usage of media formatted with a sector size different from 512.

The only exception to the 512 block limitation are CD-ROM drives. There are no plans to change this behavior in future versions of A/UX.

Support Information Services

Copyright 1994, Apple Computer, Inc.

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Created: 11/10/94
Author: 24
Source: PTS
Library: TECHINFO

Tech Info Library Article Number:16725

Tech Info Library

AppleScript: Maximum Script Length (11/94)

Revised: 11/10/94
Security: Everyone

AppleScript: Maximum Script Length (11/94)

==========

Article Created: 10 November 1994

TOPIC -----

When pasting code into a script in AppleScript 1.1, I got an error "Could not insert text because the text would be longer than it's maximum length." The script is ten printed pages in length.

What is the maximum number of characters in a script?

DISCUSSION -----

The maximum number of characters is 30,000.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16726

Tech Info Library

System 7: Copying Sounds From Scrapbook to System (2/95)

Revised: 2/16/95
Security: Everyone

System 7: Copying Sounds From Scrapbook to System (2/95)

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Article Created: 10 November 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

How do you add a sound from the Scrapbook and make it an alert sound? I tried to copy and place it into the System suitcase but it does not work.

DISCUSSION ----------

You must first open the Scrapbook and copy the sound into the clipboard. Next, open the Sound control panel and paste the sound in. It asks you to name the sound and then inserts it into the list of alert sounds.

This process copies the System 7 sound into the System suitcase so you can then open the suitcase to move or play the sound file. This works with System 7 and higher, with or without the Sound Manager extensions.

Article Change History:
16 Feb 1995 - Updated keyword.
07 Feb 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16727

Tech Info Library

Ethernet 10T/5 Workgroup Hub: Cascade Use & Other Items (11/94)

Revised: 11/10/94
Security: Everyone

Ethernet 10T/5 Workgroup Hub: Cascade Use & Other Items (11/94)

==========

Article Created: 10 November 1994

TOPIC ----------

I have the following questions about the Apple Ethernet 10T/5 Workgroup Hub:

1) Can the 10T/5 Workgroup Hub be used to cascade a network?
2) How can you tell of the 10T/5 Workgroup Hub is connected and active?
3) What is the maximum cable limits?
4) How is the 10T/5 Workgroup Hub powered?

DISCUSSION ----------

1) The Apple Ethernet 10T/5 Workgroup Hub is a 10Base-T Repeating Hub which adheres to all appropriate standards. This means there is a cascade limit of four hubs, and that no packet may traverse more than four repeating hubs between any two points on the network. If a network is set up with more than four hubs in a path it will still work, but it starts to degrade with packet collisions, runts, fragments, and so on. This degradation will be more apparent in the middle of the topology than at the ends. There is no indication on the Macintosh or Workgroup Hub that these conditions exist, other means must be used to detect it. These runts, collisions, fragments, and so on WILL be transmitted from hub to hub within a collision domain. It takes a intelligent hub (routing) to alleviate this.

2) The Ethernet 10T/5 Workgroup Hub does have a green LED associated with each port, but it works like the ones on our Ethernet transceivers. If the LED is on, it means there is an active (powered) link present, or in other words there is a connected device. The LED will blink off when it transmits data so it flashes with I/O.

3) The Ethernet 10T/5 Workgroup Hub specification allows for a 100 meter cable between each hub as a maximum.

4) The Ethernet 10T/5 Workgroup Hub must be powered. This normally comes

from the computer plugged into the one AAUI connector. If this computer is off an optional external power supply is available that plugs into the wall and then into a dedicated plug on the hub. If the AAUI and the external power connector are connected, the hub will be powered from the external connector.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16728

Tech Info Library

PowerTalk: Personal Catalog Limits (11/94)

Revised: 11/10/94
Security: Everyone

PowerTalk: Personal Catalog Limits (11/94)

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Article Created: 10 November 1994

TOPIC --------------------

What is the maximum limit for PowerTalk personal catalogs? I have found that if more than 114 items are created in a PowerTalk personal catalog, strange things start to happen. I cannot print the list, sorting often doesn't work and a variety of error messages pop up from time to time.

What is the best way to get around this limitation?

DISCUSSION --------------------

PowerTalk was designed to support 99 entries in each Personal Catalog. If the customer needs more than 99 items, they can simply create additional Personal Catalogs as needed.

Support Information Services

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Tech Info Library Article Number:16729

Tech Info Library

LaserWriter 16/600 PS: Manual Correction Sheet (11/94)

Revised: 5/24/95
Security: Everyone

LaserWriter 16/600 PS: Manual Correction Sheet (11/94)

==========

Article Created: 10 November 1994

TOPIC --------------------

This article contains the manual update sheet included in the LaserWriter 16/600 PS Accessory box.

DISCUSSION --------------------

Update: LaserWriter 16/600 PS

Installing printer utilities for NetWare networks

Do I have to read this update? If you're a printer administrator who plans to set up the LaserWriter 16/600 PS printer on a NetWare network, you should read this update. Otherwise, you can ignore this update.

Some network administrators may need to use two DOS utilities called LWPMAN and LWFORM. However, contrary to what the manual says, these utilities are not installed as part of the express installation. To install these utilities, follow these two steps instead of the single step mentioned on page 74:

1) Install the Adobe Printer Driver as described in "Installing the Windows Printer Software" in Chapter 7.

2) Run the installer program again, but choose the custom installation instead of the express installation. When the installer program asks what you want to install, choose NetWare Utilities.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16730

Tech Info Library

LaserWriter 16/600 PS: Using a Hard drive For Fax Storage 2/95

Revised: 2/10/95
Security: Everyone

LaserWriter 16/600 PS: Using a Hard drive For Fax Storage 2/95

==========

Article Created: 11 November 1994
Article Reviewed/Updated: 10 February 1995

TOPIC ----------

Page 150 of the LaserWriter 16/600 manual includes the following statement:

"...internal hard disk...provides space for font storage. If you have the LaserWriter 16/600 Postscript Fax Card installed, you can also store incoming faxes on the hard disk."

This article describes what this means and the general advantages of using hard drives attached to PostScript fax equipped printers.

DISCUSSION ----------

A hard drive connected to your PostScript fax equipped LaserWriter can also store fax jobs. In addition to all of the normal advantages of having a hard drive connected to your printer for font and print job storage, you can transmit and receive longer faxes with one phone call because there is typically more space available on a hard drive than in RAM. If the destination printer is busy printing a document, the printer saves incoming faxes in memory and/or on the hard drive. When the printer is done printing the current print job, it then prints the stored documents. Therefore, if you are using a hard drive, there is a potential for receiving and buffering more fax jobs.

However, having a hard drive attached to a fax capable LaserWriter does not let you store a fax or printing job for an extended period of time. All print or fax jobs are stored temporarily. When the printer is free to process the documents, they are printed then deleted.

If the destination printer runs out of paper, the printer buffers the queued fax print jobs until paper is provided. The printer continues to accept incoming faxes until its RAM and hard drive buffer are full, at which point it no longer accepts calls.

Faxes sent in the PostScript file format are generally more compact than traditional faxes, thus reducing the transmission time and cost. However, if the file contains complex graphics or images, then the size of the PostScript file can exceed the size of the standard raster fax. File size is reduced because PostScript Fax uses the built-in LZW compression and decompression capability of PostScript Level 2.

The memory required to handle fonts becomes an issue when the recipient's fax device is another PostScript fax device, and a PostScript fax is being sent. The sending fax device has no way of determining if the target PostScript fax device has additional fonts beyond the standard 35 fonts installed. So, if the document being sent requires additional fonts, the PostScript Fax printer automatically sends the additional fonts along with the PostScript file to the recipient’s fax printer. PostScript fonts are generally about 35KB in size and require approximately 35 seconds of additional transmission time for each font transmitted.

The reality of running out of RAM is unlikely in most circumstances. Apple has not tested the upper limit. Apple has transmitted and buffered, in RAM, as many as 20 one page PostScript faxes to a PostScript Fax LaserWriter without running out of RAM. Even though 20 print jobs were buffered, additional variables such as these can cause different results:

- The fax job is a PostScript fax file
- Fonts are downloaded
- The job is in Group 3 standard mode (200 dpi by 100 dpi)
- G3 fine mode (200 dpi by 200 dpi)

If raster faxes encounter memory limitations, they can be transmitted in multiple calls. However, if the sender or receiver does not have sufficient storage to hold all of a transmitted PostScript fax, the job fails. In this case, having a hard drive connected to one or both printers may enable the transmission to succeed.

Article Change History:
10 Feb 1995 - Added keyword; made several technical updates.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16733

Tech Info Library

CDU: Diffs Between Pre-Installed and Retail Versions (2/95)

Revised: 2/16/95
Security: Everyone

CDU: Diffs Between Pre-Installed and Retail Versions (2/95)

==========

Article Created: 11 November 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

Is the version of the Connectix Desktop Utilities (CDU) pre-installed on the Power Macintosh 8100/110 the same as the retail version?

DISCUSSION ----------

Yes, the versions are identical except for how CDU is configured. When installing CDU from the disk, all options are turned on. This includes the Balloon Help menu being turned off.

Installing CDU from the Apple Extras folder on the Power Macintosh 8100/110 has only two options turned on - the menu bar display, which displays the disk space available, and the Energy Star features. All other power user type options, such as Balloon Help and Desktop Picture control, are turned off.

Article Change History:
16 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16734

Tech Info Library

Apple Printer Utility: Can't See/Change Last Zone Printers 8/95

Revised: 8/22/95
Security: Everyone

Apple Printer Utility: Can't See/Change Last Zone Printers 8/95

==========

Article Created: 11 November 1994
Article Reviewed/Updated: 22 August 1995

TOPIC ----------

I am having a problem using the Apple Printer Utility v1.0 that came with the LaserWriter 16/600 PS printer. I have a multi-zone network, and the LaserWriter 16/600 PS is in the last zone. When I select the last zone, the list of printers in the "Printers" box does not get updated and continues to display the printers that belong to the previous zone that was selected.

DISCUSSION ----------

The original Apple Printer Utility v1.0 has a problem working with printers in the last zone of a multi-zone network, as well as networks that only have one zone (as that zone is effectively the last zone).

This problem is fixed in later versions of the Apple Printer Utility. As of this article, the current version is Apple Printer Utility v2.0.

Article Change History:
22 Aug 1995 - Updated and made public.
22 May 1995 - Clarified Problem and added permanent solution.

Support Information Services

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Tech Info Library Article Number:16735

Tech Info Library

QuickDraw GX: Problem Using Manual Feed (3/95)

Revised: 3/23/95
Security: Everyone

QuickDraw GX: Problem Using Manual Feed (3/95)

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Article Created: 11 November 1994
Article Reviewed/Updated: 23 March 1995

TOPIC ----------

This article discusses a problem using QuickDraw GX and trying to use the manual feed printing option.

DISCUSSION ----------

There is a problem with all Quickdraw GX printer drivers and using the manual feed printing option. The software only loads the notifier in the finder, so if you are working in an application, the notifier appears on the desktop behind the document window. You need to go to the desktop (Finder) to respond to the notifier box.

There is not a setting in the software to control where the notifier window appears, and you cannot turn the notifier message off.

Workaround

Go to the desktop and respond to the message or go to the printer icon and respond to the notifier within the printer software.

NOTE: If you have an alias of the desktop printer in your Apple Menu Items folder, you can use the Apple Menu instead of returning to the Desktop.

This is a known issue and engineering is working on a long-term solution.

Article Change History:
23 Mar 1995 - Made minor updates.
16 Feb 1995 - Updated keyword; reviewed for technical accuracy.

Support Information Services

..TIL16736-QuickDraw_GX-Problem_Using_Manual_Feed_3-95_(TA32904).pdf

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Tech Info Library Article Number:16736

Apple Presentation System: Frequently Asked Questions (7/95)

Revised: 7/6/95
Security: Everyone

Apple Presentation System: Frequently Asked Questions (7/95)

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Article Created: 11 November 1994
Article Reviewed/Updated: 06 Jul 1995

TOPIC -----

This article contains common questions with the L•TV Portable Pro made by Focus. This is the same device as the Apple Presentation System (M2895 & M2895ll/a). These Questions and Answers were provided by Focus Enhancements.

DISCUSSION -----

Question: With which Macintosh Computers does the L•TV Portable Pro work?

Answer: The L•TV Portable Pro works with any Macintosh that has a VGA or Apple 13/14-inch RGB output. This list includes (but is not limited to) any PowerBook with VGA or Apple 13/14-inch RGB output, Macintosh LC, Performa 400-600 models, Centris, Quadra, or other Macintosh systems with VGA video out.

Question: Which Apple monitors work with the L•TV Portable Pro?

Answer: The L•TV Portable Pro works with Apple monitors that support the 640x480 screen resolution. Apple 13- and 14-inch monitors should work. The following monitors do not work:

- Macintosh 12-inch RGB Display
- Macintosh Portrait Display
- Macintosh 16-inch Color Display
- Two-Page Monochrome Display
- Macintosh 21-inch Color Display
- Multiple Scan Displays, when set to screen resolutions higher than 640x480

Question: Can I give my presentation on the TV and my Apple monitor at the same time?

Answer: Yes. The L•TV Portable Pro supports Presentation Mode (mirror mode) when using an Apple 13/14-inch monitor, or a VGA compatible monitor.

Question: Can I record to video tape using L•TV Portable Pro?

Answer: Yes. If your VCR has a video input jack, you may connect the L•TV Portable Pro output to the input of the VCR. Record as you normally would record off the television.

Question: Does the L•TV Portable Pro slow my computer down?

Answer: No. The L•TV Portable Pro is connected to the built in video of your Macintosh, so the television acts as if it were an Apple monitor.

Question: What kind of TV do I need to display with L•TV Portable Pro?

Answer: Any NTSC or PAL compatible television. This includes most televisions that are manufactured for use in the United States, Japan, and Europe. There are two versions of the L•TV Portable Pro one for NTSC and one for PAL signals. The broadcast signal used in your country determines which version of the L•TV Portable Pro you receive.

Question: Does L•TV Portable Pro come with cables?

Answer: Yes. The L•TV Portable Pro comes with RCA, S-Video, Audio and Macintosh video connection cables. Power supply and stand are also included.

Question: How long is the supplied cable?

Answer: 10 feet.

Question: How many colors does the L•TV Portable Pro let me display on my television?

Answer: As many as your Macintosh delivers. The L•TV Portable Pro looks like a monitor to a Macintosh, and does not hinder video performance.

Question: How much does L•TV Portable Pro weigh?

Answer: 10 ounces.

Question: What size TV do I need?

Answer: Any standard NTSC or PAL television. All televisions have the same number of dots and lines on their screens, they are larger and smaller depending

on TV size. You can use a 6-inch screen or 35-inch screen, the image is scaled to screen size.

Question: Can I hook up more than one television to the L•TV Portable Pro?

Answer: Yes. There are two ways to do this:

• Hook one TV to the S-video output, the other to the RCA/composite output.

• Some television/monitors have video input and video output jacks. By creating a "daisy chain" (in one TV, out to the next) you can have more than one TV hooked up.

Question: Does L•TV Portable Pro work with my PowerBook 100/140/170?

Answer: No. L•TV Portable Pro only works with PowerBook models that have VGA or Apple 13/14-inch RGB video output. Those models include (but are not limited to) PowerBook 160, 165, 165c and 180 models.

Question: Can I replace my Apple monitor with a television using L•TV Portable Pro?

Answer: Yes, but it is not recommended. The quality of a TV picture is almost always inferior to a computer monitor. L•TV Portable Pro is an affordable way to present to classrooms or small groups on a screen that is larger than a computer monitor.

Question: Can I use L•TV Portable Pro with a projection device?

Answer: If the projector has an RCA/composite or S-video input you can. Some LCD screens and/or projectors have VGA and composite/S-video inputs. Use the input that generates the best quality for your presentation.

Question: Does the L•TV Portable Pro work with the Macintosh LC 575?

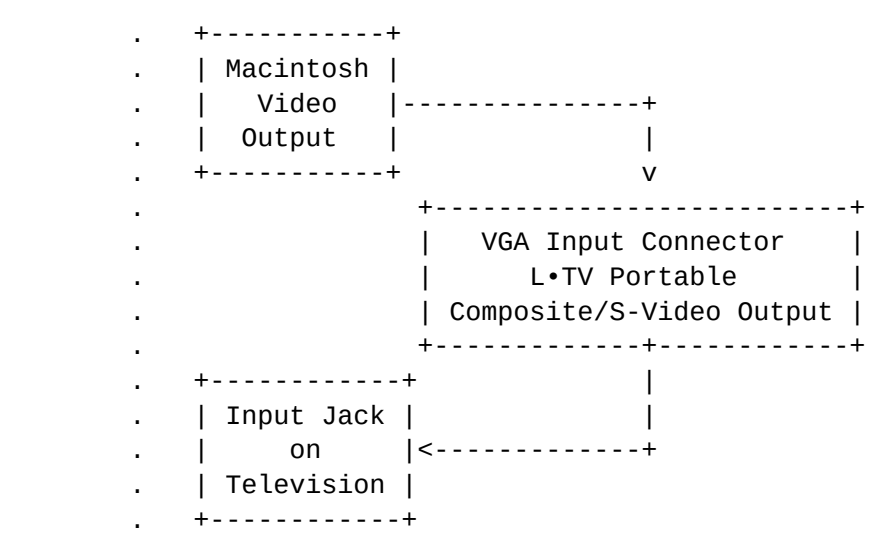
Answer: No. The Macintosh LC 575, Performa 575/576 do not have a VGA video output to drive the L•TV Portable Pro. The L•TV Pro LC card could be mounted in the expansion slot of the LC 575 and provides an NTSC output.

Question: Can I connect two Apple monitors to my Macintosh with L•TV Portable Pro?

Answer: No. L•TV Portable Pro can drive a television and one Apple 13/14-in. or VGA compatible monitor.

Question: How do I hook L•TV Portable Pro up?

Answer: L•TV Portable Pro comes with cables to connect in this manner:



Question: Does the L•TV Portable Pro work with my Macintosh IIci or Macintosh IIsi?

Answer: Yes. The Macintosh IIci and Macintosh IIsi are compatible with Apple 13/14-in. monitors, enabling L•TV Portable Pro to display on the computer monitor and television simultaneously.

Question: Does the L•TV Portable Pro work with MS-DOS PC computers?

Answer: Yes. Any PC or PC notebook that has VGA video output is L•TV Portable Pro compatible.

Question: Is The L•TV Portable Pro Windows compatible?

Answer: Yes, as long as the PC system that L•TV Portable Pro is connected to is able to output VGA video.

Article Change History:
06 Jul 1995 - Added information on incompatible monitors.
06 Jun 1995 - Added Apple part numbers.
24 Apr 1995 - Added information on PAL and NTSC signals.

Support Information Services

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Tech Info Library Article Number:16738

ABS Tech Note: ARA03 ARA 2.0.1 Known Issues (11/94)

Revised: 11/14/94
Security: Everyone

ABS Tech Note: ARA03 ARA 2.0.1 Known Issues (11/94)

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Article Created: 14 November 1994

TOPIC ----------

This article is Technical Note ARA03, ARA (Apple Remote Access) 2.0.1 Known Issues.

DISCUSSION ----------

ARA Clients on Quadra 700 with Global Village Modem

The following problem occurs only with Global Village Modems on certain Quadra 700s. Have the Global Village modem off at startup, and the machine set to answer calls. After booting, turn the modem on, and try to connect to the server. The modems try to connect, but for some reason they don't, and you get an error. The bug is probably in the serial driver. The workaround is to turn something on and off in the ARA setup control panel. We recommend that you toggle the speaker on/off button.

ARA clients and MacTCP

If MacTCP is configured to run over AppleTalk, but the zone is set to one where there is no DDP/IP gateway (KIP server) when you try to open the driver (that is launching NCSA Telnet/Mosaic/Eudora) you get an error message. If you then switch to another zone in the MacTCP control panel and try again, everything works fine. The machine crashes the next time there is an AppleTalk Transition event (such as opening up, closing an ARA connection, going to sleep, restarting/shutting down or changing ADEVs in the Network control panel). This is a bug in MacTCP 2.0.x and probably earlier versions, it is a known bug, but it doesn't crash the machine until ARA does something, so people will think ARA crashed their machine. Workaround: restart the machine, and change zones in the MacTCP control panel before launching any TCP applications. (If applications are set to launch on startup, you have to change before restarting, probably suffer a crash at that point, and it should work properly once you finally boot without having MacTCP opened in a KIPless zone.)

ARA clients using DialAssist internationally

DialAssist works by concatenating Prefix + Long-Distance + International-Access-Code + Country-Code + City/Area-Code + Number + Suffix for international calls. Some long-distance services (Sprint for instance) make it easier on their subscribers by not requiring that long, nasty 011 "access out" code. So if I set DialAssist to dial through Sprint it generates the right domestic US string (9, 103330 408 974-8100 ,1234567890 for example) but the wrong string for my ARA server in London (9, 103330 011 44 71 26580 ,1234567890) because the friendly people at Sprint want me to dial (9, 103330 1 44 71 26580,1234567890) to get international access. The workaround is to edit the Access Out code for the United States and change it to 1 (instead of 011) if and only if you are using Sprint. Other carriers probably have other restrictions.

ARA clients using DialAssist within an area code

When using DialAssist to make long-distance calls either within the same area code (calling Portland, OR from Eugene, OR for example) or when the area code is the empty string (as certain calls in France are), there is a workaround to get DialAssist to dial the right number: use the first part of the phone number as a fake area code. For instance, to call Portland OR (503 965 1234) from Eugene (503 344 5075), you can tell DialAssist to dial the number 1234 in "area code" 965, and it will stick the long-distance carrier/1 into the dial string.

Net Installs using ARA and Express Modems

Users will not be able to perform network installs over ARA if they are using the Express Modem. Because Net Installs require all applications to quit and because the express modem software runs as an application, the express modem will disconnect an ARA connection if the user tries a Net Install. The workaround is to a modem other than the Express Modem for Network Installs over ARA.

Router and ARA MultiPort and one-way Choosing

If a user is running the ARA MultiPort Server on the same machine as an Apple Internet Router, users may notice that nodes on the server's network cannot "see" ARA client nodes from the Chooser. However, ARA client nodes can see the other network nodes without any problems and communication between the nodes can occur normally. If this is a problem, a workaround is to select LocalTalk for the user port of the Router (that is in the Network Control Panel). Another workaround is to separate the router and the ARA server onto different machines.

ARA MP on 840AV computers with more than 1 Serial NB card

Under stress conditions, an ARA MultiPort Server running on a Macintosh 840AV configured with more than one Serial NB card (that is more than 4 ports) may crash with a BusErr. There is no workaround at this time. As a result, ARA MultiPort with more than four ports is not supported on the 840AV.

ARA and PowerTalk Direct Dialup

If ARA is installed on a machine that has PowerTalk Direct Dialup installed, the PowerTalk Direct Dialup will no longer work. To obtain PowerTalk mail, the user should first establish an ARA connection to the network and then use PowerTalk mail. PowerTalk Direct Dialup should not be necessary.

ARA MultiPort on Power Macintosh, Workgroup Server, or 840AV computers

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If certain conditions exist (outlined below), the ARA MultiPort Server may hang in a busy wait loop. The conditions are as follows:

- the machine is a Power Macintosh, a Workgroup Server, or an 840AV
- the administrator has set some zone restrictions
- there is more than one access to the zone information at the same time, for example global changes to the user database, global exports, or some other zone-related admin operation while a user is logging in.

These should be unusual circumstances, but if they do occur, the administrator's only option is to restart the machine. There is no workaround at this time. The development team is interested in learning if this problem does occur in the real world.

Support Information Services

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Tech Info Library Article Number:16748

ABS Tech Note: AWS26 Hybrid Applications (3/95)

Revised: 3/31/95
Security: Everyone

ABS Tech Note: AWS26 Hybrid Applications (3/95)

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Article Created: 14 November 1994
Article Reviewed/Updated: 31 March 1995

TOPIC

This note describes some of the deficiencies of A/UX hybrid applications, and gives some suggestions as to alternative approaches that may be more robust and functional.

DISCUSSION

A/UX Hybrid Applications

A/UX supports several different types of applications, including pure UNIX applications, pure Mac applications (which run under Mac OS as well), and hybrid applications, which combine both UNIX and Mac programming models.

There are two types of hybrid applications -- UNIX COFF -- format hybrids (such as CommandShell) and Mac hybrids. Both of these types of hybrids have proven to be architecturally weak and difficult to program robustly. Specific weaknesses will be discussed below.

Due to these limitations, it is unlikely that either type of hybrid will be supported in future Apple UNIX systems. A/UX will continue to support the current hybrid models, with all their existing deficiencies. Alternative approaches will be discussed in section 5.

UNIX COFF Hybrid Architecture

This section reviews the architecture of UNIX COFF hybrid applications to provide context for later sections.

Processes and Memory Layout:

Under A/UX, all pure Mac OS applications run within a single UNIX process called startmac. Each UNIX COFF-format hybrid, such as CommandShell, runs in its own

separate UNIX process.

As part of its initialization, the startmac process creates a large shared memory segment that is set up to look like the memory of a regular Macintosh. This shared memory segment contains low memory globals, the system heap, and Macintosh application partitions. As part of its initialization, each UNIX COFF hybrid application also binds to this shared memory segment.

For pure Macintosh applications, the application partition in this shared memory segment contains the application's heap, its A5 world, and its stack. Thus, all of this memory is accessible to any other Macintosh or COFF hybrid application.

For a UNIX COFF hybrid application, though, the application partition contains only the application's heap and its A5 world. The stack is in UNIX virtual memory space, accessible only to that application.

Cooperative Multitasking:

The Macintosh uses a cooperative multitasking model. At any particular time, a single application has control of the processor (the "token of control"). That application will keep control of the processor (from the Macintosh viewpoint) until it voluntarily gives it up, by calling one of three Macintosh toolbox traps: GetNextEvent, WaitNextEvent, or EventAvail.

Note that though UNIX COFF hybrid applications are running in different UNIX processes than pure Mac OS applications, each is blocked until it receives the single "token of control".

Under A/UX, the user interface device driver (/dev/uinter0) receives notification from the Process Manager when the token of control should be passed to a UNIX COFF hybrid application. The user interface device driver then directs events to the appropriate UNIX process.

Macintosh Hybrid Architecture

Macintosh hybrid applications are pure Mac OS applications that are linked with libaux.a (supplied with the A/UX Developer's Kit) to make A/UX system calls. The A/UX Installer is an example of such an application. These applications run within the startmac UNIX process like any other pure Mac OS application.

Problems with A/UX Hybrid Applications

This section describes some of the problems that have been encountered with hybrid applications.

Can't Make Blocking UNIX Calls in a Cooperative Multitasking Environment:

A hybrid application must not make blocking UNIX calls. While waiting for the UNIX call to return, the hybrid application will be blocked. In addition, the entire Macintosh toolbox environment will be blocked, because the hybrid hasn't called one of the Macintosh toolbox routines (WaitNextEvent, GetNextEvent, or EventAvail) which allows control to pass to another Macintosh application.

Allocation of Data For Asynchronous Operations:

Various Macintosh calls result in asynchronous operations that can complete at any time. It is quite possible that these operations may complete when a different Macintosh application has the "token of control". If a hybrid application starts an asynchronous operation that completes while another application is active, it will complete within a different UNIX context than the one from which it was started.

If any memory is needed to complete the asynchronous operation, that memory must be accessible from startmac or any hybrid application process. For a COFF hybrid application, the only suitable memory for this is the application heap in the shared memory segment.

Thus, extreme care must be taken in a hybrid application to ensure that any data needed to complete an asynchronous operation is stored in the application heap, rather than on the stack or in UNIX virtual memory heap space.

It has proven difficult to ensure this for all possible asynchronous operations. In some cases, Macintosh toolbox calls internally call other routines that make asynchronous operations, and it is not always apparent that an asynchronous call will be made.

Examples of various asynchronous operations include:
• Any routine that allows asynchronous operation, such as the File Manager or Notification Manager. The code for the response procedure for such an operation must be in the application heap, rather than a hybrid application's .text COFF segment. CommandShell handles this for its Notification Manager response procedure by copying relocatable code from the .text segment into its application heap.

• File Manager routines for AppleShare volumes. Be sure to allocate all parameter blocks in the application heap rather than on the stack of a hybrid. This requires the use of low-level file manager calls, rather than high-level calls that internally allocate the parameter blocks on the stack.

• Resource Manager routines for AppleShare volumes. These routines internally call File Manager routines, but do not ensure that the parameter blocks are allocated in the heap. Thus, it is possible that these routines will fail for AppleShare volumes. There are no low-level routines for the Resource Manager to allow the application to force the parameter block to be in the heap. Calling Resource Manager routines from hybrid applications has not been fully tested for AppleShare volumes.

• Any Macintosh call that internally allocates window records or dialog records on the stack, such as the Standard File package routines or PPCBrowser. The A/UX toolbox patches the Standard File routines for hybrid applications to move the stack temporarily into the application heap. However, the PPCBrowser and other such routines have not been tested from hybrid applications and may have problems. As the Macintosh toolbox evolves, it is difficult to ensure that new toolbox routines will operate correctly within the context of A/UX hybrid applications.

COFF Hybrid Application Development Tools:

UNIX tools are used to develop COFF hybrid applications. This limits developer options. For example, MacApp or the Think class libraries can't be used to create COFF hybrid applications.

In addition, it is difficult to debug COFF hybrid applications. There are no Mac source level debuggers that understand COFF formats or symbol tables. It is possible to use MacsBug, but again without application symbols. Given an address in the COFF application, it is possible to use adb to determine which routine that address is in, but that's a kludge at best.

UNIX source level debuggers are also problematic. First, they must be used over a serial port or a remote login, because the entire Mac environment, including CommandShell, will be hung while at a break point in a hybrid application. In addition, the UNIX source level debugger has no inherent knowledge of Macintosh data structures.

Macintosh Hybrid Applications:

The Macintosh hybrid application development environment and libaux.a have not undergone intensive testing, and there is not a lot of experience with their use. Some problems which have been encountered in this domain include:
• Include file incompatibilities. There may be a need to include both Mac and UNIX include files, some of which conflicted (for example, types.h).

• Limited set of A/UX routines supported by libaux. This library supplies mainly system calls. Many A/UX library routines are not system calls, and therefore are not available through libaux. Although some of these routines, such as the printf family, are available through libraries such as those provided by MPW, many other library routines are not available.

• Certain system calls are risky from Macintosh hybrid applications. Due to the usage of various file descriptors, signals, stacks, and so on, fork'ing and exec'ing new UNIX processes from a Macintosh hybrid application running within startmac must be done carefully. In addition, pipes, waits, and exit statuses are tricky.

UNIX Security Concerns:

Hybrid applications that need any special UNIX privileges are quite risky. This is because it is quite easy to patch any Macintosh trap from an INIT. If, for example, a hybrid application is running setuid-root, any Macintosh traps that it calls could be patched by any INIT to do unknown and dangerous things.

Alternatives to Hybrid Applications

Client-Server Applications:

Rather than developing an A/UX hybrid application, consider using a client-server model instead, with a Mac client half communicating with a UNIX server half. Various technologies can be used for communication, including ADSP or TCP/IP.

Using TCP, for example, the UNIX server portion could be written in a standard UNIX manner, such that it could be launched automatically by the inetd daemon when a client tries to establish a new connection. The Mac client portion would use MacTCP to establish the connection and communicate with the server.

The fact that the application is a client-server application can be hidden from the user, so that the user perceives only a Mac user interface running in the A/UX Macintosh environment. Alternatively, the client-server aspects can be exploited, by allowing the Macintosh client application to run on any Macintosh on the network, including remote Macintosh computers connected via ARA.

Advantages of Client-Server Applications:

This client-server model offers several advantages, including:
• Development is simplified. In each half of the application, all the standard programming rules for that type of application hold true. There are no additional restrictions as there are with hybrids (such as not making blocking UNIX calls).

• Better development tools are available. Both halves of the application can be developed with the best available tools. For example, the Mac half could be written with MacApp and debugged with SourceBug. The UNIX half could be written using standard UNIX development techniques, and debugged with a UNIX source-level debugger such as sdb.

• Better application design is encouraged. The client-server programming model encourages a clean separation of the user interface from the underlying "engine" of an application.

• As discussed above, the client-server model offers additional functional capabilities, by allowing the Macintosh client application to run on a different machine on the network than the UNIX server application.

• The UNIX server portion may be portable to other UNIX systems which do not support the Macintosh environment.

Converting a Hybrid Application to a Client-Server Application:

An existing hybrid application can be converted to a client-server application. This involves identifying those portions of the application which are specific to the Macintosh side (generally user interface code) and those which are specific to the UNIX side (anything that directly utilizes UNIX OS facilities). Some functionality, such as data crunching, could occur on either the Macintosh client side or the UNIX server side.

One way to identify UNIX-specific code in a UNIX COFF hybrid is to re-link each object file as if it were a separate executable. This will report all unresolved external symbols, including calls to UNIX library and system calls. Those files with many such calls may contain functionality which should be in the UNIX server portion, while files with few such calls may contain functionality which should be in the Mac server portion.

After identifying the Mac client-side functionality and the UNIX server-side functionality, the next step is to define the messages which will be passed between the two sides. Then, re-code the application using Macintosh tools to create a pure Macintosh client application and UNIX tools to create a pure UNIX server application. Try to unit test each side of the application as much as possible, then test to ensure that the proper communication is occurring between the two sides. It may be helpful to bootstrap the application, by getting limited client-server functionality running first, and adding more advanced capabilities once the basic communication mechanism is stable.

Article Change History:
31 Mar 1995 - Made minor corrections.

Support Information Services

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Tech Info Library Article Number:16749

ABS Tech Note: AWS30 /etc/fstab corruption (11/94)

Revised: 11/14/94
Security: Everyone

ABS Tech Note: AWS30 /etc/fstab corruption (11/94)

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Article Created: 14 November 1994

TOPIC ----------

This technical note provides a workaround to the /etc/fstab file corruption problem.

DISCUSSION ----------

Overview
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1) After a fresh install of A/UX 3.1 (from the full installer CD, not the Upgrade), /etc/fstab is an AppleDouble file, typed 'TEXT', creator 'iAUX' (the A/UX Installer's signature). Since the creator is not 'A/UX' or 'tefi' and the Finder cannot find the Installer application, the icon for /etc/fstab is the unknown (grey) text document. The system behaves correctly as long as /etc/fstab remains an AppleDouble file....

2) If /etc/fstab is then edited and saved with TeachText, TextEditor, or any other Macintosh application, the A/UX file manager will convert it to AppleSingle format, which is not understood by fsck. This occurs because the "TBTRANSLATEUXONLY" environment variable is set (the default), and 'iAUX' is not a creator for which the file manager handles TEXT files specially (these are 'DOS ', 'tefi' (TextEditor) and 'A/UX').

The problem is not with TextEditor, but with the A/UX file manager's handling of the TEXT file type and creator. This behavior was introduced in A/UX 3.1.

Workaround
----
1) Open /etc/fstab with TextEditor (don't use TeachText!).

2) Select and copy the contents of /etc/fstab into the cut-and-paste buffer (Command-C).

3) Open a new TextEditor document (Command-N) with a unique name (not fstab!); be sure that the "Save Text Only" button is set in the dialog box (this is the default).

4) Paste the contents of /etc/fstab into the new document.

5) Save the new document and quit TextEditor.

6) From the Finder, drag /etc/fstab to the Trash and empty the Trash.

7) Rename the new document to /etc/fstab.

It won't work to just do a "Save As..."; TextEditor will preserve the incorrect file creator. The installer of the patch from A/UX 3.1 to A/UX 3.1.1 will also correct this problem if it hasn't already been corrected.

Support Information Services

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Tech Info Library Article Number:16750

..TIL16751-ABS_Tech_Note-IPG00_About_IP_Gateway_Tech_Notes_11-94_(TA32916).pdf

Tech Info Library

ABS Tech Note: IPG00 About IP Gateway Tech Notes (11/94)

Revised: 11/14/94
Security: Everyone

ABS Tech Note: IPG00 About IP Gateway Tech Notes (11/94)

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Article Created: 14 November 1994

TOPIC ----------

This document accompanies each release of Apple Business Systems Technical Notes.

DISCUSSION ----------

We want Technical Notes to be distributed as widely as possible, so they are sent to all Partners and Associates at no charge; they are also posted on AppleLink in the Developer Services Bulletin Board.

We place no restriction on copying Technical Notes, with the exception that you cannot resell them, so read, enjoy, and share. We hope Apple Business Systems Technical Notes will provide you with lots of valuable information.

Technical notes are a 'living' complement to product documentation, be it Inside Macintosh or other documentation. This means that they are updated on a regular basis, so as to be accurate and up to date. New Notes are added as required.

This technical note is an index of all technical notes related to the Apple Internet Router IP Gateway and related products. It also documents all changes to the technical notes since the previous release.

Index

Technical Note	Subject	Last Revision
IPG00	About IP Gateway Tech Notes	Sep, 1994
IPG01	IP Gateway Tuning	Sep, 1994

Changes since last release: IPG00, IPG01

Updated:

Support Information Services

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Tech Info Library Article Number:16751

ABS Tech Note: IPG01 IP Gateway Tuning (11/94)

Revised: 11/14/94
Security: Everyone

ABS Tech Note: IPG01 IP Gateway Tuning (11/94)

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Article Created: 14 November 1994

TOPIC

This document describes how to tune the Apple IP Gateway's low-level parameters to suit your specific needs. You should attempt this tuning only if you are an experienced Macintosh administrator with a solid working knowledge of ResEdit, the application program that is used to make these modifications.

DISCUSSION

WARNING: Apple Computer, Inc., is not liable for any damage done to the Apple IP Gateway through the use of ResEdit to tune the software.

The 'cnfg' resource

All of the tuning procedures detailed here are carried out on the 'cnfg' resource, which contains configuration information about the gateway. The 'cnfg' resource in the Gateway Prefs file (stored in the Preferences folder in the System Folder) contains the current configuration. If no Gateway Prefs file exists, the gateway will create one with the default 'cnfg' resource in the Apple IP Gateway Extension.

Important: It is strongly recommended that all modifications be done to the Gateway Prefs 'cnfg' resource. By doing so, if problems arise, the defaults can be restored by throwing away the Gateway Prefs file or moving it out of the Preferences folder.

The following example shows what you might see if you opened a 'cnfg' resource with ResEdit:

```
  000000     0002  11BE  2883  0002
  000008     11BE  2883  0000  003C
  000010     0000  0000  0000  05A0
  000018     0000  0000  0000  0005
  000020     0000  001E  0014  0002
```

```
  000028     0004  0005  0100  01
```

Many variables within the 'cnfg' resource can be configured using the Gateway Manager program. The necessary procedures are covered in the Apple IP Gateway Administrator's Guide. This document covers those variables that you can only modify with ResEdit, not with the Gateway Manager. The following table illustrates the 'cnfg' resource and describes the modifiable fields within it. Once changes in the resource are made, the gateway will adopt those changes the next time it is started.

Hex Offset	Decimal Offset	Length in bytes	sample data	Description
$0C	12	4	0000 003C	Interval to be used for aging clients.
$10	16	4	0000 0000	Dynamic clients' idle timeout.
$14	20	4	0000 05A0	Static clients' idle timeout.
$18	24	4	0000 0000	NBP Confirm timeout.
$1C	28	4	0000 0005	PING timeout.
$20	32	4	0000 001E	How often to check for address conflicts on Ethernet.
$24	36	2	0014	Number of Ethernet ARP table entries.
$28	40	2	0004	Number of NBP Lookup retries.
$2A	42	2	0005	Timeout for each NBP Lookup.

Aging of Clients

Timing out or "aging" of clients allows automatic (dynamic) addresses to be reused. The gateway is configured by default to PING each dynamic client every minute to see if it is still up and running. If the gateway does not receive a PING response from a client within five minutes, it assumes the client is down and makes the address available for reassignment. Manual (static) addresses are never aged out. The following five fields can be used to modify how the gateway ages clients.

• Interval to be used for aging clients:

This field controls what the base interval (in seconds) is for timing out gateway clients. The next five fields in the resource (Dynamic clients' idle timeout, Static clients' idle timeout, NBP Confirm timeout, PING timeout, How often to check for address conflicts on Ethernet) depend on this field in that they are multiples of this interval. For example, if you set the base interval to 30 and the dynamic clients' idle timeout to 10, the gateway assumes a client is no longer using a particular address if a client is idle for 5 minutes (10 intervals of 30 seconds). The default is 60 seconds.

In the example 'cnfg' resource, the interval shown is a hex value of 0000003C, which translates to a decimal value of 60.

• Dynamic clients' idle timeout:

This field controls the timing out of dynamic clients based on their idle time.

It is in multiples of the base interval described above. When the field is nonzero, clients who are idle for the specified amount of time are assumed to be finished using their addresses, and their addresses are made available for reassignment. This may cause a former address holder to lose connection to the gateway until the client computer is restarted. When this field is 0 (the default), dynamic clients will not be timed out based on idle time.

In the example 'cnfg' resource, the dynamic clients' idle timeout is a hex 00000000 which translates to a decimal 0. Thus dynamic clients will not be aged out based on idle time.

• Static clients' idle timeout:

This field controls the timing out of static clients based on their idle time. It is in multiples of the base interval described above. When the field is nonzero, clients who are idle for the specified amount of time are assumed to be finished using their addresses and will disappear from the Gateway Information window in the Gateway Manager program. Unlike the case with dynamic addresses, this will not cause the user to lose connection to the gateway. The entry will simply reappear in the information window when the client next uses IP services. When this field is 0 (the default), static clients will not be aged out based on idle time.

In the example 'cnfg' resource, the static clients' idle timeout is a hex 000005A0, which translates to a decimal 1440. Static clients that are idle for 24 hours (1440 X 60 seconds) will disappear from the Gateway Information window in the Gateway Manager.

• NBP Confirm timeout:

This field controls the timing out of dynamic clients based on Name Binding Protocol (NBP) Confirms. This method makes use of the fact that IP addresses are registered with NBP so long as clients are up and running. If this field is nonzero, an NBP Confirm will be sent to each client every interval (see the previous discussion under "Interval to be used for aging clients."). If the gateway does not get a Confirm response in the number of intervals specified by this field, the client is assumed to be down and the address will be made available for reassignment. If this field is 0 (the default), dynamic clients will not be aged out using this method.

In the example 'cnfg' resource, the NBP Confirm timeout is hex 00000000, thus dynamic clients will not be aged out using this method.

A major drawback of this approach is that for NBP Confirms to receive a response, clients must be in the same zone as the gateway. Clients in different zones may age out quickly. It is therefore recommended that this field stay 0 unless all clients are in the same zone as the gateway.

• PING timeout:

This field controls the timing out of dynamic clients based on ICMP ECHO or PING. If this field is nonzero (default is 5), the gateway will send out PING packets to each dynamic client every base interval. If no response is received

in the number of intervals specified by the field value, the gateway assumes the client is down and makes the address available for reassignment. Loss of connection to the gateway is unlikely because the client would automatically respond to PINGs if it were still up and running. This is the recommended method for aging dynamic clients. If this field is 0, PING will not be used to time out clients.

In the example 'cnfg' resource, the PING timeout is hex 00000005, so dynamic clients will be aged out after five minutes with no PING response received.

Address Conflicts

Address conflicts are very common in the IP world because the user is often responsible for configuring his or her own address. The gateway automatically checks the IP network to make sure that none of the addresses it is allotted to assign automatically are already in use. The next field controls this check.

• How often to check for address conflicts on Ethernet:

This field controls how often the gateway checks the IP network for addresses conflicting with the gateway's automatic range of addresses. The gateway sends out Address Resolution Protocol (ARP) packets for each dynamic address after the number of specified base intervals has passed. For example, if the interval is 120 (2 minutes), and the check for address conflicts field is 10, the gateway will send out ARP packets every 20 minutes. If an ARP response is received, an entry appears in the gateway information window indicating an address conflict, and the address is removed from the pool of available addresses.

In the example 'cnfg' resource, the address-conflict check time is hex 0000001E, which translates to decimal 30, so the gateway will send out ARP packets on the IP network every 30 minutes.

ARP Table

The Ethernet addresses of IP hosts are stored in a table, the size of which is controlled by the next field.

• Number of Ethernet ARP entries:

This field controls how many Ethernet ARP entries can be stored at the same time. The default is 20. Increasing this number will incrementally increase the amount of memory the gateway uses, but will allow the gateway to "talk to" more IP hosts at the same time. This may increase performance under heavy usage.

In the example 'cnfg' resource, the number of Ethernet ARP entries is hex 00000014, which translates to decimal 20, so there is room to store 20 Ethernet addresses of IP hosts at the same time.

• Macintosh Name:

The gateway obtains Macintosh names to display in the Gateway Information window by sending NBP lookups to clients. The next two fields allow the tuning of this lookup. If nameless clients appear, increasing the frequency or number of

lookups may help.

• Number of NBP Lookup retries:

This field controls how many times the NBP Lookup is tried before the gateway gives up on getting the client's Macintosh name. The default is four.

In the example 'cnfg' resource, the number of retries is hex 00000004, so the gateway will try 5 times (once plus 4 retries) to get each Macintosh name.

• Timeout for each NBP Lookup:

This field controls the time between each NBP Lookup in seconds. The default is 5.

In the example 'cnfg' resource, the timeout for each NBP Lookup is hex 00000005, so the gateway will wait 5 seconds before sending another NBP Lookup for a Macintosh name.

Support Information Services

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Tech Info Library Article Number:16752

Tech Info Library

System 7.5: PC Exchange Works with Easy Open (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: PC Exchange Works with Easy Open (2/95)

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Article Created: 15 November 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

This article discusses the how PC Exchange works in conjuction with Macintosh Easy Open in System 7.5.

DISCUSSION ----------

When you set up DOS extension mapping in the PC Exchange control panel, they work regardless of where the file is located. A file can be on a DOS floppy disk, or on the Macintosh hard drive and they work the same.

If Macintosh Easy Open is installed, it works with PC Exchange and tries to map files to the proper applications based on the PC Exchange mappings. If the file is not mapped to an application, Macintosh Easy Open attempts to translate the file.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16753

Tech Info Library

LaserWriter 16/600 PS: Does Not Stay in Desired Zone (2/95)

Revised: 2/2/95
Security: Everyone

LaserWriter 16/600 PS: Does Not Stay in Desired Zone (2/95)

==========

Article Created: 15 November 1994
Article Reviewed/Updated: 2 February 1995

TOPIC ----------

I have a LaserWriter 16/600 PS that will not stay in the zone I place it in. I am able to change the printer's zone with the Apple Printer Utility, but the printer goes back to the previous zone if the printer is restarted.

DISCUSSION ----------

This problem is related to the configuration switch in the back of the printer. If you are changing the zone of the LaserWriter 16/600 PS from one zone to another zone, you must flip the configuration switch into the UP position prior to changing zones (if it already is not up), and leave it there. After changing the zone with the Apple Printer Utility, you should power-cycle the printer to store the change. Other than this anomaly, the configuration switch works as it is described in the manual and Apple Printer Utility.

There are only minor differences when the configuration switch is in the UP position verses being in the DOWN position. Besides the protocol used for the Parallel port the only differences are that "AutoSelect" is used more often in the Standard settings to make it easier for customers. If the only jobs going to the printer are PostScript, then either of the settings work fine. There is a diagram on page 313 of the LaserWriter 16/600 PS user manual that outlines the settings. There are no side-effects of leaving the switch in the UP position.

Article Change History:
02 Feb 1995 - Changed title and discussion to better fit the problem.
24 Jan 1995 - Replaced entire discussion
12 Dec 1994 - Added that the switch needs to stay in the UP position.

Support Information Services

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Tech Info Library Article Number:16754

Tech Info Library

LaserWriter 16/600 PS: How to Turn Off IPX Protocol (11/94)

Revised: 11/15/94
Security: Everyone

LaserWriter 16/600 PS: How to Turn Off IPX Protocol (11/94)

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Article Created: 15 November 1994

TOPIC -----

Is there a way I can turn IPX protocol off on the 16/600PS laserwriter?

DISCUSSION -----

The Apple Printer Utility that ships with the LaserWriter 16/600 PS enables you to configure the communication channels of the printer:

1) Verify the printer's configuration switch is in the up position
   (p32 of the Apple LaserWriter 16/600 PS manual).
2) Launch the Apple Printer Utility and select the 16/600.
3) Choose Communication Configuration from the menu
4) Choose "Up Switch Position (Custom)"
5) Set the Netware mode to off.

When you quit the Apple Printer Utility, you'll have the option to send this change to the printer: click send.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16755

Pwr Macintosh DOS Compatibility Card: Specifications (6/95)

Revised: 9/23/96
Security: Everyone

Pwr Macintosh DOS Compatibility Card: Specifications (6/95)

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Article Created: 15 November 1994
Article Reviewed/Updated: 12 June 1995

TOPIC ----------

This article contains the specifications for the DOS Compatibility Card for the Power Macintosh 6100 and Macintosh Performa 6100 Series.

DISCUSSION ----------

For users who want the utmost in power and compatibility, the DOS Compatibility Card for Macintosh can turn your Power Macintosh 6100 or Performa 6100 series computer into the most flexible, versatile system available. Featuring a 486 DX2 processor, the DOS Compatibility Card for Macintosh lets you run DOS and Windows applications directly on the Macintosh at a fast 66 megahertz. You can even instantly switch between the Macintosh operating system and DOS environments to take advantage of the best of both worlds.

With the DOS Compatibility Card for Macintosh, your Power Macintosh 6100 or Performa 6100 series computer becomes a powerful dual-microprocessor system. The 486 DX2 processor on the card delivers strong performance for DOS and Windows applications. Because the microprocessors work independently, you can run Macintosh and DOS or Windows applications simultaneously. In fact, you can even cut and paste information between them, as well as share folders and disks.

In addition, the DOS Compatibility Card for Macintosh helps your Power Macintosh 6100 or Performa 6100 series computer fit into your work environment better than ever. Once you install the card, your system will support DOS and Windows network applications and services using Novell NetWare IPX or TCP/IP protocols over the built-in Ethernet network connection—in addition, of course, to its built-in standard Macintosh networking capabilities. You can even run DOS and Windows multimedia applications with the built-in SoundBlaster 16 support.

In short, the DOS Compatibility Card for Macintosh can help you to get your work done easily and efficiently—no matter what environment you're working in.

Features

High Performance

66-MHz 486 DX2 processor; 32-bit data bus

Supports up to 32 MB of RAM on card

Expansion RAM

Single Macintosh-compatible 72-pin SIMM slot for up to 32 MB of 80ns local RAM on DOS Compatibility Card

DOS environment can access either shared memory on the Macintosh logic board or local memory on the DOS Compatibility Card

When no SIMM is installed on the DOS Compatibility Card, shared memory is being used. The amount of memory allocated to the DOS Compatibility Card is set using the PC Setup control panel.

Video RAM (VRAM)

512K RAM for video (DOS environment)

Compatibility

Lets your Power Macintosh 6100 or Performa 6100 series run DOS and Windows programs directly on a 486 processor

Includes Microsoft MS-DOS 6.22 and Windows 3.1

Includes SoundBlaster 16 16-bit stereo sound output for PC multimedia compatibility

Provides "hot-key switching" (screen displays either Macintosh or DOS/Windows environment; lets you toggle between the two)

Supports VGA/SVGA monitors

Includes Macintosh ODI Driver for NetWare IPX and TCP/IP support in the DOS/Windows environment

Supports DOS-formatted floppy disks and CD-ROM discs

Includes PC game port

Integration

Lets you copy and paste between Mac OS and DOS environments

Allows folder and disk sharing between Mac OS and DOS environments

Lets you print from either environment to a Macintosh-compatible printer

Parallel Port

Macintosh printer port can emulate PC-compatible parallel port

Keyboard

Macintosh ADB keyboard and mouse emulate PC AT-compatible keyboard and PS/2-compatible mouse

Storage

Works with built-in Apple SuperDrive 1.4 MB floppy disk drive, which uses high-density floppy disks and reads, writes, and formats Macintosh, Windows, MS-DOS, OS/2, and ProDOS disks

Works with internal hard disk of Power Macintosh 6100 or Performa 6100 series

Optional internal CD-ROM drive

Displays

Works with Apple 13-inch, 14-inch, and 16-inch, Multiple Scan displays, as well as third-party VGA and SuperVGA displays

Network

Macintosh ODI Driver for NetWare IPX and TCP/IP support in DOS/Windows environment using the built-in Ethernet connections. (Client software not included)

Environmental Requirements

Operating temperature: 50 to 104 degrees F (10 to 40 C)

Storage temperature: –40 to 117 degrees F (–40 to 47 C)

Humidity: 10% to 95% noncondensing

Altitude: 10,000 feet maximum (3048 m)

System Requirements

Macintosh 6100 or Performa 6100 series computer. (Excludes the 6100AV)

Installation

Does not require installation by dealer

Ordering Information

==========

Power Macintosh 6100/66 16 MB Hard Disk 500 CPU with DOS Compatibility Card -- Order No. M3972LL/A

DOS Compatibility Card for Power Macintosh 6100/60 or /66, or Performa 6100 series -- Order No. M3581LL/A

Note: All Power Macintosh CPUs include FPU, Ethernet, and 256K cache

Contents

- DOS Compatibility Card
- MS-DOS 6.22 manual and disks
- Microsoft Windows 3.1
- Macintosh PC Exchange Users Guide
- Monitor cable

The following computers are in the Macintosh Performa 6100 series: Performa 6110, Performa 6112, Performa 6115, Performa 6117, and Performa 6118.

Article Change History:
12 Jun 1995 - Added keyword.
30 Mar 1995 - Corrected Mac OS name.
21 Mar 1995 - Added shared memory information.

Support Information Services

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Tech Info Library Article Number:16756

Tech Info Library

QuickDraw GX Compliant Applications (4/96)

Revised: 4/16/96
Security: Everyone

QuickDraw GX Compliant Applications (4/96)

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Article Created: 15 November 1994
Article Reviewed/Updated: 16 April 1996

TOPIC ----------

This article provides a partial list of QuickDraw GX compliant applications.

DISCUSSION ----------

These terms will help you interpret the level of QuickDrawGX support provided in these applications:

• Aware - Supports QuickDraw GX printing, printing extensions, and Portable Digital Documents (PDD).
• Plus - Supports "Aware" features and uses GX for font and graphic handling, including advanced typographic features such as tracking, kerning, leading, and so on.
• Dependent - Requires QuickDraw GX for all typography, graphics, and printing. Will not run without GX.

General
=======
• Symantec Corporation's Act! 2.0 - Aware
• Microsoft Corporation's Excel 5.0 - Aware
• ClaireWare Software's Personal Log 2.0 - Aware

Development Tools
=================
• Oracle Developer/2000 1.2 - Aware

Graphics
========
• Lari Software's LightningDraw GX - Dependent
• Pierce Software's ShareDraw - Aware
• FirstClass NV's Tailor GX (distributed by EnFocus Software Inc. in North

America) - Dependent
• Pixar's Typestry 2.11 - Plus

Page Layout
==========
• Manhattan Graphics Corporation's Ready, Set, Go! GX - Dependent

Video
=====
• Radius' RadiusEdit - Dependent
• Scitex Digital Video's VideoCube - Dependent

Word processors and text editors
================================
• Bare Bones' BBEdit 3.5 - Aware
• Apple's SimpleText 1.3 - Aware
• Xiaolin Zhao's Unicorn Text Editor - Aware
• WordPerfect 3.5 - Aware
• World Soft Corporation's WorldWrite 3.0 - Aware
• Microsoft Corporation's Word 6.0 - Aware

Utilities
=========
• Peirce Software's Peirce Print Tools, a set of nine GX printing extensions.

• The Wollongong Group's solution for GX able printing in TCP/IP networks.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
16 Apr 1996 - Updated information.
16 Feb 1995 - Changed keyword and reviewed technical accuracy.

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Tech Info Library Article Number:16757

Tech Info Library

QuickTake: CD ROM Software Compatibility (11/94)

Revised: 11/15/94
Security: Everyone

QuickTake: CD ROM Software Compatibility (11/94)

==========

Article Created: 15 November 1994

TOPIC ----------

After installing the QuickTake software for the Power Macintosh, a message occurs at startup: "There is not enough memory to load all of your extensions."

DISCUSSION ----------

This may result in the loss of network and other important functions. This error could result from the incorrect version, or a corrupted version of Foreign File Access which resides in the System Folder.

The version of Foreign File Access that customers should use with the QuickTake camera and Power Macintosh computers is version 5.0. The copy that is on the System 7.5 CD-ROMs and on on-line services is the latest; version 5.0.2 of ISO 9660 File Access.

Version 4.0.2 should not be used with Power Macintosh computers. Some older versions are corrupted or incompatible.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16758

Tech Info Library

QuickDraw GX: Line on Printout With StyleWriter GX (4/95)

Revised: 4/10/95
Security: Everyone

QuickDraw GX: Line on Printout With StyleWriter GX (4/95)

==========

Article Created: 14 November 1994
Article Reviewed/Updated: 10 April 1995

TOPIC ----------

When printing to a StyleWriter II from QuickDraw GX-aware applications, a faint black border line appears on the right margin. This happens only when QuickDraw GX is installed and the StyleWriter GX printer driver is being used. We are using the UK (United Kingdom) localized version of the QuickDraw GX software.

DISCUSSION ----------

Solution

This problem only occurs with non-U.S. versions of QuickDraw GX. This issue has been fixed by the StyleWriter GX 1.1.1 driver. Apple has posted this software online.

These articles can help you locate the software update mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates.

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Workaround

If you do not have QuickDraw GX 1.1.1 yet, try this workaround in the interim. In the Page Setup dialog of your application, there is a pop-up field called "Format For" where you should select the printer to which you are printing. If this field is set for "Any Printer," then the problem occurs. Selecting "StyleWriter GX" should solve the problem.

To reiterate, this problem ONLY occurs with QuickDraw GX-aware applications on

non-U.S. versions of QuickDraw GX.

NOTE:
This problem may still occur with the Color StyleWriter 2400, although we have neither verified or received any reports of this.

Article Change History:
10 Apr 1995 - Added information about QuickDraw GX 1.1.1.
22 Feb 1995 - Added keyword; minor technical updates.
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16759

Tech Info Library

Apple RAID: No Custom Icons After Volume Restore (6/96)

Revised: 6/7/96
Security: Everyone

Apple RAID: No Custom Icons After Volume Restore (6/96)

==========

Article Created: 15 November 1994
Article Reviewed/Updated: 7 June 1996

TOPIC ----------

While setting up Apple RAID, I first backed up my volumes, re-initialized my drives with Apple RAID, and then restored the volumes. Now all of the custom icons I had before are now generic icons, and I can't paste them back when using the Get Info window. I get the following error message, "The command could no be completed, because it cannot be found." How do I get my custom icons back?

DISCUSSION ----------

If you use the volume restore instead of the restore to a folder in Retrospect, the invisible 'Icon' file with the custom icon gets removed and your drives.

You should use the "Retrieve files and folders" command instead of the "Restore Entire Disk" command in Retrospect.

The error you describe can also occur if you try to paste a custom icon on a volume icon.

To restore your custom icons, use ResEdit or some other resource utility, make an "Icon" file visible from another drive and, as a precaution, duplicate it. Copy the duplicate file to the Apple RAID drive. When the copy is complete, use ResEdit or other resource utility to make both the original and copied files invisible again (the Icon file must be invisible). Restart, and you should be able to create a custom icon.

Article Change History:
07 Jun 1996 - Updated article with more information.

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Tech Info Library Article Number:16761

Tech Info Library

Quadra 610/650/800: Int. and Ext. SCSI Requirements (9/95)

Revised: 9/21/95
Security: Everyone

Quadra 610/650/800: Int. and Ext. SCSI Requirements (9/95)

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Article Created: May 11, 1993
Article Reviewed/Updated: 21 September 1995

TOPIC ----------

I have a Centris 650 and have had problems connecting certain SCSI devices. Is there a specific rule to follow regarding SCSI bus lengths and termination?

The information in this article relative to the Centris 610 and Centris 650 is also relevant to the Quadra 610 and Quadra 650.

DISCUSSION ----------

Introduction

Like the Quadra 900/950, the Quadra 800 and Centris 610 and 650 allow for multiple internal SCSI devices. The Quadra 800, Centris/Quadra 610/650, and the Quadra 900/950 have SCSI Bus and termination requirements that are different from each other -- and different from other Macintosh models.

While the Quadra 900 and 950 have termination attached to the end of the internal cable (the end of the SCSI bus), the Quadra 800 and Centris systems' SCSI bus requires internal termination to be provided by the last internal SCSI device.

Cables & Terminators

As described above, the SCSI bus and termination are different from other Macintosh systems. The Quadra 800 and Centris systems use a single SCSI driver for both internal and external devices and automatic termination on the logic board. The SCSI bus extends from the last device on the internal SCSI cable to the last device on the external SCSI Bus. The internal SCSI cable does not have built-in termination; instead, the internal SCSI device at the end of the cable must include the appropriate termination.

If you have a variety of different external SCSI cables, the computer may

malfunction. Also, if you use certain external SCSI cables, future system problems may occur due to damage to the disk directory code. You should always use cables with properly matched impedance and properly terminate the SCSI Bus. The best way to match impenance is to use cables from the same vendor rather than mixing and matching them.

System Failure Symptoms

Reported symptoms that indicate SCSI bus problems are:

- The computer will not boot, and shows a "blinking "?" on screen.
- Write errors when copying large files to disk.
- Erroneous character changes in files or documents.
- Inability to empty items from the trash.
- Inability to force quit an application.

Verify Proper System Configuration

Here's what to do if a unit experiences what appears to be disk failure:

Internal SCSI Connections:

1) If the disk is accessible, immediately back up the data to another device.
2) Shut down the system, following normal shutdown procedure, and remove any external SCSI devices.
3) Remove the computer's cover.
4) Make sure that the last SCSI connector on the internal SCSI cable is connected to the internal drive supplied with the system. If it's not, remove the internal SCSI cable and connect properly.
5) If there are any other internal SCSI devices installed, make sure they are NOT terminated.
6) Replace the cover.
7) Start up the computer to verify system integrity.
8) Restart the computer from Disk Tools, and run HDSC Setup.
9) Reinitialize the disk.
10) Reinstall system software, using the appropriate system software installer.
11) Restart the computer to verify System integrity.

External SCSI Connections:

1) With the computer powered down, connect the external SCSI devices.
2) Make sure the devices are connected with cables which have properly matched impedance, it is best to use cables from one vendor.
3) Terminate ONLY the last device on the external SCSI Bus.
4) Beware of external devices with internal termination. If there is question as to whether a device is internally terminated, check with the manufacturer. No Apple SCSI device has internal termination.
5) Be sure each device has a unique SCSI ID number.
6) Power on all external SCSI devices.
7) Start up the computer system and verify proper functionality.

If the previous procedure does not result in a properly functioning computer system, the external SCSI devices may not be compatible, or may have a different

hardware failure. If that occurs, you will need to contact an authorized Apple Service Provider or the manufacturer of the suspected third-party device.

Article Change History:
21 Sep 1995 - Made minor changes.

Support Information Services

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Tech Info Library Article Number:16762

Tech Info Library

System 7.5: Sad Mac Caused by FWB Version 1.3 (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Sad Mac Caused by FWB Version 1.3 (2/95)

==========

Article Created: 16 November 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

I upgraded my Macintosh to system 7.5, and the machine now gives me a 'sad mac' error 4 error tones. Doing a clean install did not help. I used FWB Hardware Toolkit version 1.3 to reformat the drive.

DISCUSSION ----------

FWB Hardware Toolkit version 1.3 is not system 7.5 compatible, and you should be using version 1.6. The newest version is 1.6 and this the version that is 7.5 compatible. Contact FWB for an upgrade.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16763

Tech Info Library

Updating The Driver on Apple RAID 1.0.1 Formatted Disks (1/95)

Revised: 1/26/95
Security: Everyone

Updating The Driver on Apple RAID 1.0.1 Formatted Disks (1/95)

==========

Article Created: 16 November 1994
Article Reviewed/Updated: 26 January 1995

TOPIC ----------

This article describes a serious problem when Apple RAID 1.0.1 formatted disks have their drivers updated with Apple HD SC Setup.

DISCUSSION ----------

Apple HD SC Setup version 7.3 allows you to update the driver on any Apple disk, including disks formatted with Apple RAID 1.0.1. Regardless of the instructions for installing new versions of system software, DO NOT update Apple RAID formatted disks with Apple HD SC Setup. Use the Install Driver command of the current version of Apple RAID software.

WARNING: If the driver of an Apple RAID formatted disk is updated with Apple HD SC Setup, the Apple RAID partition map will be damaged, and with Apple RAID 1.0.1 no recovery is possible. You will need to re-initialize the disk and all data will be lost.

Article Change History:
26 Jan 1996 - Made correction for accuracy.

Support Information Services

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Tech Info Library Article Number:16767

Tech Info Library

PowerBook: Toshiba 540 MB Hard Drive and Sleep (11/94)

Revised: 11/17/94
Security: Everyone

PowerBook: Toshiba 540 MB Hard Drive and Sleep (11/94)

==========

Article Created: 17 November 1994

TOPIC ----------

I have a PowerBook running System 7.5 with a Toshiba 540 MB hard drive. When I wake my PowerBook from sleep, it locks up. It was fine before I upgraded to System 7.5.

DISCUSSION ----------

There appears to be a conflict between the Toshiba 540 MB hard drive and sleep. Reformatting with updated drivers that are compatible with System 7.5 does not help. The same versions of Third-Party drivers on other hard drives with System 7.5 does not result in this failure. It appears to be strictly related to this hard drive.

The workaround is to reinstall 7.1, 7.1.1, or 7.1.2 to alleviate this problem.

Support Information Services

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Tech Info Library Article Number:16768

Tech Info Library

PowerBook 280 and 500: RAM Disk Shutdown Error (12/94)

Revised: 12/8/94
Security: Everyone

PowerBook 280 and 500: RAM Disk Shutdown Error (12/94)

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Article Created: 17 November 1994
Article Reviewed/Updated: 08 December 1994

TOPIC ----------

A problem has been identified on the PowerBook Duo 280 and 280c models when running System 7.5 and trying to use the Persistent RAM Disk feature.

If booted to a system folder on a RAM disk, and you attempt to Shut Down, you get an error dialog with a message that there is a problem trying to write the Persistent RAM file, and data will be lost if you shutdown. You are given a choice to either Shut Down, or Cancel.

Is this a known problem and are there any workarounds?

DISCUSSION ----------

The problem has been traced to Assistant Toolbox 1.2, which is the extension file that manages the Persistent RAM disk. The problem has also been reported on the PowerBook 520 and PowerBook 540 models. It has been reported and as of Nov, 1994 no timeframe has been provided for a fix.

A workaround is to revert back to Assistant Toolbox 1.1 (the pre-System 7.5 version).

Article Change History:
08 Dec 1994 - Added PowerBook 500 series to article.

Support Information Services

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Tech Info Library Article Number:16769

Tech Info Library

Table of Video In/Out Options For AV & Quadra 630 (1/95)

Revised: 1/10/95
Security: Everyone

Table of Video In/Out Options For AV & Quadra 630 (1/95)

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Article Created: 17 November 1994
Article Reviewed/Updated: 10 January 1995

TOPIC ----------

This article is a table of video in and out options for the Quadra and Power Macintosh AV computers, and Quadra 630 computer.

DISCUSSION ----------

	Centris 660AV Quadra 660AV Quadra 840AV	PMac 6100 AV PMac 7100 AV PMac 8100 AV	Quadra 630
S-Video In	Built-In	Built-In	Must buy video card
Composite Video In	Built-In	s-video/comp adapter included	Must buy video card
Bundled Software for Video In	Video Monitor FusionRecorder	Video Monitor FusionRecorder	Avid's VideoShop Must buy video card
Audio In	PlainTalk port	PlainTalk port	PlainTalk port If you buy video card (has right/left)
S-Video Out	Built-In	Built-In	Must buy Apple Presentation System
Composite Video Out	Built-In	s-video/comp adapter included	Must buy Apple Presentation System
Audio Out	Speaker port	Speaker port	Speaker port
TV Play-	Requires TV	Requires TV	Must buy TV/video

Through	tuner	tuner	system or video sys & use with VCR
Bundled Software for TV Play-Through	Video Monitor FusionRecorder	Video Monitor FusionRecorder	Apple Video Player Must buy TV Tuner and video card
Record to Video Tape	Out to TV, record on VCR	Out to TV, record on VCR	Must buy Apple Presentation System (output to VCR instead of TV)
Video Mirroring	No (buy APS)	No (buy APS)	Must buy Apple Presentation System

Article Change History:
10 Jan 1995 - Updated for all Power Macintosh computers.

Support Information Services

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Tech Info Library Article Number:16770

Tech Info Library

AWS 95 Tune-Up 2.0 - Available (11/94)

Revised: 11/17/94
Security: Everyone

AWS 95 Tune-Up 2.0 - Available (11/94)

==========

Article Created: 17 November 1994

TOPIC ----------

This article describes where to get the AWS 95 Tune-Up 2.0.

DISCUSSION ----------

Apple Business Systems (ABS) recently completed an A/UX 3.1 tune-up kit for the Apple Workgroup Server (AWS) 95. The tune-up provides software fixes and some performance enhancements, and is free to all AWS 95 users. The Tune-up can only be used with systems that run A/UX 3.1. The kit includes about 2 MB of software and takes 5 minutes to install.

Some of the enhancements that Tune-up 2.0 offer are:

- Timbuktu with TCP/IP connection now works with the system.
- Colour Central and AppleSearch no longer hang under heavy user load.
- Improved performance when saving large files with resource forks.

You are encourage to use the Tune-up kit.

These articles can help you locate the software update mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Support Information Services

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Tech Info Library Article Number:16771

Tech Info Library

QuickDraw GX: Non-Native Error on Reformatted Drive (2/95)

Revised: 2/16/95
Security: Everyone

QuickDraw GX: Non-Native Error on Reformatted Drive (2/95)

==========

Article Created: 15 November 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

I have a Power Macintosh and have reformatted the Apple internal hard drive with APS Power Tools version 2.8.2. I then installed QuickDraw GX after installing 7.5. I am now getting an error message that says the non-native version of QuickDraw GX is installed.

I reformatted the hard drive with Apple HD SC Setup and QuickDraw GX worked fine.

DISCUSSION ----------

We found a similar problem with APS version 3.0.1. Version 2.8.2 of the APS Power Tools utility was written by a company called Transoft. We called Transoft and APS to inform them of this problem. Technical support at Transoft said the only problem they found was the Color Picker problem: the error "Insert <hard disk>" shows up if virtual memory is turned on and goes away when Virtual Memory is turned off when accessing the Color Picker. Transoft technical support said that no one had called them with the QuickDraw GX problem. APS said that no one had called them with the problem.

Transoft had a fix for the Color Picker problem. There is a control panel that comes with APS PowerTools called "Power Tools Assistant 1.5.7". This control panel allows the user to change options about the drive. The interface is like the Startup Disk control panel where you select the drive and then click the option button. One of the options is "Disable Finder Eject." When this option is selected, both the Color Picker and the native GX problem go away.

We tried to duplicate the problem with APS software version 3.0.5 and could not do it. This could indicate that the problem only exists with the 3.0.1 version. Contact APS for an upgrade.

Note:

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.
13 Jan 1995 - Made corrections to application name appearing in article.

Support Information Services

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Tech Info Library Article Number:16773

Tech Info Library

Macintosh Tutorial: Lower Half of Screen Missing (7/95)

Revised: 7/6/95
Security: Everyone

Macintosh Tutorial: Lower Half of Screen Missing (7/95)

==========

Article Created: 16 November 1994
Article Reviewed/Updated: 06 July 1995

TOPIC ----------

I have a Power Macintosh 7100/66 and a 12" RGB monitor and am running Macintosh Tutorial along with Apple Guide. When I bring it up on my 12" RGB monitor, the bottom half of window is cutoff.

DISCUSSION ----------

It was confirmed that this problem also happens on non-Power Macintosh systems, when using the 512x384 (12") resolution. It appears that any Macintosh using the 512x384 resolution may have this problem. Apple is aware of the problem.

The Macintosh Tutorial was intended to be compatible with 12" monitors. This problem should not occur when the Macintosh is set to a screen resolution larger than 512x384. Unfortunately, there does not appear to be a work around for this problem, at this time.

Article Change History:
06 Jul 1995 - Corrected typos.
07 Mar 1995 - Reviewed for technical accuracy.
16 Feb 1995 - Changed keyword and updated.

Support Information Services

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Tech Info Library Article Number:16774

Tech Info Library

AppleScript: Editor Cursor Flashes Left of Mouse Click (1/95)

Revised: 1/12/95
Security: Everyone

AppleScript: Editor Cursor Flashes Left of Mouse Click (1/95)

==========

Article Created: 17 November 1994
Article Reviewed/Updated: 12 January 1995

TOPIC ----------

An interface problem occurs when using the Apple Script Editor under System 7.5 on a Power Macintosh.

DISCUSSION ----------

When a user tries to click on the script in the script editor, the flashing cursor does not 'go' where one clicks. The cursor actually appears on a different character, usually one or two characters to the left of where the user clicked.

The immediate workaround is clicking further to the right to get the cursor where you want. Removing the WorldScript Power Adapter from the extensions folder will eliminate the problem.

Apple Engineering is aware of the problem and is working on a solution.

Article Change History:
12 Jan 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16775

Tech Info Library

LaserWriter: Windows PS Header Not Loaded Error (11/94)

Revised: 11/17/94
Security: Everyone

LaserWriter: Windows "PS Header Not Loaded" Error (11/94)

==========

Article Created: 17 November 1994

TOPIC ----------

I am trying to print from a Power Macintosh with SoftWindows to a LaserWriter Select 360 printer. However, every time I try to print from within Windows I get a "PS Header Not Loaded" error. Is this a problem with the driver?

DISCUSSION ----------

The only time I have seen this symptom, and it happens in Windows on a true Windows computer too, is when the "Send Header With Each Job" option is unchecked.

Changing PostScript Header
---
1) Open the Printers control Panel
2) Click on Setup
3) Click on Options
4) click on the box that reads "Send Header With Each Job". When an 'X' appears in the box, it sends the header with each job.

Make sure the box is checked and try printing again.

I have tested SoftWindows with system software 7.5, and it prints fine from Windows. In addition, I unchecked the "Send Header With Each Job" box and tried to print. I did not get the error message that you did on the screen, instead the error message was printed and I received a general "PostScript Error" from PrintMonitor. So, checking the box should correct the problem.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16777

Tech Info Library

PATHWORKS: Printing PostScript (11/94)

Revised: 11/17/94
Security: Everyone

PATHWORKS: Printing PostScript (11/94)

==========

Article Created: 17 November 1994

TOPIC ----------

My LaserWriter 16/600 reports an error when printing PostScript files with PATHWORKS.

DISCUSSION ----------

It looks like your problem was a configuration issue. Here are the steps we took to resolve this. Please note that we used PATHWORKS version 1.2, but we think version 1.1 should act the same.

1) Printed the file that you gave us using the LaserWriter Utility. This verified that the file was good, and that the printer could handle the PostScript level in the file. It worked fine.

2) Ran the following command procedure which deletes the queue from VMS and PATHWORKS, and then re-initializes the queues with the proper PostScript parameters.

```
$Set ver
$ set noon
$ stop/next laser_que
$ del/que laser_que
$admin/msa
stop printer/all
remove printer "LaserWriter 600 Printer"
ADD PRINTER "LaserWriter 600 Printer"/QUEUE=Laser_que  -
/DESTINATION="Selway@ZONE NAME E"
/SHEET_SIZE=(A4,B5,LETTER)-
/default=(flag, Trailer, Form=ps_plain)
start printer "LaserWriter 600 Printer"
exit
$set nove
```

Note: Our old init file did not have the /sheet qualifier and the /default=(form=ps_plain) qualifier. Also, Selway = LW 16/600 name, ZONE NAME E=zone name.

3) We printed your postscript file using the same command you did, $print/que=laser_que a.ps/param=(data_type=postscript), and it worked fine.

4) We then verified that the queue would still print text by using the normal print command for login.com $ print/que=laser_que login.com.

Our recommendation is that you upgrade to PATHWORKS 1.2 and then re-initialize the queues using the preceding commands.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16780

Tech Info Library

LaserWriter 16/600 PS & Sun Solaris Through TCP/IP (10/96)

Revised: 10/1/96
Security: Everyone

LaserWriter 16/600 PS & Sun Solaris Through TCP/IP (10/96)

==========

Article Created: 17 November 1994
Article Reviewed/Updated: 1 October 1996

TOPIC ----------

This article provides information on configuring the Apple LaserWriter 16/600 PS printer for printing from a Solaris workstation.

DISCUSSION ----------

Overview of Solaris Printing

Solaris 2.3, 2.4 and 2.5* printing uses the lp command available with UNIX System 5. Solaris includes two utilities that add BSD features to the lp printing system.

- lpsystem - register remote systems with the print service.
  This utility supports System V network printing and provides compatibility with BSD network printing (lpd).

- lpr - send job to the printer.
  This utility is actually a version of lp that supports lpr flags, for backwards compatibility to SunOS 4.x.

*Note: If you are using Solaris 2.5, you may notice some slight variations in the directions provided in this article.

The following instructions are provided for Solaris (SunOS 5.x) system administrators. SunOS 4.x (sometimes called Solaris 1.x) are in the LaserWriter 16/600 PS manual. SunOS 4.x is a version of BSD UNIX and uses lpr for printing.

Before configuring the Solaris system, the LaserWriter 16/600 PS needs to be installed on the Ethernet network and assigned an IP address. See your LaserWriter 16/600 PS User's Guide for detailed instructions.

Apple Computer supports printing only from Solaris 2.x over Ethernet using TCP/IP and lp to the LaserWriter 16/600 PS printer. Alternative forms of printing with other protocols, such as PAP in AppleTalk, or physical connections such as direct parallel connections are possible, but not supported by Apple Computer.

Steps for Solaris

Step 1

Login as root

Step 2

Run admintool

Step 3

Select "print manager"

Step 4

From the "Edit" Menu select "Add Printer"

Step 5

Select "Add access to remote printer"

Step 6

Set the "Printer Name"

The printer name is the name of the printer queue referred to in the lp command. For example, if you create a printer queue called "lw16ps", you would print using the following command:

```
lp -d lw16ps <filename>
```

Step 7

Set the "Printer Server"

Use the hostname or IP address of the printer. The hostname should be entered in the /etc/hosts file, NIS database or DNS.

Step 8

Verify or change "Print Server OS" to "BSD"

Click "add" when done. The new printer appears in the Print manager window.

Step 9

Change the file contents to PostScript.

Select "edit" -> "modify" -> "name of printer"
Change the file contents to PostScript and click apply. The default is any

Click apply to save changes.

Setting the "file contents to PostScript" allows all files to print to the LaserWriter correctly. Without making this change, text jobs sent to the printer using lp and lpr will not print.

Printer Configuration

Both the LaserWriter 16/600 PS and Solaris printing software has automatic page description language recognition. A single printer queue that accepts both text and PostScript is the simplest configuration for users and administrators. If Solaris is configured with the steps above, the interpreter for TCP/IP (as shown on the startup page) can be set for either PostScript or Autoselect.

If the printer will be receiving PCL jobs via TCP/IP, the TCP/IP interpreter should be set for Autoselect.

Printing from Specific Applications

Printtool: Openwindows tool for printing files

Printtool creates PostScript jobs and will work normally. Users can type in path names or use drag and drop icons from the file manager to the icon well. The default format will product 2-UP landscape output that has been "prettied" in the mp utility.

MAE: The virtual Macintosh

MAE produces PostScript using lprwriter. Set lprwriter to "lp -d <printer queue name>" If AppleTalk is supported on the Ethernet network, MAE users can use a LaserWriter driver and print using AppleTalk as well. MAE users printing over TCP/IP will find that lprwriter works with Fax cards, however, Apple Computer has not tested this combination, and it is not supported. MAE users using a Fax card equipped printer should print with AppleTalk.

lp - send requests to an LP print service

lp is the standard line command used for printing files in System V UNIX. For example:

```
lp -d lw16ps <filename>
```

lpr - send job to the printer

Although Solaris is System V, an lpr utility is provided. The lpr command is a front end to lp and is not a normal version of lpr. However the differences should not affect the use of the LaserWriter 16/600 PS printer. Example print command:

```
lpr -P lw16ps <filename>
```

For more information on configuring printing in Solaris, you should consult the Solaris documentation that came with your workstation. For more information on UNIX printing in general, you should consult a UNIX system administration book like the "UNIX System Administration Handbook" by Evi Nemeth, Garth Snyder, Scott Seebastian, Trent R. Hein.

Article Change History:
01 Oct 1996 - Added note about Solaris 2.5 variation.
24 Jan 1996 - Complete rewrite.
22 Mar 1995 - Made minor corrections.

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Tech Info Library Article Number:16781

System 7.x Aliases: Frequently Asked Questions (11/95)

Revised: 2/13/96
Security: Everyone

System 7.x Aliases: Frequently Asked Questions (11/95)

==========

Article Created: 18 November 1994
Article Reviewed/Updated: 10 November 1995

TOPIC ----------

This article answers several common questions about using Aliases with your Macintosh computer.

Questions answered in this FAQ:
==========

1) Will aliases work with disks that are not currently available on my desktop?

2) The Date Modified field of an alias does not stay in synch with the original file. If I update a file through an alias, shouldn't the date modified for the alias file be set? I have not been able to figure out the exact rules by which these dates are modified and coordinated.

3) If I delete a file, what happens to any aliases that point to the deleted file?

4) If I delete an alias, does it delete the original file?

5) I used System 7 to create aliases to items from multiple volumes on the same file server. I connect to one of the volumes and double-click an alias for something on a second volume of the same server. The second volume is connected with the same user name and password (access rights permitting) as the first volume from the server. Even if the second alias was created using a different user name, the second volume is still connected with the first user name because you cannot log on to the same server twice. Should the user be warned about this? It seems that this could cause some confusion about how a user is logged on and what privileges they have.

6) I am using System 7.5 on my Macintosh. Through the Finder I locked several aliases in my Recent Servers Folder to assure that they would not get deleted as I accessed more and more servers. I have found that my system hangs whenever I

reach the limit defined by the Apple Menu Options (v 1.0) control panel, and the Finder tries to replace a locked alias. It appears that the Finder does not first check to see if the aliases are locked before replacing them.

8) Can I have an alias to a file on a file server?

DISCUSSION ----------

1) Question: Will aliases work with disks that are not currently available on my desktop?

Answer: Yes. When an alias to an icon is opened, and the icon that alias points to is on a disk that is not available on the desktop, the Macintosh asks you to insert the disk.

• In the case of floppy disks, CD-ROMs, and removable hard disks, you are asked to insert the disk that contains the target of the alias.

• If a hard disk is attached and turned on, but not on the desktop, opening the alias mounts that disk.

• If the alias points to something on an unavailable file server or to another Macintosh using System 7 File Sharing, the server is automatically mounted on the desktop. If you were signed on as a registered user when the alias was created, you are prompted for a password.

2) Question: The Date Modified field of an alias does not stay in synch with the original file. If I update a file through an alias, shouldn’t the date modified for the alias file be set? I have not been able to figure out the exact rules by which these dates are modified and coordinated.

Answer: Aliases are separate files. When you open a file via an alias, the alias is opened, the original is found, the alias is closed, and the original is opened. At this point, the operating system has no knowledge as to how the original file was opened. Since there is no concept as to backward links to aliases, modifications to a file are treated as they always have been. The modification date is set on the modified file, not the alias. Since the alias is a separate file, its modification date can also be changed. Cases where this might occur include having the path to the original file change or modifying the alias file within a utility such as ResEdit.

3) Question: If I delete a file, what happens to any aliases that point to the deleted file?

Answer: Nothing. The next time you try to open the alias, you will receive an alert saying that the original item could not be found. If you later place an icon with the same name in the same location, the alias will find the new icon.

4) Question: If I delete an alias, does it delete the original file?

Answer: No. Aliases and the files they point to are independent. When you rename, move, delete, or change the label of an alias you are only modifying the alias, not the target file to which it points.

5) Question: I used System 7 to create aliases to items from multiple volumes on the same file server. I connect to one of the volumes and double-click an alias for something on a second volume of the same server. The second volume is connected with the same user name and password (access rights permitting) as the first volume from the server. Even if the second alias was created using a different user name, the second volume is still connected with the first user name because you cannot log on to the same server twice. Should the user be warned about this? It seems that this could cause some confusion about how a user is logged on and what privileges they have.

Answer: This is true but should not be a problem. There is little reason for more than one user name to be used from a particular machine (other than Guest). Since the password is not saved with the alias, the system prompts the user for it at the time they attempt connection to the volume. The dialog box displays the user name. The behavior of aliases mimics the Chooser. If you are already logged on to the server, choosing that server again gives you the opportunity to mount any other volumes you have access privileges for. The only time this becomes inconvenient is when you are logged on to a server as a guest and want to connect to a restricted volume. You must log off the server then log back on as a registered user.

6) Question: I am using System 7.5 on my Macintosh. Through the Finder I locked several aliases in my Recent Servers Folder to assure that they would not get deleted as I accessed more and more servers. I have found that my system hangs whenever I reach the limit defined by the Apple Menu Options (v 1.0) control panel, and the Finder tries to replace a locked alias. It appears that the Finder does not first check to see if the aliases are locked before replacing them.

Answer: This has been reported as a bug in System 7.5. There is a temporary workaround for the problem:

Step 1

Instead of locking server aliases you want to keep, make a new folder for your Apple Menu (you might call it "Recent Saved Servers").

Step 2

Drag aliases that you want to keep from your Recent Servers folder to your new Recent Saved Servers folder.

Step 3

These aliases in your Recent Saved Servers folder are not touched by Apple Menu Options and are accessible under your Apple Menu just as your Recent Servers folder currently appears.

7) Question: Can I start up my Macintosh computer from a file server by putting aliases to the server’s System and Finder files on my Macintosh computer?

Answer: No. Aliases do not do this.

8) Question: Can I have an alias to a file on a file server?

Answer: Yes. Opening the alias opens the file on the file server. When an alias points to an icon which is on a file server, but the file server is not currently on your desktop, opening that alias automatically mounting the file server.

If you were signed on as a registered user when the alias was created, you are prompted for the user's password. Apple has provided hooks for file server products that do not support the AppleTalk Filing Protocol (AFP). You should expect to see new versions of these products supporting aliases in the near future.

Article Change History:
10 Nov 1995 - Updated title, reviewed for technical accuracy.
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16782

Tech Info Library

PowerBook File Assistant: When It Is Installed (11/94)

Revised: 11/18/94
Security: Everyone

PowerBook File Assistant: When It Is Installed (11/94)

==========

Article Created: 18 November 1994

TOPIC ----------

1) I bought System 7.5 and installed it onto my Quadra. I cannot locate PowerBook File Assistant. Wasn't this part of 7.5?

2) I would like to custom install PowerBook File Assistant onto my PowerBook though I do not see it listed as an option.

DISCUSSION ----------

1) System 7.5 includes PowerBook File Assistant for file synchronization and PowerBook battery management. It is intended for PowerBook computers and will only install onto a PowerBook. If you have both a PowerBook and a desktop machine, you can install it onto the PowerBook and then copy it over to the desktop machine.

2) There is not a custom install option for PowerBook File Assistant in the 7.5 installer. Users will need to do a regular Easy Install for it to install again. After the installation, it will be located on the hard drive inside the Portables folder which resides in the Apple Extras folder.

Support Information Services

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Tech Info Library Article Number:16783

Tech Info Library

Multiple Scan 15: 1024 x768 Not Supported on Macintosh (11/94)

Revised: 11/18/94
Security: Everyone

Multiple Scan 15: 1024 x768 Not Supported on Macintosh (11/94)

==========

Article Created: 18 November 1994

TOPIC ----------

I noticed in the Appendix of Technical Information in my Multiple Scan 15 Display User's Guide (page 31) that the Resolution range says 640 x 480 to 1024 x 768. I can't seem to get 1024 x 768 as a selection in my Monitors control panel.

Can you confirm if the manual is incorrect, or document how to get 1024 x 768 out of the Multiple Scan 15"?

DISCUSSION ----------

The manual is in the process of being revised. Macintosh computers do not support the Multiple Scan 15 display in the 1024 x 768 resolution mode.

The Multiple Scan 15 can display this particular resolution mode when used in conjunction with the appropriate IBM PC or compatible.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16784

Tech Info Library

Adobe Color Central: Upgrade for Workgroup Servers (11/94)

Revised: 11/21/94
Security: Everyone

Adobe Color Central: Upgrade for Workgroup Servers (11/94)

==========

Article Created: 21 November 1994

TOPIC ----------

I have been experiencing system hangs when running Color Central 2.2 (CC) on my PowerPC based Workgroup Server. My server is typically running an extensive array of applications and other processes.

DISCUSSION ----------

Adobe has recently released version 2.2.1 of CC. Like the previous native version, 2.2.1 ships as a fat binary. Our testing for this very specific issue, indicates that this bug fix release is much more robust when running on a heavily loaded server than 2.2.

Along with Adobe, we recommend that customers experiencing hangs should upgrade to this new version as soon as possible. CC customers should contact Adobe for the upgrade.

Support Information Services

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Tech Info Library Article Number:16785

Tech Info Library

WiggleWorks: Hard Drive Space Required (3/95)

Revised: 3/22/95
Security: Everyone

WiggleWorks: Hard Drive Space Required (3/95)

==========

Article Created: 12 July 1994
Article Reviewed/Updated: 22 March 1995

TOPIC ----------

The WiggleWorks manual says that 4.5 MB (megabytes) of hard drive space is required for installation. We had a customer call who has 8.5 MB available; yet, it is still not installing. WiggleWorks seems to want more like 9.5 MB of hard drive space.

The application itself takes up approximately 4.4 MB, but the PlainTalk and QuickTime which get installed take up approximately 4 MB also.

There are no disk requirements stated on the box but the manual does indeed say 4.5 MB of disk space which is not correct.

DISCUSSION ----------

The WiggleWorks installer may stop during the installation to inform you that a file cannot be written, that the file should be deleted, and the installation started again. This type of message can occur because there is insufficient hard disk space.

When there is insufficient hard disk space, the WiggleWorks Installer should not even begin the installation. However, because the Installer is not properly checking for the amount of space required by WiggleWorks prior to actually installing it, the previously mentioned type of error can occur.

The correct hard drive space requirements for WiggleWorks are:

Easy Install

An Easy Install will install the product without the three ER movies being installed on the local drive, 8.2 MB of space is required on the hard drive.

Custom Install

A Custom Install allows you to install the three ER movies, requires an additional 2.1 MB over the 8.2 MB required by the Easy Install, resulting in a total of 10.3 MB of space being required on the hard drive.

Article Change History:
22 Mar 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16787

Tech Info Library

Apple IIgs: Dropping Off The AppleShare Network (11/94)

Revised: 11/21/94
Security: Everyone

Apple IIgs: Dropping Off The AppleShare Network (11/94)

==========

Article Created: 21 November 1994

TOPIC ----------

I have the following configuration:
• Apple IIgs running GSOS 6.0.1 or GSOS 6.0
• Connected to and AppleShare 3.x server
• AppleShare 3.x server has Apple II setup 2.2 installed.

And encounter problems with the Apple IIgs will dropping off the network. Usually within 3-5 minutes of idle time. The server window "Connected Users" will show the user connected for about 1 minute then drop them from the server. This only occurs if you boot the Apple IIgs from the server.

DISCUSSION ----------

This problem is difficult to reproduce. Sometimes it will go away simply by doing a clean install of the server and GSOS software. One resolution is to upgrade to Apple II Setup 3.0. You can obtain Apple II setup 3.0 by upgrading to GSOS 6.0.1 or obtaining it from an online service or Apple Authorized Service Provider.
Note: this software comes with GSOS 6.0.1 not AppleShare 3.x. You will need to look in the Apple II area to locate the software.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16788

Tech Info Library

Color Stylewriter: Using as a Network Printer (11/94)

Revised: 11/21/94
Security: Everyone

Color Stylewriter: Using as a Network Printer (11/94)

==========

Article Created: 21 November 1994

TOPIC ----------

How do I share a Color StyleWriter Pro over a network? How do I print to a shared Color StyleWriter Pro?

DISCUSSION ----------

This article discusses setting up the Color StyleWriter Pro printer, however these steps are identical for the Color StyleWriter 2400 when using ColorShare (make sure you use the Color StyleWriter 2400 printer software instead of the Color StyleWriter Pro software). The Color StyleWriter 2400 also has an optional LocalTalk module. When this module is used, you cannot use the following steps.

Overview

Using the Color StyleWriter printer driver (which includes ColorShare), you can share your Color StyleWriter Pro with up to 21 additional computers over an AppleTalk network. There is no limit on how many people choose the printer in the Chooser, but only 21 people can print to the printer at a time. Anyone who wants to print to the shared printer needs to install the Color StyleWriter Pro printer driver.

You still retain control of the printer after sharing it because the Color StyleWriter Pro is connected to your computer. You can turn sharing on or off at any time. You can also use the Print Monitor program to view a list of pending print jobs and delete any jobs from that list.

Note: The Macintosh connected to the shared printer slows down when other users print to the shared printer because your computer is actually being used as a spooler. The information is sent from the remote computer to yours, then from your computer to the printer.

Sharing a Printer

To share a Color StyleWriter Pro with others, follow these steps:

1) In order to share a printer, you must be connected to an AppleTalk network of some type.

   LocalTalk Connection

   The LocalTalk connector goes into the printer port. The peripheral 8 cable (serial cable) connects the printer to the Macintosh. It needs to go into the modem port.

   Ethernet or Token Ring Connection

   Since both Ethernet and Token Ring connections don't require you to use a serial port on your Macintosh, you can use either the printer or modem port to connect the printer to your Macintosh.

2) Open the Chooser and select the Color StyleWriter Pro icon. A list of available printers displays.

3) Click the icon of the port to which your printer is connected. If you are using the printer port to connect your Macintosh to the network, you must connect your Color StyleWriter Pro to the modem port.

4) Click the Setup button to open the Color StyleWriter Pro Sharing Setup dialog box.

5) Place an X in the "Share this Printer" checkbox. You have the option of naming your printer and entering a password. If you type a password for the printer, only users who know the password can use the printer from their computers.

   If you want a record of what is printed on your printer, place an X in the "Keep Log of Printer Usage" checkbox.

6) Click "OK" to close the Color StyleWriter Pro Sharing Setup dialog box and close the Chooser window.

Your printer is now available to others on the network.

Printing to a Shared Printer

To print to a shared printer, follow these steps:

1) Open the Chooser and select the Color StyleWriter Pro icon. A list of available printers and communications ports will be displayed.

2) Click the name of the shared printer that you want to use.
   If the printer requires a password, a dialog box appears in which you must type the password.

3) Optionally, you may click the Get Info button to see whether any fonts in your system are unavailable on the shared printer. If your documents contain such fonts, printing will be slower, because the fonts must be downloaded to the printer.

4) Close the Chooser

You are now ready to print to the shared printer.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16789

ARA Set to Auto-Answer with AOL (1/97)

Revised: 4/28/97
Security: Everyone

ARA Set to Auto-Answer with AOL (1/97)

==========

Article Created: 21 November 1994
Article Reviewed/Updated: 17 January 1997

TOPIC -----

A customer has a Centris 660AV with System Software 7.1, Software Update 3.0, Apple Remote Access (ARA) 2.01, America On Line (AOL) 2.5.1, GeoPort 1.2.2. Express Modem control panel settings are set to external modem. Memory control panel is set to default.

He leaves ARA and FaxTerminal both set to auto-answer. He is able to log into AOL, but when he disconnects from either application, his system hangs. What's the problem?

DISCUSSION -----

After testing, we found the following:

We were able to reproduce the customer's problem only when ARA was set to answer calls. Having Fax receive enabled did not cause the problem.

We recommend setting the Express Modem control panel to Express Modem, not external.

Finally, Express Modem 1.5.5 or Apple Telecom 2.x or later appears to fix the problem. These articles can help you locate Express Modem 1.5.5 software mentioned here:

• "Where To Find Apple Software Updates"
Lists online services for "free" Apple software updates, including:

- America Online - keyword: applecomputer
- CompuServe - GO APLSUP
- Internet -
Worldwide Web: <http://www.info.apple.com/swupdates>
ftp: <ftp://ftp.info.apple.com>

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
09 Apr 1997 - Removed out dated on line references.
17 Jan 1997 - Revised online information.
14 Dec 1994 - Added Express Modem 1.5.5 and where to obtain it.

Copyright 1994/97, Apple Computer, Inc.

Tech Info Library Article Number:16791

Tech Info Library

Apple Multimedia Tuner 2.0:Readme (11/94)

Revised: 11/22/94
Security: Everyone

Apple Multimedia Tuner 2.0:Readme (11/94)

==========

Article Created: 22 November 1994

TOPIC ----------

This is the Readme for Apple Multimedia Tuner 2.0

DISCUSSION ----------

Apple strives to provide maximum reliability for its customers. This update provides specific improvements that many Apple Macintosh customers will find helpful.

What is the Apple Multimedia Tuner 2.0?

The Apple Multimedia Tuner system extension includes a set of software enhancements that improve the performance and reliability of some software applications and multimedia titles that utilize Apple's QuickTime and Sound Manager software on Macintosh computers running system software versions 6.0.7, 7.0, 7.0.1, 7.1, 7.1.1 (System 7 Pro), 7.1.2 (for Power Macintosh), or 7.5.

What are the enhancements that the Apple Multimedia Tuner 2.0 provides?

QuickTime 2.0 contains enhancements that can dramatically improve QuickTime movie playback performance in software applications and multimedia titles. Some existing software applications and multimedia titles do not properly initiate movie playback and will not be able to realize the performance improvements of QuickTime 2.0. The Apple Multimedia Tuner 2.0 helps these applications and multimedia titles achieve much smoother and consistent movie playback.

In some situations, there may not be sufficient RAM available to play sounds. If you are using Sound Manager 3.0, the Apple Multimedia Tuner 2.0 will improve the system's ability to play sounds under these conditions.

The Apple Multimedia Tuner 2.0 improves the reliability of Quadra 660AV and Quadra 840AV systems running some compute-intensive applications under low-memory conditions.

How do I know if I should use the Apple Multimedia Tuner 2.0?

This system extension should be used with QuickTime 2.0 and with the Sound Manager 3.0.

The Apple Multimedia Tuner 2.0 automatically determines whether your computer can benefit from the enhancements it provides. If so, the Apple Multimedia Tuner initializes itself when your computer starts up, and its icon displays briefly at the bottom of your screen. If not, the Apple Multimedia Tuner has no effect, and its icon is not displayed during start-up.

The enhancements provided by the Apple Multimedia Tuner 2.0 will be incorporated into future versions of QuickTime and the Sound Manager.

Installing the Apple Multimedia Tuner 2.0

To install the Apple Multimedia Tuner 2.0, simply drag the Apple Multimedia Tuner system extension to the Extensions folder inside your System Folder, under System 7, or to the System Folder, under System 6. You must restart (reboot) your Macintosh to take advantage of this software.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16793

Tech Info Library

LaserWriter: Supported Paper Sizes (11/94)

Revised: 11/22/94
Security: Everyone

LaserWriter: Supported Paper Sizes (11/94)

==========

Article Created: 22 November 1994

TOPIC --

What are the physical dimensions of the various paper sizes supported by the Apple LaserWriter printers?

DISCUSSION --

The following are the paper sizes supported by all LaserWriter printers:

U.S. Letter ------------ 8.5" by 11"
U.S. Legal ------------- 8.5" by 14"
A4 --------------------- 8.25" by 11.667" (European standard letter size.)
B5 --------------------- 7.25" by 10.25" (Japanese standard letter size.)

Additionally, the LaserWriter Pro 810 will support 11" x 17" tabloid paper. Smaller stock is supported in some printers, it will vary from printer to printer. Check the owners guide for the individual printer for minimum paper sizes supported.

Support Information Services

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Tech Info Library Article Number:16794

Tech Info Library

AppleCD: Models Supporting 3.5-in. CD-ROMs (1/96)

Revised: 1/2/96
Security: Everyone

AppleCD: Models Supporting 3.5-in. CD-ROMs (1/96)

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Article Created: 22 November 1994
Article Reviewed/Updated: 2 January 1996

TOPIC ----------

Is it possible to play 3.5 inch CD-ROM discs in any Apple CD-ROM drives?

DISCUSSION ----------

The following Apple CD-ROM players will correctly load a 3.5 inch CD-ROM:
- PowerCD
- AppleCD 300e Plus
- AppleCD 300i Plus
- AppleCD 600e
- AppleCD 600i

The following Apple CD-ROM players cannot play 3.5 inch CD-ROMs:
- AppleCD SC
- AppleCD SC Plus
- AppleCD 300
- AppleCD 300i

In general, the caddy-based CD-ROM drives, such as the original AppleCD SC, cannot play a 3.5 inch CD-ROM. This is because the caddy is not designed to hold a 3.5 inch CD-ROM in the correct position. Third-party companies make adaptors that attach to 3.5 inch CD-ROM discs making them compatible with standard size disc players. Though untested and unsupported by Apple, these devices may work in a caddy loaded CD-ROM drive.

The tray-based CD-ROM drives, such as the AppleCD 300e Plus, have an indentation in the tray, which can hold a 3.5 inch CD-ROM in place.

The PowerCD has neither a caddy, nor a tray. It allows you to place a 3.5 inch CD-ROM directly onto the drive's spindle.

Article Change History:
02 Jan 1996 - Added AppleCD 600 series information.

Support Information Services

Copyright 1994-96, Apple Computer, Inc

Tech Info Library Article Number:16795

Tech Info Library

LaserWriter 16/600 PS: No PCL5 through EtherTalk (11/94)

Revised: 11/22/94
Security: Everyone

LaserWriter 16/600 PS: No PCL5 through EtherTalk (11/94)

==========

Article Created: 22 November 1994

TOPIC ----------

I am using a LaserWriter 16/600 PS printer in conjunction with an EtherShare Server. The original files are created on a Sun workstation, and sent to the EtherShare server. The LaserWriter 16/600 PS is using the Ethernet port. however, using the Ethernet port with the Ethertalk protocol, it is not possible to set up the LaserWriter 16/600 PS in Auto select mode (PostScript and PCL5 mode). The only protocol available using the Apple Printer Utility is PostScript or none.

DISCUSSION ----------

PCL5 is not supported using the EtherTalk communication channel. However, PCL5 is supported on IPX and IP network communication channels. You can configure these channels for PostScript, PCL5, or Autoselect. Since Sun workstations can use LPR over TCP/IP, you can use this method to print directly to the LaserWriter 16/600 PS printer.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16796

Tech Info Library

Initializing Hard Drive: Finder & Apple HD SC Setup (2/95)

Revised: 2/20/95
Security: Everyone

Initializing Hard Drive: Finder & Apple HD SC Setup (2/95)

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Article Created: 22 November 1994
Article Reviewed/Updated: 20 February 1995

TOPIC ----------

When I turn on my computer I get a blinking question mark. I insert the Disk Tools diskette and the computer starts up normally. Just before the hard drive mounts on the desktop a message appears saying the disk, meaning the hard drive, is unreadable and asks if I want to initialize it so I click the Cancel button.

The Disk Tools icon appears, but there's no hard drive icon visible. I run Disk First Aid, which reports a problem on the hard drive that can't be fixed. I then run Apple HD SC Setup, which reports it can't re-initialize the hard drive. I restart from Disk Tools again, and this time at the Disk is unreadable, do you want to initialize it? message, I go ahead and initialize it. Miraculously, the hard drive then mounts.

Why does the hard drive succeed in initializing from the Finder even though Apple HD SC Setup, which is the more specialized tool, fails?

DISCUSSION ----------

Although both the Finder and Apple HD SC Setup say they are initializing the drive, they both use different methods. The Finder initialization just creates a new, empty directory structure on hard drives. The Finder only does a complete format on floppies. HD SC Setup does a low-level format of the drive, creates new partitions, installs the drivers for the drive, and creates the empty directory structure.

NOTE: When you initialize a hard drive, all data will be lost.

The Finder can initialize any drive, whether it is an Apple drive or not, but only if it is mounted on the desktop or the Finder is trying to mount the drive. When the Finder displays the "This disk is unreadable" message, it is because the Finder is trying to mount the drive but the directory structure has become corrupted. If you click the initialize button, the Finder replaces the corrupt

directory with a new one.

HD SC Setup only works on Apple drives. It does a low-level format with verification. If either the format, or verification process fails, HD SC Setup says it can't format the drive. Failure could be caused by either mechanical problems or media problems with the drive.

Some third party formatting utilities, like SilverLining or Hard Disk Toolkit, can map out bad blocks on the disk so the disk can be formatted. One of these utilities might be able to reformat the drive.

Since the drive failed to mount and could be initialized by the Finder, that would suggest that the partition map and driver on the drive are not damaged. However, the fact that HD SC Setup could not initialize the drive suggests that the drive may be failing and should be replaced. We suggest you make frequent backups of the drive just in case it is failing.

Article Change History:
20 Feb 1995 - Corrected name of software in title of article.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16797

Tech Info Library

LaserWriter 16/600 PS: TCP/IP Accounting (11/94)

Revised: 11/22/94
Security: Everyone

LaserWriter 16/600 PS: TCP/IP Accounting (11/94)

==========

Article Created: 22 November 1994

TOPIC ----------

Communication with PostScript printers for UNIX systems is done using the TranScript package from Adobe Systems. The TranScript driver carries on a conversation with the printer that includes status queries for deadlock and failure detection, as well as accounting.

PostScript interpreters nominally keep a counter of how many 'print this page' operators have been executed. These operators generally cause a piece of paper to be cycled through the printer engine. This counter may be the same as or independent of any page counters held by the print engine.

This counter can be queried by the PostScript code

```
statusdict begin pagecount == end
```

The host driver queries the page counter before and after the job and records the difference as the number of pages that job printed. In order to query this counter a bidirectional communication link is needed.

The preferred method to connect a printer to the RJO system is through a TCP/IP bidirectional link. This allows data transfers at network speeds, letting TCP perform flow control.

Some printers (or adapters) support TCP/IP, but only implement the LPD protocol. Print jobs are sent to the printer as if it was another UNIX computer running an lpd server. This approach is not viable unless logging and accounting information can be obtained from the printer via TCP/IP. This accounting information must include the user and host identifiers from the lpd control file.

DISCUSSION ----------

You are correct that this isn't possible, the IP connection doesn't support

bidirectional PostScript communication. The LaserWriter 16/600 PS can accept print jobs through TCP/IP, but this particular mechanism is batch oriented, with no provisions for obtaining accounting information from the printer.

Bidirectional communications is supported on the LocalTalk, EtherTalk, and the Parallel communication channels.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16799

Tech Info Library

AOCE Compliant Applications (4/97)

Revised: 4/28/97
Security: Everyone

AOCE Compliant Applications (4/97)

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Article Created: 22 November 1994
Article Reviewed/Updated: 08 April 1997

TOPIC -----

This article provides a list of AOCE (Apple Open Collaborative Environment) compliant applications. (The two products which make up AOCE are PowerTalk and PowerShare.) This list is not a complete list.

For more information see the "Apple PowerTalk/PowerShare Solutions Guide" which can be found in the following areas:

1) Internet -> Higher Education Gopher Server -> Apple Support Area -> Current Product Information

2) Internet -> ftp.info.apple.com ->Apple Support Area -> Current Product Information

DISCUSSION -----

Agents

- Mainstream Newscast for PowerTalk
  Mainstream Data, Inc.
  420 Chipeta Way, Suite 200
  Salt Lake City, UT 84108
  801-584-2800

- PageNow!
  Mark/Space Softworks
  111 W St. John, 2nd Floor
  San Jose, CA 95113
  408-293-7299

- PowerAGENT
  SouthBeach Software Corporation

2631 Lincoln Avenue
Coconut Grove, FL 33133
305-858-8416

Mail-Capable

- NetWORKS
  Caravelle Networks Corporation
  301 Moodie Drive, Suite 306
  Nepean, Ontario K2H 9C4 Canada
  613-596-2802

- QuickMail AOCE
  CE Software, Inc.
  1801 Industrial Circle, W.
  P.O. Box 65580
  West Des Moines, IA 50265
  515-221-1801

- ClarisWorks
- MacWrite Pro 1.5
  Claris Corporation
  5201 Patrick Henry Drive
  Santa Clara, CA 95052
  1-800-3CLARIS

- netOctopus
  HELIOS USA
  10495 Bandley Drive
  Cupertino, CA 95014
  408-864-0690

- Microsoft Excel 5
- Microsoft PowerPoint
- Microsoft Word 6
  Microsoft Corporation
  One Microsoft Way
  Redmont, WA 98052
  (206) 882-8080

- Nisus Writer
  Nisus Software, Inc.
  107 S. Cedros Avenue
  Solana Beach, CA 92075
  1-800-922-2993

- PacerTerm
  Pacer Software, Inc.
  1900 West Park Drive, Suite 280
  Westborough, MA 01581
  1-800-PACER-02

- Useful Voice Processor for Macintosh, AOCE Edition
  Useful Software Corporation
  12 Page Street
  Danvers, MA 01923-2825
  1-800-666-9828

- WordPerfect for Macintosh and Power Macintosh
  WordPerfect, The Novell Applications Group
  1555 N. Technology Way
  Orem, UT 84057
  1-800-321-4566

PowerTalk Personal Gateways

- CompuServe Mail for PowerTalk
  CompuServe, Inc.
  5000 Arlington Centre Boulevard
  P.O. Box 20212
  Columbus, OH 43220
  1-800-848-8990 USA
  (614) 529-1340 Outside USA

- PhonePro
  Cypress Research Corporation
  240 E. Caribbean Drive
  Sunnyvale, CA 94089
  (408) 752-2700

- TeamLinks Mail for Macintosh
  Digital Equipment Corporation
  146 Main Street
  Maynard, MA 01754-2571
  1-800-DIGITAL

- ETE Communicator
  ETE, Inc.
  12526 High Bluff Drive, Suite 300
  San Diego, CA 92130
  (619) 793-5400

- NOTIFY! for PowerTalk
  Ex Machina, Inc.
  11 East 26th Street
  New York, NY 10128
  (718) 965-0309

- DSK Cataloger & Template Constructor
  Graphical Business Interfaces, Inc.
  R.R. 1, Box 260A
  Monticello, IN 47960
  1-800-424-7714

- Internet PowerClient
  OpenSoft
  640 Veteran Ave., Suite 201
  Los Angeles, CA 90024
  1-800-996-OPEN

- Mail*Link Internet for PowerTalk
- Mail*Link MS for PowerTalk
- Mail*Link QM for PowerTalk
  Apple Computer, Inc.
  1 Infinite Loop
  Cupertino, CA 95014
  (408) 996-1010

- STF PowerFax Personal Edition (PE)
- VoiceAccess
  STF Technologies, Inc.
  I-70 and Highway 23
  P.O. Box 81
  Concordia, MO 64020
  (816) 463-2021

- X.500 Catalog Gateway for PowerTalk
  University of Michigan
  1009 Green Street
  Ann Arbor, MI 48109
  (313) 936-0816

PowerShare Server Gateways

- Mail*Link SMTP for PowerShare
- Mail*Link Directory Services for PowerShare
  StarNine Technologies, Inc.
  2550 Ninth Street, Suite 112
  Berkeley, CA 94710
  (510) 649-4949

- Fax Gateway for PowerShare
  Allidator AB
  Box 564
  S-831 27 Ostersund
  Sweden
  +46 63 104430

Team Productivity

- DataModeler
  1st Desk Systems, Inc.
  55-57 Cape Road
  Mendon, MA 01756
  1-800-522-2286

- InfoDepot
  Chena Software, Inc.
  905 Harrison Street
  Allentown, PA 18103
  (610) 770-1210

- Face to Face for Macintosh
  Crosswise Corporation
  105 Locust Street
  Santa Cruz, CA 95060
  (408) 459-9060

- Timbuktu Pro for Macintosh
  Farallon Computing, Inc.
  2470 Mariner Square Loop
  Alameda, CA 94501
  (510) 814-5000

- TeamAgenda
  MacVONK Canada, Inc.
  940 6th Avenue S.W., Suite 1101
  Calgary, Alberta T2P 3T1 Canada
  (403) 232-6545

- Office Tracker Pro
  MILUM Corporation
  P.O. Box 163985
  Austin, TX 78716-3985
  (512) 469-2966

- Things to Do!
  MILUM Corporation
  P.O. Box 163985
  Austin, TX 78716-3985
  (512) 469-2966

- Common Ground
  No Hands Software, Inc.
  1301 Shoreway Road, Suite 220
  Belmont, CA 94002
  (415) 802-5800

- PacerForum
  Pacer Software, Inc.
  1900 West Park Drive, Suite 280
  Westborough, MA 01581
  1-800-PACER-02

- Informed Foundation
  Shana Corporation
  9650 20th Avenue, Suite 105
  Alberta T6N 1G1 Canada

(403) 463-3330

- Atlantis Data Publisher
- Snow Report Writer
  Snow Development Group
  2360 Congress Avenue
  Water, FL 34623
  (813) 784-1845

- ACT! for Macintosh
  Symantec Corporation
  10201 Torre Avenue
  Cupertino, CA 95014
  1-800-441-7234

Utilities

- Apple Remote Access Client
- Apple Remote Access Personal Server
- Apple Remote Access MultiPort Server
  Apple Computer, Inc.
  1 Infinite Loop
  Cupertino, CA 95014
  (408) 996-1010

- AOCE Connection Kit
  Graphical Business Interfaces, Inc.
  R.R. 1, Box 260A
  Monticello, IN 47960
  1-800-424-7714

- Radius StageTwo Rocket with RocketShare
  Radius, Inc.
  1710 Fortune Drive
  San Jose, CA 95131
  (408) 954-6454

Article Change History:
08 Apr 1997 - Removed out dated on line references
09 Jan 1996 - Reviewed and updated for accuracy.

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Tech Info Library Article Number:16801

Tech Info Library

Software Revisions: Why Version Numbers May Not Change (11/94)

Revised: 11/28/94
Security: Everyone

Software Revisions: Why Version Numbers May Not Change (11/94)

==========

Article Created: 28 November 1994

TOPIC ----------

I have downloaded the Express Modem Software version 1.5.4. However, in the About dialog box, the version is noted as 1.5.3.

Has there really been a change or is it just in name alone.

DISCUSSION ----------

A particular application or system software component can be comprised of many individual files. A version number is assigned to the whole group of files. Often times, only a few of the individual components are revised, though the version number for the group of files must be revised.

In the case of the Express Modem build, if you open the Express Modem control panel, it will display version 1.5.3. But if you were to perform a "Get Info" on the Express Modem control panel from the Finder, you will notice that the 1.5.3 control panel is part of the Express Modem Software 1.5.4 build.

Support Information Services

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Tech Info Library Article Number:16804

Tech Info Library

System 7.5: System Freezes with Microsoft Office 4.2 (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: System Freezes with Microsoft Office 4.2 (2/95)

==========

Article Created: 28 November 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

Your system may occasionally freeze if you have System 7.5 and Microsoft Office 4.2 (including Word 6.0 and Excel 5.0). This happens less frequently when running "System 7.5 Only" with no Microsoft applications.

DISCUSSION ----------

Microsoft Office 4.2 comes with RAM Doubler. If you are using System 7.5 you should run RAM Doubler 1.5.1 or higher. Some versions of RAM doubler that shipped with Microsoft Office included RAM Doubler 1.0.4 and should be upgraded.

You can check your version using the following steps:

Step
Open the Extensions Folder in the System Folder.

Step 2
Click on the RAM Doubler extension once to highlight.

Step 3
Select "Get Info" and read the version number.

Although Connectix wrote RAM Doubler, if it shipped with Microsoft Office you need to call Microsoft to get the update, not Connectix. You can contact Microsoft Technical Support.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed technical accuracy.
10 Feb 1995 - Added keyword; made minor technical updates.

Support Information Services

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Tech Info Library Article Number:16805

RAM Disk: Description (2/95)

Revised: 2/16/95
Security: Everyone

RAM Disk: Description (2/95)

==========

Article Created: 22 November 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

What is a RAM disk, and why would I use one?

DISCUSSION ----------

You can set aside a portion of your computer’s memory to function like a disk drive, called a RAM disk. With a RAM disk, you can save and retrieve files very quickly, but the files are stored only temporarily. This feature is not available on all models of the Macintosh.

Using a RAM disk is faster and conserves power, because the computer uses less energy and time to access RAM than it does to access a hard disk or a floppy disk.

PowerBook users may want to use a RAM disk to maximize battery life. Commonly used files could be stored on the RAM disk, which requires less electricity to access than hard disk and floppy disk drives. Also, accessing frequently used files from RAM allows the PowerBook to spin down the internal hard disk more often.

Memory assigned to a RAM disk is not available for opening programs, so it is usually not practical to create a RAM disk unless your computer has at least 4 MB of RAM. You need more than 2 MB of memory to create a RAM disk.

To create a RAM disk:

- Choose Control Panels from the Apple menu.
- Double-click the Memory control panel to open it.
- Click On to create the RAM disk.
- Drag the lever to choose the percentage of available memory you want to use for your RAM disk. Choose a size large enough to accommodate the programs and documents you want to put on the RAM disk, but not larger.

- Close the Memory control panel.
- Choose Restart from the Special menu.

You won’t see the RAM disk icon until you’ve restarted.

Warning: Choosing Shut Down removes the RAM disk. (An alert box appears.) A computer crash can erase the RAM disk files.

Since RAM disk storage is temporary, it’s a good idea to observe some precautions when using a RAM disk:

- Don’t store your only copy of a file on a RAM disk. Keep an extra copy on a hard disk or a floppy disk.
- Before using a program on a RAM disk, test the program on another disk (hard disk or floppy) to make sure it works properly.
- Always save the contents of your RAM disk on another disk before turning off your computer (which erases the RAM disk on most models). Note: Choosing Restart doesn’t erase the RAM disk.

You use a RAM disk exactly as you would any other disk, except that you must save your work onto another disk before shutting down.

To erase a RAM disk, you can either :

- Select the RAM disk icon on your desktop and choose Erase Disk from the Special menu,

or

- Drag everything on the RAM disk to the Trash and choose Empty Trash from the Special menu,

or

- Shut down your computer, then turn it back on.

These methods won’t remove the RAM disk itself or make more memory available for opening programs.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16809

Tech Info Library

RAM Disk: Resizing or Deleting (2/95)

Revised: 2/16/95
Security: Everyone

RAM Disk: Resizing or Deleting (2/95)

==========

Article Created: 29 November 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

This article describes how to resize or remove a RAM disk.

DISCUSSION ----------

Step 1
Copy any files you want to save onto a hard disk or floppy disk.

Step 2
If you want to resize or remove a RAM disk, you need to first remove the items on it.

Step 3
Drag everything on the RAM disk to the Trash.

Step 4
Choose Empty Trash from the Special menu.

Step 5
Choose Control Panels from the Apple menu.

Step 6
Open the Memory control panel.

Step 7
Drag the lever to choose the percentage of available memory you want to use for your RAM disk.
Or click the Off button, if you want to remove the RAM disk.

Note:
You can’t change the RAM disk setting while there are files on the RAM disk.

Step 8
Close the Control Panel.

Step 9
Choose Restart from the Special menu.

If you resized your RAM disk, a new RAM disk icon appears on the desktop when the computer restarts. If you removed your RAM disk, no icon appears.

Article Change History:
16 Feb 1995 - Changed keyword from and reviewed technical accuracy.

Support Information Services

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Tech Info Library Article Number:16810

Tech Info Library

LaserWriter 16/600 PS: Fax Log Status Messages (1/95)

Revised: 1/24/95
Security: Everyone

LaserWriter 16/600 PS: Fax Log Status Messages (1/95)

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Article Created: 29 November 1994
Article Reviewed/Updated: 24 January 1995

TOPIC ----------

What are the options when using the LaserWriter 16/600 PS fax log? All of the status messages I have read "Job Unknown". Also, How does the Settings section work? Were are using local area code of 516 and long distance code of 1. I am assuming that this informs the fax that the local area code is 516 and to place a 1 in front of numbers where the area code is different from 516.

DISCUSSION ----------

The fax log only lists the faxes sent from the workstation you are on. For a listing of all of the faxes sent by the printer, the LaserWriter FAX Utility should be used. The utility is capable of displaying and printing all fax jobs sent by the printer.

Concerning the status options, some of the more common status messages are: "Job Unknown", "Status Unknown", "Currently Sending", "Callee Didn't Respond", "Finished Successfully". We were able to duplicate the problem where most of the jobs state "Job Unknown". To get a correct status;

1) Select all the fax jobs in the fax log
2) Choose "Check Status" from the File menu

This causes the Laserwriter Fax Log Utility to query the Fax servers and update the log to the correct values.

You are correct, the "Long Distance Prefix" gets placed automatically in front of any area code not equal to the "Local Area Code". This only occurs when selecting an entry in the phonebook, and not when manually typing in a phone number. If a phone number is manually typed in to the "Fax Number" field, then whatever is typed is used by the printer.

Article Change History:
24 Jan 1995 - Added steps for getting the correct status of jobs

Support Information Services

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Tech Info Library Article Number:16811

Tech Info Library

Power Macintosh: LAT Random Disconnect Problem Fix (5/95)

Revised: 5/11/95
Security: Everyone

Power Macintosh: LAT Random Disconnect Problem Fix (5/95)

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Article Created: 29 November 1994
Article Reviewed/Updated: 11 May 1995

TOPIC ----------

Several people have asked about a problem related to running the LAT Connection Tool on a Power Macintosh and AV computers. The configuration is normally a Power Macintosh running an application that has selected the LAT Connection Tool. The LAT session will disconnect itself randomly.

DISCUSSION ----------

The Network Software Installer (NSI) 1.5 will fix this problem, and you should find and install NSI 1.5.

These articles can help you locate NSI 1.5 mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

The Read Me does not specifically state this fixes the Power Macintosh and LAT problem, however it does.

Article change History:
11 May 1995 - Updated article for NSI 1.5.

Support Information Services

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Tech Info Library Article Number:16813

Tech Info Library

Power Macintosh Upgrade Card: Problem with SilverLining (11/94)

Revised: 11/30/94
Security: Everyone

Power Macintosh Upgrade Card: Problem with SilverLining (11/94)

==========

Article Created: 30 November 1994

TOPIC ----------

There appears to be an incompatibility between SilverLining 5.6 and the Power Macintosh Upgrade Card (PMUC).

Our customer updated the internal HD and reformatted the external HD with 5.6, and when he tried booting in PowerPC 601 mode, he got Sad Mac. The Quadra 700 boots fine in 68000 (68k) mode.

DISCUSSION ----------

I put the Power Macintosh Upgrade Card into a Quadra 700 and formatted an external drive with Silverlining 5.6. The Quadra was in 68K mode when I formatted the drive. I installed the PMUC software on the external drive and set it as the startup disk. It started fine in 68K mode. I then set the Quadra to 601 mode, shutdown and restarted. The Quadra booted but was really slow. I could watch each letter being drawn in "Welcome to Power Macintosh." I restarted and this time I got a system error in QuickTime Powerplug. I restarted again and this time got the Sad Mac error.

I connected the external drive to a Power Macintosh 8100/80. I used Silverlining 5.6 to reinstall the driver, leaving all the data intact. I took the drive back to the Quadra 700 and it now worked in both 68K and 601 mode. Based on this, it appears the problem is with SilverLining.

LaCie is aware of the problem and are working on a fix. There is no estimate as to when one will be available.

Support Information Services

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Tech Info Library Article Number:16814

Tech Info Library

VRAM SIMMs: Differentiating Between 256k and 512k (11/94)

Revised: 11/30/94
Security: Everyone

VRAM SIMMs: Differentiating Between 256k and 512k (11/94)

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Article Created: 30 November 1994

TOPIC ----------

Is there any method of identifying a 256k and 512k VRAM SIMM? There are no distinguishing numbers on the chips themselves which help to identify the density.

DISCUSSION ----------

The only way to differentiate VRAM SIMMs is by the number of individual chips on the SIMM itself. The 256K VRAM SIMM has two (2) 40-pin ICs, and the 512K VRAM SIMM has 4 (four) 28-pin ICs.

Do keep in mind that VRAM SIMMs comes in two different speeds, 80ns and 100ns.

Support Information Services

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Tech Info Library Article Number:16816

Tech Info Library

Express Modem Does Not Support Faxing Gray Scale Images (11/94)

Revised: 11/30/94
Security: Everyone

Express Modem Does Not Support Faxing Gray Scale Images (11/94)

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Article Created: 30 November 1994

TOPIC ----------

I've noticed when I have a document on screen with several shades of gray, and I Fax it using my Express Modem software, it results in a black and white image at the receiving end. Darker shades of gray are replaced with black, and lighter shades of gray are replaced with white. Doesn't the Express Modem software support Faxing in gray scale?

DISCUSSION ----------

No, the Express Modem software does not support Faxing in gray scale.

If your document application supports dithering, which means converting each shade of gray to a mixture of black and white dots, you can first save the image as black and white, then Fax it. The appearance may not be as good as printing the file to a printer that supports gray scale.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16817

Tech Info Library

MacTCP 2.0.4 to 2.0.6 Patch: Read Me, Release Notes (11/94)

Revised: 11/30/94
Security: Everyone

MacTCP 2.0.4 to 2.0.6 Patch: Read Me, Release Notes (11/94)

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Article Created: 30 November 1994

TOPIC --------------------

This article is the MacTCP 2.0.4 to 2.0.6 Patch ReadMe, and Release Notes.

DISCUSSION --------------------

Read Me for MacTCP 2.0.6 Patches
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November 22, 1994

What Is This For?

The applications: "MacTCP 2.0.4 to 2.0.6 Patch" and "MacTCP Admin 2.0.6 Patch" are ResCompare resource patching applications. Applying the appropriate patch to a COPY OF YOUR ORIGINAL ("clean") MacTCP or MacTCP Admin control panel will upgrade your copy to version 2.0.6.

What Can Be Upgraded?

All licensed copies of MacTCP 2.0.4 can be upgraded. For users of earlier 2.x versions (2.0 and 2.0.2) must first be updated to version 2.0.4 before updating to version 2.0.6.

What Cannot Be Upgraded?

Any other version of MacTCP 2.x (for example, 2.0.1, 2.0.3, 2.0.5É), any MacTCP alpha, beta, or development version, or any version of MacTCP v1.x may not be upgraded.

What's The Difference?

The changes between MacTCP 2.0.4 and MacTCP 2.0.6 are described in the Release Notes document. MacTCP 2.0.5 was an interim release, only distributed

internally at Apple.

Release Notes for MacTCP 2.0.6
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November 22, 1994

MacTCP version 2.0.6 is an update release.
MacTCP version 2.0.5 was only released internal to Apple.
MacTCP 2.0.6 contains the following improvements over MacTCP 2.0.4 and earlier versions:

Domain Name Resolver:

• Inbound Domain Name Server replies are now processed one Resource Record (RR) at a time in order to avoid exhausting the DNR's limited pool of memory. This allows 2.0.6 to swallow the most verbose BIND 4.9.2/3 ADDAUTH PTR replies without encountering an out-of-memory error condition.

• The DNR now only caches A and CNAME RRs from the Answer section. NS RRs from Authority and A RRs from Additional are used to recursively follow-up references if that's necessary, but they are not stored. This greatly reduces the demand placed on the DNR's limited memory pool. It also transforms the DNR almost totally into a Stub Resolver (see RFCs 1034 and 1035). As a side effect, each new query starts off with only the name server information originally configured in the control panel or from a server. This makes the choice of which server(s) to contact, and the order in which they will be contacted, much more determinate and under the control of the configuring administrator.

• Several small memory leaks have been fixed, including a corner case in MacTCP 2.0.4 in which a block of memory could be freed twice, causing indeterminate problems later on.

• The DNR is now fully up to date in terms of permitted and forbidden syntax for domain names.

• Domain name syntax checking has been extended to cover MXINFO and HINFO requests; previously only A requests (String To Address) went through this check.

Performance:

• Previous versions of MacTCP kept track of re-transmission timers on a per segment basis. If 4 successive segments were dropped due to congestion at a gateway, the re-transmission of each one would require a separate time-out, and each would force an additional exponential back-off. Because of this, re-transmission time-outs sometimes became excessively long. In MacTCP 2.0.6, re-transmission of a group of segments does not result in further exponential back-offs.

• Under certain conditions, MacTCP 2.0.6 will assume that a duplicate ack implies that re-transmission of data will be required, and will expedite the

re-transmission process. This often results in much shorter re-transmission delays when MacTCP is sending data.

Configuration:

• Previous versions of MacTCP checked both the source and destination port field in Bootp configuration responses, and did not accept the response unless the source port was 67 (Bootp Server) and the destination port was 68 (Bootp Client). Because the Bootp protocol permits Bootp Relay Agents (which are Clients) to relay configuration packets from their own Client port address, MacTCP failed to accept valid Bootp responses passing through Bootp Relay Agents that implemented this feature. MacTCP 2.0.6 now only checks the destination port for validity.

• When configuring via Bootp, previous versions of MacTCP saved only the last Domain Name Server returned in a Bootp reply. In cases where only one DNS server was returned, this didn't matter. When more than one server was returned, the one saved (the last one) was usually the least desirable server. 2.0.6 is still limited by architectural constraints to using a single Bootp-configured DNS server, but it now saves the first one returned - that is, the "best" or most desirable server in the list.

• Previous versions contained a bug in the Bootp configuration code for the processing of the Default Gateway option that could have led the DNR to corrupt any portions of a Bootp reply following that option.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16818

Tech Info Library

Macintosh 630 family: Internal Termination Specifics (11/94)

Revised: 11/30/94
Security: Everyone

Macintosh 630 family: Internal Termination Specifics (11/94)

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Article Created: 30 November 1994

TOPIC ----------

I noticed that there are no terminating resistors on the internal SCSI devices in a Macintosh 630 family computer. How is termination handled?

DISCUSSION ----------

The Macintosh 630 family has termination very near the SCSI connector on the logic board so no internal device requires termination. When adding an internal SCSI device, make sure it is free of terminating resistors. When removing an internal device, no termination concerns apply.

The existing SCSI termination rules still apply for external devices; terminate the last device in the chain.

The following computers are in the Macintosh 630 family: Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, LC 630, and Quadra 630.

Support Information Services

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Tech Info Library Article Number:16820

Tech Info Library

Paging Up and Down Keyboard Shortcut: No Standard Mapping(12/94)

Revised: 12/2/94
Security: Everyone

Paging Up and Down Keyboard Shortcut: No Standard Mapping(12/94)

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Article Created: 1 December 1994

TOPIC -----

I have a PowerBook that doesn't have page up and page down keys on the keyboard. Is there anyway to simulate these functions?

DISCUSSION -----

There is no built in mapping to allow a user to use those functions. However, many (if not most) applications support <ctrl-k> and <ctrl-l> sequences for page up and page down, respectively. There are also a variety of utilities that will allow you to virtually macro these keys.

Support Information Services

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Tech Info Library Article Number:16822

Tech Info Library

MacCheck 1.0.3: Missing a file record... Error (12/94)

Revised: 12/1/94
Security: Everyone

MacCheck 1.0.3: "Missing a file record..." Error (12/94)

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Article Created: 1 December 1994

TOPIC ----------

I am using MacCheck version 1.0.3, and received the following error messages:

"Missing a file record for file thread "1184, 326", "1209, 326" , "1210, 326", and more. I ran Disk First Aid, and got no error messages. Norton Utilities found some errors that it could fix, but I would like to know what these error messages mean.

DISCUSSION ----------

The error message you are seeing is from an older version of MacCheck. It is actually giving you more detail than is necessary, or helpful. It refers to an index in the catalog tree.

We believe that error message may result from a problem in MacCheck version 1.0.3. Release 1.0.4 of MacCheck actually incorporates some Disk First Aid code, and would not give these messages. It doesn't sound like there is an actual problem with your system because Disk First Aid would have flagged a problem.

MacCheck v1.0.5 was the last version of MacCheck to be released.

Support Information Services

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Tech Info Library Article Number:16824

Tech Info Library

ImageWriter II: Fonts are Larger and Bolder (12/94)

Revised: 12/2/94
Security: Everyone

ImageWriter II: Fonts are Larger and Bolder (12/94)

==========

Article Created: 1 December 1994

TOPIC ----------

All the print from my ImageWriter II is bolder and larger than it was before. I have the ImageWriter II is connected to a Macintosh computer.

DISCUSSION ----------

To correct this, rebuild the desktop file on the Macintosh. To rebuild the desktop file, hold down the Command and Option keys at startup.

Support Information Services

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Tech Info Library Article Number:16825

Tech Info Library

LaserWriter 16/600 PS: QuickDraw GX 1.1.3 for Envelopes 11/95

Revised: 11/13/95
Security: Everyone

LaserWriter 16/600 PS: QuickDraw GX 1.1.3 for Envelopes 11/95

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Article Created: 1 December 1994
Article Reviewed/Updated: 10 November 1995

TOPIC ----------

We are unable to use the envelope Feeder on our LaserWriter 16/600 PS when printing with LaserWriter GX installed by QuickDraw GX 1.0. Regardless of how our desktop printer, Page Setup, or the Print dialogs are configured, all output directed to the envelope feeder gets printed from the 250-sheet cassette tray.

DISCUSSION ----------

This issue was fixed in subsequent releases of QuickDraw GX. You should update to QuickDraw GX 1.1.3 which is posted to online services.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
10 Nov 1995 - Updated with latest version of QuickDraw GX.
27 Jul 1995 - Added information on updated software fixing issue.

Support Information Services

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Tech Info Library Article Number:16826

Tech Info Library

QuickDraw GX: Tray Switching Possible W/ Desktop Printers 5/95

Revised: 5/10/95
Security: Everyone

QuickDraw GX: Tray Switching Possible W/ Desktop Printers 5/95

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Article Created: 1 December 1994
Article Reviewed/Updated: 10 May 1995

TOPIC ----------

If the 810 printer has 8.5x11 paper in all three trays, and the only difference is plain, letterhead, and quality. How do I under QuickDraw GX choose the tray I want to use? Without GX I can do this in the main print window.

DISCUSSION ----------

It is possible to select the various trays of the LaserWriter Pro 810 using the LaserWriter GX software.

QuickDraw GX 1.0

There is only one minor "glitch" in doing this. You must send a print job to a newly created desktop printer before using any of the paper trays. You only need to do this once when creating a desktop printer for a networked LaserWriter. Part of this print job is a query to the printer for information on which trays it has available, as well as other options such as FinePrint, and PhotoGrade. After the print job is complete, then you can select the desktop printer for the LaserWriter Pro 810 and select the "Input Trays" menu item in the "Printer" menu of the Finder. This is where the paper sizes are defined for the various trays in the printer.

QuickDraw GX 1.1

With QuickDraw GX 1.1 and later, you do not have to print to the desktop printer prior to configuring the paper trays.

Once the paper trays are configured, all of the 810's paper trays can be accessed. Access is different depending on whether the application being used is QuickDraw GX-aware. There are currently a limited number of QuickDraw GX-aware applications. These include Microsoft Word 6.0, SimpleText, and the Finder.

QuickDraw GX-aware Applications

In QuickDraw GX-aware applications, selecting the specific paper trays can be automatic or manual. Automatic tray selection is based on the paper size selected in Page Setup, which then corresponds with the "Paper Match" option setting "Print with input paper tray matching" in the Print dialog box. For manual paper tray selection, you can select "Ignore paper match..." in the "Paper Match" options window and select a specific paper tray.

NOTE:
One thing to make sure of is that the "Format For" pop-up field in Page Setup, and "Print To" pop-up field in the Print dialog has the LaserWriter 810 desktop printer selected from the pop-up selections.

Non-QuickDraw GX-aware Applications

For a non-GX-aware application, the standard Page Setup and Print dialogs appear so you can select the LaserWriter 810 paper trays as you normally do.

Article Change History:
10 May 1995 - Added QuickDraw 1.1 information.
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16827

Tech Info Library

LaserWriters: Determining Page-Per-Minute (12/94)

Revised: 12/1/94
Security: Everyone

LaserWriters: Determining Page-Per-Minute (12/94)

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Article Created: 1 December 1994

TOPIC -----

I am confused by "page-per-minute" calculations for Apple printers. For example, the LaserWriter NTR is rated at "maximum 4 pages per minute" according to Apple documentation. However, I can get 8 pages per minute out of the printer, after the first page is printed.

Exactly how does Apple determine page per minute calculations, and how does that compare to other printer manufacturers?

DISCUSSION -----

The "page-per-minute" specification in all of Apple's printers reflects the maximum number of pages per minute that the print engine is capable of outputting. The key factor is the speed that the print engine can output pages. This defines the theoretical pages per minute if the I/O board can process the pages as fast as the engine can output them.

We would be very surprised if you are able to get 8 pages-per-minute from a Personal LaserWriter NTR. We printed all blank pages (to take out the variable of rasterizing the page) and verified that the printer could only print approximately 4 pages in one minute, or roughly one page for every 15 seconds.

The same page-per-minute specification denoting print engine speed is used industry-wide.

Support Information Services

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Tech Info Library Article Number:16828

Power Macintosh AV: Super Video Cable Length (12/94)

Revised: 12/1/94
Security: Everyone

Power Macintosh AV: Super Video Cable Length (12/94)

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Article Created: 1 December 1994

TOPIC -----

I'm interested in using several Power Macintosh 6100/60AV computers and have video output to a TV. I plan on using the Super Video cable and need to get lengths of about 50 feet. Will the AV option on the Power Macintosh have a problem outputting though a 50 feet Super Video cable?

DISCUSSION -----

You most likely will have a problem if you use a long video cable. The problem is referred to as line loss. The longer the cable the greater the loss of signal.

We cannot definitively state the length at which line loss will begin to have a detrimental affect on the signal, because we do not know the construction of the video extension cable being used. However, if you are using a cable 50 feet long, there will be degradation of the video signal. This is usually manifested as ghosting, smeary video, or transparent lines running through the screen. A long video cable will not damage the display or the computer. Therefore, if you find the distortion acceptable, there is no reason why he cannot use the display with a long video cable.

Support Information Services

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Tech Info Library Article Number:16831

Tech Info Library

Macintosh Processor Upgrade: Frequently Asked Questions (12/95)

Revised: 4/21/97
Security: Everyone

Macintosh Processor Upgrade: Frequently Asked Questions (12/95)

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Article Created: 2 December 1994
Article Reviewed/Updated: 8 December 1995

TOPIC ----------

This article contains frequently asked questions (FAQ) on the Macintosh Processor Upgrade.

Questions Answered in this FAQ:
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1) I read in MacWorld (Nov. '94) that the PowerPC 601 used in the upgrade is different than that used in the regular Power Macintosh computers. Is this true?

2) What system software ships with the upgrade?

3) Will the upgrade board be supported in future system releases?

4) What computers are supported by the Macintosh Processor Upgrade?

5) Will the upgrade support full PlainTalk speech recognition and text to speech conversion?

DISCUSSION ----------

1) Question: I read in MacWorld (Nov. '94) that the PowerPC 601 used in the upgrade is different than that used in the regular Power Macintosh computers. Is this true?

Answer: The Macintosh Processor Upgrade uses the same PowerPC 601 chip that the Power Macintosh computers and upgrade cards use.

2) Question: What system software ships with the upgrade?

Answer: The Processor Upgrade ships with the Macintosh System 7.5, which contains the 601 Processor Upgrade control panel and the 601 Processor Upgrade Enabler. ClarisWorks 3.0 is also included.

3) Question: Will the upgrade board be supported in future system releases?

Answer: Yes, the Macintosh Processor Upgrade will be supported in all future Macintosh System Software releases.

4) Question: What computers are supported by the Macintosh Processor Upgrade?

Answer: The Macintosh Processor Upgrade is supported ONLY in the Macintosh Quadra 605, Performa 47X, Macintosh LC/Performa 57X, and the Macintosh LC/Quadra/Performa 63X series computers.

5) Question: Will the upgrade support full PlainTalk speech recognition and text to speech conversion?

Answer: The Macintosh Processor Upgrade does not support PlainTalk speech recognition, because speech recognition requires 16-bit sound input. None of the systems which work with the Macintosh Processor Upgrade have 16-bit sound input.

The Processor Upgrade does support the PlainTalk text-to-speech software though.

Article Change History:
08 Dec 1995 - Corrected minor typo.
27 Nov 1995 - Updated format, updated compatible computers.
04 Jan 1995 - Added info on PlainTalk compatibility.

Support Information Services

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Tech Info Library Article Number:16832

Tech Info Library

Quadra 630: Internal HD Formatter Error Message (12/94)

Revised: 12/2/94
Security: Everyone

Quadra 630: Internal HD Formatter Error Message (12/94)

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Article Created: 2 December 1994

TOPIC ----------

The hard drive on my Quadra 630 didn't mount when booted from the Disk Tools floppy. Running the Internal HD Formatter gave the message that "no ATA device found in the drive queue."

Is this Internal HD Formatter's equivalent to HD SC Setup's, "Search failed because a suitable SCSI device could not be found"?

DISCUSSION ----------

The Internal HD Formatter does not work like HD SC Setup. Internal HD Formatter looks to see if the ATA driver is loaded and if there is an entry in the drive queue for the IDE drive. Internal HD Formatter does not work directly with the drive as HD SC Setup does.

If the internal drive is set to be the startup disk in the Startup Disk control panel, booting with the command, shift, option and delete (CSOD) keys down prevents the driver from being loaded and the entry in the drive queue from being created. This is what the CSOD key sequence is designed to do.

On SCSI computers there is a patch that later mounts the drive. This patch was put in to help with mounting slow SCSI drives. The startup disk can be prevented from mounting on SCSI machines by zapping PRAM and pressing the CSOD on the same boot. This clears the patch's list of drives that are supposed to be attached.

The Macintosh OS maintains a data structure in memory called the drive queue. The queue stores information about the drives available. They do not have to be physical devices. The Mount Image control panel creates eight entries in the drive queue so it can mount eight disk images.

Since the CSOD key sequence prevents the disk driver from being loaded and drive queue entry from being created, Internal HD Formatter is lost and displays the message that no ATA device is available.

The work around for this is to boot the machine and select some other drive as the startup disk. When this is done, the CSOD key sequence does not need to be used and the internal should mount. If the Finder displays a message stating the internal drive cannot be mounted because of some error, Internal HD Formatted will still be able to work with the drive since the driver and drive queue entry exist.

Support Information Services

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Tech Info Library Article Number:16834

Tech Info Library

LaserWriter Bridge version 1.0 Read Me (12/94)

Revised: 12/2/94
Security: Everyone

LaserWriter Bridge version 1.0 Read Me (12/94)

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Article Created: 2 December 1994

TOPIC ----------

This article is the LaserWriter (LW) Bridge ReadMe file.

DISCUSSION ----------

LaserWriter Bridge version 1.0

The LaserWriter Bridge software allows users on your extended network (such as Ethernet) to have access to a LocalTalk printer connected to your Macintosh. This file summarizes the installation procedure and provides information not covered in the documentation you received with the LaserWriter Bridge software.

About LaserWriter Bridge

LaserWriter Bridge 1.0 is intended to be used only with the type of printer you have just purchased. Do not try to use LaserWriter Bridge with other types of LocalTalk printers, or with more than one LocalTalk printer connected to a single “host” Macintosh.

Before Installing LaserWriter Bridge

Before installing LaserWriter Bridge, you need to connect your LocalTalk printer to a host Macintosh on an extended network. Refer to the manual that came with your printer for instructions on connecting it to the Macintosh.

The host Macintosh requires

- At least 4 megabytes (MB) of RAM.
- System software version 7.0 or later.
- The appropriate hardware and software for an extended network connection.

Installing LaserWriter Bridge

1) Select your extended network (for example, EtherTalk) in the Network control panel.

2) Insert the LaserWriter Bridge floppy disk.

3) Drag the LaserWriter Bridge icon to the System Folder icon.

4) When asked if you want LaserWriter Bridge placed in the Control Panels folder, click Yes.

5) Restart the host computer.

Support Information Services

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Tech Info Library Article Number:16835

Tech Info Library

Multiple Scan 17 Display: Purity Problems (12/94)

Revised: 12/5/94
Security: Everyone

Multiple Scan 17 Display: Purity Problems (12/94)

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Article Created: 05 December 1994

TOPIC -----

Some of our clients have mentioned a very soft blue, rose, red, or green spot near the bottom right corner of the Multiple Scan 17" monitor. If you rotate the monitor, this spot moves a little, changing its intensity.

They are aware of the "Geo-magnetic" sensitivity to the magnetic pole, especially because we are very close to the South pole. It is known that these monitors are calibrated for the different geographic hemispheres.

We think that the best solution would be to have a monitor calibrated for Australia, is there a product code? We have been told that M2611X/A represents an Australian calibration. Is this true?

DISCUSSION -----

The correct marketing number for the Australian version of the Multiple Scan 17 display is M2611X/A. However, this is probably not going to solve your problem.

From your description, you are dealing with a purity problem. Assuming a correct display setup, poor purity is usually related to stray DC magnetic fields. We have found that over time metal objects such as desks, cabinets, or computer cases can become magnetized and adversely affect a display's purity.

You can purchase a hand held degaussing coil (about $25 to $30) and demagnetize metal objects in the proximity of the display. I have done this many times to eliminate problems like the one you are experiencing. Sometimes this is not easily remedied because of magnetized metal beams in the structure of the building. If this is the case, then the only solution is to either accept the purity problem or relocate the unit to another area of the building.

Support Information Services

..TIL16837-Multiple_Scan_17_Display-Purity_Problems_12-94_(TA32995).pdf

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Tech Info Library Article Number:16837

MacX 1.2 and Motif Window Manager Problems (12/94)

Revised: 12/5/94
Security: Everyone

MacX 1.2 and Motif Window Manager Problems (12/94)

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Article Created: 5 December 1994

TOPIC ----------

In using MacX 1.2 with Motif Window Manager (mwm) and I'm having some problems, which don't happen on other X display servers. I'm running Motif Window Manager 1.1.4 on SunOS 4.1.3. Most things are fine, however, I've noticed these three anomalies:

1) Ghosting is not working. I get pixel numbers displayed, but I don't get an outline of a window as I move it. I set the showfeedback xresource to all, and many of the other features controlled by this xresource are working, but the window outline is not. I also checked that the ghost window is not mapped to the background color.

2) The window menu button in upper left (move, resize...), if I click once with the left mouse button, the menu usually stays up. In MacX, the menu goes away when I release the mouse button.

3) The window menu button, if double clicked, the menu window is usually killed, but in MacX it just flashes a couple of times.

Any ideas why these are behaving differently than my other X servers?

DISCUSSION ----------

We do not have access a Sparc workstation running SunOS 4.1.3, we tried to locate one on campus. Therefore we tried duplicating your problem on a SparcLX running Solaris v2.3, and olwm (Sun's OpenLook Windows Manager).

We tried several different scenarios, but we could not duplicate your reported problem. We could get everything to work under Solaris v2.3, and we believe the problem lies in the SunOS 4.1.3 based olwm (v1.1.4).

1) Steps we took to set up the Sun:

```
   Please do not start "openwin" at the Sun,

   sparclx%csh
   sparclx%setenv OPENWINHOME /usr/openwin
   sparclx%setenv LD_LIBRARY_PATH /usr/openwin/lib

2) Steps we took to set up MacX v1.2:

   under "remote":

   "edit remote command":

   "remote command":

   csh; setenv DISPLAY "®display"; /usr/openwin/bin/olwm -display
   130.43.4.25:0.0

   "color": color rooted

   "output": pop up

3) Start executing "olwm", and "xterm" and some X applications.

4) We can see the window's outline when moving or resizing with xterm. We
   could close the "xterm" window by clicking on the upper-left-most
   corner.

We checked with MacX Engineering and were told that cases such as the one you
reported happen in SunOS based OpenLook Windows Manager not Solaris v2.x, but it
was hard to tell whether it's because of MacX or the olwm. Sometimes a
particular X-application can also cause similar problems.

The MacX Engineer also recommended the use of "twm" or some other third party
applications.

Also we tried the Motif Windows Manager (mwm) on HP/UX, and RS/6000 AIX v3.2.5,
and things worked exactly as they were supposed to. We did not experience the
problem you reported on these workstations.


Support Information Services
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Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16838

Tech Info Library

LaserWriter Pro 810: PCL5 Print Environment (12/94)

Revised: 12/5/94
Security: Everyone

LaserWriter Pro 810: PCL5 Print Environment (12/94)

==========

Article Created: 5 December 1994

TOPIC ----------

I'm having problems with the DOS/Windows compatibility of the LaserWriter Pro 810. The drivers supplied with the printer are unable to work in PCL5 environment which I require. Is there a solution to this?

DISCUSSION ----------

The drivers shipped with the LaserWriter 810 are PostScript only drivers. In order to get the printer to print PCL, the Hewlett-Packard LaserJet IIP driver should be used. It is important to note that the LaserWriter Pro 810 does NOT support PCL5. The LaserWriter Pro 810 supports PCL4+ only. Use the corresponding Hewlett-Packard driver to get PCL functionality, LaserJet II, IIP, or III.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16839

Tech Info Library

System 7.5: Extra Items Installed with Easy Install (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Extra Items Installed with Easy Install (2/95)

==========

Article Created: 5 December 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

I would like to know why when installing System 7.5 and selecting "for this Macintosh," I get files for other Macintosh computers as well. It appears that software "for any (every ?) Macintosh" gets loaded rather than what should for just my Macintosh. This causes me a lot of extra work in cleaning up after the Installer. I am also concerned about having users perform installations over the network as they have a variety of machines, and I do not want to visit them all or walk them through which files to keep or to throw away.

DISCUSSION ----------

We are aware of this situation occurring via the "Custom Install" option in the System 7.5 Installer. The problem is that a top level check box item (the one that has a triangle to the left of it) installs items for all machines, regardless of whether the user has already selected a secondary checkbox item for a specific Macintosh.

Oftentimes, a user "instinctively" makes the following selections:
• System Software for this Macintosh only
• Apple Menu Options
• Control Panels

The Installer interprets these requests as "System Software for this Macintosh only" plus "All Apple Menu Items" plus "All Control Panels." This situation can be avoided by clicking on the triangles next to the top level check boxes to reveal the second level check box items. It is at this point (the second level) where a user should specify which items should be installed.

For this particular scenario, note the following:
• Selecting "System Software for this Macintosh only" by itself achieves the desired result.
• Performing an "Easy Install" is much easier. It is the recommended way to

install the needed System software, and not install any unnecessary System software.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.
12 Dec 1994 - Retitled and slightly modified Discussion.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16840

Tech Info Library

QuickTake 100: Default Compression (12/94)

Revised: 12/5/94
Security: Everyone

QuickTake 100: Default Compression (12/94)

==========

Article Created: 5 December 1994

TOPIC -----

I need to get some VERY technical information on the QuickTake 100:

(1) I need detailed specifications on the focusing and filtering elements and charged coupled device specifications.

(2) What is the default compression used by the QuickTake?

DISCUSSION -----

Detailed specifications on the focusing and filtering elements, and charged coupled device specifications are Apple Proprietary information and can’t be given out.

The default compression QuickTake 100 Camera images is about 7 to 1. A special QuickTime codec is uses for the compression. Eight 640 x 480 24 bit images are stored in 1 megabit of EEPROM in the camera, and as a 128K file on disk. When this file is converted to a 24 bit PICT it is about 900K.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16841

LaserWriter Bridge 1.0: Questions & Answers (Q&A) (1/96)

Revised: 1/12/96
Security: Everyone

LaserWriter Bridge 1.0: Questions & Answers (Q&A) (1/96)

==========

Article Created: 5 December 1994
Article Reviewed/Updated: 12 January 1996

TOPIC ----------

This article contains Q & As for the LaserWriter Bridge control panel.

DISCUSSION ----------

Question: What is the LaserWriter Bridge control panel?

Answer: LaserWriter Bridge is a software Control Panel device that allows the a LaserWriter Select 360 to be bridged to an Ethernet network. The Bridge software resides on the host Macintosh connected to an Ethernet network. The LaserWriter Select 360 connected via LocalTalk cables to the host Macintosh. The printer can also be attached using PhoneNet or similar LocalTalk cable systems. It will not work using a serial cable connection.

Question: Where will customers get it?

Answer: The LaserWriter Bridge software ships with the LaserWriter Select 360 and will have a "/B" after the finished goods model number. LaserWriter Bridge will not be a separate item on the Apple price list nor will it be shipped with other Apple printers. The only way to get it is to purchase the software from SONIC, the developer of the software.

Question: What other products will it work on?

Answer: Apple will only support it on the LaserWriter Select 360 printer. It has not been tested by Apple on any other products.

Question: Who supports the hardware product?

Answer: Sonic does. Refer all support calls to them.

Sonic Systems, Inc.
408-736-1900
800-535-0725
408-736-7228 (fax)

Question: What protocols do they handle?

Answer: Both LaserWriter Bridge and the Sonic Box are capable of handling the following EtherTalk protocols:

- PAP - Printer Access Protocol
- NBP - Name Binding Protocol
- ATP AppleTalk Transaction Protocol
- DDP - Datagram Delivery Protocol
- ZIP - Zone Information Protocol
- AEP - Echo Protocol

Question: What indicators does the Sonic box have?

Answer:

Label	Color	Indication
PWR	green	Unit is on (plugged into a 5v DC regulated power supply)
LINK	green	Unit is connected to twisted pair Ethernet & link signal detected
BRIDGE	yellow	Unit is bridging packets between LocalTalk & EtherTalk

Question: What Macintosh computers does it support?

Answer: Power Macintosh and all currently shipping Macintosh systems, except PCI-based Power Macintosh systems (7200, 7500, 8500, and 9500) because the LaserWriter Bridge is not compatible with Open Transport, running:

System 7.0 through System 7.5
LaserWriter Select 360
Testing included:
- Background and Foreground printing
- Mixed LocalTalk and EtherTalk network traffic
- Simultaneous printing from host Macintosh and other Ethernet Macintosh systems
- Simultaneous printing outgoing and incoming from/to host Macintosh
- Apple Remote Access (ARA) printing

Question: Is the LaserWriter Bridge compatible with System 6.x?

Answer: There is no System 6.X support.

Article Change History:
12 Jan 1996 - Updated for clarity by adding PCI-base Power Macintosh systems.
21 Nov 1995 - Reviewed for technical accuracy.

Support Information Services

Copyright 1994-96, Apple Computer, Inc

Tech Info Library Article Number:16842

Tech Info Library

LaserWriter Bridge version 1.0: Description (12/94)

Revised: 12/5/94
Security: Everyone

LaserWriter Bridge version 1.0: Description (12/94)

==========

Article Created: 5 December 1994

TOPIC ----------

The following contains specific information for customers who purchased the LaserWriter Select 360 with the LaserWriter Bridge utility version 1.0.1.

DISCUSSION ----------

The LaserWriter Bridge software allows users on your extended network (such as Ethernet) to have access to a LocalTalk printer connected to your Macintosh. This file summarizes the installation procedure and provides information not covered in the documentation you received with the LaserWriter Bridge software.

About LaserWriter Bridge

LaserWriter Bridge 1.0.1 is intended to be used with the LaserWriter Select 360 only. Do not try to use LaserWriter Bridge with other types of LocalTalk printers, or with more than one LocalTalk printer connected to a single “host” Macintosh.

Before Installing LaserWriter Bridge

Before installing LaserWriter Bridge, you need to connect your LocalTalk printer to a host Macintosh on an extended network. Refer to the manual that came with your printer for instructions on connecting it to the Macintosh.

The host Macintosh requires:
- at least 4 megabytes (MB) of RAM
- system software version 7.0 or later
- the appropriate hardware and software for an extended network connection

Installing LaserWriter Bridge
---
1. Select your extended network (for example, EtherTalk) in the Network control panel.

2. Insert the LaserWriter Bridge floppy disk.
3. Drag the LaserWriter Bridge icon to the System Folder icon.
4. When asked if you want LaserWriter Bridge placed in the Control Panels folder, click Yes.
5. Restart the host computer.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16843

Tech Info Library

Sonic Systems, Inc.

Revised: 5/16/95
Security: Everyone

Sonic Systems, Inc.

==========

Article Created: 7 December 1994
Article Reviewed/Updated: 16 May 1995

Sonic Systems, Inc.

1150 Kifer Road
Suite 201
Sunnyvale CA 94086

Phone (Sales & Tech Support): 408-736-1900
Toll Free (Sales & Tech Support): 800-535-0725
Fax: 408-736-7228

Company Profile:
Software, specializing networking products for the Macintosh, such as an EtherTalk Phase 2 to LocalTalk router.

Article Change History:
16 May 1995 - Added Company Profile information.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16845

Tech Info Library

LaserWriter 8.x: Must Use At Least System 6.0.7 (8/96)

Revised: 8/21/96
Security: Everyone

LaserWriter 8.x: Must Use At Least System 6.0.7 (8/96)

==========

Article Created: 7 December 1994
Article Reviewed/Updated: 20 August 1996

TOPIC ----------

I would like to know if LaserWriter 8.1.1 is compatible with System 6.0.5.

DISCUSSION ----------

LaserWriter drivers 8.0, 8.1.1, and 8.1.2 were tested with System 6.0.7, so they are compatible. However, it is not know if System 6.0.5 is compatible, since no tests were performed using this version of System 6. We would recommend upgrading all Macintosh computers using System 6 to System 6.0.7 or System 6.0.8.

Backward compatibility testing with System 6.x ended with LaserWriter 8.1.2., so LaserWriter driver 8.2 was not tested with any version of System 6.

Article Change History:
20 Aug 1996 - Updated with information on later LW 8 drivers.

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Tech Info Library Article Number:16846

Tech Info Library

QuickDraw GX: Tray Selection Problem With LaserWriter GX (2/95)

Revised: 2/16/95
Security: Everyone

QuickDraw GX: Tray Selection Problem With LaserWriter GX (2/95)

==========

Article Created: 7 December 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

I am using QuickDraw GX and the Laserwriter GX driver. I have 500 Sheet Feeder attached to my LaserWriter printer with letter size paper in both the 250 sheet feeder and the 500 sheet feeder. I cannot make the 500 sheet feeder the default tray, or even print using the tray. How can I use the 500 sheet feeder?

DISCUSSION ----------

Currently if both trays have letter paper in the trays, or have been configured for same type of paper there is no option to choose which tray to take from.

The only way to get the 500 sheet feeder to work or to be the Default tray with QuickDraw GX is to go into the Printing menu and configure the 250 sheet feeder for a paper size other than Letter, or different from the 500 sheet tray. Changing this allows you to use the 500 sheet feeder. However, once you change the paper size, the 250 sheet feeder will not be available.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16849

Tech Info Library

ImageWriter: How To Lubricate the Carriage Shaft (12/94)

Revised: 12/7/94
Security: Everyone

ImageWriter: How To Lubricate the Carriage Shaft (12/94)

==========

Article Created: 7 December 1994

TOPIC ----------

The lubricant on my ImageWriter II carriage shaft has dried up. What steps do I need to take to replace it?

DISCUSSION ----------

As ImageWriter and ImageWriter II printers age the lubricants used on the carriage shaft accumulate dust and other contaminants. Instead of adding additional lubricants on top of the old ones it is recommended that the old lubricants and contaminants first be removed.

A small amount of WD-40 lubricant or other de-greasing solution applied to a lint free cloth can be used to remove the old lubricants. Be sure to clean the carriage shaft(s) completely to minimize carriage friction. Never spray the lubricant or de-greaser directly into the printer.

Once all of the old lubricant has been removed apply four drops of telous oil or Floil G-488 lubricant to a clean lint-free cloth and wipe it onto the carriage shaft(s). Another method is to apply four drops of oil to the felt wipers which are located under the carriage assembly.

Many hardware stores and home centers have a good selection of compatible lubricants. Local stores specializing in lubricants can be found in the phone book under lubricants.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16850

Tech Info Library

Apple Built-In Ethernet 1.01: Fix For MACE Controller (12/95)

Revised: 12/21/95
Security: Everyone

Apple Built-In Ethernet 1.01: Fix For MACE Controller (12/95)

==========

Article Created: 7 December 1994
Article Reviewed/Updated: 21 December 1995

TOPIC ----------

Macintosh Quadra 660AV, 840AV, Power Macintosh, and PowerPC-based Workgroup Server computers may freeze and/or have data corruption problems related with the MACE Ethernet controller. This article describes a fix and where to locate the software needed.

DISCUSSION ----------

The Network Software Installer (NSI) 1.5 contains the Apple Built-In Ethernet driver file version 1.0.1. This driver file contains drivers for all Apple built-in Ethernet implementations and is installed in the extensions folder.

The Macintosh Quadra 660AV and 840AV, Power Macintosh 6100/60, 6100/66, 7100/66, and 8100/80, and Workgroup Server 6150, 8150, and 9150 Ethernet drivers were updated to eliminate slowdowns, hangs, lost connections, and data corruptions that were possible on some Ethernet networks. Installing NSI 1.5 fixes this problem.

If you do not have access to NSI 1.5 follow the instructions below:

Hardware Products Affected

Macintosh Quadra 660AV, 840AV
Power Macintosh 6100/60, 7100/66, 8100/80
Power Macintosh 6100/66
Apple Workgroup Server 6150, 8150, and 9150
Fixed in the ROM of the 7100/80, 8100/100, and 8100/110

NOTE: The MACE patch is NOT included in the Power Macintosh 6100/66 computer. The patch is present in the 7100/80, 8100/100, and 8100/110 ROM, but the 6100/66 computer does not have this ROM. Therefore it does not have the MACE patch.

Software Versions Affected

Ethernet driver that ships with:

• System 7.1 (840AV/660AV) Ethernet (.ENET) driver version 1.0.1
• System 7.1.2, Ethernet (.ENET) driver version 1.0f2d4
• System 7.5, Ethernet (.ENET) driver version 1.0f2d4
• Workgroup Server 9150, System Software 7.1.2, Ethernet (.ENET) driver version 1.0.1b1q4

Software Version(s) Required to Resolve the Problem

• Drag install-able driver (Apple Built-In Ethernet) version 1.0f1 which includes:

- Macintosh 660AV, Macintosh 840AV Ethernet (.ENET) driver version 1.0f2d4

- All Power Macintosh and Workgroup Server products Ethernet (.ENET) driver version 1.0f2d4

• Network Software Installer 1.4.5.

Problem Description

A problem exists in the MACE Ethernet controller chip used in the Macintosh products listed above. In some situations the MACE Ethernet controller chip can get into a condition that causes the operating system to hang, data corruption, or a system crash. The fundamental cause of the problem is an error condition known as a late collision. A late collision is defined as a collision that occurs after the initial, and normal, 64 byte collision window (preamble and start frame delimiter not included). Late collisions are usually the result of a network whose physical extent exceeds the maximum round trip delay as specified by the 802.3 specification. This can be caused by either a network segment that is too long, or from a network design that exceeds the maximum number of allowable repeaters.

Macintosh 840AV, 660AV, and Power Macintosh 6100/60, 7100/66, and 8100/80 systems will typically see this problem manifest itself as a system hang. The problem usually occurs when transferring data from the Macintosh to a remote device (File Server, Mail Server, and so on). The Macintosh appears to be frozen, the mouse can still be moved but no menu items can be selected. In some situations the Macintosh may not freeze but may corrupt the data in the packet being transmitted when the late collision occurred. The corrupt data actually looks like valid data and is accepted by the destination device. As such this problem can cause corrupt files to be stored on File Servers or other remote devices. Any of the Power Macintosh computers running AppleShare 4.0.2 or any of the PowerPC-based Workgroup Server products, would usually crash with an unimplemented instruction error when they encountered this condition.

There is no loss of performance in using these new drivers other than the time required for the driver to retransmit the packet after the error condition is encountered. The time required to retransmit the packet is no more than a few microseconds. The packet is retransmitted at the driver level instead of by a

higher level protocol allowing the data transfer to continue without degrading the performance of the transfer.

Please do not install these drivers on any Macintosh other than those listed above. There is no benefit and the installation of the extensions based drivers has only been tested on the affected system configurations.

Installation Details with NSI 1.4.5

The new Built-In Ethernet drivers are installed as an extension instead of as an integral piece of the "System" file. To install the extensions based version of the Built-In Apple Ethernet drivers please follow the instructions below exactly. Even if you have done a install of NSI 1.4.5 previously, it is important to follow the steps provided below.

You might be wondering why you have to install NSI 1.4.5, again? For that matter why do would you need to select Twisted-Pair Ethernet when you're using the AAUI interface? In answer, this is the first time that Apple has distributed a network driver as an extension. As such, an obscure problem was discovered that caused the NSI installer to not update a piece of software that is now needed to load drivers from the extension folder. Because this code was never required before the release of these new drivers this was never a problem. By following the instructions below you will install an updated piece of code that will allow the extensions based drivers to load. If you do NOT follow the instructions, the extensions based drivers WILL NOT load.

You should install NSI 1.5 when it becomes available as it will remove all old Ethernet drivers from the System and install the latest versions of AppleTalk and the "Apple Built-In Ethernet" driver file. With the release of NSI 1.5, all Ethernet drivers will reside in the "Apple Built-In Ethernet" extensions file instead of in the "System" file.

Installation Instructions with NSI 1.4.5

Step 1
Run the NSI 1.4.5 Installer and choose "Custom" install.

Step 2
Choose "AppleTalk v.58.1.4 for System 7" and "EtherTalk for Ethernet NB Twisted-Pair Card". Click "Install" to install the drivers. The installer then forces a restart.

Step 3
Drag the "Apple Built-In Ethernet" file onto the System folder.

Step 4
Reboot the system.

These articles can help you locate the NSI 1.4.5, NSI 1.5, and Apple Built-In Ethernet software mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

You can verify that the new drivers are loaded by observing the extension icons displayed at boot time. After installing the new driver you should see the Built-In Apple Ethernet" icon (same icon as is associated with the "Apple Built-In Ethernet" drivers file you did the drag install on) when the system is loading.

Article Change History:
21 Dec 1995 - Corrected typographical mistake.
14 Mar 1995 - Updated article with NSI 1.5 information.
15 Feb 1995 - Added information on the 6100/66, 7100/80, and 8100/100.

Support Information Services

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Tech Info Library Article Number:16852

Tech Info Library

AppleScript Additions: On-Line Sources (4/97)

Revised: 4/28/97
Security: Everyone

AppleScript Additions: On-Line Sources (4/97)

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Article Created: 7 December 1994
Article Reviewed/Updated: 9 April 1997

TOPIC --

Is there an on-line source for good AppleScript additions?

DISCUSSION --

There are several on-line sources for Apple Script information or additions. Some of those we know of are listed below:

• The ftp site gaea.kgs.ukans.edu is a good source for AppleScript scripting additions, scripts and documentation.

• macscripting@dartmouth.edu is a great listserv for AppleScript discussion. Subscribe by sending a message to listserv@dartmouth.edu with body of message subscribe macscrpt. Send actual discussions to macscripting@dartmouth.edu

• The ftp sites sumex-aim.stanford.edu and mac.archive.umich.edu have good scripting subfolders. sumex and umich.edu are worth checking as well.

Article Change History:
09 Apr 1997 - Removed out dated on line references.
16 Dec 1994 - Made AppleScript one word.

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Tech Info Library Article Number:16853

Tech Info Library

Connecting Two Macintosh Computers With a Serial Cable (3/95)

Revised: 3/30/95
Security: Everyone

Connecting Two Macintosh Computers With a Serial Cable (3/95)

==========

Article Created: 1 February 1995
Article Reviewed/Updated: 30 March 1995

TOPIC ----------

I have two Macintosh computers, is it necessary to connect the two using LocalTalk connectors, or would a serial cable like the Peripheral 8 cable work?

DISCUSSION ----------

It is possible to connect two Macintosh computers using AppleTalk protocols with a Peripheral 8 cable. The serial cable needed to make the connection is the Apple System Peripheral - 8 Cable (finished goods part number M0197, service part number 590-0552). Part numbers mentioned in this article are accurate as of this writing. Before ordering, verify that they are still correct as they are subject to change.

By using personal file sharing, you can share information between the two computers. Remember, using the Peripheral - 8 serial cable will only let you create a two node network. In other words you will lose other network services because the port is being used by the serial cable.

For information on connecting a LaserWriter to a Macintosh with a serial cable, search for the Tech Info Library article titled "LaserWriter: Connecting to a Macintosh via Serial Cable."

Article Change History:
30 Mar 1995 - Complete rewrite of article.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16854

Tech Info Library

Apple Built-In Ethernet Driver and DECnet (12/94)

Revised: 12/7/94
Security: Everyone

Apple Built-In Ethernet Driver and DECnet (12/94)

==========

Article Created: 7 December 1994

TOPIC -----

According to the document which comes with the new Apple Built-In Ethernet drivers:

"With the release of NSI 1.5 all Ethernet drivers will reside in the "Apple Built-In Ethernet" extensions file instead of in the "System" file."

Does this also mean that the eadr resource will be moving from the system file to the an extension? Will enet moving or eadr moving to an extension break DECnet (PATHWORKS or TSSnet)?

DISCUSSION -----

After installing NSI 1.5, the only 'enet' resources that should remain in the system file are the 'enet' 8 (old 3Com card), and any third-party Ethernet drivers. A new enet 8 is provided in the "Apple Ethernet NB" file, but it will only be used if the card is in fact an Apple card. The system file enet 8 is used for any other cards usurping our board ID 8. Going forward, this means we will never update a third-party enet 8 driver, but installing NSI 1.5 will not produce a non-working system.

The 'eadr' remains in the system file. Products that rely on this will have to be changed with OpenTransport and, new native drivers.

We hope that these changes do not cause any problems for PATHWORKS or DECnet. If they use the standard calls for opening slot drivers, everything should be fine.

It has been verified by field testing that the known problem with PATHWORKS involving disconnects with LAT on the PowerPC-based systems have been corrected in NSI 1.5.

..TIL16855-Apple_Built-In_Ethernet_Driver_and_DECnet_12-94_(TA33011).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16855

Tech Info Library

StyleWriter Printers: All Printing appears backwards (2/97)

Revised: 3/3/97
Security: Everyone

StyleWriter Printers: All Printing appears backwards (2/97)

==========

Article Created: 8 December 1994
Article Reviewed/Updated: 28 February 1997

TOPIC --

My Color Stylewriter 2400 prints backwards. Everytime I print anything it comes out backwards on the paper.

DISCUSSION --

Inside the print dialog, change the Paper Type from Back Print to one of the other paper options. The Back Print option is available on any Stylewriter printer using the following drivers:

Color SW 2400
Color SW 2500
Color SW Pro
Color SW 2200
Stylewriter 1200
Stylewriter 1500

Back Print is used with a special type of media that is similar to a transparency with a smoky film covering one side. When using Back Print film, the non-glossy side is printed on. The printing is backwards so that when you view the film from the glossy side, everything appears in the proper orientation.

Article Change History:
28 Feb 1997 - Added additional printers.

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Tech Info Library Article Number:16859

Tech Info Library

File Assistant: For Which Computers and How To Install (1/96)

Revised: 1/8/96
Security: Everyone

File Assistant: For Which Computers and How To Install (1/96)

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Article Created: 8 December 1994
Article Reviewed/Updated: 8 January 1996

TOPIC -----

Several users are reporting that "File Assistant" is getting installed as part of the System 7.5 Easy Install. It also does not appear to be part of a clean install on some computer models. This product ships installed on many Macintosh computers, but if someone erases it there is no option in Custom Install to reinstall it.

Does Assistant Toolbox and it's companion application File Assistant work on any Macintosh computer?

What choice do users select in custom install to get File Assistant installed?

The Installer places this software on which computers during a Clean Install or Easy Install?

Which computers come with the software installed on the hard drive?

DISCUSSION -----

File Assistant version 1.0 can be used on any Macintosh but there is a catch with Power Macintosh computers. It turns out that during an Easy Install on a Power Macintosh computer, the installer for File Assistant replaces the Finder, Finder Help, and the Network extension with older versions.

The workaround is to use the Custom Install option to install 'File Assistant' and 'Assistant Toolbox'. File Assistant then works without any problems on Power Macintosh computers.

For non-Power Macintosh computers, you can use the Easy Install option on the File Assistant 1.0 Installer Disk available online. When doing an Easy Install, File Assistant will be installed if the target computer is a PowerBook or Duo. It will also be installed during the Custom Install option if the you select

Software for Any Macintosh.

File Assistant is factory installed on PowerBook and Duo computers with the Assistant Toolbox installed in the active System Folder, and PowerBook File Assistant installed in the Portables folder inside the Extras Folder. It is also included in the System 7.5 Install Folders on non-System 7.5 systems such as the 4 MB PowerBook configurations.

These articles can help you locate the software update mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
08 Jan 1996 - Corrected minor typo.
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16860

Tech Info Library

LaserWriter Pro 810: Toner Cartridge Identification (3/95)

Revised: 3/1/95
Security: Everyone

LaserWriter Pro 810: Toner Cartridge Identification (3/95)

==========

Article Created: 9 December 1994
Article Reviewed/Updated: 1 March 1995

TOPIC ----------

How many different toner cartridges are offered by Apple for the LaserWriter Pro 810? Once the cartridges have been removed from their packing materials how can they be identified?

DISCUSSION ----------

Apple used to offer two different toner cartridges for the LaserWriter Pro 810. The original LaserWriter Pro 810 Toner Cartridge (M1853G/A) is no longer available. This cartridge used a larger average toner particle size of 11 microns which although less expensive did not provide as much detail as the newer Extended Capacity Toner Cartridge. The original toner cartridge can be identified by the white product label on the top of the cartridge.

Apple currently offers only the newer LaserWriter Pro 810 Extended Capacity Toner Cartridge (M3602G/A) which uses an average toner particle size of 7 microns. The extended capacity toner cartridge minimizes ghosting problems and yields a higher apparent resolution due to the smaller toner particle size. It can be identified by a pale yellow label on the top of the toner cartridge.

Article Change History:
01 Mar 1995 - Modified discussion to show the cartridge Apple carries.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16864

Tech Info Library

QuarkXPress: System Hang When Faxing Through GeoPort (2/95)

Revised: 2/16/95
Security: Everyone

QuarkXPress: System Hang When Faxing Through GeoPort (2/95)

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Article Created: 09 December 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

I am experiencing a system lock on my Power Macintosh 7100 AV when I try to fax a document from QuarkXPress 3.3.1 using my GeoPort. The document will image and it is then placed in the "Waiting to be faxed" folder. The Macintosh locks up and must be restarted with System 7.5 extensions only.

After I restart, I must reinstall the GeoPort software and restart again. Once the Macintosh restarts, the fax is sent immediately. This same procedure happens everytime I fax anything from Quark.

DISCUSSION ----------

I recommend upgrading to the latest Express Fax/GeoPort software. In this case you should first install GeoPort for Power Macintosh 1.0.2, then install Express Modem 1.5.5. This combination will provide the latest and greatest versions of the software.

There was a known bug that caused the system to crash when there were faxes waiting to be sent at startup time.

Both GeoPort for Power Macintosh 1.0.2 and Express Modem 1.5.5 are available on AppleLink or Apple's WWW site on the internet (http://www.support.apple.com/).

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16865

Tech Info Library

System 7.5: Use Apple Remote Access v2.0.x (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Use Apple Remote Access v2.0.x (2/95)

==========

Article Created: 9 December 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

Can I use ARA (Apple Remote Access) 1.0 with System 7.5?

DISCUSSION ----------

ARA 1.0 was never fully tested with System 7.5. The only versions of ARA Apple supports with System 7.5 are 2.0 and later.

Article Change History:
16 Feb 1995 - Changed keyword from and reviewed for technical accuracy.
06 Feb 1995 - Total rewrite of article.
23 Jan 1995 - Added notation about ARA 1.0.
04 Jan 1995 - Added any version of ARA.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16868

Tech Info Library

Express Modem 1.5.5 Read Me (12/94)

Revised: 12/9/94
Security: Everyone

Express Modem 1.5.5 Read Me (12/94)

==========

Article Created: 9 December 1994

TOPIC --------------------

This article is the Express Modem 1.5.5 ReadMe file.

DISCUSSION --------------------

Express Modem Disk

- Fax Cover Folder
  - Fax Cover 1.5.2
  - Sample
  - Standard
- Fax Extension 1.5.5
- Fax Sender 1.5.5
- Fax Terminal 1.5.5
- Fax Viewer 1.5.2
- My first fax

Express Modem Folder

- Express Modem 1.5.5
- Express Modem Tool 1.5.5
- PowerBook 7.3.1
- PowerBook Setup 7.3.1
- System Enabler 131

Express Modem ReadMe 1.5.5
Installer 3.4
Installer Script 1.5.5
Modem Documents

- AppleLink US Access
- Express Modem 14400 1.0
- Express Modem ARA 2.0 1.0
- Express Modem AT Cmds 1.5.2
- Express Modem CCL 1.0

Read Me for Express Fax/Modem

This Express/Fax Modem software can be run on the following machines with their respective modem cards:

- PowerBook 160, 165, 165c, 180, 180c using an internal Apple PowerBook 14.4 Modem Card.

- PowerBook Duo 210, 230, 250, 270c, 280, 280c using an internal Apple PowerBook Duo 14.4 Modem.

- PowerBook 520, 520c, 540, 540c using an internal Apple PowerBook Express Modem II Card.

- LC 575, Macintosh 630 using an internal Macintosh Express Fax/Modem.

- Quadra 660 AV, 840 AV using an external GeoPort Telecom Adapter. For these machines you will need additional software (GeoPort rev. 1.2.1 or greater) provided on your GeoPort Disk.

- Power Macintosh 6100/60, 7100/66, 8100/80 using an external GeoPort Telecom Adapter. For these machines you will need additional software (GeoPort for Power Macintosh rev. 1.0 or greater) provided on your GeoPort Disk.

- The Express Fax software also allows you to send faxes with PowerBook models 100, 140, 145 and 170 when used with the Apple PowerBook Fax/Data Modem.

Preferred CCL scripts for AppleTalk Remote Access

ARA 1.0: Express Modem 14400
ARA 2.0: Express Modem ARA 2.0 (in "Modem Documents" folder on installer disk)

Using QuickDraw GX with Express/Fax Modem

In order to send faxes using QuickDraw GX, you need a QuickDraw GX modem driver. A QuickDraw GX modem driver for the Express/Fax modem will be available later this year. If you have installed QuickDraw GX, you'll need to turn it off temporarily in order to use your Express Fax/Modem.

To turn off QuickDraw GX temporarily:

1. Hold down the space bar while you choose Restart from the Special menu to restart your PowerBook.

   The Extensions Manager dialog box appears on the screen.

2. Click the QuickDraw GX extension to remove the check beside it.

   This prevents the QuickDraw GX software from loading.

3. Click the close box in the Extensions Manager dialog box to resume

startup.

Your fax modem should work normally. You won't be able to use any QuickDraw GX features until you turn the extension back on again.

Auto-answer setting

If Fax Terminal is set to Auto-answer, the Manual Receive is disabled.

Using Express Modem with System 7.5

This Express/Fax Modem software is fully compatible with System 7.5.

IMPORTANT: If you are using System 7.5, you can still use the shortcut for choosing Fax Sender by holding the Control and Shift keys while choosing Print from the File menu. The menu item no longer changes from Print to Fax, but the shortcut works as before. The same applies to Page Setup and Fax Setup.

Troubleshooting

If you experience unknown system crashes while using Express Modem with the PowerBook 500 series, set the Speaker setting to Modem sound always off .

To turn off the modem sound:

1. Open the Express Modem Control Panel.

2. Select Express Modem Settings in the Express Modem Settings/Status pop-up menu.

3. Select Modem sound always off in the Speaker pop-up menu.

4. Click the close box in the Express Modem Control Panel.

Fax V.17 (High Speed) reception

Some fax machines may not work well with the high-speed (V.17) fax capabilities of Express/Fax Modem. If you find you are having problems sending or receiving a fax, try turning off the V.17 option in the Fax Terminal Preferences dialog.

Support Information Services

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Tech Info Library Article Number:16869

Tech Info Library

System 7.5 File Search on a Mounted Novell Volume (9/95)

Revised: 9/26/95
Security: Everyone

System 7.5 File Search on a Mounted Novell Volume (9/95)

==========

Article Created: 9 December 1994
Article Reviewed/Updated: 26 September 1995

TOPIC ----------

Whenever I do a file search on a mounted Novell volume, Find File finds the files just fine. However, if I highlight a file I immediately get a window that says, "The file is missing and has probably been deleted, checking others", and then all the other found files immediately become grayed out and listed as missing. This does not happen to found folders, just individual files. What is wrong?

DISCUSSION ----------

This is a known problem with the new "Find..." program shipping with System 7.5. This problem has been corrected with System 7.5 Update 1.0 and after installing this update you should not have this problem.

The workaround is to hold down the Command-Shift keys while selecting "Find..." with your mouse from the File menu. You will get the "old" Find dialog box and the search will work properly. Also by holding down the Command-Shift keys you can select "Find Again" and the "old" Find Again method will work.

If this problem occurs on other remote volumes, this workaround should also work.

Article Change History:
26 Sep 1995 - Added System 7.5 Update 1.0 fix.
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16870

Tech Info Library

Graphing Calculator: Graphing Inequality Functions (12/94)

Revised: 12/12/94
Security: Everyone

Graphing Calculator: Graphing Inequality Functions (12/94)

==========

Article Created: 12 December 1994

TOPIC -----

My customer is a university math professor who uses the Graphing Calculator through an overhead projector in his classroom of 400+ students.

The Graphing Calculator appears not to accept the "less than or equal to" (≤) or "greater than or equal to" (≥) operators. If you press option-< or option->, nothing appears in the equation box. He wants to graph inequalities beyond "y > x + 2" and enter something like "y ≤ 4 x". Graphing Calculator help says it can graph inequalities and simple algebra.

Is support for the ≤ and the ≥ hidden from the user or unavailable altogether? What other operators are unavailable?

DISCUSSION -----

Here is the answer I received from Engineering:

Graphing Calculator can graph functions of x, functions of x and y, and inequalities. The ≤ and ≥ characters denote equalities. Therefore, the ≤ and ≥ characters are unavailable altogether in Graphing Calculator.

There are ways to graph inequalities. For example, you cannot graph x = y, but you can graph |x - y| < 0, which is the same thing. To do this, you must turn on Honest 2D Plotting.

Engineering stated that if an operator is not in the Graphing Calculator help screen (accessible from the Balloon Help menu), then Graphing Calculator cannot do it. Graphing Calculator was included with the Power Macintosh to show the potential of the PowerPC chip and no Apple resources are currently allocated for development of a future version.

Support Information Services

..TIL16871-Graphing_Calculator-Graphing_Inequality_Functions_12-94_(TA33025).pdf

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16871

System 7.5: Custom Install File Listing (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Custom Install File Listing (2/95)

==========

Article Created: 12 December 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

We have a lot of customers that call wanting to know what the differences are between Easy install and the various custom install options available in System 7.5.

What files get placed on the hard drive for the 7.5 custom install system software options? If customers select minimal install for any Macintosh, how would the system folder differ from selecting system for any Macintosh?

DISCUSSION ----------

To answer your question about when and why you would use the different options, I have included the information below.

Question: When do I use the different Custom Install Options?

Answer:

Minimum System for This Macintosh Only

Can be used for creating a System Folder that has a small RAM and hard disk footprint. Minimum System resources are installed.

Minimum System for Any Macintosh

Can be used for creating a universal System folder that has a small RAM and hard disk footprint. Minimum System resources are installed.

System for this Macintosh

Can be used for creating a custom System Folder that picks appropriate software for a particular Macintosh.

System for any Macintosh

Can be used for creating a Universal System Folder that picks all appropriate software for many different Macintosh models.

Finally, below is the information regarding System 7.5 and what is installed after custom installs. These installs were done on a Quadra 660AV with a clean hard drive using the System 7.5 Upgrade CD.

Question: What is installed with a System 7.5 Custom - Minimum Install for this Macintosh?

Anwer: Minimum System Software This Macintosh

- Apple Menu Items
  - Control Panels 7.5
- Finder 7.1.4
- Preferences
  - DSP Preferences
  - Finder Preferences
- System 7.5

Question: What is installed with a System 7.5 Custom - Minimum Install for Any Macintosh?

Answer: Minimum System Software Any Macintosh

- Apple Menu Items
  - Control Panels 7.5
- Finder 7.1.4
- Preferences
  - DSP Preferences
  - Finder Preferences
- System 7.5

Question: What is installed with a System 7.5 Custom - Complete System Software Install for this Macintosh?

Answer: Complete System Software - This Macintosh Only

Apple Extras
- CPU Energy Saver 1.0.6

SimpleText 1.1.1
System 7.5 --Read Me 7.5
System Folder
- Apple Menu Items
  - Calculator 7.5
  - Chooser 7.5
  - Control Panels 7.5
  - Find File 1.0

- Jigsaw Puzzle 1.0
- Key Caps 7.5
- Note Pad 7.5
- Scrapbook 7.5
- Stickies 1.0
- • Shut Down

- Control Panels
  - Apple Menu Options 1.0
  - Auto Power On/Off 1.0
  - Color 7.1
  - Date & Time 7.5
  - Desktop Patterns 7.5
  - Extensions Manager 3.0
  - General Controls 7.5
  - Keyboard 7.1
  - Labels 7.1
  - Launcher 2.4
  - Map 7.5
  - Memory 7.5
  - Monitors 7.5
  - Mouse 7.3
  - Network 3.0.2
  - Numbers 7.1
  - Sharing Setup 7.1
  - Sound 8.0.3
  - Startup Disk 7.3.2
  - Text 7.1
  - Users & Groups 7.1
  - Views 7.1
  - WindowShade 1.3
- Extensions
  - EM Extension 3.0
  - AppleShare 3.5
  - Clipping Extension 7.1.4
  - Color Picker 2.0.1
  - Find File Extension 1.0
  - Finder Help 7.1.4
  - Network Extension 7.1.3
  - Quadra AV Monitors Extension 7.5
  - SCSI Manager 4.3 4.3
  - Speech Guide Additions 1.0
  - Video Guide Additions 1.0
  - WorldScript™ Power Adapter 7.5.1
- Finder 7.1.4
- Fonts
  - Chicago
  - Courier
  - Geneva
  - Helvetica
  - Monaco
  - New York
  - Palatino
  - Symbol

```
  - Times
- Launcher Items
  - Icon[13]                              7.5
  - Script Editor                         7.5
  - SimpleText                            7.5
- Preferences
  - Apple Menu Options Prefs
  - Assistant Toolbox Prefs
  - DSP Preferences
  - Extensions Manager Prefs
  - Finder Preferences
  - General Controls Prefs
  - Users & Groups Data File
  - WindowShade Preferences
- Scrapbook File                         7.5
- System                                 7.5


Question: What is installed with a System 7.5 Custom - Complete System Software
Install for Any Macintosh?

Answer: Complete System Software - Any Macintosh
------------------------------------------------

Apple Extras
- CPU Energy Saver                       1.0.6
- Portables
  - About Portables Extras               7.5
  - Battery Recondition                  1.2
  - PowerBook File Assistant
    - File Assistant                     1.0
    - File Assistant Guide               1.0
SimpleText                               1.1.1
System 7.5 --Read Me                     7.5
System Folder
- Apple Menu Items
  - Calculator                           7.5
  - Chooser                              7.5
  - Control Panels                       7.5
  - Find File                            1.0
  - Jigsaw Puzzle                        1.0
  - Key Caps                             7.5
  - Note Pad                             7.5
  - Recent Applications
    - Battery Recondition
    - File Assistant
    - Icon[13]
    - SimpleText
  - Recent Documents
    - About Portables Extras
    - Icon[13]
  - Scrapbook                            7.5
  - Stickies                             1.0
```

- • Shut Down
- Clipboard
- Control Panels
  - PowerBook Display 7.5
  - Apple Menu Options 1.0
  - Auto Power On/Off 1.0
  - AutoRemounter 1.2
  - Brightness 7.0.1
  - Color 7.1
  - Control Strip 1.1
  - Date & Time 7.5
  - Desktop Patterns 7.5
  - Extensions Manager 3.0
  - General Controls 7.5
  - Keyboard 7.1
  - Labels 7.1
  - Launcher 2.4
  - Map 7.5
  - Memory 7.5
  - Monitors 7.5
  - Mouse 7.3
  - Network 3.0.2
  - Numbers 7.1
  - Power Macintosh Card 1.0
  - PowerBook 7.3.1
  - PowerBook Setup 7.3.1
  - Screen 1.0.4
  - Serial Switch 1.2
  - Sharing Setup 7.1
  - Sound 8.0.3
  - Startup Disk 7.3.2
  - Text 7.1
  - Users & Groups 7.1
  - Views 7.1
  - WindowShade 1.3
- Control Strip Modules
  - AppleTalk Switch 1.1
  - Battery Monitor 1.1
  - File Sharing 1.1
  - HD Spin Down 1.1
  - Power Settings 1.1
  - Sleep Now 1.1
  - Sound Volume 1.1
  - Video Mirroring 1.1
- Extensions
  - EM Extension 3.0
  - Assistant Toolbox 1.2
  - Caps Lock 7.1.3
  - Clipping Extension 7.1.4
  - Color Picker 2.0.1
  - EtherTalk Phase 2 2.5.6
  - Find File Extension 1.0
  - Finder Help 7.1.4

- IIci/IIsi Monitors Extension 7.5
- LC Monitors Extension 7.5
- Network Extension 7.1.3
- PowerBook Guide Additions 1.0
- PowerBook Monitors Extension 7.5
- PowerPC Finder Update 1.0
- PowerPC Monitors Extension 7.5
- Quadra AV Monitors Extension 7.5
- Quadra Monitors Extension 7.5
- SCSI Manager 4.3 4.3
- Speech Guide Additions 1.0
- Video Guide Additions 1.0
- WorldScript™ Power Adapter 7.5.1

- Finder 7.1.4
- Fonts
  - Chicago
  - Courier
  - Geneva
  - Helvetica
  - Monaco
  - New York
  - Palatino
  - Symbol
  - Times
- Launcher Items
  - Icon[13] 7.5
  - Script Editor 7.5
  - SimpleText 7.5
- Preferences
  - Apple Menu Options Prefs
  - DSP Preferences
  - File Assistant Data
  - Finder Preferences
  - General Controls Prefs
  - Users & Groups Data File
  - WindowShade Preferences
- Scrapbook File 7.5
- System 7.5

Article Change History:
16 Feb 1995 - Changed keyword, reviewed for technical accuracy, reformatted.

Support Information Services

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Tech Info Library Article Number:16873

Tech Info Library

System 7.5: Problems With Quicken and Control Strip (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Problems With Quicken and Control Strip (2/95)

==========

Article Created: 12 December 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

I am having a problem with the Control Strip when using Quicken 4.0 on my PowerBook running System 7.5. When the Control Strip is on top of one of the transactions or the display window and the arrows are used to scroll, the Control Strip is redrawn over each transaction line.

DISCUSSION ----------

Apple is aware of this incompatibility and there are several other applications that also have this problem.

The issue revolves around how the application is redrawing the screen. Applications that incorrectly use the 'CopyBits' QuickDraw routine to scroll are going to conflict with the Control Strip. According to Apple Developer Technical Support, developers should be using the 'ScreenRect' routine, instead, to avoid redraw conflicts.

I contacted Intuit today regarding this problem. They explained that they would look into the problem to see how they can best resolve it. They would not commit to a specific timeframe. You need to contact Intuit for further information regarding a fix.

This article provides information about a non-Apple product. Please contact the vendor for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Support Information Services

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Tech Info Library Article Number:16874

Tech Info Library

System 7.5: Not All Performa Bundled Software Compatible (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Not All Performa Bundled Software Compatible (2/95)

==========

Article Created: 12 December 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

Macintosh Performa computers come with a lot of software already installed. If you install System 7.5 on your Performa using the Safe Install application, Safe Install reports that some of the applications are not System 7.5 compatible. (These applications are listed in the following table.)

DISCUSSION ----------

The testing of System 7.5 and bundled software has been ongoing since August 1994. As software is tested it is either confirmed as compatible with System 7.5, updated with a compatible version, or removed. This is true for both Apple and third party software.

In regards to the specific software listed as incompatible by Safe Install, the latest information is listed in the right column of the following table.

. Product	Version	Developer	Compatibility Information
At Ease Startup	2.0	Apple Computer	Incompatible need newer version 2.0.3
Billminder	unknown	Intuit, Inc.	Should be ok; database needs updating
Macintosh Easy Open	1.0.4	Apple Computer	Incompatible - gets replaced by 7.5 installer with v1.1
Performa Version	1.4P	Apple Computer	Gets removed by 7.5 installer and replaced with General Controls
ProDOS File System	1.2.1	Apple Computer	Incompatible needs to be removed PC Exchange 2.0.2 includes ProDOS File System capabilities and is installed by 7.5
Video StartupVersion	1.0	Apple Computer	Should be compatible;

. database needs updating

Article Change History:
16 Feb 1995 - Added/updated keyword; made several technical updates.

Support Information Services

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Tech Info Library Article Number:16875

Tech Info Library

Express Modem 2.3: Recommended With System 7.5 (1/96)

Revised: 1/5/96
Security: Everyone

Express Modem 2.3: Recommended With System 7.5 (1/96)

==========

Article Created: 12 December 1994
Article Reviewed/Updated: 5 January 1996

TOPIC ----------

This article describes the recommended version of Express Modem software to use with System 7.5.

DISCUSSION ----------

Express Modem software version 1.5 was the first version supported on computers running System 7.5.

Apple released Apple Telecom software v2.3 during the summer of 1995 which includes all the latest versions of extensions and communications software to use with all Apple PowerBook Express Modems, all Apple Comm Slot Express Modems, and Apple GeoPort Telecom Adaptors.

The Apple Telecom 2.3 software package installer automatically places the correct software on your hard drive for your computer's configuration. Apple Telecom 2.3 is available on online services.

These articles can help you locate the Apple Telecom 2.3 software mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
05 Jan 1996 - Corrected minor typo.

15 Dec 1995 - Added Apple Telecom 2.3 information.
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16877

Tech Info Library

LaserWriter 16/600 PS: Hard Drives Supported (12/94)

Revised: 12/12/94
Security: Everyone

LaserWriter 16/600 PS: Hard Drives Supported (12/94)

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Article Created: 12 December 1994

TOPIC ----------

I have a LaserWriter 16/600 PS customer who purchased an internal hard disk drive bracket and cable through service so that he can install an extra PowerBook hard drive in his printer. Using the Apple Printer Utility supplied with the printer he gets PostScript errors whenever he tries to format the hard drive. Which hard drives are supported by Apple?

DISCUSSION ----------

The LaserWriter 16/600 PS SCSI ports are not guaranteed to support all SCSI hard drives. In order to make customers aware of this, page 159 in the owner's guide has a note that reads: "IMPORTANT Some older model hard disk drives may not be compatible with the LaserWriter 16/600 PS.

Apple sells and supports a complete internal hard disk drive solution for the LaserWriter 16/600 PS. The mounting bracket and cable that can be ordered separately through service are intended only to be used for the service and support of the finished goods upgrade kit. Customers who purchase the brackets and cables for the sole purpose of installing a hard drive other than the one provided in the finished goods hard disk drive solution are on their own in the event they experience problems.

Engineering does not have the resources to test and qualify all of the different hard drives on the market. During their testing they found that most hard drives produced during the past 2-3 years work fine, but that some of the earlier drives may experience problems because they don't implement the complete SCSI instruction set. Most commonly these older drives will be 20, 40, and 80 megabytes in size.

For customers who are experiencing problems check the following:

1) Verify that the I/O controller serial number doesn't end in 34AA.
   If it does, replace it through normal service procedures and retest.

2) Remove the hard drive and carefully reinstall it. Insure that none of the pins in the SCSI connectors have been damaged.

3) If the hard disk cannot be formatted using the Apple Printer Utility then try installing it in a PowerBook or external tester and format it using HD SC Setup or a third-party formatter. If the hard drive formats without any problems on a Macintosh, but fails on the printer then the drive is probably incompatible with the LaserWriter 16/600 PS. To verify the functionality of the I/O controller SCSI port install and format a hard drive from the M3297G/A LaserWriter 16/600 PS Internal Hard Disk Drive kit.

Hard drives that will not format properly or experience other problems during use are not supported by Apple. For best results customers should install the M3297G/A LaserWriter 16/600 PS Internal Hard Disk Drive.

Support Information Services

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Tech Info Library Article Number:16879

Tech Info Library

QuickTake 100: Information Stored on Flash EPROM (12/94)

Revised: 12/12/94
Security: Everyone

QuickTake 100: Information Stored on Flash EPROM (12/94)

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Article Created: 12 December 1994

TOPIC -----

I want to use the QuickTake 100 for some projects where I need to make sure that the information stored in the camera cannot be retrieved after the camera is cleared. I need to know some security questions.

DISCUSSION -----

1) How is the information stored in the camera?

- Picture data and info are stored on flash EPROM. Flash EPROM is an electrically eraseable non-volatile memory, meaning that it does not require power to the chip to retain the data stored in it.

2) How is the information cleared (erased) from the camera?

- Data is erased by user command, either from the control panel on the camera or from the host application.

3) Once "erased" is there a technical means to retrieve information? (Similar to Norton Utilities for hard drives)

- No - erasing the data means overwriting each byte and filling the memory with FFs. If the memory does not overwrite with FFs, a hard failure is declared and the camera displays an error condition and does not operate.

4) If the Camera is damaged and must be returned for repair, is there a component (e.g. EPROM) that can be removed to positively insure that the storage media is not allowed out of government control.

- No. The EPROM is a surface mounted device, and is soldered directly to the circuit board.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16881

Tech Info Library

Language Kits: Updates for System 7.5.x Compat. (12/96)

Revised: 12/10/96
Security: Everyone

Language Kits: Updates for System 7.5.x Compat. (12/96)

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Article Created: 27 May 1994
Article Reviewed/Updated: 10 December 1996

TOPIC ----------

Is either the Chinese Language Kit (CLK) 1.0 or 1.1, or the Japanese Language Kit (JLK) 1.0 or 1.1 compatible with either System 7.5.x, or QuickDraw GX?

DISCUSSION ----------

Yes, an updater for the Chinese Language Kit and a new version of the Japanese Language Kit are now available and provide compatibility for the Language Kits with System 7.5.x and QuickDraw GX.

The Chinese Language Kit Updater Version 1.0 was released November 27, 1994 and updates the Chinese Language Kit to version 1.1.1. This update is available from online services.

Japanese Language Kit Updater for System 7.5.1 includes four updated extensions and provides compatibility with System 7.5.x. This update is available online.

The Japanese Language Kit 1.2 was released provides compatibility with System 7.5.x, QuickDraw GX compatibility for Japanese fonts, keyboard labels with Kana characters, and a TrueType version of the Osaka font. The entire kit is available from AsiaSoft, Inc. If you need to update from a previous version of the Japanese Language Kit, contact the Apple Order Center.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

If you already own Japanese Language Kit 1.0 or 1.1, you can purchase the Japanese Language Kit 1.2 updater for $39 plus tax and shipping and handling fees by calling the Apple Order Center. Both products are also available in other countries. For information on availability, contact the Apple office in your country.

Files found on the Chinese Language Kit Updater disk:
==========

Chinese Updater	1.0
Installer	4.0.3
Read Me	
Support Files	
- InputBackSupport	7.5
- Language Kit Extension	7.5
- SimpleText	1.1.1
- Simplified Chinese	CH1-7.1.1
- Simplified Chinese Input Method	CH1-1.0.3
- Traditional Chinese	TA1-7.1.1
- WorldScript™ II	7.5
- WorldScript™ Power Adapter	7.5.1

From the Read Me:
==========

About the Chinese Language Kit Updater Disk

Installation

If you have installed System 7.5 and the Chinese Language Kit on your computer, you need to use the Updater program on this disk. Do not use the Updater if you are not running System 7.5.

IMPORTANT

Use the Updater program after you have installed the Chinese Language Kit software. If you have installed only one version of Chinese (Simplified or Traditional) and later decide to install the other version, you must use the Updater program again after installing the other version.

System Requirements

To install the Chinese Language Kit and the software on this Updater disk, you need the following:

- Macintosh system software version 7.5.

- A hard disk with at least 22 megabytes (MB) of disk space available if you want to install both Simplified and Traditional Chinese and their TrueType fonts (You need only 8 MB if you are installing only Simplified Chinese and its TrueType fonts, or 15 MB if you are installing only Traditional Chinese and its TrueType fonts).

- At least 16 MB of random-access memory (RAM) if you are using QuickDraw GX and/or PowerTalk along with the Chinese Language Kit; 8 MB of RAM if you are not using QuickDraw GX or PowerTalk.

Where to Find the Update

These articles can help you locate the Chinese Language Kit Updater mentioned

here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates.

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

From the JLK Read Me:
==========

The Japanese Language Kit is a combination of system and language resources that enables you to create, display, and edit documents in Japanese on the Macintosh and other computers using the Mac OS.

The floppy disk set and the CD-ROM both contain the software needed to install the Japanese Language Kit. The CD-ROM includes demo applications you can use with your Japanese Language Kit. (The samples are not full-scale programs, but they give you an overview of each product's features and functionality.) Also, look at the CD-ROM for updates to software you may already own.

Enhancements in this version of the Japanese Language Kit include System 7.5 and QuickDraw GX compatibility, a TrueType version of the Osaka font, an updated input method, and system resources to allow WorldScript to run native on Power Macintosh computers.

Current Japanese Language Kit version 1.0 and 1.1 Users
During installation, the Installer safeguards your system folder against data loss by creating temporary files. These temporary files and your Japanese Language Kit may require up to 41 MB of hard drive space for correct installation. After installation the Japanese Language Kit will occupy less than 30 MB. (Size will vary depending on which fonts you choose to install.)

If you do not have sufficient space for installation, you can make more space available by doing the following:
1. Remove unnecessary files or applications.
2. Custom remove the current language kit.

To custom remove the current language kit:
1. Insert Disk 1 of Japanese Language Kit v 1.1 or 1.0 in the floppy disk drive.
2. Double-click on the Installer icon and immediately hold down the Option key. (Hold down the Option key until you see the Remove button in the right hand corner of the dialog box.)
3. Shift select all items displayed, then press the Remove button. (NOTE: If the button says Install, press the Option key again change it back to Remove.)

Installation
Refer to the Macintosh Japanese Language Kit Installation and User's Guide for installation and set up information.

If you have a Performa or PowerBook and receive a dialog box during installation that refers you to this READ ME, you must remove the "Launcher Control Panel" before installation.

To remove the Launcher, do the following:
1. Open the System Folder.
2. Open the Control Panels folder.
3. Select the Launcher and drag it to another folder.
4. Install the Japanese Language Kit.
5. Place the Launcher back into the Control Panels folder (inside the System Folder).

Prior to installing the Japanese Language Kit on the Arabic or Hebrew versions of the Mac OS, you may want to choose the left-to-right setting in the Text Control Panel for proper justification of Roman text during installation.

Printing
If you experience printing problems with the LaserWriter 8 printer driver, use the LaserWriter v7.2 printer driver.

To select the LaserWriter v. 7.2 printer driver do the following:
1. Open the Apple Menu and select the Chooser.
2. Click the LaserWriter icon.

Note: LaserWriter v7.2 is the version of LaserWriter that comes with System 7.5.

Helpful Hints
The Macintosh Japanese Input Method Guide (chapter 5) will show you how to create your own user dictionary to save frequently used Kanji characters and names.

To activate the Japanese input method open a Japanese Language Kit compatible application or a Japanese application.

Compatible Applications
The Japanese Language Kit includes a basic text processing application called SimpleText Japanese. Previous versions of the Japanese Language Kit included TeachText Japanese. All TeachText Japanese documents can be edited with SimpleText Japanese.

The Japanese Language Kit can be used with a variety of Japanese-localized applications. Most of these applications are available for purchase through specialized distributors and dealers outside of Japan. They include:
Act! for Macintosh J
Canvas J
ClarisImpact J
ClarisWorks J
Deltagraph Pro J
Director J
EGWord J
Fetch J

FileMaker J
FileMaker Pro J
FreeHand J
GreatWorks J
HyperCard J
Illustrator J
InControl J
Lotus 1-2-3 J
MacDraw Pro J
MacWord J
MacWrite II J
PageMaker J
Persuasion J
Photoshop J
Premiere J
QuarkXPress J
Shasta J
SoundEdit J
StatView J
SuperPaint J
TurboWriter J
UltraPaint J
WordPerfect J

The Japanese Language Kit can be used with many English or Roman character-based programs that employ the Apple WorldScript software technology. These programs include:
A.D.A.M Comprehensive
AllPage
AllScript
Ambassador English/Japanese
Logo Vista E to J
Logo Vista J to E
Nisus Writer
Shasta
TurboWriter
WinText
WordPerfect
WorldWrite

Note: The above lists are not intended to be comprehensive. Also, many English or Roman character-based applications that do not employ WorldScript software technology may provide limited functionality and allow input of Japanese characters, but may cause loss of data over time. Please check with the application vendor for more information about WorldScript support in their products.

Apple makes no warranties or representations regarding the quality or compatibility of third party products. Warranties, if any, relating to such third party products are between the software vendors and their customers.

The Tech Info Library article titled "Locating Vendor Information" can help you

search for Apple Order Center's phone number.

Article Change History:
10 Dec 1996 - Updated information.
03 Jun 1996 - Updated for technical accuracy.
29 May 1996 - Added information about JLK Updater for 7.5.1 and JLK 1.2

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Tech Info Library Article Number:16882

Tech Info Library

Microsoft Works 4.0: Compatibility Issue w/MacLink Plus (12/94)

Revised: 12/13/94
Security: Everyone

Microsoft Works 4.0: Compatibility Issue w/MacLink Plus (12/94)

==========

Article Created: 13 December 1994

TOPIC ----------

I have created a new document using the new 4.0 version of Microsoft Works. When reopening the document another time, I get an application error, and a message such as "This document was created with another version of Works and will have to be translated ".

What is causing this?

DISCUSSION ----------

This is caused by an incompatibility with Works 4.0 and the MacLink Plus translator package. Microsoft tech support confirms that they are aware of the problem.

The short term solution is to turn off MacLink Plus with the extensions manager or to drag it out of the Extensions folder of the System folder and restart.

The final solution will be a reversion of Microsoft Works, which, according to Microsoft, will be released in the near future.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16883

Tech Info Library

LaserWriter 16/600 PS: BootP Requires Same Subnet (12/94)

Revised: 12/13/94
Security: Everyone

LaserWriter 16/600 PS: BootP Requires Same Subnet (12/94)

==========

Article Created: 13 December 1994

DISCUSSION ----------

The LaserWriter 16/600 manual states that you must use the bootp software from a computer on the same subnet as the printer. I am using a Wellfleet's router that has the ability to interpret bootp communications, so does this negate the manual's statement or is the same subnet a hard and fast requirement?

DISCUSSION ----------

You must follow the manual, and use a computer on the same subnet as the printer. This must be done because the Wellfleet router listens on port 67 for BootP requests, and the Laserwriter 16/600 PS printer sends out a BootP request using port 68. This is a broadcast message, so the printer sends out a broadcast message to address 255.255.255.255, this is also called a limited broadcast address, any datagram which is destined for the limited broadcast address is NEVER forwarded by a router under any circumstance. It only occurs on a local physical cable.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16886

Tech Info Library

Quadra 840AV: Icon Relocation Fixed In Display Enabler (10/95)

Revised: 10/12/95
Security: Everyone

Quadra 840AV: Icon Relocation Fixed In Display Enabler (10/95)

==========

Article Created: 13 December 1994
Article Reviewed/Updated: 12 October 1995

TOPIC ----------

All desktop icons on a Quadra 840AV or 660AV shift to the right side of the screen at resolutions higher than 640x480. This happens with both Display Enabler 1.0 or 1.1 and either Multiple Scan 17 or 20 Displays.

Leaving a Finder window open before restarting or shutting down, will usually rearrange the icons in that window, instead of on the desktop. Is there a way to correct this problem?

DISCUSSION ----------

Installing Display Software 1.2 corrects this problem.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
12 Oct 1995 - Corrected minor spelling error.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16887

Tech Info Library

DOS Compatibility Card for Pwr Mac: No Windows NT Support (8/95)

Revised: 8/9/95
Security: Everyone

DOS Compatibility Card for Pwr Mac: No Windows NT Support (8/95)

==========

Article Created: 13 December 1994
Article Reviewed/Updated: 05 May 1995

TOPIC ----------

Is it possible to set up a Windows NT file system from the DOS Compatibility Card for the Power Macintosh?

DISCUSSION ----------

Any operating system that accesses hardware directly fails on the DOS Compatibility Card. Windows NT, Windows for Workgroups 3.11, OS/2, and OS/2 Warp fall into this category. OS/2, OS/2 Warp, and Windows NT will not run on the DOS Compatibility Card.

However Windows for Workgroups 3.11 will run in a limited fashion on the DOS Compatibility Card. You can use any function of this application that does not require direct hardware access (The Tech Info Library Article "DOS Compatibility Card: Using Windows for Workgroups 3.11" Provides installation instructions).

Article Change History:
09 Aug 1995 - Updated information for accuracy.
25 May 1995 - Revised 3.11 information.
26 Jan 1995 - Added Windows for Workgroups and OS/2.

Support Information Services

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Tech Info Library Article Number:16888

Tech Info Library

Power Macintosh: Enable Virtual Mem for Best RAM Usage (2/95)

Revised: 2/27/95
Security: Everyone

Power Macintosh: Enable Virtual Mem for Best RAM Usage (2/95)

==========

Article Created: 13 December 1994
Article Reviewed/Updated: 22 December 1994

TOPIC ----------

When Excel is launched from a local hard drive, it increases the System Memory by about 4.5 MB. In contrast, the native PhotoShop increases the System Memory by 100K, and the native ClarisDraw doesn't increase it at all! Why is this happening?

DISCUSSION ----------

This question has been around before and we saw a response from Microsoft to it. The reason the Power Macintosh behaves so much differently from the 680x0-based computers is because of the way memory and applications are handled by the Power Macintosh.

680x0-based applications stored the executable code in the resource fork of the file as resources of type CODE. The application can load and unload CODE resources as needed. This allowed applications to limit the memory needed since unused code could be removed from RAM. For example, the code for printing a document only needs to be in RAM when printing. When the print job is finished, the code can be removed from RAM.

Power Macintosh applications have the code stored in the data fork as one big code fragment. This eliminates the ability to remove unused code since the application only has one fragment and the whole fragment is loaded into memory. The work around to this problem is to turn on virtual memory. Virtual memory on the Power Macintosh uses what is called file-mapped virtual memory. What this does is allow the code fragment to be divided up into 4k blocks and only code that is executing is in RAM. If the program branches to code that is not in RAM, it is read in from the disk. This is the reason Apple recommends enabling virtual memory on Power Macintosh computers. This is also the reason that Excel takes 6500K less RAM when virtual memory is turned on. Excel's code fragment is 6500K in size.

The growth of the system heap is also due to the new architecture of the Power Macintosh. Excel and other applications install what are known as shared libraries. These are code fragments that can be executed by any application. These code fragments are stored in the Extensions folder. Since these extensions can be shared by different applications, their code fragments are loaded into the system heap. This is done because one application can not access another application's memory and the system heap is open to everyone. Excel installs seven shared libraries for a typical install.

We believe the reason Microsoft installs so many shared libraries is to decrease application size. Code common to more than one application can be loaded into memory only once in the system heap instead of once for every application that needs to access it. For example, let's say the code is common to PowerPoint, Excel and Word. If the user has all three applications open, there is only one copy of the shared library code in the system heap. If the code was not in a shared library, all the applications would need their own copy of the code and therefore, the code would be loaded three times, once into each applications partition. This would involve increasing the size of each applications partition to make room for the extra code and the end result would be a big waste of memory.

Microsoft has made an effort to minimize the RAM they need. Microsoft applications are just large.

In conclusion, virtual memory should be enabled on all Power Macintosh computers. All large Power Macintosh applications will behave this way. The native version of PhotoShop requires a 5 MB smaller partition when virtual memory is turned on.

Article Change History:
27 Feb 1995 - Revised title to more accurately reflect contents of article.
22 Dec 1994 - Clarification for accuracy.

Support Information Services

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Tech Info Library Article Number:16889

Tech Info Library

PowerBook 190, 500, & 5300: Formatting ATA PC Cards (10/95)

Revised: 10/24/95
Security: Everyone

PowerBook 190, 500, & 5300: Formatting ATA PC Cards (10/95)

==========

Article Created: 13 December 1994
Article Reviewed/Updated: 24 October 1995

TOPIC ----------

How do I format an ATA PC card for use with a PowerBook 190, 500, or 5300 series computer? Do I just pop the card in and use the system 'Erase Disk' command, or do I use the IDE HD Format Utility?

DISCUSSION ----------

Macintosh-Formatted Card
==========

To format a ATA (rotating media) PC card (also called PCMCIA card), simply insert the card directly into the computer (PowerBook 190 or 5300 series) or into the PCMCIA expansion module (PowerBook 500 series only) and use the 'Erase Disk' command under the Special menu. An ATA PC card can be reformatted with PC Exchange active if it has already been formatted as a Macintosh volume.

DOS/Windows-Formatted Card
==========

Most storage PCMCIA cards (PC Cards) are pre-formatted as DOS volumes. Macintosh PowerBook 190, 500, and 5300 series computers have the ability to mount these volumes because of the Macintosh PC Exchange software that ships installed on every PowerBook.

For correct results, it is necessary to use PC Exchange version 2.0.2 or greater (included with System 7.5).

Installing PC Exchange

To install a newer version of Macintosh PC Exchange

Step 1
Drag the PC Exchange icon into the Control Panels folder of your System Folder and click “OK” to overwrite the older version of PC Exchange.

Step 2
Restart your Macintosh.

Reformatting a DOS PC Card

If the PC card has been formatted for DOS (as most are when purchased) Macintosh PC Exchange needs to be turned off before the card can be reformatted.

While you can use Macintosh PC Exchange to read and write data from/to DOS volumes and erase data from PC cards, it cannot be used to alter the format of a PC Card (from DOS to Macintosh or vice versa).

Macintosh PC Exchange will not allow you to reformat a Macintosh-formatted PC card as a DOS-format PC card. To do so you should use a DOS/Windows computer.

If you wish to change a DOS-formatted card to a Macintosh-formatted card, follow these steps:

Step 1
Eject the PC Card.

Step 2
Disable the PC Exchange control panel by opening the PC Exchange control panel and select the Off option.

Step 3
Insert the PC card. You will be prompted to reformat the PC card as a Macintosh volume. Click Initialize.

Step 4
Once the PC card is reformatted, you can turn PC Exchange back on from the control panel by opening the PC Exchange control panel and select the On option.

IDE HD Format Utility
==========

The IDE HD Format Utility cannot be used to format PC cards. If you launch the IDE HD Format Utility on a PowerBook 500 Series computer, a dialog appears stating that this application cannot be used with this PowerBook. You will not get this dialog on either a PowerBook 190 or 5300 series computer, but you still cannot use this utility to reformat a PC card.

A Note On Ministor PC Cards
==========
Some PC Cards from Ministor contain factory-installed compression software that is specific to DOS/Windows computers. This compression software consumes usable

disk space and should be deleted for use with PowerBook computers. Select the “Erase Disk…” command from the Finder’s Special menu in order to delete this software.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor, Ministor, for additional information.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16891

Tech Info Library

AppleDesign Speaker II: No Built-In Noise Gate Circuit (8/95)

Revised: 8/18/95
Security: Everyone

AppleDesign Speaker II: No Built-In Noise Gate Circuit (8/95)

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Article Created:14 December 1994
Article Reviewed/Updated: 17 August 1995

TOPIC ----------

Could you please tell me if the AppleDesign Powered Speakers II are identical to the original AppleDesign Powered Speakers in relation to the built in noise gate?

The article in the Tech Info Library titled AppleDesign Powered Speakers: Sound Cuts Out (4/94) talks about the effect this noise gate has on sound from an audio CD. The original speakers had a 3.5 mm mini-stereo jack as well as dual RCA stereo jacks whereas the AppleDesign Powered Speakers II have two 3.5 mm mini-stereo phono jacks. One jack is identified for use with a computer and one for CD. You could bypass the noise gate in the original speakers by using the dual RCA jacks. What about the AppleDesign Powered Speaker IIs?

Is there any difference in the specifications for the 3.5 mm mini-stereo jacks on the AppleDesign Powered Speaker IIs? Do the AppleDesign Powered Speaker IIs have a noise gate?

DISCUSSION ----------

The AppleDesign Powered Speaker IIs do not have the noise gate circuitry that was in the original AppleDesign Powered Speakers. The AppleDesign Powered Speaker II does not have the problem of sound cutting out during soft passages.

You do not have to be concerned as to which jack you use on the AppleDesign Powered Speaker II.

Article Change History:
17 Aug 1995 - Made minor grammatical corrections.
07 Aug 1995 - Changed "1/8-inch stereo" to "3.5mm mini-stereo."

Support Information Services

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Tech Info Library Article Number:16895

Maximum Hard Drive Partitions (2/95)

Revised: 2/16/95
Security: Everyone

Maximum Hard Drive Partitions (2/95)

==========

Article Created: 14 December 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

How many partitions will System 7.1 recognize? I have 21 out a total of 29 partitions visible on the desktop on my server. With SCSI Probe I show all 29, and it allows access to the partitions through the network.

What are the maximum number of hard drive partitions (volumes) supported under System 7.1 or 7.5?

DISCUSSION ----------

The maximum number of partitions that can be mounted varies and is controlled by the number of file control blocks (FCB) that are allocated by the system. When a volume is mounted, there are at least two files open (Desktop DB and Desktop DF). If the volume is being shared then there are also other files that are open. In addition, on the startup volume, the system and finder are open as well as some extensions. All of these use file control blocks.

The default number of FCBs under system 7 at boot time, is around 40. The problem is during boot time the number of FCBs can not change, but once the system takes over the number of FCBs can change up to a maximum of 348. The system software, beginning with System 7, dynamically allocates FCBs based on available memory when the file control buffer gets filled. It is this behavior that allows the other volumes to be mounted after the system is up and running using a SCSI mount utility. There are third party utilities, such as the FWB hard drive utilities, that allow a user to change the default number of FCBs allocated at boot time by editing the boot block on the startup volume. There is also a control panel that comes with Silverlining called SilverInit that will mount volumes that the system missed.

In the situation you reported, what might be happening is during the boot process, when the system mounts partitions/volumes, it runs out of file control blocks after mounting the first 21 volumes. However, after the system is up, the

user can mount the additional 8 volumes with a SCSI utility, since the extra file control blocks can now be allocated. If you need all 29 volumes at startup, then you might want to consider a third party utility, such as the FWB utilities, to increase the default allocation of file control blocks. However, if all the volumes do not need to be present at startup, then you could continue to use a utility, such as SCSI Probe, to mount the remaining volumes after the system boots.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16896

Tech Info Library

A/UX: Panic SBdrop Crashes Computer and Fix (12/94)

Revised: 12/14/94
Security: Everyone

A/UX: Panic SBdrop Crashes Computer and Fix (12/94)

==========

Article Created: 14 December 1994

TOPIC ----------

The A/UX 3.0 kernel on my Macintosh IIci, used to telnet into, hangs every two or three days. The computer writes this error to the console, "Panic SBdrop." The only way out of the hang is to manually restart the machine.

I upgraded to 3.0.1 and then to 3.0.2 using the patch I downloaded from the Apple FTP server. The system has been running now for over a month with full time usage, and I have not seen the kernel freeze since. I read once that there was a version of the A/UX kernel that did not freeze up when it received panics, and I wonder if that patch made it into A/UX 3.0.1? The only reason I ask is because I have not seen the console on the computer since I installed the new software, and I could still be getting errors but I haven't seen the computer lock up. I expect that the system upgrade solved the problem.

DISCUSSION ----------

We think your concern would be taken care of by the AWS 95 Tune-UP 2.0, however, you must first upgrade to A/UX 3.1. If you have not installed Tune-UP 2.0, it can be downloaded for our ftp sight. Also you can get the Console under the Windows menu. These articles can help you locate the software update mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Here are the fixes to the A/UX Kernel:

- The A/UX kernel no longer panics if more than four Ethernet interfaces are installed.

- The console emulator no longer hangs if you stop <CTRL-S> the output.
- A kernel bus error, which could occur under heavy file I/O, has been corrected.
- Certain I/O operations no longer cause the kernel fault handler to panic the system.
- The FIONREAD ioctl no longer causes the system to hang when issued from a background process.
- A problem which caused the kernel's asynchronous I/O data structures to become corrupted has been fixed.
- NFS now maps client user IDs greater than 65533 to the anonymous user, "nobody".

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16897

Tech Info Library

QuickTake 100: Battery Charger Not 220V Compatible (12/94)

Revised: 12/14/94
Security: Everyone

QuickTake 100: Battery Charger Not 220V Compatible (12/94)

==========

Article Created: 14 December 1994

TOPIC -----

Is the QuickTake 100 battery charger supplied in the US compatible with 220/240V AC?

DISCUSSION -----

The battery charger supplied with the U.S. version of the QuickTake 100 camera is designed for 110V/60Hz use only. Customers who wish to use the QuickTake 100 camera in foreign countries should either purchase the correct battery charger from an authorized Apple service provider in the country that they are visiting, or purchase an over-the-counter universal ni-cad battery charger from a local electronics store. The QuickTake 100 uses standard AA ni-cad batteries, so there are many different chargers worldwide that customers can use.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16898

Tech Info Library

LaserWriter: Why There is No Full Bleed Printing (12/94)

Revised: 12/14/94
Security: Everyone

LaserWriter: Why There is No Full Bleed Printing (12/94)

==========

Article Created: 14 December 1994

TOPIC ----------

Why don't most laser printers support full bleed (edge-to-edge) printing?

DISCUSSION ----------

Low-cost laser printers were made possible with the development of an imaging system that is safe, reliable, and allows user's to operate the printer without being exposed to hazardous chemicals and messy toner particles. Canon's all-in-one EP toner cartridge system was first introduced at Apple with the original LaserWriter. Since then, research has continued to focus on improving the image quality.

In order to control the imaging process and to insure optimal print quality Canon print engines have a predetermined 'safe area' for each supported paper size where printing cannot take place. The 'safe area' is hard coded into the print engine controller logic and is usually set by the cassette size sensors. This safe area is a little less than 1/4 inch and is designed to prevent toner from being placed on anything other than paper during the printing process, even if the paper skews or shifts slightly in the paper path. A small amount of toner that is transferred from the photosensitive drum to a roller or other component instead of the paper significantly affects print quality and increases maintenance costs. In order to eliminate the 'safe area' the paper registration characteristics of each print engine would have to be exact, thereby significantly raising the cost and complexity of the printer. The majority of customers do not require full bleed printing support and are unwilling to pay the extra costs required for it.

Full bleed printing requires that the printing device be capable of printing edge to edge on the printing material being used. Some printer vendors have created workarounds by using print engines that support oversize printing materials. The 'safe area' still exists, but it is located in an area which will be trimmed off when the printing material is trimmed to a standard size.

..TIL16899-LaserWriter-Why_There_is_No_Full_Bleed_Printing_12-94_(TA33047).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16899

Tech Info Library

Power Macintosh: Loses Color & Video Board Info (9/95)

Revised: 9/21/95
Security: Everyone

Power Macintosh: Loses Color & Video Board Info (9/95)

==========

Article Created: 15 December 1994
Article Reviewed/Updated: 21 September 1995

TOPIC ----------

I have a Power Macintosh 8100/80 running System 7.5 and a Multiple Scan 17 Display. After playing a game, the monitor went to black and white.

When I went to the Monitors control panel, the Color and Grays options were there, but not the number of colors. When I clicked the Options button, a dialog appeared with the message "No Board Info Available".

How can I get my system to recognize the VRAM card I have installed again?

DISCUSSION ----------

This is problem with the Slot Manager. However it was only discovered when Power Macintosh computers were running System 7.5 and virtual memory. It has also been found to occur with RAM Doubler installed. This problem is corrected in System Update 7.5.

Until you get the update, three work arounds for this problem.

1) Turn off virtual memory
2) Open and close the Monitors control panel.
   a) Go to the Monitors control panel.
   b) Click Options. A dialog appears with the message "No Board Info".
   c) Click "OK".
   d) Close the control panel.
   e) SHUT DOWN (restarting doesn't correct this).
      When the computer restarts, everything comes up in black and White so you have go back into the Monitors control panel and reset the number of colors.
3) Do a forced restart (command-control-power).

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

Article Change History:
21 Sep 1995 - Corrected minor typo.
08 May 1995 - Added keywords kppc and sys75.
15 Mar 1995 - Added System Update 7.5 information.

Support Information Services

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Tech Info Library Article Number:16902

Tech Info Library

Earth Explorer: Technical Specifications (2/95)

Revised: 2/15/95
Security: Everyone

Earth Explorer: Technical Specifications (2/95)

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Article Created: 16 December 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

This article provides the technical specifications on the Earth Explorer compact disc for Macintosh and Windows.

DISCUSSION ----------

Technical Specifications:
==========

Major topics

Climate: the sun, water, wind, oceans, and more
Biosphere: ecosystems, plant and animal communities, and more
Human impact: land use, energy consumption, attitudes toward nature, and more
Future: environmental law, technologies, careers, and more

Articles

- 443 articles, all verified for accuracy by the AAAS
- Hierarchical arrangement for easy access to general or detailed information
- Each article includes photos, graphics, quotes, thought-provoking questions, and/or video clips
- Specified words are linked to a glossary

Data sets

- 21 sets of environmental data on such topics as rainfall, population, whaling, and pollution
- Up to five graphic displays for each data set, including maps, color graphs, timelines, and interactive graphics

Hot Topics

- Lively discussions of 21 environmental issues such as endangered species, urban transportation, biodiversity, and nuclear power
- Entertaining "first person" format in which fictional characters describe their dilemmas
- 16 different arguments on each issue

Explore

- 12 interactive animations on such topics as ocean currents, famous naturalists, the food chain, and energy usage
- Ideal introduction to environmental concepts for younger children

System requirements—Macintosh

==========

- Apple Macintosh or PowerBook computer with 68030 or higher processor, or Apple Power Macintosh computer
- 5 MB of RAM
- Macintosh system software 7.0.1 or later
- Hard disk
- 12-inch or larger color monitor (at least 256 colors)
- CD-ROM drive (double-speed drive recommended)

System requirements—Windows

==========

- IBM-compatible computer with 25-MHz 80486 or higher processor
- 8 MB of RAM
- Windows 3.0 with Multimedia Extensions, or Windows 3.1
- Hard disk
- 12-inch or larger color monitor
- Video card capable of displaying at least 256 colors
- CD-ROM drive (double-speed drive recommended)

Ordering Information

==========

Earth Explorer for Macintosh, retail version

In the U.S., Order No. M3781LL/A
- One CD-ROM disc containing Earth Explorer, HyperCard, and QuickTime software
- User's manual

Earth Explorer for Macintosh, school version

In the U.S., Order No. M3782LL/A
- One CD-ROM disc
- Teacher's guide with lesson plans
- User's manual

Earth Explorer for Windows, retail version

In the U.S., Order No. M3783LL/A
- One CD-ROM disc containing Earth Explorer, HyperCard, and QuickTime for Windows software

- User's manual

Article Change History:
15 Feb 1995 - Reclassifed and changed format.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16904

Earth Explorer: Description (2/95)

Revised: 2/15/95
Security: Everyone

Earth Explorer: Description (2/95)

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Article Created: 16 December 1994
Article Reviewed/Updated: 15 February 1995

TOPIC ----------

This article describes the Earth Explorer compact disc.

DISCUSSION ----------

Features:
=========

Comprehensive

- Includes more than 400 in-depth articles
- Contains nearly 1,000 color photographs
- Provides 21 sets of environmental data
- Features more than 90 minutes of audio-visual material

Interactive

- Lets children decide how to navigate through the information and exercises
- Encourages users to explore different facets of each topic
- Offers a variety of environmental games and simulations

Educational

- Uses data verified by the American Association for the Advancement of Science (AAAS)
- Provides both high-level and detailed articles
- Helps develop critical-thinking skills

Fun to Use

- Features engaging games and exercises that make environmental topics come alive

- Presents data in colorful, easy to understand charts, graphs, animations, and videos
- Lets your whole family participate together

Earth Explorer gives children the most comprehensive and up-to-date information about our planet in a fun, easy-to-use format.

Continuing the Apple tradition of making education enjoyable, Earth Explorer provides a fascinating interactive tour of our home planet. With this program, children will learn about the natural and human forces affecting Earth through a variety of informational and explorative activities: lively articles illustrated with graphics and movies, simulations based on actual environmental data, animations that explain basic environmental concepts, and games that will both challenge and amuse them.

One of Earth Explorer's most valuable features is its interactive design. Children can move from topic to topic wherever their interest leads them. They can change the assumptions in environmental data and view the results, such as how a different life expectancy would affect a country's population growth. They can compare data of their choice, such as energy usage in various countries. With Earth Explorer, your children learn in the way they most enjoy.

Earth Explorer was developed in conjunction with the American Association for the Advancement of Science (AAAS) and with support by the National Science Foundation (NSF). The program offers both objective data and a wide variety of viewpoints on controversial issues, so it helps children develop critical-thinking skills as they learn about the world around them.

Although Earth Explorer was designed for children nine years of age and older, parents and teachers will also find its encyclopedic information invaluable in learning about our environment.

Earth Explorer: It's the adventure guide to our beautiful, complex planet that your children will come back to again and again.

Product specifications are subject to change. Check with your Apple reseller for the most current information about product specifications and configurations.

Article Change History:
15 Feb 1995 - Reclassified and Changed format.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16905

Apple LAN Utility: Can Find Burned-In Card Address (9/95)

Revised: 9/1/95
Security: Everyone

Apple LAN Utility: Can Find Burned-In Card Address (9/95)

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Article Created: 16 December 1994
Article Reviewed/Updated: 01 September 1995

TOPIC ----------

How do I find the burned in Ethernet or Token Ring address on my Macintosh computer, and does the computer need to connected to the network to find it?

DISCUSSION ----------

You can use the Apple LAN Utility to report the burned in address without being connected to a network. These articles can help you locate the software mentioned here:

- "Where To Find Apple Software Updates"
  Lists online services for "free" Apple software updates.

- "Obtaining Apple Product Support in the USA"
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Here is the Read Me file

Apple LAN Utility version 1.0b3

The Apple LAN Utility is provided to perform the following tasks for Apple LAN interfaces:

1) Obtain the burned-in address without connecting to a network.
2) Override the burned-in address with a locally-administered address (this is mostly done in SNA and DECNet environments).
3) Set the speed for token ring interfaces that are software selectable.

The utility is intended to handle all Apple ethernet and token ring interfaces, whether built-in or on cards. When run, the utility opens one window per interface present in the machine, describing what its configuration will be the

next time that interface is activated. This utility makes no attempt to alter the current operation of an active interface.

To make any changes to an interface, it is necessary to choose "Allow Changes" from the Edit menu. This was provided to minimize the chance of accidentally overriding a burned-in address.

To remove a locally-administered address, either clear the entry or set it to 12 zeroes.

The utility can save a tab-delimited text file describing the machine's configuration. The file has the following format:

Line 1: The Macintosh model, machine name and user name
Line 2: Title strings
Lines 3 - n: One line per interface with bus/slot, interface name, burned-in address, local address and speed

The addresses are given in hexadecimal and are quoted to allow the file to be imported into a spreadsheet if desired.

Although the text file is rather ugly when viewed in TeachText/SimpleText, it can be made to look better when viewed in a word processor or spreadsheet program by adjusting the tabs or cell sizes appropriately.

This utility is provided free of charge on an "as is" basis. This is not an official product of Apple Computer!

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Release Notes

Version 1.0b3 includes the following changes: Support was added for the Power Macintosh 9500.

Article Change History:
01 Sep 1995 - Revised article for v.1.0b3 of the Apple LAN Utility.

Support Information Services

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Tech Info Library Article Number:16906

Tech Info Library

System 7.5: Stickies Type 1 Caused By Collapsed Window (3/95)

Revised: 5/25/95
Security: Everyone

System 7.5: Stickies Type 1 Caused By Collapsed Window (3/95)

==========

Article Created: 16 December 1994
Article Reviewed/Updated: 21 March 1995

TOPIC ----------

There is an intermittent problem that can happen with Stickies v1.0 that ships with System 7.5, which causes intermittent crashes when Stickies is launched. If one of the note windows is collapsed using WindowShade or the "Zoom-box collapses window" option, a Type 1 error can appear when Stickies is launched.

DISCUSSION ----------

Engineering has reproduced and identified the problem. Unfortunately, the error is purely random and some things may make it occur more often. Since this problem is random, it is impossible to specify which setup causes the problem to occur. It is a random crash that might occur on some setups but not on others.

The following solutions are available:

• Install System 7.5 Update 1.0 to replace the older version of Stickies with version 1.0.1.

• Leave Stickies windows uncollapsed until System 7.5 Update 1.0 can be installed.

Article Change History:
21 Mar 1995 - Added more detail regarding problem and solution.
22 Feb 1995 - Correctly stated what the problem is.
13 Jan 1995 - Added way to correct problem if you saved collapsed notes.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16907

Tech Info Library

PC Exchange 2.0.2: File Size Issue (12/94)

Revised: 12/16/94
Security: Everyone

PC Exchange 2.0.2: File Size Issue (12/94)

==========

Article Created: 16 December 1994

TOPIC -----

With PC Exchange 2.0.2 on my system and others, I see a variation in file size of PC files when I do Get Info from the File menu. For example it will say, "99k on disk (340,272 bytes used)". I used Extensions Manager to turn off all non-Apple extensions but PC Exchange, but I didn't see any difference. I tried DOS files from different PC's and on different disks with the same results. If I revert to an older version of PC Exchange this does not happen.

The numbers are the reverse of what I expected. I expected the size on disk to be larger than the actual file size, because a file must use complete allocation blocks even if it doesn't fill them. What's wrong?

DISCUSSION -----

We are aware of the problem, and it is a purely cosmetic issue. Indications suggest a possible Finder problem, as opposed to Macintosh PC Exchange. It is felt that this problem affects a very small percentage of users who read that Get Info window, and there is no chance of data loss.

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16908

Tech Info Library

PowerBook 280c: Remote Launch of Persuasion (12/94)

Revised: 12/16/94
Security: Everyone

PowerBook 280c: Remote Launch of Persuasion (12/94)

==========

Article Created: 16 December 1994

TOPIC ----------

We have a problem launching Persuasion, which is installed on an AppleShare server, from a PowerBook 280c. It is possible to launch Persuasion (2.12 or 3) from the copy which is installed on the PowerBook 280c itself, but it is not possible to launch the one on the server.

To eliminate the possibility of network problems, other PowerBook and desktop systems could launch the program.

The version of the AppleShare Server is AppleShare 3.0. The version of System Software running on the Duo 280c is System 7.1.1. The Duo 280c hangs whenever Persuasion is launched. The problem is only with Persuasion.

DISCUSSION ----------

We are able to reproduce this problem, but ONLY when the Duo 280c is running System Software version 7.1.1, AND the AppleShare Server is at version 3.0.

If the Duo is running System Software 7.5, OR the AppleShare Server is version 4.0 (or 4.0.1) there is no problem with remote launching of Persuasion by the Duo 280c. We tested that the Duo could successfully launch both Persuasion, version 2.12 and Persuasion, version 3.0.

Since System 7.5 is the current version of system software, and since AppleShare 4.0.1 is the current version of AppleShare Server software, it is unlikely that engineering will have resources available to research this problem.

We suggest that you upgrade the Duo 280c to version 7.5 of the system software, or consider upgrading the AppleShare Server to version 4.0.x or later?

Support Information Services

..TIL16909-PowerBook_280c-Remote_Launch_of_Persuasion_12-94_(TA33058).pdf

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16909

Tech Info Library

Apple HD SC Setup: Updating SCSI Disk Drivers (1/95)

Revised: 1/17/95
Security: Everyone

Apple HD SC Setup: Updating SCSI Disk Drivers (1/95)

==========

Article Created: 16 December 1994
Article Reviewed/Updated: 17 January 1995

TOPIC -----

This article provides information for updating SCSI disk drivers in the following areas:

- When updating from System 6.0.x to System 7.x.
- HD SC Setup returns the message, "Unable to find a suitable SCSI drive".
- HD SC Setup "Update" button was dimmed (disabled).

DISCUSSION -----

When updating from System 6.0.x to System 7.x
==========

For drives initialized with Apple HD SC Setup 1.0

If the hard drive was initialized with drivers installed by Apple HD SC Setup 1.0, you don't need to update the drive to work with System 7 or later. Virtual Memory does work with the drivers installed by Apple HD SC Setup 1.0. But the drivers installed by Apple HD SC Setup 1.0 are NO LONGER SUPPORTED by Apple, and if your computer is later than a Macintosh Plus, using the drivers installed by Apple HD SC Setup 7.x gives you faster hard drive access speed.

NOTE: Hard drives initialized with Apple HD SC Setup 1.0 cannot be updated; they must be re-initialized, meaning that all the data on them would have to be placed back on later, after you have reformatted them with HD SC Setup 7.x.

WARNING: You must back up your data before reformatting your hard drive because the formatting process will delete all data.

For drives initialized with Apple HD SC Setup 2.0 or later

If the hard drive was initialized with drivers installed by Apple HD SC Setup

2.0 or later, you will want to update the hard drive with Apple HD SC Setup 7.x because:

- Bugs in the previous versions are fixed with the new driver installed by Apple HD SC Setup 7.x.

- Virtual Memory requires the new driver installed by Apple HD SC Setup 7.x. Virtual Memory does not work with drivers installed by Apple HD SC Setup versions 2.0 and later (before System version 7.0).

Apple HD SC Setup 7.x is on the System 7.x "Disk Tools" floppy disk.

HD SC Setup returns the message, "Unable to find a suitable SCSI drive"

The Read Me file that comes with System Update 3.0 has a section titled "Installing System Update 3.0". Step 3 of the installation instructions section is called "Update your Apple Drivers".

These instructions state that System Update 3.0 contains a driver update for Apple hard disk drives. This update is for Apple hard disk drives only. HD SC Setup will not update the driver software on non-Apple drives.

If you are using a non-Apple hard disk drive, skip the part about updating the driver with HD SC Setup.

With regards to formatting, the hard disk drives sold by Apple in some Macintosh systems have different firmware than the drives sold by various third-party vendors -- though the mechanisms may be the same.

This firmware contains information that allows HD SC Setup to determine the type and size of drive it is looking at. If HD SC Setup does not understand the information in the firmware of a third-party drive, it will not access the drive in any way.

HD SC Setup "Update" button was dimmed (disabled)

The version of Apple HD SC Setup shipping with System 7.5 is 7.3.2. When Power Macintosh computers first shipped with System 7.1.2, they came with Apple HD SC Setup 7.3. System Update 2.0.1 included Apple HD SC Setup 7.2.2.

You will find that Apple HD SC Setup will not let you down-level the SCSI disk drivers. For example, HD SC Setup 7.2.x or earlier cannot be used to update a disk that was formatted or updated by HD SC Setup version 7.3.x.

The number used to determine the SCSI disk driver level is the second digit. So, any member of the 7.3.x family can update anything in the same family or lower versions. Once this update has been done, HD SC Setup versions 7.2.x and lower cannot update the SCSI disk drivers, and the update button will be dimmed or grayed out.

If you wish to use an earlier version of the SCSI disk drivers supplied with Apple HD SC Setup, you must reformat the drive.

The other case where the Apple HD SC Setup update button could be disabled, is when third-party format utilities are used to write a SCSI driver on the disk. Apple's HD SC Setup will not overwrite these, unless the drive is reformatted.

WARNING: You must back up your data before reformatting a hard drive because the formatting process will delete all data.

Support Information Services

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Tech Info Library Article Number:16911

SAM 4.0: Installer Problem and Workaround (12/94)

Revised: 12/19/94
Security: Everyone

SAM 4.0: Installer Problem and Workaround (12/94)

==========

Article Created: 19 December 1994

TOPIC ----------

I experienced a problem when installing SAM 4.0 on a Macintosh II. The first diskette would not eject so the install process stalled there.

Is there a workaround?

DISCUSSION ----------

Symantec Technical Support states that they are aware of some instances on older Macs where the Installer does not eject the Install 1 disk of SAM 4.0 (Symantec Antivirus for Macintosh). They informed me they have a new version of the Installer that prevents this problem from occurring.

For customers who already own SAM 4.0, there are two ways to bypass this problem:

Method #1
1. Quit the Installer.
2. Insert disk 2 of SAM.
3. Select Eject from the Special menu or press Command-E. A grayed image of disk 2 should remain on the Macintosh desktop.
4. Insert disk 1 of SAM and open the Installer. Install SAM as you normally would.

Symantec states that this has resolved the problem in nearly all instances. However, if it does not, customers can install it manually, as listed below.

Method #2 (Manual Install)
1. Print the Read Me document from disk 1.
2. The section entitled "Installed File Location" contains a list of SAM-related files and where they belong. Use this as a checklist for copying each file from the SAM Install Disks to their recommended location.

..TIL16912-SAM_4-0-Installer_Problem_and_Workaround_12-94_(TA33062).pdf

Support Information Services

Copyright 1994, Apple Computer, Inc.

Tech Info Library Article Number:16912

Tech Info Library

System 7.5: Monitor Extensions Described (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Monitor Extensions Described (2/95)

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Article Created: 19 December 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

I noticed in my system folder that there are a variety of files titled xxx Monitors Extension where xxx is the name of a Macintosh computer. What are these files for and do I need all of them?

DISCUSSION ----------

The various monitors extensions add options to the Monitors control panel. The options added vary from machine to machine and depend on several factors including the Macintosh model and the video hardware that is installed.

There are six different monitors extensions. They are:

IIci/IIsi Monitors Extension
LC Monitors Extension
PowerBook Monitors Extension
Quadra Monitors Extension
Quadra AV Monitors Extension
PowerPC Monitors Extension

All the extensions contain the video card information strings such as "Macintosh II built-in video". The extensions also contain the monitor information strings that show the resolution and scan rate for the attached monitor.

The PowerPC and Quadra AV Monitors extension also include the AV video display options.

The IIci/IIsi Monitors Extension also contains the options for setting the maximum number of colors that can be displayed since these machines used RAM for the video.

The PowerBook Monitors Extension also has a gamma setting that can be used on

the color PowerBook computers.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16913

Tech Info Library

Klaus Industrial Electronics (12/94)

Revised: 12/19/94
Security: Everyone

Klaus Industrial Electronics (12/94)

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Article Created: 19 December 1994

Klaus Industrial Electronics

2400 West Schneidman Drive
Quincy, Illinois 62301

Tel: (217) 223-7560
Fax: (217) 223-2820

Company Profile:
US Distributor for DW Electrochemicals, Ltd. , producer of Stabilant 22A contact enhancer.

For Canada, Europe, and other international locations, contact the manufacturer for local distributor information. For a complete list of U.S. distributors, contact the manufacturer.

Support Information Services

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Tech Info Library Article Number:16914

Tech Info Library

PowerBook: Slow Presentations with Video Mirroring (12/94)

Revised: 12/20/94
Security: Everyone

PowerBook: Slow Presentations with Video Mirroring (12/94)

==========

Article Created: 20 December 1994

TOPIC -----

I bought a PowerBook 520c for use when making PowerPoint based presentations. We use it to drive an "n-View" LCD display panel.

When a presentation is shown that makes use of any of the "fade and dissolve" type graphics that PowerPoint offers, the PowerBook slows down to an absolute crawl. It will take 5-10 seconds for a slide to change. If you take out these features, it is acceptable, but still is much, much slower than an equivalent desktop model.

Is there a reason for this slowdown?

DISCUSSION -----

We are aware of some performance issues regarding PowerBook computers, presentation software, and video mirroring. Video mirroring uses a toolbox routine called CopyBits, which moves information from one part of memory to another.

With complex transitions, the amount of information for CopyBits to process increases dramatically, potentially causing a performance decrease. Simpler transition effects will cause less of a burden on the system.

Customers will also see improved performance when using an external monitor as the primary display, rather than mirroring the PowerBook's display to an external monitor. This is independent of the software being used.

Optimum performance can be achieved by using some of the following suggestions in the creation of the presentations:

- keep color settings to the minimum bit depth actually needed
- reduce use of animation transition effects to a minimum
- minimize use of complicated graphics

- minimize number of individual graphics per slide
- turn off virtual memory during presentations
- disable extensions that are not required during the presentation

Support Information Services

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Tech Info Library Article Number:16915

Tech Info Library

AppleScript: Use ResEdit To Change Desktop Patterns (2/94)

Revised: 2/16/95
Security: Everyone

AppleScript: Use ResEdit To Change Desktop Patterns (2/94)

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Article Created: 20 December 1994
Article Reviewed/Updated: 16 February 1995

TOPIC -----

I am trying to use AppleScript to change the Desktop Patterns. When I try using the "Set Desktop Pattern to" command in the Desktop Patterns AppleScript dictionary I get a time out error.

DISCUSSION -----

Desktop Patterns as it shipped in System 7.5 does not support changing patterns while in the background.

To change the Desktop Patterns with AppleScript, you need to use ResEdit to modify the size resource and turn on the bit setting for "Can background". This enables Desktop Patterns to respond to AppleScript commands while it is in the background.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16916

Tech Info Library

PowerBook 150: Frequently Asked Questions (7/96)

Revised: 7/2/96
Security: Everyone

PowerBook 150: Frequently Asked Questions (7/96)

==========

Article Created: 21 December 1994
Article Reviewed/Updated: 02 July 1996

TOPIC ----------

This article contains frequently asked questions (FAQ) and answers about PowerBook 150 computers compiled by the PowerBook support team in the Apple Assistance Center.

DISCUSSION ----------

Question: What features are included in the PowerBook 150?

Answer: The PowerBook 150 features:
- Motorola 33-MHz 68030 microprocessor
- 9.5-inch (diagonal), backlit, passive-matrix, grey-scale display (four levels of grey)
- High-capacity internal IDE 120MB hard disk drive
- Slots for internal modem and additional RAM (up to 40 MB)
- Serial port for external devices and LocalTalk networking
- Built-in floppy drive
- External SCSI port for connecting up to six SCSI devices
- Integrated trackball and palm rests

Question: How much does my PowerBook 150 weigh?

Answer: The PowerBook 150 weighs 5.5 pounds.

Question: When I press the power button, my PowerBook does not start up, or flashes the display momentarily. What is wrong?

Answer: There are a couple of things that you need to try. Follow these procedures:

Plug in the AC Adapter

If the unit starts with the AC Adapter, but not with the battery in the battery compartment, you either need to charge the battery, or you may need to replace the battery.

Reset the Power Management Circuitry
==========

To do this, follow these steps:

Step 1

Remove the power adapter and battery from unit.

Step 2

Push the reset button in the back of the unit with a paper clip and hold for 5 to 10 seconds.

Step 3

Attach the power adapter and push the reset button in back again, but just briefly. You should hear a small pop from the speaker; do not be concerned.

Step 4

Push main power button in back (large exposed button). The unit should power up.

Step 5

We suggest charging the battery for at least 8 hours before running on battery power.

If the PowerBook powers on, the battery may be reinserted. If it fails to start, the PowerBook likely needs service.

If the machine does not start with a recharged or new battery, or does not start with the AC Adapter alone (with the battery removed), your PowerBook may need servicing. Please call 1-800-SOS-APPL or see your local Apple Authorized Service Provider.

Question: My battery lasts only a very short time. What can I do?

Answer: Follow this procedure

Step 1

Reset the power manager, following the procedure detailed in the first preceding question and answer.

Step 2

Let the battery charge for eight (8) hours. This procedure should resolve the problem.

Step 3

Completely discharge the battery after approximately 15 to 20 recharges.

How to Completely Discharge a Battery

Let the battery discharge until the PowerBook goes into sleep mode. Three battery warning dialog boxes appear before this occurs. This process "recycles" the nickel cadmium (NiCad) battery and eliminates a "memory effect," which makes the battery appear depleted when it is not.

Question: Since I installed a modem, the battery seems to get depleted very quickly. What can I do to save battery power?

Answer: Apple released the PowerBook 150 Update to correct this problem. When the PowerBook 150 has an internal modem, the modem continues to draw power when not in use. This shortens the battery life. The update is available through online services on which Apple publishes software updates.

Question: My PowerBook 150 does not always eject floppy disks; what is the problem?

Answer: The drive may not be properly aligned. If you can see the metal frame sticking up more than a couple of centimeters behind the floppy drive door, you should either have an Authorized Apple Service Provider adjust this, or call the Apple Assistance Center to arrange for this repair.

Question: I just bought my PowerBook 150 and the battery is missing. How can I get a replacement?

Answer: Check the packaging. The battery is in the accessory box. An extra door over the battery compartment keeps dirt out; the battery is shipped separately to prevent draining the battery charge during shipment.

Question: My PowerBook 150 display is blurry or sometimes has shadowing and ghosting effects. What can I do to correct this?

Answer: There are a number of methods to reduce shadowing. Among them, adjust the viewing angle, adjust the brightness and contrast levels, or adjust the desktop to a mostly white pattern. If those do not work, change to black and white in the Monitors control panel temporarily for your application.

Question: I try to use SCSI Disk Mode on my PowerBook 150, and it does not seem

to work. What is wrong?

Answer: That mode is not supported on the PowerBook 150. It is supported in a lot of other PowerBook models, but not in the PowerBook 150.

Question: Can I hook up an external monitor to my PowerBook 150?

Answer: Apple does not provide a solution for external monitor support on the PowerBook 150. There may be third party vendors who provide devices to do this. Apple recommends checking with your Apple reseller or the trade magazines.

These articles can help you locate software updates mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
02 Jul 1996 - Added Fax Doc word
16 Nov 1995 - Reformatted for clarity.
27 Mar 1995 - Added one step to PowerBook 150 procedure.
21 Feb 1995 - Added keyword; made minor technical updates.

Support Information Services

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Tech Info Library Article Number:16918

Tech Info Library

Multi Media Applications Not Fully Launching (12/94)

Revised: 12/21/94
Security: Everyone

Multi Media Applications Not Fully Launching (12/94)

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Article Created: 21 December 1994

TOPIC -----

I have noticed a few of my multi media type applications fail to fully launch. They used to work fine.

DISCUSSION -----

If you have moved the QuickTime PowerPlug out of your Extensions folder, this could be part of the problem.

It is possible that your application is looking for resources available in the QuickTime PowerPlug, not finding what it's looking for, and then quitting without providing any feedback whatsoever.

Make sure that all the originally installed QuickTime files are in your system folder and all should be fine.

Support Information Services

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Tech Info Library Article Number:16920

Tech Info Library

Apple Internet Router Modem Scripts (6/95)

Revised: 6/8/95
Security: Everyone

Apple Internet Router Modem Scripts (6/95)

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Article Created: 21 December 1994
Article Reviewed/Updated: 8 June 1995

TOPIC -----

Is there a manual or documentation that tells how to write modem CCLs for the Apple Internet Router (AIR)? Should Apple Remote Access (ARA) modem CCLs ALWAYS work for the Internet Router?

DISCUSSION -----

AIR and ARA modem CCLs are the same. Please note that AIR uses ARA 1.0 CCL scripts and should ignore ARA 2.0.x CCL calls but may not. What you need is the Apple Remote Access Modem Toolkit v2.0 available from APDA, part #RO129LL/C. To locate APDA's address and phone number, use APDA name as a search string.

Article Change History:
08 Jun 1995 - Added more information on which version of ARA CCLs.

Support Information Services

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Tech Info Library Article Number:16921

Tech Info Library

MacTCP 2.0.6: Invalid Domain Name, Syntax Error (12/94)

Revised: 12/21/94
Security: Everyone

MacTCP 2.0.6: Invalid Domain Name, Syntax Error (12/94)

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Article Created: 21 December 1994

TOPIC ----------

We have discovered a problem when running MacTCP 2.0.6. We have duplicated the error on a PowerBook Duo 270c, Macintosh IIci, and Macintosh IIfx. System software involved is System 7.5 and System 7.0.1 (on IIfx).

When we attempt to connect to an IP host with an underscore character in the name, we get a MacTCP error. For example, when we use Telnet 2.6 to connect to an IP host with a valid name of hlan_pager.pnl.gov.

The error returned was "The connection to <hostname> cannot be opened because the domain name given was invalid. Internal error 0. Mac OS error -23041". Error -23041 is a name syntax error. This naming convention caused no problems with MacTCP 2.0.4, what's wrong?

DISCUSSION ----------

MacTCP 2.0.6 was changed to adhere to RFC 1034 (Section 3.5) and RFC 1035 (Section 2.3.1) in regards to domain name syntax.

Here is section 3.5 from RFC 1034:

3.5. Preferred name syntax

The DNS specifications attempt to be as general as possible in the rules for constructing domain names. The idea is that the name of any existing object can be expressed as a domain name with minimal changes. However, when assigning a domain name for an object, the prudent user will select a name which satisfies both the rules of the domain system and any existing rules for the object, whether these rules are published or implied by existing programs.

For example, when naming a mail domain, the user should satisfy both the rules of this memo and those in RFC-822. When creating a new host name, the old rules for HOSTS.TXT should be followed. This avoids problems when old software is

converted to use domain names.

The following syntax will result in fewer problems with many applications that use domain names (e.g., mail, TELNET).

<domain> ::= <subdomain> | " "

<subdomain> ::= <label> | <subdomain> "." <label>

<label> ::= <letter> [[<ldh-str>] <let-dig>]

<ldh-str> ::= <let-dig-hyp> | <let-dig-hyp> <ldh-str>

<let-dig-hyp> ::= <let-dig> | "-"

<let-dig> ::= <letter> | <digit>

<letter> ::= any one of the 52 alphabetic characters A through Z in upper case and a through z in lower case

<digit> ::= any one of the ten digits 0 through 9

Note that while upper and lower case letters are allowed in domain names, no significance is attached to the case. That is, two names with the same spelling but different case are to be treated as if identical.

The labels must follow the rules for ARPANET host names. They must start with a letter, end with a letter or digit, and have as interior characters only letters, digits, and hyphen. There are also some restrictions on the length. Labels must be 63 characters or less.

For example, the following strings identify hosts in the Internet:

A.ISI.EDU XX.LCS.MIT.EDU SRI-NIC.ARPA

As you can see, host and domain names that start with a period or that contain underscore characters are illegal. MacTCP is not going to be changed to allow illegal host and domain names. The only options we see for the customer is to revert back to MacTCP 2.0.4 or change their host and domain naming conventions to be in line with the RFCs. We suspect the latter option is the right one to take.

Support Information Services

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Tech Info Library Article Number:16922

Tech Info Library

System 7.5 Startup Disk With Minimal Network Software (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5 Startup Disk With Minimal Network Software (2/95)

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Article Created: 21 December 1994
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

How do I make a floppy disk that can start my Macintosh and then access the network for system software network installations?

DISCUSSION ----------

On the Macintosh System 7.5 Group Upgrade CD, in the Administrator Tools folder, in the Network Access folder is the Network Access.image Disk Copy file. With this file you can create a startup floppy disk with network software for doing network installs from a server. The Read Me file is below.

Read Me for Network Access Disk

The Network Access Disk is a startup disk that works on all Macintosh computers. It also contains the minimum software required to connect to a server. This disk will allow you to perform a net install of system software and other simple tasks, such as "blessing" a system folder.

IMPORTANT: This disk does not have a full system on it and may not properly support all applications. It was designed for starting up all Macintosh computers (newer than the Macintosh Plus), running the Finder, the Chooser, and the Installer.

This disk contains the software necessary to connect to a server using LocalTalk cable. The LocalTalk connection must be to the printer port. The Responder resources are not on the disk.

The disk also contains the software necessary to connect to a server using EtherTalk. All Apple Ethernet cards are supported.

The Network Access disk does not contain any of the software necessary to support token ring network connections.

The only sound on the disk is the Simple Beep. The Sound control panel is not provided, but it will work if you open it from another disk. The only action you can take is setting the volume for the single alert sound.

The fonts on the disk are Chicago 12, Geneva 9 and 12, and Monaco 9. These fonts and sizes will support most any situation that this disk supports. If a window is set to display a different font or size, substitution and scaling may make the text look less than ideal; this is only cosmetic and will do no harm.

The system on this disk does not support printing.

Neither Apple Guide nor Balloon help is on the disk.

How to use this disk

For situations in which the system has become corrupted, but the hard disk is usable, it is possible to reinstall the system software by starting up from this disk. When startup is complete, you can select the Chooser from the Apple Menu and connect to a remote server that has the net install software. (You can also use an alias to the server instead of the Chooser.)

If the hard disk is not usable, try repairing it with the Disk Tools disk, then restart with the Network Access Disk.

In some cases, you may wish to install a completely new system on the hard disk while leaving the existing System Folder intact. To do this, first open the existing System Folder and drag the System file into any other folder. This "de-blesses" the current system folder. (Note: Previously hiding the Finder would accomplish this, but hiding the System file is now the only acceptable method.) To complete the de-blessing, you must close the System Folder and verify that the Finder no longer displays the special System Folder icon. Finally, change the System Folder's name. During the installation, the Installer will create a new System Folder.

Specific disk contents

The disk contains the same minimum core system file that is used on the Disk Tools disk and the Install 1 disk. The system additionally contains the resources for LocalTalk Port B and EtherTalk.

The Finder is the same minimum compressed version that is used on the Disk Tools disk.

The other supporting files are the Chooser, the Network control panel, AppleShare, and EtherTalk Phase 2. All of these files are identical to the versions included in System 7.5, except that they are compressed and have had their color icons removed for space. These files will not work with any system version prior to 7.5.

There is also an alias to the Network control panel in the Apple Menu Items folder for your convenience.

Tips and shortcuts

If you always install from the same server, consider making an alias for it and adding it to the Apple Menu Items folder or the Startup Items folder.

If you only use aliases to connect to servers, you may remove the Chooser from the disk.

If you never have to switch between LocalTalk and EtherTalk, you may remove the Network control panel. You may also remove the alias to it from the Apple Menu Items folder.

If you use only LocalTalk, you may remove the EtherTalk Phase 2 file from the disk.

After analyzing your needs and removing files that you don't need, you may be able to free enough space for other files that are more important to you. For example, consider trading the Network control panel for the Apple CD-ROM driver from the Disk Tools disk.

Be aware of the need for applications and control panels to write preference files to the disk; there is very little free space.

If you use the Chooser, the disk must remain unlocked for it to write the AppleShare Prep file.

WARNING:
The Chooser writes configuration data to itself that may require as much as 7K of disk space. If there is not enough disk space available, the Chooser may become corrupted. If this happens, the next time you attempt to use the Chooser, you will see error code -39. To correct this, you will need to create another copy of this disk from the original image.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16926

Tech Info Library

Power Macintosh: Disk Copy Gives Error Copying (12/94)

Revised: 12/22/94
Security: Everyone

Power Macintosh: Disk Copy Gives Error Copying (12/94)

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Article Created: 22 December 1994

TOPIC -----

I have a Power Macintosh computer and I am trying to use Disk Copy to make disks. However, when I try to copy over preformatted MS-DOS formatted disks, I get an error message. If I put the disk into the Macintosh after quitting Disk Copy, it looks like it copied the disk properly, but the disk doesn't work. What is going on?

DISCUSSION -----

There are two issues at work here. The Power Macintosh floppy driver and the Disk Copy application.

When using a 720K MS-DOS formatted disk with an 800K Macintosh image file, Disk Copy (or any other disk image utility such as DART or Disk Dup) runs out of useable tracks at the end of the disk. On non-Power Macintosh computers, Disk Copy is able to "add" the extra tracks needed. On Power Macintosh computers, because of some timing issues in the Power Macintosh floppy driver, Disk Copy is not able to "add" the extra tracks, so you get the error message at the end. These timing issues are known to Engineering, but since Disk Copy was written before the advent of the Power Macintosh computers, it is not able to account for the timing differences. Disk Copy needs to be revised to account for the timing differences in the Power Macintosh floppy driver. Since there is not a group tasked with revising Disk Copy, this may or may not be done soon.

Workarounds

There are two workarounds for this problem:

1) Use the Erase Disk option in the Special menu, and format the disk as a Macintosh disk.
2) Use a bulk-eraser to remove all track and sector information.

..TIL16927-Power_Macintosh-Disk_Copy_Gives_Error_Copying_12-94.pdf

Support Information Services

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Tech Info Library Article Number:16927

Tech Info Library

Power Macintosh 6100/66: Description (8/95)

Revised: 8/29/95
Security: Everyone

Power Macintosh 6100/66: Description (8/95)

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Article Created: 21 December 1994
Article Reviewed/Updated: 29 August 1995

TOPIC ----------

The Power Macintosh 6100/66 is a high performance Macintosh model incorporating the PowerPC 601 RISC processor.

DISCUSSION ----------

Overview

The Power Macintosh 6100/66 and Power Macintosh 6100/66AV are the most affordable members of the high-performance line of Macintosh computers that use the revolutionary PowerPC chip technology. With this technology, they deliver the performance that business and education users demand while maintaining the legendary Macintosh ease of use and the ability to run virtually all existing Macintosh applications. And the current generation of Power Macintosh 6100 computers offers performance increases of up to 30 percent over the previous 6100 models.

In addition, they run applications accelerated for Power Macintosh computers at two to six times the speed of Macintosh computers based on the 68040 chip. Both computers also support MS-DOS and Windows applications when using Insignia Solutions' SoftWindows software, or with the installation of the Power Macintosh 6100 DOS Compatibility Card.

Based on the 66-megahertz PowerPC 601 microprocessor co-developed by Apple, IBM, and Motorola, the Power Macintosh 6100/66 and 6100/66AV both have built-in, floating-point math coprocessors and come with 8 megabytes of RAM, expandable to 72 megabytes. They provide on-board high-speed Ethernet support as well.

Both computers support most Apple and third-party displays, including monochrome, color, VGA, and SVGA. The 6100/66AV supports 32,000 colors on all Apple displays and also supports NTSC and PAL monitors.

Both computers can easily be expanded. The Power Macintosh 6100/66 has eight built-in ports and one expansion slot. The Power Macintosh 6100/66AV has 11 built-in ports and supports a second simultaneous display.

Support for GeoPort telecommunications (integrating your computer and phone services), speech recognition, and text-to-speech capabilities is built into both computers. The 6100/66AV adds S-video and composite video input as well as output for use with televisions, video cameras, and video recorders.

The Power Macintosh 6100/66 and Power Macintosh 6100/66AV provide an affordable gateway to Power Macintosh technology and the future of personal computing.

Power and Speed

- 66-MHz PowerPC 601 microprocessor with floating-point processor and 32K cache
- 256K level-2 cache

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB of RAM standard, expandable to 72 MB
- 2 SIMM slots
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size AND speed. For example, you should install two 8 MB SIMMs in first two adjoining slots.
- Possible RAM configurations are 8 MB, 16 MB, 24 MB, 40 MB, and 72 MB.
- 80 ns SIMMs or faster
- L2 Cache Slot for Optional Macintosh Cache Card

RAM note: All 8MB RAM configurations come with 8MB of RAM soldered onto the logic board

Display

- 640k of non-expandable DRAM-based video display support
- 2MB of non-expandable VRAM for second display (6100/66AV only)
- Support for NTSC and PAL input and output (6100/66AV only)
- Video input/output (6100/66AV only)

Audio System

- Custom sound circuitry, including stereo generator capable of driving stereo miniplug headphones or audio equipment. Also includes stereo sampling hardware for recording samples.

Expansion

- Eight built-in ports to support a wide range of peripherals (6100/66AV has eleven)
- Slot for processor-direct or NuBus adapter card (6100/66 only)
- Optional internal CD-ROM drive

- On-board Ethernet (AAUI)
- PlainTalk microphone

System software

System 7.5 software
- Makes working with applications consistent so they’re easier to learn and use
- Allows easy customization of your Macintosh to fit the way you work
- Apple Guide provides active assistance in learning new features
- Lets you open and use MS-DOS and Windows documents

Networking

- Built-in AppleTalk networking
- File sharing without a dedicated server
- On-board Ethernet networking

Compatibility

- Runs Macintosh applications
- Runs MS-DOS and Windows applica- tions (special configurations only)
- Reads Macintosh, Windows, MS-DOS, OS/2, and ProDOS floppy disk formats

What's in the box:

Each unit includes a power cord, keyboard cable, mouse, microphone, and system software.

System software includes System 7.5 for Power Macintosh, System Enabler, Color Macintosh Basics, AppleScript 1.1, QuickTime 2.0, and HyperCard Runtime 2.2.

System software shipped on a bootable CD-ROM, the "Install Me First CD" which can double as a rescue disk.#

Documentation included with the Power Macintosh 6100/60:
- Power Macintosh Getting Started
- Technical Information
- Macintosh Reference
- AppleCD 300i Plus User's Guide#

CD-ROM and AppleCD 300i Plus User's Guide bundled with configurations which include an internal CD-ROM drive.

Configurations and Ordering Information:

Power Macintosh 6100/66*
Order No. M3631LL/A
Power Macintosh 6100/66 computer with 8MB of RAM, built-in 1.4MB Apple SuperDrive, internal 350MB hard disk drive, and Power Macintosh Display Adapter

Order No. M3632LL/A
With 8MB of RAM, 350MB hard disk, and internal CD-ROM drive

Order No. M3972LL/A
With 16MB of RAM, 500MB hard disk, and DOS Compatibility Card for Power Macintosh 6100 (see separate data sheet)

Power Macintosh AV Card
Order No. M3447LL/A

Upgrades the Power Macintosh 6100/66 to a Power Macintosh 6100/66AV computer

Power Macintosh 6100/66 NuBus Adapter Card
Order No. M2337LL/A

Power Macintosh Display Adapter
Order No. M2681LL/A For use with 6100/66AV built-in video support

Power Macintosh GeoPort Telecom Adapter
Order No. M3127LL/A

Macintosh Memory Expansion Kits
(Must be installed in pairs by an authorized service provider)

Order No. M3651LL/A
4MB (1–4MB SIMM)

Order No. M3652LL/A
8MB (1–8MB SIMM)

Order No. M3372LL/A
16MB (1–16MB SIMM)

Article Change History:
29 Aug 1995 - Added information about DRAM.
03 Jan 1995 - Made article public.

Support Information Services

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Tech Info Library Article Number:16928

..TIL16929-Power_Macintosh_6100-66-Technical_Specifications_8-95_(316_Pow).pdf

Power Macintosh 6100/66: Technical Specifications (8/95)

Revised: 8/29/95
Security: Everyone

Power Macintosh 6100/66: Technical Specifications (8/95)

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Article Created: 21 December 1994
Article Reviewed/Updated: 29 August 1995

TOPIC ----------

This article gives the technical specifications for the Power Macintosh 6100/66 computer.

DISCUSSION ----------

Microprocessor

- PowerPC 601 RISC microprocessor running at 66 MHz
- Integrated floating-point unit and 32K cache
- 256K level-2 cache

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB of RAM standard, expandable to 72 MB
- 2 SIMM slots (1 pair)
- 80 ns (nanosecond) SIMMs or faster
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size. For example, you should install two 8 MB SIMMs in first two adjoining slots.
- Possible RAM configurations are 8, 16, 24, 40 and 72 MB.

RAM note: All 8MM RAM configurations come with 8MB of RAM soldered onto the logic board

Form Factor

- Modular desktop enclosure (similar to Quadra 610, 660av enclosure)

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, Windows, MS-DOS, OS/2, and ProDOS disks
- One internal 350MB hard disk
- Accommodates one 5.25-in., half-height device, such as the AppleCD 300i Plus CD-ROM drive
- Optional internal Apple CD-ROM drive (see above)
- Optional external SCSI hard disk drive (many capacities available)

Video Display

- Most Apple displays (see chart below)
- Most third-party displays as well as NTSC, PAL, VGA, and SVGA monitors

Video Support*

- 640k of non-expandable DRAM-based video in all Power Macintosh 6100/66 models
- Power Macintosh 6100/66AV only: 2MB of non-expandable VRAM display support and DRAM display support for optional second display

*Note: For Power Macintosh 6100/66 DOS Compatible specifications, please see the articles specific to that card.

Begin_Table

Color depth support (maximum resolution in colors)

Display resolution	6100/66 6100/66AV DRAM video	6100/66AV W/2MB VRAM video
640 by 480	32,768	16.7 million
832 by 624	256	16.7 million
1,024 by 768	not supported	32,768
1,152 by 870	not supported	32,768

End_Table

Interfaces

- One Apple Desktop Bus (ADB) port for a keyboard, mouse, and other device
- AAUI-15 Ethernet connector
- High-density display port supporting Apple AudioVision monitors directly and other displays via a Power Macintosh Display Adapter (included with the 6100/66 only)
- Two DMA serial (RS-232/RS-422) ports compatible with LocalTalk and GeoPort cables
- High-speed asynchronous SCSI interface supporting up to six SCSI external devices

- 16-bit stereo sound input and output ports
- 6100/66 only: Internal expansion slot for processor-direct or 7-in. NuBus expansion card (requires adapter)
- 6100/66AV only: DB-15 video port for display
- 6100/66AV only: S-video input and output ports
 (RCA adapters included)

Audio System

- 16-bit stereo in and out
- Sample rates of 48, 44.1, 24, 22.05 kilohertz (kHz)
- Input line level: 1 volt peak-to-peak
- Output line level: 1 volt peak-to-peak
- Input SNR (signal-to-noise ratio): 82 decibels (dB) with no audible discrete tones
- Output SNR: 85 dB with no audible discrete tones
- Bandwidth: 20 Hz-20 kHz (+/- 2 dB) at 44.100 kHz sample rate
- THD+N (Total harmonic distortion plus noise): Less than 0.05 percent; measured 20 Hz-20kHz with a 1-Vrms sine wave input.

Networking

- Built-in Ethernet
- Serial port for AppleTalk
- Integrated GeoPort telecommunications architecture for data, fax, and voice connectivity.

Keyboard

- Several Apple Desktop Bus keyboards with numeric key pads available.

Mouse

- Apple Desktop Bus Mouse II; mechanical tracking, optical shaft, or contact encoding.

Clock/Calendar

- CMOS custom chip with long-life lithium battery.

Apple PlainTalk Microphone

- The microphone is unidirectional and optimized for use with speech recognition.

Disability Access

- Easy Access, and visible beep included with system software. These built-in features and third-party options provide alternative input and output tools for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured
- Frequency: 50 to 60 hertz, single phase
- Power Supply Output Rating (Power available for internal devices)
  - Continuous output 86W

- A/C Line Input (Power drawn by the Power Macintosh 6100/60)
  - Maximum continuous 132W
  - Peak input 201W

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 milliamps (a maximum of three Apple Desktop Bus devices is recommended)
- Mouse draws 10 milliamps.
- Keyboard draws 25 to 80 milliamps, depending on the keyboard model used.

Size and Weight

Main unit

- Height: 3.4 inches (8.5 cm)
- Width: 16.3 inches (41.5 cm)
- Depth: 15.6 inches (39.7 cm)
- Weight*: 14.0 pounds (6.4 kg)

*Weight varies based on internal devices installed

Mouse

- Height 1.3 inches (33 mm)
- Width 2.4 inches (61.7 mm)
- Depth 4.2 inches (107.3 mm)
- Weight 4 ounces (0.10 kg)

Operating Environment

- Operating temperature: 50 degrees to 104 degrees F (10 degrees to 40 degrees C)
- Storage temperature: -40 degrees to 116.6 degrees F (-40 degrees to 47 degrees C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 ft. (3,048m)

System Software Requirements

Requires System 7.5.

Article Change History:
29 Aug 1995 - Added information about video DRAM.
25 May 1995 - Corrected Video support.
03 Jan 1995 - Made article public.

..TIL16929-Power_Macintosh_6100-66-Technical_Specifications_8-95_(316_Pow).pdf

Support Information Services

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Tech Info Library Article Number:16929

Tech Info Library

Power Macintosh 7100/80: Description (1/95)

Revised: 1/3/95
Security: Everyone

Power Macintosh 7100/80: Description (1/95)

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Article Created: 21 December 1994
Article Reviewed/Updated: 03 January 1995

TOPIC -----

The Power Macintosh 7100/80 is a performance Macintosh model incorporating the PowerPC 601 RISC processor.

DISCUSSION -----

Overview

The Power Macintosh 7100/80 and Power Macintosh 7100/80AV are the expandable, mainstream members of the high-performance line of Macintosh computers that use PowerPC chip technology. They’re built with the speed, expandability, and networking required for word processing, desktop publishing, complex spreadsheets, and databases.

These computers run virtually all existing Macintosh applications. In addition, they run the hundreds of applications accelerated for Power Macintosh computers at two to six times the speed of previous Macintosh computers. And the 7100/80 and 7100/80AV can run up to 40 percent faster than the previous 7100 models. Both computers can also run MS-DOS and Windows applications using SoftWindows software.

Based on the 80-megahertz PowerPC 601 microprocessor codeveloped by Apple, IBM, and Motorola, the Power Macintosh 7100/80 and 7100/80AV both have built-in, floating-point math coprocessors. They provide built-in, high-speed Ethernet networking as well.

Both computers support all Apple and most third-party displays, including monochrome, color, VGA, and SVGA. Support for up to 32,000 colors on Apple color displays (up to 16- or 17-inch) is included with the 7100/80. The 7100/80AV (and the 7100/80 with the addition of 1 mega-byte of VRAM) supports display of more than 16 million colors.

Both computers feature easy expandability via three NuBus slots, and you can run two simultaneous displays with each.

The 7100/80 and 7100/80AV support GeoPort telecommunications, which allows you to integrate computers with telephone services. Both also provide speech recognition and text-to-speech capabilities. The 7100/80AV adds S-video and composite video input as well as output for use with televisions, video cameras, and video recorders.

The Power Macintosh 7100/80 and Power Macintosh 7100/80AV are designed to meet your needs with high performance and expandability in a platform that’s built for the future.

Power and Speed

- 80-MHz PowerPC 601 microprocessor with floating-point processor and 32K cache
- 256K level-2 cache

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB or 16 MB of RAM standard, expandable to 136 MB
- 4 SIMM slots
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size AND speed. For example, you should install two 8 MB SIMMs in first two adjoining slots.
- Possible RAM configurations are 8 MB, 24 MB, 40 MB, 72 MB, and 136 MB.
- 80ns SIMMs or faster

RAM note: All 8MM RAM configurations come with 8MB of RAM soldered onto the logic board

Display

- 1MB of VRAM for optional second display, expandable to 2MB (7100/80 only)
- DRAM display support for second display
- 2MB of VRAM including NTSC or PAL monitors (7100/80AV only)
- Video input/output (7100/80AV only)

Audio System

- Custom sound circuitry, including stereo generator capable of driving stereo miniplug headphones or audio equipment. Also includes stereo sampling hardware for recording samples.

Expansion

- Nine built-in ports to support a wide range of peripherals (7100/80AV has eleven)
- Three NuBus slots for expansion cards
- Optional internal CD-ROM drive

- On-board Ethernet (AAUI)
- PlainTalk microphone

System software

System 7.5 software
- Makes working with applications consistent so they’re easier to learn and use
- Allows easy customization of your Macintosh to fit the way you work
- Apple Guide provides active assistance in learning new features
- Lets you open and use MS-DOS and Windows documents

Networking

- Built-in AppleTalk networking
- File sharing without a dedicated server
- On-board Ethernet networking

Compatibility

- Runs Macintosh applications
- Runs MS-DOS and Windows applications (special configurations only)
- Reads Macintosh, Windows, MS-DOS, OS/2, and ProDOS floppy disk formats

What's in the box:

Each unit includes a power cord, keyboard cable, mouse, microphone, and system software.

System software includes System 7.5 for Power Macintosh, Color Macintosh Basics, AppleScript 1.1, QuickTime 2.0, and HyperCard Runtime 2.2.

System software shipped on a bootable CD-ROM, the "Install Me First CD" which can double as a rescue disk.#

Documentation included with the Power Macintosh 7100/80:
- Power Macintosh Getting Started
- Technical Information
- Macintosh Reference
- AppleCD 300i Plus User's Guide#

- CD-ROM and AppleCD 300i Plus User's Guide bundled with configurations which include an internal CD-ROM drive.

Configurations and Ordering Information:

Power Macintosh 7100/80*
Order No. M3642LL/A
Power Macintosh 7100/80 computer with 8MB of RAM, 1MB of VRAM, built-in 1.4MB Apple SuperDrive, and internal 500MB hard disk

Order No. M3643LL/A

With 8MB of RAM, 700MB hard disk, and internal CD-ROM drive

Power Macintosh 7100/80AV*
Order No. M3645LL/A
Power Macintosh 7100/80AV computer with 16MB of RAM, 2MB of VRAM, built-in 1.4MB Apple SuperDrive, internal 700MB hard disk drive, internal CD-ROM drive, and two S-video to composite video adapters

Power Macintosh AV Card
Order No. M3447LL/A

Macintosh VRAM Expansion Kit
Order No. M5953LL/A
(Two kits required to add 1MB of VRAM)

Power Macintosh Display Adapter
Order No. M2681LL/A (For using 7100/80 built-in video support with non-AV displays)

Power Macintosh GeoPort Telecom Adapter
Order No. M3127LL/A

Macintosh Memory Expansion Kits
(Must be installed in pairs by an authorized service provider)

Order No. M3651LL/A
4MB (1–4MB SIMM)

Order No. M3652LL/A
8MB (1–8MB SIMM)

Order No. M3372LL/A
16MB (1–16MB SIMM)

Article Change History:
03 Jan 1995 - Made article public.

Support Information Services

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Tech Info Library Article Number:16930

Tech Info Library

Power Macintosh 7100/80: Technical Specifications (8/95)

Revised: 8/11/95
Security: Everyone

Power Macintosh 7100/80: Technical Specifications (8/95)

==========

Article Created: 21 December 1994
Article Reviewed/Updated: 11 August 1995

TOPIC ----------

This article gives the technical specifications for the Power Macintosh 7100/80 computer.

DISCUSSION ----------

Microprocessor

- 80-MHz PowerPC 601 microprocessor with floating-point processor and 32K cache
- 256K level-2 cache

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB or 16 MB of RAM standard, expandable to 136 MB
- 4 SIMM slots (2 pairs)
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size. For example, you should install two 8 MB SIMMs in first two adjoining slots, and can install two 4 MB SIMMs in the remaining two for a total of 32 MB.
- Possible RAM configurations numerous: 8 MB, 16 MB, 24 MB, 32 MB, 40 MB, 48 MB, 72 MB, 80 MB, and 136 MB.
- 80 ns SIMMs or faster

RAM note: All 8MB RAM configurations come with 8MB of RAM soldered onto the logic board

Form Factor

- Modular desktop enclosure (similiar to Quadra 650 enclosure)

Disk Drives

- One built-in Apple SuperDrive 1.4MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, Windows, MS-DOS, OS/2, and ProDOS disks
- One internal hard disk (350MB, 500MB, and 700MB options available)
- Accommodates one 5.25-in., half-height device, such as the AppleCD 300i Plus CD-ROM drive
- Optional internal Apple CD-ROM drive (see above)
- Optional external SCSI hard disk drive (many capacities available)

Video Display

- All Apple displays
- Third-party displays including NTSC, PAL, VGA, and SVGA monitors
- 7100/80: 1MB of VRAM, expandable to 2MB
- 7100/80AV: 2MB of VRAM
- DRAM display support for optional second display

Display resolution	7100/80 7100/80AV DRAM video	7100/80 1MB VRAM	7100/80* 7100/80AV 2MB VRAM
640 by 480	32,768 colors	32,768 colors	16.7 million colors
832 by 624	256 colors	32,768 colors	16.7 million colors
1,024 by 768	not supported	256 colors	32,768 colors
1,152 by 870	not supported	256 colors	32,768 colors

*With 1MB VRAM upgrade

Interfaces

- Three internal NuBus expansion slots
- One Apple Desktop Bus (ADB) port for a keyboard, mouse, and other device
- AAUI-15 Ethernet connector
- High-density display port supporting Apple AudioVision monitors directly and other displays via the optional Power Macintosh Display Adapter
- Two DMA serial (RS-232/RS-422) ports compatible with LocalTalk and GeoPort cables
- High-speed asynchronous SCSI interface supporting up to six SCSI external devices
- 16-bit stereo sound input and output ports
- DB-15 video port for display
- 7100/80AV only: S-video input and output ports (RCA adapters included)
- 7100/80AV only: digital-audio video connector (DAV)
- Energy Star compliant

Audio System

- 16-bit stereo in and out
- Sample rates of 48, 44.1, 24, 22.05 kilohertz (kHz)
- Input line level: 1 volt peak-to-peak
- Output line level: 1 volt peak-to-peak
- Input SNR (signal-to-noise ratio): 82 decibels (dB) with no audible discrete tones
- Output SNR: 85 dB with no audible discrete tones
- Bandwidth: 20 Hz-20 kHz (+/- 2 dB) at 44.100 kHz sample rate
- THD+N (Total harmonic distortion plus noise): Less than 0.05 percent; measured 20 Hz-20kHz with a 1-Vrms sine wave input.

Networking

- Built-in Ethernet
- Serial port for AppleTalk
- Integrated GeoPort telecommunications architecture for data, fax, and voice connectivity.

Keyboard

- Several Apple Desktop Bus keyboards with numeric keypads available.

Mouse

- Apple Desktop Bus Mouse II; mechanical tracking, optical shaft, or contact encoding.

Clock/Calendar

- CMOS custom chip with long-life lithium battery.

Apple PlainTalk Microphone (optional)

- The microphone is unidirectional and optimized for use with speech recognition.

Disability Access

- Easy Access and visible beep included with system software. These built-in solutions and third-party options provide alternative input and output devices for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 volts AC, RMS single phase, automatically configured
- Frequency: 50 to 60 Hz, single phase
- Power: 325 W maximum, not including display

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 milliamps (a maximum of three Apple Desktop Bus devices is recommended)
- Mouse draws 10 milliamps.
- Keyboard draws 25 to 80 milliamps, depending on the keyboard model used.

Size and Weight

Main unit:

Height: 6 inches (15.3 cm)
Width: 13 inches (32.8 cm)
Depth: 16.5 inches (42 cm)
Weight: 25 lb. (11.32 kg)

*Weight varies based on internal devices installed

Mouse:

- Height 1.3 inches (33 mm)
- Width 2.4 inches (61.7 mm)
- Depth 4.2 inches (107.3 mm)
- Weight 4 ounces (0.10 kg)

Operating Environment

- Operating temperature: 50 degrees to 104 degrees F (10 degrees to 40 degrees C)
- Storage temperature: -40 degrees to 116.6 degrees F (-40 degrees to 47 degrees C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 ft. (3,048m)

System Software Requirements

Requires System 7.5.

Article Change History:
11 Aug 1995 - Reformatted to make more readible on the World Wide Web.
03 Jan 1995 - Made article public.

Support Information Services

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Tech Info Library Article Number:16931

Tech Info Library

Power Macintosh 8100 Series: Description (1/95)

Revised: 1/3/95
Security: Everyone

Power Macintosh 8100 Series: Description (1/95)

==========

Article Created: 21 December 1994
Article Reviewed/Updated: 03 January 1995

TOPIC ----------

The Power Macintosh 8100 series is the highest performance Macintosh incorporating the PowerPC 601 RISC processor.

DISCUSSION ----------

Overview

The Apple Power Macintosh 8100 series computers continue to set new Macintosh speed and performance standards, which is tremendous news for publishers, engineers, and multimedia professionals. In fact, current generations of Power Macintosh 8100 computers offer performance increases of up to 30 percent over the previous 8100 models.

There’s the Power Macintosh 8100/100, running at 100 megahertz; the Power Macintosh 8100/100AV, which adds advanced video capabilities; and the Power Macintosh 8100/110, the fastest Macintosh computer ever.

These computers run virtually all Macintosh applications. In addition, they run the hundreds of applications accelerated for Power Macintosh computers at two to six times the speed of previous Macintosh computers.

The 8100 computers can also run MS-DOS and Windows applications using SoftWindows software, available from Insignia Solutions.

All three computers are based on the PowerPC 601 microprocessor codeveloped by Apple, IBM, and Motorola. The 8100/110 runs at a breathtaking 110 megahertz.

The 8100 computers support all Apple and most third-party displays, including monochrome, color, VGA, and SVGA. They support up to 16.7 million colors on Apple color displays of up to 17 inches. With the addition of 2 megabytes of VRAM (to total 4 megabytes), the 8100/100 and 8100/110 support 16.7 million

colors on displays of up to 21 inches.

These Power Macintosh 8100 computers are easy to expand because each includes three NuBus slots. They also provide GeoPort telecommunications, which allows you to integrate them with telephone services. The series also offers speech recognition and text-to-speech capabilities. The 8100/100AV adds S-video and composite video input as well as output for use with televisions, video cameras, and video recorders.

The Power Macintosh 8100 computers are designed to meet the most demanding power, speed, and expandability requirements of publishing, engineering, and multimedia customers.

Power and Speed

- 100-MHz or 110-MHz PowerPC 601 microprocessor, including floating-point processor and 32K cache
- 256K level-2 cache

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB or 16 MB of RAM standard, expandable to 264 MB
- 8 SIMM slots
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size AND speed. For example, you should install two 8 MB SIMMs in first two adjoining slots.
- Possible RAM configurations are 8 MB, 40 MB, 72 MB, 136 MB and 264 MB.
- 80 ns SIMMs or faster
- L2 Cache Slot with preinstalled Macintosh Cache Card

RAM note: All 8MB RAM configurations come with 8MB of RAM soldered onto the logic board

Display

- 2MB of VRAM (8100/110 and 8100/100 expandable to 4MB)
- DRAM display support for second display
- 2MB of VRAM including NTSC or PAL monitors (8100/100AV only)
- Video input/output (8100/100AV only)

Expansion

- Nine built-in ports to support a wide range of peripherals
- Three NuBus slots for expansion cards
- On-board Ethernet (AAUI)
- Optional internal CD-ROM drive
- PlainTalk microphone

System software

System 7.5 software

- Makes working with applications consistent, so they’re easier to learn and use
- Allows easy customization of your Macintosh to fit the way you work
- Provides active assistance in learning new features with Apple Guide
- Lets you open and use MS-DOS and Windows documents

Networking

- Built-in AppleTalk networking
- File sharing without a dedicated server
- On-board Ethernet networking

Compatibility

- Runs Macintosh applications and appli-cations accelerated for Power Macintosh computers
- Runs MS-DOS and Windows applications via SoftWindows
- Reads Macintosh, Windows, MS-DOS, OS/2, and ProDOS floppy disk formats

What's in the box:

Each unit includes a power cord, keyboard cable, mouse, microphone, and system software.

System software includes System 7.5 for Power Macintosh, Color Macintosh Basics, AppleScript 1.1, QuickTime 2.0, and HyperCard Runtime 2.2.

System software shipped on a bootable CD-ROM, the "Install Me First CD" which can double as a rescue disk.#

Documentation included with the Power Macintosh 8100 series:
- Power Macintosh Getting Started
- Technical Information
- Macintosh Reference
- AppleCD 300i Plus User's Guide#

- CD-ROM and AppleCD 300i Plus User's Guide bundled with configurations which include an internal CD-ROM drive.

Configurations and Ordering Information:

Power Macintosh 8100/110*

Power Macintosh 8100/110 computer with 16MB of RAM, 2MB of VRAM, a built-in 1.4MB Apple SuperDrive floppy disk drive, an internal 2GB hard disk drive, an internal AppleCD 300i Plus CD-ROM drive, and a PlainTalk microphone: Order No. M3561LL/A

Power Macintosh 8100/100AV*

Power Macintosh 8100/100AV computer with 16MB of RAM, 2MB of VRAM, a built-in 1.4MB Apple SuperDrive, an internal 1GB hard disk drive, an internal CD-ROM drive, a PlainTalk microphone, and two S-video to composite video adapters:

Order No. M3680LL/A

Power Macintosh 8100/100*

Power Macintosh 8100/100 computer with 8MB of RAM, 2MB of VRAM, a built-in 1.4MB Apple SuperDrive, and an internal 700MB hard disk drive:
Order No. M3635LL/A

With 16MB of RAM, a 1GB hard disk, and
an internal CD-ROM drive:
Order No. M3640LL/A

Power Macintosh AV Card
Order No. M3447LL/A

Power Macintosh Display Adapter
Order No. M2681LL/A (For 8100/100 and 8100/110 built-in video support with non-AV displays)

Power Macintosh GeoPort Telecom Adapter
Order No. M3127LL/A

Macintosh VRAM Memory Expansion Kit
Order No. M1311LL/A (Requires four kits)

Macintosh Memory Expansion Kits
(Must be installed in pairs by an authorized service provider)

- 4MB (1–4MB SIMM)
  Order No. M3651LL/A

- 8MB (1–8MB SIMM)
  Order No. M3652LL/A

- 16MB (1–16MB SIMM)
  Order No. M3372LL/A

*All configurations include mouse; system software version 7.5; complete setup, learning, and reference documentation; as well as a limited warranty. Product specifications are subject to change. Check with your Apple reseller for the most current information about product specifications and configurations.

Article Change History:
03 Jan 1995 - Made article public.

Support Information Services

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Tech Info Library Article Number:16932

Tech Info Library

Power Macintosh 8100/100 &110: Technical Specifications (4/95)

Revised: 4/26/95
Security: Everyone

Power Macintosh 8100/100 &110: Technical Specifications (4/95)

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Article Created: 21 December 1994
Article Reviewed/Updated: 26 April 1995

TOPIC ----------

This article gives the technical specifications for the Power Macintosh 8100/100 and 8100/110 computer.

DISCUSSION ----------

Microprocessor

- PowerPC 601 RISC microprocessor running at 110 MHz (8100/110 only)
- PowerPC 601 RISC microprocessor running at 100 MHz (8100/100 and 8100/100AV)
- Integrated floating-point unit and 32K cache
- 256K level-2 cache

Memory

- 4 MB ROM
- 256 bytes of non-volatile parameter memory
- 8 MB of RAM standard, expandable to 264 MB
- 8 SIMM slots (4 pairs)
- SIMMs can be 4 MB, 8 MB, 16 MB or 32 MB, but must be installed in pairs of the same size. For example, you should install two 8 MB SIMMs in first two adjoining slots, and two 4 MB SIMMs in the remaining two slots for a 32 MB machine.
- Possible RAM configurations are 8 MB, 16 MB, 24 MB, 32 MB, 40 MB, 48 MB, 56 MB, 64 MB, 72 MB, 80 MB, 96 MB, 104 MB, 120 MB, 136 MB, 168 MB, 200 MB, 216 MB and 264 MB.
- 80 ns non-composite SIMMs or faster
- L2 Cache Slot for Optional Macintosh Cache Card

RAM note: All 8MB RAM configurations come with 8MB of RAM soldered onto the logic board

Form Factor

• Desktop Mini Tower (similiar to Quadra 800, Quadra 840 case)

Disk Drives

• Includes one built-in Apple SuperDrive 1.4MB floppy disk drive that uses high-density floppy disks and reads, writes, and formats Macintosh, Windows, MS-DOS, OS/2, and ProDOS disks
• Includes one internal hard disk (700MB, 1GB, and 2GB options available)
• Supports one 5.25-inch, half-height device, such as the AppleCD 300i Plus CD-ROM drive
• Supports one additional 3.5-inch hard disk drive or 3.5-inch removable-media device

Video Display

• All Apple displays
• Third-party displays including VGA and SVGA monitors
• NTSC and PAL monitors (8100/100AV only)

Video support

• 8100/100 and 8100/110: 2MB of VRAM, expandable to 4MB
• 8100/100AV: 2MB of VRAM
• DRAM display support for optional second display

Display resolution	8100/100 8100/100AV 8100/110 DRAM video	8100/100 8100/100AV 8100/110 2MB VRAM	8100/100* 8100/110* 4MB VRAM
640 by 480	32,768 colors	16.7 million colors	16.7 million colors
832 by 624	256 colors	16.7 million colors	16.7 million colors
1,024 by 768	not supported	32,768 colors	16.7 million colors
1,152 by 870	not supported	32,768 colors	16.7 million colors

*With 2MB VRAM upgrade

Interfaces

• Three internal NuBus expansion slots; the 8100/110 also supports higher-performance burst mode between NuBus cards
• One Apple Desktop Bus (ADB) port for a keyboard, mouse, and other device
• AAUI-15 Ethernet connector
• High-density display port supporting Apple AudioVision monitors directly and other displays via the optional Power Macintosh Display Adapter
• Two DMA serial (RS-232/RS-422) ports compatible with LocalTalk and GeoPort cables

- Dual-channel asynchronous SCSI interface: external channel supports up to six SCSI devices; internal channel supports a hard disk array
- 16-bit stereo sound input and output ports
- DB-15 video port for display
- 8100/100AV only: S-video input and output ports (RCA adapters included)
- 8100/100AV only: digital-audio video connector (DAV)
- Energy Star compliant

Audio System

- 16-bit stereo in and out
- Sample rates of 48, 44.1, 24, 22.05 kilohertz (kHz)
- Input line level: 1 volt peak-to-peak
- Output line level: 1 volt peak-to-peak
- Input SNR (signal-to-noise ratio): 82 decibels (dB) with no audible discrete tones
- Output SNR: 85 dB with no audible discrete tones
- Bandwidth: 20 Hz-20 kHz (+/- 2 dB) at 44.100 kHz sample rate
- THD+N (Total harmonic distortion plus noise): Less than 0.05 percent; measured 20 Hz-20kHz with a 1-Vrms sine wave input.

Networking

- Built-in Ethernet
- Serial port for AppleTalk
- Integrated GeoPort telecommunications architecture for data, fax, and voice connectivity.

Keyboard

- Several Apple Desktop Bus keyboards with numeric keypads available.

Mouse

- Apple Desktop Bus Mouse II; mechanical tracking, optical shaft, or contact encoding.

Clock/Calendar

- Custom integrated circuit with long-life lithium battery.

Apple PlainTalk Microphone

- The microphone is unidirectional and optimized for use with speech recognition. (Microphone bundled with all AV units sold in the USA, available as a separate item outside the USA.)

Disability Access

- Easy Access, and visible beep included with system software. These built-in features and third-party options provide alternative input and output tools for people with disabilities.

Electrical Requirements

- Line voltage: 100 to 240 VAC, RMS single phase, automatically configured
- Frequency: 50 to 60 hertz, single phase
- Power Supply Output Rating (Power available for internal devices)
  - Continuous output 200W

- A/C Line Input (Power drawn by the Power Macintosh 8100/80)
  - Maximum continuous 298W
  - Peak input 453W

ADB Power Requirements

- Maximum current draw for all ADB devices: 500 milliamps (a maximum of three Apple Desktop Bus devices is recommended)
- Mouse draws 10 milliamps.
- Keyboard draws 25 to 80 milliamps, depending on the keyboard model used.

Size and Weight

Main unit

- Height 14.25 inches (46.2 cm)
- Width 7.75 inches. (19.6 cm)
- Depth 16 inches (40.5 cm)
- Weight 24 lb. (16.7 kg) varies with disk drive options installed

Mouse

- Height 1.3 inches (33 mm)
- Width 2.4 inches (61.7 mm)
- Depth 4.2 inches (107.3 mm)
- Weight 4 ounces (0.10 kg)

Operating Environment

- Operating temperature: 50 degrees to 104 degrees F (10 degrees to 40 degrees C)
- Storage temperature: -40 degrees to 116.6 degrees F (-40 degrees to 47 degrees C)
- Relative humidity: 5% to 95% noncondensing
- Maximum altitude: 10,000 ft. (3,048m)

System Software Requirements

Requires System 7.5.

Article Change History:
26 Apr 1995 - Changed title to more accurately reflect contents of article.
03 Jan 1995 - Made article public.

Support Information Services

..TIL16933-Power_Macintosh_8100-100_and110-Technical_Specifications_4-95.pdf

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Tech Info Library Article Number:16933

Tech Info Library

GeoPort/Express Modem: Does Not Connect To Some Modems (2/95)

Revised: 2/23/95
Security: Everyone

GeoPort/Express Modem: Does Not Connect To Some Modems (2/95)

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Article Created: 22 December 1994
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

Sometimes a GeoPort does not connect to modems that do not support data compression, unless the GeoPort modem is not using data compression. This article discusses some possible reasons for this.

DISCUSSION ----------

The default setting on Express Modem software and GeoPort is for the modem to attempt a high-speed, error correcting, data compressed connection and fall back as necessary to what the other modem is set to (AT command &q5). Also, modem register S47 is set to 7, which enables the Express Modem to negotiate with the other modem on features such as compression.

The Problem

If you are having problems with the Express Modem connecting or negotiating a connection with another modem, make sure register S47 is not set to 0. This causes the Express Modem to drop a connection when the other modem is incapable of data compression connections (v42bis).

The application being used may be making settings without your knowledge. You can test connections by using a basic terminal program. Enter AT&F and press Return in the terminal window. Dial the other modem by entering one of these commands and pressing Return:

- ATDT <phone number> (digital)
- ATDP <phone number> (pulse/rotary)

For example: ATDT 555-4567

You should see the message 'CARRIER XXXX' followed in a few seconds by the message 'CONNECT XXXX'.

Some applications are written to immediately send data after seeing the CARRIER message. This behavior causes the Express Modem software to drop the connection because it is receiving data from the terminal program before the CONNECT message. The CARRIER message only means that the Express Modem/GeoPort has detected another modem on the line. By design, the Express Modem software disconnects if it receives data before it has a chance to print the CONNECT message. Some terminal programs send data before the CONNECT message to command the modem to abort a connection. The Express Modem is duplicating this behavior.

A Workaround

A workaround if your application expects CARRIER to signify a connection is to add a 'W0' (a zero, not the letter "O") command to the application’s modem initialization string. This instructs the Express Modem to not provide the CONNECT message and allow the application to use the CARRIER message as a valid connection signal.

Refer to the document titled Express Modem AT Commands installed by the Express Modem software installer for a complete description of modem commands.

Article Change History:
22 Feb 1995 - Added keyword; made minor technical updates.

Support Information Services

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Tech Info Library Article Number:16934

Tech Info Library

Power Macintosh: Using Sony Monitor with AV Card (12/94)

Revised: 3/23/95
Security: Everyone

Power Macintosh: Using Sony Monitor with AV Card (12/94)

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Article Created: 22 December 1994

TOPIC -----

I am trying to use a Sony Multiscan 15-in. Display on my Power Macintosh 6100AV. I can get video from the HDI-45 connector, but not when I use the AV card.

DISCUSSION -----

With the Sony Multiscan display, you need to change some of the settings on the video adapter. According to Sony, the settings you need on the wheel selector should be set to J with the DIP switches 4,7,8, and 9 set to the ON position.

Support Information Services

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Tech Info Library Article Number:16936

Tech Info Library

LaserWriter 16/600 PS: Disabling Energy Saver W/ PS Code (1/96)

Revised: 1/26/96
Security: Everyone

LaserWriter 16/600 PS: Disabling Energy Saver W/ PS Code (1/96)

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Article Created: 22 December 1994
Article Reviewed/Updated: 26 January 1996

TOPIC ----------

Is there a way to disable the Energy Saver feature on the LaserWriter 16/600 PS printer using PostScript?

DISCUSSION ----------

The code for disabling the energy saver mode on the LaserWriter 16/600 PS is shown below. Paste the code into a text document and then use the LaserWriter Utility or Apple Printer Utility to download it to the printer.

Caution:
If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

```
%=========================================================
% Begin PostScript code
%
(%Engine%)  << /Password 0 /TimeToStandby  0 >> setdevparams
%
% End PostScript code
%=========================================================
```

In order to re-enable the energy saving mode use the built-in power saving options menus built into the LaserWriter Utility and Apple Printer Utility.

Article Change History:
26 Jan 1996 - Added PostScript caution message.

Support Information Services

Copyright 1994, Apple Computer, Inc

Tech Info Library Article Number:16937

Tech Info Library

Macintosh Processor Upgrade Card: Read Me (12/94)

Revised: 12/22/94
Security: Everyone

Macintosh Processor Upgrade Card: Read Me (12/94)

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Article Created: 22 December 1994

TOPIC ----------

This article contains the Read Me file for the Macintosh Processor Upgrade Card.

DISCUSSION ----------

Important Information About Your Macintosh Processor Upgrade Card

Congratulations on purchasing a Macintosh Processor Upgrade Card. The information in this document adds to and updates the information in your Macintosh Processor Upgrade Card User's Guide and the manuals that came with your computer. Read the tips below as well as your manuals to take full advantage of the increased speed and new capabilities your computer will have after you install the Macintosh Processor Upgrade Card.

Using the Processor Upgrade Card

Once you turn on the Processor Upgrade Card, the 601 Processor Upgrade Enabler file must remain on your hard disk (it is installed on your hard disk with the upgrade card software). This file is also on the Install Me First and the Disk Tools disks that came with the upgrade card, and you can start the computer with either of those disks. If your computer will not start up, follow the instructions on reinstalling system software in the Macintosh Processor Upgrade Card User's Guide.

To turn the Processor Upgrade Card on and off, choose Control Panels from the Apple menu and double-click the 601 Processor Upgrade control panel icon to open it. Click Off to turn the card off and use the 040 processor that originally came with your Macintosh. Click On to turn the card on and use the 601 (PowerPC) processor. You must restart your computer for the change to take effect.

Memory requirements for animation

When the Processor Upgrade card is turned on, you may experience problems when watching computer animation. Increasing the amount of memory assigned to the program may help. To increase the program's memory, click the program's icon (in the Finder) to select it, and choose Get Info from the File menu. Type a bigger number in the Preferred size box.

You can also try running the animation with the card turned off, or installing more memory (RAM).

Using CloseView and the Apple Video Player

If you have a Macintosh LC630 or Quadra 630 with a Video In or TV Tuner card installed: CloseView does not work with the Apple Video Player program. To view video or TV with Apple Video Player, turn off CloseView with the CloseView control panel or by typing Command-Option-O.

Using CPU Energy Saver

If you have a Macintosh LC575: CPU Energy Saver is not compatible with the Macintosh LC575. CPU Energy Saver is located in the Apple Extras folder. Do not install this file into your System Folder because it may cause your computer to function improperly.

Using Custom Install to install the upgrade card software

Apple recommends that you use Easy Install to install the upgrade card software. If you choose Custom Install instead, some items may be installed that are incompatible with the upgrade card. Two such items are described below.

Assistant Toolbox Extension: If you have problems printing to the LaserWriter Select 310 with the Macintosh Processor Upgrade Card turned on, check for a file called Assistant Toolbox Extension in your Extensions folder (in the System Folder).Throw away this file and restart your Macintosh, then try printing again.

AutoRemounter: If you notice slower performance over a network, check in the Control Panels folder for a file named AutoRemounter. Throw away this file and restart your Macintosh.

Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. Apple assumes no responsibility with regard to the performance or use of these products.

Support Information Services

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Tech Info Library Article Number:16939

System 7.5: Hard Drive and RAM Footprint (2/95)

Revised: 2/24/95
Security: Everyone

System 7.5: Hard Drive and RAM Footprint (2/95)

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Article Created: 23 December 1994
Article Reviewed/Updated: 24 February 1995

TOPIC ----------

This article provides the memory and hard drive space usage for the following install configurations of System 7.5.

7.5 Easy Install
7.5 Minimum Install for this Macintosh
7.5 Easy Install + QuickDraw GX
7.5 Easy Install + PowerTalk
7.5 Easy Install + QuickDraw GX + PowerTalk

DISCUSSION ----------

The following information will continue to be updated with newer systems as time allows for the various installations.

.	Tot	7.5 Min		7.5		7.5+PT		7.5+GX		7.5+PT+GX	
Mac	Mem	HD	RAM	HD	RAM	HD	RAM	HD	RAM	HD	RAM
IIcx	8	2.5	1,362	13.8	2,007	16.6	2,576	17.9	3,695	21.0	4,192
IIci	8	2.4	1,615	13.5	2,241	16.6	2,815	17.9	3,877	21.0	4,445
IIx	8	2.5	1,365	13.5	1,984	16.6	2,564	17.9	3,659	21.0	4,192
IIfx	8	2.4	1,266	13.5	1,918	16.6	2,473	17.9	3,585	21.0	4,097
IIsi	9	2.4	1,631	13.5	2,254	16.6	2,832	17.9	3,921	21.0	4,449
LC575	8	2.4	1,354	13.6	2,085	16.7	2,638	18.0	3,715	21.0	4,280
TV	8	2.4	1,373	13.5	2,049	16.6	2,626	17.9	3,702	21.0	4,278
8100/ 80AV	16	1.9	1,971	14.8	2,872	18.0	3,356	20.7	5,110	23.8	5,814
7100/ 66AV	16	2.0	1,947	14.8	2,728	18.0	3,382	20.7	5,146	23.9	5,801
6100/ 60AV	16	2.0	1,949	14.8	2,705	17.9	3,472	20.7	5,131	23.9	5,717

System 7.5 Footprint legend

Tot Mem	RAM configuration in MB.
HD	Space used, in MB.
RAM	Total Memory minus Largest Unused Block, in K.
7.5 Min	Minimal System Software 7.5 installed for this Macintosh.
7.5	Easy Install of System Software 7.5 for this Macintosh.
GX	Easy Install of QuickDraw GX 1.0.1 for this Macintosh.
PT	PowerTalk 1.1.
Disk Cache	Set to 32K.
No. of Colors	Set to 256, if available.
32-Bit Addr.	On, if available.
AppleTalk	Active.
Addt'l Notes	No additional cards installed. No SCSI devices attached. Built-in video used, if available.

Article Change History:
24 Feb 1995 - More computers added.
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

Support Information Services

Copyright 1994-95, Apple Computer, Inc.

Tech Info Library Article Number:16942

Tech Info Library

Adj. Keyboard: Caps Lock LED Goes Off w/Microsoft Apps (1/95)

Revised: 1/3/95
Security: Everyone

Adj. Keyboard: Caps Lock LED Goes Off w/Microsoft Apps (1/95)

==========

Article Created: 03 January 1995

TOPIC -----

When using the Apple Adjustable Keyboard with Caps Lock active, I launch Microsoft Word. Halfway thru launching, the LED indicating that Caps Lock is active goes off.

The keyboard remains in Caps Lock although the LED is off. If I press the Caps Lock key again, the LED comes on and Caps Lock is still active. If you press Caps Lock again, it will go to lowercase.

Is there a fix to this problem?

DISCUSSION -----

This problem only appears to occur with the Apple Adjustable Keyboard and Microsoft Word 6.0, Excel 4.0, and Excel 5.0. It does not occur with Word 5.1a.

Microsoft Technical Support is aware of this issue and states that it is currently under investigation.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16943

Tech Info Library

ImageWriter II: Common Causes of Paper Jams (1/95)

Revised: 1/3/95
Security: Everyone

ImageWriter II: Common Causes of Paper Jams (1/95)

==========

Article Created: 3 January 1995

TOPIC ----------

I am having problems with the paper feed on numerous Imagewriter II printers. I have done everything I can think of including cleaning the platen and under the platen, fanning the paper, and checking the paper guide and print head. But these printers still continually jam. Is there anything you could suggest that might alleviate this problem?

DISCUSSION ----------

The two most common causes of paper jamming in early white ImageWriter II printer's were caused by the old style mechanical paper out sensors, and the older style paper guides which had a stainless steel ribbon shield instead of the amber colored plastic. If either of these are present then they should be upgraded. The optical paper out sensor kit is available as part number 076-0250, and the paper guide is part number 949-0029.

Other possibilities are that the platen has been configured for single sheets which creates a feed rate slightly different than the tractor feed. This can lead to the paper jumping off of the tractor mechanism. To test for this problem remove the tractor feed paper from the printer and then try inserting a single piece of paper into the printer under the platen. There should be very little resistance. If there is resistance then check to make sure that the platen is configured for tractor feed paper, that there are no labels or adhesive residue stuck to the black paper guide, and that the optical paper guide has been installed and the old metal paper-out sensor plate removed.

If the problem still persists then try temporarily removing the paper guide and then printing several pages. If the problem disappears then the paper guide is adjusted too close to the platen. Insert 4 sheets of paper into the printer to use as a spacer when reinstalling the paper guide, then retest. Inspect the tractor mechanism for signs of damage and replace if necessary.

..TIL16945-ImageWriter_II-Common_Causes_of_Paper_Jams_1-95_(TA33084).pdf

Support Information Services

Copyright 1995, Apple Computer, Inc

Tech Info Library Article Number:16945

Tech Info Library

Power Macintosh: Running Native Apps From a Server (1/95)

Revised: 1/4/95
Security: Everyone

Power Macintosh: Running Native Apps From a Server (1/95)

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Article Created: 03 January 1995

TOPIC ----------

I want to launch Microsoft Office 4.2 applications over the network from Novell servers. I have installed the fat binary versions (both 680x0 and PowerPC based code) of Microsoft Office, and the applications load slowly on my Power Macintosh 6100 computers. There also seems to be some unusual behavior with the memory usage on the Power Macintosh computers when launching Excel 5.0 over the network.

Here is a typical installation of fat Excel 5.0 on a Novell server:

680x0-based computer	PowerPC-based computer
Quadra 800	Power Macintosh 8100
Plain System 7.5	Plain System 7.5
16 MB RAM	16 MB RAM
Time to launch: 15 seconds	Time to launch: 60 seconds
System Heap Size: grew about 400K	System Heap Size: grew about 6 MB

DISCUSSION ----------

Apple has recommended turning on virtual memory on Power Macintosh computers to get better memory management for native applications. The Power Macintosh has a feature called file-mapped virtual memory. File-mapping allows most of the native application's code to remain on the disk and only currently executing code is RAM. The amount of RAM savings is different for each application. To see how much RAM will be saved by turning on virtual memory, open the Get Info window for the native application and the RAM savings will be displayed in the bottom of the window.

The above paragraph pertains only to native applications on local volumes and not on file servers. File-mapping is not supported on remote volumes. What happens in this case is that the application's code is loaded into RAM in the system heap. This is not a major problem with small applications. However,

Excel has a 6500k code fragment, which is why the system heap grows about 6MB when Excel is launched from the server. It is also why it takes longer for Excel to launch on the Power Macintosh since all that data has to travel across the network.

If virtual memory is turned off, the application's code fragment is loaded into the application's heap. In the case of Excel, the application heap grows by 6MB and the system heap grows by 4MB, a total of 10MB, when virtual memory is turned off. The system heap grows in this case because of the shared libraries that are installed with Excel. These shared libraries are located in the extensions folder and are loaded into the system heap when Excel is launched.

When virtual memory is turned on and Excel is run from a server, Excel's 6MB of code is loaded into the system heap but the shared libraries are file-mapped since they are on the local volume. This results in a RAM savings of 4MB over running the same application with virtual memory disabled.

The conclusion is that virtual memory should be enabled regardless of where the application resides. However, greater RAM savings can be achieved by running applications from the local drive since the application's code can be file-mapped.

68000 (68k) based applications are not subject to the above behavior. For a detailed explanation about the differences between 68k and PowerPC code management, read the Tech Info Library article entitled "Power Mac and Unusual Memory Usage with Some Applications (12/94)

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16947

Tech Info Library

LaserWriter Bridge Software 1.0 & AppleShare Print Server (5/96)

Revised: 5/17/96
Security: Everyone

LaserWriter Bridge Software 1.0 & AppleShare Print Server (5/96)

==========

Article Created: 3 January 1995
Article Reviewed/Updated: 14 May 1996

TOPIC ----------

1. Does the LaserWriter Bridge 1.0 software work with AppleShare print server?
2. Can I print to a printer on LocalTalk captured by an AppleShare Print Server on Ethernet using the LaserWriter Bridge 1.0 software bridge?

DISCUSSION ----------

1. Question: Does the LaserWriter Bridge 1.0 software work with AppleShare print server?

Answer: The LaserWriter Bridge v1.0 and AppleShare Print Server 4.x were not tested together running on the same Macintosh and do not work together. Other Apple options include running LaserWriter Bridge on another client, using MicroPrint (the hardware Ethernet to LocalTalk bridge), or running Apple Internet Router on your print server.

2. Question: Can I print to a printer on LocalTalk captured by an AppleShare Print Server on Ethernet using the LaserWriter Bridge 1.0 software bridge?

Answer: The symptom you described is due to a limitation of the LaserWriter Bridge software, assuming the print spooler is on the Ethernet segment and you have disabled Bypass printing.

Three workarounds are:
A. Place the spooler on the same LocalTalk segment the printer is located on.
B. Enable Bypass printing allowing Macintosh computers and the spooler to print to the LaserWriter.
C. Use the LocalTalk Bridge.

Background:
The LocalTalk Bridge enables devices of "Type" LaserWriter on the LocalTalk

segment to be available to devices on the EtherTalk segment. When you capture a printer with the AppleShare Print Server (or possibly other spoolers) and disable Bypass printing, the spooler instructs the printer to change its Type to LaserShared; thereafter, the printer only responds to NBP LkUps with Type LaserShared which coincidentally only spoolers with Bypass disabled typically use. This forces users wishing to print to a printer having a Type of LaserShared to use the spooler that captured it. However, since the bridge does not pass any packets to devices except to those with a Type of LaserWriter, the spooler on Ethernet will not be able to access the printer either.

To recover from a spooler changing the printer Type to LaserShared, power the printer off and back on, delete and reinstate the print queue with Bypass printing enabled or use one of the other workarounds above.

Note:
This applies to all versions of LaserWriter Bridge up to and including v2.0.1.

Article Change History:
14 May 1996 - Added workarounds.
16 May 1995 - Added version number to title.

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Tech Info Library Article Number:16950

Tech Info Library

LaserWriter IINTX and LaserWriter Driver 8.2 Problem (8/95)

Revised: 8/22/95
Security: Everyone

LaserWriter IINTX and LaserWriter Driver 8.2 Problem (8/95)

==========

Article Created: 3 January 1995
Article Review/Updated: 22 August 1995

TOPIC ----------

When printing to a LaserWriter IINTX from any application on a Macintosh with LaserWriter 7.1.2 or 8.2 drivers, and using the manual sheet feeder, the data appears "garbled" on the printed page. What is the problem?

DISCUSSION ----------

We were able to verify that the LaserWriter 8.2 driver does in fact have a problem when using the manual tray on a LaserWriter IINTX. We tested previous versions of the LaserWriter driver and they seem to work fine.

NOTE:
Manual feed does work with LaserWriter 7.1.2 drivers, but background printing must be turned on.

Driver	Result
LW 7.1.2	Works
LW 8.1.1	Works
LW 8.2	Fails - We tried 8.2 with the 8.1.1 NTX PPD file just in case this might work, however, it did not work with any older PPD files.

For now you will have to use a LaserWriter driver prior to the LaserWriter 8.2 driver. This problem has been reported, however, there is no commitment to a fix date.

Article Change History:
22 Aug 1995 - Made minor corrections.

Support Information Services

..TIL16951-LaserWriter_IINTX_and_LaserWriter_Driver_8-2_Problem_8-95_(TA33088).pdf

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16951

Tech Info Library

Power Macintosh: Generic System, Finder & Enabler Icons (5/95)

Revised: 5/18/95
Security: Everyone

Power Macintosh: Generic System, Finder & Enabler Icons (5/95)

==========

Article Created: 04 January 1995
Article Reviewed/Updated: 17 May 1995

TOPIC ----------

I rebuilt my desktop and then I noticed that icons for the System, the Finder, and the PowerPC Enabler files in my new Power Macintosh 8100/110 are generic in appearance. Everything seems to work fine and rebuilding the desktop again did not resolve the problem.

What can I do to restore the proper icons?

DISCUSSION ----------

Problem

This is a cosmetic issue involving the system software which affects the Power Macintosh 6100/66, 7100/80, 8100/100, and 8100/110 computers. Even with the generic icons, the computers are fully functional, and the issue causes no damage to the system software.

Solution

Install the System 7.5 Update 1.0 to correct the issue.

These articles can help you locate the System 7.5 Update 1.0 mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates.

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
17 May 1995 - Added Power Macintosh 6100/66 and System 7.5 Update 1.0 info.
17 Mar 1995 - Corrected PowerPC wording.

Support Information Services

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Tech Info Library Article Number:16953

Tech Info Library

Performa 611x: QuickTime 1.6.1 and Groliers Issue (1/96)

Revised: 1/25/96
Security: Everyone

Performa 611x: QuickTime 1.6.1 and Groliers Issue (1/96)

==========

Article Created: 4 January 1995
Article Reviewed/Updated: 25 January 1996

TOPIC ----------

I am trying to use the Grolier Encyclopedia CD with my Performa 6115CD computer and it will not work. After I copied the 1.6.1 version of QuickTime from to the CD I started getting Type 1 errors when I try to run the CD.

What is wrong?

DISCUSSION ----------

Replacing QuickTime 2.0 which comes with System 7.5 and is preloaded on the Performa 6115CD with the QuickTime 1.6.1 (which comes on the Grolier Encyclopedia CD) is likely the problem. To correct this problem, update to QuickTime 2.1, available online, which includes fixes for several issues encountered when working with multimedia titles.

This same issue could occur with any member of the Performa 611xCD family of computers.

These articles can help you locate the QuickTime 2.1 software mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
25 Jan 1996 - Added QuickTime 2.1 information.
22 Mar 1995 - Revised discussion to include Multimedia Tuner.

..TIL16955-Performa_611x-QuickTime_1-6-1_and_Groliers_Issue_1-96_(TA33091).pdf

Support Information Services

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Tech Info Library Article Number:16955

Tech Info Library

System 7.5: Menus Disappear to the Left (5/95)

Revised: 5/24/95
Security: Everyone

System 7.5: Menus Disappear to the Left (5/95)

==========

Article Created: 4 January 1995
Article Reviewed/Updated: 24 May 1995

TOPIC -----

I recently upgraded to System 7.5 and now some of the left-most application menus disappear from time to time. These are usually the Apple, File and Edit menus and sometimes a few Application-specific menus.

This has occurred with several applications (Microsoft Excel, AppleLink, and others) on three different machines which are all running System 7.5 (A Quadra 950, a Centris 650, and a Quadra 800).

Because the file menu is no longer available, there is no way to quit the application, and you need to "force quit" (Command-Option-Esc) to get out of the application.

Is this a known issue? If so, how do I workaround it?

DISCUSSION -----

Symptoms

As you may have noticed, the menus disappear under two different circumstances. The first is by clicking in the menu bar before the application has finished loading. The second is by clicking in a part of the menu bar that does not have any menus.

Cause

A problem has been identified in the Apple Menu Options (AMO) control panel that causes menus to disappear. The problem has been identified and is scheduled to be corrected in a new version of Apple Menu Options.

Issue Resolution

Apple Menu Options version 1.0.2 has corrected this issue. It is posted online to Apple SW Updates. When installed with System 7.5 or with the System 7.5 Update 1.0 (7.5.1), this update to Apple Menu Options provides enhancements for problems encountered by some Macintosh computer users. System 7.5 or System 7.5.1 must be installed on your computer before Apple Menu Options 1.0.2 is installed.

These articles can help you locate the software update mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates.

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Workaround

If you cannot download the update right away, try this workaround:
To avoid the disappearing menus, either do not do any of the above or simply, remove the AMO control panel from the Control Panels folder.

Technical Explanation

AMO installs four menus when you click in the menubar and deletes the four menus when you release the mouse button. Some applications cause AMO to change the ID numbers for its menus. When this happens, clicking in the menubar at the wrong time will cause AMO to delete the application's menu.

This problem appears every time you click in the menubar while the application is still loading. For example, click in the menubar while Microsoft Word's splash screen is still on the monitor and Microsoft Word's menus disappear. One of the most bizarre aspects of this problem is that the application that causes AMO to renumber its menus, is not necessarily the application that has its menus disappear.

You may have noticed that when the menus are deleted, clicking in the menubar causes the wrong menu to be pulled down. For example, clicking the Apple menu will cause the Edit menu to display. When the problem application is moved to the background and brought back to the foreground the menubar is updated to reflect the missing menus.

Article Change History:
24 May 1995 - Reviewed for technical accuracy.
19 May 1995 - Added Issue Resolution information .
04 Apr 1995 - Added more details and reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16957

Tech Info Library

Microsoft Works 4.0 or 4.0a: Typing Displays Double (1/95)

Revised: 1/4/95
Security: Everyone

Microsoft Works 4.0 or 4.0a: Typing Displays Double (1/95)

==========

Article Created: 4 January 1995

TOPIC ----------

When typing in Microsoft Works 4.0 or 4.0a while at the same time listening to an audio CD the keyboard will display double characters. In other words, when you press a key once, two characters are displayed.

DISCUSSION ----------

Microsoft is aware of this, and Microsoft Works version 4.0b should correct it. For more information contact Microsoft Corporation. To locate a vendor's address and phone number, use the vendor name as a search string.

Support Information Services

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Tech Info Library Article Number:16958

Tech Info Library

Built-In CD-ROM: Separate CD-ROM Software Installation (1/95)

Revised: 1/4/95
Security: Everyone

Built-In CD-ROM: Separate CD-ROM Software Installation (1/95)

==========

Article Created: 4 January 1995

TOPIC ----------

There is some confusion about which 7.1 backup Install Me First CDs have the CD Setup files as a separate installation. Which computers do you have to install the CD files separately after installing the operating system.

DISCUSSION ----------

There are six systems, that we are aware of, that include CD-ROM drives, but do not get the CD-ROM software installed as part of a system software installation. These systems are:

- Centris 610
- Centris 650
- Quadra 610
- Quadra 650
- Quadra 800
- LC 575

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16959

Tech Info Library

MAE 1.0: PrintMonitor Cannot Print To a File (1/95)

Revised: 1/4/95
Security: Everyone

MAE 1.0: PrintMonitor Cannot Print To a File (1/95)

==========

Article Created: 4 January 1995

TOPIC ----------

I have the Solaris version of MAE 1.0 (without the patch), and Excel 5 installed with MS Office 4.2. When trying to print an Excel document to a file, the file does not get saved in the selected directory. It gets saved in the PrintMonitor Documents folder.

As a test, I attempted to print the Finder window to a file, and selected my home directory as the location to save it. The file did get saved there, as expected.

What is the problem, and are there any workarounds?

DISCUSSION ----------

We have verified the symptom you described above with MAE 1.0. Printing an Excel 5 document to a file does not get saved in the desired directory, it is saved in the PrintMonitor Documents folder. Printing the Finder window to a file also works as you described.

The "Print to a file" feature of PrintMonitor does NOT seem to work properly in MAE 1.0, since we have also verified this with other applications, like Word 6.0, which does not work as expected. This feature should be fixed with the next release of MAE.

A Software Problem Report has been submitted on this problem.

Support Information Services

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Tech Info Library Article Number:16960

68LC040 Processor: SoftwareFPU Compatibility Statement (1/95)

Revised: 1/4/95
Security: Everyone

68LC040 Processor: SoftwareFPU Compatibility Statement (1/95)

==========

Article Created: 04 January 1995

TOPIC ----------

I understand that some 68LC040 microprocessors will not function with the SoftwareFPU software which emulates a floating point unit in software. Is Apple planning any upgrade to the chip to provide this compatibility?

DISCUSSION ----------

An incompatibility exists between the shareware utility SoftwareFPU developed by John Neil & Associates and the Motorola 68LC040 microprocessor installed in certain Macintosh computers. SoftwareFPU is a control panel that is intended to allow most applications expecting a math coprocessor to work properly on Macintosh computers without one.

The Motorola 68040 microprocessor has an integrated hardware math coprocessor built into it. The 68LC040 microprocessor is a low cost version of the 68040 and does not have the integrated hardware math coprocessor included.

SoftwareFPU may not be compatible with Macintosh models which utilize the 68LC040 microprocessor. It has never been Apple's intention for the 68LC040-based Macintosh computers to have math coprocessor capability. The incompatibility between SoftwareFPU and the 68LC040 is unfortunate, but does not affect the normal functionality of the computer as marketed by Apple.

Customers who wish to add hardware math coprocessor capability to their 68LC040 equipped desktop Macintosh computer have three alternatives:

a) replace their 68LC040 microprocessor with a 68040 microprocessor;
b) obtain a third party upgrade that utilizes a 68040 microprocessor;
c) upgrade to a 68040 equipped Macintosh.

At this time it is not possible for PowerBook customers to upgrade to a 68040 microprocessor.

Support Information Services

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Tech Info Library Article Number:16961

Tech Info Library

System 7.5: Custom Installation Selections (7/95)

Revised: 7/6/95
Security: Everyone

System 7.5: Custom Installation Selections (7/95)

==========

Article Created: 05 January 1995
Article Reviewed/Updated: 06 July 1995

TOPIC ----------

I'm using System 7.5 and I want to reinstall a single control panel which I believe is corrupted.

DISCUSSION ----------

The following is a list of the items available when selecting CUSTOM INSTALL from System 7.5 Installer. That list will only show the main topics.

Clicking on the triangle to the left of the topic will reveal the subtopics. Each main topic may be selected, which will install all the sub items, or any individual item may be selected for installation.

SYSTEM SOFTWARE

- System for this Macintosh only
- System for any Macintosh
- Minimum system for this Macintosh only
- Minimum system for any Macintosh
- International support

PRINTING

- Apple ImageWriter
- ImageWriter
- LaserWriter
- LaserWriter 8
- Apple ImageWriter
- LaserWriter 300
- LaserWriter select 310
- Personal LaserWriter SC
- StyleWriter I/II

- LaserWriter Utility

NETWORKING SOFTWARE

- Filesharing
- EtherTalk
- TokenTalk
- MacTCP

UTILITY SOFTWARE

- Apple Guide
- AppleScript
- ColorSync

MULTIMEDIA SOFTWARE

- CD-ROM
- QuickTime

COMPATIBILITY SOFTWARE

- Macintosh Easy Open
- PC Exchange

FONTS

- Chicago
- Courier
- Geneva
- Helvetica
- Monaco
- New York
- Palatino
- Symbol
- Times

APPLE MENU ITEMS

- AppleCD Audio Player
- Calculator
- Chooser
- Find File
- Jigsaw Puzzle
- Key Caps
- Note Pad
- ScrapBook
- Stickies

CONTROL PANELS

- Apple Menu Items
- Auto Power On/Off

- AutoRemounter
- Brightness
- Button Disabler
- CPU Energy Saver
- Cache Switch
- CloseView
- Color
- Control Strip
- Date and Time
- Desktop Pattern
- Easy Access
- Extensions Manager
- File Sharing Monitor
- General Controls
- Keyboard
- Labels
- Launcher
- Map
- Memory
- Monitors
- Mouse
- Network
- Numbers
- PowerMac Card
- PowerBook
- PowerBook Display
- PowerBook Setup
- Screen
- Serial Switch
- Sharing Setup
- Sound
- Startup Disk
- Text
- Trackpad
- Users and Groups
- Views
- WindowShade

Article Change History:
06 Jul 1995 - Corrected typos.
16 Feb 1995 - Changed keyword and reviewed technical accuracy.

Support Information Services

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Tech Info Library Article Number:16962

Tech Info Library

Apple OneScanner: Driver Not SCSI Manager 4.3 aware (2/95)

Revised: 2/16/95
Security: Everyone

Apple OneScanner: Driver Not SCSI Manager 4.3 aware (2/95)

==========

Article Created: 5 January 1995
Article Reviewed/Updated: 16 February 1995

TOPIC -----

Is our scanner driver SCSI Manager 4.3 aware?

DISCUSSION -----

No, the Apple Scanner extension 3.0 that ships with OneScanner Software 2.0.2 does not support multiple SCSI buses available with SCSI Manager 4.3.

At this time, there are no plans to revise the Apple Scanner extension to support this feature of SCSI Manager 4.3.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed technical accuracy.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16964

Tech Info Library

LaserWriter Fax: Does Not Support Two Faxs On One Line (1/95)

Revised: 1/24/95
Security: Everyone

LaserWriter Fax: Does Not Support Two Faxs On One Line (1/95)

==========

Article Created: 5 January 1995
Article Reviewed/Updated: 24 January 1995

TOPIC ----------

Are there any solutions for connecting two fax devices to one phone line so that they do not interfere with each other?

I am using a LaserWriter 16/600 PS with the fax option, and another standard fax machine connected to the same phone line. Even though the printer fax option is set to answer after eight (8) rings and the fax machine is set for two (2) rings the fax printer connects as soon as the standard fax machine answers the incoming call. It sounds like both devices try to communicate and then the line is dropped. I want to use the fax in the printer for out-going faxes only, and then use the second fax machine for incoming faxes and faxes that need to be sent manually.

DISCUSSION ----------

This configuration is non-standard. Only one fax device should be connected at a time to prevent a carrier signal from activating the second device. Even though the printer has been set to answer after eight (8) rings, it probably senses an 'off hook' condition when the standard fax machine answers and then detects the carrier tone causing both fax devices to respond. When neither device can connect properly they both hang up.

We are not aware of a PostScript solution for preventing this problem, however there is a third-party device which may work. The device is not intended for this exact situation, but it should work fine. A company called Command Communications Incorporated produces a line of products called Comshare which allow a single phone line to automatically switch between fax, modem, answering devices, and voice modes. By connecting the standard fax to the fax port and the printer fax to the modem or voice port the problem should be resolved. The Comshare device intercepts incoming calls when the phone rings and listens for signals that are characteristic of a fax, modem, or voice call. It then quickly connects the appropriate device.

To locate a vendor's address and phone numbers, use the vendor name as the search string.

Article Change History:
24 Jan 1995 - Minor title change.

Support Information Services

Copyright 1995, Apple Computer, Inc

Tech Info Library Article Number:16965

Tech Info Library

DOS Compatibility Card: Troubleshooting Sound Problems (2/95)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Troubleshooting Sound Problems (2/95)

==========

Article Created: 5 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

I have a DOS Compatibility Card installed in my computer, but for some reason am not able to get any sounds to play from DOS or Windows. Even the DOS system beep does not work. My PC Setup control panel has the sound set to Auto Enable. All the Macintosh sounds play correctly. What is wrong?

DISCUSSION ----------

Check the following:

Ensure first that the PC Setup control panel has the sound set to Auto Enable.

Make sure that the audio cable is correctly attached between the DOS Compatibility Card and the Macintosh logic board.

Check the Sound control panel's Sound In settings:
Step 1: Click the Options button.
Step 2: Click on the CD icon (visible even if you do not have an internal CD).
Step 3: Click the PlayThrough button.

This lets you play DOS and Windows sounds through the Macintosh speaker.

Artiole Change History:
22 Feb 1995 - Added keyword; minor updates.

Support Information Services

Copyright 1995, Apple Computer, Inc .

Tech Info Library Article Number:16967

Tech Info Library

LTV Portable Pro: Some Units Do Not Produce PAL Signal (1/95)

Revised: 1/5/95
Security: Everyone

LTV Portable Pro: Some Units Do Not Produce PAL Signal (1/95)

==========

Article Created: 5 January 1995

TOPIC ----------

We received a Focus Enhancements LTV Portable Pro as part of our Apple Presentation System. This unit should be producing a PAL video signal, and we are attaching it to a PAL television. When we try to use the LTV Portable Pro, the image on the television is black and white -- we cannot get any color.

Is it possible that we received a NTSC version of the LTV Portable Pro?

DISCUSSION ----------

Some PAL versions of the LTV Portable Pro were configured incorrectly during the manufacturing process. This problem causes the LTV Portable Pro to send a black and white image to a PAL television.

The few units that were incorrectly configured must be repaired by an authorized technician. Customers who obtain one of these units should contact Focus Enhancements for warranty repair.

Support Information Services

Copyright 1995, Apple Computer, Inc

Tech Info Library Article Number:16968

Color StyleWriter Pro: Using Ink Refill Kits (3/97)

Revised: 3/11/97
Security: Everyone

Color StyleWriter Pro: Using Ink Refill Kits (3/97)

==========

Article Created: 5 January 1995
Article Reviewed/Updated: 11 March 1997

TOPIC ----------

I want to purchase black ink in bulk from a third-party company to refill my Color StyleWriter Pro black ink cartridge. Is the same ink formulation used in the StyleWriter II and Color StyleWriter Pro? Will I void the warranty refilling my cartridges?

DISCUSSION ----------

The ink formulation used in the Color StyleWriter Pro and the StyleWriter II is proprietary. The manufacturer has spent millions of dollars on research and development to overcome problems that can develop with ink-jet technology including clogged nozzles, ink overspray, evaporation, slow firing rate, water fastness, drying time, and so forth. The manufacturer of the ink will not provide detailed information regarding the composition of the inks other than they are both based on the same principal ingredients including water, glycerin, water soluble dye, and a solvent. Although the principal ingredients are similar their formulation and supplemental ingredients vary. For instance, the ink used in the Color StyleWriter Pro has been enhanced to speed up drying time and to improve the water fastness characteristics.

The use of non-Apple or non-Canon ink cartridges in either printer voids the warranty if problems occur as a result of their use. There have been numerous cases where Color StyleWriter Pro customers have experienced clogged print nozzles or poor quality printing after refilling their ink cartridges.

These Canon ink cartridges are compatible with the Color StyleWriter Pro:

BJI 201C
BJI 201Y
BJI 201M
BJI 201K

Article Change History:
11 Mar 1997 - Added Canon ink cartridge information.

Copyright 1995, Apple Computer, Inc

Tech Info Library Article Number:16970

Tech Info Library

QuickTime for Windows 2.0: Increasing Performance (5/95)

Revised: 5/11/95
Security: Everyone

QuickTime for Windows 2.0: Increasing Performance (5/95)

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Article Created: 5 January 1995
Article Reviewed/Updated: 11 May 1995

TOPIC -----

This article contains help increasing the performance of QuickTime for Windows 2.0. This article assumes that you are a developer using the QuickTime for Windows Developers Kit available from APDA.

DISCUSSION -----

Read the readme.exe File

This document is part of the QuickTime for Windows 2.0 distribution, and contains important information that you should be aware of concerning performance on various Windows platforms. For instance, the document provides a list of all supported video chips and video hardware.

Check Out the Environment

Some of the PC video and audio cards might cause the problem. Make sure that the you have double checked the problem by running the QuickTime movie on another different QuickTime for Windows environment, and that the cards used in the environment are mentioned in the QuickTime for Windows 2.0 README file as cards supported by Apple for QuickTime for Windows.

Video Chip Sets Supported

The following video chip sets are currently supported:

- Western Digital 90C23
- Cirrus GD542X
- ATI Mach 8
- ATI Mach 32
- ATI Wonder XL
- ATI 28800

- ET 4000 (TSENG)
- Headland 208,209
- P9000
- XGA
- WD90C3X
- S3934, S3801, S386C911, 924, S3801805

NOTE: If the card is a PCI card, direct video chip access is not currently support.

Minimum Configuration

The minimum PC configuration for QuickTime for Windows 2.0 is:

- 386SX at 20Mhz
- 4MB RAM
- 80MB hard disk
- VGA or better display card*
- A Sound Card for playback of movies with sound
- Windows 3.1 or later
- DOS 5.0, MS-DOS 6.0 and 6.2 with and without double space is supported

* NOTE: QuickTime provides best quality and performance on cards displaying 32768 colors (16 bit) or more.

DMA and IRQ conflicts

Check that none of the installed additional boards (CD-ROM, Sound boards, or any other boards) use the same IRQ level. If these card do, the cards try to race for IRQ interrupts and slow down the performance. You should also be able to sometimes see or hear unexpected behavior due to such conflicts (such as interrupted sound, or the system will not function properly).

Similarly, make sure that none of the installed or built-in boards use the same DMA channel. If this is the case, you will have huge performance problems due to two boards trying to use the same channel at the same time. If there's no way to change the DMA channel, then you need to disable DMA support of either board.

Check Out the Throughput of the QuickTime Movie

If the movie requires a lot of throughput due to massive amounts of video or audio (For example, large window, 16-bit stereo sound, or Cinepak throughput of 400kbps or more), make sure this is the real problem. For instance, if the sound is disabled, there's less bytes the system needs to pump out. Also, slow CD-ROM drives or slower systems, and/or badly written device drivers for CD-ROM units might cause performance problems. Test is again to test the movie using a well-behaving PC environment.

If you disable the sound track (volume down to 0) and the movie plays fine from the CD, and enabling the movie sound track causes audio drops and video frame skipping, then there's a good chance that you have problems related to handling

the throughput of the movie.

Check if your CD-ROM drive is a single speed (150kbps) or double-speed (300kpbs) system. If you have problems with playing back movies using a single-speed CD-ROM unit, then there's a likelihood that the movies were indeed optimized for a double-speed (or better) CD-ROM environment. If you move movies with bad playback to the hard disk, and the playback works just fine, then the issue has to do with throughput and various parameters that impact the playback rate.

Better Throughput

QuickTime for Windows 2.0 has better throughput than QuickTime for Windows 1.1.1. If the developer could fix throughput problems by switching to QuickTime for Windows 2.0. In some cases it also helps to disable the cache for the CD-ROM driver.

GDI or Driver Use

If the configuration specified is to use either the video driver or the GDI environment without directly using the video chip, then this might be the problem with performance in general.

CD-ROM DRIVERS

In some cases it helps to disable the cache for the CD-ROM driver. For example, you could add a /U at the end of the smartdrv.sys line in AUTOEXEC.BAT.

Driver and System File Issues

- SYSTEM.INI FILE

In some cases (for instance, the ATI Graphics cards) changing the device bitmap setting helps performance. To change the device bitmap, use:

```
Device bitmap=off
```

MSACM called drivers might cause additional resampling of sounds that could slow down the system. For testing purposes, leave these files in:

```
timer
midimapper
wave
aux
midi1
midi
```

To test this, comment out or delete the following drivers: msacm.drv (usually set to the wavemapper parameter), this disables the Microsoft audio compression manager so that QuickTime uses its own faster compression scheme.

CONFIG.SYS File

You could try to change the amount of file control blocks in the CONFIG.SYS file so that the system has at least 16:

```
FCBS=16,0
```

QTW.INI File

In some rare cases the QTW.INI file from a former QuickTime for Windows 1.1.1 installation is not removed when the QuickTime for Windows 2.0 installation script is run. If you suspect this is the case, remove the QTW.INI file from the Windows folder and re-run SETUP.EXE.

If the video parameter specifies hardware, then QuickTime for Windows tries to directly access the video chip, resulting in the best possible performance. If the video parameter specifies GDI, then the playback will not be optimal as it tries to use the GDI environment. This is the case with an Windows/NT installation.

Also check that after the installation the Optimize parameter is set to BMP.

Sound Cards

In some cases increasing the buffer of the sound card improves on the playback performance. For example, you could increase the buffer size from 32k to 64k to provide a smoother playback of sound. This usually also improves the quality of the sound. You have to check how each sound board handles the buffer settings.

Sound Sampled At a Non-multiple of 20.050KHz

If the sound is sampled using a Macintosh, and it's sampled at a non-multiple rate of 22.050kHz, then QuickTime for Windows needs to resample the sound during playback of the movie. This can cause poor performance. Usually you hear clear pops and cracking sounds when you playback movies with a non-11.025kHz rate (or multiples of this).

Interleave Factor

The default interleave factor for audio/sound is 1.5 seconds when the movie is recompressed using MovieShop. You could try to increase this to 1.9 seconds (Preferences:Sound... menu in MovieShop) to see if this improves playback.

Using MovieAnalyzer you can figure out the current interleave factor (Info:Playability menu entry).

Contact Apple Developer Support*

Provide a configuration list of systems used and an explanation of the problem including test files used to re-produce the problem. Make sure you have specified the following information:

Hardware used including the sound card, CD-ROM drive, video card and anything that is dependent on the multimedia environment.

Software used (including any specific drivers for the environment)
QTW.INI file
WIN.INI file
AUTOEXEC.BAT file
CONFIG.SYS file
SYSTEM.INI file

A clear example of how to reproduce the problem, including references to a QuickTime movie available from the Developer SDK kit.

* Note: You must an Apple Certified Developer in order to contact Apple Developer Support.

Article Change History:
11 May 1995 - Reviewed for technical accuracy.

Support Information Services

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Tech Info Library Article Number:16971

..TIL16972-Command_Communications_Incorporated.pdf

Tech Info Library

Command Communications Incorporated

Revised: 1/5/95
Security: Everyone

Command Communications Incorporated

==========

Article Created: 5 January 1995

Command Communications Incorporated

10800 E. Bethany Drive #500
Aurora, CO 80014

(303) 751-7000

Company Profile: Provides commuincation equipment and software.

Support Information Services

Copyright 1995, Apple Computer, Inc

Tech Info Library Article Number:16972

Tech Info Library

At Ease 2.0.3 for Workgroups: Setting Up (8/95)

Revised: 8/14/95
Security: Everyone

At Ease 2.0.3 for Workgroups: Setting Up (8/95)

==========

Article Created: 5 January 1995
Article Reviewed/Updated: 14 August 1995

TOPIC ----------

The following instructions are provided to help you set up your network using AppleShare 3.0.3 and At Ease for Workgroups 2.0.3, they assume a good understanding of how AppleShare works (please see the manual).

DISCUSSION ----------

AppleShare 3.0.3 setup

Please follow the manual for installing and setting up the AppleShare server software. DO NOT install At Ease on the server, however you will need to create a user (for example, "At Ease User") that has write access to the root level of the shared volume. This user can be restricted (via AppleShare Admin) to the access of the folders on the shared volume, but must have at least write privileges to the root level).

If you have designated an administrator's Macintosh for the At Ease workgroup, set up that computer first (any of your workstations could be used for this), to look just as you would like other users' computers to look, since you will be putting the same information on all the computers in the workgroup. If you are using At Ease on an AppleTalk network, you can set up the other computers in the group from the administrator's Macintosh.

To begin, double-click the At Ease Setup for Workgroups icon on the startup disk. A window will appear, indicating that At Ease is turned off. Do not turn At Ease on yet. You will turn it on when you have completed the setup procedure.

Designating a File Server

At Ease will need to have a single AppleShare ID in order to access a file server. There is no relationship between the At Ease user names and the

AppleShare user names.

If At Ease uses the AppleShare volume as the startup disk:

- All At Ease users will be using the same AppleShare name and password.

- At Ease remembers the AppleShare name and password from when you set it up and automatically connects to the server when At Ease users log into At Ease on the workstation.

To designate a file server as the At Ease disk:

1) Choose Chooser from the Apple menu.

2) Use the AppleShare user name (again "At Ease User" is recommended) to connect to the file server that you want to use as the At Ease disk.

3) Select the name of the server volume that you want to use as the At Ease disk. Close the Chooser window.

4) Go back to the At Ease Setup program and choose At Ease Disk... from the Options menu.

5) Click the radio button next to Mounted Server, then select the server you're using. Click OK.

Adding Users

Create a list of all the users who will have access to At Ease, and enter their names. To do this:

1) Open the At Ease Setup program on the startup disk (it may already be open).

2) Click New to add new users.

3) Type the name of the first new user, and a password (optional). If you add a password, be sure to notify the user that you have done this.

4) Click Next User to add another user. When you have added all the users, click Done.

5) A list with all the users you added appears. At this point, you can remove any users by selecting their names and clicking Remove if necessary.

6) Click Done.

CREATING A SETUP

A Setup is a subsection of the entire workgroup that will be using At Ease. Each Setup consists of users who are all associated by definition (a class, a business team, a company division). All the users in a single Setup have access

to the same programs, menus, and options within At Ease.

Naming a New Setup
---
1) Click New in the At Ease Setup window.

2) Type the name of the new Setup in the box.

Adding Users to a Setup
---
1) Click the Users button.

2) Click the name of the user(s) you want to add to this Setup, and click Add. Click OK when you are done.

Adding Programs and Documents to a Setup
---
1) Click the Items button.

2) Click Add Applications.

   NOTE: Please be aware that most software licensing agreements require a separate copy for each user, therefore, having one legal copy accessed by many users is still a violation of the agreement

3) Click the pop-up menu to see all available disks from which you can select applications.

4) Click the name of the program(s) you want to add, then click Add. The names that appear under "Items for this Setup" are actually aliases for the originals, which remain in their original location. (Users do not need to have the actual application on their systems to have access to items on a file server in an AppleTalk network.)

5) Click OK when you are done.

6) Click Add Documents.

   NOTE: You cannot add a common folder from the server. You can, however, add your folder (for example, Clip Art) to the user folder in the Documents folder on the root level of the server hard drive. It will then appear as a folder in the user's document page in At Ease. Please be aware that At Ease works similar to the Finder, if you click on a document and it cannot find the application that created it, it will tell you this. You will then have to open the application (such as ClarisWorks) that supports it and then open the document from the application's Open... menu selection.

7) Click the Disk pop-up menu to see all available disks from which you can select documents.

8) Click the Kind pop-up menu and drag down to the application that created the document(s) you want to add. A list of documents created in

that application and available on the disk you selected (in the Disk pop-up menu) appears.

9) Click the document(s) you want to add, and click Add.

10) When you are done adding documents, click OK.

NOTE: If you do not know the full name or location of an item you want to add to the Setup, Click Find Items in the New Setup window and type the name or partial name of the item. Click Find. Click Add to add the item to the Setup.

11) Click OK when you are done.

Choosing Menus and Options for a Setup

The administrator can control what users are able to do from their desktops by configuring the menus for each Setup.

1) Click the Menus button in the At Ease Setup window.

2) Click the box next to the item you want to make available to users of this Setup. An X appears next to the menu items available to users of this Setup.

3) Click the Options button in the At Ease Setup window.

4) You can set other options for the users of the setup.

Updating the other Workstations

Please refer to page 91 of the At Ease for Workgroups Administrator's Guide for directions.

Article Change History:
14 Aug 1995 - Reviewed for technical accuracy. Added keyword.

Support Information Services

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Tech Info Library Article Number:16973

Clean System Install on a Workgroup Server 60 or 80 (8/96)

Revised: 8/13/96
Security: Everyone

Clean System Install on a Workgroup Server 60 or 80 (8/96)

==========

Article Created: 5 January 1995
Article Reviewed/Updated: 13 August 1996

TOPIC ----------

This article describes how to do a clean system install of the Mac OS on an AppleShare server and preserve privileges. This procedure will work on Workgroup Server and other Macintosh computers.

NOTE: This will not cure problems due to corrupted Users & Groups Data File or AppleShare PDS file.

This is the procedure to use if your system software on a Mac OS AppleShare server has become damaged, and you want to replace it while preserving privileges and sharing information.

DISCUSSION ----------

First, Restart with either a Disk Tools floppy, or the Workgroup Server CD-ROM and run Disk First Aid and allow any fixes. If Disk First Aid cannot repair the drive, you should back up your data, format the drive, and then restore the data.

WARNING: Be sure to back up data BEFORE formatting a drive because all data will be lost during the formatting process.

If your problem was starting the file server software itself, or in any way involved with privileges, you will want to attempt to compact volume access privileges with the AppleShare Admin software prior to resorting to the clean install. This will frequently fix privilege problems. If the server still will not start, follow these steps:

Clean Server Install

Step 1

Startup with the Install Me First CD CD-ROM disc that came with your computer by pressing and holding the command-option-shift-delete keys after restarting until seeing the Welcome To Macintosh screen, or other startup floppy or volume.

Step 2
Open existing System Folder.

Step 3
Drag the System suitecase to the Preferences folder.

Step 4
Make a new folder at the root level of the internal hard disk titled "Old System Contents".

Step 5
Drag the remaining contents of the System Folder to Old System Contents folder EXCEPT for the Preferences Folder.

Step 6
Make a new Preferences Folder inside the Old System Contents folder.

Step 7
Open the ORIGINAL Preferences Folder and drag the contents EXCEPT for the Users & Groups Data File to the new Preferences folder inside the Old System Contents folder.

What you should have at this point is the original System Folder, empty EXCEPT for the original Preferences folder, which in turn is empty except for the Users & Groups Data File. Make a backup COPY of the Users & Groups Data File.

Step 8
Install system software from the Install Me First CD you started from.

Step 9
Restart and install AppleShare Software.

Step 10
Restart again and start the Server. (You may be prompted for server name and admin key.)

NOTE: This methodology will preserve the original System Folder's hierarchy in the Old System Contents folder. At this point you can transfer any items from your Old System Contents folder to your new one if necessary. Those items which were either installed during the install process, or are unnecessary may be placed in the Trash.

Article Change History:
13 Aug 1996 - Corrected for technical accruacy.
09 Aug 1996 - Change title.
23 May 1996 - Updated steps 1 and 4 for clarity.

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Tech Info Library Article Number:16974

Tech Info Library

Power Macintosh Upgrade Card: Video Problem w/Quadra 700 (1/95)

Revised: 1/6/95
Security: Everyone

Power Macintosh Upgrade Card: Video Problem w/Quadra 700 (1/95)

==========

Article Created: 06 January 1995

TOPIC ----------

Our customer has the Power Macintosh Upgrade card installed in a Quadra 700 with a Multiple Scan 17 Display. If they turn the card off via the control panel, shut the unit down, then restart, they get no video on their Multiple Scan 17" display.

Is there a workaround for this problem?

DISCUSSION ----------

The Power Macintosh Upgrade card allows the use of the 1024 X 768 resolution when using a 17" Multiple Scan monitor. When the Power Macintosh Upgrade card is disabled and the resolution is left at 1024 x 768, the Quadra 700 will lose video on restart. Customers will lose video in 68040 mode if they turn off the Power Macintosh Upgrade card after they have set the video resolution to 1024 x 768.

Removing the battery for 30 minutes will reset the PRAM so that the Quadra 700 would output video to the 17" Multiple Scan monitor at 640 x 480. The following workaround eliminates the need to pull the backup battery.

Workaround:

- Shutdown the Quadra 700 and remove the video cable from the Quadra 700.
- Restart the unit and allow it to run approximately one minute.
- Power down the Quadra with the power on/off button on the back of the unit.
- Plug the video cable back in and power up the Quadra. Video will be restored at the 640 x 480 resolution.

Support Information Services

..TIL16976-Power_Macintosh_Upgrade_Card-Video_Problem_w-Quadra_700_1-95_(TA33111).p

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Tech Info Library Article Number:16976

Tech Info Library

MAE: Support for 24-bit Color (1/95)

Revised: 1/6/95
Security: Everyone

MAE: Support for 24-bit Color (1/95)

==========

Article Created: 6 January 1995

TOPIC ----------

Does MAE (Macintosh Application Environment) support 24-bit color?

DISCUSSION ----------

Yes, MAE 1.0 supports 24-bit color on a Sun running Solaris or HP (Hewlett-Packard) running HP-UX workstations, as long as the underlying X display server and the window manager support 24-bit color in the X Window environment. Most X display servers on Solaris and HP-UX are X11R5 or X11R6 based, which are capable of supporting 24-bit color.

Here is a summary of MAE's graphics concept:

MAE (Macintosh Application Environment) is a software implementation of Macintosh that runs on UNIX workstations from Sun Microsystems and Hewlett-Packard. Through the use of 68LC040 emulation and some native codes, MAE provides the Macintosh System 7.1 environment in an X Window. This gives UNIX workstation users the ability to run "off-the-shelf" Macintosh applications on their workstations.

Graphics in MAE differ from graphics on an Macintosh because MAE has no physical Macintosh video card or monitor directly involved. MAE creates a virtual Macintosh monitor that applications draw to. MAE takes advantage of the fact that virtually all Macintosh applications make calls to QuickDraw to do their graphics. When the Macintosh application makes a QuickDraw call, QuickDraw updates the virtual monitor and tells MAE which part of bitmap changed; MAE then makes the appropriate X Window System calls to update the X Window.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16979

Tech Info Library

System 7.5: Menu Bar Clock Anomaly After Installation (2/95)

Revised: 2/16/95
Security: Everyone

System 7.5: Menu Bar Clock Anomaly After Installation (2/95)

==========

Article Created: 10 January 1995
Article Reviewed/Updated: 16 February 1995

TOPIC ----------

When System 7.5 was installed over the original System 7.1 on my PowerBook 180, I got some strange behavior from the clock. That is, the time and date continuously change with a change delay of about half a second.

DISCUSSION ----------

We are aware of some Macintosh computers exhibiting this type of problem when System 7.5 is installed on a Macintosh with the SuperClock control panel previously installed.

We recommend disabling SuperClock, or any extension that puts the time/date in the menu bar. The Date & Time control panel offers this type of functionality. As an alternative, you can turn off the Menubar Clock in the Date & Time control panel.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed technical accuracy.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16982

Tech Info Library

AppleSearch & Client for Windows: Description (4/97)

Revised: 4/2/97
Security: Everyone

AppleSearch & Client for Windows: Description (4/97)

==========

Article Created: 10 January 1995
Article Reviewed/Updated: 02 April 1997

TOPIC --

This article provides the description and technical specifications of AppleSearch and AppleSearch Client for Windows.

DISCUSSION --

AppleSearch is easy-to-use, yet sophisticated, client/server software designed to be a personal assistant—a knowledge navigator that finds information relevant to users' needs, prioritizes it, and keeps users updated if information changes. AppleSearch software helps organizations manage and use the growing stockpiles of electronic information; it lets users on the local area network (LAN) search local servers as well as the vast resources of the Internet from both Macintosh computers and Windows software–based PCs.

A server administrator clicks on a button to index documents such as memos, reports, spreadsheets, and articles from on-line news feeds that reside on the server or a locally mounted volume, making them available as local information sources. Administrators can choose to index an information source immediately or schedule automatic indexing so that users always have access to the latest information. If the server is connected to the Internet, AppleSearch provides a list of all Wide Area Information Servers (WAIS) found on directory servers, allowing the server administrator to select those that are most useful to the organization. Selected WAIS servers can be searched as if they were local information sources, without being indexed by AppleSearch. One connection to the Internet serves up to 50 simultaneously connected AppleSearch users in the LAN.

AppleSearch "reporters" are user-defined search agents that look for and retrieve requested information. Reporters can be created either for immediate use or for ongoing scheduled searches; they look for new or recently modified documents relevant to the search request and automatically deliver the findings in periodic newspaper-style updates.

With AppleSearch, users can choose local and Internet information sources and specify their topic of interest in their own words. And for users familiar with information retrieval, AppleSearch supports the full range of Boolean operators. The feature-rich AppleSearch search engine, from Personal Library Software, processes the request and finds the relevant documents by looking not only for how often the user's words occur, but also for how close the words appear together.

AppleSearch uses XTND file-format translators to extract plain text from various document formats. This means that users can access the text of retrieved documents, even if they don't have the applications used to create the documents—or they can choose to retrieve documents in their original format.

An easy, cost-effective means of managing and finding information from both inside and outside the organization, AppleSearch is the information-retrieval tool of choice for Apple LANs.

Features

Powerful information retrieval

- Helps users take advantage of organizational information stored on local servers, on-line information feeds, and the vast resources of the Internet.
- Searches the full text of documents.
- Provides quick access to the most relevant documents.
- Supports Boolean operators and stemming, proximity, and wild-string searches.

Ease of use

- Allows immediate search results.
- Delivers easy-to-read, personalized updates to the user's desktop on a periodic basis.
- Allows search requests to be entered in the user's own words.
- Enables users to view the text of relevant documents—even if they don't have the applications used to create them—as well as retrieve the actual documents in their original formats.
- Lets users search for and retrieve information from either Macintosh computers or Windows software–based PCs.
- Allows users to work in the operating system environment with which they are most familiar (Mac OS or Windows).

Efficient administration

- Makes it easy to monitor the flow of information and take appropriate security measures.
- Indexes local information sources automatically or on a scheduled basis.
- Lets administrators choose Internet WAIS servers that are useful to the workgroup.
- Supports many client users through a single Internet connection on the server.
- Includes a network license for AppleSearch client for Macintosh and Windows software.

Flexibility
- Can be customized to meet an organization's specific needs.
- Supports up to 50 connected users at a time (including remote or mobile users, via Apple Remote Access software) Compatibility.
- Includes full support for both Macintosh and Windows clients.
- Is compatible with all major brands of PC networking interface cards (via AppleSearch for Windows client software).

Product Details

Setup and configuration
- AppleSearch is quick and easy to install.
- An AppleSearch server supports 50 concurrently connected users; users connect to one AppleSearch server at a time.
- To use the Internet capability of AppleSearch, a server connection to the Internet is required. A direct (not dial-up) connection is recommended.

Information sources
- An information source can be any shared folder on an AppleSearch server volume and can reside on any locally mounted volume such as a hard disk drive or CD-ROM drive.
- Incremental indexing can be scheduled on an hourly, daily, or weekly basis.
- Indexing speed is 10 to 30MB/hour, depending on document format.
- Index files are approximately the same size as the text in source documents.
- If the server is connected to the Internet, the server administrator can select up to 100 WAIS servers listed on WAIS directory servers to appear to users as information sources. AppleSearch automatically scans for new WAIS servers.

Document format independent
Apple's XTND file-format translator technology, in conjunction with MacLinkPlus/AppleSearch, from DataViz, Inc., allows AppleSearch users to view the text of nearly all document types without needing the application that created them.

The following translators are included: MacWrite 4.5, 5.0, and II; Microsoft Word for Macintosh 3.0, 4.0, 5.0, and 5.1; Microsoft Works (word processing) 2.0 and 3.0; PageMaker 4.0; Ragtime 3.1; AppleWorks; WriteNow 2.0 and 3.0; Nisus 3.0; PICT (text extraction only); WordPerfect for Macintosh 1.0, 2.0, and 2.1; FrameMaker MIF 2.0 and 3.0; Microsoft Excel; Microsoft Word for Windows 1.0 and 2.0; and Word Perfect for Windows 5.1.

Reporters and updates
- Reporters contain search criteria defined by the user. Once saved, they reside on the server and can be scheduled to search and retrieve information relevant to the search request on a periodic basis from both local and Internet information sources.
- Results found by a scheduled reporter are automatically formatted in an easy-to-read update and delivered to users on the days and times they

specify.

Security
- Provides password protection to the server.
- Manages search requests based on user and group access privileges defined in AppleShare or Mac OS file sharing.
- If enabled, allows guest users to conduct on-demand searching, but not to save or schedule reporters.

Query features
- Natural-language processing allows users to formulate queries in their own words.
- Relevance ranking—AppleSearch ranks relevancy of documents from both local and Internet sources using one to five stars.
- Additional query features include stemming, and searching by proximity, phrase, co-occurring words, wild strings, and Boolean operators (AND, OR, NOT).

System requirements

AppleSearch Server
- An Apple Macintosh computer with a Motorola 68040 processor, a Power Macintosh, or a Workgroup Server.
- Mac OS software version 7.0 or later.
- At least 8MB of RAM for use with Mac OS file sharing or with AppleShare 3 software; 12MB of RAM for use with AppleShare 4 software; or 16MB of RAM for use with AppleShare Pro software.
- An Apple SuperDrive floppy disk drive.
- An internal hard disk with available storage space equivalent to 2.5 times the space required for the textual content of the source being indexed.
- An optional CD-ROM drive for use with on-line manuals.

AppleSearch Client
Macintosh
  - An Apple Macintosh computer with an internal hard disk drive and at least 4MB of RAM.
  - Mac OS software version 7.0 or later.
  - An Apple SuperDrive floppy disk drive.

Windows
  - Any IBM or 100% compatible computer running Intel processor 386 or greater; ISA, MicroChannel, VESA and EISA internal buses; 4MB of RAM.
  - Windows or Windows for Workgroups software version 3.1 or 3.11.
  - MS-DOS 5.0 or later.
  - Ethernet network adapter card.
  - NDIS 3.0 or ODI interface driver.

Network requirements
- AppleShare or Mac OS file sharing (AppleShare 4 is recommended to provide a higher-performance configuration that allows a larger number of users).
- An AppleTalk network connection (via LocalTalk, Ethernet, Token Ring, or Apple Remote Access software) between the server and clients; Windows

  software–based computers must be connected via Ethernet.
• MacTCP (which is included) to run an Internet connection from the
  AppleSearch server.

Ordering and Licensing Information

AppleSearch v1.5 Server and Client for Mac OS and Windows

Order No. M2136Z/D, AppleSearch v1.5
          M3707Z/A, AppleSearch Client for Windows v1.0
          M3333Z/C, AppleSearch v1.5 Update Kit
          M3361LL/C, AppleSearch v1.5 Education Kit

• AppleSearch server software
• AppleSearch client software (for both Macintosh and Windows)
• AppleSearch Administrator's Guide
• AppleSearch User's Guide
• Getting Started with AppleSearch
• An electronic version of the manuals on CD-ROM
• MacTCP software and manual
• User license to make unlimited copies of the AppleSearch client for
  Macintosh and Windows software and documentation

Developer Information

Developer information can be ordered from the APDA Tools Catalog. For a free copy of the catalog, call:
  1-800-282-2732 (United States)
  1-800-637-0029 (Canada)
  (716) 871-6555 (international)

For information about developer licensing, please contact:
  Software Licensing Department
  Apple Computer, Inc.
  2420 RidgePoint Drive, M/S 198-SWL
  Austin, TX 78754
  U.S.A.
  (512) 919-2645
  eMail: SW.LICENSE@apple.com

Article Change History:
02 April 1997 - Update eMail addresses

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Tech Info Library Article Number:16983

Tech Info Library

AppleShare 4.0.2 & Client for Windows: Description (9/95)

Revised: 9/25/95
Security: Everyone

AppleShare 4.0.2 & Client for Windows: Description (9/95)

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Article Created: 10 January 1995
Article Reviewed/Updated: 25 September 1995

TOPIC ----------

This article provides a description and product details for AppleShare and AppleShare Client for Windows.

DISCUSSION ----------

AppleShare is easy-to-use file and print sharing software that allows networked Mac OS and Windows software–based computers to share files, applications, and printers.

With AppleShare File Server software, organizations can store all of their shared files and applications in a single, central location, providing convenient, easy access to every user on the local area network (LAN). By allowing networked users to centralize all key files and applications for easy sharing, AppleShare improves everyone's productivity. It eliminates time spent looking for files, worrying about misplaced documents, and determining file or application version.

AppleShare Print Server software offers all users queued access to up to five networked printers. This time-saving function allows them to be more productive because they can use their computers to tackle other tasks instead of waiting for documents to print.

Now, all networked users can connect easily to an AppleShare server. AppleShare lets Macintosh users access shared resources via the Macintosh operating system (Mac OS); Windows users via the Windows interface. AppleShare's network architecture coexists with other application programs and networking services such as Novell NetWare software, Windows for Workgroups (WFW), and the Internet.

Yet for all of its power and capabilities, AppleShare is extremely easy to set up, use, and maintain. It continues in the "plug and play" tradition established

by the Macintosh more than a decade ago; most system administrators find that they can get an AppleShare server up and running within 15 minutes. And overall maintenance—including the addition and deletion of users—is so simple that a dedicated, full-time administrator is not required. In fact, because AppleShare is so easy to install, maintain, reconfigure, and expand, it offers the lowest long-term cost of ownership for any product in its class.*

So, whether your organization is a small or medium-size business, a classroom, or a department within a global enterprise, AppleShare improves collaboration and increases efficiency—so networked Macintosh and Windows users can get the most out of their computers.

* Based on a report by Business Research Group, Newton, Massachusetts.

AppleShare

AppleShare software comes in three versions that are designed to accommodate a variety of workgroup sizes and performance needs.

AppleShare 3 is designed for smaller workgroups of Macintosh and Windows software–based computers that have outgrown the basic file-sharing capabilities of the Mac OS. It runs on any 68030-based or below Macintosh computer.

AppleShare 4 offers performance that is up to three times faster than that of AppleShare 3. AppleShare 4 is the ideal choice for small or medium-size workgroups of Macintosh and Windows software–based computers. Extremely easy to set up and administer, AppleShare 4 is perfect for users who don't want to spend hours managing their servers, yet require high performance and extensive security.

AppleShare Pro utilizes the specialized hardware and A/UX operating system offered with the Workgroup Server 95 to provide the fastest AppleShare server performance available today. Larger workgroups that need the highest-performance file and print services will want to take full advantage of the speed and scalability of AppleShare Pro, which supports up to 5,000 open files and 20 hard disks connected to the server.

Features

Powerful file and print services
- Lets users store their files and applications in a single, central location.
- Makes it easy and efficient to print documents to networked printers.
- Provides comprehensive, effective security.

Ease of use
- Installs with a single click of the mouse.
- Can be up and running in minutes.
- Makes day-to-day management quick and easy.
- Users can take advantage of file and print services from either Mac OS computers or Windows software–based PCs.
- Allows users to work in the operating system environment with which they are most familiar (Mac OS or Windows).

Compatibility
• Includes full support for both Macintosh and Windows clients.
• Macintosh client built into the Mac OS; Windows client sold separately.
• Server works with all Mac OS–compatible applications.

Performance and scalability
• Supports up to 200 users.
• Performs up to 10 times faster than built-in Mac OS file sharing.
• Can be set up for use in an AppleTalk network of any size.
• Scalable from LocalTalk to Ethernet networks, and beyond.

Product Details

Capabilities and services
• Supports Mac OS program linking and publish and subscribe.
• Includes file and print servers.
• Features an open environment that allows additional network services.
• Works with the Macintosh client software built into every Macintosh; Windows client software sold separately.

Sharing options
• On-line CD-ROM exchange.
• Sharing of folders or entire disks.
• Easy server selection through the Chooser.
• Intuitive, consistent access to shared resources.
• User-controlled access to information.

Print spooling
• Provides spooling for up to five AppleTalk printers.
• Offers centralized queue management.
• Accepts simultaneous print requests.
• Frees client workstations for use immediately.
• Includes print log for up to 1,000 print jobs.

Administrator control
• Administrator can set number of connected users.
• Server messages can be broadcast or sent to selected users.
• Administrator can set cache sizes to maximize performance.

Security
• Minimum password length.
• Password aging.
• Password history to prevent immediate reuse.
• Ability to disallow saved passwords.
• Account disabled after specified number of password failures.
• Adjustable time limit for temporary accounts.
• Guest access allowed; turned off by default.
• Copy-protection setting for documents.
• "Lock" setting for folders.
• Adjustable number of concurrent application launches.
• Inherited folder privileges.
• Administrator log-off of any user.

AppleShare Access Privileges
• Both the user and the administrator can control access to information
• Eight different access privileges
  How users view shared data:
   - Full access privileges
   - Drop folder, write capability only
   - No access privileges
  How users protect their data:
   - Can't see enclosed folders
   - Can't see enclosed files
   - Can't write to folder
   - Can't write to or see folders
   - Can't write to or see files

Supported platforms

AppleShare Server
• AppleShare 3 A 68030-based (or below) Apple Macintosh computer.
• AppleShare 4 A 68040-based Apple Macintosh or Power Macintosh computer or Workgroup Server.
• AppleShare Pro Workgroup Server 95.

AppleShare Client
Macintosh
  • An Apple Macintosh computer with an internal hard disk drive and at least 4MB of RAM.
  • Macintosh system software version 6.07 or later.
Windows
  • Any IBM or 100% compatible computer running Intel processor 386 or greater; ISA, MicroChannel, VESA and EISA internal buses; 4MB of RAM.
  • Windows or Windows for Workgroups software version 3.1 or 3.11.
  • MS-DOS 5.0 or later.
  • Ethernet network adapter card.
  • NDIS 3.0 or ODI network interface driver.

Network Requirements
• An AppleTalk network connection (via LocalTalk, Ethernet, Token Ring, or Apple Remote Access software); Windows software–based computers must be connected via Ethernet

Ordering and Licensing Information

AppleShare 3.0.1
Order No. M0090LL/B

AppleShare 4.0.2
Order No. M1738Z/C
(Included in certain Workgroup Server configurations.)

AppleShare 4.0.2 Upgrade Kit
Order No. M1946Z/C

AppleShare Pro
Order No. M6825Z/B
(Included in certain Workgroup Server 95 configurations.)

AppleShare Client for Windows
Order No. M3481Z/A
(Included in all Workgroup Server configurations; a network license is included.)

Article Change History:
25 Sep 1995 - Change title to reflect AppleShare 4.0.2.

Support Information Services

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Tech Info Library Article Number:16984

Tech Info Library

GeoPort Telecom Adapter: Frequently Asked Questions (7/96)

Revised: 12/20/96
Security: Everyone

GeoPort Telecom Adapter: Frequently Asked Questions (7/96)

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Article Created: 10 January 1995
Article Reviewed/Updated: 02 July 1996

TOPIC ----------

This article is the most frequently asked questions (FAQ) about the GeoPort Telecom Adapter.

DISCUSSION ----------

Questions: What is the maximum number of addresses that the same fax can be sent to simultaneously using the GeoPort for Power Macintosh (version 1.0) software?

Answers: Testing showed the Send To field can hold up to 145 recipients, although there is no specifically defined limit.

Questions: What is the ringer equivalence and ring signal frequency range of the GeoPort Adapter?

Answers: The Ringer Equivalence Number (REN) for the GeoPort Adapter is 0.7. In most areas, the total of the RENs of all devices connected shouldn’t exceed 5.0. Contact your local phone company to determine your local maximum. Exceeding the recommended maximum can cause unreliable operation of all devices on the line. In other words, if a call comes in, all of the devices may not ring or detect the call.

The GeoPort Adapter uses a ring frequency range from 14 Hz to 1200 Hz (wider than required by FCC Part 68).

Questions: Why does the GeoPort sometimes connect to a service and immediately disconnect?

Answers: Make sure you are using the software that comes with the GeoPort Telecom Adapter. The Express Modem Software 1.1.2 is compatible, but there’s

much more software installed by the GeoPort Express Modem Installer than by the normal one. Software installed includes the Shared Library Manager, ASLM Resources, GeoPort Extension, GeoPort Telecom Adapter, and GeoPort Telecomm. Without these files, you can’t use the GeoPort Telecom Adapter.

If you installed the proper software and still experience problems with disconnects or aren’t connecting at all, try turning off error correction. You can do this with the modem command &Q0 in the modem string.

Questions: What is the difference between the modem port on a Macintosh and the GeoPort?

Answers: There are two primary differences:

- The standard modem port has connectors (pins) for in and out signals, timing, and handshaking. The GeoPort adds a ninth pin for power to an external device.

- The GeoPort also takes advantage of the power of the processor (either the DSP processor in the Macintosh AV computers or the PowerPC chip itself) to do telephone – either data or fax, or even voice. A modem is just a line interface to the telephone wire, a DSP to create the tones used, and software to run it. The the DSP is on the motherboard, an inexpensive line interface (like a GeoPod Telephone Adapter) can be used, with software to run the modem.

  This makes it cheaper to add a modem to a machine, and makes it easy to enhance the modem through software to increase performance or to accommodate new standards.

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
02 Jul 1996 - Added Fax Doc word
09 Nov 1995 - Changed article title.

Support Information Services

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Tech Info Library Article Number:16986

Tech Info Library

Macintosh 630 family: Video Memory Allocation (1/95)

Revised: 1/11/95
Security: Everyone

Macintosh 630 family: Video Memory Allocation (1/95)

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Article Created: 11 January 1995

TOPIC -----

A customer bought an LC 630 and is asking why with 1,024K of video memory, he is not able to get thousands of colors on his 15" monitor at a resolution of 800x600.

He makes the following calculation: 800 x 600 x 16 / 8 / 1024 = 937.5K needed to support thousands of colors on a Macintosh LC 630. He wants to know why this memory is not allocated to the display.

Why can a Macintosh LC 475 with 1,024K of VRAM support the 832x624 screen size at thousands of colors, but the LC 630 cannot support thousands of colors at 800x600?

DISCUSSION -----

The video memory for the Macintosh 630 series is split into two sections. The first section holds the graphics data -- the standard display that is generated by the computer. The second section holds the video data from the video input module.

The second section uses 300K of video memory for gathering video-in images. This leaves 724K of video memory available for displaying the standard graphics screen. There is no way to use the 300K of video memory from the second section for displaying 16-bit color at screen sizes larger than 640x480.

Support Information Services

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Tech Info Library Article Number:16987

Tech Info Library

System 7.5: Additional Find File Search Criteria (2/95)

Revised: 2/14/95
Security: Everyone

System 7.5: Additional Find File Search Criteria (2/95)

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Article Created: 11 January 1995
Article Reviewed/Updated: 14 February 1995

TOPIC ----------

Are there any other search criteria available in the Find File dialog box other than what shows up? I'm looking for a way to find invisible files without using a special disk utility

DISCUSSION ----------

This article describes the four additional undocumented search options available with the System 7.5 desktop Find command.

The System 7.5 desktop Find command (Command-F) lets you search for a variety of file attributes. There are four additional search options available under the first pop up menu selection in the Find File dialog box. Hold down the Option key while selecting the "name" pop up and you will see these additional selections:

Contents

Find files containing a specific string or phrase (up to 30 characters)

Name/Icon Lock

Find all locked/unlocked files.

Custom Icon

Find all files that either do or do not have a custom icon.

Visibility

Find all visible/invisible files.

These additional search criteria are "undocumented features" of Find File. As such, their use is not officially supported.

Article Change History:
14 Feb 1995 - Combined with another article. Other article deleted.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16989

PB 500 Series: Intelligent Battery Recondition Software (1/97)

Revised: 1/17/97
Security: Everyone

PB 500 Series: Intelligent Battery Recondition Software (1/97)

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Article Created: 11 January 1995
Article Reviewed/Updated: 17 January 1997

TOPIC ----------

This document provides information about the Intelligent Battery Recondition software for a PowerBook 500 series computer.

DISCUSSION ----------

The batteries of the PowerBook 500 series computers are "intelligent", which means they have a small microprocessor in them that monitors the battery's status. The system software communicates with the microprocessor and uses the information stored inside it to tell you how much time is left, if the battery is charging, and so on.

Under certain conditions, the information stored in the battery can become corrupted and cause the system software to incorrectly report the battery status. The Intelligent Battery Recondition software updates this information in the battery and restores normal operation. This software only works on the PowerBook 500 series computers.

Obtaining the Software

Apple Dealers And Authorized Apple Service Providers (AASP)

Call 1-800-538-9696 to locate the Apple dealer or AASP near you. Ask for the Intelligent Battery Recondition software or Intelligent Battery Update. Most dealers will not charge for the software, but others will charge a small service fee.

Appletalk Remote Access (ARA)

a) Using ARA and a modem, call 1-512-908-8083 and connect as a Guest. You can find many useful PowerBook softwares updates here.

- or -

b) Call the Apple Assistance Center software update server at 1-800-280-9227 and log on as username "AAC." To obtain the password to this server, call 1-800-SOS-APPL.

Download From On-Line Services

You can download the software from a number of online services or the Internet:

America Online - keyword: applecomputer

CompuServe - GO APLSUP

Internet -
Worldwide Web: <http://www.info.apple.com/swupdates>
ftp: <ftp://ftp.info.apple.com>

These articles can help you locate the software mentioned here:

• "Where To Find Apple Software Updates"
Lists online services for "free" Apple software updates.

• "Obtaining Apple Product Support in the USA"
Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Installation
==========
The Intelligent Battery Recondition software consists of two parts: a system extension ("Intelligent Battery") an application ("Intelligent Battery Recondition").

Battery Extension

To install the Intelligent Battery extension, follow these steps:

Step 1

Drag the extension to the Extensions folder (in the System folder) on your PowerBook's hard disk.

Step 2

Restart your PowerBook.

Battery Recondition Application

To install the Intelligent Battery Recondition application, do this:

Step 1

Drag the Intelligent Battery Recondition application to your PowerBook. You can copy the application anywhere on your PowerBook's hard disk.

Reasons For Installing/Using

You should use the Intelligent Battery Recondition application if your PowerBook fails to recognize an installed battery or when a battery will not charge. You can tell if the PowerBook recognizes an installed battery by looking at the battery monitor module in the Control Strip.

If one of the following situations occur while looking in the Control Strip, then you need to run the Intelligent Battery Recondition application:

- With a battery installed in both bays, the right side battery icon is grayed out.
- With a battery installed in both bays, the left side battery icon is grayed out.
- At least one battery installed and you see the icon of a plug and a right facing triangle in the battery monitor module.

Using The Intelligent Battery Recondition Application

To use the Intelligent Battery Recondition application, do this:

Step 1

Make sure the battery you want to update is in the right hand battery bay.

Step 2

Double-click the Intelligent Battery Recondition application icon and follow the on screen instructions. You will be instructed to insert batteries into the battery bay on the right side (facing the computer) .

It takes from 7 to 12 minutes to complete the update process. Do not interrupt the application while it is running. Watch for dialogs that require action on your part. Progress messages appear in the Intelligent Battery Recondition application window.

A message appears on the screen telling you when the update process is finished. Click OK to finish the process and automatically quit the application.

IMPORTANT: You can quit the application at any time, but quitting before the update process is complete may cause the battery to behave unpredictably.

The application can only update the battery in the battery bay on the right side of the computer, so if your PowerBook has a battery in the left battery bay, or you have extra batteries for your PowerBook, follow the steps above for each

battery.

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

NOTE: Apple Fax number 20729 contains the same information as the TIL article titled "Where To Find Apple Software Updates".

This article is one of many available through the Apple Fax center. For a complete list of available fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

Article Change History:
17 Jan 1997 - Updated online references.
02 Jul 1996 - Added Fax Doc word
15 Aug 1995 - Reformatted and listed information about where to get software.

Support Information Services

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Tech Info Library Article Number:16990

Tech Info Library

Power Macintosh DOS Compatibility Card & LAN Manager (5/96)

Revised: 5/23/96
Security: Everyone

Power Macintosh DOS Compatibility Card & LAN Manager (5/96)

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Article Created: 11 January 1995
Article Reviewed/Updated: 23 May 1996

TOPIC -----

I have several Power Macintosh computers with DOS Compatibility cards at a site where LAN Manager is used for networking our PCs. I realize that there is currently only an ODI driver for built-in Ethernet available, but I'm trying to find a way to make NDIS-based LAN Manager work.

I came across some information which recommends installing Novell Netware client software on the DOS Compatibility Card, but I do not know how to get it to work. What can I do?

DISCUSSION -----

First, Apple does not support any protocols other than TCP/IP and IPX on the Apple DOS Compatible Card.

In a DOS PC environment, there are typically two standards by which network protocol stacks can access network interface cards, NDIS and ODI. The current release of the Apple DOS Compatibility Card software (v1.0.3) ships only with MACODI, an ODI compliant driver that lets the DOS Compatibility Card run PC network software over the Power Macintosh 6100 computer's built-in Ethernet. Since the DOS Compatibility Card does not have an NDIS driver, it has not been obvious how to run network clients that cannot directly operate with ODI drivers. Microsoft LAN Manager is one such system, LAN Manager is NOT supported by Apple. It is possible to run LAN Manager over MACODI on the DOS Compatibility Card. There may be two ways for you to do this, though to date we have had success with only one. It may be possible to run other NDIS-based PC software on the DOS Compatibility Card using these methods. We want to stress that both methods require a user to run additional client software that they are not running now.

Solution #1: ODINSUP

One way we have been able to solve this problem is with Novell's ODINSUP adapter, which provides NDIS support over ODI drivers. This adapter, or shim, has been around for a while. This shim intercepts calls from NDIS and re-routes them through an ODI driver. By installing the Novell Link Support Layer, the MACODI driver, and ODINSUP we have successfully run LAN Manager v2.2 on the DOS Compatibility Card.

We have had success with either the older, or newer versions of Novell's client software. The current versions are available on Novell's Internet server (ftp.novell.com) in the NetWire section. We have used LSL.COM v2.05 and ODINSUP 1.22 running on DOS 6.22 and Windows 3.11. We have also had success using LSL v2.12 and ODINSUP v2.0 together without problems.

Below are the installation steps we followed:

1) Install DOS 6.22 & video drivers.
2) Install Windows 3.11.
3) Install Apple DOS Compatibility Card software.
4) Install SoundBlaster software.
5) Create NOVELL directory and copy the LSL.COM, MACODI.COM, ODINSUP.COM; created NET.CFG as shown below.
6) Install LAN Manager 2.2a with LMSETUP. Pick a driver like NE2000 when the installer prompts you, then edit LAN Manager's .INI files replacing NE2000 with MACODI. The LAN Manager installer won't show you MACODI since it's looking for NDIS drivers.
7) Edit AUTOEXEC.BAT, CONFIG.SYS, and NET.CFG as shown below.

Since this solution requires some pieces of Novell's Netware client for DOS, it is not an ideal solution, however, it does not use much memory and it's inexpensive. If the user has any Novell servers at their site, they already have a license to use the required client pieces. If they don't, Novell will sell a site-wide license to use the Netware client by calling 1-800-UPDATE1.

NOTE: You do not need to load Novell's NETX (Netware 3.x clients) or VLM (4.x clients) to use ODINSUP.

We have also used ODINSUP and LAN Manager to run a DOS NDIS TCP packet driver that the DOS version of NCSA Telnet uses.

Solution #2: Windows for Workgroups v3.11

We haven't tried this approach, but it appears Windows for Workgroups version 3.11 includes an adapter that's similar to ODINSUP, called ODIHLP.EXE. Chapter 8 of the Windows for Workgroups v3.11 Resource Kit goes into details about this approach in the section entitled "Configuring Windows for Workgroups with Novell Netware", which begins on Page 8-9. You should be able to skip installing the Windows for Workgroups applications like Mail, Schedule, and so on and use the Network setup part of the installer to get the software you need.

Simultaneous TCP/IP in DOS and Mac OS

The Apple DOS Compatibility Card introduces one more complication that is easily solved. Since a PowerMac 6100 DOS system is really two computers in one, it is

not possible to run the same network protocol stack on the same network adapter, under DOS and Mac OS, at the same time. It is, however, possible to run two completely different protocol stacks at the same time, which is very useful. For example, a customer mounts an HP series 800 HP-UX server from their PCs via LAN Manager/X using TCP/IP, but accesses the same server from their Macintosh computers using an AppleTalk-based Xinet server package that runs on the same host. Since the DOS Compatibility Card is using TCP/IP, and Mac OS is using AppleTalk, there's no problem with simultaneous access to the file server from both sides at the same time.

However, the customer also runs NCSA Telnet on both DOS and Mac OS. Normally, this would not be possible simultaneously. While few people will want or need to run Telnet on DOS and Mac OS at the same time, planning problems (common in computer labs or computer classrooms) can easily lead to that result. For example, user A walks up, starts using the DOS card which connects to the LAN Manager server via TCP/IP, then leaves. User B walks up, switches back to Mac OS and tries to start NCSA Telnet. Since the PC is still connected to the LAN Manager server via TCP/IP, problems will occur if the user doesn't shut down the PC before starting the Mac NCSA Telnet. User B is trying to run two TCP/IP stacks on the same network card at the same time. The best solution allows a user to walk up to any Power Macintosh, and switch to DOS or to Mac OS without worrying about the state of the machine from the last user and without the need to shut down the PC. If the DOS PC is always using TCP/IP, via LAN Manager, for file server access, any attempt to use MacTCP-based Macintosh applications will cause file server access problems on the PC.

An excellent solution, which avoids the need to shut down the PC, is using the Apple IP Gateway software to provide MacTCP services under Mac OS via AppleTalk. In this scenario, MacTCP wraps TCP/IP packets within AppleTalk packets and sends the AppleTalk packets to the gateway. The gateway strips off the AppleTalk wrapper and sends the TCP/IP packets to the appropriate address. This solution does require both "machines", Macintosh and DOS Compatibility Card, to have their own TCP/IP addresses. The Apple IP Gateway and MacTCP can be configured so the addresses are assigned manually or dynamically from an allowable range. Setting up MacTCP to use the gateway is simple: open MacTCP, select the "Ethertalk" icon, and use the pop-up menu to choose the zone containing your IP Gateway. Using the Apple IP Gateway provides a complete, stateless solution that does not affect network administration of the PC side and does not require any changes in TCP/IP applications on the Macintosh side since the AppleTalk-IP encapsulation is handled transparently by MacTCP.

Further Reading

For more information the following may be helpful:

- Novell Netware Workstation for DOS and Windows (Part 100-001623-001)
- Microsoft LAN Manager Installation and Configuration Guide (Part 24945)
- Windows 3.11 Resource Kit (from a book store or computer store)
- Windows for Workgroups 3.11 Resource Kit (from a book store or computer store)

Edited: AUTOEXEC.BAT, CONFIG.SYS, NET.CFG, PROTOCOL.INI, and LANMAN.INI

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==========================================================================

AUTOEXEC.BAT
------------
@ECHO OFF

SET SOUND=C:\SB16
SET BLASTER=A220 I5 D1 H1 T6
C:\SB16\MIXERSET /P /Q

PROMPT $p$g
PATH C:\WINDOWS;C:\DOS;C:\NOVELL;C:\;C:\APPLE;C:\LOCAL\BIN
SET TEMP=C:\DOS
SET TMP=C:\TEMP

REM Do we really need this for ODINSUP??
REM
LH SETVER C:\DOS NETX.EXE 6.00 > NUL:

REM The following server may be necessary under DOS 6.22...
REM see the LANMAN v2.2b README.TXT.
REM
LH SETVER C:\DOS NETWKSTA.EXE 6.00 > NUL:
VER

REM
REM The following allow the "MacDOS card" run LAN Manager over its
REM ODI driver (MACODI.COM)...
REM
CD \NOVELL
LH LSL
LH MACODI
LH ODINSUP
CD \

@REM == LANMAN 2.2a == DO NOT MODIFY BETWEEN THESE LINES == LANMAN 2.2a =
SET PATH=C:\LANMAN.DOS\NETPROG;%PATH%
C:\LANMAN.DOS\DRIVERS\PROTOCOL\tcpip\umb.com
NET START WORKSTATION
LOAD TCPIP
SOCKETS
DNR
@REM == LANMAN 2.2a == DO NOT MODIFY BETWEEN THESE LINES == LANMAN 2.2a =

REM Load Windows packet driver...
REM
LH WINPKT 0x60

REM Connect to UMD server...
REM
NET LOGON lmguest ""

REM CALL C:\ACSUPWIN.BAT
```

```
C:\DOS\SMARTDRV.EXE /X

REM Load "MacDOS card" pieces...
REM
LH C:\Apple\ApplePC
REM LH C:\Apple\MacShare
REM LH C:\DOS\MSCDEX /D:CDDRVR /L:E
REM LH C:\Apple\DOSClip

CD \WINDOWS
WIN
```

REMARKS: The order in which the networking pieces load is important: LSL must come first, then MACODI, then ODINSUP. For LAN Mgr v2.2, you don't appear to need to run NETBIND; NET START WORKSTATION seems to take care of that. There was a remark in Microsoft's LAN Manager documentation that you want to run NETBIND early, so I assume that means NET START should happen fairly early, too. This AUTOEXEC is for a customer who's using MS TCP/IP in LAN Manager. This also loads a TCP driver for NCSA Telnet. MacShare and DOSClip were disabled to leave memory for other things. We didn't spend any time optimizing the use of memory under DOS.

CONFIG.SYS

```
----------
DEVICE=C:\DOS\SETVER.EXE
DEVICE=C:\DOS\HIMEM.SYS /TESTMEM:OFF
REM If you are using PC Setup 1.0.7, the lines are:
REM DEVICE=C:\DOS\EMM386.EXE NOEMS X=C800-CFFF RAM=D000-EFFF
REM or
REM DEVICE=C:\DOS\EMM386.EXE X=C800-CFFF RAM=D000-EFFF
REM
REM For PC Setup 1.5, the command lines are:
REM DEVICE=C:\DOS\EMM386.EXE NOEMS I=CA00-CBFF X=CC00-CFFF RAM=D000-EFFF
REM or
REM DEVICE=C:\DOS\EMM386.EXE I=CA00-CBFF X=CC00-CFFF RAM=D000-EFFF
REM
DEVICE=C:\DOS\EMM386.EXE I=CA00-CBFF X=CC00-CFFF RAM=D000-EFFF
DOS=HIGH,UMB
FILES=60
BUFFERS=40
LASTDRIVE=Z
STACKS=9,256

DEVICE=C:\LANMAN.DOS\DRIVERS\PROTMAN\PROTMAN.DOS /i:C:\LANMAN.DOS
DEVICE=C:\LANMAN.DOS\DRIVERS\PROTOCOL\tcpip\tcpdrv.dos /i:C:\LANMAN.DOS
DEVICE=C:\LANMAN.DOS\DRIVERS\PROTOCOL\tcpip\nemm.dos
DEVICEHIGH=C:\LANMAN.DOS\DRIVERS\DIS_PKT.DOS

DEVICE=C:\Apple\CDROM.SYS /D:CDDRVR
```

```
NET.CFG
-------
link driver macodi
     frame ethernet_II
     frame ethernet_802.3
     frame ethernet_802.2
     frame ethernet_snap
     protocol IP 800 ethernet_II
     protocol arp 806 ethernet_II
     port 300
     int 6

protocol odinsup
     bind macodi
     buffered

Remarks: The "buffered" keyword is important; see the attached document on
ODINSUP for more info.Note that NET.CFG is only used for basic configuration;
all of the protocol configuration still happens within LAN Manager. Drop the
DIS_PKT.DOS if you're only interested in LAN Manager. Again, we didn't spend any
time optimizing the use of memory under DOS. Any suggestions would be
appreciated.


PROTOCOL.INI
------------
[PROTMAN]
DRIVERNAME = PROTMAN$
DYNAMIC = YES
PRIORITY = NETBEUI

[TCPIP_XIF]

DRIVERNAME      = TCPIP$
IPADDRESS0 = 130 219 034 200
SUBNETMASK0 = 255 255 255 000
DEFAULTGATEWAY0 = 130 219 034 001
NBSESSIONS = 11
; the following two parameters added after documentation was completed
TCPSEGMENTSIZE  = 1450
TCPWINDOWSIZE   = 1450
LOAD            = tcptsr[c],tinyrfc[c],emsbfr[cr]
UNLOAD          = "unloadt /notsr[dc]"
BINDINGS = "macodi"
LANABASE = 0

;[NE2000_NIF]

; protocol.ini section for the Novell NE2000 Card

;    IOBASE = 0x300
;    INTERRUPT = 3
;    DRIVERNAME = MS2000$
```

Remarks: Note the NE2000 section has been commented out and BINDINGS was changed from NE2000 to MACODI.

LANMAN.INI

```
;*****************************************************************;
;**             Microsoft LAN Manager                           **;
;**        Copyright(c) Microsoft Corp., 1993                   **;
;*****************************************************************;
[networks]
netservices = chknet, minses

[workstation]
wrkservices = encrypt,messenger,minipop
computername = acsn200
domain = STANDALONE
othdomains = langroup
numdgrambuf = 3
lanroot = C:\LANMAN.DOS

[netshell]
username = lmguest

[version]
lan_manager = 2.2b

[messenger]

[services]
chknet        = netprog\chknet.exe
minses        = netprog\minses.exe /n
workstation   = netprog\netwksta.exe
messenger     = services\msrv.exe
netpopup      = services\netpopup.exe
encrypt       = services\encrypt.exe
minipop       = services\minipop.exe
```

Remarks: By setting domain to STANDALONE and othrdomain to the customer's domain name, we made a significant difference in LAN Manager performance.

Article Change History:
23 May 1996 - Added New PC Setup CONFIG.SYS Information.
19 Apr 1995 - Corrected INT setting.
30 Mar 1995 - Corrected name of Mac OS.

Support Information Services

Copyright 1995-96, Apple Computer, Inc.

Tech Info Library Article Number:16991

Tech Info Library

DOS Compatibility Card: Apple Adjustable Keyboard Works (2/95)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Apple Adjustable Keyboard Works (2/95)

==========

Article Created: 11 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

There is an error on page 61 of the "DOS Compatibility Card for the Power Macintosh User's Guide".

DISCUSSION ----------

On page 61 the manual reads "Using the Apple Adjustable Keyboard: If you are using the Apple Adjustable Keyboard, you cannot use key combinations made up of keys from the main keyboard and function keys (for example, Shift-F1)".

This is incorrect; the Apple Adjustable keyboard works properly with a DOS Compatibililty Card.

Article Change History:
22 Feb 1995 - Added keyword; made minor updates.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16993

Tech Info Library

DOS Compatibility Card: AfterDark v3.0 Causes Crash (2/95)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: AfterDark v3.0 Causes Crash (2/95)

==========

Article Created: 11 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

When using Switch on Startup with AfterDark v3.0 for the Macintosh, the DOS Compatibility Card freezes.

DISCUSSION ----------

If you select Switch at Startup in the PC Setup control panel, when you choose Restart from the Special menu your Macintosh freezes. If you have two monitors and you are running Macsbug, a Macsbug error appears on the Macintosh monitor and the MS-DOS monitor is frozen. With only one monitor, you switch to the DOS side, but the system freezes and you are unable to return to the Macintosh OS.

This is a problem with AfterDark and not the DOS Compatibility Card. There are only two workarounds at this time:

- Disable Switch at Startup in the PC Setup control panel.

- Turn off AfterDark if you want to use the Switch at Startup option.

Article Change History:
22 Feb 1995 - Added keyword; minor updates.

Support Information Services

Copyright 1995, Apple Computer, Inc .

Tech Info Library Article Number:16994

Tech Info Library

DOS Compatibility Card: PC Network Extension Error Message 8/95

Revised: 8/30/95
Security: Everyone

DOS Compatibility Card: PC Network Extension Error Message 8/95

==========

Article Created: 11 January 1995
Article Reviewed/Updated: 30 August 1995

TOPIC ----------

I have a DOS Compatibility Card and am getting an error message at startup: "PC Network Extension: AgentOpen () returned -1." What is wrong?

DISCUSSION ----------

The PC Network Extension lets the DOS Compatibility Card access built-in Ethernet. The error message results when the PC Network Extension is looking for a network that is not present. Usually this is because AppleTalk is off. To eliminate the error at startup, you have three options.

(1) Upgrade to version 1.0.7 of the PC Setup software.*

(2) Use the Chooser to turn AppleTalk on.

(3) Drag the PC Networking Extension from the Extensions folder to the Trash (provided that you are not using a PC network).

The PC Network Extension is not required unless you plan on using network services on the DOS Compatibility Card. If you are using the DOS Compatibility Card's networking capabilities, make sure AppleTalk is active.

*NOTE:
PC Setup software v1.0.7 is not compatible with the DOS Compatibility Card for the Macintosh Quadra 610 or Centris 610.

Article Change History:
29 Aug 1995 - Added information about turning on AppleTalk.
10 Aug 1995 - Added info about PC Network Extension version 1.0.7.
22 May 1995 - Updated article with more complete information.

..TIL16995-DOS_Compatibility_Card-PC_Network_Extension_Error_Message_8-95_(TA33124).p

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16995

Tech Info Library

DOS Compatibility Card: Do Not Lock Drive Container (2/95)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Do Not Lock Drive Container (2/95)

==========

Article Created: 11 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

This article discribes an error in the Readme file from the DOS Compatibility Card for the Power Macintosh.

DISCUSSION ----------

On Page 6 of the Readme file, it is recommended that you lock the Drive File.

Do not lock the Drive File.

If you lock the Drive File using Get Info, the PC does not startup and several error messages appear.

Article Chagne History:
22 Feb 1995 - Added keyword; made minor updates.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16996

Tech Info Library

DOS Compatibility Card: DOSClip Not Compatible In EGA Mode 2/95

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: DOSClip Not Compatible In EGA Mode 2/95

==========

Article Created: 11 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC -----

I have a DOS Compatibility Card installed in my Power Macintosh 6100 and I am having problems copying information using DOSClip when I am in the EGA mode.

DISCUSSION -----

You cannot use DOSClip when in EGA mode. The DOS Compatibility Card only supports VGA modes 0, 1, 2, 3, 4, 5, 6, 7, 14, 16, 17, 18, and 19.

Article Change History:
22 Feb 1995 - Added keyword; minor updates.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16997

Tech Info Library

DOS Compatibility Card: Cannot SUBST Shared Drives (2/95)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Cannot SUBST Shared Drives (2/95)

==========

Article Created: 11 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

I have a DOS Compatibility Card and when I try using the MS-DOS Command SUBST on a shared drive, I get an error. The error message reads "Cannot SUBST a network drive". Is this normal?

DISCUSSION ----------

Yes, this is normal. There are many things that MS-DOS does not let you do with a networked drive, including using the SUBST command. This is how MS-DOS works.

Article Change History:
22 Feb 1995 - Added keyword; minor updates.

Support Information Services

Copyright 1995, Apple Computer, Inc .

Tech Info Library Article Number:16998

Tech Info Library

DOS Compatibility Card: Do Not Restart While Copying (2/95)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Do Not Restart While Copying (2/95)

==========

Article Created: 11 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

Is there a way to prevent the DOS Compatibility Card from restarting before it is finished copying a file?

DISCUSSION ----------

There are no safety checks in MS-DOS to prevent you from restarting MS-DOS while a copy is in progress. Since the Macintosh OS cannot determine if files are open in the DOS container, there is no way to prevent this.

The only way to prevent zero length or corrupted files is not to press the Control-Alt(Option)-Del keys when the computer is copying files.

Article Change History:
22 Feb 1995 - Added keyword; minor updates.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:16999

Tech Info Library

DOS Compatibility Card: No Support for Multiple CD-ROMs (2/95)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: No Support for Multiple CD-ROMs (2/95)

==========

Article Created: 11 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

I cannot get my DOS Compatibility Card in my Power Macintosh 6100 to recognize my external CD-ROM drive. I can get the internal CD-ROM drive to operate properly, but not the external.

DISCUSSION ----------

The current software for the DOS Compatibility Card does not support multiple CD-ROM devices. If you have an internal CD-ROM, then you cannot use your external CD-ROM drive when you are using MS-DOS.

Article Change History:
22 Feb 1995 - Added keyword; minor updates.

Support Information Services

Copyright 1995, Apple Computer, Inc .

Tech Info Library Article Number:17000

Tech Info Library

DOS Compatibility Card: Windows Calc. Uses Leading Space (2/95)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Windows Calc. Uses Leading Space (2/95)

==========

Article Created: 11 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

I am using the DOS Compatibility Card and I am having problems pasting a number from the Windows Calculator application into the Macintosh Calculator. The Macintosh Calculator doesn't accept the number.

DISCUSSION ----------

When you copy a number from the Windows Calculator, it places a leading space in front of the number, which prevents you from pasting the number in the Macintosh Calculator. One workaround is to paste the number into a Macintosh application, then delete the space. Once you delete the space, you can paste the number into the Macintosh Calculator.

Article Change History:
22 Feb 1995 - Added keyword; made minor updates.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:17001

Tech Info Library

A/UX: Overview and Description (01/95)

Revised: 1/11/95
Security: Everyone

A/UX: Overview and Description (01/95)

==========

Article Created: 11 January 1995

TOPIC ----------

This article is from an A/UX Frequently Asked Questions (FAQ) list maintained at a NASA Internet ftp site.

A/UX is Apple's implementation of UNIX (it's Apple's/UNix) for various Macintosh computers. A/UX merges two computing environments, UNIX and the Macintosh Finder OS, and provides the full functionality of both.

DISCUSSION ----------

A/UX is based on AT&T UNIX System V.2.2 with numerous extensions from V.3, V.4 (such as streams), and BSD 4.2/4.3 (such as networking, the Fast File System, job control, lpr, NFS with Yellow Pages, SCCS, and sendmail 5.64). It also provides full POSIX compliance. A/UX provides SYSV, BSD and POSIX compatibility switches and libraries.

A/UX is fully compliant with the System V Interface Definition (SVID).
A/UX provides all three standard shells: sh, csh, and ksh. X-Windows is also provided standard.

A/UX 3.0 and later incorporates System 7 for the Macintosh allowing for the use of the vast majority of Macintosh applications under A/UX. System7 and UNIX are fully-integrated under A/UX 3.0 and later with the UNIX file system being seen as a disk drive by the Finder.

There are quite a few people who feel that A/UX is a near-perfect implementation of UNIX. Of course, every operating system has its share of devotees, so that's not a very valid scale of whether the system is any good.
A/UX _is_ UNIX – it's not some form of pseudo-UNIX. It insulates the user from UNIX, if required, but the System Administrator needs to become UNIX-aware. Furthermore, if you want straight UNIX, you can get it. People may also complain that A/UX is based on an "obsolete" version of AT&T UNIX (V.2.2). In many ways, Apple's extensions make A/UX very V.3-like (V.3 is in many ways an enhanced V.2

– it even uses the V.2 kernel). The list of extensions to A/UX are impressive. Compare what you get standard with other systems and you'll be shocked! On some, 'cc', 'f77', NFS, etc... are costly options.

The main consideration (and opposition) to A/UX is the platform it runs on: the Macintosh. Some consider this a boon, others a bust. At present, Apple's top-level workstation is the Quadra 800, a 33MHz 68040-based system. Some consider this underpowered; others consider it overkill; others consider it, like Goldilocks, "just right".

If you need super-fast state-of-the-art number crunching capability then A/UX may not be for you; the Q800 benchmarks at maybe 10-16 SPECmarks (depending on compiler used, external cache size, etc...) and you can get lots faster with other platforms. Of course, you'll have to "settle" for their operating systems, but if you need it, then that's how you'll get it. Of course, this doesn't mean that A/UX "crawls".

There are very few people who need this type of performance though. If you need (or just want) a UNIX workstation with the speed and power of UNIX and the user interface and application selection of the Macintosh then A/UX is the way to go. In many, many ways, A/UX is the UNIX "for the rest of us" even if we are long-time UNIX junkies. If you love the Macintosh, you'll love A/UX; if you love UNIX, you'll love A/UX. And if you want a near-perfect marriage of the two, then you'll love A/UX.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:17002

Tech Info Library

DOS Compatibility Card: Does Not Support AppleCD SC Drive (2/95)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Does Not Support AppleCD SC Drive (2/95)

==========

Article Created: 11 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

I am having problems getting a AppleCD SC drive connected to my Power Macintosh 6100 with the DOS Compatibility Card installed to recognize DOS CD-ROM discs. The show up correctly on the Macintosh desktop, but when I try reading them O, and I cannot get DOS CD-ROM discs to read correctly in when I switch to MS-DOS.

DISCUSSION ----------

You can use the AppleCD SC drive for Macintosh CD-ROM discs, but not for MS-DOS CD-ROM discs.

This problem only occurs with the AppleCD SC drive. The AppleCD SC Plus, AppleCD 150, AppleCD 300, or AppleCD 300 Plus drives work without a problem.

With the AppleCD SC drive, you can sometimes read directories, however trying to run applications from the disc results in the error message "CDR101: Not ready reading drive E, with Abort/Retry/Fail."

Article Change History:
22 Feb 1995 - Added keyword; minor updates.

Support Information Services

Copyright 1995, Apple Computer, Inc .

Tech Info Library Article Number:17003

Tech Info Library

DOS Compatibility Card: Press ESC Twice to Bypass RAM Test 2/95

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: Press ESC Twice to Bypass RAM Test 2/95

==========

Article Created: 11 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

I have an 8 MB SIMM installed in my DOS Compatibility Card, and I cannot bypass the memory test when I startup MS-DOS. The screen instructs me to "Press ESC To Bypass Memory Test". Can I bypass the memory test?

DISCUSSION ----------

To bypass the RAM memory test when you startup MS-DOS, you have to press the Esc (Escape) key twice, even though the screen instructs you only to "Press ESC to Bypass Memory Test". At this time it is not known why you must press the ESC twice, but it does let you bypass the memory test.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:17004

Tech Info Library

DOS Compatibility Card: All Display Modes Not Supported (2/95)

Revised: 5/24/95
Security: Everyone

DOS Compatibility Card: All Display Modes Not Supported (2/95)

==========

Article Created: 11 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

I have a SuperMatch 20-inch monitor connected to the DOS Compatibility Card, but I cannot get the PC Setup control panel to recognize the monitor. The VGA resolution option is dimmed.

DISCUSSION ----------

The DOS Compatibility Card does not support all multiscan displays. If the PC Setup Control Panel does not recognize your monitor, and the VGA resolution option is dimmed, your monitor may not be supported. In this case, your monitor only works in the mode the hardware recognizes.

Article Change History:
22 Feb 1995 - Added keyword; minor updates.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:17005

Tech Info Library

System 7.5: PowerBook Processor Cycling Location (1/95)

Revised: 5/8/96
Security: Everyone

System 7.5: PowerBook Processor Cycling Location (1/95)

==========

Article Created: 12 January 1995
Article Reviewed/Updated: 8 May 1996

TOPIC ----------

I know I missed something somewhere, but I can't rediscover what happened to processor cycling (a.k.a. system rest) in the PowerBook control panel under system 7.5. Is it gone?

It seems to be cycling on my 180c and a customers 280c, but clicking on the Option word no longer works like it did under 7.1.

How do I turn Processor Cycling on and off now?

DISCUSSION ----------

The following information applies to any PowerBook computer running System 7.1.x or 7.5.x or later (including the PowerBook 200, 500, 2300, 5300 series computers).

The Processor Cycling function is still available, but as of System 7.1.1 various PowerBook Control Panels changed significantly. To turn on (or off) Processor Cycling the following are the correct steps, for System Software releases 7.1.1 and 7.5:

1) Open the "PowerBook" Control Panel, and select "Custom" from the Easy/Custom slide switch in the upper right corner.

2) After the control panel display enlarges, in the third section of the display (entitled "Options") click in the box. This will put an "X" in the box, which will turn Processor Cycling "on". If you wish to turn it "off", you need only click to in the box to remove the "X".

There were also a number of other changes made to the Control Panels for the PowerBooks and PowerBook Duos as of System 7.1.1. Some of these changes include changes to the Express Modem Control Panel.

If you are interested in using the Express Modem, or just for reference regarding the control panel changes, you may want to check the Tech Info Library for an article entitled "PowerBook Duo: Where To Find Express Modem Controls (6/94)" which details specifics about the older and newer PowerBook Control Panels relative to the Express Modem.

Article Change History:
08 May 1996 - Added new PowerBook info.

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Tech Info Library Article Number:17006

Tech Info Library

PowerBook 500 series: Global Village Modem and MacPPP (1/95)

Revised: 1/12/95
Security: Everyone

PowerBook 500 series: Global Village Modem and MacPPP (1/95)

==========

Article Created: 12 January 1995

TOPIC ----------

I have a PowerBook 500 with a Global Village Mercury modem and am trying to use a serial protocol like MacPPP. The line drops shortly after I connect. Is there anything I can do about this?

DISCUSSION ----------

If you have trouble maintaining a carrier using MacPPP or another PPP using a PowerPort 500, try upgrading to MacTCP 2.0.6 and try using the initialization string AT&F%C0\N0 to turn off all compression and error correction.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:17007

Tech Info Library

Power Macintosh 6100/66: Incorrect Alias on CD (3/95)

Revised: 3/28/95
Security: Everyone

Power Macintosh 6100/66: Incorrect Alias on CD (3/95)

==========

Article Created: 12 January 1995
Article Reviewed/Updated: 28 March 1995

TOPIC ----------

A problem has been discovered with the latest Power Macintosh CD (p/n 691-0445-A, Version 2.0) that shipped with the recent Power Macintosh computers.

DISCUSSION ----------

Power Macintosh 6100/66 customers who build system software diskettes from the 6100/66 alias on the version 2.0 Power Macintosh CD and try to use them will encounter an error message; "This startup disk will not work on this Macintosh model. Use the latest Installer to update this disk for this model."

The system software disk images referenced by the Power Macintosh 6100/66 alias correspond to the system software disk images for the Power Macintosh 7100/80, 8100/100 and 8100/110. Apple is aware of the alias mis-match and recommends the following simple workaround.

Current Workaround:
The Power Macintosh 6100/66 uses the identical system software disk images as the Power Macintosh 6100/60. Use the "Power Macintosh 6100/60" alias to create a Disk Tools disk or a complete set of system software disks for the Power Macintosh 6100/66.

Long Term Solution:
A resolution for the longer term is being put in place for future builds of this CD.

Article Change History:
28 Mar 1995 - Noted problem is with entire system software, not Disk Tools.
14 Feb 1995 - Changed access to Public.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:17009

Tech Info Library

Apple Personal Diagnostics 1.1.3: Computers Supported (8/95)

Revised: 8/16/95
Security: Everyone

Apple Personal Diagnostics 1.1.3: Computers Supported (8/95)

==========

Article Created: 12 January 1995
Article Reviewed/Updated: 16 August 1995

TOPIC ----------

This article contains the list of Apple Computers supported by Apple Personal Diagnostics (APD). This list is supplied with Apple Personal Diagnostics v1.1.3.

DISCUSSION ----------

LIST OF APPLE COMPUTERS SUPPORTED BY
APPLE PERSONAL DIAGNOSTICS (AS OF AUGUST 1995):
==========

Apple Workgroup Server 60
Apple Workgroup Server 80
Apple Workgroup Server 95
Workgroup Server 6150
Workgroup Server 6150/66
Workgroup Server 8150
Workgroup Server 8150/110
Workgroup Server 9150
Workgroup Server 9150/120

Macintosh Plus
Macintosh Portable
Macintosh SE
Macintosh SE/FDHD
Macintosh SE/30
Macintosh Classic
Macintosh Classic II
Macintosh Color Classic
Macintosh Color Classic II
Macintosh TV

Macintosh II
Macintosh IIx
Macintosh IIfx
Macintosh IIci
Macintosh IIcx
Macintosh IIsi
Macintosh IIvi
Macintosh IIvx
Macintosh IIvm

Macintosh LC
Macintosh LC II
Macintosh LC III
Macintosh LC 475
Macintosh LC 520
Macintosh LC 550
Macintosh LC 575
Macintosh LC 630

Macintosh Centris 610
Macintosh Centris 650
Macintosh Centris 660AV

Macintosh Performa 200
Macintosh Performa 250
Macintosh Performa 275
Macintosh Performa 400
Macintosh Performa 405
Macintosh Performa 410
Macintosh Performa 430
Macintosh Performa 450
Macintosh Performa 460 series
Macintosh Performa 475
Macintosh Performa 476
Macintosh Performa 520
Macintosh Performa 550
Macintosh Performa 560
Macintosh Performa 570 Series
Macintosh Performa 580 Series
Macintosh Performa 600 Series
Macintosh Performa 630 Series
Macintosh Performa 640 Series
Macintosh Performa 5200 Series
Macintosh Performa 6100 Series
Macintosh Performa 6200 Series

Macintosh PowerBook 100
Macintosh PowerBook 140
Macintosh PowerBook 145
Macintosh PowerBook 145B
Macintosh PowerBook 150
Macintosh PowerBook 160
Macintosh PowerBook 165

Macintosh PowerBook 165c
Macintosh PowerBook 170
Macintosh PowerBook 180
Macintosh PowerBook 180c
Macintosh PowerBook 500 Series
Macintosh PowerBook Duo 200 Series

Macintosh Quadra 605
Macintosh Quadra 610
Macintosh Quadra 610 DOS Compatible
Macintosh Quadra 630
Macintosh Quadra 650
Macintosh Quadra 660AV
Macintosh Quadra 700
Macintosh Quadra 800
Macintosh Quadra 840AV
Macintosh Quadra 900
Macintosh Quadra 950

Power Macintosh 5200 LC/75
Power Macintosh 6100 Series
Power Macintosh 7100 Series
Power Macintosh 8100 Series
Power Macintosh 9500 Series

Note: APD also tests the Power Macintosh Upgrade and Macintosh Processor Upgrade cards. APD does not test the DOS Compatible Upgrade Card or DOS Compatibility Upgrade Card.

Article Change History:
16 Aug 1995 - Updated "as of" date.
04 Aug 1995 - Added new computer compatibility with version 1.1.3.
03 Feb 1995 - Noted new version of APD.

Support Information Services

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Tech Info Library Article Number:17011

Apple Personal Diagnostics 1.1: Read Me document (1/95)

Revised: 1/12/95
Security: Everyone

Apple Personal Diagnostics 1.1: Read Me document (1/95)

==========

Article Created: 12 January 1995

TOPIC --------------------

This article contains the Read Me First document from Apple Personal Diagnostics 1.1.

DISCUSSION --------------------

The purpose of this document is to provide late-breaking information as a supplement to the Apple Personal Diagnostics User's Guide. Please refer to the User's Guide for operating instructions and other important and time-saving troubleshooting tips when using Apple Personal Diagnostics (APD). Also, be sure to fill out and return your software registration card so that Apple can notify you of future upgrades to APD 1.1 as they become available.

System Requirements

APD 1.1 runs on Apple computers starting with the Macintosh Plus and is fully compatible with system software versions 6.0.7 through 7.5 (including Performa system software). Installing and using the Automated Diagnostics functionality of APD 1.1 requires that your system is running system software version 7.0 or greater.

New Features

APD 1.1 provides the following major enhancements:

• Support of Power Macintosh computers has been added. APD now supports over 116 Macintosh computers. (See the "Computers Supported by APD" file on the Application Disk for a complete listing.) Also, the number of Emergency disks has been reduced, making it easier to select the one to use on your Macintosh. The two emergency disks included with APD 1.1 provide startup and emergency repair software for all computers that have either an 800K or a 1.4 MB floppy drive.

• The Overall Benchmark Checks now include a broader range of CPUs (including the Power Macintosh). Also, the Overall Benchmark Checks display a numeric value that indicates the relative performance of your Macintosh (compared to a Macintosh Plus). If you run benchmarks on a Power Macintosh, the scale of the Overall Benchmark Checks changes (the maximum performance value changes from 150 to 2000) to reflect the higher performance of Power Macintosh computers. Also note that when running benchmarks on a Power Macintosh (native mode), all comparisons of floating-point math operations include the FPU test because FPU functionality is built-in.

• The SCSI Devices portion of System Info now displays information on both SCSI and IDE hard drives. If you have an IDE drive installed in your computer, drive information similar to that provided for SCSI devices displays in a framed region near the bottom of the SCSI Devices screen.

Installation Instructions

1. Insert the Application Disk into your floppy drive.

2. Drag the APD application icon from the floppy drive onto your hard drive.

3. To install the Automated Diagnostics (System 7 or later only), drag the Automated Diagnostics system extension from the floppy drive onto the closed System Folder of your hard drive. Allow the system software to place the extension in the proper folder (the Extensions folder within the System Folder).

In most cases, you'll want to start up your computer and run APD from your computer's hard drive, which allows the diagnostics to run faster and also lets you collect information about your hard drive.

File Sharing Alert

Turn off File Sharing before you start the APD application. If File Sharing is on, you will receive an on-screen alert or see dimmed selection buttons. To switch File Sharing off, go into the Sharing Setup control panel and click on the stop button.

Turn Off Extensions, Applications, and Other Programs

For best results, start your system with all extensions, applications, and other programs off before launching APD (or use an extensions manager to disable extensions at startup). To turn extensions off, shut down your system, then switch on the system while holding down the Shift key (System 7.0 and later). You should then see a message saying "Welcome to Macintosh, Extensions Off." To perform the equivalent operation on a computer running System 6.0.7 or 6.0.8, please refer to the "Software Remedies" section in the Troubleshooting chapter of the Apple Personal Diagnostics User's Guide.

Using the Emergency Disks

This package contains two emergency disks that allow you to perform certain system software repairs and to boot from a floppy disk when you are unable to

boot from your system's hard drive. Each disk provides the APD Emergency application, as follows:

APD Emergency Disk 1 is a 1.4 MB bootable startup and repair disk for all Macintosh computers with a 1.4 MB floppy drive released through January 1995 (excluding Workgroup Server 9150 computers and computers in which the Macintosh Processor Upgrade card is installed).

Note: To create emergency disks to test Workgroup Server 9150 computers or the Macintosh Processor Upgrade card, see "Creating New Emergency Disks" below.

APD Emergency Disk 2 is an 800K bootable startup and repair disk providing the APD Emergency application for Macintosh computers that did not originally come with, or were not upgraded to include, a 1.4 MB floppy drive (Macintosh Plus, SE, SE/30, II, IIx, and IIfx computers).

The system software on these disks has been minimized to reduce disk requirements. Do not use the software on these disks to install system software on your computer's hard drive. Also, make copies of the original disks to use when you need to start your computer from an emergency disk, and keep your original disks in a safe place. Please refer to the "Getting Started" section of the Apple Personal Diagnostics User's Guide for detailed instructions on the proper use of these disks.

Note: If you have installed a Power Macintosh Upgrade Card, you can use APD Emergency Disk 1 to start your Macintosh computer with the Power Macintosh Upgrade Card on or off at startup. However, if you have a problem, you may want to reset PRAM first and then use APD Emergency Disk 1 to boot your computer. (Refer to the "Software Remedies" section in the Troubleshooting chapter of the Apple Personal Diagnostics User's Guide for instructions on resetting PRAM.)

Creating New Emergency Disks

Workgroup Server 9150 computers and computers with the Macintosh Processor Upgrade card installed require different system software from that provided on APD Emergency Disk 1. To make an emergency startup disk to test the Workgroup Server 9150 or the Macintosh Processor Upgrade card:

1. Insert the Apple Macintosh CD or locked Disk Tools disk that came with your computer or processor upgrade card. Create a temporary folder named Emergency Disk on your computer's hard drive and copy the System file and the system enabler file from the Apple Macintosh CD or Disk Tools disk to the Emergency Disk folder. Eject the Apple Macintosh CD or Disk Tools disk.

2. Insert APD Emergency Disk 1 and copy the APD Emergency application to the Emergency Disk folder. Then eject the APD Emergency Disk 1.

3. Format a 1.4 MB floppy disk and label the disk APD Emergency Disk. Optionally, you may want to add "9150" or "Processor Upgrade Card" to the label.

4. Copy the System file, the system enabler file, and the APD Emergency application file from the Emergency Disk folder to the new emergency disk.

5. On the floppy disk, rename the APD Emergency application to Finder. (Changing the application's name to Finder lets you start up using the APD Emergency application instead of the System Finder.)

6. Eject the new emergency disk and lock the disk. Drag the Emergency Disk folder on your computer's hard drive to the Trash and empty the trash (select Empty Trash from the Special menu).

7. Check the new emergency disk you've created to make sure that your system boots correctly and that you can run the APD emergency application from the new disk.

Automated Diagnostics

Installing and running the Automated Diagnostics functionality of APD software requires that your system is running System Software version 7.0 or greater. The startup delay for Automated Diagnostics has been set to 20 minutes (default). Certain extensions and third-party software programs that perform functions considered to be system activities may prevent Automated Diagnostics from starting up. Also, some third-party utilities may interfere with Automated Diagnostic's operation.

Automated Diagnostics runs in non-native or emulation mode on Power Macintosh computers, so it does not perform an FPU test (since Power Macintosh emulation does not provide FPU functionality).

Help Window

The default setting for the Help window is to have it hidden from view. You can activate the Help window from the Windows menu in the Menu bar. Note: In addition to hiding and showing the Help window, you can move it or change its size to suit your preferences.

Accelerator Cards

If you've installed a third-party accelerator card, you may want to remove or disable the card before running APD to avoid possible incompatibilities.

Video Mirroring

Turn off video mirroring before running APD.

RAM Test Conflicts

Turn off virtual memory and disable RAM optimization utility applications before you run APD RAM tests. (Some RAM optimization utility applications cause your system to behave as if virtual memory were on. The virtual memory setting in your system's Memory control panel cannot disable these applications.)

Low-Memory Alerts

APD returns a low-memory alert when it does not have enough memory to run or is

running low on memory, for example, if you've created a report that requires more memory than is currently available. To allocate more memory to the APD application, you can do one or more of the following:

If you are using System 7, or System 6 with MultiFinder:

• Quit other applications that may be running at the same time as APD.

• If you have sufficient RAM installed in your system, quit the APD application, open the APD Get Info box and increase the "preferred" application memory size to 1500K. (The application memory size is initially set to 1200K.)

• Close any open report.

• Reduce the size of any installed RAM disk and the system RAM cache.

If you are using System 6 with Finder rather than MultiFinder:

• Close any open report.

• Reduce the size of any installed RAM disk and the system Disk cache.

AppleTalk Zones

Under certain conditions (for example, during periods of heavy network activity) System Information may report an AppleTalk zone to be "Unknown."

System Info and Partitioned Hard Drives

The SCSI Device display in System Info does not provide information on multiple drive partitions. Typically, the display lists the name of a single partition on the drive corresponding to the SCSI device, however, the exact information that appears depends on the software used to partition the hard drive.

Looping the Floppy Drive Test

Running the Floppy Drive test for more than approximately 50 loops can cause the floppy drive to temporarily overheat and induce a test failure.

Power Macintosh Upgrade Cards

Basic Info identifies the CPU type as Power Macintosh when a computer with a Power Macintosh Upgrade or Macintosh Processor Upgrade card is operating in "Power Macintosh" mode; however, the card does not appear in Video and Expansion Card Information displays.

Creating Report Log Files

Using APD 1.1, you can create log files and then reload them later to compare with updated reports. Due to changes in the information included in reports, APD 1.1 cannot read log files created by APD 1.0.

Basic Info Reporting of Startup Devices

Basic Info lists the startup device selected in the Startup Disk control panel when APD was launched. If no device is selected in the Startup Disk control panel, or if you've disconnected (or unmounted) the original startup device, Basic Info will not reflect the current setting or may report it as an unknown device.

Benchmark Check Results

The results you get from running Benchmark checks may vary, depending on a range of different factors (see the User's Guide for more information). Therefore, it may be helpful to run Benchmark checks several times and average the results to obtain an accurate comparison for your computer. Also note that the results of the Individual Checks reflect the true speed of your system compared to a Macintosh computer chosen by you from the pull-down menu. The Overall Check graph, on the other hand, is a performance ratio that uses a relative scale of zero to 150 (or zero to 2000 on a Power Macintosh), where a Macintosh Plus equals 1. For example, if the score for your computer is 80, then you can infer that, overall, your computer is 80 times faster than a Macintosh Plus. All scores are relative to a Macintosh Plus.

In addition, benchmark results may be affected by currently active applications and whether you are using FPU emulation software, video mirroring, accelerator cards, virtual memory, or RAM optimization utilities, etc. Turn off all of these items before running APD.

Display Patterns

For a PowerBook with an external display, the Display Patterns Test uses patterns designed for an LCD display on the external monitor, rather than the specific patterns that would otherwise appear.

When using System 7.5 or third-party clock utilities, the clock may appear when test patterns display on your screen. The clock does not affect the operation of the Display Patterns checks.

Support Information Services

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Tech Info Library Article Number:17012

PlainTalk: What is CEToolbox? (2/95)

Revised: 2/22/95
Security: Everyone

PlainTalk: What is CEToolbox? (2/95)

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Article Created: 12 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

What is CEToolbox? Why is it installed with PlainTalk? Can you take it out without creating problems?

DISCUSSION ----------

With most versions of PlainTalk, Apple supplies a Test Drive version of QuicKeys from CE Software.

This version of QuicKeys has a two month expiration time. Supplied samples demonstrate capabilities and integration with speech that go beyond what AppleScript alone can do. Examples show off things QuicKeys can do with Control Panels and applications that cannot be done with AppleScript.

CEToolbox is a system extension that makes QuicKeys available in the Apple menu or the menu bar. It performs other managerial functions for QuicKeys and various products in the CE Software product line. These are usually common interface routines to the Macintosh Toolbox.

The version of CEToolbox supplied with the QuicKeys Test Drive is sufficient to demonstrate the capabilities of the product. Updating to a higher version of CEToolbox does not create problems. Removing CEToolbox does not cause PlainTalk to stop working, although it may cause some speakable phrases not to work if they use the QuicKey OSA language.

There is usually a file called QuicKeys Script Examples, which is a Speech Macro Editor document, placed in the Extensions folder. It contains definitions of recognizable speech phrases to turn Virtual Memory on or off, and copy a selection to the Scrapbook. These are actions that could not be done with just AppleScript functionality, and show off QuicKeys extended capabilities.

Article Change History:
22 Feb 1995 - Added keyword; made minor technical updates.

Support Information Services

Copyright 1995, Apple Computer, Inc .

Tech Info Library Article Number:17013

Tech Info Library

System 7.5: MYST Install Overwrites QuickTime 2.0 (01/95)

Revised: 6/22/95
Security: Everyone

System 7.5: MYST Install Overwrites QuickTime 2.0 (01/95)

==========

Article Created: 13 January 1995

TOPIC -----

When the included installation procedures are followed for the MYST CD-ROM, produced by Broderbund Software, the System 7.5 QuickTime 2.0 is replaced with an older version. According to Broderbund's Tech Support the MYST game should be used with QuickTime 2.0.

DISCUSSION -----

If the user has already followed the MYST Installation instructions, then the simplest solution may be a Custom System Software install. The user should select only the QuickTime software (in the Multimedia Software folder), which replaces the older QuickTime 1.X from the MYST install with the 2.0 version from Apple.

Prior to installing MYST, the user can make a copy of the QuickTime file in the System Folder to a new file name (such as QuickTime Save). After installing MYST, the user can copy the QuickTime Save file back over the QuickTime file in the System Folder.

Other Tips

Broderbund also says that Multimedia Tuner 2.0 is required. This should be available through fulfillment, online services, and Apple Authorized dealers.

Sound Manager 3.0 is also added with a MYST installation. Some other older applications/extensions may not be compatible with Sound Manager.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

Support Information Services

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:17014

Tech Info Library

Frame Technology Corporation

Revised: 1/13/95
Security: Everyone

Frame Technology Corporation

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Article Created: 13 January 1995

Frame Technology Corporation
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333 West San Carlos Street
San Jose, CA 95110-2711

Telephone: 408-975-6000

Fax: 408-975-6799

Sales Info Telephone: 1-800-U4-FRAME, Extension 890

Frame Technology International Limited

Unit 52 Airways Industrial Estate
Cloghran, Dublin 17
Ireland

Telephone: (353) 1 8429566

Fax: (353) 1 8429478

Company Profile:
Develops and markets FrameMaker, desktop publishing software for Macintosh, Windows and UNIX computers.

Support Information Services

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Tech Info Library Article Number:17015

Tech Info Library

Reply Corporation

Revised: 11/21/95
Security: Everyone

Reply Corporation

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Article Created: 13 January 1995

Reply Corporation

4435 Fortran Drive
San Jose, CA 95134 USA

Telephone: 800-801-6898
408-942-4804

Techinical Support: 408-956-2909

Sales: 800-955-5295

Fax: 408-956-2793

Company Profile:
Markets and sells DOS cards for Macintosh computers, including the Quadra line. Reply is a licensee of Apple's DOS Compatibility Card technology.

Copyright 1995, Apple Computer, Inc.

Tech Info Library Article Number:17016

Tech Info Library

How To Order The Support Professional Solution Series (1/97)

Revised: 1/17/97
Security: Everyone

How To Order The Support Professional Solution Series (1/97)

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Article Created: 13 January 1995
Article Reviewed/Updated: 17 January 1997

TOPIC ----------

This article lists Apple's award winning Support Professional Solution Series package options, pricing, and ordering information. The Support Professional Solution Series is a fee-based support tool for corporate help desks, educational technology coordinators, or for anyone who supports Apple products and technologies. See the TIL article "Support Professional Solution Series: Description" for more detailed program information.

DISCUSSION ----------

Pricing & Part Numbers
==========

Please note that the solution series designators equate to the number of people requiring authorized access to Apple; access to information, briefings, escalations and so on.
(Example: 501/701 = 1 person; 703 = 3 people; 705 = 5 people).

The 700 Access Module is designed to expand services beyond the central support area to remote site personnel who require information but who have no direct access to the central support site information server.

Begin_Table

500 Series*

Part Number	Description	Apple Price
M3845LL/A	501 Solution	$2,000

* NOTE: The Support Professional 501 Solution is designed to complement the technical response (phone) services of your chosen provider. Thus, technical

assistance from Apple is not included with this offering. Apple recommends that you review your technical response needs with your chosen hardware provider before purchasing the 501 Solution to ensure your provider has:

- escalation access to Apple
- can support installation and use of Support Professional components
- the level of response to meet your needs

700 Series

Part Number	Description	Apple Price
M3849LL/A	701 Solution	$3,400
M3850LL/A	703 Solution	$4,500
M3851LL/A	705 Solution	$6,200
M3848LL/A	700 Access Module	$ 975 (only available w/701, 703, or 705 Series Solution)

The 700 Solution Series adds technical escalation directly from Apple through a priority 800 number to Apple's Direct Response center.

Component Extensions & Upgrades

Part Number	Description	Apple Price
M3854LL/A	Support Information System/Server Kit	$1,400
M3853LL/A	SP Escalation Line/Extended Hours (Mon-Fri; 7am-1am Central Time Coverage).	$1,000

End_Table

How to Order

• Call 1-800-745-2775 between the hours of 7 AM and 10 PM CST and choose option #3

• If you currently have a direct hardware purchasing relationship with Apple, you will then be prompted to chose option #1. The following menu will be available to you:
Option #1: Authorized Apple Reseller
Option #2: Institute of Higher Education
Option #3: K-12
Option #4: State or Local Government
Option #5: Authorized Developer

• If you do not have a direct hardware purchasing relationship with Apple you will then be prompted to choose option #2. This action will route your call to a representative who can work to guide you through the order process.

What Information Do I Need To Provide To Place My Order?

• If you have a direct hardware purchasing relationship with Apple, you will need to provide your Customer Number and P.O. number or credit card. You can place your order for Support Professional products and services at the time hardware is purchased or any time afterwards.

• If you do not have a direct hardware purchasing relationship with Apple, you will need to provide the following information:

- Name
- Institution Name
- Address
- Phone number
- Purchase order number* or credit card number

This information is necessary for each customer to register directly with Apple so that the "Subscription Activation Kit" may be mailed to the correct person.

* P.O. needs to be faxed to the sales agent as a hard copy verification of purchase. The fax number is (303) 294-0930

What Methods Of Payment Are Available?

• Customers who have an Apple Finished Goods account may pay for Support Professional products in the same way they pay for other Finished Goods products. Support Professional products can also be purchased using a credit card. AppleFund monies cannot be used to purchase Support Professional products (also, AppleFund dollars are not rewarded for the purchase of Support Professional products).

• Customers who do not have an Apple Finished Goods account may pay for Support Professional products by purchase order* or credit card.

* P.O. needs to be faxed to the sales agent as a hard copy verification of purchase. The fax number is (303) 294-0930

What Can I Expect After I Have Placed My Order?

• You will receive a Subscription Activation Box within 2-3 business days after placing the order. Inside the box will be detailed instructions concerning the information you will need to provide to activate your subscription. This information can be provided to Apple by calling 1-800-745-2775 between 7 AM and 10 PM CST and choosing option #4 or by faxing it to (303) 294-0930.

Use of this Subscription Activation Box ensures:

- subscription items are sent directly to you (versus a central warehouse)
- we have the information necessary to customize services to your needs
- offers budget cycle flexibility for those who wish to purchase now but delay the start of the subscription for up to 60 days.

After providing this information to Apple you will receive your Support Professional components within 2-3 business days of subscription activation.

Who Can I Call To Check The Status Of My Order?

- Call the Support Professional line at 1-800-745-2775 between the hours of 7 AM and 10 PM CST and choose option #4 for administrative support.

Article Change History:
17 Jan 1997 - Reviewed article, removed Ziff-Davis information.
05 Apr 1996 - Updated with latest pricing and product information.

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Tech Info Library Article Number:17017

SCSI Manager 4.3: Compatibility and Features (5/96)

Revised: 5/14/96
Security: Everyone

SCSI Manager 4.3: Compatibility and Features (5/96)

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Article Created: 13 January 1995
Article Reviewed/Updated: 14 May 1996

TOPIC ----------

This article provides compatibility and feature information of Small Systems Computer Interface (SCSI) Manager 4.3.

DISCUSSION ----------

SCSI Manager 4.3 adds several new features to the SCSI architecture of the Macintosh. These features include:

- SCSI-2 compliance
- Concurrent asynchronous I/O
- Disconnect and reconnect

SCSI Manager 4.3 is supported on all Power Macintosh, and 68040 Macintosh desktop computers. However, the Macintosh 630 family* requires SCSI Manager 4.3.1 which is included in System 7.5.1 and later. SCSI Manager 4.3 is not supported on any Macintosh PowerBook computers, including Duos.

SCSI Manager 4.3 is part of the ROM in all Power Macintosh and Quadra AV computers. Other 68040 Macintosh computers require the SCSI Manager 4.3 extension (System 7.5) or the SCSI Manager extension (System 7.5.1 or later).

SCSI-2 Compliance

All mandatory SCSI-2 messages and protocol actions, as defined by the initiator, are supported. However, optional hardware features of SCSI-2, such as fast SCSI and wide SCSI, are supported by the interface but not by the Macintosh hardware. This means that expansion cards can be designed to offer this functionality and SCSI Manager 4.3 supports these cards.

Concurrent Asynchronous I/O

Concurrent asynchronous I/O means that reads and writes can be requested and the processor is free to do other things until the device completes the request and notifies the SCSI Manager by using an interrupt. Multiple drivers can issue multiple requests; SCSI Manager 4.3 tries to overlap the operations as much as possible. Applications need to call the File Manager asynchronously to take advantage of the asynchronous operation of SCSI Manager 4.3.

Disconnect and Reconnect

Disconnect and reconnect lets devices disconnect from the SCSI bus while processing a command and reconnect when needed. With this feature requests can be sent to multiple devices and executed in parallel. For example, a driver for a disk array can send a request to one disk, which disconnects, then issue another request to a different disk. The two disks can then process the requests simultaneously, reducing the time needed to accomplish the task.

Direct Memory Access

Direct memory access is also used by SCSI Manager 4.3. This capability is available on the Quadra 660av, Quadra 840av and all Power Macintosh computers. This allows direct transfer of data from the SCSI bus to memory without going through the main processor. This frees the main processor to do something else at the same time as the data transfer.

Multiple SCSI Bus Support

SCSI Manager 4.3 also supports multiple SCSI buses. Some Macintosh models (such as the Power Macintosh 8100/80) have dual SCSI buses. These Macintosh computers support 14 SCSI devices (7 on each bus) as long as the drivers for these devices support SCSI Manager 4.3. Also, Nubus and PDS cards can be developed to add even more SCSI buses.

Parity Detection

Parity detection is now used to check for errors in data received by the SCSI Manager. This feature can be enabled or disabled on a per transaction basis for compatibility. The original SCSI Manager did not check for parity errors of incoming data. All Macintosh computers generate parity for write operations.

Compatibility

SCSI Manager 4.3 is backward compatible with the original SCSI Manager. All of the original SCSI Manager functions and TIB instructions are supported except for scComp (compare).

Additional and programming information can be found in "Chapter 4 - SCSI Manager 4.3" of "Inside Macintosh: Devices".

*Note: The following computers are in the Macintosh 630CD family: LC 630, Quadra 630, Performa 630, Performa 635, Performa 636, Performa 637, Performa 638, and Performa 640.

Article Change History:
14 May 1996 - Updated technical information.
22 Feb 1995 - Added keyword; made minor technical updates.

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Tech Info Library Article Number:17019

Tech Info Library

System 7.5: Desktop Patterns Control Panel (2/96)

Revised: 2/28/96
Security: Everyone

System 7.5: Desktop Patterns Control Panel (2/96)

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Article Created: 13 January 1995
Article Reviewed/Updated: 28 February 1996

TOPIC ----------

With the new Desktop Patterns control panel in System 7.5, Apple gives you greater control than ever before over the patterns that you can use to decorate your desktop.

DISCUSSION ----------

When you first access the Desktop Patterns control panel, a 3.25" by 4" window opens up. This initial "scrapbook" contains 64 patterns that you can view by clicking repeatedly on the horizontal scroll bar beneath the patterns themselves. When you find a pattern that you would like to transfer to your desktop, click the Set Desktop Pattern button.

You can design your own patterns by using a paint-type program (or the paint module within a program like ClarisWorks). The pattern area measures 128 x 128 pixels, so you can create a design up to that size, select it with a marquee tool, cut the selection from the paint document, and paste it into the Desktop Patterns window without distortion. If you paste a pattern smaller than 128 x 128 pixels, the smaller pattern is duplicated without distortion across the desktop after you click on the Set Desktop Patterns button. If you paste a pattern larger than 128 pixels in either direction, a reduced version of the pattern appears in the Desktop Patterns window.

Every time you paste something into the Desktop Patterns window, a new pattern is added to the collection. (You cannot paste text into the Desktop Patterns window, although you can paste an image of text from a paint program.) Regardless of which pattern is open at the time you paste, the new pattern appears after all the others. The pattern that was open at the time of pasting is not deleted. To remove a currently visible pattern from the collection, use Cut from the Edit menu or type Command-X.

The Desktop Patterns control panel supports a maximum image size of 64K. The

maximum number of patterns that can be stored is 226. The patterns are stored in a file called Desktop Pattern Prefs in the Preferences folder inside of the System Folder. If the current Desktop Pattern Prefs file is removed from the Preferences folder and placed elsewhere, a new Prefs file is created the next time you call up the Desktop Patterns control panel. The new Desktop Patterns Prefs file contains the basic collection of 64 patterns. The old file, with all its saved patterns, can be kept and substituted for the current Prefs file whenever desired.

When patterns are cut from the control panel, they disappear from view but remain hidden and inaccessible in the Desktop Pattern Prefs file, where they take up space. Over time, if you do lots of cutting and pasting of patterns, the Prefs file can become quite large. If this happens, you may want to discard it and start over.

In addition to the traditional copying and pasting of images, the Desktop Patterns control panel supports Apple’s new drag-and-drop feature. If you drag a pattern out of the control panel window and into a Finder window or onto the Desktop, a file called “picture clipping” is created. This file can be dragged into any Macintosh program that supports drag-and-drop, such as the new Scrapbook. Similarly, you can drag picture clipping files into the Desktop Patterns control panel window from drag-and-drop-compatible programs like the Scrapbook.

Here's one last feature of the Desktop Patterns control panel: if you hold down the Option key on your keyboard, the Set Desktop Pattern button changes to Set Utilities Pattern. When you click on this alternate button, the selected design is used as a background pattern in various Apple utilities. These utilities include Calculator, Find File, Jigsaw Puzzle, Key Caps, and Scrapbook. ** NOTE **: This option does not show up if the Macintosh is limited to Black and White.

With all of these features, the new Desktop Patterns control panel can make your Macintosh more attractive than ever before.

Article Change History:
28 Feb 1996 - Added note about option not available with black & white.
03 Aug 1995 - Corrected minor typo.
16 Feb 1995 - Changed keyword and reviewed for technical accuracy.

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Tech Info Library Article Number:17020

Tech Info Library

LaserWriter 16/600 PS: Problems With Quark Xpress EPS files 5/95

Revised: 5/31/95
Security: Everyone

LaserWriter 16/600 PS: Problems With Quark Xpress EPS files 5/95

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Article Created: 13 January 1995
Article Reviewed/Updated: 31 May 1995

TOPIC ----------

If I import an EPS file that is resized or cropped in Quark XPress 3.3, it prints out in its entirety on a LaserWriter 16/600 PS, not cropped as it appears on the screen. How can I fix this?

DISCUSSION ----------

The fix to this problem, a patch, created by Quark, gets downloaded automatically with each print job. The patch is in the form of a Quark PDF file.

This PDF file is currently available on several online services. The following are the locations from which QuarkXPress users can obtain the PDF for LaserWriter 16/600 PS:

America Online

Mac = Keyword: Quark -> Quark Software Libraries -> Misc. Downloads -> filename: LaserWriter 16/600 PDF

Win = Keyword: Quark -> Quark Software Libraries -> QXP Windows XTensions -> filename: WN16-600.PDF

Compuserve

Mac = Go: Quark -> Software Libraries -> library section 6 (PDFs/PPDs) -> filename: M16600.PDF

Win = Go: Quark -> Software Libraries -> library section 6 (PDFs/PPDs) -> filename: L16600.PDF

Applelink

```
---------
(Macintosh version only)
Software Sampler
.   >3rd Party Demos/Updates
.     >Software Updates
.       >Companies K-R
.         >Quark
.          >Mac Software Libraries
.             >Printer Description Files
.                LaserWriter 16/600 PDF
```

Alternately if customers do not have access to any online services, they can call Quark. When they call customers merely need to mention that they have the LaserWriter 16/600 PS - Quark Xpress clipping problem and that they have been informed that Quark has a fix for the problem. Then they can request that fix be sent to them.

The Tech Info Library article titled "Locating Vendor Information" can help you search for a particular vendor's address and phone number.

This article was published in the "Information Alley":
Volume II, Issue 3, Page 9

Article Change History:
31 May 1995 - Added Info Alley information; made minor updates.
17 Mar 1995 - Added solution to the problem.
21 Feb 1995 - Added more detail about the resolution.

Support Information Services

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Tech Info Library Article Number:17021

Earth Explorer: Overview (6/95)

Revised: 6/28/95
Security: Everyone

Earth Explorer: Overview (6/95)

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Article Created: 17 January 1995
Article Reviewed/Updated: 28 June 1995

TOPIC ----------

What is Earth Explorer?

DISCUSSION ----------

Earth Explorer is a CD-ROM based product that sets the user off on an interactive tour of our planet, from the countless microorganisms that give us oxygen to breathe, to the abysses of the oceans where strange life forms thrive, to the human world that has been transforming the planet for thousands of years.

Earth Explorer covers it all - the science of climate and life, the history of human exploration and migration, the rise of technology, even the thoughts of artists and writers on our natural world.

Users will discover how life evolved from single-celled organisms billions of years ago to the countless species that exist today. Users will be able to examine the fascinating chemical processes that spell the difference between life and death. How do plants make their own food-and why is their food-making process vital to nearly all other life on earth? Users will learn how the oceans influence earth's climate-or even how the decay of organic material millions of years ago affects the air over Mexico City today.

But Earth Explorer goes deeper. It helps users think through how we'll solve today's environmental problems. Users will discover that pollution and overuse of the land re not modern "inventions." They plagued some of the earliest civilizations. So who's responsible for fixing the ozone hole? How can we preserve endangered species? What about population growth? Sort the facts from the fiction, the wishes from the reality. From wetlands protection to biodiversity to renewable energy, Earth Explorer lets users compare conflicting points of view and draw one's own conclusions.

Hundreds of richly illustrated articles make up the backbone of Earth Explorer. Almost 1,000 photographs and more than 400 original graphic art pieces-infographics-make complex ideas more clear. Explore Screens let users (literally!) play with the building blocks of basic environmental concepts. In Hot Topics games, users can listen to people's opinions on 21 controversial issues of the day-then decide which ones best support a particular point of view. (The solutions are not clear-cut, so users get a chance to score themselves on their reasoning and knowledge.) Users will also find Puzzlers-challenging questions that invite them to think logically or look at a subject in a new light.

In Data Sets, users view environmental data in different graphic combinations for their own analysis. Whether it's tracing the decline of the Blue Whale, estimating the population of Peru 2,000 years ago, or figuring out why some pollutants are getting better and while others are getting worse-users can find the numbers they need in a Data Set.

More than 90 minutes of Movies and Videos provide an added dimension of drama-a "you are there" feel to earth's people and places. One can see how the Pangea of 600 million years ago became the continents we know today. Users can walk with a naturalist on their daily adventures. They can listen to the poetry of Langston Hughes.

Earth Explorer includes other writers and artists as well, expressing their views on nature and the environment. Here users may find that "just right" quotation for a report, or a piece of fine art that is a springboard to a new thought.

There's much, much more. Laws and treaties, and what they mean. Biographies. Careers that can make a difference. For all its wealth of information and activities, Earth Explorer is easy to use. It's all cross-linked. Users can go anywhere, from anywhere. Users will master it in a flash, making endless discoveries.

Earth Explorer features:
- 433 In-Depth Articles
- 21 Hot Topic Interactive Activities
- 21 Datasets
- 12 Exploration Activities
- 165 quotes
- 406 info graphics
- More than 1200 Color Photographs
- More than 90 minutes of audio-visual presentations including slide shows, QuickTime movies, animation's and audio clips
- Colorful and Easy-To-Read Charts and Graphs
- Data Verified by the American Association for the Advancement of Science
- Printable Student Notebook
- Includes Case Studies
- Interactive Activities
- Teachers' Materials including Guide Book, Lesson Plans, and Worksheets (School Version)

Article Change History:
28 Jun 1995 - Lowered security now that product is released.

Support Information Services

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Tech Info Library Article Number:17024

Tech Info Library

Quadra 800/840av/Wrkgrp Srvr 80: No Memory from Apple (5/95)

Revised: 5/4/95
Security: Everyone

Quadra 800/840av/Wrkgrp Srvr 80: No Memory from Apple (5/95)

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Article Created: 17 January 1995
Article Reviewed/Updated: 4 May 1995

TOPIC ----------

I noticed that on the latest Apple Product List does not list the Quadra 800, Quadra 840AV, or Workgroup Server 80 as supported products for the 4MB, 8MB, or 16MB memory upgrade kits. Will these Macintosh memory kits work in these machines?

DISCUSSION ----------

Apple's memory offerings recently went through a slight change. Our current Macintosh memory upgrades are all 70ns.

Quadra 800, Quadra 840AV and Workgroup Server 80 customers requiring 60ns SIMMs should purchase SIMMs through 3rd party sources.

Apple currently offers 4MB, 8MB, and 16MB 72-pin SIMM upgrade kits.

M3651LL/A Macintosh 4MB Memory Exp. Kit (1-4MB SIMM)

M3652LL/A Macintosh 8MB Memory Exp. Kit (1-8MB SIMM)

M3372LL/A Macintosh 16MB Memory Exp. Kit (1-16MB SIMM)

These kits may be used in the following systems:

- LC III, 475, 520, 550, 575
- Performa 450, 460, 466, 467, 475, 476, 550
- Macintosh TV
- Centris 610, 650, 660AV
- Quadra 605, 610, 630 family, 650, 660AV
- Power Macintosh 6100, 7100, 8100
- Apple Workgroup Server 60

NOTE: The Quadra 800, 840AV, and Workgroup Server 80 require 60 nanosecond SIMMs

and thus will not be supported by the new DRAM Upgrade Kits. Upgrade Kits for these systems can be purchased from a variety of 3rd party sources.

Article Change History:
04 May 1995 - Made minor technical updates.

Support Information Services

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Tech Info Library Article Number:17026

Tech Info Library

LaserWriter 16/600 PS: Use Manual Feed For Labels (4/97)

Revised: 4/14/97
Security: Everyone

LaserWriter 16/600 PS: Use Manual Feed For Labels (4/97)

==========

Article Created: 17 January 1995
Article Reviewed/Updated: 14 April 1997

TOPIC ----------

I am using a LaserWriter 16/600 PS for printing labels almost exclusively. I am using the normal paper tray. However, the labels jam all the time. The manual says to use the manual feed, but I have not found a way to make the Page Setup default to manual feed. Also, the manual feed also does not allow as many labels as the paper tray does.

Are there any tips to printing labels with the LaserWriter 16/600 PS? Is there a way to default always to the manual feed?

DISCUSSION ----------

The LaserWriter 16/600 PS print engine is not designed to handle labels from either the 250 or 500 sheet cassette trays. Trying to do so results in a higher than normal number of misfeeds, label separations, and paper jams.

Workaround
==========

The LaserWriter 8.x driver does not have a "sticky button" feature that remembers the last paper source chosen. However, there is a PostScript level workaround that may be acceptable since you use the printer mainly for labels. It is important to note that the workaround involves modifying a value stored on the I/O controller, which stores the default paper tray information. The default tray is always set to the 250 sheet cassette tray when the printer ships from the factory, however it can be changed.

The paper out LED (Light Emitting Diode - the small amber light on the side of the printer) is activated whenever there is no paper detected in the default tray. If the default tray is set to the multi-purpose tray then the paper out LED turns on whenever there is no paper present in the multi-purpose tray, even

if there is paper in the 250 sheet cassette. To prevent confusion a note should be placed on the printer explaining that a paper out condition means that paper should be added to the multi-purpose tray.

Defining the Default Paper Tray

Any of the paper trays (Multipurpose, 250-sheet, 500-sheet, or Envelope) can be set as the default paper tray if Auto Select is selected as the paper source from within the print dialog box, if the PostScript code below is downloaded to the printer. The default paper tray is the default paper tray setting for print jobs coming from any Macintosh since this value is modified at the printer hardware level.

PostScript Code

If you decide to use the PostScript code below, you need to be very careful in selecting the default tray. If the multipurpose tray is set as the default and there is no paper in it, the paper out LED will light for EVERY PRINT JOB until paper is placed in the tray. This problem has caused some users (others on the network) to think that the printer is malfunctioning and needs to be repaired. Please forewarn users about this so they can understand, that the printer's behavior has changed.

Caution! If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

Here is the PostScript Level 1 code to set the default paper tray:

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
statusdict begin 1 setdefaultpapertray end
%
% End PostScript Code
%=========================================================
```

The preceding example has a 1 as the Tray Selection option, before the PostScript operator:

```
1 setdefaultpapertray
```

This indicates that the default changes to the multi-purpose tray. If the default tray needs to be reset to the factory default at a later date then the value should be changed to 0.

To download the PostScript file to the LaserWriter copy the two lines of PostScript code into any text processor and save it as a text file. Use the Apple Printer Utility or other PostScript utility to download the file to the printer.

The following table lists the values for the Tray Selection option:

Begin_Table

VALUE	TRAY SELECTION
0	250 Sheet Cassette
1	Multi-purpose tray
2	500 Sheet Cassette
3	Envelope tray

End_Table

This is the equivalent PostScript Level 2 code:

```
%=========================================================
% Begin PostScript Code
%
serverdict begin 0 exitserver
1 dict dup /InputAttributes 1 dict dup /Priority [2 1 0] put put setpagedevice
%
% End PostScript Code
%=========================================================
```

This sets the paper tray priority to:
1st Priority - Cassette (500 Sheets) - designated by the "2" in the array above.
2nd Priority - Multipurpose Tray - designated by the "1" in the array above.
3rd Priority - Cassette (250 Sheets) - designated by the "0" in the array above.

You can change the paper tray priority order by changing the values in "/Priority [2 1 0]".
For example, /Priority [0 1 2] makes the 250 sheet cassette first priority, then the Multipurpose tray next, then the 500 sheet cassette.

NOTE: Remember to reset the default value back to its original setting when you are done.

Article Change History:
14 Apr 1997 - Added PostScript Level 2 code.
23 May 1995 - Added section to notify users about default paper tray change.
22 Feb 1995 - Added keyword, Tray Selection table, PostScript caution.

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Tech Info Library Article Number:17029

Tech Info Library

DOS Compatibility Card: TCP/IP in Both Environments (10/96)

Revised: 10/1/96
Security: Everyone

DOS Compatibility Card: TCP/IP in Both Environments (10/96)

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Article Created: 17 January 1995
Article Reviewed/Updated: 1 October 1996

TOPIC ----------

Is there a way to have the TCP/IP protocol stack active in both the Macintosh and DOS environments on computers which are using a DOS Compatibility Card, but which do not have the Curio Prime controller?

DISCUSSION ----------

With the introduction of the Power Macintosh 7200/90 (in Europe ONLY), 7200/120, 7600/120, 8500/132, 8500/150, and 9500/150 a new Ethernet controller ASIC called Curio Prime (or Curio II) is used. This chip implements two hardware Ethernet addresses for the single built-in Ethernet interface. One address is used by the Mac OS and the other is used by only the DOS Compatible Card. Since these computers have two hardware addresses the DOS compatible architecture can now deliver a particular frame type to different addresses which removes the limitation of each frame type going to only one environment.

Prior to the implementation of the Curio Prime ASIC, the built-in Ethernet controller could have only one Ethernet hardware address. Because of this, only one incidence of a given protocol can be in use over the Ethernet interface. If TCP/IP is in use in the DOS environment, it's unique IP address is tied to the hardware address of the Ethernet controller. Another IP address cannot be linked to the same Ethernet hardware address, so TCP/IP could not be active in the Macintosh environment at the same time.

Workaround

Two possible workarounds exist for those who need to have TCP/IP in both the Macintosh and DOS environments on computers without the Curio Prime ASIC.

Workaround 1:
Add an additional Ethernet card to the computer. With this card present, the Macintosh environment could be configured to use TCP/IP on the added card while

the DOS environment could be configured to use the built-in Ethernet controller.

Workaround 2:
Configure the Macintosh environment to use MacIP. This requires the presence of a DDP/IP Gateway, like the Apple IP Gateway, Shiva FastPath, or Cayman GatorBox, on the network. With MacIP, TCP/IP packets from the Macintosh environment would be encapsulated in EtherTalk. The encapsulation process does reduce TCP/IP performance in the Macintosh environment, but provides full TCP/IP connectivity for both environments.

Article Change History:
01 Oct 1996 - Complete revision of article.
22 Feb 1995 - Added keyword; made several technical updates.
25 Jan 1995 - Added section on IP numbers and so on.

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Tech Info Library Article Number:17030

Pwr Mac DOS Compatibility Card: Read Me File (11/95)

Revised: 11/29/95
Security: Everyone

Pwr Mac DOS Compatibility Card: Read Me File (11/95)

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Article Created: 18 January 1995
Article Reviewed/Updated: 29 November 1995

TOPIC ----------

This article contains the Power Macintosh DOS Compatibility Card ReadMe file.

DISCUSSION ----------

Using DOS and Windows Applications
With the DOS Compatibility Card for Macintosh

This document contains important information about using your DOS Compatibility Card that is not included in your user's guide.

Contents

- Using the Clipboard
- Using the Serial Ports on the Macintosh
- Using Backup Programs
- Using the Floppy Drive
- Booting the PC from Floppy
- Configuring the Memory
- Using the Drive Files
- Using Shared Folders
- Strange Text Characters in a Document
- Rebuilding the Desktop
- Sound Control Panel Settings
- Using the Sound Blaster Card
- Using CD-ROM Drives
- Multimedia, MIDI, Game Applications
- Video Configurations
- Setting General Controls
- Bypassing the CONFIG.SYS and AUTOEXEC.BAT files
- Installing Corel Draw
- Using Norton Utilities
- Using After Dark 3.0

-Using Debabilizer
-Using SAM 4.0
-Using PC Tools Pro 9.0
-Using MWUNDEL
-Networking
-Using the Serial Port
-Printing
-Printing to a Postscript Printer
-Printing to a QuickDraw Printer
-Printing to a PCL Printer
-AppleShare Print Server
-Other Notes

Using the Clipboards

The DOSClip utility provides a limited emulation of the clipboards available with the Mac OS and Windows.

With the DOS Compatibility Card fully installed, you'll have three separate clipboards to work with: the Mac OS clipboard, the Windows clipboard, and DOSClip. Translation between the clipboards takes place each time you switch between the PC and Macintosh environments. When using these clipboards there are a few things to keep in mind:

• Copying items to the Macintosh clipboard, switching to Windows and copying items to the Windows clipboard, will write over the original Macintosh clipboard contents. To prevent this, remove the PC Clipboard extension from the System Folder.

• In order to translate the contents of the Macintosh clipboard to the Windows clipboard, Windows must be already running when you switch environments. If you switch to DOS, then launch Windows, the Macintosh clipboard will be translated into DOSClip, and the Windows clipboard will be blank.

• In order to translate the contents of the Macintosh clipboard to DOSClip, the PC should be running without Windows when you switch environments. This means that you must have already quit Windows. Running the "MSDOS Prompt" command from Windows won't work either. In short, If Windows is running when you switch to the PC, the Macintosh clipboard will be translated into the Windows clipboard, and DOSClip will be blank.

• DOSClip contents cannot be pasted into Windows, or vice versa.

• Graphics can be copied from a DOS application to DOSClip, but graphics cannot be pasted into a DOS application from DOSClip.

• After copying a graphic from DOS using DOSClip, you may experience difficulty in pasting the graphic into a Macintosh application. If this happens, trying increasing the Macintosh application's memory:
    - Highlight the application's icon
    - Select Get Info from the File Menu
    - Adjust the Preferred Size setting

- Close the Get Info window

• Sounds are not translated between the Macintosh and the PC.

• Plain text is automatically translated from one environment to another, but in order to retain font and style information, additional Macintosh Easy Open translators must be used (for example, MacLink Plus from DataViz).

When using DOSClip from within certain applications, it may not be possible to select the text using the mouse. In these cases, either:
• Use the keyboard to select your text, or
• Check that the Standard DOS Mouse Driver is NOT loaded

When the PC environment is active, all Macintosh applications are put in the background to allow PC Clipboard to run in the foreground. If you do not want your Macintosh applications to run in the background while you are in the PC environment, you must disable the clipboard translation.
• Remove the PC Clipboard Extension from the Extensions Folder.

Using the Serial Ports on the Macintosh

The maximum baud rate supported by the DOS Compatibility Card when a COM port is mapped to a Macintosh serial port is 19,200. However, when the "MODE" command is issued in DOS and the serial port is set at 19,200 baud, the erroneous message "Function not supported on this computer" is returned. This occurs because DOS is looking for specific hardware (a PC UART) that is not emulated by the DOS Compatibility Card. The DOS Compatibility Card WILL support 19,200 baud, and can be set by a number of communication applications.

Using Backup Programs

To back up the drive files on your Macintosh, either make a copy of the files by duplicating them in the Finder, or use a Macintosh backup application program. Do not use PC backup programs. PC backup programs do not work with the DOS Compatibility Card because these applications require direct access to PC floppy drive hardware. The floppy disk drive on this system is controlled by the Macintosh.

Using the Floppy Drive

Both PC and Macintosh floppies are automatically mounted when inserted into the floppy drive, in either operating environment.* This mounting process takes a few seconds. Macintosh users are familiar with this process; PC users will find that they should wait a few seconds before accessing the data on the floppy disk.

Certain DOS or Windows floppy disk utilities will not work with the DOS Compatibility Card. These utilities attempt to exercise direct control over the floppy drive, which they cannot do, since it is a Macintosh-controlled floppy drive. Instead, Macintosh disk utility applications should be used.

An unlocked DOS floppy (e.g. an install floppy) inserted while running in the Mac environment will not be visible from the DOS environment. You must switch to the DOS environment before inserting the floppy for it to be accessible to the PC. This is especially important to remember during DOS installation. However, locked DOS floppies inserted in the Mac environment WILL be visible to both the DOS and Macintosh environments.

Disk Copy won't read a DOS-formatted floppy unless it is unlocked.

Floppy disks formatted by the DOS Compatibility Card in DOS 720K format are not readable by some DOS computers. Instead, format the disk in the Macintosh environment:

- Switch to Macintosh environment
- Insert an unlocked, low-density floppy disk
- Select "Erase Disk" from the Special menu
- Select the "DOS 720K format" from the dialog box
- Click "Erase"

Booting the PC from Floppy

To reboot the PC environment with a floppy, insert the disk in the floppy drive and press <Ctrl-Alt-[keypad] period>. Selecting the "Restart PC" option from the PC Setup Control Panel, or pressing <Cmd-Ctrl-Alt-[keypad] period> will eject the floppy from the drive. Alternatively, the user may select either of the two latter options and immediately reinsert the floppy after it is ejected.

Configuring the Memory

On pg. 73 of the User's Guide, it states: "The SIMM that your card uses is the same type of SIMM that your computer uses." "Your computer" refers to your Macintosh.

Many DOS and Windows applications require "conventional memory" to run. At the same time, many device drivers and "TSR's" may be loaded into conventional memory. You may find that you do not have enough conventional memory to run some of your DOS or Windows applications. To correct this we recommend:

To increase Upper Memory Block (UMB) space to 122K instead of 64k:

DEVICE=C:\WINDOWS\EMM386.EXE RAM=D000-EFFF FRAME=D000 in CONFIG.SYS

To load DOS into the UMB (high memory):

DOS=HIGH, UMB in the CONFIG.SYS file

Insert LH before all TSRs/device drivers in the AUTOEXEC.BAT. For example:

LH C:\DOS\SMARTDRV.EXE /X

This will load these into UMB (high memory). If you run out of UMB space, you may see an error message like this during the boot process:

Run time error R6009
-not enough space for environment.

In this case, remove "LH" from TSRs/device drivers one or two at a time, and try again until the error message does not appear.

If a DOSClip copy command is executed from within Harvard Graphics 3.0 then the PC crashes when Harvard Graphics is quit. To prevent this, use the steps outlined above, making sure that SMARTDRV is one of the drivers preceded with LH.

Important:
To prevent the System BIOS from becoming corrupted when the DOS Compatibility Card is configured for 2 MB of memory, set the switch in the CONFIG.SYS file to turn memory testing off:

DEVICE=C:\DOS\HIMEM.SYS /TESTMEM:OFF

The DOS Compatibility Card does not support memory management utilities for DOS/Windows as mentioned on pg. 38 of the User's Guide. In addition, RAM Doubler, and similar applications, are not supported.

When sharing memory with the DOS Compatibility Card, the Macintosh allocates a portion of its memory to the PC. Because of this, the Macintosh may not be able to load all extensions desired by the user.
If this problem occurs, try:

- Adding memory to the DOS Compatibility Card.
- Decreasing shared memory setting
- Do not use PowerTalk
- Reducing the number of System Extensions loaded
- Removing CloseView from the Extensions folder
- Do not use QuickDraw GX. QuickDraw GX prefers 16MB of RAM.
- Do an Easy Install of System 7.5, or, if you need to do a custom install, install only what you need
- Renaming the "PC Setup" Control Panel to "!PC Setup" so that it loads first.

Note: Start your Macintosh with the SHIFT key held down during the boot-up process. Extensions will not be loaded and you will be able to relocate those extensions that are not desired to a location outside of the System Folder. Restart the Macintosh to have the new extension configuration take effect.

You may find that, even when SIMMs are added to the Power Macintosh 6100 DOS Compatible mother board, you get less shared memory (MB) than you requested from the PC Setup Control Panel.

Begin_Table

SET	ALLOCATED
8	4
16	8
32	8

End_Table

The design of some memory SIMMs do not permit the DOS Compatibility Card to utilize the full capacity of the memory.

When sharing memory other than 8 MB (e.g. 2,4,16, etc.), the Modern Memory Manager must be turned on. This is done through the Memory Control Panel. There are applications which are incompatible, to varying degrees, with the Modern Memory Manager. If shared memory must be set at a level other than 8MB, there are two options for problems occurring with these applications:

- Add a memory SIMM to the DOS Compatible Card
- Upgrade the application to a version compatible with the Modern Memory Manager

If the DOS Compatibility Card shares 16MB or more and Disklight of Norton Utilities 3.1.1 is installed, the system will hang during startup. This does not occur with 8MB or less shared memory.

Using the Drive Files

Use caution when handling the Drive File. Erasing one of these is equivalent to reformatting the hard drive it is emulating! To prevent this, lock the Drive File using Get Info.

Correction to the User's Guide, pg. 43:
A PC-formatted SCSI drive may be used as the C: drive, as long as it is formatted to be bootable by using the FORMAT C: /S command.

When using a PC-formatted SCSI device as the PC's C: or D: drive, ensure that the driver for that device is not loaded by PC Exchange. This would cause PC Exchange to mount the drive instead of the DOS Compatibility Card.
To correct this, open the PC Exchange control panel, and click the Options button. Make sure the SCSI driver for the device is not checked. Then click OK. This will ensure that the DOS Compatibility Card will be able to load the C: drive.

Using Shared Folders

Because two operating systems have access to each shared folder, there may be a noticeable slowdown in performance when using these folders for high-speed PC applications, such as multi-media programs, or during large file transfers between them. For optimum performance, place the PC applications and their files on the C: or D: drive rather than on a shared folder. The performance of Macintosh applications is unaffected by placing them in shared folders.

Since the PC doesn't understand the concept of resource forks the same way the Macintosh does, information in a Macintosh file's "resource fork" is lost when it is copied by the PC. For example, if a Macintosh file is copied between two shared folders using the COPY command in DOS, that file's original icon will be lost, and the file itself may be unusable.

Many document files do not have resource forks and can be copied between shared folders with no problems. The applications that created the files contain the resource information for these files. However, QuickTime files cannot be successfully copied between shared folders.
Refer to PC Exchange documentation for more information.

In some Microsoft applications, there is a misrepresentation of the shared drive icons. When you open a file from a shared folder in Microsoft Excel or Microsoft Word, the shared drive icon may appear as a floppy or CD. This does not affect the file's functionality.

Do not attempt to use shared folders from a DOS shell run from Windows.

Strange Text Characters in a Document

When using shared folders to exchange documents between your Macintosh and the DOS Compatibility Card, in some cases a Macintosh application program may not be able to interpret the file format of a PC document. When this happens, the document's formatting is displayed incorrectly and you may see strange characters in the document:

- Try using a different application program
- Translate the document into a different file format using one of the file format translation utilities available for the Macintosh (such as MacLinkPlus/Easy Open Translators from DataViz).
- Transfer the text using DOSClip
- Use the "Export" feature found in many applications
- Use a PC-Macintosh translation utility. There are many shareware applications available.

Rebuilding the Desktop

If you need to rebuild the Macintosh desktop, you must either wait for the desktop to rebuild while in the Macintosh environment, or switch to the DOS environment and remain there until the rebuild is complete. Switching back to the Macintosh environment during rebuild will cause the Macintosh to crash.

Sound Control Panel Settings

For sounds generated by the Sound Blaster card and for sounds from the PC, the Sound Control Panel must be set with the Internal CD playthrough enabled. The User's Guide will explain how to make this setting (see pg. 54). With System 7.1.2, however, the setting is lost after each reboot. Install the System

Update 3.0 software to correct this problem so that the playthrough setting is retained after each reboot.

QuickTime also turns off the playthrough option. This has the effect of cutting off all PC and Sound Blaster card sounds. QuickTime v1.6.2 will turn off playthrough and not restore it, while v2.0 will restore playthrough back to its original state.

Using the Sound Blaster Card

The PC Sound control in the PC Setup control panel does not effect sounds produced by the Sound Blaster card. Only PC-generated sounds such as the system beep are affected by this control. Use the master volume control of the Mixer Control application from the Audio program group, or turn off the Internal CD playthrough to turn off both PC and Sound Blaster generated sounds (see pg. 54 of the User's Guide).

The Sound Blaster daughter-card included on your DOS Compatibility Card will play sounds as expected, but is not able to record them.

The DOS Compatibility Card does not fully support Sound Blaster 8-bit, Sound Blaster 2.0 or Sound Blaster Pro drivers. If problems occur, select the Sound Blaster 16 driver that comes with the DOS Compatibility Card.

Using CD-ROM Drives

Simultaneous use of multiple CD-ROM drives is not supported.

Audio CDs cannot be controlled from both Windows and the Macintosh environment at the same time. One or the other must be used.

The PC side sets up a drive letter (E:) for a CD-ROM drive although no drive is attached. If no CD-ROM drive is connected to your system, this drive letter can be freed up (and some memory) by editing these files:

AUTOEXEC.BAT
```
REM  LH C:\DOS\MSCDEX /D:CDDRVR /L:E
```

CONFIG.SYS
```
REM  DEVICE=C:\Apple\CDROM.SYS /D:CDDRVR
```

Prefacing these commands with "REM" will make DOS ignore them.

Playing an audio CD in Windows while running low-level media tools, such as PC Tools or Microsoft Anti-Virus, may cause a crash. It is best to reduce computer activity to a minimum while using such tools.

Multimedia, MIDI, Game Applications

These types of applications, whether they are run in the PC or Macintosh

environments, will see a marked performance improvement with the installation of a memory SIMM onto the DOS Compatibility Card. QuickTime application performance is especially improved with the addition of a SIMM.

Some DOS-based MPEG players require a VGA monitor to output video. All VGA modes can be displayed on Macintosh monitors supported by the DOS Compatibility Card. In a two monitor configuration, if the monitor specified to display the PC is a VGA monitor, simply select "VGA" in the Display box in the PC Setup Control Panel. You cannot select VGA for a shared monitor configuration from the PC Setup Control Panel if your monitor is not capable of displaying VGA. Multi-scan monitors are VGA-capable.

The Flightstick Pro Joystick for the Macintosh triggers the System beep 'Indigo' when entering the DOS environment. It also triggers this sound twice upon bootup. To correct this:

- Remove the Indigo sound from the System file in the Macintosh System Folder.

Video Configurations

If you have a 16" monitor, the PC doesn't use the entire screen unless you install a display driver for the program that you're using. See "Installing Video Drivers" pg. 39 of the User's Guide for more information.

On pg. 39 of the User's Guide: "Installing video drivers", select "Windows 3.1" as the application during the installation process.

If you are working with two monitors, make sure that both monitors are connected before booting the Macintosh and PC. The monitor dedicated to the Macintosh environment should be connected to the video port on the back of your Macintosh. The monitor dedicated to the PC should be connected to your DOS Compatibility Card. If your DOS-dedicated monitor is a 14", and you connect this monitor to the DOS Compatibility Card after you have booted the PC, you may see interference on the monitor or the PC will hang at the DOS prompt. This is because, when no monitor is connected, the PC defaults to expect a 16" monitor. If this should happen, select 14" from the "Display" menu in the PC Setup Control Panel and restart the PC.

Setting General Controls

Using the "Switch at Startup" Option:

This applies to System 7.5 users only. The "Shut Down Warning" in the General Control Panel should be disabled. If the "Switch at Startup" option in the PC Setup Control Panel is set to switch over to the DOS environment during boot-up, the switch from the Macintosh to DOS takes place before the "improper shutdown" dialog is displayed on the Macintosh. If a System 7.5 user has this option set and has either a system crash, or used the on/off switch instead of selecting Shutdown from the Menu Bar, the user will be unable to return to the Macintosh environment from DOS. The user with two monitors will see this dialog box in the dimmed Macintosh environment but will be unable to switch back to the Macintosh environment immediately. The user with only one monitor will not be

able to return to the Macintosh to see this dialog box. This dialog box WILL go away after a few minutes. At this time, the user can return to the Macintosh environment and should disable the "Shut Down Warning" in the General Controls control panel.

Using the "Show Desktop when in background" Option:

This applies to System 7.5 users only. The "Show Desktop when in background" control in the General Control Panel should be "ON". If it is "OFF", desktop folders, Trash, etc, will not be visible when an application is running on the Macintosh. If there is an application running in the background on the Macintosh, and the user switches to the DOS environment, switching back to the Macintosh shows the application now in the foreground. All desktop icons are hidden. This can be confusing to the user.

Bypassing the CONFIG.SYS and AUTOEXEC.BAT files

To bypass these DOS startup files during the boot-up process, press and hold the F5 key (Command-5 on non-extended keyboards) after the memory testing is complete.

Installing Corel Draw

If you allow Corel Draw to update the AUTOEXEC.BAT file, the line:
LH C:\Apple\MacShare

is replaced with the line:
C:\DOS\SHARE.EXE /L:500 /F:5100

If the former line is needed, you should edit the AUTOEXEC.BAT file to add it back.

Using Norton Utilities

If Norton Utilities for the Macintosh v3.0 or v3.1 is being used, the "More Compatible" option should be chosen:

1. Go into Control Panels and Open FileSaver
2. Click More Choices
3. Click Preferences and Update Now
4. Click More Compatible and Save

Using After Dark 3.0

The use of After Dark's 3.0 for Macintosh external screen saver modules in a single-monitor configuration can cause a crash. Unless you have a dual-monitor configuration, you must use one of After Dark's built-in modules, such as Starry Night.

Additionally, do not use the PC Setup control panel "Switch at Startup" option when using After Dark.

Using Debabilizer

If Debabilizer (for the Macintosh) is running when switching to the PC environment, the system crashes. You can avoid this by quitting Debabilizer before switching. Items copied to the clipboard before quitting are still translated to the PC environment

Using SAM 4.0

When using SAM 4.0 for the Macintosh with the "Prompt: 'Skip' is the default button" check box selected in the Floppy Drive preferences, inserting a floppy while in the PC environment causes the system to hang. The floppy cannot be accessed nor can the user switch to the Macintosh environment. To avoid this, select the "Always scan" option.

Using PC Tools Pro 9.0

The CPTASK.EXE utility (Central Point Task Manager) is incompatible with the DOS Compatibility Card.

Using MWUNDEL

MWUNDEL does not work on shared folders, so files deleted by the PC in shared folders will not be recoverable. However, files in shared folders can be recovered if they are deleted from the Macintosh. Use a Macintosh utility such as Norton Disk Doctor.

Support of Operating Systems

Only MS-DOS and Windows 3.1 are supported by the DOS Compatibility Card.

DESQview 2.6 has problems with certain memory configurations.

Networking

The DOS Compatibility Card supports network drivers that conform to Novell's Open Data-Link Interface (ODI). For help in installing these drivers, please refer to README.NET, located in the C:\APPLE directory.

Network performance is improved by adding a SIMM to the DOS Compatibility Card.

Using the Serial Port

If you are using communications software that uses the serial port, the following are known errors:

- For Procomm, the auto-answer mode does not work.

- For LapLink, transferring files between two machines may not work, especially for large files.

Printing

For DOS or Windows printing on the DOS Compatibility Card, we recommend using LPT1.DOS or LPT1. In general you must use printers that are Macintosh compatible, and use their corresponding printer extension for the Macintosh, selectable in the Chooser. However, in a PC Novell Netware™ environment you can print to a PC-compatible printer attached to a Novell network (refer to the Network Installation Guide on how to set up a Novell client).

Printing to a Postscript Printer

If you have a Postscript printer, open the Printers icon in the Windows Control Panel and select a Postscript driver. We recommend the Laserwriter IINT driver or Windows Postscript driver. In the Macintosh Chooser, select the corresponding printer extension for your type of printer.

Printing to a QuickDraw Printer

If you have a QuickDraw (non-Postscript, non-PCL printer) such as an Apple's ImageWriter or StyleWriter, or HP's DeskJet printer:

- Open the Printers icon in the Windows Control Panel and select the Epson LQ-2500 driver.
- In the Macintosh Chooser, select the corresponding printer extension for your type of printer.
- In the Macintosh Extension folder, launch the PC Print Spooler by double-clicking its icon in the Extension folder.
- From the File menu, select "Preferences".
- Click on the Epson option for "Interpret non-Postscript As" to enable the Epson emulator.

The Epson emulator works by first translating the DOS text to a similar Macintosh font, then interpreting that text into a series of QuickDraw commands. Some characters in the original DOS character set may not have exact translations to a Macintosh font. The use of a PostScript font is recommended in these cases, since use of the PostScript standard requires no translation.

The Epson emulator does not support color or greyscale. When printing from the PC to a Color or Grayscale printer, make sure to select the Black & White option from the Print dialog.

Printing to a PCL Printer

If you have a PCL (Page Control Language) printer, printing is limited to text-only or graphics-only when printing using AppleTalk. To print text only:

- Open the Printers icon in the Windows Control Panel and select your printer's driver.
- In the Macintosh Chooser, select the corresponding printer extension for your type of printer.
- In the Macintosh Extension folder, launch the PC Print Spooler by double-clicking its icon in the Extension folder.
- From the File menu, select "Preferences".
- Click on the PCL option for "Interpret non-Postscript As" to enable PCL printing.

To print graphics only, apply the steps listed above, except choose the LaserJet III driver from the Windows Control Panel instead.

If you need to print mixed graphics and text, many Windows applications "bit-map" their text so that it becomes a graphic. Such programs include Paintbrush, Corel Draw & Adobe Illustrator.

Additionally, PCL printing of text and graphics together is possible when printing over a Novell network, where a PC print server is connected to the PCL printer and handles the printing job. Select your printer's own driver in the Windows Control Panel.

On pg. 69 of the User's Guide, it states: "If you try to print a file and you're using a PostScript printer driver for a non-postscript printer, your file will not be printed. Instead, the file will be moved to a folder called "Spooler Rejected" in the Mac OS." This happens only with Non-Postscript set to Epson. If you have Non-Postscript set to PCL, the file is sent to the printer without the "spooler rejected" dialog.

AppleShare Print Server

The AppleShare Print Server should not be installed in a DOS Compatibility system, as the server's software would conflict with the PC Print Spooler. You may, however, connect your DOS Compatibility system to a network that uses the AppleShare Print Server.

Other Notes

If you have purchased the DOS Compatibility Card as a separate product for the Power Macintosh 6100, it will be necessary to install the required software. After installation, the Macintosh must be restarted for the new software to be enabled. The Desktop will be automatically rebuilt. This is normal.

The components of the card become very hot, therefore, operate your Macintosh

with the cover on.

*This information is incorrect. Macintosh formatted disks are automatically ejected in the MS-DOS environment. The correct information is documented in the "DOS Compatibility Card for Macintosh User's Guide" on page 59.

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AppleScript: Using AppleScript Documentation (11/95)

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AppleScript: Using AppleScript Documentation (11/95)

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TOPIC -----

This article contains the Using AppleScript Documentation supplied with versions of AppleScript shipped as part of the Macintosh Operating System.

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Welcome to AppleScript

This manual is your introduction to the AppleScript application program. Use it to begin working with AppleScript. You can use AppleScript on Macintosh computers that use system software version 7.0 or later. If you're new to the Macintosh, read the information that came with your computer before you install the AppleScript application program. You'll need to know basic Macintosh operations and vocabulary to use AppleScript.

What is AppleScript?

When you use your Macintosh computer, you use the mouse and keyboard to open documents and application programs, move documents and file folders, enter information, print, and perform any other actions you want. AppleScript gives you a whole new way to work: You can give the computer a list of things you want it to do—a script—and let the computer do everything on your list.

You can create a script by simply turning on the recorder and performing a set of actions. AppleScript keeps a list of what you do while the recorder is turned on. When you turn the recorder off, you can see the recorded script. When you run the script, your computer repeats your actions automatically.

You can use the Finder and many application programs with AppleScript. Scripts can make the Finder or the program do many things for you. For example, a script might format a letter the way you want, save it in a particular folder, and print it.

You can also use AppleScript to combine the capabilities of application programs. For example, a script might use the calculation capabilities of a spreadsheet and the formatting capabilities of a word processor to assemble an invoice.

Scriptable application programs and the Scriptable Finder

You can create scripts to control any scriptable application programs you have installed on your Macintosh. An application is scriptable when you can use AppleScript to control it. Many Macintosh programs are scriptable. If you're not sure your program is scriptable, contact the program's manufacturer for information.

With system software version 7.5, the Finder (inside the System Folder) is scriptable. When you begin working with the Script Editor, you can use the Finder to try recording and playing a script.

About this guide

This guide tells you how to use the Script Editor to record scripts and how to change a script to do something different. The Script Editor is an application

program you use to open and run scripts, make new scripts by recording or writing them, and save scripts. You don't need to know how to write computer programs to do anything described in this manual.

Balloon Help

You can use Balloon Help with the application program that come with AppleScript (the Script Editor). Choose Show Balloons from the Guide menu (near the right end of the menu bar).

When you point to any feature of the Script Editor application program, a balloon appears explaining the feature.

Where to go from here

For more information about using the Script Editor to work with scripts, open the file called "Using AppleScript part 2" to see Chapter 1 ("Using the Script Editor") and Chapter 2 ("Script Editor Command Reference").

If you wish to create more complex scripts, see an authorized Apple dealer for information about the AppleScript Scripter's Kit. The Scripter's Kit contains additional AppleScript software and manuals.

1 Using the Script Editor

Use this chapter to find out how to use the Script Editor to:

- open scripts that have been saved
- record new scripts
- make changes in scripts you record
- check scripts for errors
- format scripts
- save scripts in several formats (that is, as different kinds of documents)
- run scripts
- view the AppleScript terms you can use with a scriptable application
- use different scripting systems
- use different AppleScript dialects
- display the Result window
- paste an object reference into a script

The instructions in this chapter assume that the Script Editor is active and that you have at least one script and the Scriptable Finder on your hard drive.

Opening a script

You can use the Script Editor to open any script except those that have been saved as run-only scripts. (For more information about formats for saving scripts, see "Saving a Script" later in this chapter.)

To open a script, follow these steps:

1. Choose Open Script from the File menu.

2. In the dialog box that appears, select the script you want to open and click Open.

You can open one of the scripts in the Automated Tasks folder (inside the AppleScript folder). The script appears in a new script window.

Recording a script

You can use the Script Editor to record a series of actions. You can only record actions in a recordable application. For example, you can't record anything you do in SimpleText, because SimpleText isn't scriptable or recordable. In system software version 7.5, the Finder (inside the System Folder) is scriptable and recordable.

An application is scriptable when you can use AppleScript to control it. It is recordable when you can use the recorder with it. An application can be scriptable without being recordable.

Not all actions are recorded. If you move the mouse in circles, for example, it won't be recorded in your script. That's because moving the mouse doesn't result in a change in your document. The recorder records only things you do that change your document in some meaningful way. For example, typing a message in a text window is a meaningful change, because it makes something about the document different. Saving a file also results in a meaningful change. Clicking somewhere in the document doesn't result in a change in the document and isn't recorded.

To start recording your actions as a script:

1. Open the File menu and choose New Script..

2. Click the Record button in the active script window.

You can also choose Record from the Controls menu.

3. Open a scriptable application and perform the actions you want to record.

To stop recording:

1. Click the script window to make it active (or choose Script Editor from the Application menu).

2. Click the Stop button.

You can also choose Stop from the Controls menu.

Editing a script

You can edit a script much as you would edit any text document on your Macintosh computer. The editing actions you can take include:

Begin_Table

Action	Result
Click	Places an insertion point in the text at the location you clicked.
Click and drag	Selects the portion of the script you drag across.
Double-click	Selects a word.
Triple-click	Selects an entire line.
Press arrow key	Moves the insertion point in the direction of the arrow.
Option–Left Arrow key	Moves the insertion point to the beginning of the line.
Option–Right Arrow key	Moves the insertion point to the end of the line.
Option–Up Arrow key	Moves the insertion point to the beginning of the script.
Option–Down Arrow key	Moves the insertion point to the end of the script.
Option–Return	Inserts a line continuation character (¬).
Shift–Return	Moves the insertion point to the beginning of the next line.

End_Table

Checking the syntax of a script

You can use the Script Editor to check the syntax of a script. If the syntax is correct, the script is then compiled.

When you record a script and don't make any changes to it, the Check Syntax button is not available. This is because the Script Editor does not record scripts with incorrect syntax. When you make a change to a recorded script, or when you write a script, you can use the Check Syntax button.

When you write a script, all of the terms you type appear in the same font and size (the default is 10-point Courier). When you check the syntax, the Script Editor applies different fonts, sizes, styles, and colors to the different kinds of terms in your script. You can choose the formatting applied to the terms in your script. To find out how to make changes to script formatting, see the next section, "Formatting a Script."

To check the syntax of a script:

- Click the Check Syntax button in the script window.

The Script Editor identifies the first syntax error it finds for you by selecting the text that appears to contain the error. When the Script Editor finds a syntax error in a script, it does not apply any formatting to the script.

If the syntax of the script is correct, the Script Editor compiles the script.

Checking syntax won't find all the problems a script can have, but it will identify AppleScript expressions that are put together incorrectly. A script containing syntax errors can be saved only as text, not as a compiled script or script application.

Formatting a script

Scripts have a number of different parts, including operators such as "+" and "=," keywords, comments, and more. The Script Editor keeps track of these different parts for you, and applies formatting to help you identify them.

You can change the fonts, sizes, styles, and colors used for parts of scripts. The changes you make apply to all of your scripts, not just the active script.

To change script formatting:

1. Choose AppleScript Formatting from the Edit menu.

2. In the dialog box that appears, click a script element to select it.

3. Use the Font and Style menus to choose a font, size, style, and color for the script element you selected.

The following table describes the kinds of terms you can format.

Begin_Table

Category	What It Means
New text	Any portion of a script you type before saving, running, or checking syntax, or an entire script that will not compile due to syntax errors.
Operators	Operators perform actions ("operate") on values. For example, the "+" operator adds two values together.
Language keywords	The scripting terms built into AppleScript and available to all scripting applications.
Application keywords	The scripting terms specific to an application.

Comments	Explanations about things in your script. You can use them for yourself and for people who read your scripts. The computer ignores comments.
Values	A kind of data (information) that AppleScript can use. Numbers and words can be values.
Variables	Terms that are used as containers for values (such as a number or a word).
References	Phrases that specify an object that a script can identify. For example, "word 2 of document 1" is a reference. Reference formatting is applied only in the Result window, not in the script window.

End_Table

To format a script you must use the AppleScript Formatting command; you can't select part of a script and choose an item from the Font or Style menus. This is so that the formatting is consistent throughout the whole script. You can, however, use the Font and Style menus to format text in the description area of the script window. If you save the script as an application, the formatting you apply to its description appears in the script's startup screen.

In addition to formatting your script by choosing fonts, sizes, styles, and colors, the Script Editor automatically indents some lines of your scripts. All lines within compound statements are indented. (A compound statement is one that takes up more than one line and includes other statements within it.)

You can use the Tab key to indent lines in your scripts. If you use the Tab key in the middle of a line, however, the tab will be replaced by a space when you check syntax.

To indent your scripts automatically, press Return at the end of each line.

To force the next line of your script to begin at the left margin, hold down the Shift key and press Return.

Lines in a script are sometimes too long to fit in the active window. You can make a line shorter by breaking it up into two lines with the continuation character. To insert a continuation character into a line in your script, hold down the Option key and press Return. A line broken into two or more lines with a continuation character is treated as a single line when you run your script.

Saving a script

You can save a script as one of three kinds of document:

- as a text file, for opening in the Script Editor or other Macintosh applications
- as a compiled script, for opening in the Script Editor
- as an application, for using by itself without the Script Editor

You can also save a script in two run-only formats. See "Saving a Script As Run-Only" later in this chapter.

To save a script:

1. Choose Save or Save As from the File menu.

2. In the dialog box that appears, choose a location, specify a name, and choose a format for the script.

3. Click Save.

Saving a script without compiling it

When you save a script, it is usually compiled before it is saved. To save a script without compiling it:

• Hold down the Shift key while choosing Save from the File menu.

The Save dialog box appears, but you can only save the script as a text document.

Save options for script applications

When you save a script as an application, two additional buttons appear in the dialog box:

• Stay Open. Choose this option when you want your script to remain available after it runs (instead of quitting automatically). This can be useful when you want to send commands from another script to the open script.

• Never Show Startup Screen. Choose this option when you don't want the startup screen to appear. The startup screen displays the description of the script you write in the top part of the Script Editor window.

Saving a script as run-only

You can save a script in a format that can be run but cannot be opened in the Script Editor (or any other application). This is called a run-only script.

To save a script as run-only:

1. Choose Save As Run-Only from the File menu.

2. In the dialog box that appears, choose a location, specify a name, and choose a format for the script.

You can save run-only scripts as compiled scripts or as applications. You cannot save a run-only script as text.

3. Click Save.

Running a script

To run a script that's in the active script window:

- Click the Run button.

You can also choose Run from the Controls menu.

To stop a script that's running, press the Stop button (or hold down the command key and type a period).

To run a script application:

- Double-click the icon of the script application.

You can force the script's startup screen to appear by holding down the Control key when you open the script application.

Viewing AppleScript terms

The Scriptable Finder and every scriptable application has its own dictionary, which is a set of AppleScript terms that you can use with it. You can open the Finder's dictionary or an application's dictionary in order to find out what terms are available and their syntax. To open a dictionary, follow these steps:

1. Choose Open Dictionary from the File menu.

A dialog box appears in which you can select the Finder (inside the System Folder) or a scriptable application.

2. Select the Finder (inside the System Folder) or application you want and click Open.

The Dictionary window opens.

3. To see the details about using a term, click it.

The details for using the term appear in the window.

A suite is a set of AppleScript terms that are related. The required suite is the most basic set of AppleScript terms. The standard suite is the set of terms that every scriptable application should support. Most scriptable applications (such as the Scriptable Finder also have their own suite of commands.

The terms available in a dictionary are organized into suites. For example, the Finder Dictionary includes the required suite, the standard suite, and the Finder suite.

Using different scripting systems

You can use the Script Editor to write scripts for scripting systems other than AppleScript.

A scripting system is software that lets you write scripts using a set of terms put together according to rules of syntax. AppleScript has one set of terms and syntactic rules. Other scripting systems offer different terms and rules.

To use a different scripting system, you must first install the system. To find out how to install a specific scripting system, see the documentation that came with it. To use the Script Editor with an installed scripting system, choose the scripting system from the pop-up menu at the bottom of the Script Editor window.

For more information about a scripting system you have on your Macintosh, see the information that came with the scripting system.

Using different AppleScript dialects

The examples in this guide are based on the English dialect of AppleScript. If you have the proper software installed on your Macintosh computer, you can use a different AppleScript dialect in the Script Editor.

An AppleScript dialect is a version of AppleScript based on the words and syntax of a particular language (a human language or a computer language). The English dialect is based on the English language. AppleScript can resemble any language if there is an AppleScript dialect for that language.

To choose a different AppleScript dialect, follow these steps:

1. Choose AppleScript Formatting from the Edit menu.

2. In the dialog box that appears, choose a dialect from the pop-up menu if more than one exists.

IMPORTANT: Be sure you understand the dialect you choose. When you choose a dialect, all the AppleScript terms in the Script Editor appear in that dialect. This can present problems if you don't understand the dialect.

Displaying the Result window

When a script runs, some of its expressions can produce an outcome or a result. For example, the expression "2+2" produces the result "4." When a script produces a result, it appears in the Result window. Some error messages also appear in the Result window.

You can open the Result window at any time when you use the Script Editor. To open the Result window:

• Choose Show Result from the Controls menu.

The Result window opens. If the open script ran and produced a result, the result appears in the window.

Pasting an object reference into a script

You can use the Paste Reference command (in the Edit menu) to paste an object reference into your script. An object reference is an AppleScript phrase that identifies an object in an application program. For example, the phrase "word 3 of document 1" identifies an object in the Scriptable Text Editor.

To paste an object reference into your script, follow these steps:

1. Select an object in the Finder or in an application program.

For example, to select a Finder object you can click the icon for your startup disk.

2. Choose Copy from the Edit menu.

3. Make a Script Editor window the active window.

You can choose Script Editor from the Application menu, or you can click an open Script Editor window.

4. Choose Paste Reference from the Edit menu.

The reference phrase is pasted into your script at the location of the insertion point. For example, you can paste the reference phrase for your startup disk (a Finder object.)

You can paste references only from applications that support this particular feature. An application can be scriptable and recordable without allowing pasting of object references.

2 Script Editor Command Reference

File menu

New Script - Opens a new script window in which you can write or record a new script.

Open Script - Opens the script you select.

Open Dictionary - Opens a window containing all the AppleScript terms you can use with an application program you select.

Close - Closes the active window.

Save - Compiles and saves the script in the active script window.
If you have not saved the script before, you choose the format in which to save the script, the name, and the location.

In the dialog box that appears, you can save a script in one of three formats:

Compiled Script. This is the normal format. When you open a script saved as a compiled script, you see the script in the active script window of the Script Editor.

Text. You can open a script saved as text in SimpleText or in most word-processing and text-editing application programs. This is the only format in which you can save a script that contains syntax errors.

Application. This format saves your script as its own application program. When you open a script saved as an application, you see a window (or "startup screen") containing the description of the script. The description is the information you entered in the description area of the window for that script. When you click the Run button in the startup screen, the script runs. You do not see a script window for the script.

When you save a script as an application, you have two additional choices: Stay Open and Never Show Startup Screen.

If you check Stay Open, the script stays open after you run it (instead of closing automatically after it is run).

If you check Never Show Startup Screen, the script runs immediately when you open it, rather than displaying its description first.

Note: To save a script without compiling it, hold down the Shift key while you choose the Save command.

Save As - Saves a copy of the script in the active script window.
You specify a name and a location and choose the format in which to save the script. The new copy becomes the active script.

Save As Run-Only - Saves a copy of the script in the active script window as a compiled script or an application that cannot be edited. You specify a name and a location in which to save it.

Revert - Returns the script in the active script window to the way it was the last time you saved it. Any changes you made since the last time you saved the script are lost.

Page Setup - Opens a dialog box in which you can choose page size, orientation, and other printing options. The options you can choose depend on the printer you have selected in the Chooser.

Print - Prints the script in the active script window. The name of the script and its description are also printed. Different parts of the script are printed in the font, size, style, and color you choose in the AppleScript Formatting dialog box. (To open the AppleScript Formatting dialog box, choose AppleScript Formatting from the Edit menu.)

Set Default Window Size - Sets the size of the active script window as the default. New script windows you open (by choosing New Script from the File menu) are automatically opened at the default size.

Quit - Quits the Script Editor.

Edit menu

Undo - Reverses the effects of your last action. If you choose Undo while recording a script, the last line you see in the script window is removed.

Cut - Removes selected text and places a copy on the Clipboard.

Copy - Places a copy of selected text on the Clipboard.

Paste - Places a copy of the text that's on the Clipboard at the location of the insertion point, in either the description area or the script area of the active script window.

Clear - Removes selected text without placing a copy on the Clipboard.

Paste Reference - Pastes an AppleScript expression from the Clipboard into the script area of the active script window, at the location of the insertion point. The AppleScript expression is a reference—a phrase that identifies something in an application program. For example, "startup disk of application Finder" is a reference that is used with the Scriptable Finder. You can use the Paste Reference command only with application programs that support it.

Select All - Selects all the text in the description area or script area of the active script window, whichever contains the insertion point.

AppleScript Formatting - Opens a dialog box in which you select the font, size, style, and color of text indicating various parts of scripts.

Controls menu

Record - Starts recording your actions as a script. Choosing Record is the same as clicking the Record button in the active script window.

Run - Checks the script in the active script window for syntax errors, and if no errors are found, compiles and runs the script. Choosing Run is the same as clicking the Run button in the active script window.

Stop - Stops the script that is currently running.

Show Result - Opens the Result window. The Result window displays the outcomes of some types of expressions in scripts. (For example, a script with the expression "2+2" would display "4" in the Result window.)

Font and Style menus

You use the Font and Style menus to change the font, size, style, and color of:

- selected text in the description area of a script window
- text indicating different parts of a script

Any changes you make to the formatting of the text in the description area also appear in the startup screen when the script runs.

To change the font, size, style, or color of selected text in the description

area:

1. Select the text in the description area of the active script window.

2. Choose the font and size you want from the Font menu.

3. Choose the style and color you want from the Style menu.

To change the font, size, style, or color of text indicating different parts of scripts:

1. Choose AppleScript Formatting from the Edit menu.

2. In the window that appears, click to select one of the parts of a script.

3. Choose the font and size you want from the Font menu.

4. Choose the style and color you want from the Style menu.

5. If you want, select another part of a script, then repeat steps 3 and 4.

Article Change History:
21 Nov 1995 - Reviewed for technical accuracy. Corrected minor typo.
09 Aug 1995 - Reformatted to make more readible on the World Wide Web.

Support Information Services

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Tech Info Library Article Number:17036

Apple II High-Speed SCSI Card: Setting SCSI ID (11/96)

Revised: 11/21/96
Security: Everyone

Apple II High-Speed SCSI Card: Setting SCSI ID (11/96)

==========

Article Created: 18 January 1995
Article Reviewed/Updated: 15 November 1996

TOPIC ----------

This article discusses how to change the Apple II High-Speed SCSI Card's SCSI ID switch settings.

DISCUSSION ----------

Switch 1 turns on and off DMA (Direct Memory Access). See the article "Apple II High-Speed SCSI Card: Setting DMA" for more information on this subject.

The computer's SCSI ID number is determined by the positions of switches 2, 3, and 4 on the SCSI card. Follow these steps to reset the computer's SCSI ID number:

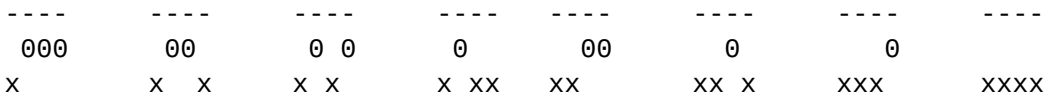
1. Switch the computer off, but leave the power cord plugged in.

2. Choose an appropriate SCSI ID number for the computer. If you are using a LaserWriter IISC, Personal LaserWriter SC or Apple Scanner, use the settings for SCSI ID 2.

3. Refer to the information that follows for the correct position of switches 2, 3, and 4.

Switch indication
---
0 = Open or off x = Closed or on

SCSI ID 0	SCSI ID 1	SCSI ID 2	SCSI ID 3	SCSI ID 4	SCSI ID 5	SCSI ID 6	SCSI ID 7
OPEN 1234	OPEN 1234	OPEN 1234	OPEN 1234	OPEN 1234	OPEN 1234	OPEN 1234	OPEN 1234



4. Be sure to follow the installation instructions in the Apple II High-Speed SCSI Card Owners Guide to install the SCSI card.

Article Change History:
15 Nov 1996 - Reviewed for technical accuracy, revised formatting.

Copyright 1995-96, Apple Computer, Inc.

Tech Info Library Article Number:17037

Apple II High-Speed SCSI Card: Setting DMA (11/96)

Revised: 11/21/96
Security: Everyone

Apple II High-Speed SCSI Card: Setting DMA (11/96)

==========

Article Created: 18 January 1995
Article Reviewed/Updated: 15 November 1996

TOPIC

This article discusses how to change the Apple II High-Speed SCSI Card's PDMA (pseudo direct memory address) switch settings.

DISCUSSION

The computer's SCSI ID number is determined by the positions of switches 2, 3, and 4 on the SCSI card. See the article "Apple II High-Speed SCSI Card: Setting SCSI ID."

Switch 1 turns DMA on or off.

DMA is a feature that allows the SCSI card to read or write information directly to a storage device (such as a hard disk drive) without having to depend on the computer's microprocessor to manage the operation.

The Apple II High-Speed SCSI Card comes with the DMA switch already in the closed (on) position. However, if you have another card (such as an accelerator card) that uses its own DMA, you may need to turn off the SCSI card's DMA. Follow these instructions to turn DMA off:

1. Switch the computer off, but leave the power cord plugged in.
2. Locate Switch 1 on the SCSI card and carefully move Switch 1 to the open (off) position.
3. Refer to the information in the article entitled "Apple II High-Speed SCSI Card: Setting SCSI ID" if you want to set the rest of the switches.
4. Be sure to follow the installation instructions in the Apple II High-Speed SCSI Card Owners Guide to install the SCSI card.

Article Change History:
15 Nov 1996 - Reviewed for technical accuracy, revised formatting.

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Tech Info Library Article Number:17038

Tech Info Library

All Characters of the Skia Font Only Print w/QuickDraw GX (2/95)

Revised: 2/16/95
Security: Everyone

All Characters of the Skia Font Only Print w/QuickDraw GX (2/95)

==========

Article Created: 18 January 1995
Article Reviewed/Updated: 16 February 1995

TOPIC -----

Is it not possible to print the Norwegian characters "æøå ÆØÅ" with the Apple TrueType font Skia even though the Skia font displays correctly on the screen?

I am using Norwegian System 7.5, LaserWriter driver 8.2, and a LaserWriter Pro 630.

DISCUSSION -----

Because Skia is a QuickDraw GX font, GX must be turned on in order for it to print. Turn on QuickDraw GX using the Extensions Manager Control Panel.

Article Change History:
16 Feb 1995 - Changed keyword and reviewed technical accuracy.

Support Information Services

Copyright 1995, Apple Computer, Inc

Tech Info Library Article Number:17039

Tech Info Library

Macintosh Printing To Netware Queue For An Epson Printer (1/95)

Revised: 1/18/95
Security: Everyone

Macintosh Printing To Netware Queue For An Epson Printer (1/95)

==========

Article Created: 18 January 1995

TOPIC -----

1) Can a Macintosh print to a Novell Netware queue that is configured for an Epson LQ-1050 or EX-1000 printer?

2) What are the steps necessary to do this?

DISCUSSION -----

1) Yes, it is possible to print to an Epson LQ-1050 or EX-1000 via a Novell Netware queue. In order to do this, you need a Macintosh driver for the printers. GDT SoftWorks currently sells a package called PowerPrint NW, which has the drivers needed for the printers you have asked about.

2) The PowerPrint NW package will go into details concerning setting up their drivers to work with Novell Netware. The general steps are as follows:

    1) Set up the printer and queue in Novell Netware as per the Novell Netware documentation.

    2) Add the following line to the "atps.cfg" printer configuration file: -o "Queue_Name" -wb (where "Queue_Name" is the name of the queue you want the Macintosh to print to".

   Again, the documentation for the PowerPrint NW will tell you how to set up their drivers. To locate a vendor's address and phone number, use the vendor name as a search string.

Support Information Services

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Tech Info Library Article Number:17040

Tech Info Library

AppleSearch 1.5 Administrator Guide: Troubleshooting (1/95)

Revised: 1/23/95
Security: Everyone

AppleSearch 1.5 Administrator Guide: Troubleshooting (1/95)

==========

Article Created: 23 January 1995

TOPIC ----------

This article describes potential problems you may encounter while setting up or maintaining your AppleSearch server, it tells you the probable cause for each problem, and offers likely solutions.

If you can read the server log, check there first for detailed status and troubleshooting messages. For descriptions of messages that may appear in the log, and suggestions for resolving the problems they indicate, see "Using the Server Log" in Chapter 2 of the AppleSearch Administrator's Guide.

For descriptions of and solutions for problems related to AppleSearch reporters and updates, see Appendix B, "Troubleshooting," in the AppleSearch User's Guide.

DISCUSSION ----------

Problems Opening the AppleSearch Server Program
==========

- A server message indicates that the application is already running when it is not.

  You tried to open a copy of the AppleSearch Server program when another copy was already running. You cannot have two copies of AppleSearch Server running on the same computer.

  Use the copy of AppleSearch that is already running. If that does not work, restart your server computer.

- When you start AppleSearch Server, a warning message appears that reads as follows: "Some system resources are not set to optimal values for the AppleSearch Server. To reset the values of these resources, reinstall the server software using the AppleSearch Server Installer."

AppleSearch modifies the PPC (Program-to-Program Communications) tuning resource in the System file during the AppleSearch installation process. If you have not run the AppleSearch Installer, or you installed operating system software after installing AppleSearch, then the alert message appears.

Re-install the AppleSearch software by using the AppleSearch Installer program.

- Users whose log-on name exceeds 30 characters are unable to log on to the AppleSearch Server.

  The PPC browser, which asks users to select an AppleSearch server, does not accept more than 30 characters. Change the user's log-on name so that it does not exceed 30 characters. Notify the user of his or her new user ID and have the user try logging on to the server again.

- AppleSearch Server unexpectedly quits or crashes.

  Restart the server machine.

Problems Using or Adding Information Sources

No Matches After Conducting a Search

The user does not get any article matches after conducting a search on a particular information source.

- The user has See Folders privileges but does not have See Files privileges.

  If you're using AppleShare, open the Access Information window and click the See Files checkbox so that a checkmark appears in it. If you're using file sharing, select the folder that is designated as the information source; then choose Sharing from the File menu to assign the correct access privileges for that user.

- There are no documents in the information source that answer the user's search request.

  Add documents to that information source that answer the user's search request, direct the user to another information source that answers the user's search request, or advise the user to rephrase the search request to provide greater potential for article matches.

- The local information source contains document formats for which there are no corresponding XTND translators.

  Examine the AppleSearch server log to identify the troublesome document; then refer to Appendix A of the AppleShare Administrator's Guide to

determine whether an XTND translator that supports each document's format came with AppleSearch. If an XTND translator is not present for that particular document format, contact the developer of the application, or a developer of XTND translators, to see if one is available and where you might purchase it.

- The information source has been added but not yet indexed.

  Open the Information Sources window, select the information source whose content cannot be accessed, and click the Index button; or inform the user to wait and try the search again after the next scheduled indexing procedure is performed.

Foreign-Language Characters Do Not Yield Results

Searches made for or using foreign-language characters do not yield the expected results.

The user typed a search request using non-English characters, or searched an information source that contained non-English characters. AppleSearch currently supports the U.S. English character set, with some character-mapping exceptions. These exceptions allow the AppleSearch Server program to provide limited recognition of accented characters and double characters (ligatures). Accented characters are mapped to the corresponding U.S. English characters; for example, é is recognized by AppleSearch as e, so the French élève is recognized by AppleSearch as eleve; å is recognized by AppleSearch as a. Double characters (ligatures) are mapped to the first character; for example, Æ is recognized as A.

Explain to users what exceptions AppleSearch allows in supporting non-English characters. In some cases the user may get slightly more information than requested because of the diacritical marks, but the information returned will still answer the search request.

Information Source Does Not Open

AppleSearch does not let an information source to be opened.

The AppleSearch Server program does not have enough memory to open the specified information source. The AppleSearch Server program has a default value of 3500K allocated to it. The recommended memory allocation is 4000K, which is typically sufficient to support ten information sources. The application requires 100K for each information source beyond ten.

Quit AppleSearch Server by choosing Quit from the File menu. Then select the AppleSearch Server program icon from the Finder and choose Get Info from the File menu. In the Preferred Size box, enter the value that meets your needs.

Server Is Not In "Select an AppleSearch server" Dialog Box

An AppleSearch server does not show up in the user's "Select an AppleSearch server" dialog box.

- Program linking is not enabled on the server.

  Open the Sharing Setup control panel on the AppleSearch server and click the Start button under Program Linking.

- The AppleSearch Server program is not running.

  Start the AppleSearch Server program.

- The user is running a version of the AppleSearch Client program that is not compatible with the installed version of the AppleSearch Server program.

  Upgrade the AppleSearch Client program on the user's computer.

Problems Establishing Information Sources (Sharing Volumes or Folders)

Status Information in Information Source Window is Zero (0) K

The status information displayed in the Information Sources window when a source is selected indicates zero (0) K of text.

- The information source has not yet been indexed.

  Open the AppleSearch Information Sources window, select the information source whose text size does not show up in the status information, and click the Index button; or check the status information after the next scheduled indexing time. The text of an article can be generated and therefore show up in the information source status only after its information source has been indexed.

- The information source contains document formats for which there are no corresponding XTND translators.

  Confirm that XTND translators are present in your Claris Translators folder for each of the document formats present in the specified information source. Open the AppleSearch folder (found in the Preferences folder inside your System Folder) to confirm that it contains the MacLinkPlus/AppleSearch Trans1 file. This file contains a basic set of XTND translators for many document formats. The supported document formats are listed in Appendix A or the AppleSearch Administrator's Guide. If you have purchased other XTND translators, check the documentation that came with them for a list of supported document formats. If the troublesome information source contains a document format for which no XTND translator is present, you need to purchase the corresponding translator.

Status Information For an Information Source is Zero (0) Documents

The status information for a particular information source indicates zero 0 documents.

- The specified information source does not contain any documents.

  Add any documents to the information source that you want to be available to AppleSearch users. Also, make sure that an XTND translator is present for each document format you add to the information source.

- No XTND translator is present for any of the existing document formats in the information source.

  Check the AppleSearch server log to identify the documents that were not indexed. Then purchase and install an XTND translator for each document format that didn't get indexed.

- The MacLinkPlus/AppleSearch Trans1 file is not present.

  Open the AppleSearch folder (found in the Preferences folder inside your System Folder) to confirm that it contains the MacLinkPlus/AppleSearch Trans1 file. If the file is absent, re-install the AppleSearch server software.

Indexing Takes a Long Time

- The corresponding information source probably contains many documents, or documents containing graphics and detailed formatting instructions. For each information source, indexing typically takes 10 to 20 MB per hour.

  Choose Preferences from the Server menu and schedule indexing to occur when you expect search traffic to be light.

- The processing power of your particular server is insufficient for the speed you require.

  Upgrade your server. For help, contact your authorized Apple dealer.

- An AppleSearch reporter is conducting a search at the same time that the information source is being indexed. Concurrent indexing and searching reduce server performance, resulting in both functions' operating at slower speeds than usual.

  Do nothing. Indexing will continue, but not as quickly as it would if no searches were taking place. If a user scheduled a reporter to conduct a search at the same time that you scheduled indexing, you might want to check the reporter list to identify the user who scheduled the reporter. Advise the user to schedule the reporter to conduct searches after the scheduled indexing procedure is complete.

Some Matched Words in an Article Are Not Highlighted

Users report that when they conduct a wildcard search, only some of the matched words are highlighted in the article viewing window.

The maximum number of distinct search words that can be highlighted has been reached. Only 50 distinct search words in each information source can be highlighted. However, each distinct word may appear highlighted any number of times.

Tell the user that his or her search request found more than 50 distinct search words. The user should modify the search request, avoiding the wildcard (*) character so that only 50 words or fewer are available for highlighting.

Problems Setting Up Users and Groups

AppleSearch users cannot log on to the AppleSearch server

- File sharing is not active or AppleShare is not running.

  Activate file sharing or start AppleShare. See Appendix C of the AppleSearch Administrator's Guide for more information, or see the AppleShare Administrator's Guide or the Macintosh User's Guide or Macintosh Reference manual that came with your computer.

- The user name is refused.

  Open the Users & Groups control panel or the AppleShare Admin program and confirm that the names of registered users and groups are entered correctly. See Appendix C of the AppleSearch Administrator's Guide for more information, or see your Macintosh User's Guide, Macintosh Reference, or AppleShare Administrator's Guide.

  Activate program linking for the user. See Appendix C of AppleSearch Administrator's Guide. For more detailed information see your AppleShare Administrator's Guide or the Macintosh User's Guide or Macintosh Reference that came with your computer.

An AppleSearch user cannot log on to the AppleSearch server as a guest

Guest access was not specified.

For AppleShare, open the Any User icon and click Login Enabled to activate this option.

For Macintosh file sharing, open the Users & Groups control panel and create a guest user. Open the Guest User window and click "Allow guests to connect" to activate this option. In addition, click "Allow guests to link to programs on this Macintosh" to activate this option.

Refer to Appendix C of AppleSearch Administrator's Guide for more information.

WAIS Databases Do Not Appear

- The WAIS Gateway file is missing from the AppleSearch folder in the Preferences folder (inside the System Folder).

  Quit the AppleSearch Server program, drag the WAIS Gateway file from the AppleSearch Server installation disk to the AppleSearch folder in the Preferences folder (inside the System Folder) to copy it there, and then restart your server and AppleSearch Server program. (Simply dragging this file to the System Folder will not put the file into the correct folder.)

- The physical connection to the Internet is malfunctioning.

  Check with your network support professionals.

- The TCP/IP software is not installed or is configured incorrectly.

  Ensure that you have the MacTCP software and that it is installed correctly. With the Macintosh Operating System, you must have MacTCP version 2.0.6 or greater.

IMPORTANT: If you are running A/UX, you must use the version of MacTCP that shipped with your system. Do not replace it with another version, even though that version may seem newer.

Ensure that you know the correct values for your Internet address, your Internet gateway address, your domain name server address, and your subnet mask (if any).

Check the configuration information in the MacTCP and MacTCP Admin control panels.

If you are using A/UX, ensure that you are running a kernel configured for Berkeley networking (BNET) services, and check the configuration information in the following files:

/etc/inittab
/etc/HOSTNAME
/etc/hosts
/etc/NETADDRS
/etc/rc
/etc/resolv.conf
/etc/SYSNAME

Support Information Services

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Tech Info Library Article Number:17041

Tech Info Library

Macintosh: Description of NoEject Extenstion (7/95)

Revised: 7/19/95
Security: Everyone

Macintosh: Description of NoEject Extenstion (7/95)

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Article Created: 23 January 1995
Article Reviewed/Updated: 19 July 1995

TOPIC ----------

I was looking through the System folder on the CD-ROM disc I received with my Power Macintosh 6100, and discovered a NoEject extension. What is this extension used for?

DISCUSSION ----------

The System Folder on the CD-ROM disc that you receive with your Power Macintosh computer may include a NoEject extension. The NoEject extension exists exclusively in the System Folder on bootable CD-ROM discs. It prevents a CD-ROM that is used as the startup disk from automatically being ejected when you restart your Power Macintosh computer.

This extension is only on CD-ROM discs capable of being used as a startup disk. The NoEject extension should not be moved into the System Folder on your hard disk.

This article was published in the "Information Alley":
Volume II, Issue 5, Page 14

Article Change History:
19 Jul 1995 - Updated from Info Alley.

Support Information Services

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Tech Info Library Article Number:17042

Tech Info Library

Macintosh: Serial Port HSKo Voltages (1/95)

Revised: 1/23/95
Security: Everyone

Macintosh: Serial Port HSKo Voltages (1/95)

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Article Created: 23 January 1995

TOPIC ----------

I am trying to determine what voltages should be on the Macintosh serial connector.

DISCUSSION ----------

As you look at the Macintosh serial connector, it is numbered like this:

```
   8 7 6
  5  4 3
   2  1
```

Pin	Signal Name	Voltage Specification
1	HSKo	Vouth 3.6V Voutl -3.6V Rl= 450ohms
2	HSKi	Vinh 0.2V Vinl -0.2V Ri= 12Kohms
3	TxD-	Vouth 3.6V Voutl -3.6V Rl= 450ohms
4	GND	Signal Ground
5	RxD-	Vinh 0.2V Vinl -0.2V Ri= 12Kohms
6	TxD+	Vouth 3.6V Voutl -3.6V Rl= 450ohms
7	Gpi	Vinh 0.2V Vinl -0.2V Ri= 12Kohms
8	RxD+	Vinh 0.2V Vinl -0.2V Ri= 12Kohms

Absolute values of specified voltages are minimums.
Ri is a minimum, Rl is a maximum.

Support Information Services

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Tech Info Library Article Number:17044

Tech Info Library

Color StyleWriter 2400: Waste Ink Absorbers Full Error (6/96)

Revised: 6/20/96
Security: Everyone

Color StyleWriter 2400: Waste Ink Absorbers Full Error (6/96)

==========

Article Created: 23 January 1995
Article Reviewed/Updated: 19 June 1996

TOPIC ----------

My Color StyleWriter 2400 keeps giving me an error indicating that the waste ink absorbers are full and will not allow me to print. Why am I getting this error message and how do I correct it?

DISCUSSION ----------

Color StyleWriter 2400
==========

Under normal circumstances the ink absorbers should last for approximately 80,000 sheets of paper using the black cartridge and 13,000 pages using the color cartridge. Heavily used printers may require replacement of the ink absorbers which can be ordered using part number 076-0470. In the event of a false error, and after replacement of the ink absorbers the contents of the EEPROM can be cleared using the following procedure:

1) Make sure there is paper in the printer
2) Install a high-performance black ink cartridge (color will not work)
3) Open the front door of the printer
4) Press and hold down the power button while connecting the power cord
5) Release the power button
6) Press the power button again and close the front door

A test pattern prints once the EEPROM has been reset. There should be a white box on the lower right corner of the test page indicating that the contents of the EEPROM have been cleared.

Color StyleWriter 2500
==========

The Color StyleWriter 2500 also exhibits the same symptoms as the Color

StyleWriter 2400 printer. However, the steps for clearing the EEPROM are different from the Color StyleWriter 2400.

Step 1

Disconnect the power cord from the printer.

Step 2

Make sure the High Performance Black ink cartridge is installed and the power cord is plugged into the wall.

Step 3

Open front door.

Step 4

Press and hold down the power button while connecting the power cord to the printer, and then relaese the power button.

Step 5

Close the front door.

Step 6

A pattern page is printed that has a series of small boxes in the top left corner. The last box will be white, showing the EEPROM has been reset.

Article Change History:
19 Jun 1996 - Updated for technical accuracy.
30 Apr 1996 - Added how to clear Color StyleWriter 2500 EEPROM.

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Tech Info Library Article Number:17045

Tech Info Library

PlainTalk Microphone: Assembly Not Available (1/94)

Revised: 1/23/95
Security: Everyone

PlainTalk Microphone: Assembly Not Available (1/94)

==========

Article Created: 23 January 1995

TOPIC ----------

I would like to know where I can get the extended plug and socket assembly used on the PlainTalk microphone. I have not been able to locate this assembly anywhere, and want to build an extension cable.

DISCUSSION ----------

The plug on the microphone cable and the socket used on the logic boards are a custom part for Apple. The extended plug is how power is supplied to the microphone.

No information is available on how to get the plugs or sockets.

There are two possible workarounds to get a longer cable. First, you could splice in an added length of cable to the PlainTalk Microphone. However, that voids the warranty. Another work around would be to use a different type of microphone from a different vendor. This may be a bit more costly than splicing the cable but, depending on the microphone used, you may receive a better quality signal.

Support Information Services

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Tech Info Library Article Number:17046

Tech Info Library

Deleted AppleMail Messages Reappear After Server Crash (3/95)

Revised: 3/27/95
Security: Everyone

Deleted AppleMail Messages Reappear After Server Crash (3/95)

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Article Created: 23 January 1995
Article Reviewed/Updated: 27 March 1995

TOPIC ----------

After a PowerShare Mail Server crash we found that hundreds of previously read and deleted mail messages reappeared in our users' inboxes. There were also messages that appeared in the Administrator's inbox.

DISCUSSION ----------

PowerShare stores mail messages in the Server Bin folder in the PowerShare Mail Data folder. Also within this folder is a file named QMgrCatalog. This file, in conjunction with the catalog data files in the PowerShare Catalog Data folder, keeps track of what messages have been read and by whom.

In the event of a server crash PowerShare does its best to rebuild this information from the available files. If the QMgrCatalog is damaged or deleted, a new QMgrCatalog is created with all messages in the Server Bin Folder are marked as unread.

The PowerShare mail server performs message purging at startup, and then once an hour after startup. It follows the criteria specified by the administrator, for example remove no, read, or all messages that are at least X days old. However, the purging process functions for five seconds before it terminates, which means all of the mail may not be deleted on each purge cycle.

NOTE: For a message to be deleted from the Server Bin folder all recipients must have read the message (and deleted it if the server is not doing so automatically). If the server crashes between the time the last recipient has read the message and the time set for deleting messages, then it is possible for that message to show up again (even though it was read by everyone). This explains why messages with large distribution lists are more likely to appear. The chance that at least one of the recipients had not read or deleted the message is much higher with a large distribution list.

Article Change History:
27 Mar 1995 - Added section on purge process.
22 Feb 1995 - Added keyword; made minor technical updates.

Support Information Services

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Tech Info Library Article Number:17048

Tech Info Library

Power Macintosh 8100/100: Differences from 8100/80 (1/95)

Revised: 1/23/95
Security: Everyone

Power Macintosh 8100/100: Differences from 8100/80 (1/95)

==========

Article Created: 23 January 1995

TOPIC ----------

What are the specific differences between the Power Macintosh 8100/80 and the Power Macintosh 8100/100?

DISCUSSION ----------

The differences are as follows:

- New logic board with PowerPC 601 microprocessor running at 100MHz.
- Configurations: 8MB DRAM, 256K L2 cache, 700MB hard drive, CD-ROM
  16MB DRAM, 256K L2 cache, 1GB hard drive, CD-ROM
  16MB DRAM, 256K L2 cache, 1GB hard drive, CD-ROM, AV Card

All configurations come with System Software 7.5 (updated Finder and PowerPC Enabler version 1.1.1).

Specific Logic Board differences

- PowerPC 601 microprocessor running at 100MHz
- Clock chip (CPU bus clock rate is 33.333 MHz)
- New Thermoelectric Heatsink (Peltier device) added to microprocessor
- ROM change
- BART21 NuBus controller
- 20% performance gain above Power Macintosh 8100/80

Software

- LocalTalk driver changed to not rely on the CURIO's enhanced LocalTalk mode
- System Software release:
  System ver. same as 7.5
  Finder ver. 7.1.5
  Enabler ver 1.1.1

PPC Update (revised)
Finder Update (revised)
HD SC Setup (revised)

In Box (Accessory Kit) changes

• PlainTalk Microphone added
• Apple Macintosh CD
• Technical Information booklet for Power Macintosh 8100/100

Support Information Services

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Tech Info Library Article Number:17049

Tech Info Library

System 7.5: No Fax Sender in the Chooser (5/95)

Revised: 5/24/95
Security: Everyone

System 7.5: No Fax Sender in the Chooser (5/95)

==========

Article Created: 23 January 1995
Article Reviewed/Updated: 24 May 1995

TOPIC ----------

Since I installed System 7.5 I can no longer find Fax Sender in the Chooser. I did find the Fax Sender Chooser extension in my Extensions folder. What is wrong?

DISCUSSION ----------

It sounds like you may have installed QuickDraw GX. Since there is no QuickDraw GX driver for the Express Modem or GeoPort at this time, the Fax Sender would not be visible in the Chooser when the QuickDraw GX extension is active.

Using QuickDraw GX with Express/Fax Modem

To send faxes using QuickDraw GX, you need a QuickDraw GX modem driver. A QuickDraw GX modem driver for the Express/Fax modem will be available later this year. If you have installed QuickDraw GX, you need to turn it off temporarily to use your Express Fax/Modem or GeoPort. Follow these steps to turn off QuickDraw GX temporarily:

Step 1:
Hold down the Space Bar while you choose Restart from the Special menu to restart your Macintosh computer. The Extensions Manager dialog box appears on the screen.

Step 2:
Click the QuickDraw GX extension (remove the check beside it) to prevent the QuickDraw GX software from loading.

Step 3:
Click the Extensions Manager Close box to resume startup.

Your fax modem should work normally. You cannot use any QuickDraw GX features until you turn the extension back on and restart again.

Issue Resolution
==========

Fax Sender GX Available With QuickDraw GX 1.1 & Apple Telecom 2.0

The Fax Sender GX extension is now available with Apple Telecom Software 2.0. It can only be used with QuickDraw GX 1.1 or later.

If you need to send complex greyscale images, you should use Fax Sender GX instead of previous versions of Fax Sender. The image quality is superior.

NOTE:
The Control-shift shortcut used to select Fax Sender without going through the Chooser is not available when using Fax Sender GX. However, you can create a desktop printer icon for Fax Sender GX and use drag-and-drop to accomplish the same thing.

These articles can help you locate the software updates (QuickDraw GX and Apple Telecom 2.0) mentioned here:

- Where To Find Apple Software Updates
  Lists online services for "free" Apple software updates.

- Obtaining Apple Product Support in the USA
  Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech. Info. Library.

Article Change History:
24 May 1995 - Added information about resolution.
22 Feb 1995 - Added keyword; made minor updates.

Support Information Services

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Tech Info Library Article Number:17050

Tech Info Library

System 7.5: EtherTalk Not Available After Installing 7.5 (1/95)

Revised: 1/24/95
Security: Everyone

System 7.5: EtherTalk Not Available After Installing 7.5 (1/95)

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Article Created: 24 January 1995

TOPIC -----

I just installed System 7.5 on my PowerBook 540c. Since the installation, when I open the Network Control Panel I can no longer switch from LocalTalk Built in to EtherTalk Built in.

I know that my EtherTalk cable and transceiver are OK because I tested them on another Macintosh. Also, EtherTalk used to work fine on my PowerBook 540c before I upgraded to System 7.5. What happened?

DISCUSSION -----

The networking software may have been corrupted. This problem could occur on any PowerBook 500 series computer or any other Macintosh computer. If EtherTalk cannot be turned on, then reinstall the System 7.5 Networking software using the following steps. First Custom Remove the Networking Software then Custom Install it.

Test the Hard Drive
---

1) Shut down your computer.
2) Insert the Disk Tools disk into the floppy drive and turn on your computer.
3) Double-click on the Disk Tools disk icon on the desktop to open it.
4) Double-click on the Disk First Aid icon.
5) Select the Hard Drive icon.
6) Click Verify and follow the instructions on the screen.
7) When you are finished, click Quit.
8) Double-click on the Apple HD SC Setup icon.
9) Click Update and follow the instructions on the screen.
10) When you are finished, click Quit.

Reinstall the Networking Software
---

1) Shut down you computer.
2) Insert the Install 1 disk into the floppy drive and turn on your computer.
3) Double-click on the Install 1 disk icon on the desktop to open it.
4) Launch the Installer by Double-clicking on its icon.
5) When you see the Installer’s welcome screen click Continue.
6) Make sure the Destination Disk indicated on the screen is the one on which you want to install system software.
7) Click on the pop-up menu in the upper left corner of the installation window that says Easy Install on it. Pull down the menu and select Custom Remove.
8) Click to put an x in the Networking Software box.
9) Click Remove and follow instructions on the screen.
10) When Removal is complete. Choose Continue for further installation.
11) Click on the pop-up menu in the upper left corner of the installation window that says Custom Remove on it. Pull down the menu and select Custom Install.
12) Click to put an x in the Network Software box.
13) Select Install and follow directions.
14) When you are finished, click Quit and Restart.

You should now be able to switch from LocalTalk to EtherTalk in the Network Control Panel.

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Tech Info Library Article Number:17051

LaserWriter Pro 630: Changing Paper Options Using PCL (1/95)

Revised: 1/24/95
Security: Everyone

LaserWriter Pro 630: Changing Paper Options Using PCL (1/95)

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Article Created: 24 January 1995

TOPIC -----

What are the PCL escape codes to change paper trays on the LaserWriter Pro 630 printer?

DISCUSSION -----

Changing Paper Trays

The HP PCL escape code sequence for selecting paper trays is:

<esc>&l#h

where <esc> = escape character
where l = lower case L
where # = paper tray selection below

<esc> = escape character
l = lowercase L
# = refer to following values below:
0 - source current (default)
1 - 250 sheet cassette
2 - Multipurpose tray
4 - 500 sheet cassette
6 - Envelope Feeder

For example, if you wanted to use the 500 sheet cassette, you would use the following escape code:

<esc>&l4h

Changing Page Size

The HP PCL escape command for selecting the page size is:

```
<esc>&l#A

<esc> = escape character
    l = lower case L
    # = refers to the following page sizes:
         2 - letter
         3 - legal
         1 - executive
        26 - A4
        80 - Monarch Envelope
        81 - Comm. 10 Envelope

For example, if you wanted to print on a legal-sized page you would send:

<esc>&l3A


Support Information Services
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Tech Info Library Article Number:17052

Tech Info Library

LaserWriter 16/600 PS: Changing Paper Options Using PCL (5/95)

Revised: 5/19/95
Security: Everyone

LaserWriter 16/600 PS: Changing Paper Options Using PCL (5/95)

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Article Created: 24 January 1995
Article Reviewed/Updated: 4 May 1995

TOPIC ----------

What are the PCL escape codes to change paper trays on the LaserWriter 16/600 PS printer?

DISCUSSION ----------

PCL (Printer Control Language) is the language Hewlett-Packard printers in use for MS-DOS/Window print jobs. You use PCL escape codes for printer instructions such as changing the default paper tray or page size. On Apple LaserWriter printers, you can only use PCL when you are printing from MS-DOS or Windows. You cannot use PCL from a Macintosh computer.

PCL codes are used within the application you are using, or you can create a file that contains the PCL code and send it to printer before you send a print job to the printer.

Changing Paper Trays

The HP PCL escape code sequence for selecting paper trays is:

<esc>&l#h

where <esc> = escape character
where l = lower case L
where # = paper tray selection below

<esc> = escape character
l = lowercase L
# = refer to following values below:
0 - source current (default)
1 - 250 sheet cassette
2 - Multipurpose tray

```
        4 - 500 sheet cassette
        6 - Envelope Feeder

For example: To use the 500 sheet cassette, you use this escape code: <esc>&l4h

Changing Page Size
------------------
The HP PCL escape command for selecting the page size is:

<esc>&l#A

<esc> = escape character
    l = lower case L
    # = refers to the following page sizes:
         2 - letter
         3 - legal
         1 - executive
        26 - A4
        80 - Monarch Envelope
        81 - Comm. 10 Envelope

For example: To print on a legal-sized page, you send this escape code:
<esc>&l3A


This article was published in the "Information Alley":
Volume I, Issue 24, Page 14


Article Change History:
04 May 1995 - Corrected mistakes in both escape code examples.
07 Apr 1995 - Made minor technical updates.

Support Information Services

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Tech Info Library Article Number:17053
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Tech Info Library

Macintosh: Determining File Sharing Access Levels (2/95)

Revised: 2/22/95
Security: Everyone

Macintosh: Determining File Sharing Access Levels (2/95)

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Article Created: 24 January 1995
Article Reviewed/Updated: 22 February 1995

TOPIC ----------

This article contains a description of how to determine folder access levels of folders contained on file servers.

DISCUSSION ----------

Types of access privileges

Access privileges govern what you and other users of a file serer can see or alter. The following table lists the access privileges that you must have in order to perform the listed actions:

Function	See Folders	See Files	Make Changes
Copy a file to a folder			X
Copy a file from a folder	X	X	
Copy a folder to a folder	X		X
Copy a folder from a folder	X		
Create a file	X	X	X
Create a folder	X		X
Delete a file		X	X
Delete a folder	X		X
Move a folder to a folder	X		X
Move a folder from a folder	X		X
Open and use a file		X	
Save changes to a file		X	

Finding Out What Privileges You Have

You can determine your access privileges by looking at the folder icons:

.	Owner of Folder	Some Folder Access	No Folder Access	Only Make Changes
AppleShare 3.0	Tabbed	Plain	Dimmed	Dimmed w/Arrow
AppleShare 4.0	Tabbed	Plain	Strapped	Strapped w/Arrow
System 7.x*	Tabbed	Plain	Strapped	Strapped w/Arrow

* System 7.x Personal File Sharing

NOTE: A folder with a custom icon does not always indicate access privileges.

Article Change History:
22 Feb 1995 - Added keyword; added note; minor technical updates.

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Tech Info Library Article Number:17054

Tech Info Library

Macintosh Family: Upgrade History (8/96)

Revised: 8/19/96
Security: Everyone

Macintosh Family: Upgrade History (8/96)

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Article Created: 24 January 1995
Article Reviewed/Updated: 19 August 1996

TOPIC ----------

Do you have a matrix that shows the upgrade paths for past and current Macintosh computers?

DISCUSSION ----------

The following chart shows all past and present logic board upgrade kits. Due to the dynamic nature of upgrades, refer to the latest finished goods price list or service price list for availability.

Begin_Table

Compact Macintosh Computers			
MACINTOSH COMPUTER	LOGIC BOARD UPGRADE KIT	CURRENTLY AVAILABLE	PART NUMBER
128K	Mac Plus Logic Bd. Upgrade	NO	M2518
512K, 512Ke	Mac Plus Logic Bd. Upgrade	NO	M2518
Plus	N/A		
SE	Macintosh SE/30 Upgrade	NO	M1102LL/A
SE/30	N/A		
Classic	Classic II Logic Bd. Upgrade	NO	M1545LL/A
Classic II	N/A		

Color Classic	N/A		

* Mac 128K and 512K requires 800K floppy drive upgrade in addition (p/n M2516)

Macintosh II Computers

MACINTOSH COMPUTER	LOGIC BOARD UPGRADE KIT	CURRENTLY AVAILABLE	PART NUMBER
II	Mac IIx Logic Bd. Upgrade Kit	NO	M0271
	Mac IIfx Logic Bd. Upgrade Kit	NO	M0375LL/B
IIx	Mac IIfx Logic Bd. Upgrade Kit	NO	M0375LL/B
IIcx	Mac IIci Logic Bd. Upgrade Kit	NO	M5816LL/A
	Quadra 700 Logic Bd. Upgrade Kit	NO	M5950LL/A
IIci	Quadra 700 Logic Bd. Upgrade Kit	NO	M5950LL/A
IIfx	N/A		
IIsi	N/A		
IIvx	Centris 650 Logic Bd. Upgrade	NO	M1330LL/A
	Power Mac 7100/66 Logic Bd Upgrd	NO	M2474LL/A
	Power Mac 7100/66/AV Logic Bd Upg	NO	M2840LL/A

Macintosh LC Computers

MACINTOSH COMPUTER	LOGIC BOARD UPGRADE KIT	CURRENTLY AVAILABLE	PART NUMBER
LC	LC II Logic Bd. Upgrade Kit	NO	M1710SC/A
	LC III Logic Bd. Upgrade Kit	NO	M1386LL/A
LC II	LC III Logic Bd. Upgrade Kit	NO	M1386LL/A
	LC 475 Logic Bd. Upgrade Kit	NO	M2139LL/A
LC III	LC 475 Logic Bd. Upgrade Kit	NO	M2139LL/A
LC 475	Macintosh Processor Upgrade Card	NO	M3397LL/A

LC 520	Performa 575 Logic Bd. Upgrade	NO	M2479LL/A
	520/LC 550 Pwr Macintosh Logic Bd	NO	M3395LL/A
LC 550	Performa 575 Logic Bd. Upgrade	NO	M2479LL/A
	520/LC 550 Pwr Macintosh Logic Bd	NO	M3395LL/A
LC 575	Macintosh Processor Upgrade Card	NO	M3397LL/A
LC 580	Macintosh Processor Upgrade Card	NO	M3397LL/A
LC 630	Macintosh Processor Upgrade Card	NO	M3397LL/A
	5300/6300 Logic Board Upgrade	YES	M4447LL/A
Macintosh TV	N/A		
5200/75 LC	5300/6300 Logic Board Upgrade	YES	M4447LL/A

Macintosh Performa Computers

MACINTOSH COMPUTER	LOGIC BOARD UPGRADE KIT	CURRENTLY AVAILABLE	PART NUMBER
Performa 200	N/A		
Performa 400,405, 430,450	LC 475 Logic Bd. Upgrade Kit	NO	M2139LL/A
Performa 460,466, 467	LC 475 Logic Bd. Upgrade Kit	NO	M2139LL/A
Performa 475 & 476	Macintosh Processor Upgrade Card	NO	M3397LL/A
Performa 550	Performa 575 Logic Bd. Upgrade	NO	M2479LL/A
	520/LC 550 Pwr Macintosh Logic Bd	NO	M3395LL/A
Performa 575,577, 578	Macintosh Processor Upgrade Card	NO	M3397LL/A
Performa 580	Macintosh Processor Upgrade Card	NO	M3397LL/A
Performa 600	Centris 650 Logic Bd. Upgrade Kit	NO	M1330LL/A
	Power Mac 7100/66 Logic Bd. Upgrd	NO	M2474LL/A
	Power Mac 7100/66/AV Logic Bd.	NO	M2840LL/A
Performa 630 Series	Macintosh Processor Upgrade Card	NO	M3397LL/A
	5300/6300 Logic Board Upgrade	YES	M4447LL/A

Performa 640 DOS	N/A		
Performa 5200CD Series	5300/6300 Logic Board Upgrade	YES	M4447LL/A
Performa 5300CD Series	N/A		
Performa 6100	Power Mac 6100/60/AV Logic Bd.	NO	M2901LL/A
Performa 6200CD Series	5300/6300 Logic Board Upgrade	YES	M4447LL/A
Performa 6300CD Series	N/A		
Performa 6400 Series	N/A		

Macintosh Centris & Quadra Computers

MACINTOSH COMPUTER	LOGIC BOARD UPGRADE KIT	CURRENTLY AVAILABLE	PART NUMBER
Quadra 605	Macintosh Processor Upgrade Card	NO	M3397LL/A
Quadra/Centris 610	Power Macintosh Upgrd Crd.	NO	M2843LL/A
	Quadra 660AV Logic Bd. Upgrd.	NO	M1534LL/A
	Power Mac 6100/60 Logic Bd. Upgrd	NO	M2343LL/A
	Power Mac 6100/60/AV Logic Bd.	NO	M2901LL/A
Quadra 630	Macintosh Processor Upgrade Card	NO	M3397LL/A
	5300/6300 Logic Board Upgrade	YES	M4447LL/A
Quadra 650	Power Macintosh Upgrade Card	NO	M2843LL/A
	Power Mac 7100/66 Logic Bd. Uprd	NO	M2474LL/A
	Power Mac 7100/66/AV Logic Bd.	NO	M2840LL/A
Quadra 660AV	Power Mac 6100/60 Logic Bd. Upgrd	NO	M2343LL/A
	Power Mac 6100/60/AV Logic Bd.	NO	M2901LL/A
Quadra 700	Power Macintosh Upgrade Card	NO	M2843LL/A
Quadra 800	Power Macintosh Upgrade Card	NO	M2843LL/A
	Quadra 840AV Logic Bd. Upgrade	NO	M1848LL/A
	Power Mac 8100/80 Logic Bd. Upgrd	NO	M2344LL/A
	Power Mac 8100/80/AV Logic Bd.	NO	M2902LL/A
	Power Macintosh 8500 Logic Bd.	YES	M3807LL/B

Quadra 840AV	Power Mac 8100/80	NO	M2344LL/A
	Power Mac 8100/80/AV	NO	M2902LL/A
	Power Macintosh 8500 Logic Bd.	YES	M3807LL/B
Quadra 900	Power Macintosh Upgrade Card	NO	M2843LL/A
	Quadra 950 Logic Board Upgrade		
	Workgroup Server 95 PDS Card	NO	M6940Z/A
	Workgroup Server 95 PDS Card	NO	M6945Z/A
	Workgroup Server 9150 Logic Bd.	NO	M3262LL/A
Quadra 950	Power Macintosh Upgrade Card	NO	M2843LL/A
	Workgroup Server 95 PDS Card	NO	M6940Z/A
	Workgroup Server 95 PDS Card	NO	M6945Z/A
	Workgroup Server 9150 Logic Bd.	NO	M3262LL/A

Power Macintosh Computers

MACINTOSH COMPUTER	LOGIC BOARD UPGRADE KIT	CURRENTLY AVAILABLE	PART NUMBER
5260/100	N/A		
5400/120	N/A		
6100CD family	Power Macintosh AV Card	NO	M3447LL/A
7100/66	Power Macintosh AV Card	NO	M3447LL/A
7100/80	Power Macintosh AV Card	NO	M3447LL/A
7200	Power Macintosh 7600 Logic Board	YES	M3842LL/A
7500	Power Macintosh 120 MHz Proc. Upg	YES	M4731LL/A
	Power Macintosh 132 MHz Proc. Upg	YES	M4875LL/A
	Power Macintosh 7600 Logic Board	YES	M3842LL/A
7600	Power Macintosh 120 MHz Proc. Upg	YES	M4731LL/A
	Power Macintosh 132 MHz Proc. Upg	YES	M4875LL/A
8100/80	Power Macintosh AV Card	NO	M3447LL/A
8100/10	Power Macintosh AV Card	NO	M3447LL/A
	Power Macintosh 8500 Logic Bd	YES	M3807LL/B
8100/110	Power Macintosh 8500 Logic Bd	YES	M3807LL/B
8500	Power Macintosh 132 MHz Proc. Upg	YES	M4875LL/A
9500	Power Macintosh 132 MHz Proc. Upg	YES	M4875LL/A

Apple Workgroup Servers

MACINTOSH COMPUTER	LOGIC BOARD UPGRADE KIT	CURRENTLY AVAILABLE	PART NUMBER
WGS 60	Workgroup Server 6150/60 Logic Bd	NO	M2913LL/A
WGS 80	Workgroup Server 8150/80 Logic Bd	NO	M2915LL/A
	Workgroup Server 8150/110 Lgc Bd	NO	M4046LL/A
	Workgroup Server 8550/132 Lgc Bd	YES	M4607LL/A
WGS 95	Workgroup Server 9150/80 Logic Bd	NO	M3262LL/A
	Workgroup Server 9150/120 Lgc Bd	NO	M4047LL/A
WGS 6150/60	N/A		
WGS 8150/80	Workgroup Server 8150/110 Lgc Bd	NO	M4046LL/A
	Workgroup Server 8550/132 Lgc Bd	YES	M4607LL/A
WGS 8150/110	Workgroup Server 8550/132 Lgc Bd	YES	M4607LL/A
WGS 9150/80	Workgroup Server 9150/120 Lgc Bd	NO	M4047LL/A

PowerBook Computers

MACINTOSH COMPUTER	LOGIC BOARD UPGRADE KIT	CURRENTLY AVAILABLE	PART NUMBER
Duo 200 series	100-MHz PowerPC 603e Logic Board	YES	M3171LL/A
190 series	100-MHz PowerPC 603e Logic Board	YES	M3881LL/A
500 series	100-MHz PowerPC 603e Daughter Bd	YES	M3081LL/A

End_Table

*Notes:
The following computers are in the Macintosh 630CD family: LC 630, Quadra 630, Performa 630, Performa 635, Performa 636, Performa 637, Performa 638.

The following computers are in the Macintosh 6100CD family: Macintosh 6100/60,

Macintosh 6100/66, Macintosh 6100 DOS Compatible, Performa 6110, Performa 6112, Performa 6115, Performa 6117, and Performa 6118.

The following computers are in the Macintosh 5200CD family: Macintosh 5200/75 LC, Performa 5200, Performa 5210, Performa 5215, and Performa 5220.

The following computers are in the Macintosh 6200CD series: Performa 6200, Performa 6214, Performa 6216, Performa 6218, Performa 6220, and Performa 6230.

This article was published in the Information Alley on 29 April 1996.

Article Change History:
19 Aug 1996 - Reformated, verified information, added new computers.
10 Jun 1996 - Added keyword.
06 May 1996 - Added keyword.

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Tech Info Library Article Number:17055

Tech Info Library

Color Stylewriter 2400 & ClarisWorks: FPU Not Installed (5/95)

Revised: 5/4/95
Security: Everyone

Color Stylewriter 2400 & ClarisWorks: FPU Not Installed (5/95)

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Article Created: 23 January 1995
Article Reviewed/Updated: 4 May 1995

TOPIC ----------

I get an error message that says, "Floating Point Coprocessor Not Installed" when I launch the database function of ClarisWorks.

I have a Performa 636CD, System 7.5, and ClarisWorks 2.x. The Color StyleWriter 2400 driver is selected in the Chooser.

DISCUSSION ----------

We were able to duplicate your problem with Clarisworks 2.x. When we installed ClarisWorks 3.0 the problem was resolved. To solve this problem, you have two options available:

1) You can contact Claris for a maintenance upgrade of 2.1 (2.1.4 is the version you need).

2) You can contact Claris for a upgrade to version 3.0 of ClarisWorks.

This article provides information about a non-Apple product. Apple Computer, Inc. is not responsible for its content. Please contact the vendor for additional information.

To locate a vendor's address and phone number, use the vendor name as a search string.

Article Change History:
04 May 1995 - Added information on 2.1.4 upgrade.

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Tech Info Library Article Number:17057

Tech Info Library

PowerBook 500 series: Using the LaserWriter Select 310 (4/95)

Revised: 4/27/95
Security: Everyone

PowerBook 500 series: Using the LaserWriter Select 310 (4/95)

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Article Created: 24 January 1995
Article Reviewed/Updated: 27 April 1995

TOPIC ----------

I am using a PowerBook 500 series computer, without an internal modem, and a LaserWriter Select 310. I just installed the printer software and cannot get it to print. Any ideas?

DISCUSSION ----------

The PowerBook 500 series computers were introduced after the LaserWriter Select 310, so you need to use the LaserWriter Select 310 printer driver that comes pre-installed on the hard disk. Installing the LaserWriter Select 310 software that came with your printer can cause compatibility problems since it places older versions of the chooser, printer drivers, and other software on your hard disk.

Setting Up The Printer
---
1) In the Chooser, select the LaserWriter 310 icon.
2) Select the serial port with the telephone icon.

Using With an Internal Modem

If you have an internal modem, in the PowerBook Setup control panel set the Modem section to Normal. In the PowerPort 500 v2.5 software, this setting is located in the Modem control panel under Configure Port. Set it to Normal.

Article Change History:
27 Apr 1995 - Reformatted and corrected driver name.
09 Mar 1995 - Reflected change made by new version of modem software.

Support Information Services

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Tech Info Library Article Number:17059

Tech Info Library

LaserWriter Bridge & PowerBook 500 Series Compatibility (3/95)

Revised: 3/28/95
Security: Everyone

LaserWriter Bridge & PowerBook 500 Series Compatibility (3/95)

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Article Created: 25 January 1995
Article Reviewed/Updated: 28 March 1995

TOPIC ----------

Is it true that the LaserWriter Bridge is not compatible with PowerBook 500 series computers? Does the same problem exist for the new products LaserWriter Bridge 2.0 or LocalTalk Bridge?

DISCUSSION ----------

LaserWriter Bridge 1.0 IS NOT compatible with the PowerBook 500 series computers, however, LaserWriter Bridge 2.0 is compatible. Customers can obtain LaserWriter Bridge 2.0 free; it is included in the Network Software Installer (NSI) 1.5 disks.

LocalTalk Bridge is also fully compatible with the PowerBook 500 series computers, and is sold as a separate product.

These articles can help you locate the NSI 1.5 software mentioned here:

• "Where To Find Apple Software Updates" -- Lists online services for free Apple software updates.

• "Obtaining Apple Product Support in the USA" -- Lists 800 numbers and online services for software updates, Apple support information, and a subset of the Apple Tech Info Library.

Article Change History:
28 Mar 1995 - Updated article with new information and classified for everyone.

Support Information Services

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Tech Info Library Article Number:17062